CATALOG & TECHNICAL GUIDE – INCH



TURNING

SECO



SOLUTIONS & SUPPORT

By choosing Seco, you get more than just a comprehensive portfolio of advanced metal-cutting solutions and expert services. You get a partnership based on trust, respect and communication and a team that is always ready to help you gain the competitive advantage.

Globally headquartered in Fagersta, Sweden and present in more than 50 countries, Seco develops cutting tools, processes and services for high productivity and profitability. Our team of over 5,000 dedicated employees maintains partnerships around the world to identify and overcome the challenges faced by today's manufacturers.

Our broad selection of milling, turning, holemaking and toolholding solutions include over 30,000 standard products, custom items for special applications and a team of metal-cutting experts who help customers identify and implement cost-effective solutions.

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SNU 275
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SPMR 276
SPU 276
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TCGT 277
TCGW 316
TCGX 278
TCMT 279
TCMW 330
TCMX 280
TDAB 280
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TNGA 317
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TNMA 282
TNMG 282-286
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TNMN 321
TNMP 282
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W
WCMT 295
WNGA 326
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WNMA 296, 327
WNMG 296-299
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X
X4 578-584



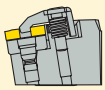


External toolholders

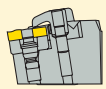


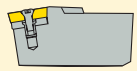
D	W	L	N	R		-	16	-	3	C	-	
1	2	3	4	5	6		7		8	9		10

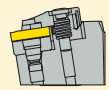
1. Insert clamping system

D 
Top clamp using center hole

P 
Pin lock assembly (NL/PL toolholders)

M 
Multiple lock assembly (Pin and clamp lock) (M-Type toolholders)

S 
Screw lock

C 
Clamp lock assembly

T 
Tapered stem (Tee-lock)

2. Insert shape

C 

D 

R 

S 

T 

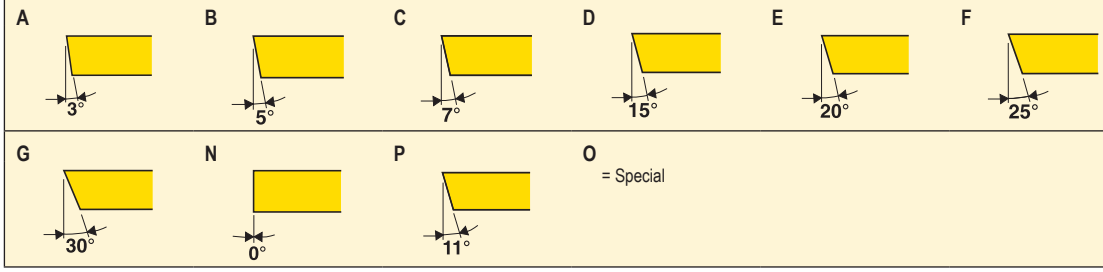
V 

W 

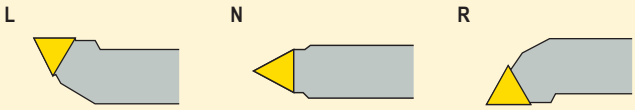
3. Tool type

A = Straight shank with 0° side cutting edge angle
B = Straight shank with 15° side cutting edge angle
C = Shank with 0° end cutting edge angle
D = Straight shank with 45° side cutting edge angle
E = Straight shank with 30° side cutting edge angle
F = Offset shank with 0° end cutting edge angle
G = Offset shank with 0° side cutting edge angle
J = Offset shank with –3° side cutting edge angle
K = Offset with 15° end cutting edge angle
L = Offset shank with –5° end or side cutting edge
M = Straight shank with 50° side cutting edge angle
O* = Offset shank with centrally located round insert
P = Straight shank with 27.5° side cutting edge angle
Q = Offset shank with –17.5° cutting edge angle
R = Offset shank with 15° side cutting edge angle
S = Offset shank with 45° side cutting edge angle
T* = Offset shank with –30° side or end cutting edge angle
V = Straight shank with 17.5° side cutting edge angle
W = Offset shank with 10° side cutting edge angle
***** = Seco standard

4. Insert side clearance angle



5. Cutting direction (hand of tool)



6. Pocket style

S = Single wall pocket construction.
Full pocket construction when letter position is vacant.

7. Toolholder shank size

For square shanks, the number represents the number of sixteenths of width and height. For rectangular shanks, the first digit represents the number of eighths of width and the second digit represents the number of quarters of height.

8. Insert size I.C.

Number of eights of I.C.

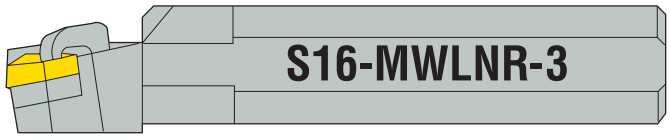
9. Qualified surface & length

A = Qualified back and end. 4" long
B = Qualified back and end. 4.5" long
C = Qualified back and end. 5" long
D = Qualified back and end. 6" long
E = Qualified back and end. 7" long
F = Qualified back and end. 8" long
J = Qualified back and end. 3.5" long
M = Qualified front and end. 4" long
N = Qualified front and end. 4.5" long
P = Qualified front and end. 5" long
R = Qualified front and end. 6" long
S = Qualified front and end. 7" long
T = Qualified front and end. 8" long

10. Internal designation

JET = Jetstream Tooling®
JETL = Jetstream Tooling® with P-lever clamp
JETB = Jetstream Tooling® with inlet on backend of shank
JETLB = Jetstream Tooling® with P-lever clamp and inlet on back end of shank
-PL = Plunging

Internal toolholders



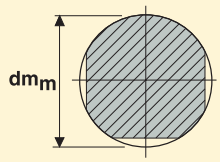
S	16		-	M	W	L	N	R	-	3
1	2	3		4	5	6	7	8		9

1. Toolholder type

A = Steel with coolant passage
C = Carbide
E = Solid carbide with brazed* cutting head and coolant passage
H = Heavy metal
J = Heavy metal with coolant hole
S = Solid steel

*Brazed or equivalent

2. Shank diameter



Indicates bar diameter in sixteenths of an inch.

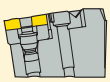
Stepped bar shows smallest diameter first.

3. Tool length

F = 3”
G = 3.5”
H = 4”
J = 4.5”
K = 5”
L = 5.5”
M = 6”
N = 6.5”
P = 6.75”
Q = 7”
R = 8”
S = 10”
T = 12”
U = 14”
V = 16”
W = 18”
Y = 20”
X = Special Length

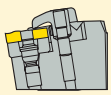
4. Insert clamping system

P



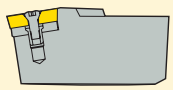
Pin lock assembly
(NL/PL toolholders)

M



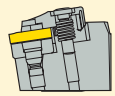
Multiple lock assembly
(Pin and clamp lock)
(M-Type toolholders)

S



Screw lock

C



Clamp lock assembly
(PC toolholders)

5. Insert shape

C



D



R



S



T



V



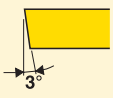
W

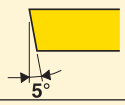


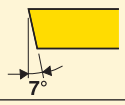
6. Tool type

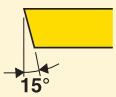
U = Offset shank with negative 3° (93°) end or side cutting edge angle
F = Offset shank with 0° (90°) end cutting edge angle
G = Offset shank side/end cutting (round insert)
K = Offset shank with 15° (75°) end cutting edge angle
L = Offset shank with negative 5° (95°) end or side cutting edge angle
Q = Offset shank with negative 17.5° (107.5°) cutting edge angle
P = Offset shank with 27.5° side and end cutting edge angle

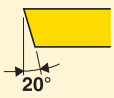
7. Insert side clearance angle

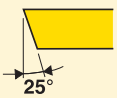
A


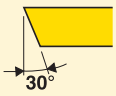
B


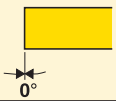
C


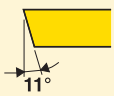
D


E


F


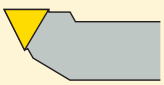
G


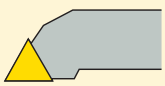
N


P


O
= Special

8. Cutting direction (hand of bar)

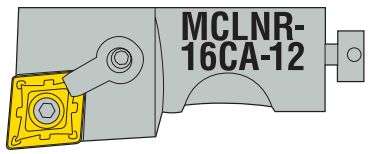
L


R


9. Insert size I.C.

Number of eights of I.C.

Cartridge Identification System



M	C	L	N	R	-	16	C	A	-	12
1	2	3	4	5		6	7	8		9

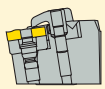
1. Insert clamping system

P



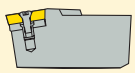
Pin lock assembly (NL/PL toolholders)

M



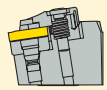
Multiple lock assembly (pin and clamp lock) (NCL toolholders)

S



Screw lock

C



Clamp lock assembly (PC toolholders)

2. Insert shape

C



D



S



T



V

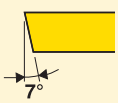


3. Tool type

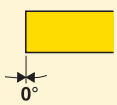
F = Offset shank with 0° end cutting edge angle
G = Offset shank with 0° side cutting edge angle
K = Offset shank with 15° end cutting angle
L = Offset shank with –5° and/or side cutting edge angle
R = Offset shank with 15° side cutting edge angle
S = Offset shank with 45° side cutting edge angle
T* = Offset shank with –30° side or end cutting edge angle
X* = Offset shank with 27.5° side or end cutting edge angle
Y = 5° end cutting edge angle
* = Seco standard

4. Insert side clearance angle

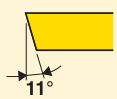
C



N

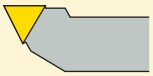


P

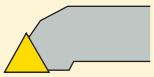


5. Cutting direction (hand of tool)

L



R



6. Cartridge cutting height

A Type = Length of cutting edge in millimeters

W, **X** & **Z** Type = Height in thousandths of an inch rounded (2) places

7. Tool symbol

C = Indicates cartridge

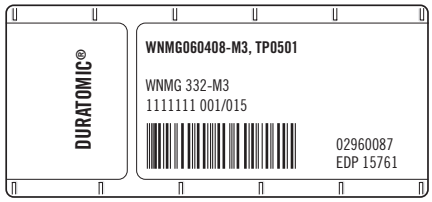
8. Cartridge Type

A = Metric cartridge/metric components-metric hex wrench
W = Metric cartridge/metric components-Inch hex wrench
X = 90° mount cartridge
Z = Mini-cartridge

9. Insert size

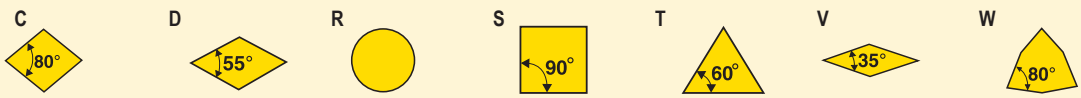
A Type = Length of cutting edge in millimeters
W, **X** & **Z** Type = Insert I.C. in eighths of an inch
..JET = Jetstream Tooling®

A.N.S.I. Insert Identification System

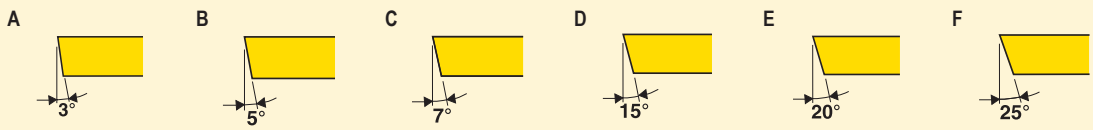


W	N	M	G	3	3	2		-	M3
1	2	3	4	5	6	7	8		9

1. Insert shape



2. Insert side clearance angle



O = Special

3. Tolerances

Insert I.C.	Thickness
A = ± 0.001	± 0.001
C = ± 0.001	± 0.001
E = ± 0.001	± 0.001
G = ± 0.001	± 0.005
M = ± 0.002*	± 0.005
=± 0.004*	± 0.005
U = ± 0.003*	± 0.005
= ± 0.010*	± 0.005

*Tolerance is determined by size of insert (I.C)

4. Insert type

A = With hole, no chipbreaker
B = With hole and one counter sink
E = Smaller than 1/4" I.C. without hole
G = With hole and chipbreaker on both faces
H = With hole, counter sink and chipgroove
M = With hole and chipbreaker on one face only
P* = 10° positive-land with hole and chipbreaker
R = Without hole, chipbreaker on one face only
T = C-Lock hole with chipbreaker on one face only
U = Negative insert with hole and chip-breaker on both faces for toolholders with pin lock only
W = C-Lock hole, no chipbreaker

*Non ANSI Standard

5. Size

For equal sided inserts I.C. in 1/8 ths of an inch

1/8	= 1	1/2	= 4
5/32	= 1.2	5/8	= 5
3/16	= 1.5	3/4	= 6
7/32	= 1.8	7/8	= 7
1/4	= 2	1	= 8
5/16	= 2.5	1 1/4	= 10
3/8	= 3		

Rectangle and parallelogram inserts require two digits:

1st Digit - Number of 1/8ths in width
2nd Digit - Number of 1/4ths in length

6. Thickness

Number of 1/32nds on inserts less than 1/4" I.C.

Number of 1/16ths on inserts 1/4" I.C. and over.

7. Nose radius

0.0	=	Sharp to 1/512
0	=	Sharp to 1/256
0.5	=	1/128
1	=	1/64
2	=	1/32
3	=	3/64
4	=	1/16
6	=	3/32
8	=	1/8

8. Cutting edge condition

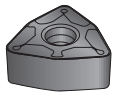
F = Sharp cutting edges
E = Honed cutting edges
T = Chamfered cutting edges
S = Chamfered and honed cutting edges
K = Double chamfered cutting edges
P = Double chamfered and rounded cutting edges.

9. Manufacturer's option

e.g. chipbreaker designation
F = Finishing
M = Medium
R = Roughing
1 = For low feed rates and easy conditions
9 = For high feed rates and rough conditions

Insert/Metric series, Extract from ISO 1832-2004

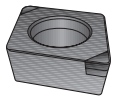




W	N	M	G	06	04	08		-	M3
1	2	3	4	5	6	7	8		9

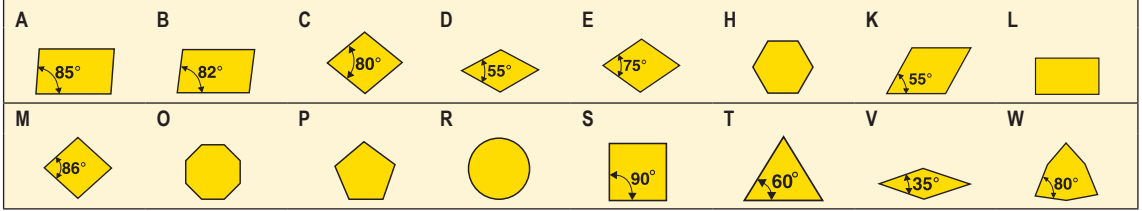
Insert/Metric series, Extract from ISO 1832-2004



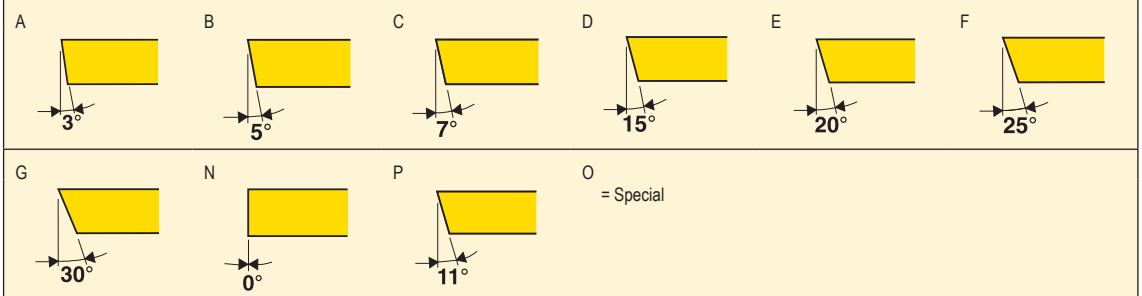


C	C	M	W	09	T3	08	S	-		-		-	L1	-		-	B
1	2	3	4	5	6	7	8		9		10		11		12		13

1. Insert shape



2. Insert side clearance angle

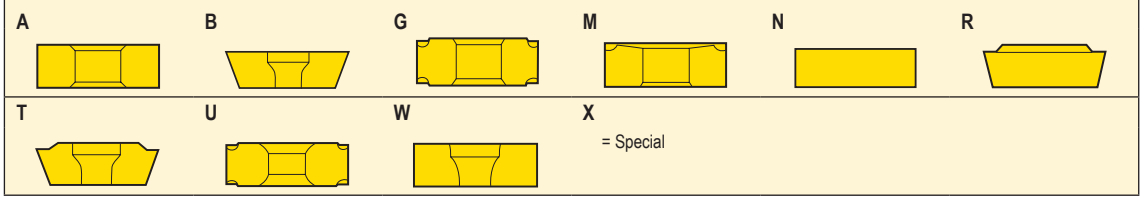


3. Tolerances

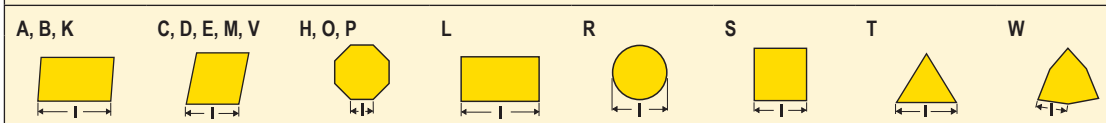
Tolerance class	Tolerance +/- mm		For d, dimension mm											
	s	d	3.175*	3.969	4.064	4.760	6.350	9.525	12.700	15.875	19.050	25.400	31.750	38.100
A	0.025	0.025	•			•	•	•	•	•	•	•	•	•
C	0.025	0.025	•	•	•	•	•	•	•	•	•	•	•	•
E	0.025	0.025	•			•	•	•	•	•	•	•	•	•
F	0.025	0.013	•			•	•	•	•	•	•	•	•	•
G	0.130	0.025	•			•	•	•	•	•	•	•	•	•
H	0.025	0.013	•			•	•	•	•	•	•	•	•	•
J	0.025	0.050	•			•	•	•						
	0.025	0.080							•					
	0.025	0.100								•	•			
	0.025	0.130										•		
	0.025	0.150											•	•
K	0.025	0.050	•			•	•	•						
	0.025	0.080							•					
	0.025	0.100								•	•			
	0.025	0.130										•		
	0.025	0.150											•	•
M	0.130	0.050	•			•	•	•						
	0.130	0.080							•					
	0.130	0.100								•	•			
	0.130	0.130										•		
	0.130	0.150											•	•
U	0.130	0.080	•			•	•	•						
	0.130	0.130							•					
	0.130	0.180								•	•			
	0.130	0.250										•	•	•

* Not ISO

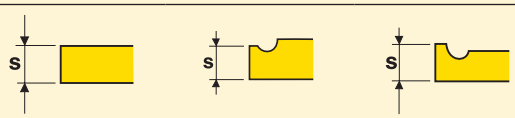
4. Hole configuration and/or chipbreaker



5. Cutting edge length



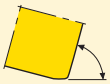
6. Thickness



01 = 1.59 mm	T3 = 3.97 mm	07 = 7.94 mm
T1 = 1.98 mm	04 = 4.76 mm	08 = 8.00 mm
02 = 2.38 mm	05 = 5.56 mm	09 = 9.52 mm
03 = 3.18 mm	06 = 6.35 mm	

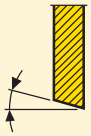
7. Corner configuration

1st letter



A = 45°
D = 60°
E = 75°
F = 85°
P = 90°
Z = Special

2nd letter



A = 45°
B = 5°
C = 7°
D = 15°
E = 20°
F = 25°
G = 30°
N = 0°
P = 11°
Z = Special

nose radius



M0 = round inserts (metric version)
005 = 0.05 mm
01 = 0.1 mm
02 = 0.2 mm
04 = 0.4 mm
08 = 0.8 mm
12 = 1.2 mm
etc

8. Cutting edge condition

F



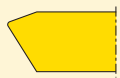
E



T



S



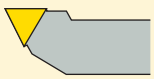
W

= High feed inserts

Not mandatory information

9. Cutting direction

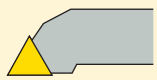
L



N



R



Not mandatory information

10. Internal designation

e.g. chipbreaker designation
F = Finishing
M = Medium
R = Roughing

e.g. edge designation
e.g. 01020 = 0.1 mm x 20°

Not mandatory information

11. Manufacturers option

Tip sizes:
L0
L1
L2
LF = full-face insert (sintered layer)

Not mandatory information

12. Internal designation

Turning
e.g. chipbreaker designation
F = Finishing
M = Medium
R = Roughing
WZ = Wiper (PCBN)
etc

Not mandatory information

13. No. of tips

B = 2
C = 3
D = 4

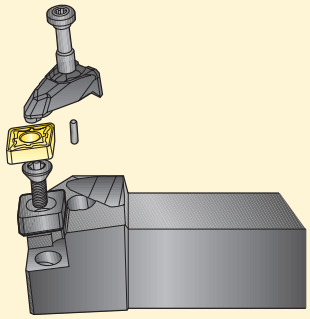
U = 4 (double sided)
V = 6 (double sided)

Not mandatory information

D Toolholder
First choice for general purpose machining, external

- For negative basic shape inserts with hole
- Robust, stable clamping system

The insert is locked in position by a clamp that presses the insert into and down onto the fixed insert seat

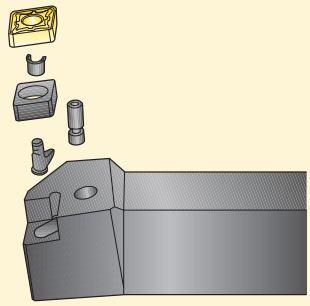


P Toolholder for Jetstream Tooling®
A complement to the D Toolholder, external

- For negative inserts with hole

In the illustration when the clamping screw is tightened the toggle lever secures the insert in the insert seat

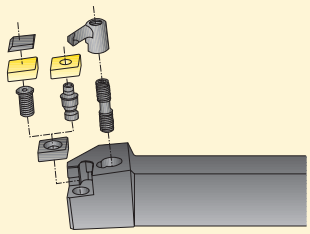
In the alternative design the clamping screw acts upon the wedge that fix the insert towards the center pin



M External Toolholders

- A multiple-clamp and lock pin design for NC/CNC machines
- Maximum insert locking power with industry-standard NL lock pin mechanism

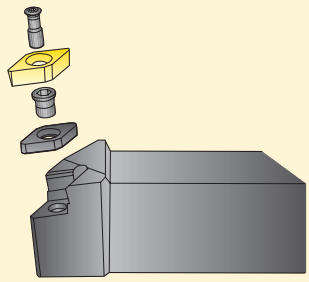
Two different assembly options:
1. For negative basic shape inserts with hole
2. For conventional precision-ground or utility-ground solid inserts with chipbreaker plates



S Toolholder
For external and internal turning with positive inserts (C-lock)

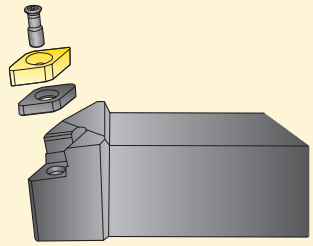
- For positive basic shape inserts with center hole
- Qualified holders that conform to ISO-ANSI standards and utilize Torx Plus®* holding screws
- Shank sizes ranging from 3/8 to 1-1/2 inch
- For inserts with 7° clearance angles and advanced chip groove geometries

*Torx Plus® is a registered trademark of CamCar Division of Textron, Inc.



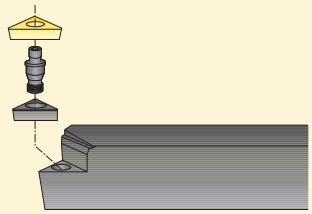
P External Negative Toolholders (PL)

- For negative inserts with hole
- Negative-rake lock pin style
- Simple to set up and index



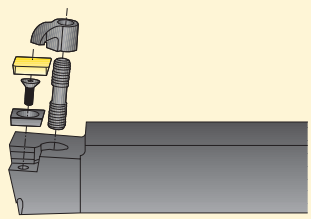
P External Positive Toolholders (PL)

- Positive-rake lock pin style
- Simple to set up and index
- For positive-rake inserts with chip grooves



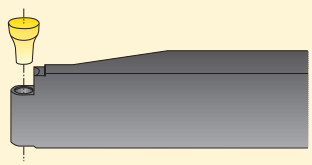
C External Toolholders (PC)

- Qualified holders with positive clamping
- Designed for precision- and utility-ground, positive-rake inserts and chipbreakers
- Ideal for positive-rake applications on materials such as high-temperature alloys, aluminum and soft steels, and low horse- power applications



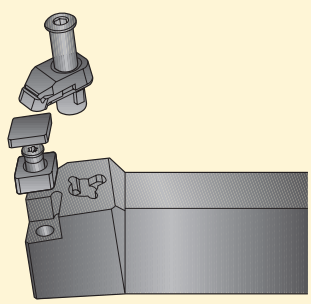
T External Toolholders (T-Lock)

- Well-suited for high-temperature alloy profiling
- Unrestricted chip flow
- Simple field modifications possible with Style O
- Simple retention system
- Requires no spare sparts



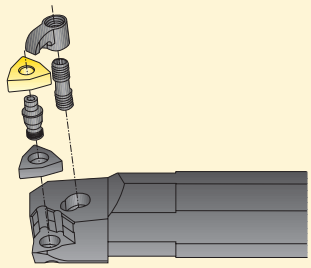
C Toolholder
Designed mainly for Seco PCBN inserts without hole

The insert is locked in position by a clamp, which is equipped with a carbide plate



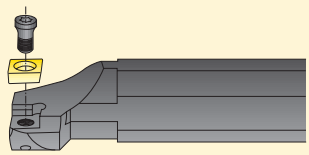
M Internal Boring Bars

- Proven lock pin for negative rake geometry inserts
- Ideal for unground, negative rake inserts or precision ground inserts with a chipbreaker plate



S Internal Boring Bars (C-Lock)

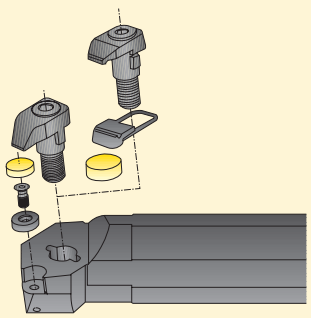
- For bores as small as 0.180 inch
- Available with steel or carbide shanks, ranging in diameter size from 3/16 to 1 inch
- Designed to ISO-ANSI standards
- Uses Torx Plus® insert holding screws



Torx Plus® is a registered trademark of CamCar Division of Textron, Inc.

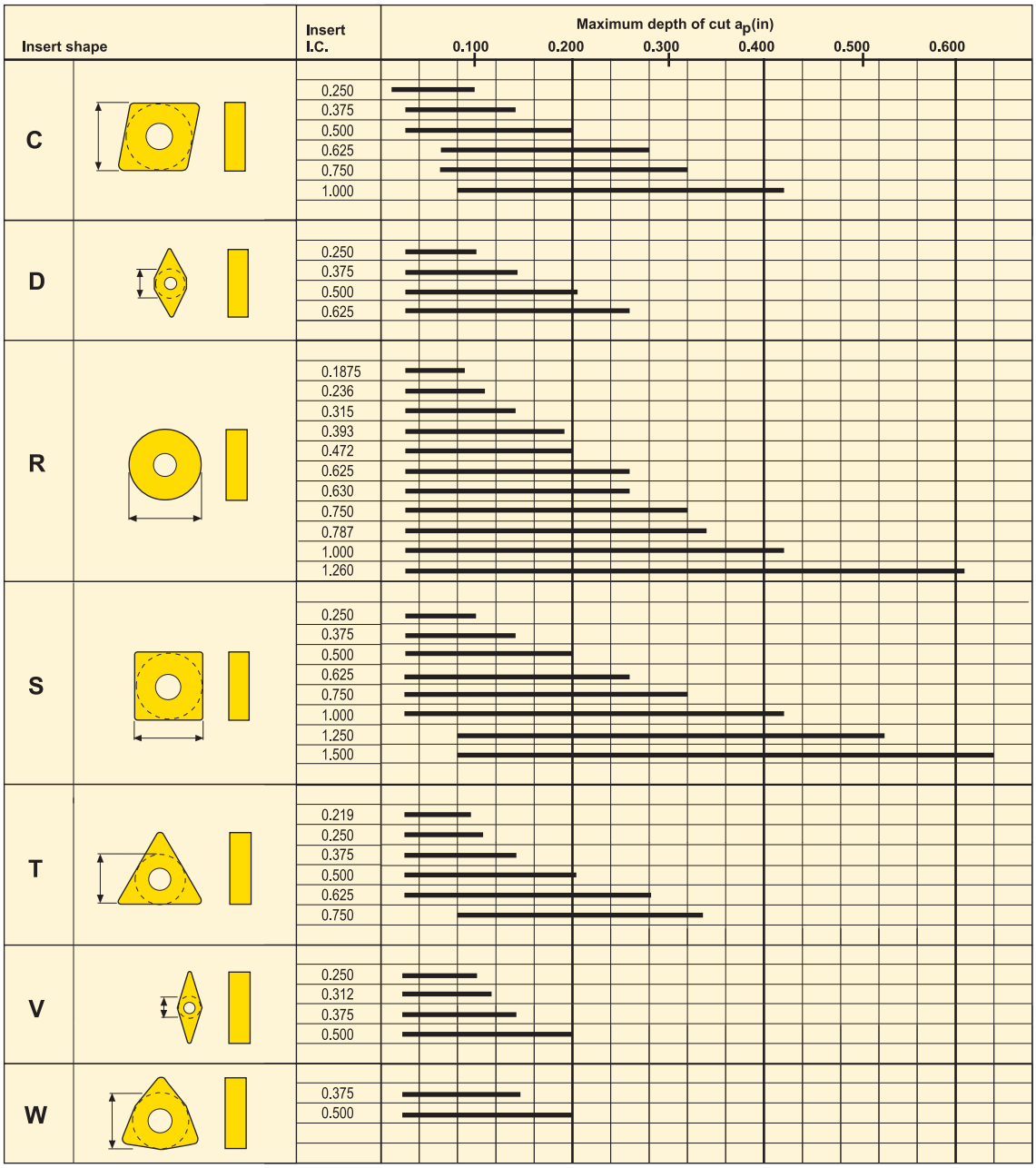
C Internal Boring Bars (PCBN)

- Designed principally for Secomax PCBN inserts without a center hole
- Also used with other Secomax negative and positive inserts without a center hole and chipbreaker, or with a separate mechanical chipbreaker
- Insert is held down with clamp
- For rougher machining, clamp is equipped with a carbide pressure plate that reduces clamp wear and distributes the clamping force onto the insert surface

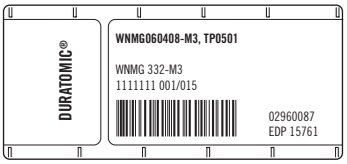


Maximum depth of cut capability

The maximum cutting depth that can be used depends on a number of factors, including machine power, stability, workpiece material, insert shape and size, nose radius, chipbreaker, grade and setting angle. Start with the insert size to get an indication and proceed with the recommendations for the chosen chipbreaker. This will give a suitable maximum cutting depth. The minimum cutting depth should not be less than the nose radius.

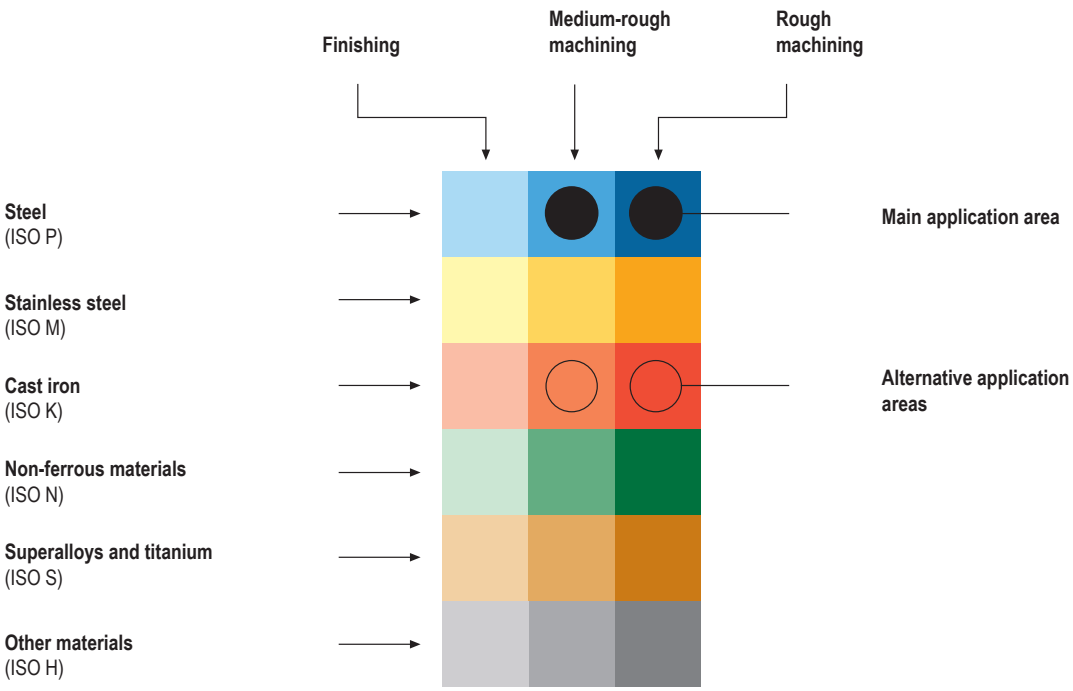


The insert type and size are often determined by the toolholder choice.
The code on the insert must correspond to the code on the toolholder.



Secolor is a system for presenting the application area for a specific insert. It is based on a matrix with eighteen squares symbolizing different workpiece materials and different machining conditions. The geometry of the insert i.e. the basic shape and the chipbreaker, together with the carbide grade forms the application area that the insert is meant for.

Black dots in the matrix indicate the main application areas for the inserts and circles indicate alternative areas.

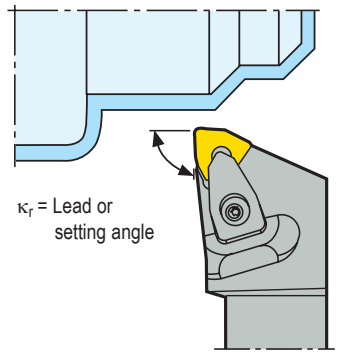


Cutting speed v_c (sf/min)

In this section a recommended cutting speed is indicated under specified conditions and a selected SMG (ver.2)

Use the tables beginning on page 770 to classify the workpiece material into a SMG.

In order to increase the accuracy towards the actual cutting conditions and requirements of the applications the recommendation is to use My Pages – Suggest on www.secotools.com



kar (κ_r) = cutting edge angle (°) (from holder)

rep (r_ε) = nose radius (inch)

a_p = depth of cut (inch)

f = feed rate (inch/rev)

SMG = Seco Material Group

Universal insert: CCMT32.51-MF2 **Tool life = 15 min** **a_p = 0.040 inch** **rep = 0.016 inch** **κ_r = 95°**

	TP1501			TP2501			TP3500			CP500		
	f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)		
SMG	0.006	0.008	0.010	0.006	0.008	0.010	0.006	0.008	0.010	0.006	0.008	0.010
P1	2675	2450	2275	2225	2075	1950	2000	1800	1650	960	870	810
P2	2600	2400	2225	1850	1900	1900	1950	1750	1600	930	850	790
P3	1750	1750	1700	1900	1950	1950	1375	1225	1125	800	730	680
P4	1975	1825	1675	1650	1525	1450	1475	1325	1225	710	640	600
P5	1475	1475	1425	1350	1400	1375	1150	1025	940	670	610	570
P6	2100	1950	1800	1750	1650	1550	1575	1425	1300	760	690	640
P7	1550	1550	1500	1225	1325	1350	1225	1100	990	710	650	600
P8	1475	1475	1425	1350	1400	1375	1150	1025	940	670	610	570
P11	1500	1500	1475	1375	1450	1425	1200	1075	960	690	630	590

Universal insert: CCMT32.51-MF2 **Tool life = 15 min** **a_p = 0.040 inch** **rep = 0.016 inch** **κ_r = 95°**

	TP1030			TP1020		
	f (in/rev)			f (in/rev)		
SMG	0.004	0.008	0.012	0.004	0.008	0.012
P1	1825	1450	1175	1150	760	550
P2	1775	1400	1150	1125	740	540
P3	1525	1200	990	960	640	465
P4	1350	1075	870	840	560	410
P5	1275	1025	830	810	530	390
P6	1425	1150	930	900	600	440
P7	1350	1075	880	850	570	415
P8	1275	1025	830	810	530	390
P11	1325	1050	860	830	550	400

Universal insert: CNMG432-M3

Tool life = 15 min | a_p = 0.100 inch | rep = 0.031 inch | κ_r = 95°

	TP0501			TP1501			TP2501			TP3500			TP200		
	f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)		
SMG	0.008	0.012	0.016	0.008	0.012	0.016	0.008	0.012	0.016	0.008	0.012	0.016	0.008	0.012	0.016
P1	2550	2250	1975	2275	1925	1650	1925	1675	1475	1650	1325	1100	1100	940	830
P2	2475	2200	1925	2200	1875	1625	1825	1675	1500	1600	1275	1075	1075	910	810
P3	2050	1925	1675	1650	1475	1300	1875	1725	1525	1125	890	720	920	790	700
P4	1875	1675	1475	1675	1400	1225	1425	1225	1075	1225	970	810	810	690	620
P5	1725	1600	1400	1375	1250	1100	1325	1225	1075	940	740	610	770	660	590
P6	2025	1775	1575	1800	1525	1325	1525	1325	1150	1300	1050	860	870	740	660
P7	1825	1700	1500	1450	1325	1150	1275	1250	1125	1000	790	650	820	700	620
P8	1725	1600	1400	1375	1250	1100	1325	1225	1075	940	740	610	770	660	590
P11	1775	1650	1450	1425	1275	1125	1375	1250	1100	970	770	630	800	680	610

Universal insert: CNMG644-MR7

Tool life = 15 min | a_p = 0.240 inch | rep = 0.062 inch | κ_r = 95°

	TP0501			TP1501			TP2501			TP3500			TP40		
	f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)		
SMG	0.016	0.022	0.028	0.016	0.022	0.028	0.016	0.022	0.028	0.016	0.022	0.028	0.016	0.022	0.028
P1	1900	1550	1300	1600	1300	1100	1425	1175	1025	1025	790	630	760	610	510
P2	1850	1500	1250	1550	1275	1075	1425	1150	910	1000	770	610	740	590	495
P3	1600	1225	930	1250	1000	820	1450	1150	920	680	520	410	640	510	425
P4	1400	1150	950	1175	970	820	1050	870	750	760	580	465	560	450	375
P5	1350	1025	780	1050	840	690	1025	800	630	570	435	345	530	430	360
P6	1500	1225	1025	1250	1025	880	1125	940	810	820	620	495	600	480	400
P7	1425	1075	830	1100	890	730	1100	900	730	610	460	365	570	455	380
P8	1350	1025	780	1050	840	690	1025	800	630	570	435	345	530	430	360
P11	1375	1050	810	1075	860	710	1050	820	650	590	445	355	550	440	370

Universal insert: CNMG432-MF2

Tool life = 15 min | a_p = 0.060 inch | rep = 0.031 inch | κ_r = 95°

	TH1000			TH1500		
	f (in/rev)			f (in/rev)		
SMG	0.004	0.010	0.016	0.004	0.010	0.016
H3	300	225	175	410	270	195
H5	560	415	325	760	500	365
H7	300	225	175	410	270	195
H8	560	415	325	760	500	365
H11	710	530	415	970	630	460
H12	1075	800	630	—	—	—
H21	560	415	325	—	—	—

Universal insert: CCMT32.52-MF2

Tool life = 10 min | a_p = 0.40 inch | rep = 0.031 inch | κ_r = 95°

	TM4000			CP500			TP3500		
	f (in/rev)			f (in/rev)			f (in/rev)		
SMG	0.004	0.008	0.012	0.004	0.008	0.012	0.004	0.008	0.012
M1	1275	1100	950	1400	1075	820	1350	1200	980
M2	1025	880	760	1150	880	660	1100	970	800
M3	780	670	580	870	670	500	830	740	610
M4	590	500	435	650	500	380	620	560	455
M5	490	420	365	540	420	315	520	465	380

Universal insert: CNMG432-MF4

Tool life = 10 min | a_p = 0.080 inch | rep = 0.031 inch | κ_r = 95°

	TM2000			TM4000			CP500			TP2501		
	f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)		
SMG	0.008	0.012	0.016	0.008	0.012	0.016	0.008	0.012	0.016	0.008	0.012	0.016
M1	1100	970	880	1050	890	780	980	690	510	1650	1275	990
M2	890	780	710	850	720	630	790	560	410	1325	1025	800
M3	680	600	540	650	550	475	600	425	315	1025	790	610
M4	510	450	405	485	410	360	455	320	235	760	590	460
M5	425	375	335	405	345	300	380	265	195	630	495	380

Universal insert: CCMT32.52-M5

Tool life = 15 min | a_p = 0.040 inch | rep = 0.031 inch | κ_r = 95°

	TK1001			TK2001			TP0501		
	f (in/rev)			f (in/rev)			f (in/rev)		
SMG	0.008	0.012	0.016	0.008	0.012	0.016	0.008	0.012	0.016
K1	1975	1825	1700	1825	1650	1525	1300	1175	1075
K2	1525	1425	1350	1525	1400	1325	1125	1000	930
K3	1275	1200	1150	1275	1200	1125	960	850	780
K4	1225	1150	1100	1225	1125	1075	920	820	750
K5	730	680	650	730	680	640	550	485	445
K6	1225	1125	1050	1125	1000	930	810	720	660
K7	930	870	830	930	870	820	700	620	570

Universal insert: CNMG433-MR7

Tool life = 15 min | a_p = 0.120 inch | rep = 0.047 inch | κ_r = 95°

	TK1001			TK2001			TP0501		
	f (in/rev)			f (in/rev)			f (in/rev)		
SMG	0.008	0.014	0.020	0.008	0.014	0.020	0.008	0.014	0.020
K1	1825	1575	1450	1650	1375	1225	1175	970	850
K2	1400	1275	1175	1400	1250	1150	1025	840	740
K3	1200	1075	1000	1175	1050	970	860	710	620
K4	1125	1025	950	1125	1000	930	820	680	600
K5	680	610	570	670	600	550	490	405	355
K6	1125	980	890	1025	860	750	730	600	520
K7	870	780	730	860	770	710	630	520	455

Universal insert: CCGT21.51F-AL

Tool life = 15 min | a_p = 0.040 inch | rep = 0.016 inch | κ_r = 95°

	KX		
	f (in/rev)		
SMG	0.004	0.006	0.008
N1	2000	1775	1600
N2	1600	1425	1300
N3	1075	950	870
N11	1225	1100	990

Universal insert: CCMT32.51-F1

Tool life = 10 min | a_p = 0.040 inch | rep = 0.016 inch | κ_r = 95°

	TS2000			CP200			CP500		
	f (in/rev)			f (in/rev)			f (in/rev)		
SMG	0.003	0.006	0.008	0.003	0.006	0.008	0.003	0.006	0.008
S1	300	220	190	160	130	120	140	115	105
S2	240	180	150	130	105	95	120	100	90
S3	210	155	130	110	90	85	105	85	75
S11	435	320	270	230	190	170	—	—	—
S12	335	245	210	180	145	130	—	—	—
S13	260	190	160	140	110	100	—	—	—

Universal insert: CNMG432-MF1 Tool life = 10 min a_p = 0.060 inch rep = 0.031 inch κ_r = 95°

	TS2000			CP200			890			CP500		
	f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)		
SMG	0.004	0.008	0.012	0.004	0.008	0.012	0.004	0.008	0.012	0.004	0.008	0.012
S1	265	185	140	145	115	100	130	105	90	125	100	85
S2	215	150	115	115	95	80	105	85	75	110	85	75
S3	185	130	100	100	80	70	90	75	65	95	75	65
S11	380	265	205	210	165	145	190	155	135	—	—	—
S12	295	205	155	160	130	110	145	120	100	—	—	—
S13	230	160	120	125	100	85	115	90	80	—	—	—

Universal insert: CNMG432-MR4 Tool life = 10 min a_p = 0.120 inch rep = 0.031 inch κ_r = 95°

	TS2500			883		
	f (in/rev)			f (in/rev)		
SMG	0.008	0.012	0.018	0.008	0.012	0.018
S1	150	110	80	80	70	60
S2	120	90	65	65	55	47
S3	105	75	55	55	48	40
S11	215	160	115	115	100	85
S12	165	120	85	90	75	65
S13	125	95	70	70	60	50

Note: In order to increase the accuracy towards the actual cutting conditions and requirements of the applications the recommendation is to use My Pages – Suggest on www.secotools.com

SMG version 2 – Introduction

Seco Material Groups version 2 (SMG v2) is the foundation for a new and accurate way of organizing work materials and choosing the correct speed, feed rate and depth of cut for any work material and any Seco tool. In addition to using a greater number of work material groups compared to our previous system, SMG v2 also incorporates a reference material or standard for each group. The machinability of all other materials within that group can be compared to the standard, allowing for adjustments to the cutting data, accounting for the unique characteristics of each material.

The use of SMG v2 is illustrated below.

As shown below in Table I, the reference material for work material group P4 is 1045, for P5 it is 4140 steel and for H5 it is 4140 hardened to 50 HRC. 4140 steel is available in a wide variety of hardness and tensile strengths. As to be expected the machinability will vary with these properties.

SMG	Description	Properties	Reference
P4	Low alloy general structural steels, 0.25% < C < 0.67%wt Low alloy Quench & Temper steels	75 < UTS < 175	1045 UTS = 95 ksi
P5	Structural steels, 0.25% < C < 0.67%wt Quench & Temper steels	80 < UTS < 175	4140 UTS = 100 ksi

SMG	Description	Properties	Reference
H5	Quenched & Tempered steels	38 < HRC < 56	4140 50 HRC

Table II below gives some examples of 4140 in different conditions.

SMG	EN	W.-Nr	AFNOR	BS	UNI	JIS	AISI / ASTM	GOST	Condition	UTS (ksi)	HRC_{nom}
P5	42 CrMo 4	1.1201	42 CD 4	708 M 40	42 CrMo 4	SCM 440 (H)	4142, 4140	38HM	Annealed	100	
	42 CrMo 4	1.1201	42 CD 4	708 M 40	42 CrMo 4	SCM 440 (H)	4142, 4140	38HM	Quenched & Tempered	145	
H5	42 CrMo 4	1.1201	42 CD 4	708 M 40	42 CrMo 4	SCM 440 (H)	4142, 4140	38HM	Quenched & Tempered		45
	42 CrMo 4	1.1201	42 CD 4	708 M 40	42 CrMo 4	SCM 440 (H)	4142, 4140	38HM	Quenched & Tempered		50

The graphs indicate how the speed recommendation for a specific material can be adjusted to account for the different properties of the steel. As an example, consider 4140 with a tensile strength (UTS) of 145 ksi. The standard material for SMG P5 is 4140 steel with a tensile strength of 100 ksi. Since the material of interest is 45% stronger, the cutting speed will have to be reduced. Following the black arrows in Figure 1, it can be seen that a speed 75% of that recommended for 4140 at 100 ksi should be used. So if a cutting speed of 900 sf/min is suggested for a tool of interest when machining 4140 at 100 ksi, a speed of 675 sf/min (900 X 0.75) should be used if the 4140 has a tensile strength of 145 ksi.

Figure 1

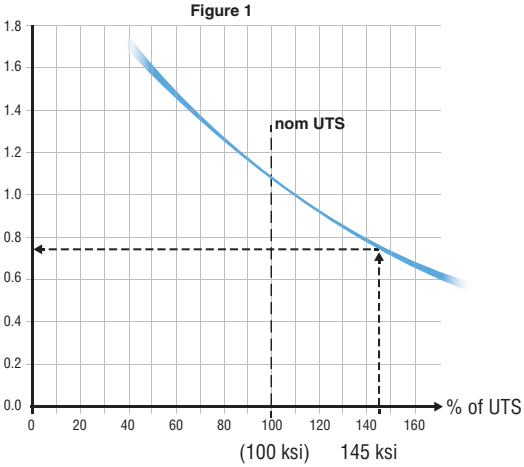
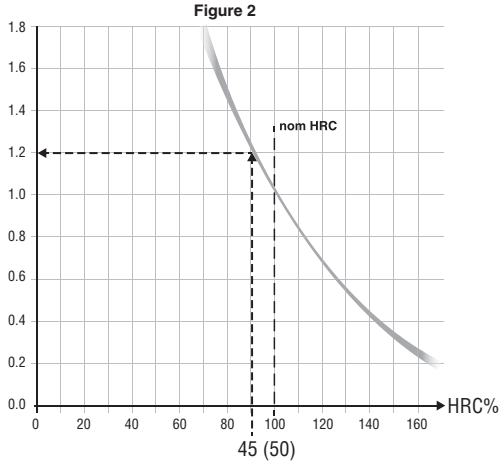


Figure 2



If the 4140 is quenched and tempered to a hardness of 45 HRC, an accurate cutting speed can be obtained by using Figure 2. The standard material for SMG H5 is 4140 heat treated to a hardness of 50 HRC. Logically, a softer material, in this case 45 HRC, can be machined at a higher speed. Since the hardness, 45 HRC, is 90% that of the standard material, the graph shows a speed 120% that of the standard could be used. If a speed of 200 sfpm is recommended when machining 4140 at 50 HRC, a speed of 240 sf/min (200 X 1.2) could be used if the 4140 is only 45 HRC.

Note that when using PCBN tools use utting data recommendations beginning on page 71.

For further workpiece material details please see page 770 and suggested cutting data on applicable pages.

For more convenient cutting data handling we recommend applicable tools in My Pages – Suggest on www.secotools.com

Extract from Workpiece materials classification beginning on page 770.

UTS = Ultimate tensile strength

Steels, ferritic and martensitic stainless steels

SMG	Description	Properties	Reference
P1	Free-cutting steels	50 < UTS < 125	1213 UTS = 55 ksi
P2	Low alloy ferritic steels, C < 0.25%wt Low alloy weldable general structural steels	45 < UTS < 85	A284 GRC UTS = 60 ksi
P3	Ferritic & ferritic/pearlitic steels, C < 0.25%wt Weldable general structural steels Case hardening steels	60 < UTS < 90	5115 UTS = 80 ksi
P4	Low alloy general structural steels, 0.25% < C < 0.67%wt Low alloy Quench & Temper steels	75 < UTS < 175	1045 UTS = 95 ksi
P5	Structural steels, 0.25% < C < 0.67%wt Quench & Temper steels	80 < UTS < 175	4140 UTS = 100ksi
P6	Low alloy through hardening steels, C > 0.67%wt Low alloy spring and bearing steels	75 < UTS < 175	1095 UTS = 85 ksi
P7	Through hardening steels, C > 0.67%wt Spring and bearing steels	85 < UTS < 175	52100 UTS = 95 ksi
P8	Tool steels High Speed Steels (HSS)	85 < UTS < 175	H13 UTS = 100 ksi
P11	Ferritic & martensitic stainless steels	60 < UTS < 175	420 UTS = 95 ksi

Hard materials

SMG	Description	Properties	Reference
H3	Case hardened steels	58 < HRC < 62	5115 60 HRC
H5	Quenched & Tempered steels	38 < HRC < 56	4140 50 HRC
H7	Quenched & Tempered steels Bearing steels	56 < HRC < 64	52100 60 HRC
H8	Tool steels High Speed Steels	38 < HRC < 64	H13 50 HRC
H11	Martensitic stainless steels	38 < HRC < 50	420 45 HRC
H12	Precipitation hardened stainless steels	33 < HRC < 50	17-4PH 35 HRC
H21	Manganese steels	23 < HRC < 64	Hadfield, High manganese steel 50 HRC
H31	White cast irons	50 < HRC < 64	A532 ID, White cast iron 55 HRC

Chipbreakers

Chipbreaker application areas

The chipbreakers are designed to give the insert proper edge geometry for different application areas.
Chipbreaker designations describe the application area as follows:

Letters: F = Finishing
M = Medium turning
R = Roughing

Digits: 1 = Low edge strength
9 = High edge strength

The colors in the chart indicates the ISO material group the chipbreakers are adaptable for.

ISO material group use

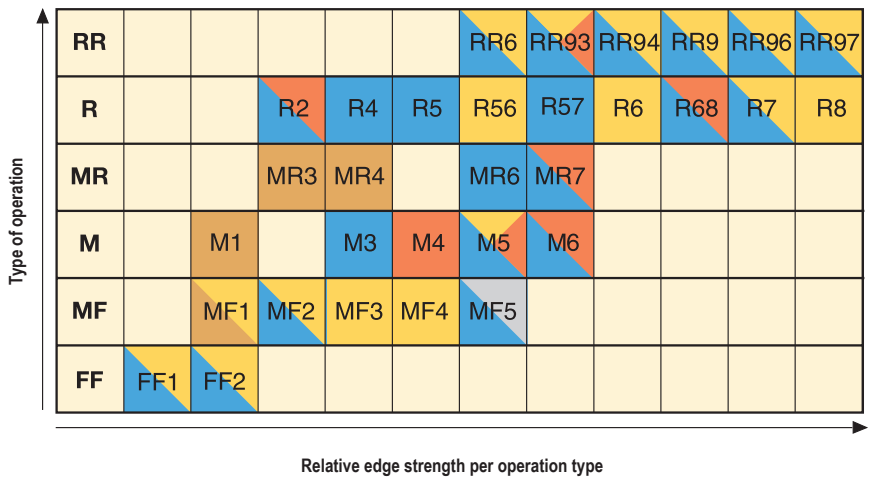
MF4 — Stainless steel (ISO M)

FF2 — Steel (ISO P) Stainless steel (ISO M)

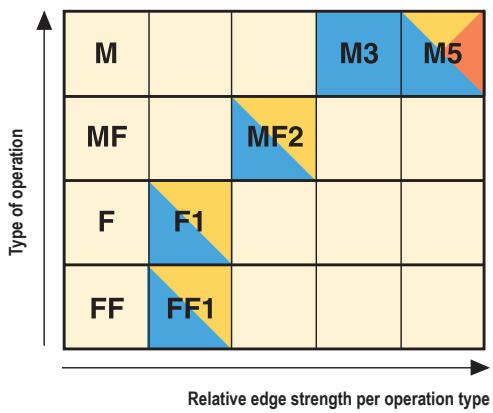
MR7 — Steel (ISO P) Cast iron (ISO K)

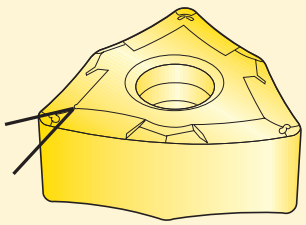
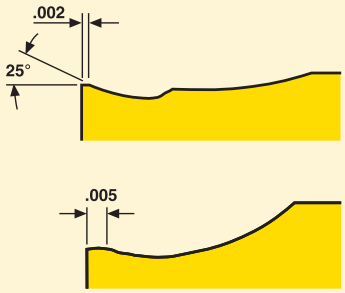
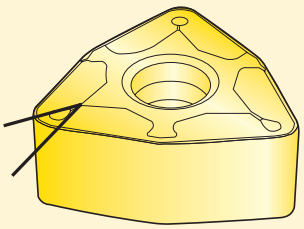
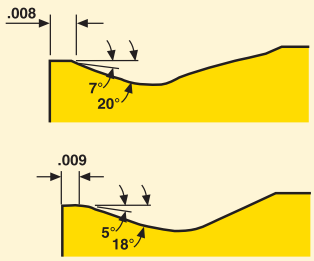
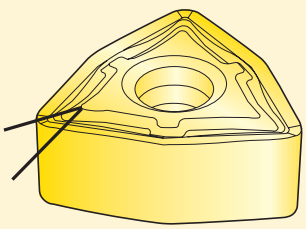
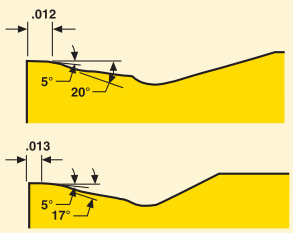
M5 — Steel (ISO P) Stainless steel (ISO M) Cast iron (ISO K)

Chipbreaker chart for negative basic shape inserts

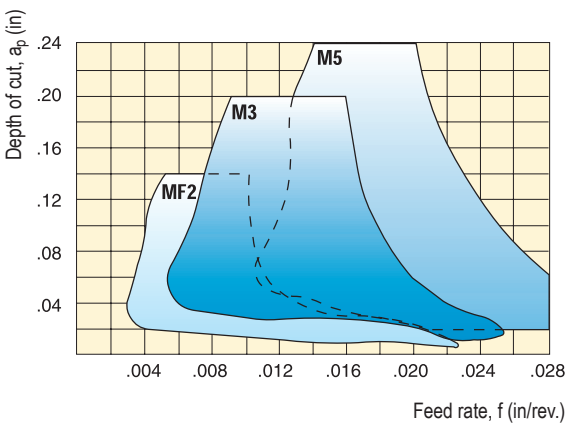


Chipbreaker chart for positive basic shape inserts



-MF2 	**WNMG0804..** 	For finishing
-M3 	**WNMG43.** 	For general machining
-M5 	**WNMG43.** 	For roughing

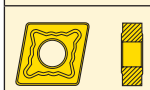
Complete program is shown on the following pages.



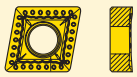
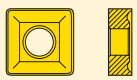
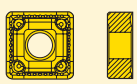
Chipbreaker program, negative basic shape inserts

	**-FF1**	Chipbreaker for negative inserts. Used to achieve a very fine finish when turning slender steel and stainless steel components. Machining range: f = 0.003-0.012 in/rev, a_p = 0.008-0.120 inch.
	**-FF2**	Chipbreaker for negative inserts. Intended for fine-finishing and semi-finishing steels and stainless steels. The positive, tight chip groove offers light cutting action combined with superior chip forming. Machining range: f = 0.003–0.012 in/rev, a_p = 0.008–0.060 inch.
	**-MF1**	Chipbreaker intended for stainless steel, superalloys and titanium alloys. Type ..GG insert has a sharp, precision ground edge. Type ..MG insert has a lightly honed cutting edge for increased strength. MF1 is intended for use in semi-finishing and finishing. Machining range: f = 0.003–0.012 inch/rev, a_p = 0.008–0.140 inch.
	**-MF2**	First choice for finishing with negative inserts. Suitable for chip control at depths of cut down to 0.010 inch, provided that the feed rate is in excess of 0.010 in/rev. Good capacity for medium roughing. Machining range: f = 0.004–0.016 in/rev, a_p = 0.008–0.120 inch.
	**-MF3**	Chipbreaker with positive cutting rake angle intended for moderately difficult stainless steel. The MF3 is also intended for light roughing in relatively soft, “tacky” steel and difficult to machine stainless steel if the depth of cut is limited. MF3 can also be used for finishing cast iron. Machining range: f = 0.008–0.016 in/rev, a_p = 0.040–0.160 inch.
	**-MF4**	Chipbreaker intended for medium to medium-finishing stainless steel, very open and highly positive geometry. Machining range: f = 0.006–0.020 in/rev, a_p = 0.020–0.160 inch.
	**-MF5**	Chipbreaker intended for medium finishing steel and stainless steel at high feeds. Very easy cutting and open geometry. Machining range: f = 0.008–0.032 in/rev, a_p = 0.008–0.100 inch.
	**-M1**	Chipbreaker intended for superalloys and titanium alloys. It has a positive cutting rake angle which is slightly honed to increase the edge strength. Also available with a perfectly sharp edge (type ..GG insert). The M1 is intended for light roughing and for semi-finishing. Machining range: f = 0.008–0.016 in/rev, a_p = 0.60–0.200 inch.

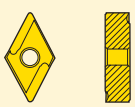
Chipbreaker program, negative basic shape inserts

	**-M3**	First choice for medium-rough machining. The most versatile Seco chipbreaker. In most cases, it is the only chipbreaker needed. Offers the best useful life and best chipbreaking in a wide range of cutting data and workpiece materials. Suitable for precision forged and cast workpieces (NNS or Near Net Shape workpieces) regarding both chip control and edge strength. Machining range: f = 0.006-0.020 in/rev, a_p = 0.020-0.200 inch.
	**-M4**	Chipbreaker intended for cast iron. Positive rake angle with a narrow T-land gives low cutting forces. First choice for cast iron machining at high speeds. Machining range: f = 0.004-0.028 in/rev, a_p = 0.008-0.028 inch.
	**-M5**	The choice for roughing by means of double-sided inserts. Intended for demanding operations at high feed rates in steel, stainless steel and cast iron. Combines high edge strength with comparatively low cutting forces. Machining range: f = 0.012-0.028 in/rev,a_p = 0.060-0.280 inch.
	**-M6**	Strong double-sided chipbreaker, intended for semi-roughing and roughing of steel. A well-balanced design combining excellent chip control and relatively low cutting forces which provides reliable cutting action in both continuous and interrupted cuts. Also well suited for machining ferritic and martensitic stainless steels. Machining range: f = 0.008-0.031 in/rev, a_p = 0.040-0.275 inch
	**-MR3**	Chipbreaker with a positive cutting rake angle that reduces cutting forces and gives a very high edge strength. Intended for medium-roughing and roughing superalloys, titanium alloys and hardened steel. Machining range: f = 0.008–0.024 in/rev, a_p = 0.060–0.280 inch.
	**-MR4**	The MR4 has a negative T-land, which gives extremely high edge strength. The chipbreaker is intended for more difficult machining applications on superalloys and titanium alloys, such as intermittent cuts and machining parts with raw surface. Machining range: f = 0.006–0.020 in/rev, a_p = 0.060–0.280 inch.
	**-MR6**	Chipbreaker for medium and medium roughing steel. Very easy cutting and open geometry. Double and single-sided. Machining range: f = 0.010–0.032 in/rev, a_p= 0.035–0.200 inch.
	**-MR7**	The strongest chipbreaker for double-sided inserts. The MR7 is suitable for high feed rates and depths of cut that normally require a single-sided insert. The chipbreaker has a wide negative T land, which gives high edge strength. Machining range: f = 0.014–0.035 in/rev, a_p = 0.060–0.280 inch.

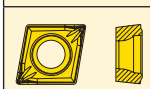
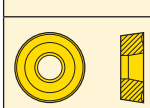
Chipbreaker program, negative basic shape inserts

	**-R4**	Chipbreaker for single-sided inserts. It has a positive cutting edge which gives low cutting forces. Machining range: f = 0.008–0.024 in/rev, a_p = 0.080–0.400 inch.
	**-R5**	Chipbreaker for single-sided inserts. Recommended for medium-roughing steel. Machining range: f = 0.012–0.040 in/rev, a_p = 0.080–0.475 inch.
	**-56** **-R56**	Chipbreaker with easy-cutting geometry for single-sided inserts. Intended for stainless steel machining applications. Machining range: f = 0.016–0.032 in/rev, a_p = 0.080–0.470 inch.
	**-57** **-R57**	Chipbreaker for single-sided roughing inserts. Recommended for roughing operations on steel at high feed rates and high depth of cut. Machining range: f = 0.018–0.042 in/rev, a_p = 0.080–0.470 inch.
	**-R6**	Chipbreaker for single-sided inserts. Recommended for medium-roughing stainless steel. Machining range: f = 0.010–0.028 in/rev, a_p = 0.080–0.400 inch.
	**-R68**	Chipbreaker for single sided insert. Recommended for heavy-roughing steel. Machining range: f = 0.016–0.055 in/rev, a_p = 0.160–0.550 inch.
	**-R7**	A strong but easy-cutting chipbreaker for single sided inserts. The R7 is well suited for intermittent machining of both stainless and ordinary carbon steel. Machining range: f = 0.016–0.063 in/rev, a_p = 0.120–0.700 inch.
	**-R8**	A very strong chipbreaker for single-sided inserts. The R8 is intended for high feed rates when machining castings and forgings of austenitic stainless steel. Machining range: f = 0.014–0.032 in/rev, a_p = 0.080–0.470 inch.

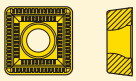
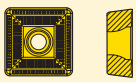
Chipbreaker program, negative basic shape inserts

	**-RR6**	A very easy-cutting chipbreaker for single-sided inserts. Recommended for roughing stainless steel and steel. Machining range: f = 0.012–0.040 in/rev, a_p = 0.080–0.470 inch.
	**-RR9**	Extremely strong chipbreaker for single-sided negative inserts, for use at high feed rates. Suitable for difficult castings and forgings and for austenitic stainless steel. Machining range: f = 0.020–0.047 in/rev, a_p = 0.100–0.590 inch.
	**-RR93**	Heavy roughing chipbreaker for negative single-sided inserts for very high parameters for all materials. Machining range: f = 0.050–0.100 in/rev, a_p = 0.400–1.180 inch.
	**-RR96**	Heavy roughing chipbreaker for negative single-sided inserts for high parameters and chip control for all materials. Machining range for LNMX50: f = 0.060–0.100 in/rev, a_p = 0.470–1.415 inch.
	**-RR97**	Heavy roughing chipbreaker for negative single-sided inserts for soft materials. Machining range for LNMX50: f = 0.060–0.100 in/rev, a_p = 0.390–1.415 inch.
	**-UX**	Chipbreaker for negative inserts. Positive cutting rake with sharp edge. Low cutting force. Suitable for slim components. Machining range: f = 0.008–0.016 in/rev, a_p =0.040–0.240 inch.

Chipbreaker program, positive basic shape inserts

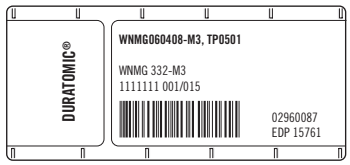
	**-AL**	Chipbreaker for positive inserts. Intended for machining aluminum alloys. The highly polished rake face and the very large rake angle ensure extremely light cutting action. Machining range: f = 0.006–0.024 in/rev, a_p = 0.020–0.160 inch.
	**-FF1**	Chipbreaker for positive inserts. Used to achieve a very fine finish when turning slender steel and stainless steel components. Machining range: f = 0.002-0.012 in/rev, a_p = 0.008-0.080 inch.
	**-F1**	Chipbreaker for positive inserts. Positive geometry with sharp cutting edge gives easy-cutting properties. Suitable for high feed rates at fine depths of cut in precision forgings and castings. Machining range: f = 0.004-0.020 in/rev, a_p = 0.008-0.120 in. Machining in bar automatics, for instance: f = 0.003-0.010 in/rev, a_p = 0.040-0.120 inch.
	**-F2**	A reliable semi-finishing to medium roughing chipbreaker ensuring safe chip flow. Suitable for medium cuts in steel and stainless steels application including boring. Machining range: f = 0.005–0.024 in/rev, a_p = 0.008–0.160 inch.
	**-MF2**	A versatile finishing to semi-finishing chipbreaker with light-cutting action for positive inserts. Suitable for a wide range of cuts in steel and stainless steel finishing applications including boring. Machining range: f = 0.003–0.020 in/rev, a_p = 0.006–0.120 inch.
	**-M3**	A reliable semi-finishing to medium roughing chipbreaker ensuring safe chip flow. Suitable for medium cuts in steel and stainless steels application including boring. Machining range: f = 0.005–0.024 in/rev, a_p = 0.008–0.160 inch.
	**-M5**	A highly reliable chipbreaker for positive inserts. Intended for medium-rough and rough machining of steels, stainless steels and cast iron. Combines high edge strength with comparatively low cutting forces. Safe action in interruptions and rough skin on parts also including boring. Machining range: f = 0.006–0.024 in/rev, a_p = 0.040–0.200 inch
	**-R2**	Chipbreaker for large inserts intended for finishing of railway wheels. Machining range: f = 0.012–0.032 in/rev, a_p = 0.040–0.200 inch.

Chipbreaker program, positive basic shape inserts

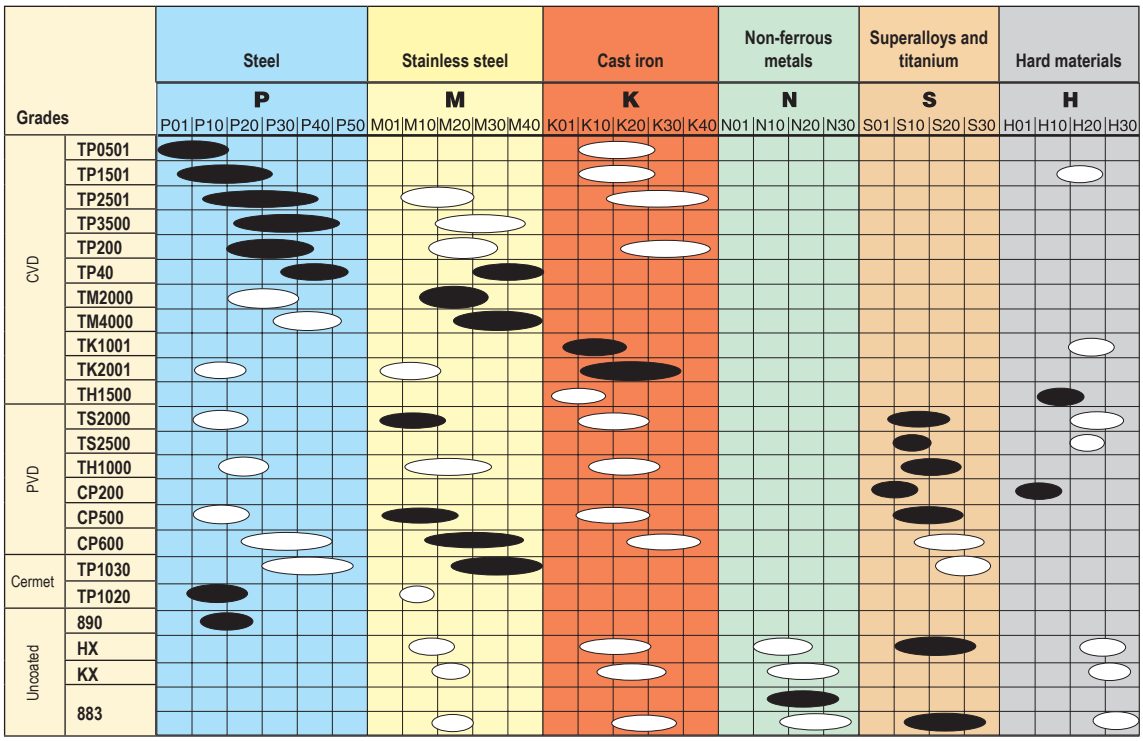
	**-RR94**	Chipbreaker for large inserts intended for roughing of railway wheels. Machining range: f = 0.024–0.060 in/rev, a_p = 0.120–0.400 inch.
	**-RR96**	Chipbreaker for large inserts intended for machining of steel with high depth of cut and large feed rates. Machining range: f = 0.024–0.085 in/rev, a_p = 0.120–0.945 inch.
	**-RR97**	Chipbreaker for large inserts intended for machining of steel with high depth of cut and large feed rates. The –RR97 geometry is stronger than the –RR96. Machining range: f = 0.032–0.085 in/rev, a_p = 0.120–0.945 inch.
	**-UX**	Chipbreaker for positive inserts. Smooth and easy chip flow on finishing and medium roughing in steel and stainless steel. Well suited for slim components. Machining range: f = 0.002–0.016 in/rev, a_p =0.020-0.160 inch.

Insert grades

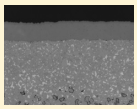
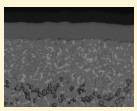
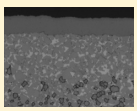
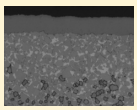
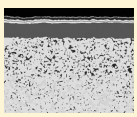
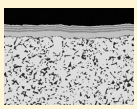
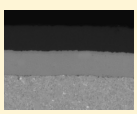
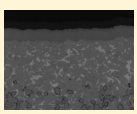
The Seco range consists of coated (CVD and PVD), uncoated, and cermet grades.
The designation of the grades indicates a ranking regarding their wear resistance and toughness behavior.
All the grades are also classified according to ISO (P, M, K, N, S, H).
The black areas in the chart indicate an insert's main ISO application groups and the white areas indicate other supplementary application groups.



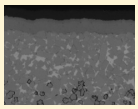
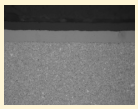
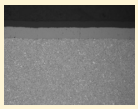
Indicative ISO classification of the grades



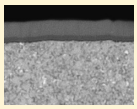
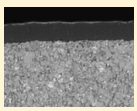
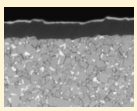
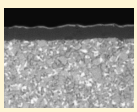
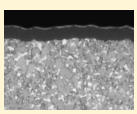
CVD coated grades

TP0501 		**Duratomic®** technology coated grade featuring Seco Edge Intelligence. A grade with an extremely high degree of heat and wear resistance for many steel applications such as in alloy steels and especially capable under dry conditions, but also applicable for demanding applications in cast irons. $Ti(C,N) + Al_2O_3 + Cr$
TP1501 		**Duratomic®** technology coated grade featuring Seco Edge Intelligence. Highly heat and wear resistant grade extremely well suited for productive general turning of steels and a useful backup in other material groups. $Ti(C,N) + Al_2O_3 + Cr$
TP2501 		**Duratomic®** technology coated grade featuring Seco Edge Intelligence. Designed with high wear resistance and edge strength applicable in a wide range of turning applications in steels and many stainless steels and cast irons. $Ti(C,N) + Al_2O_3 + Cr$
TP3500 		**Duratomic®** technology coated grade. Enhanced edge toughness, still with the characteristic high wear resistance intended for versatile performance in turning applications in steels and stainless steels especially including interrupted cuts. $Ti(C,N) + Al_2O_3$
TP200 		Univeral grade for high versatile performance over a wide range of application in steels, stainless steels and cast irons. $Ti(C,N) + Al_2O_3 + TiN$
TP40 		Universal grade for a extremely secure performance in the most demanding application from steels, stainless steels to superalloys especially in castings and forgings. $TiC/Ti(C,N) + TiN$
TH1500 		**Duratomic®** technology coated grade. An extremetly hard super micrograin grade intended for machining partly hardened steels and provides an alternative for cast iron finishing. $Ti(C,N) + Al_2O_3$
TM2000 		**Duratomic®** technology coated grade. Highly resistant and optimized grade for stainless steel machining with capability in softer steels. $Ti(C,N) + Al_2O_3$

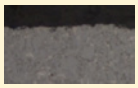
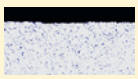
CVD coated grades

TM4000 		**Duratomic®** technology coated grade. A highly capable stainless steel grade with combinations of high resistance and superior edge toughness making it versatile with high performance also in many steels. $Ti(C,N) + Al_2O_3$
TK1001 		**Duratomic®** technology coated grade. A extremely wear resistant optimized grade choice for machining of grey cast iron and easier ductile cast irons. $Ti(C,N) + Al_2O_3$
TK2001 		**Duratomic®** technology coated grade. A highly wear resistant grade for cast irons in general as well as in steels. The grade is particularly capable in machining of ductile (nodular) cast irons also in more demanding setups and interrupted cuts. $Ti(C,N) + Al_2O_3$

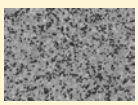
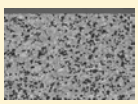
PVD coated grades

TH1000 		Very hard supermicrograin grade intended for partly hardened steel components and generally workpiece materials such as superalloys. Due to remarkable edge toughness it also provides high performance in interrupted cuts and hard-surface removal. Ti-Al-Si-N nanolaminate coating
TS2000 		Hard micrograin wear resistant grade intended for finishing in superalloys and titanium and in many in stainless steels. (Ti,Al)N + TiN
TS2500 		Relatively hard micrograin grade for machining of superalloys and titanium in roughing applications. Due to its design, it's also applicable in a wide range of materials such as stainless steels. (Ti,Al)N + TiN
CP200 		Hard micrograin grade principally intended for finishing in superalloys and titanium. Also works well in stainless steels. (Ti, Al) N + TiN
CP500 		Tough micrograin grade intended for finishing to medium-roughing of stainless steels but with wide applicability. For example: in steels and aluminum alloys. Especially suitable in intermittent cuts. (Ti,Al)N + TiN
CP600 		Very tough micrograin grade intended for stainless steels and steels applications, but generally applicable when ever high edge toughness required e.g. more difficult interrupted cuts. (Ti,Al)N + TiN

Uncoated

HX 		Universal uncoated grade intended for machining cast iron and hardened steels. Useful also in non-ferrous materials.
KX 		Optimized micrograin grade intended for machining aluminum and other non-ferrous materials.
883 		Relatively hard and still tough uncoated micrograin grade for machining titanium in roughing applications. Also suitable for superalloys.
890 		High hardness uncoated micrograin grade maintaining good toughness. Intended for superalloys and titanium. Can also be applied in other materials.

Cermet

TP1020 		High wear resistance cermet grade for highest surface finish with predictability, first of all in steels and stainless steels.
TP1030 		Coated highly wear resistant cermet grade for high surface finish and productivity requirements. Mainly used in steels and stainless steels. Ti-Al-Si-N nanolaminate coating.

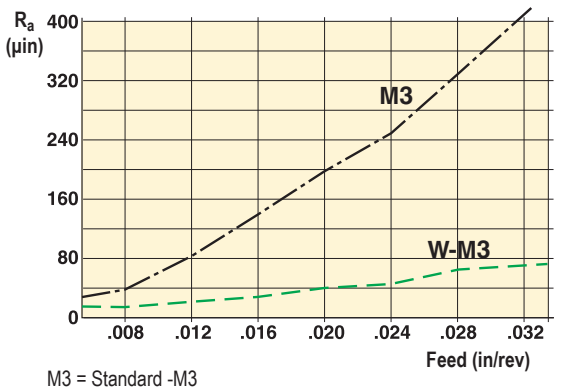


High Feed inserts – Introduction

The Seco High Feed inserts offer:

- Excellent surface finish at high feed rates.
- Superior surface finish at normal feed rates.

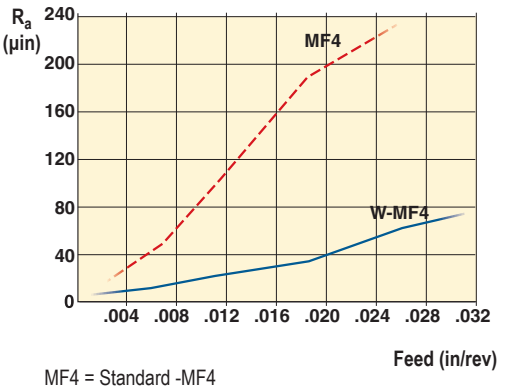
The use of Seco High Feed Wiper inserts often eliminates the need for finishing operations (including grinding).



M3 = Standard -M3
W-M3 = Wiper -M3

The diagram shows the superior surface finish in steel achieved with a Seco High Feed W-M3 wiper insert compared to a conventional insert.

CNMG432W-M3, TP2500, κ = 95°, a_p = 0.040 inch, cutting speed adjusted for feed, workpiece material: (steel) SMG 4.

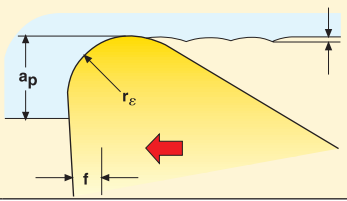


MF4 = Standard -MF4
W-MF4 = Wiper -MF4

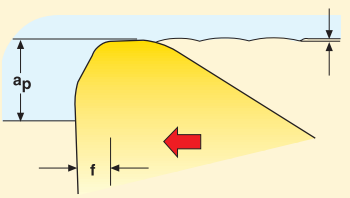
When applying a Seco High Feed W-MF4 wiper insert in stainless steel the diagram shows the superior surface finish achieved compared to a conventional insert.

CNMG432W-MF4, TM4000 κ = 95°, a_p=0.040 inch, cutting speed tool life adjusted for feed in SMG 9 (stainless steel).

Standard insert geometry

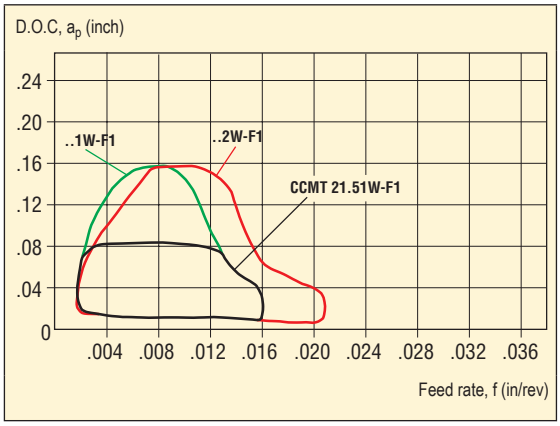


High feed wiper insert geometry

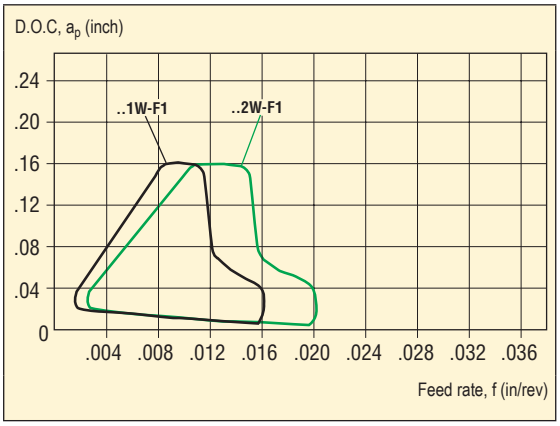


Chipbreaking range

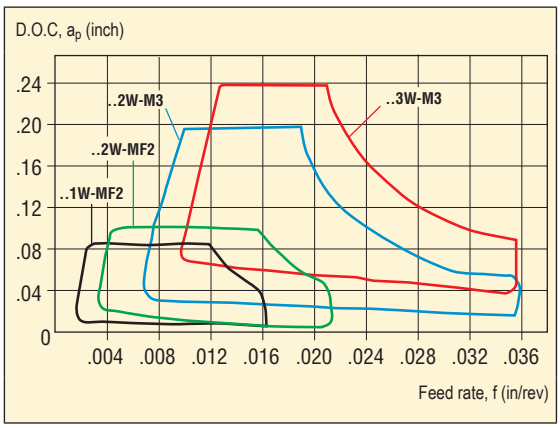
Positive inserts, C and W



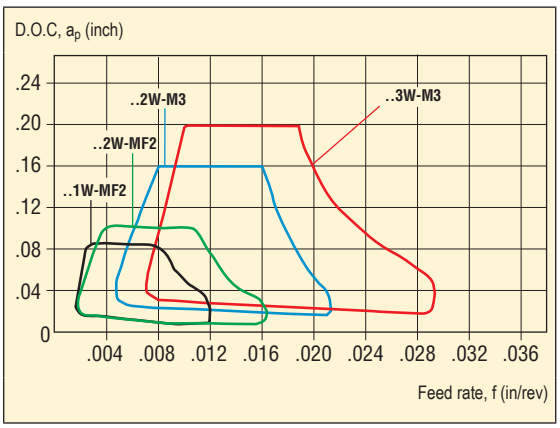
Positive inserts, D and T



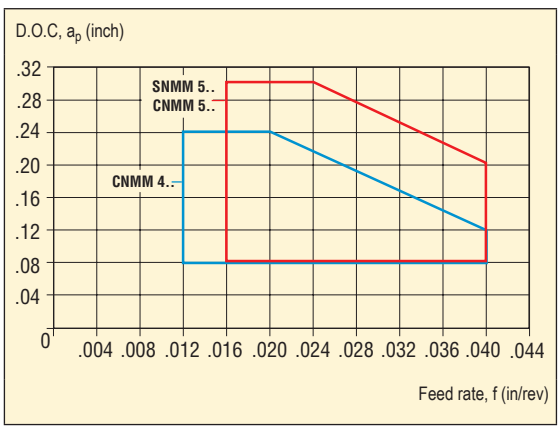
Negative inserts, C and W



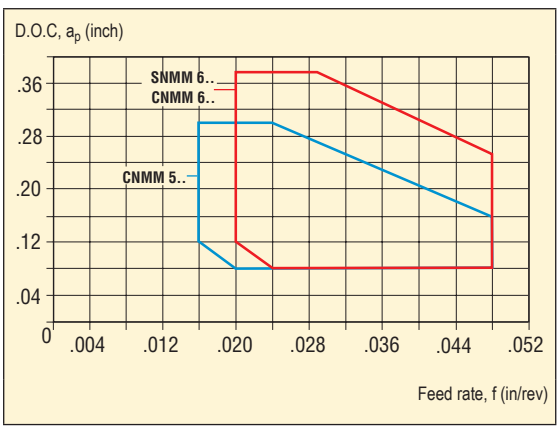
Negative inserts, D and T



Negative inserts, C and S Chipbreaker W-R4

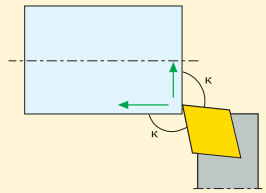


Negative inserts, C and S Chipbreaker W-R7

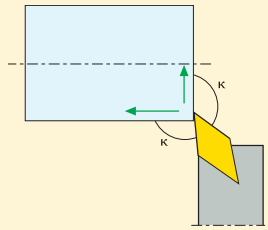


Operation guidelines

- The favorable surface finish results are lost if the cutting edge angle diverges from 95° (C-and W-style inserts)
- Max diversion allowed: ±2°
- Back-turning is NOT recommended



- The favorable surface finish results are lost if the cutting edge angle diverges from 93° (D-and T-style inserts)
- Max diversion allowed: ±2°
- Back-turning is NOT recommended



C-style High Feed inserts
On C-style High Feed inserts, except for PCBN inserts, the wiper geometry is also located on the 100° corner.

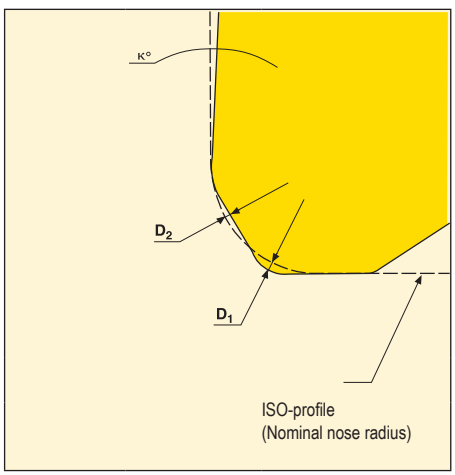
Chipbreaker W-R4 and W-R7
When using W-R4 or W-R7 chipbreaker use a toolholder with M-type clamping.

S-style High Feed inserts
S-style High Feed insert to be used in a toolholder with 75° setting angle. The favorable surface finish results are lost if the cutting edge angle diverges from 75° Max diversion allowed: ± 2°

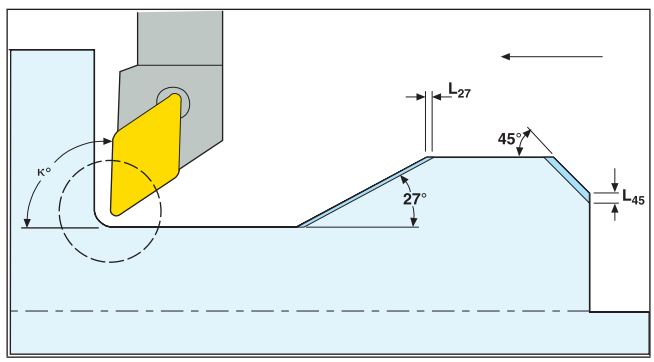
Copying with D- and T-style Wiper inserts

Since D- and T-style High Feed inserts not are designed within ISO-tolerances, an adjustment in the tool offset must be made.

A deviation from the nominal nose radius shape will always occur (D1, D2) when going towards a corner.



The High Feed geometry on a D-and T-style insert does not provide an exact corner radius.



When copying with a D- or T-style High Feed insert, an adjustment must be made for dimensional deviations.

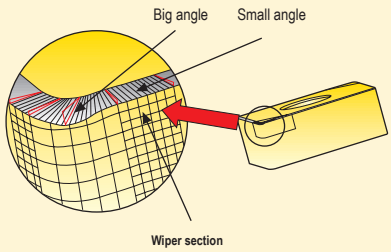
The Helix™ wiper technology

Our unique, patented Helix™ wiper concept is designed for optimization in finish machining. It has a wiper on both sides of the corner radii (as the standard) but the protection chamfer is twisted from negative to positive or from positive to negative depending on the application.

It is available in grades CBN010 and CBN060K. The following considerations apply when selecting the appropriate geometry:

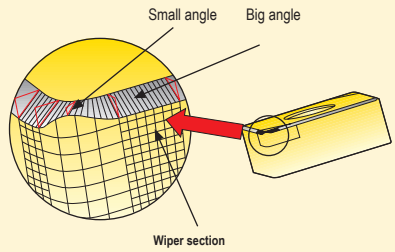
Positive Wiper, WZP

- Reducing vibrations in weak set-ups
- Lower radial cutting forces
- Used where standard wiper cannot be used



Negative Wiper, WZN

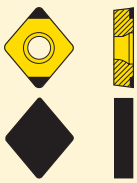
- Longer tool life
- Reducing vibrations in stable set-ups
- Increasing compressive stresses



Chipbreaker program, high feed wiper inserts

	**W-F1**	A versatile chipbreaker for positive inserts. For finishing steel, stainless steel and cast iron, giving good surface finish. Suitable for high feed rates at small depths of cut. Indicative machining range: f = 0.002-0.020 in/rev, a_p = 0.010-0.120 inch.
	**W-F2**	Chipbreaker for high feed finishing and medium-roughing steel and cast iron. Ensures safe and well directed chip flow and good surface finish. Machining range: f = 0.008-0.026 in/rev, a_p = 0.020-0.160 inch.
	**W-FF2**	Chipbreaker for high feed finishing steel and stainless steel. Wide chip control range in finishing and generates a superior surface quality. Machining range: f = 0.004-0.020 in/rev, a_p = 0.008-0.060 inch.
	**W-MF2**	First choice for finishing with both positive and negative inserts. Chipbreaker suitable for finishing machining steel, stainless steel and cast iron at high feed rates, giving good surface finish. Machining range: f = 0.002-0.024 in/rev, a_p = 0.020-0.160 inch.
	**W-MF4**	Easy cutting action chipbreaker for high feed machining stainless steel. Provides good surface finish in finishing operations and High Feed Wiper productivity in medium-roughing machining. Machining range: f = 0.002-0.035 in/rev, a_p= 0.008 - 0.240 inch
	**W-MF5**	Chipbreaker intended for medium finishing steel at high feed. The geometry is very open and highly positive and equipped with wiper radius. Machining range: f = 0.008-0.032 in/rev, a_p = 0.008-0.105 inch.
	**W-M3**	Versatile chipbreaker for high feed finishing and medium-roughing steel, stainless steel and cast iron. Operates in a wide application area. Gives a good surface finish even at high feeds. Machining range: f = 0.008-0.035 in/rev, a_p = 0.020-0.240 inch.
	**W-M6**	Strong double-sided chipbreaker, intended for high-feed semi-roughing and roughing steel. A well-balanced design combining excellent chip control and relatively low cutting forces which provides reliable cutting action in both continuous as well as interrupted cuts. Machining range: f = 0.012-0.040 in/rev, a_p = 0.040-0.275 inch

Chipbreaker program, high feed wiper inserts

	**W-R4**	Chipbreaker for single sided inserts intended for high feed medium-roughing and roughing of steel, stainless steel and cast iron. Gives a good surface finish even at high feeds. Low cutting forces. Machining range: f = 0.012-0.040 inch/rev, a_p = 0.080-0.295 inch.
	**W-R7**	A strong easy cutting chipbreaker for single sided inserts. Intended for the highest feeds when medium-roughing and roughing of steel, stainless steel and cast iron. Gives a good surface finish even at the higher feeds. Machining range: f = 0.016-0.048 in/rev, a_p = 0.080-0.375 inch.
	**-WZ** **-WZN** **-WZP**	Wiper geometries on PCBN inserts. Available in various insert styles in solid or brazed format. Developed for machining pearlitic grey cast iron and hardened steel. Gives a high quality surface finish at high feeds.

Turning – Troubleshooting insert wear

1. Normal flank wear

Normal Flank Wear, since it is predictable and consistent, is the most desirable wear condition. Rapid flank wear looks the same, but happens much quicker than the target 15 minutes of time in cut.



Cause

Abrasive wear. Hard microscopic particles or work-hardened material in the workpiece cut into the insert, wearing away the cutting edge.

What to look for

- Relatively uniform abrasion along the cutting edge
- Occasionally, metal from the workpiece that is smeared over the cutting edge can exaggerate the apparent size of the wear scar

When to expect it

- In all materials, an insert will fail due to normal wear if it doesn't fail from something else first

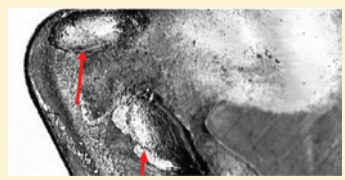
Corrective actions (to rapid flank wear)

- Select a harder, more wear resistant grade
- Apply coolant correctly
- Reduce the cutting speed (RPM or SFPM)

2. Cratering

Cause

A combination of diffusion, decomposition and abrasive wear causes cratering. The heat from workpiece chips promotes decomposition of the tungsten carbide grains in the cutting tool, wearing a 'crater' on the top of the insert. The crater will eventually grow large enough to cause the insert flank to chip or deform.



What to look for

- Craters or pits on top of inserts
- Chipbreaking may improve after cratering starts

When to expect it

- When machining iron (especially steel) or titanium-based alloys

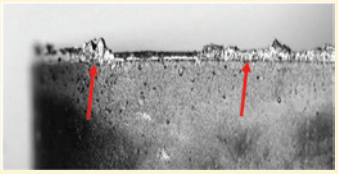
Corrective actions

- Use a coated grade
  - Coatings containing relatively thick layers of aluminum oxide are best
  - TiAlN is the most crater resistant PVD coating
- Apply coolant
- Use a freer cutting geometry to reduce heat
- Reduce the cutting speed (RPM or SFPM)
- Reduce feed rate
- Increasing the lead angle will have a small, but positive, effect

3. Built-up edge

Cause

Material adhesion. BUE is a result of the workpiece material being pressure welded to the cutting edge. This occurs when there is chemical affinity, high pressure, and sufficient temperature in the cutting zone. Eventually, the built up edge breaks off and often takes a piece of the cutting edge with it, leading to chippage and rapid flank wear.



What to look for

- Shiny material on the top or flank of the insert edge
- Erratic changes in part size or surface finish

When to expect it

- When machining gummy materials
- At low speeds
- When machining high temp alloys and stainless steel
- Threading operations
- Drilling
- When machining non-ferrous materials

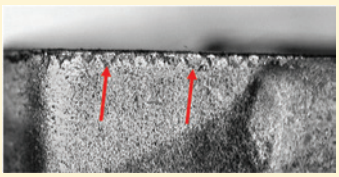
Corrective actions

- Increase the cutting speed (RPM or SFPM)
- Any coating, but especially a nitride coating, will reduce built-up edge
- Select an insert with a sharper, freer cutting edge geometry
- Apply coolant correctly, increasing the concentration usually helps
- Use an insert with a smoother (polished) surface

4. Chipping

Cause

Mechanical instability. Chipping of the insert edge is often a result of vibrations in the workpiece or spindle. Hard inclusions in the surface of the material being cut and interrupted cuts result in local stress concentrations that can cause chipping.



What to look for

- Chippings along the edge of the insert

When to expect it

- Non-rigid set-ups (bad bearings, worn spindles, etc.)
- Interrupted cuts
- Deflection in the tool or tool holder. Often seen in long drills or long boring bars
- Hard spots in work material
- Powdered Metal (PM) materials

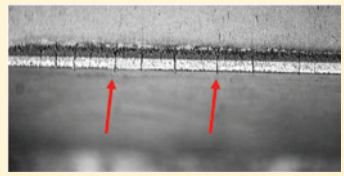
Corrective actions

- Ensure proper (rigid) machine tool setup
- Minimize deflection
- Select a stronger cutting edge geometry
- Select a tougher insert grade
- Reduce the feed rate (especially at the entrance or exit of the cut)
- See also corrective actions for built-up edge as built-up edge is a frequent cause of chipping

5. Thermal mechanical failure

Cause

A combination of thermal cycling (changing the temperature of the insert very rapidly), thermal load (temperature differences between warm and cold zones), and mechanical shock causes thermal mechanical failure. Stress cracks form along the insert edge, eventually causing sections of carbide to pull out and appear to be chipping. This is the most common failure mode encountered in milling applications.



What to look for
- Multiple cracks perpendicular to cutting edge
- Need to identify before chipping occurs

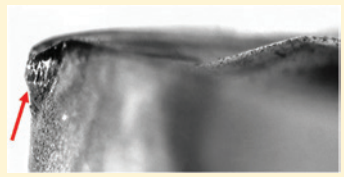
When to expect it
- Milling
- Facing operations when a large number of parts are machined
- Operations with intermittent coolant flow

Corrective Actions
- Apply coolant correctly or remove completely
- Select a tougher insert grade (higher cobalt content)
- Reduce the cutting speed (RPM or SFPM)
- Reduce the feed rate

6. Edge deformation

Cause

Thermal overloading. Excessive heat causes the carbide binder (cobalt) to soften. It could come in combination with mechanical overloading where the pressure of the insert against the workpiece all in all making an insert edge deform partly or fully, eventually breaking off or leading to irregular flank wear.



What to look for
- Deformation at the cutting edge
- The dimensions of the workpiece may not be as expected

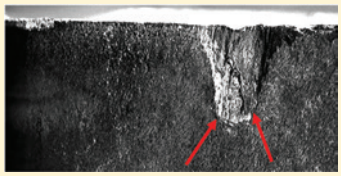
When to expect it
- High heat operations
- High speed
- Hard steels or work-hardened surfaces
- High temperature alloys
- High feed rates

Corrective actions
- Apply coolant correctly
- Use a harder, more wear resistant grade with a lower binder (cobalt) content
- Using a freer cutting insert geometry will have a small but positive effect
- Reduce the cutting speed (RPM or SFPM)
- Reduce the feed rate
- Select an insert with a larger nose radius

7. Notching

Cause

Hard or abrasive surfaces on the workpiece. Notching is caused when the surface of the workpiece is harder or more abrasive than the material deeper in the cut, e.g. surface hardening from previous cuts, forged or cast surfaces, or surface scale. This causes the insert to wear more rapidly at the depth of cut line. Local Stress Concentration can also lead to notching. As a result of the compressive stress along the cutting edge – and lack of the same behind the cutting edge – the insert is particularly stressed at the depth of cut line.



What to look for

- Notching or chipping at the depth of cut area on the insert

When to expect it

- Machining materials with surface scale or oxidation
- Machining work hardened materials
- Machining cast or irregular surfaces
- (see also Built Up Edge)

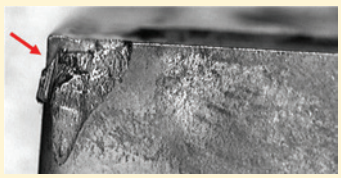
Corrective actions

- Vary the depth of cut when using multiple passes
- Use taper machining techniques when possible
- Use a tool with a larger lead angle
- Increase cutting speed if machining a high temp alloy
  - NOTE: This will generate more flank wear
- Use a chipbreaker designed for high feed rates
- Carefully increase the hone in the DOC area
- Select a tougher insert grade
- Reduce the feed rate

8. Mechanical fracture

Cause

Mechanical overload. The mechanical load is so great that the insert breaks, often during the first moments of a cut. Excessive wear of any type can cause mechanical fracture.



What to look for

- Fracture of insert, large segments of the insert gone

When to expect it

- Any operation, but especially those involving severe impact such as an interrupted cut

Corrective actions

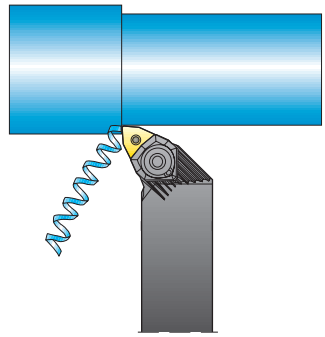
- Correct for all other failure mechanisms besides normal flank wear
- Verify set-up rigidity
- Select a tougher insert grade (higher content of cobalt)
- Select a thicker insert
- Select an insert with a tougher cutting edge
- Select an insert with a chipbreaker geometry designed for higher feed rates
- Reduce the depth of cut
- Reduce the feed rate
- Check the workpiece for hard inclusions or difficult entry

Chipbreaking problems

Too long chips

Step 1. Increase the feed rate.

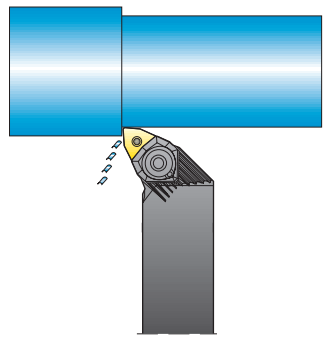
Step 2. Use the chart on page 34 to select a more suitable chipbreaker. Take one to the left or below the one being used.



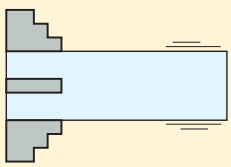
Too hard chipbreaking

Step 1. Reduce the feed rate.

Step 2. Use the chart on page 34 to select a more suitable chipbreaker. Take one to the right or above the one being used.

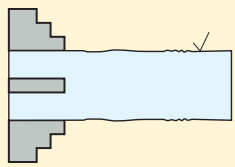


Vibrations



- Improve the stability of the tool and workpiece
- Change the cutting speed
- Increase the feed rate
- Reduce the depth of cut
- Select a more easy-cutting chipbreaker
- Select a smaller nose radius

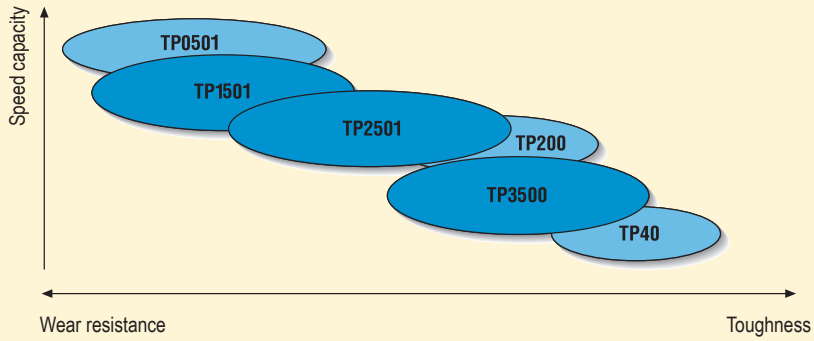
Poor surface finish



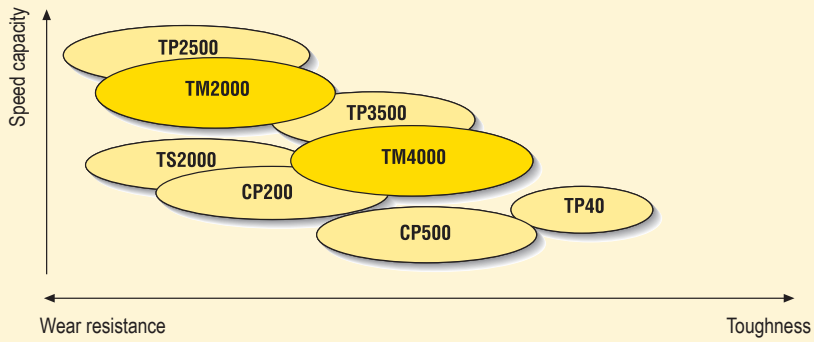
- Reduce the feed rate
- Increase the cutting speed
- Use a coolant
- Improve the stability of the tool and workpiece
- Select a more easy-cutting chipbreaker
- Increase the nose radius

Optimization – Grades

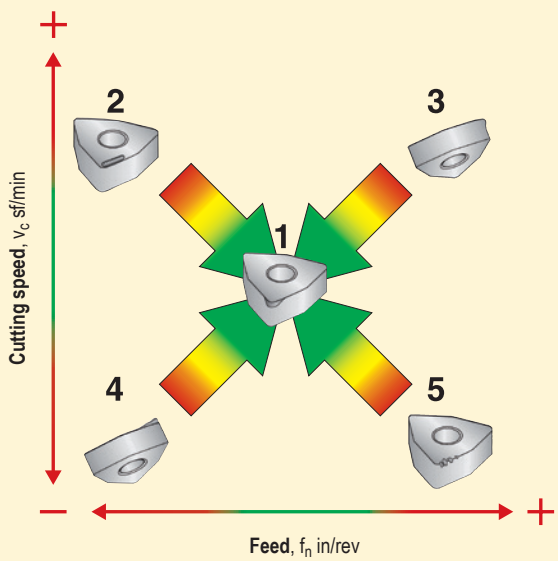
Steel



Stainless steel



Optimization – Wear



1. Flank wear
2. Crater wear
3. Plastic deformation
4. Built-up edge
5. Chipping, Fracture

Secomax™ – PCBN

Introduction

Polycrystalline Cubic Boron Nitride (PCBN) is a material which is sintered at extremely high pressure and high temperature into a wear-resistant material with properties close to those of diamond. Due to the hot hardness, oxidation resistance and fracture toughness of the material, inserts made of PCBN have excellent edge strength and long tool life in machining operations on hard ferrous materials and pearlitic grey cast iron.

Secomax™ PCBN inserts are suitable for machining:

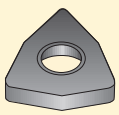
- Hardened steel (including hard-facing alloys)
- Pearlitic grey cast iron
- Chilled and white cast iron
- Manganese steel
- Cemented carbide
- Valve seat materials
- Powder Metallurgy (PM) alloys
- Nickel-based superalloys e.g. Inconel 718

For more information including a comprehensive guide to understanding and applying PCBN successfully, please ask your sales representative for the Secomax™ PCBN, Technical Guide.

Selection of insert types

Solid insert



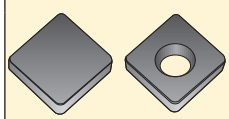


According to the geometry, two sides can be used.

Grades:
CBN060K, CBN010,
CBN170, CBN200,
CBN300, CBN300P,
CBN400C, CBN500, CBN600

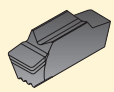
Toolholder styles:
D, P, C and M

Sintered layer insert -LF

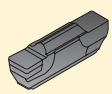


CBN layer sintered on carbide. One side is usable.

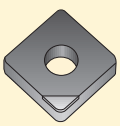
Grades:
CBN010, CBN060K
CBN150, CBN160C, CBN200
Toolholder styles: S, C and M

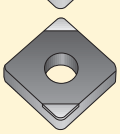


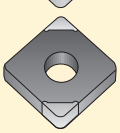
MDT
Grades:
CBN010, CBN170, CBN200
Toolholder styles: C (MDT)



Brazed tip -L1 (single and double sided) and -L2







CBN brazed onto standard carbide inserts.
Grades:
CBN010, CBN060K, CBN150,
CBN160C, CBN170, CBN200
Toolholder styles:
D, P, S and M

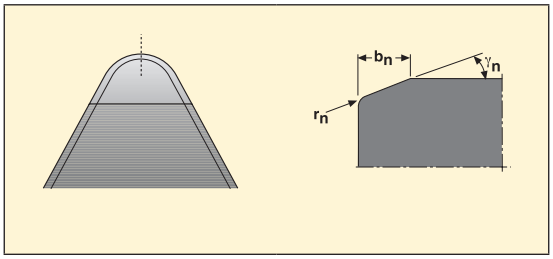
Geometry recommendations

Strong cutting edge geometries are always preferred.

- Negative cutting geometry
- Chamfered cutting edge
- Big nose radius

Sharp positive cutting edge geometry can be advantageous when:

- Finishing of small hardened bores without interruptions
- Finishing of unstable components without interruptions
- Finishing of pearlitic grey cast iron



b_n = Chamfer width
γ_n = Chamfer angle
r_n = Hone radius

Edge preparation

E	=	Honed
E25	=	Extra honed, intended for Nickel-based superalloys
S	=	Chamfered and honed
S25	=	Chamfered and extra honed intended for PM material
WZ	=	High Feed (Wiper) geometry
WZP	=	High Feed (Wiper) geometry Positive
WZN	=	High Feed (Wiper) geometry Negative

Design

LF	=	Complete top layer
B	=	Brazed tips (single sided), Insert geometry C, D and V
C	=	Brazed tips (single sided), Insert geometry T and W
D	=	Brazed tips (single sided), Insert geometry S
U	=	Brazed tips (double sided), Insert geometry C, D and V
V	=	Brazed tips (double sided), Insert geometry T and W

Chamfer size and angle

Solid CBN inserts

CBN060K	=	0.006 in x 25°
CBN010	=	0.004 in x 20°
CBN200	=	0.008 in x 20°
CBN300	=	0.008 in x 20°
CBN400C	=	0.008 in x 20°
CBN500	=	0.008 in x 20°
S-00420	=	0.004 in x 20°
S-00820	=	0.008 in x 20°
S-01515	=	0.015 in x 15°
S-06015	=	0.060 in x 20°
X	=	Custom

Brazed CBN inserts CBN010

L1	=	0.004 in x 20°
L2	=	0.008 in x 20°
LF	=	0.004 in x 20°
LF-MDT	=	0.004 in x 25°

Brazed CBN inserts CBN200

L0	=	0.004 in x 20°
L1	=	0.008 in x 20° (L1-WZ = .004 in x 20 °)
L2	=	0.008 in x 20°
LF	=	0.008 in x 20°
LF-MDT	=	0.004 in x 25°

CBN150

L0	=	0.006 in x 25° (positive C-lock inserts, .004 in x 20°)
L1	=	0.006 in x 25°
LF	=	0.006 in x 25°

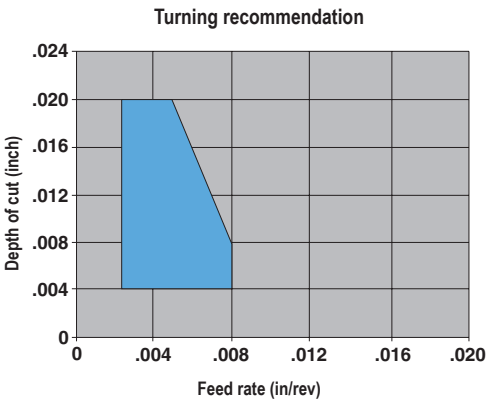
CBN160C, CBN060K

L1	=	0.006 in x 25°
LF	=	0.006 in x 25°

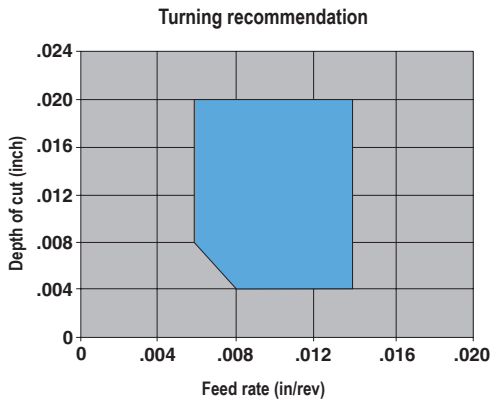
PCBN Chipbreaker inserts

The laser machined chipbreaker comes in two different styles, one for low feed and one for high feed applications. The non-wiper Secomax™ chipbreaker insert makes it possible to have a good chip control when low feed rates are used. The Secomax™ wiper chipbreaker insert provides improved chip control when using high feed rates.

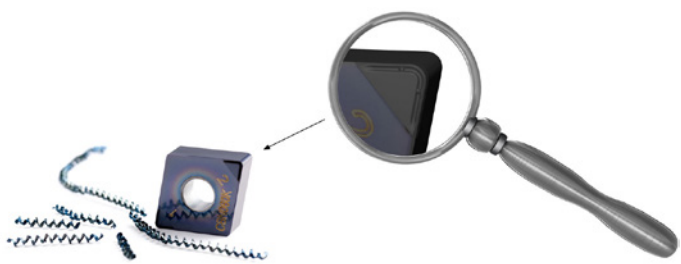
Secomax™ PCBN, non-wiper chipbreaker inserts



Secomax™ PCBN, wiper chipbreaker inserts



Laser machining provides several benefits over conventional production technologies such as grinding. Laser technology meets the highest requirements regarding dimensional accuracy, geometrical precision and surface quality for the machining of complex, three-dimensional geometries. These advantages and possibilities have led to a complex formed chipbreaker with “bumps” that would have been impossible to produce with any other production technology.

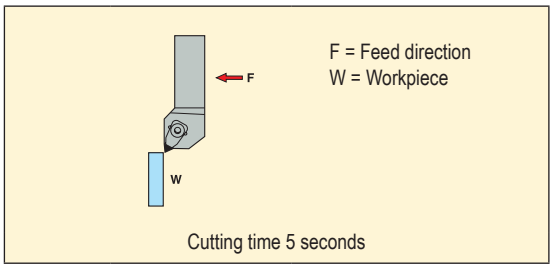


Plunge Turning

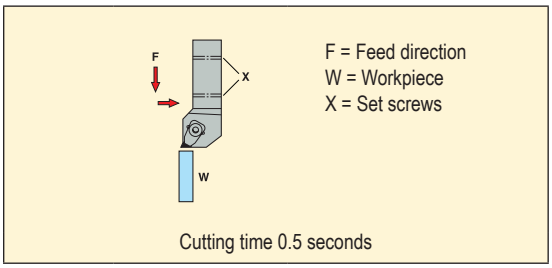
The vast majority of heat treated components in the metalworking industry are machined to their final geometrical form after hardening. Seco has developed a method in hard turning, the Seco patented Plunge Turning.

Using the Plunge Turning method gives two great advantages compared to conventional hard turning, reduction in cutting time (up to 90%) and improved surface integrity.

Conventional Turning



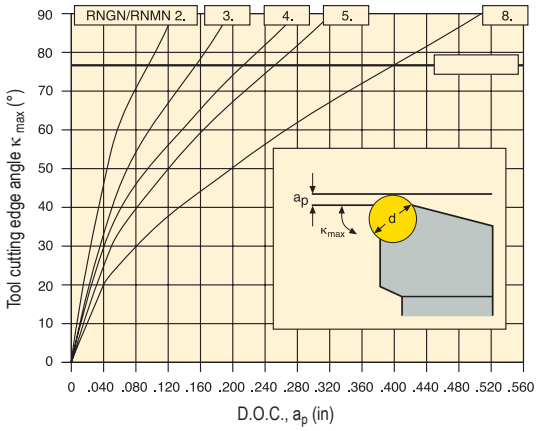
Plunge Turning



General cutting data recommendation for Plunge Turning is v_c = 660–1300 sf/min and f = .0016 in/rev.
To avoid the cutting edge profile affecting surface finish, complete the operation with a small axial movement.

In addition to the introduction of the Plunge Turning method there are also some standard toolholders. These toolholders have set screws which give the possibility to adjust the toolholder to an exact setting angle. The toolholders have a designation ending with – PL, and are available for inserts in sizes T..2 and T..3.

Maximum depth of cut recommendations

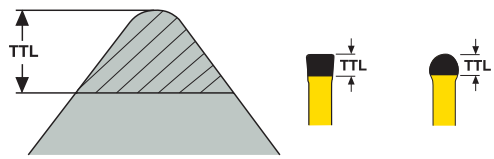


The tool cutting edge angle is limited to 75° resulting in maximum depth of cut (a_p).

Max. D.O.C. a_p (in)	Number of usable cutting edges/side at 80% utilization		
	R...2	R...3	R...4
0.004	20	24	–
0.006	16	20	23
0.008	14	17	20
0.010	12	15	18
0.012	11	14	16
0.016	10	12	14
0.020	8	10	12
0.030	7	8	10
0.040	6	7	9
0.050	5	7	8
0.060	5	6	7
0.070	4	5	6
0.080	4	5	6
0.100	3	4	5
0.120	3	4	5
0.140	–	4	4
0.160	–	3	4
0.180	–	–	4
0.200	–	–	3

Type	Grade	Max. D.O.C. a_p (inch)
L1	CBN060K CBN160C CBN170 CBN010 CBN150 CBN200	0.020 0.020 0.020 0.020 0.020 0.040
L2	CBN010	0.020
LF	CBN160C CBN010 CBN150 CBN200	0.020 0.020 0.020 30% of cutting edge length
Solid	CBN10 CBN200 CBN300 CBN400C CBN500 CBN600	0.020 30% of cutting edge length 30% of cutting edge length 30% of cutting edge length 30% of cutting edge length 30% of cutting edge length

MDT			
Type		Grade	Max. D.O.C. a_p (inch)
	-LF	CBN010	0.020
	-LF	CBN200	0.060
	M0-LF	CBN010 CBN200	.4 x D



True tip length (TTL) in inch per nose radius (rep) and tip type

Insert shape	Nose angle	rep = .016 in			rep = .031 in			rep = .047 in	
		L0	L1	L2	L0	L1	L2	L0	L1
C/W	80°	.055	.106	–	.047	.094	–	.039	.087
D	55°	.083	.118	–	.063	.102	–	.043	.083
S	90°	–	–	–	.035	.087	–	–	–
T	60°	.067	.102	–	.051	.087	–	.035	.071
V	35°	.106	–	.185	.067	–	.150	–	–

MDT size	..-LF	..M0-LF
LC..13..	.087	.094
LC..1304..	.087	.094

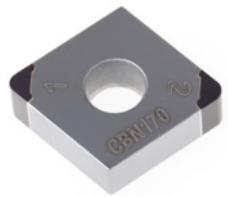
MDT size	..LF	..M0-LF
LC..1603..	.098	.098
LC..1604..	.098	.122
LC..1605..	.110	.122
LC..1606..	.126	.146

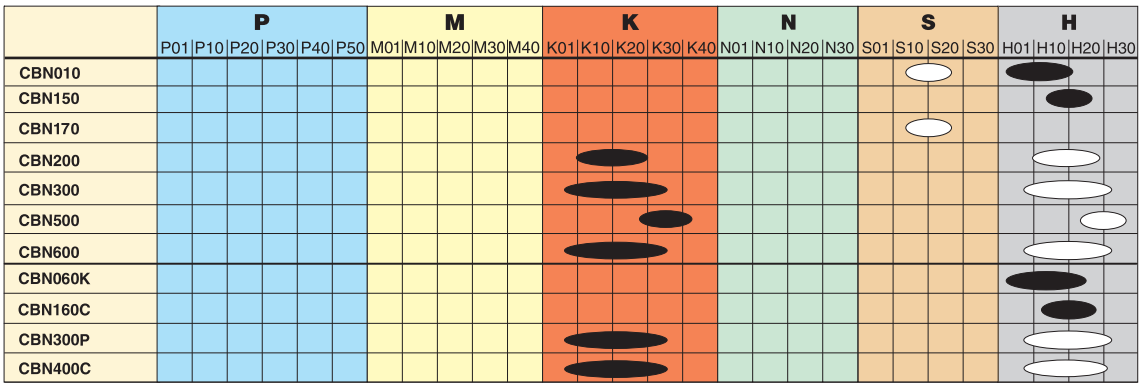
Secomax™ – PCBN Grades

The Secomax™ PCBN range of grades consists of both coated and uncoated grades.
The application areas for the Secomax™ grades are shown below.
The black areas in the chart indicate a grade's main ISO application groups
and the white areas indicate other supplementary application groups.

Uncoated grades:
CBN010
CBN150
CBN170
CBN200
CBN300
CBN500
CBN600

PVD coated grades:
CBN060K
CBN160C
CBN300P
CBN400C



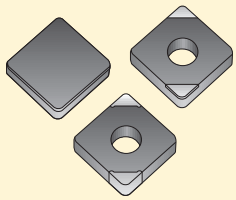
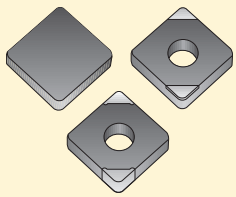
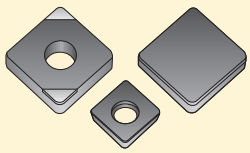
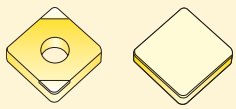
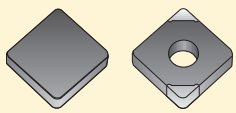
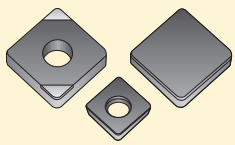


Optional parts for "M" style holders to accept solid inserts (without hole)

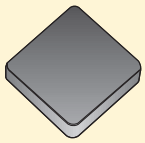
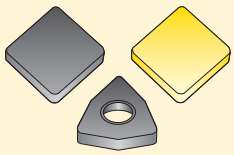
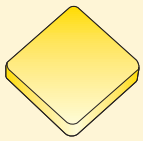
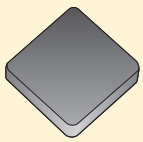
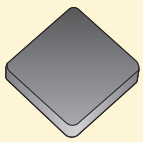
Insert	Anvil	Anvil screw	Long reach clamp	Optional parts pack
CN** 42*	CSN442	S-46	CL-22	CN42-22
CN** 43*	Existing	S-46	CL-22	CN43-22
DN** 32*	DSSN333	S-34	CL-22	DN32-22
DN** 33*	Existing	S-34	CL-22	DN33-22
RN** 42*	IRSN44	S-46	CL-12	RN42-12
RN** 43*	Existing	S-46	CL-12	RN43-12
SN** 32*	Existing	S-34	CL-7	SN32-7
SN** 42*	ISSN443	S-46	CL-12	SN42-12
SN** 43*	Existing	S-46	CL-12	SN43-12
TN** 32*	ITSN333	S-34	CL-22	TN32-22
TN** 33*	Existing	S-34	CL-22	TN33-22

Use insert nomenclature in above chart to determine parts required.
Instruction for toolholder modification - Remove and discard lock pin, replace anvil if required and secure with anvil screw. Remove and discard clamp and replace with new long reach clamp.
Note - The clamp screw should be flush with the top of the new clamp at the final clamping position with the insert in place.

Grades

CBN010 	Format: Solid, full-face brazed layer and brazed tips (single and double sided). Composition: 50% cBN content grade with an average grain size of 2 µm and a TiC ceramic binder. Uncoated
CBN060K 	Format: Solid, full-face brazed layer and brazed tips (single and double sided). Composition: 60% cBN content grade with an average grain size of 1-2 µm and a TiCN ceramic binder. Coating: (Ti, Si, Al)N coating
CBN150 	Format: Full-face brazed layer and brazed tips (single sided). Composition: 45% cBN content grade with an average grain size of < 1 µm and a TiCN ceramic binder. Uncoated
CBN160C 	Format: Full-face brazed layer and brazed tips (single sided). Composition: 65% cBN content grade with an average grain size of < 1 µm and a TiCN ceramic binder. Coating: (Ti, Si)N coating
CBN170 	Format: Full-face brazed layer and brazed tips (double sided). Composition: 65% cBN content grade with an average grain size of 2 µm and a TiCN+SiCw ceramic binder. Uncoated
CBN200 (Tipped and Full-face) 	Format: Full-face brazed layer and brazed tips (single sided). Composition: 85% cBN content grade with an average grain size of 2 µm and a Co-W-Al ceramic binder. Uncoated

Grades

CBN200 (Solid) 	Format: Solid. Composition: 90% cBN content grade with an average grain size of 3-6 µm and a Al ceramic binder. Uncoated
CBN300, CBN300P 	Format: Solid. Composition: 90% cBN content grade with an average grain size of 22 µm and a Al ceramic binder. Coating: CBN300: Uncoated CBN300P: (Ti, Al)N coating
CBN400C 	Format: Solid. Composition: 90% cBN content grade with an average grain size of 3-6 µm and a Al ceramic binder. Coating: (Ti, Si)N coating
CBN500 	Format: Solid. Composition: 90% cBN content grade with an average grain size of 15 µm and a AlN ceramic binder. Uncoated
CBN600 	Format: Solid. Composition: 90% cBN content grade with multi modal grain size and AlN ceramic binding. Uncoated

Cast Irons

SMG	Properties	Reference	Recommendations
K1	Grey cast irons (GCI)	A48 35 B	First choice in dry machining: CBN300. Universal option: CBN600. First choice when coolant is used: CBN200. First choice for finish machining: CBN400C. Adjust the depth of cut to get under the casting skin and blow holes.
K2	Compacted graphite irons (CGI)	Grade 400-15	First choice for finish machining: CBN060K. First choice for rough machining: CBN300. Adjust the depth of cut to get under the casting skin and blow holes.
K4	Nodular cast irons (SGI)	80-55-06	First choice for finish machining: CBN010.
K5	Austempered ductile irons (ADI)	1050/700/7	First choice for finish machining: CBN010.

Superalloys and Titanium

SMG	Properties	Reference	Recommendations
S1	Iron based superalloys	Discalloy	First choice for finish machining: CBN010 with E25 edge preparation. Use coolant.
S2	Cobalt based superalloys	Stellite 21	First choice for finish machining: CBN010 with E25 edge preparation. Use coolant.
S3	Nickel based superalloys	Inconel 718	PCBN tools can be used on Inconel 718 with following properties. Solution annealed + age hardened Direct age hardened Hardness 32 – 44 Hrc First choice for finish machining: CBN170. Use coolant.

Hard Materials

SMG	Properties	Reference	Recommendations
H3	Case hardened steels	5115 60 HRC	Dry machining is preferable. Coolant can be used. The chips should be fully annealed and brittle. First choice for finish machining: CH0550. Universal grade for finish machining: CBN010. For high surface finish requirements, use CH0550. **In interrupted machining:** Moderate interruptions, use CBN060K/CBN010. Aggressive interruptions, use CH2540/CH3515/CBN150. Reduce the feed rate. Machine without coolant. If possible, chamfer any sharp edges of the workpiece before machining.
H5	Quenched & Tempered steels	4140 50 HRC	Dry machining is preferable. Coolant can be used. The chips should be fully annealed and brittle. First choice for finish machining: CBN060K. Universal grade for finish machining: CBN010. For high surface finish requirements, use CH0550. **In interrupted machining:** Moderate interruptions, use CBN060K/CBN010. Aggressive interruptions, use CH2540/CH3515/CBN150. Reduce the feed rate. Machine without coolant. If possible, chamfer any sharp edges of the workpiece before machining.
H7	Quenched & Tempered steels Bearing steels	52100 60 HRC	Dry machining is preferable. Coolant can be used. The chips should be fully annealed and brittle. First choice for finish machining: CBN060K. Universal grade for finish machining: CBN010. For rough machining, use CBN200/CBN300. For high surface finish requirements, use CH0550. **In interrupted machining:** Moderate interruptions, use CBN060K/CBN010. Aggressive interruptions, use CH2540/CH3515/CBN150. Reduce the feed rate. Machine without coolant. If possible, chamfer any sharp edges of the workpiece before machining.
H8	Tool steels High Speed Steels	H13 50 HRC	First choice for finish machining: CBN010. First choice for rough machining: CBN200. Interrupted machining of high speed steels can not be done.
H11	Martensitic stainless steels	420 45 HRC	First choice for finish machining: CBN010. First choice for rough machining: CBN300. **In interrupted machining:** Moderate interruptions, use CBN010. Aggressive interruptions, use CH2540/CH3515/CBN150.
H21	Manganese steels	Hadfield, High Manganese steel 50 HRC	First choice CBN300. When a tougher grade is needed use CBN500. Use chamfered inserts. Use stable toolholder and rigid clamping of the workpiece. Machine without coolant. Chamfer workpiece edges first.
H31	White cast irons	A532 Class I Type D, White cast iron 55 HRC	Use CBN300 or when centerlock inserts are used CBN200. When a tougher grade is needed use CBN500. Universal option: CBN600. Adjust the depth of cut to get under the casting skin and blow holes. Dry machining is preferable.

Other Difficult Materials

SMG	Properties	Reference	Recommendations
PM1	Low alloy PM materials	F-0008 Fe-0.7C	PCBN tools can be used on PM parts as soft as 25 HRC. The critical parameter is particle hardness, when the particle hardness exceeds 50 HRC, PCBN is useful, no matter what the bulk hardness is. First choice CBN200. For rough machining CBN300 is an alternative. Use chamfered inserts, S25 edge preparation. Do not use coolant for interrupted cut.
PM2	Medium alloy PM materials	FLC-4608 Fe2Cu1.8Ni0.5Mo0.2Mn0.8C	PCBN tools can be used on PM parts as soft as 25 HRC. The critical parameter is particle hardness, when the particle hardness exceeds 50 HRC, PCBN is useful, no matter what the bulk hardness is. First choice CBN200. For rough machining CBN300 is an alternative. Use chamfered inserts, S25 edge preparation. Do not use coolant for interrupted cut.
PM3	High alloy PM materials Exhaust valve seat materials		First choice CBN150. Second choice CBN010. Use positive inserts. Use chamfered and honed edges for longer tool life. Use honed edges when tight tolerances are required. Machining can be carried out either with or without coolant.
HF1	Hard facing alloys Welded or plasma deposited iron based alloys		Cr-based alloys – Hardness <60 HRC. Co-based alloys – Hardness >35 HRC. Ni-based alloys – Hardness >35 HRC. Fe-based alloys – Hardness >35 HRC. First choice for finish machining: CBN010. First choice for rough machining: CBN500, or when centerlock inserts are used: CBN200. Use round inserts if possible. Use chamfered inserts. Adjust the depth of cut to get under the welding skin and blow holes. Dry machining is preferable. Remove any weld spatter before machining.
HF2	Hard facing alloys Welded or plasma deposited cubalt and nickel based alloys		Cr-based alloys – Hardness <60 HRC. Co-based alloys – Hardness >35 HRC. Ni-based alloys – Hardness >35 HRC. Fe-based alloys – Hardness >35 HRC. First choice for finish machining: CBN010. First choice for rough machining: CBN500, or when centerlock inserts are used: CBN200. Use round inserts if possible. Use chamfered inserts. Adjust the depth of cut to get under the welding skin and blow holes. Dry machining is preferable. Remove any weld spatter before machining.
CC1	Sintered tungsten carbide	G50	Sintered tungsten carbide with a Co content >17%. **Basic conditions:** Use CBN300. When a tougher grade is needed use CBN500. Use round inserts. Use chamfered inserts. Machining with coolant is preferable. Chamfer the workpiece at entry and exit.

PCBN, Roughing a_p 0.020 – 0.120 inch

	CBN200		CBN300		CBN400C		CBN500	
SMG	v_c	f	v_c	f	v_c	f	v_c	f
K1	1650 — 3275	0.0080 — 0.030	1650 — 4925	0.0080 — 0.032	1975 — 3925	0.0080 — 0.032	—	—
K2	330 — 1225	0.0040 — 0.015	330 — 1150	0.0032 — 0.014	—	—	425 — 1075	0.0050 — 0.015
K5	330 — 1475	0.0040 — 0.010	—	—	—	—	—	—
H7	230 — 490	0.0032 — 0.011	295 — 660	0.0032 — 0.011	—	—	295 — 590	0.0048 — 0.012
H8	165 — 490	0.0012 — 0.0085	165 — 490	0.0020 — 0.0090	—	—	—	—
H11	—	—	330 — 660	0.0024 — 0.0095	—	—	230 — 590	0.0040 — 0.010
H21	460 — 690	0.0080 — 0.024	520 — 820	0.0080 — 0.024	—	—	425 — 750	0.0080 — 0.024
H31	165 — 330	0.0080 — 0.032	—	—	—	—	100 — 425	0.0065 — 0.028
PM1	330 — 660	0.0028 — 0.0085	330 — 720	0.0028 — 0.0085	—	—	—	—
PM2	330 — 660	0.0028 — 0.0085	—	—	—	—	—	—
HF1	330 — 490	0.0040 — 0.012	—	—	—	—	330 — 660	0.0040 — 0.011
HF2	560 — 820	0.0040 — 0.012	—	—	—	—	560 — 890	0.0040 — 0.011
CC1	—	—	65 — 130	0.0016 — 0.0080	—	—	65 — 115	0.0020 — 0.010

PCBN, Finishing a_p < 0.020 inch

	CBN010		CBN060K		CBN150		CBN160C		CBN170	
SMG	v_c	f	v_c	f	v_c	f	v_c	f	v_c	f
K1	—	—	—	—	—	—	—	—	—	—
K2	—	—	490 — 1150	0.0020 — 0.0085	395 — 920	0.0016 — 0.0085	395 — 980	0.0024 — 0.0095	—	—
K4	520 — 920	0.0020 — 0.0080	—	—	590 — 980	0.0020 — 0.0075	—	—	—	—
K5	260 — 1975	0.0020 — 0.0080	—	—	—	—	260 — 1650	0.0020 — 0.0085	—	—
S1	560 — 1150	0.0040 — 0.010	—	—	—	—	—	—	—	—
S2	560 — 1150	0.0020 — 0.0080	—	—	—	—	—	—	—	—
S3	560 — 1150	0.0040 — 0.010	—	—	—	—	—	—	560 — 1150	0.00040 — 0.011
H3	260 — 750	0.0012 — 0.010	330 — 790	0.0012 — 0.011	245 — 590	0.0012 — 0.0080	330 — 660	0.0012 — 0.0095	—	—
H5	260 — 710	0.0012 — 0.010	295 — 720	0.0012 — 0.011	230 — 520	0.0012 — 0.0080	295 — 590	0.0012 — 0.0095	—	—
H7	330 — 720	0.0024 — 0.0070	330 — 750	0.0024 — 0.0080	330 — 560	0.0020 — 0.0065	330 — 620	0.0028 — 0.0085	—	—
H8	295 — 660	0.00040 — 0.0075	295 — 720	0.00040 — 0.0080	230 — 490	0.00080 — 0.0060	230 — 590	0.00080 — 0.0065	—	—
H11	330 — 720	0.0012 — 0.0065	330 — 750	0.0012 — 0.0070	195 — 520	0.0012 — 0.0065	260 — 590	0.0016 — 0.0070	—	—
H21	—	—	—	—	—	—	—	—	—	—
H31	—	—	—	—	—	—	—	—	—	—
PM1	—	—	—	—	—	—	360 — 820	0.0020 — 0.010	—	—
PM2	—	—	—	—	260 — 660	0.0020 — 0.010	295 — 660	0.0020 — 0.010	—	—
PM3	260 — 560	0.0020 — 0.0080	—	—	260 — 560	0.0020 — 0.0080	260 — 560	0.0020 — 0.0080	—	—
HF1	165 — 490	0.00080 — 0.0065	—	—	165 — 395	0.00080 — 0.0065	165 — 490	0.00080 — 0.0070	—	—
HF2	195 — 620	0.00040 — 0.0070	—	—	195 — 620	0.00080 — 0.0065	330 — 660	0.00080 — 0.0065	—	—
CC1	—	—	—	—	—	—	—	—	—	—

	CBN200		CBN300		CBN400C		CBN500	
SMG	v_c	f	v_c	f	v_c	f	v_c	f
K1	1650 — 4275	0.0040 — 0.020	1650 — 5575	0.0040 — 0.024	1975 — 5900	0.0040 — 0.024	—	—
K2	—	—	—	—	—	—	—	—
K4	—	—	—	—	—	—	—	—
K5	—	—	—	—	—	—	—	—
S1	—	—	—	—	—	—	—	—
S2	—	—	—	—	—	—	—	—
S3	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—
H5	—	—	—	—	—	—	—	—
H7	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—
H11	—	—	—	—	—	—	—	—
H21	490 — 750	0.0040 — 0.024	560 — 820	0.0040 — 0.024	—	—	490 — 750	0.0040 — 0.024
H31	165 — 395	0.0060 — 0.018	—	—	—	—	130 — 490	0.0048 — 0.018
PM1	425 — 980	0.0020 — 0.010	—	—	—	—	—	—
PM2	395 — 820	0.0020 — 0.0080	—	—	—	—	—	—
PM3	330 — 660	0.0020 — 0.0060	—	—	—	—	—	—
HF1	—	—	—	—	—	—	—	—
HF2	—	—	—	—	—	—	—	—
CC1	—	—	65 — 130	0.0016 — 0.0060	—	—	—	—

PCBN, Plunging

SMG	CBN010		CBN060K		CBN150		CBN160C	
	v_c	f	v_c	f	v_c	f	v_c	f
K1	—	—	—	—	—	—	—	—
K2	—	—	490 — 1150	0.0020 — 0.0085	395 — 920	0.0016 — 0.0085	395 — 980	0.0024 — 0.0095
K4	520 — 920	0.0020 — 0.0080	—	—	590 — 980	0.0020 — 0.0075	—	—
K5	260 — 1975	0.0020 — 0.0080	—	—	—	—	260 — 1650	0.0020 — 0.0085
S1	560 — 1150	0.0040 — 0.010	—	—	—	—	—	—
S2	560 — 1150	0.0020 — 0.0080	—	—	—	—	—	—
S3	560 — 1150	0.0040 — 0.010	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—
H5	—	—	—	—	—	—	—	—
H7	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—
H11	—	—	330 — 750	0.0012 — 0.0070	195 — 520	0.0012 — 0.0065	260 — 590	0.0016 — 0.0070
H21	—	—	—	—	—	—	—	—
H31	—	—	—	—	—	—	—	—
PM1	—	—	—	—	—	—	360 — 820	0.0020 — 0.010
PM2	—	—	—	—	—	—	—	—
PM3	—	—	—	—	—	—	—	—
HF1	165 — 490	0.00080 — 0.0065	—	—	165 — 395	0.00080 — 0.0065	165 — 490	0.00080 — 0.0070
HF2	195 — 620	0.00040 — 0.0070	—	—	195 — 620	0.00080 — 0.0065	330 — 660	0.00080 — 0.0065
CC1	—	—	—	—	—	—	—	—

SMG	CBN200		CBN300		CBN400C		CBN500	
	v_c	f	v_c	f	v_c	f	v_c	f
K1	—	—	—	—	—	—	—	—
K2	—	—	—	—	—	—	—	—
K4	—	—	—	—	—	—	—	—
K5	—	—	—	—	—	—	—	—
S1	—	—	—	—	—	—	—	—
S2	—	—	—	—	—	—	—	—
S3	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—
H5	—	—	—	—	—	—	—	—
H7	—	—	—	—	—	—	—	—
H8	—	—	—	—	—	—	—	—
H11	—	—	—	—	—	—	—	—
H21	—	—	—	—	—	—	—	—
H31	—	—	—	—	—	—	—	—
PM1	—	—	—	—	—	—	—	—
PM2	—	—	—	—	—	—	—	—
PM3	—	—	—	—	—	—	—	—
HF1	—	—	—	—	—	—	—	—
HF2	—	—	—	—	—	—	—	—
CC1	—	—	65 — 130	0.0016 — 0.0060	—	—	—	—

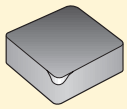
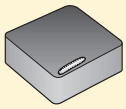
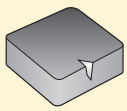
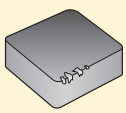
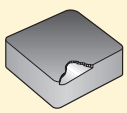
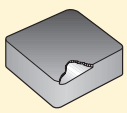
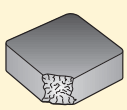
SMG = Seco Material Group
v_c = sf/min
f = in/rev
All cutting data are start values

PCBN, Grooving

SMG	CBN010		CBN170		CBN200	
	v_c	f	v_c	f	v_c	f
K1	—	—	—	—	1650 — 3925	0.0036 — 0.0070
K2	660 — 1300	0.00080 — 0.0040	—	—	—	—
K4	330 — 980	0.0012 — 0.0028	—	—	—	—
S1	490 — 980	0.0020 — 0.0060	—	—	—	—
S2	490 — 980	0.0020 — 0.0060	—	—	130 — 195	0.00080 — 0.0040
S3	490 — 980	0.0020 — 0.0060	490 — 1150	0.0020 — 0.0080	—	—
H3	330 — 920	0.00040 — 0.0028	—	—	—	—
H5	295 — 820	0.00040 — 0.0028	—	—	—	—
H7	295 — 820	0.00080 — 0.0028	—	—	—	—
H8	260 — 980	0.00080 — 0.0028	—	—	260 — 425	0.00080 — 0.0028
H11	395 — 720	0.00080 — 0.0024	—	—	—	—
H21	—	—	—	—	330 — 660	0.00040 — 0.0032
H31	—	—	—	—	165 — 330	0.0012 — 0.0040

SMG = Seco Material Group
v_c = sf/min
f = in/rev
All cutting data are start values

Secomax™ – PCBN Troubleshooting

Problem	Cause	Suggested action(s)
Flank wear 	Not correct edge temperature	• Increase cutting speed • Increase feed rate • Increase depth of cut • Check cutting tool center height • Check the ferrite content
Crater wear 	Not correct edge temperature	• Decrease cutting speed • Decrease feed rate • Reduce chamfer angle • Use E edge preparation • Use coated insert • Use coolant (only in continuous cut)
Notch wear 	Not correct edge temperature Too high cutting forces	• Increase cutting speed • Decrease feed rate • Increase insert approach angle (preferably round inserts) • Vary the depth of cut • Use inserts with chamfered cutting edges
Edge chipping 	Too high cutting forces	• Use inserts with chamfered cutting edges • Increase system rigidity • For interrupted cuts, chamfer the tool entry/exit slots and holes • Vary the cutting speed to eliminate vibrations
Edge flaking (continuous cut) 	Too high cutting forces	• Increase cutting speed • Reduce feed rate • Use chamfered and honed cutting edges • Check cutting tool center height • Reduce insert approach angle
Edge flaking (interrupted cut) 	Too high cutting forces	• Do not use coolant • Use chamfered and honed cutting edges • Reduce feed rate • Increase cutting speed • Check cutting tool center height • Reduce insert approach angle
Edge breakage 	Too high cutting forces	• Reduce depth of cut • Reduce cutting speed • Increase nose radius • Use chamfered and honed inserts • Check cutting tool center height
Insert breakage 	Too high cutting forces	• Check insert seating • Check insert shim and insert clamp • Check cutting tool center height

Introduction

Polycrystalline Diamond (PCD) is produced by sintering together carefully selected particles of diamond under conditions of high temperature and high pressure. PCD cutting tools combine the hardness, abrasion resistance and thermal conductivity of diamond with the toughness of tungsten carbide.

Secomax™ PCD inserts are suitable for machining non-ferrous metals and alloys, e.g.:

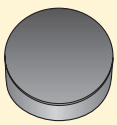
- Aluminum
- Copper
- Brass
- Bronze

It can also be used for other materials, e.g.:

- Composites (MMC, ...)
- Reinforced plastics
- Graphite
- Cemented/tungsten carbide
- Ceramics
- Titanium alloys

Selection of insert types

Sintered layer -LF

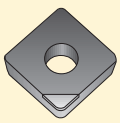


PCD sintered on carbide.
All cutting edges on one side are usable.

Grade:
PCD30

Toolholder style:
C

Brazed tip -L1



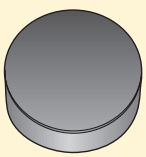
PCD brazed on to standard carbide inserts.

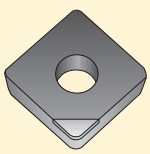
Grades:
PCD20, PCD30

Toolholder styles:
D, P, M and C

Grades

PCD20



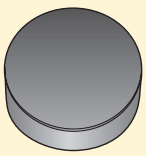


Format:
Full-face brazed layer and brazed tips (single sided).

Composition:
Grade with an average grain size of 10 µm and a Co binder.

Coating:
No coating

PCD30



Format:
Full-face brazed layer (single sided).

Composition:
Grade with an average grain size of 25 µm and a Co binder.

Coating:
No coating

Non Ferrous Metals

SMG	Properties	Reference	Recommendations
N1	Aluminum alloys, Si < 9%	7075-T6	First choice for finish and rough machining: PCD20.
N2	Aluminum alloys, 9% < Si < 16%	413.2 Si = 12%	First choice for finish and rough machining: PCD20.
N3	Aluminum alloys, Si >16%	AlSi17Cu5	First choice for finish and rough machining: PCD30.
N11	Copper alloys	UNS C38500	First choice for finish and rough machining: PCD20.

Other Difficult Materials

SMG	Properties	Reference	Recommendations
CC1	Sintered tungsten carbide	G50	Sintered tungsten carbide with a Co content >17%. Second choice for finish machining: PCD30.

Plastics and Composites

SMG	Properties	Reference	Recommendations
TS1	Thermosetting polymers	Urea formaldehyde (UF)	First choice for finish and rough machining: PCD20.
TS2	Thermosetting Carbon fiber composites	T300 T700 T800 HTA-S IMA - Epoxy (M21)...	First choice for finish and rough machining: PCD20.
TS3	Thermosetting Glass fiber composites	Epoxy - HX..(42..)/E glass (7781...)...	First choice for finish and rough machining: PCD20.
TP1	Thermoplastic polymers	Polycarbonate (PC)	First choice for finish and rough machining: PCD20.
TP2	Thermoplastic Carbon fiber composites	PPS/PEEK - T300..	First choice for finish and rough machining: PCD20.
TP3	Thermoplastic Glass fiber composites	PPS/PEEK - E glass or A glass...	First choice for finish and rough machining: PCD20.

Graphites

SMG	Properties	Reference	Recommendations
GR1	Graphite	R 8500	First choice for finish- and rough machining: PCD20.

PCD, Roughing a_p 0.020 – 0.120 inch

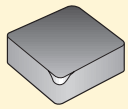
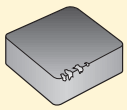
SMG	PCD20		PCD30	
	v_c	f	v_c	f
N1	1975 — 11475	0.0020 — 0.012	—	—
N2	1475 — 8200	0.0020 — 0.0080	—	—
N3	980 — 3275	0.0020 — 0.0040	980 — 3275	0.0040 — 0.016
N11	1975 — 3925	0.0040 — 0.020	1975 — 3925	0.0040 — 0.020
TS1	330 — 4925	0.0040 — 0.016	—	—
TS2	1300 — 2625	0.0040 — 0.0080	—	—
TS3	330 — 2625	0.0020 — 0.0080	—	—
TP1	330 — 4925	0.0040 — 0.016	—	—
TP2	1300 — 2625	0.0040 — 0.0080	—	—
TP3	330 — 2625	0.0020 — 0.0080	—	—
GR1	330 — 4925	0.0040 — 0.0080	—	—

PCD, Finishing a_p < 0.020 inch

SMG	PCD20		PCD30	
	v_c	f	v_c	f
N1	1975 — 11475	0.0020 — 0.012	—	—
N2	1475 — 8200	0.0020 — 0.0080	—	—
N3	980 — 3275	0.0020 — 0.0040	980 — 3275	0.0040 — 0.016
N11	1975 — 3925	0.0040 — 0.020	1975 — 3925	0.0040 — 0.020
CC1	—	—	33 — 65	0.0016 — 0.0060
TS1	330 — 4925	0.0040 — 0.016	—	—
TS2	1300 — 2625	0.0040 — 0.0080	—	—
TS3	330 — 2625	0.0020 — 0.0080	—	—
TP1	330 — 4925	0.0040 — 0.016	—	—
TP2	1300 — 2625	0.0040 — 0.0080	—	—
TP3	330 — 2625	0.0020 — 0.0080	—	—
GR1	330 — 4925	0.0040 — 0.0080	—	—

SMG = Seco Material Group
v_c = sf/min
f = in/tooth
a_p = inch
All cutting data are start values

Secomax™ – PCD Troubleshooting

Problem	Cause	Suggested action(s)
Flank wear 	Wrong grade Presence of Fe/Ni/Co	• Change to coarser PCD grade • Check material composition • Reduce cutting speed • Use coolant
Built-up edge 	Not correct edge temperature Wrong grade	• Decrease or increase cutting speed • Choose a sharper insert • Change to a finer grade
Edge chipping 	Poor rigidity Wrong grade Incorrect cutting data High run-out	• Minimize vibrations • Change to a tougher grade • Change cutting data • Check set-up
Poor surface finish	Wrong grade Too high cutting data Incorrect wiper position	• Change to a finer PCD grade • Reduce cutting speed and feed rate • Check wiper position
Flaking of workpiece	To high depth of cut	• Decrease depth of cut • Add entry chamfer on component

Secomax™ – Ceramic grades and general information

Introduction

Secomax ceramics include a range of products developed to meet the manufacturing industries ever increasing demands on productivity and product performance.

The inserts are die-pressed and sintered by a HIP process using very fine and pure raw materials with fine microstructure to reach excellent material properties. All surfaces are then ground ensuring a product with superior dimensions and tolerances.

This comes together in a product with outstanding features:

– high thermal shock resistance

– optimized fracture toughness

– excellent wear resistance

– high product quality

Application areas

Heat resistant superalloys (HRSA) include a broad range of nickel, iron and cobalt based alloys developed specifically for applications demanding exceptional mechanical and chemical properties at elevated temperatures.

Seco ceramic inserts are intended for rough machining of nickel based heat resistant superalloys. The most common nickel based superalloy is Inconel 718, which is a precipitation hardenable nickel chromium alloy containing significant amounts of iron, niobium and molybdenum along with lesser amounts of aluminum and titanium.

Other common nickel based superalloy names are:

– Hastalloy

– Haynes (Waspaloy)

– MAR

– Nimonic

– Rene

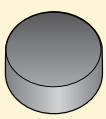
– Udimet

Selection of insert types

Ceramic inserts are only available in solid format.

Solid insert

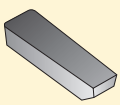




According to the geometry, two sides can be used.

Grade:
CS100

Solid insert



According to the geometry, one edge can be used.

Grade:
CW100

Geometry recommendations

Strong cutting edge geometries are always preferred.

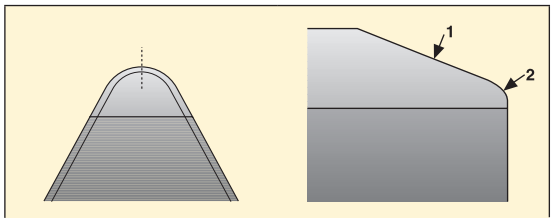
- Negative cutting geometry
- Chamfered cutting edge
- Large nose radius

Edge preparation, chamfer size and angle

E = Hone only

S = Chamfered and honed

T = Chamfered no hone



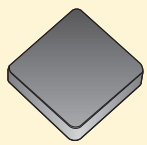
1 = Chamfer (0.004 inch x 20º)
2 = Hone (0.0006 inch)

ISO classification

	P						M					K					N				S				H			
	P01	P10	P20	P30	P40	P50	M01	M10	M20	M30	M40	K01	K10	K20	K30	K40	N01	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20	H30
CS100																												
CW100																												

Grades

CS100

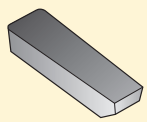


Format:
Solid

Composition:
Sialon (Si, Al, O, N) ceramic grade

Uncoated

CW100



Format:
Solid

Composition:
Aluminum oxide (Al_2O_3) + SiC-whisker reinforced ceramic grade

Uncoated

Superalloys

SMG	Properties	Reference	Recommendations
S1	Iron based superalloys	Discalloy	First choice for rough machining: CS100 First choice for grooving: CW100 Use coolant
S2	Cobalt based superalloys	Stellite 21	First choice for rough machining: CS100 First choice for grooving: CW100 Use coolant
S3	Nickel based superalloys	Inconel 718	First choice for rough machining: CS100 First choice for grooving: CW100 Use coolant

Ceramics, Roughing a_p 0.020 – 0.120 inch

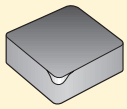
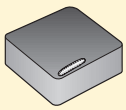
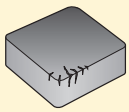
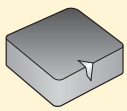
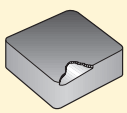
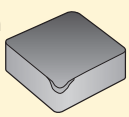
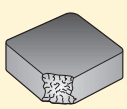
SMG	CS100	
	v_c	f
S1	490 — 820	0.0040 — 0.016
S2	490 — 980	0.0040 — 0.016
S3	490 — 980	0.0040 — 0.016

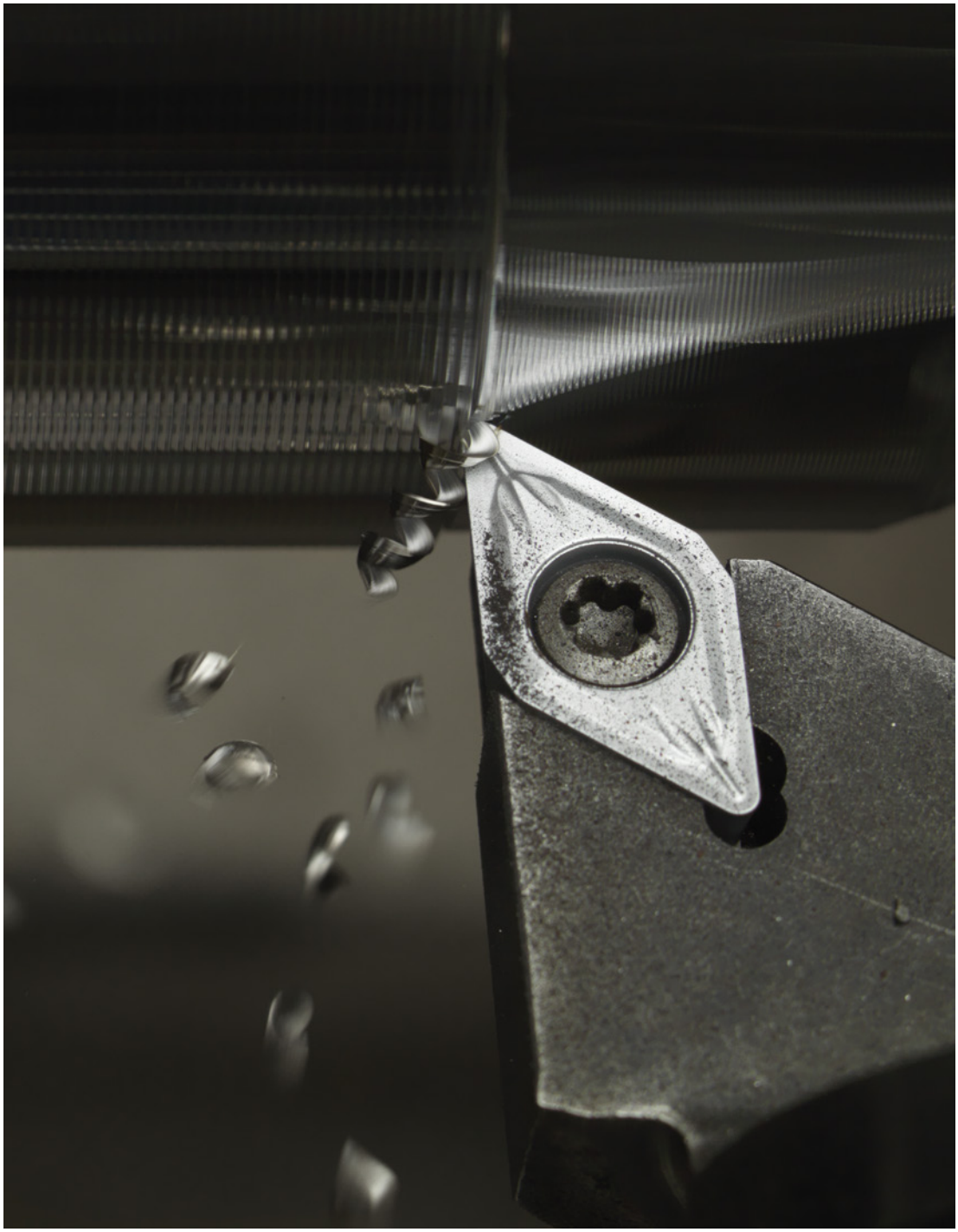
Ceramic, Grooving

SMG	CW100	
	v_c	f
S1	490 — 980	0.0020 — 0.010
S2	490 — 980	0.0020 — 0.010
S3	490 — 980	0.0020 — 0.010

SMG = Seco Material Group
v_c = sf/min
f = in/rev
a_p = inch
All cutting data are start values

Troubleshooting

Problem	Cause	Suggested action(s)
Flank wear 	Excessive feed rate and cutting speed	• Reduce cutting speed • Use larger corner radius • Use high wear-resistant grade
Crater wear 	Excessive feed rate and cutting speed	• Reduce cutting speed • Use smaller lead angle • Check edge geometry
Thermal cracking 	Severe cycle of heating & cooling during cutting Excessive feed rate and cutting speed	• Change to dry machining • Reduce cutting speed • Reduce feed rate
Notch wear 	Excessive feed rate and cutting depth	• Reduce cutting depth • Reduce feed rate • Increase coolant supply
Edge flaking 	Excessive feed rate Separation of BUE Weak cutting edge	• Check edge geometry • Increase stability of the system • Use larger lead angle
Plastic deformation 	Excessive feed rate and cutting speed	• Reduce cutting speed • Reduce feed rate • Reduce cutting depth
Built-up edge 	High affinity with workpiece Low cutting speed	• Increase cutting speed • Increase feed rate • Use larger rake angle
Breakage 	Excessive feed rate and cutting depth	• Reduce feed rate • Reduce cutting depth • Increase stability of the system



Torque key range

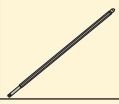
For most Seco milling products, torque keys with fixed torque values are available in combinations of key grips and torque values for insert locking. Using a Torque key will ensure the correct tightening force when mounting an insert. The torque value is given on page 85 for each screw.

Torque keys are calibrated according to ISO 6789.

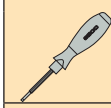
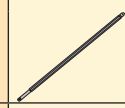
Code key: T00-15P35

T00 = Torque screwdriver type for Torx Plus blade
T00T = Torque T-handle type for Torx Plus blade
H00 = Torque screwdriver for hexagonal blade
H00T = Torque T-handle type for hexagonal blade

15P = Torx Plus size
35 = Torque value 3.5 Nm

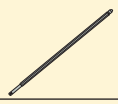
Torque key* 	Replaceable blade 	Hexagonal size	Torque in/lbs	Torque value
H00-1305	H00-1.3	1.3 mm	4 in/lbs	0.5 Nm
H00-1505	H00-1.5	1.5 mm	4 in/lbs	0.5 Nm
H00-1509	H00-1.5	1.5 mm	7 in/lbs	0.9 Nm
H00-2009	H00-2.0	2.0 mm	7 in/lbs	0.9 Nm
H00-2016	H00-2.0	2.0 mm	14 in/lbs	1.6 Nm
H00-2020	H00-2.0	2.0 mm	17 in/lbs	2.0 Nm
H00-2512	H00-2.5	2.5 mm	10 in/lbs	1.2 Nm
H00-2530	H00-2.5	2.5 mm	26 in/lbs	3.0 Nm
H00-2535	H00-2.5	2.5 mm	30 in/lbs	3.5 Nm
H00-3020	H00-3.0	3.0 mm	17 in/lbs	2.0 Nm
H00-4030	H00-4.0	4.0 mm	26 in/lbs	3.0 Nm

*Including blade

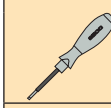
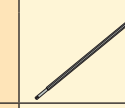
Torque key* 	Replaceable blade 	Hexagonal size	Torque in/lbs	Torque value
H00T-3050	H00T-3.0	3 mm	44 in/lbs	5.0 Nm
H00T-4050	H00T-4.0	4 mm	44 in/lbs	5.0 Nm
H00T-4060	H00T-4.0	4 mm	53 in/lbs	6.0 Nm
H00T-5080	H00T-5.0	5 mm	70 in/lbs	8.0 Nm
H00T-60100	H00T-6.0	6 mm	88 in/lbs	10.0 Nm

*Including blade

Blades are not interchangeable between screwdriver type and T-handle type.
Torx Plus® is a registered trade mark belonging to Camcar-Textron (USA)

Torque key* 	Replaceable blade 	Torque Plus size	Torque in/lbs	Torque value
T00-06P05	T00-06P	T06P	4 in/lbs	0.5 Nm
T00-07P05	T00-07P	T07P	4 in/lbs	0.5 Nm
T00-07P09	T00-07P	T07P	7 in/lbs	0.9 Nm
T00-08P12	T00-08P	T08P	10 in/lbs	1.2 Nm
T00-09P09	T00-09P	T09P	7 in/lbs	0.9 Nm
T00-09P12	T00-09P	T09P	10 in/lbs	1.2 Nm
T00-09P20	T00-09P	T09P	17 in/lbs	2.0 Nm
T00-10P20	T00-10P	T10P	17 in/lbs	2.0 Nm
T00-10P30	T00-10P	T10P	26 in/lbs	3.0 Nm
T00-15P20	T00-15P	T15P	17 in/lbs	2.0 Nm
T00-15P30	T00-15P	T15P	26 in/lbs	3.0 Nm
T00-15P35	T00-15P	T15P	30 in/lbs	3.5 Nm
T00-15P50	T00-15P	T15P	44 in/lbs	5.0 Nm
T00-20P35	T00-20P	T20P	30 in/lbs	3.5 Nm
T00-20P50	T00-20P	T20P	44 in/lbs	5.0 Nm

*Including blade

Torque key* 	Replaceable blade 	Torque Plus size	Torque in/lbs	Torque value
T00T-15P50	T00T-15P	T15P	44 in/lbs	5.0 Nm
T00T-20P50	T00T-20P	T20P	44 in/lbs	5.0 Nm
T00T-20P60	T00T-20P	T20P	53 in/lbs	6.0 Nm
T00T-20P80	T00T-20P	T20P	70 in/lbs	8.0 Nm
T00T-25P50	T00T-25P	T25P	44 in/lbs	5.0 Nm
T00T-25P60	T00T-25P	T25P	53 in/lbs	6.0 Nm
T00T-25P80	T00T-25P	T25P	70 in/lbs	8.0 Nm
T00T-30P80	T00T-30P	T30P	70 in/lbs	8.0 Nm

*Including blade

Torque value for clamping screws

Torque value for each screw is shown below

Screw designation	Torque in/lbs	Torque Nm	Torque key
110.26-655	89	10.0	–
117.26-655	35	4.0	–
117.26-657	27	3.0	H00-2530
170.26-655	53	6.0	H00T-4060
C02205-T07P	8	0.9	T00-07P09
C02505-T07P	8	0.9	T00-07P09
C02506-T07P	8	0.9	T00-07P09
C03007-T09P	18	2.0	T00-09P20
C03508-T15P	27	3.0	T00-15P30
C03509-T15P	27	3.0	T00-15P30
C03510-T15P	27	3.0	T00-15P30
C03511-T09P	27	3.0	–
C03512-T15P	27	3.0	T00-15P30
C04008-T15P	31	3.5	T00-15P35
C04010-T15P	31	3.5	T00-15P35
C04011-T15P	31	3.5	T00-15P35
C04014-T15P	31	3.5	T00-15P35
C04512-T15P	44	5.0	T00-15P50
C04518-T15P	44	5.0	T00-15P50
C05010-T20P	44	5.0	T00-20P50
C05012-T15P	44	5.0	T00-15P50
C05013-T20P	44	5.0	T00-20P50
C05018-T20P	44	5.0	T00-20P50
C11804-T06P	4	0.5	T00-06P05
C46017-T20P	53	6.0	T00T-20P60
C82204-T06P	4	0.5	T00-06P05
CC05	8	0.9	H00-1509
CC08P-V13	18	2.0	T00-09P20
CC09P-D11	18	2.0	T00-09P20
CC12P-S12	31	3.5	T00-15P35
CC14	53	6.0	H00T-4060
CC16	89	10.0	–
CC17P	89	10.0	–
CC17P-06	89	10.0	–
CC17P-09	89	10.0	–
CC20P	89	10.0	–
CC20P-V13	89	10.0	–
CD09-S09	18	2.0	T00-09P20
CD12-S12	31	3.5	T00-15P35
CD16-C16	44	5.0	T00-20P50
CD19-S19	44	5.0	T00-20P50
CD19-V16	44	5.0	T00-20P50
CSC8015-T20P	44	5.0	T00-20P50
CSC1015-T20P	44	5.0	T00-20P50
CSP16-T15P	18	2.0	T00-15P20
CSP22-T25P	27	3.0	T00-15P30
CSP27-T25P	53	6.0	T00T-25P60

For the Seco range of torque keys, please see page 84.

Screw designation	Torque in/lbs	Torque Nm	Torque key
L84017-T09P	18	2.0	T00-09P20
L85011-T15P	44	5.0	T00-15P50
L85012-T15P	44	5.0	T00-15P50
L85017-T09P	18	2.0	T00-09P20
L85020-T15P	35	4.0	–
L86015-T20P	53	6.0	–
L86025-T20P	58	6.5	–
LD1035-T25P	53	6.0	T00T-25P60
LD5020-T09P	18	2.0	T00-09P20
LD6020-T15P	27	3.0	T00-15P30
LD6021-T09P	18	2.0	T00-09P20
LD6024-T20P	18	2.0	–
LD6025-T15P	27	3.0	T00-15P30
LD6026-T09P	18	2.0	T00-09P20
LD8025-T25P	53	6.0	T00T-25P60
LD8030-T25P	53	6.0	T00T-25P60
LS0512	22	2.5	–
LS0613	27	3.0	H00-2530
LS0616	27	3.0	H00-2530
LS0818	35	4.0	–
LS0822	35	4.0	–
MC6S4X14	31	3.5	–
MC6S4X18	31	3.5	–
MC6S5X14	44	5.0	H00T-4050
MC6S5X18	44	5.0	H00T-4050
MN0909L-T09P	18	2.0	T00-09P20
MN1215L-T15P	27	3.0	T00-15P30
MN1215R-T15P	27	3.0	T00-15P30
MN1215S-T15P	27	3.0	T00-15P30
MN1215T-T15P	27	3.0	T00-15P30
MN1515-T15P	27	3.0	T00-15P30
MN1515SL-T15P	27	3.0	T00-15P30
MN1520-T20P	53	6.0	T00T-20P60
MN1920-T20P	53	6.0	T00T-20P60
MN1925-T25P	44	5.0	T00T-25P50
MN2525-T25P	53	6.0	T00T-25P60
PL1403-T09P	22	2.5	T00-09P20
TCEI0409	31	3.5	–
TCEI0509	53	6.0	H00T-4060
TCEI0513	53	6.0	H00T-4060
TCEI0609	71	8.0	H00T-5080
TCEI0613	71	8.0	H00T-5080
TCEI0614	71	8.0	H00T-5080
TCEI0620	71	8.0	H00T-5080
TCEI0815	89	10.0	H00T-60100
TCEI0825	89	10.0	H00T-60100
TCEI1020	133	15.0	–
WS1620-T20P	31	3.5	T00-20P35
WS1920-T20P	31	3.5	T00-20P35
WS2325-T25P	44	5.0	T00T-25P50

Jetstream Tooling® – Introduction

Seco Jetstream Tooling is a revolutionary method of delivering coolant precisely to the cutting zone.

It works by delivering a concentrated high pressure jet of coolant at high velocity straight to the optimum position close to the cutting edge.

The jet lifts the chips away from rake face, improving chip control and tool life enabling increased cutting data.

It is proven to show improvement in nearly all material groups and with a wide choice of coolant pressures.

Seco Jetstream Tooling Duo holders, yet another innovation introduced to market, feature both a rake face and flank face jet, that can provide even better chip control and significantly longer tool life. Note the addition of roughing inducer option see page 87.

The standard range of Jetstream Tooling is based on ISO toolholders. It can be mounted and used on a large selection of machines.

Coolant can either be supplied to the toolholder externally through a coolant hose which is attached to one of the inlet positions of the toolholder or internally in the case of Seco-Capto holders.

Hoses are available, allowing the coolant supply to be connected to almost any position on the turret or tool block.

Seco Jetstream Tooling consists of holders for external turning, both square shanks and Seco-Capto backends.

Products are available for turning with positive and negative inserts, as well as MDT.

Maximum coolant pressure recommended for use with standard shank type Jetstream Tooling is 4000 psi (275 bar).

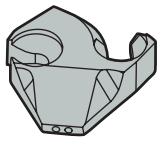
For Seco-Capto toolholders the maximum pressure is 1000 psi (70 bar). Here the limitation is the clamping units.

Technical information

For designation of Jetstream Tooling holders please refer to code key pages.

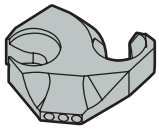


Finishing inducer (Included in delivery)



The mounted Jetstream Tooling® Finishing Inducer gives a universally applicable coolant jet, which provides a well positioned coolant wedge for finishing to medium-roughing applications.

Roughing inducer (Ordered separately)



As accessories, Jetstream Tooling® Roughing Inducers available for easy exchange, providing a more boosted coolant wedge for clearer roughing applications or for cases demanding more space for chip flow.

Changing the insert

Simply loosen both locking screws, and rotate the inducer clear of the insert. Check the conditions of the tool, screws and O-ring and exchange regularly. Change or index the insert in the standard way before rotating the inducer back into position (make sure the inducer O-ring is still in place) and re-tighten the insert locking screw before locking the inducer.

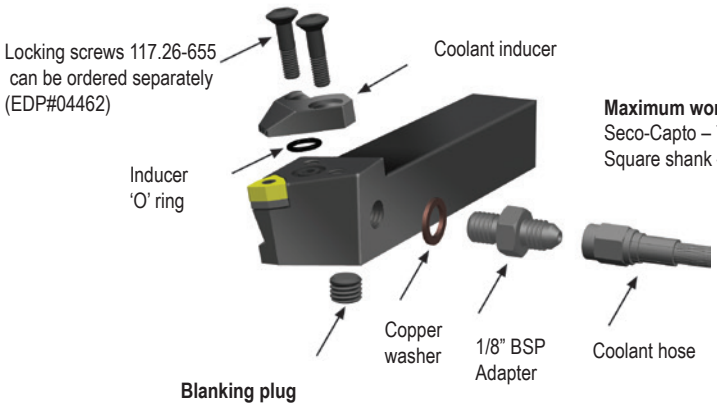




Assembly instructions

For personal safety, Jetstream Tooling® should only be used with the machine door in a fully closed position in accordance with general machine safety procedures. Please ensure that the coolant hose is located correctly and fully tightened with all seals in position. The unused coolant hole should have a blanking plug fitted. Please note the maximum safe working pressures shown below.

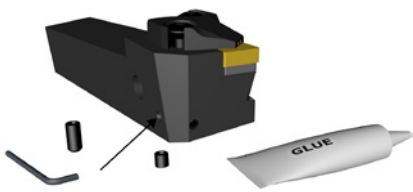
The maximum torque for tightening the inducer locking screw 117.26-655 is 88 in/lbs (10 Nm).



Maximum working pressures
Seco-Capto – 70 bar (1000 psi)
Square shank – 275 bar (4000 psi)

Blanking plug
Make sure the blanking plug is securely in position in the unused coolant hole prior to use.

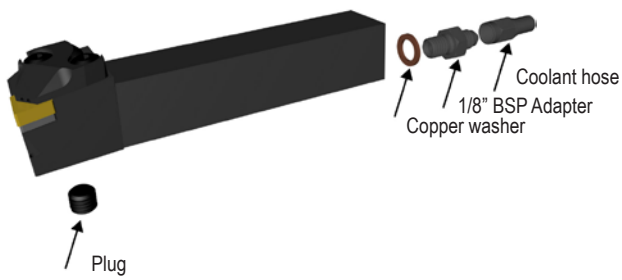
In the rare case you need to shut off the Duo outlet underneath the insert, first remove the short screw in the side of the toolholder. Then mount the long plugging screw P6SS4X8 (EDP#91623) using suitable glue to seal the thread (e.g. Loctite® 270). Plugging the underneath outlet has to be considered permanent and irreversible.



Replace the short screw here with the long screw to shut off underneath coolant

Alternative coolant inlet

The range of toolholders …B offers one coolant inlet underneath and one in the back of the shank.



For Accessories, see page 89.

Hoses, Part No. ordering code includes spare parts

Connection type	Part No.	Length (mm)
Straight fitting 	JET-HOSE150SS	150
	JET-HOSE200SS	200
	JET-HOSE250SS	250
	JET-HOSE300SS	300
Banjo fitting 	JET-HOSE150BS	150
	JET-HOSE200BS	200
	JET-HOSE250BS	250
	JET-HOSE300BS	300
Banjo-to-Banjo fitting 	JET-HOSE150BB	150
	JET-HOSE200BB	200
	JET-HOSE250BB	250
	JET-HOSE300BB	300

All hoses are pressure rated to a maximum of 275 bar (3990 psi)
Please check availability in current price and stock-list

Spare Parts, Parts included in delivery

Part No.	...SS	...BS	...BB
JET-CFP1/8BSP 	■	■	■
JET-CBP15 	■	■	■
JET-AD1/8BSP 	■	■	
JET-ADM10 	■		
JET-BBM10 		■	■
JET-BB1/8BSP 		■	■
JET-C1/4-1/8BSP 		■	■
JET-P1/8-5mm 	■	■	■
JET-WM10* 	■	■	■
JET-ORING10X1*/** 	■	■	■

When ordered separately pack of 2, except *Pack of 20.
** Not suitable for use in inducer. Inducer O-rings are shown on product pages. These O-rings are for use with JET-CFP1/8BSP and JET-CBP15.
For assembly instructions, see page 88

Turning – Small diameter boring

Introduction

Seco offers a range of small diameter boring bars to machine holes as small as 0.183 inch diameter. Inserts are available in C and T shape.

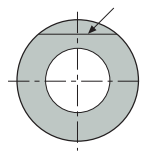
The toolholders are available in steel and have the possibility for internal through coolant.

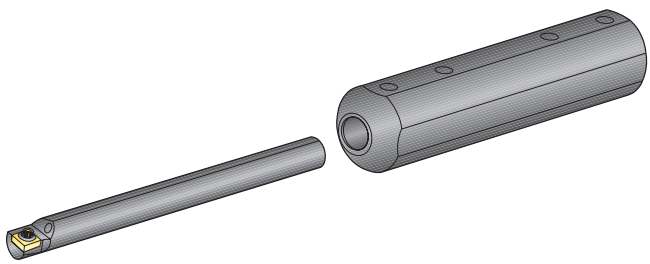
Set-up information

When positioned in the machine the insert will sit slightly above center line. This is a design feature of the tool that compensates for the deflection and improves the machining operation.

When setting the tool in the machine be sure to position it with the flat parallel and in the same plane as the bed of the machine.

Position flat parallel with machine bed





Introduction

Turning – Railway wheels

The product range consists of:

– Inserts for machining of new wheels

– Inserts for railway wheel re-turning (RWRT)

– Cassettes for railway wheel re-turning (RWRT)

Railway machinig inserts and cassettes can be found on pages 585-589.

Machining of new wheels

RCMX-R2, -RR94, -RR97



Strong geometries for machining at high feed rates.

Feed recommendation: 0.024-0.60 in/rev
D.O.C. recommendation: a_p < 0.600 inch

SNMM-R7

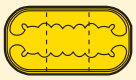


For roughing operations at high feed rates and large depth of cut.

Feed recommendation: 0.024-0.048 in/rev
D.O.C. recommendation: a_p < 0.600 inch

Inserts for railway wheel re-turning (RWRT)

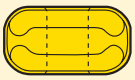
LNMX-MF



For re-machining at small depth of cut. (Normally used when machining with an under floor lathe).

Feed recommendation: 0.016-0.040 in/rev
D.O.C. recommendation: a_p < 0.400 inch

LNMX-MR

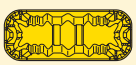


Basic choice for re-machining.

Feed recommendation: 0.024-0.080 in/rev
D.O.C. recommendation: a_p < 0.600 inch

New inserts and geometries for railway wheel re-turning (RWRT)

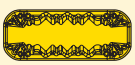
LNMX19-R2



R2 – for less worn out, soft wheels for best chip control.

Feed recommendation: 0.016-0.042 in/rev
D.O.C. recommendation: a_p = 0.080-0.200 inch

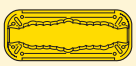
LNMX-RR94



RR94 – for the moderately damaged wheels.

D.O.C. and feed recommendation:
LNMX19, a_p = 0.080-0.200 inch; f = 0.018-0.055 in/rev
LNMX30, a_p = 0.080-0.400 inch; f = 0.022-0.070 in/rev

LNMX-RR97



RR97 – for the highly damaged wheels at high parameters.

D.O.C. and feed recommendation:
LNMX30, a_p = 0.080-0.480 inch; f = 0.030-0.70 in/rev

SNMX-R2



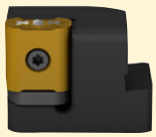
SNMX-R2 inserts can be economically used for less skidded or first time re-turned wheels.

D.O.C. and feed recommendation:
SNMX6710, a_p = 0.080-0.200 inch; f = 0.030-0.070 in/rev

Cassettes for railway wheel re-turning RWRT

Standard products

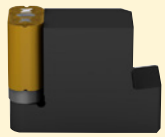
CT-PLANR/L (R/L175.32)



Pin clamped cassettes for LNMX19 and LNMX30

Right-hand version shown

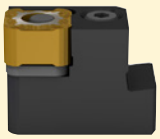
CT-PLFNR/L (R/L177.32-3219-19)



Pin clamped cassettes for LNMX19 and LNMX30

Right-hand version shown

CT-PSANR/L



Lever clamped cassettes for SNMX1911

Right-hand version shown

The cassettes are equipped with carbide shims for insert support and cassette protection.

The toolholders for these cassettes are machine specific. The combination cassettes are also machine specific. Some of them are offered as specials.



Universal insert: LNMX191940-RR94 Tool life = 60 min a_p = 0.310 inch Holder: CT-PLANL3223-19

	TP0500			TP2500			TP200		
	f (in/rev)			f (in/rev)			f (in/rev)		
SMG	0.024	0.035	0.047	0.024	0.035	0.047	0.024	0.035	0.047
P4	560	365	250	435	320	245	375	310	265

Universal insert: LNMX401432-RR93 Tool life = 60 min a_p = 0.200 inch Holder: PLBNR6060V40-A (Metric)

	TP0500			TP2500			TP200		
	f (in/rev)			f (in/rev)			f (in/rev)		
SMG	0.024	0.039	0.059	0.024	0.039	0.059	0.024	0.039	0.059
P8	590	345	205	450	305	210	375	295	240

Universal insert: RCMX320900-R2 Tool life = 60 min a_p = 0.160 inch Holder: PRDCN5050T32 (Metric)

	TP0500			TP2500			TP200		
	f (in/rev)			f (in/rev)			f (in/rev)		
SMG	0.020	0.039	0.059	0.020	0.039	0.059	0.020	0.039	0.059
P4	810	420	250	590	355	250	460	335	270

Universal insert: RCMX250700-RR97 Tool life = 60 min a_p = 0.240 inch Holder: PRDCN4040S25 (Metric)

	TP0500			TP2500			TP200			TP40		
	f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)		
SMG	0.024	0.039	0.059	0.024	0.039	0.059	0.024	0.039	0.059	0.024	0.039	0.059
P4	630	370	210	485	325	225	405	320	255	310	200	135

Universal insert: SNMM856-R7 Tool life = 60 min a_p = 0.100 inch Holder: PSBNR4040S25 (Metric)

	TP0500			TP2500			TP200		
	f (in/rev)			f (in/rev)			f (in/rev)		
SMG	0.024	0.039	0.059	0.024	0.039	0.059	0.024	0.039	0.059
P4	790	510	330	580	405	300	445	360	300

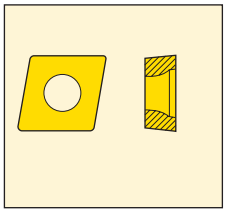
Nomenclature and formulae

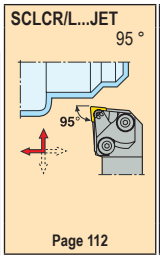
RPM	$n = 3.82 \times \frac{v_c}{D}$	(rev/min)
Cutting speed	$v_c = .262 \times D \times n$	(sf/min)
Metal removal rate	$Q = 12 \times a_p \times f \times v_c$	(in^3/min)
Feed rate	$f_m = f \times n$	(in/min)
Cutting time	$t = \frac{L}{f_m}$	(min)
Horsepower required at spindle	$HP_S = Q \times P$	(hp)
Horsepower required at motor	$HP_m = \frac{Q \times P}{E}$	(hp)
Torque at spindle	$T_S = \frac{63{,}030\ HP_S}{n}$	(in/lbs)
Profile depth	$R_{max} = \frac{f^2 \times 1{,}000{,}000}{8 \times rep}$	(µin)
Surface finish	$R_a = (1/y)^2$ where: $y = \frac{0.001 \times \sqrt{21.6 \times r}}{f}$	(µin)

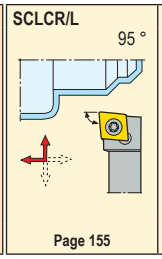
a_p	=	Depth of cut	(inch)
D_c	=	Workpiece diameter	(inch)
E	=	Efficiency of spindle drive	
f	=	Feed rate	(in/rev)
f_m	=	Feed rate	(in/min)
h	=	Chip thickness	(inch)
HP_m	=	Horsepower at motor	(hp)
HP_s	=	Horsepower at spindle	(hp)
L	=	Length of cut	(inch)
n	=	RPM	(rev/min)
P	=	Unit power factor per cubic inch per minute (for P values see page 46)	(hp)
Q	=	Metal removal rate	(in^3/min)
R_a	=	Surface finish (arithmetic average deviation)	(µin)
rep	=	Nose radius	(inch)
r_{max}	=	Profile depth	(µin)
t	=	Cutting time	(min)
T_s	=	Torque at spindle	(in/lbs)
v_c	=	Cutting speed	(sf/min)

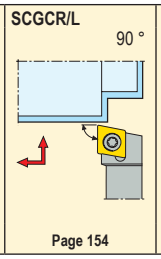
Application overview – Toolholders, external

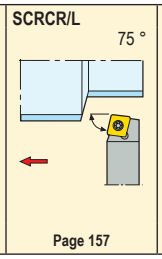
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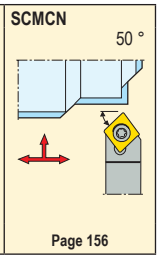




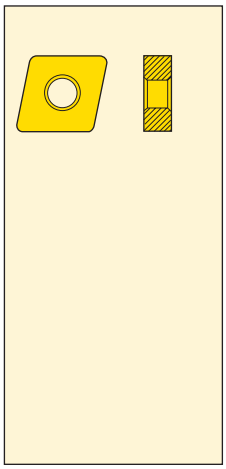


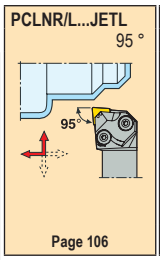


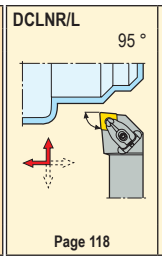


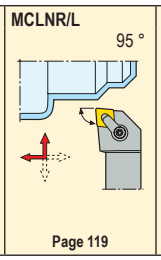


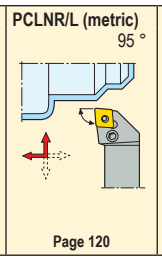
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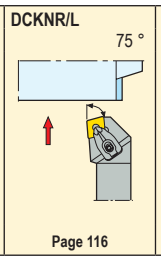


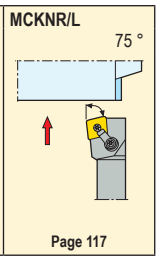


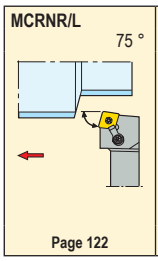


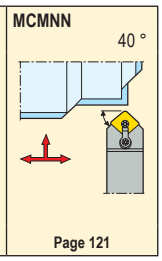




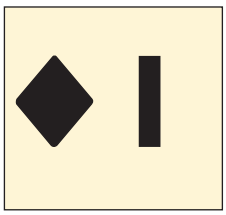


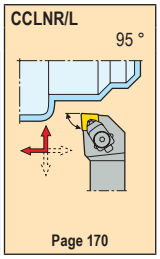




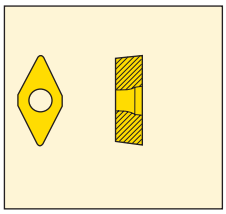


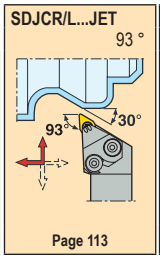
Inserts CN.N

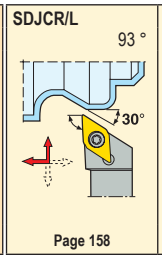


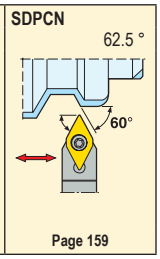


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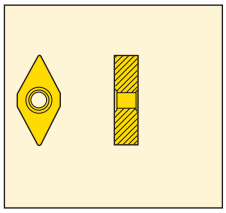


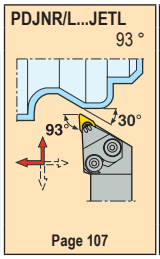


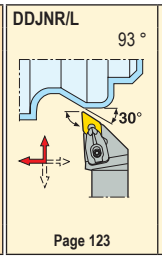


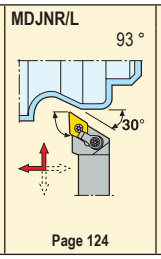


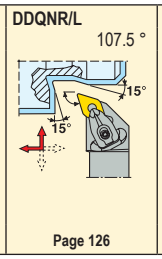
Inserts DN..

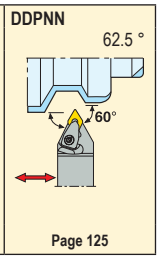






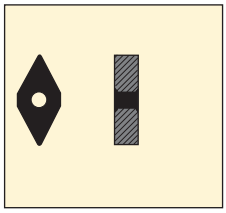


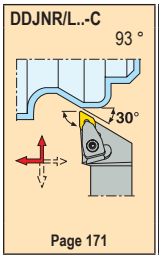




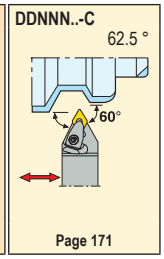
Application overview – Toolholders, external

Inserts DN.A



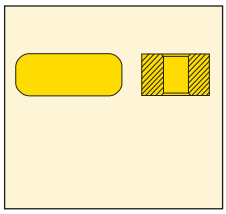


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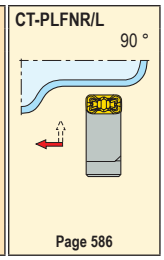
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Inserts LNMX19..



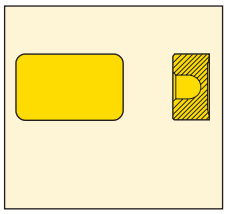


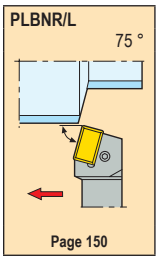
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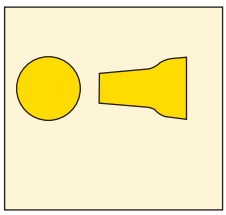
Inserts LN..40/50

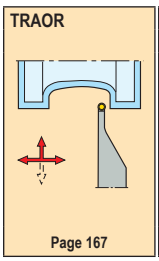




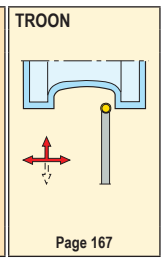
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Inserts RCG.



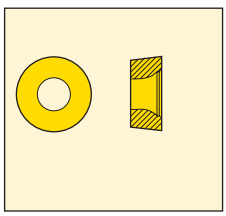


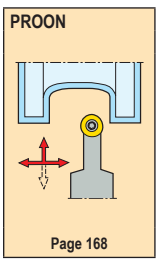
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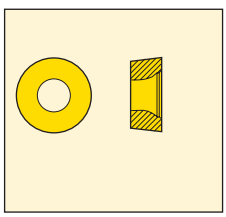
Inserts RCMM

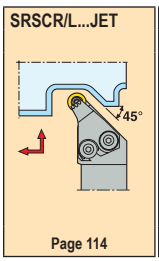




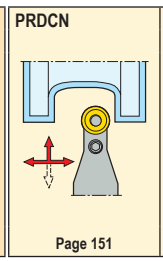
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Inserts RC..

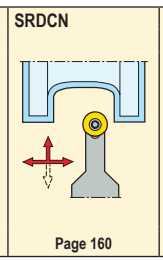




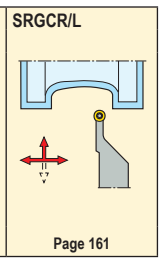
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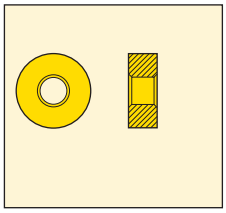
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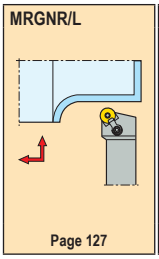


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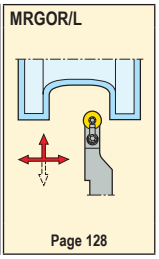
Application overview – Toolholders, external

Inserts RN..



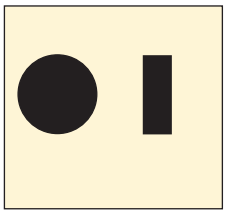


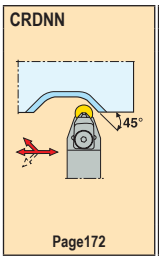
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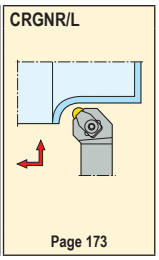
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Inserts RN.N



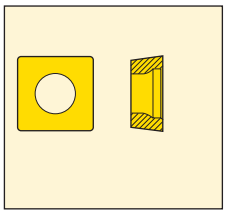


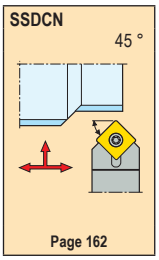
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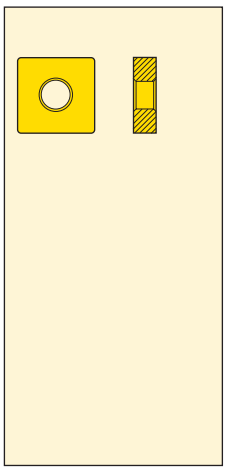
Inserts SC..

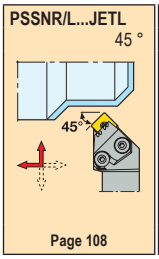




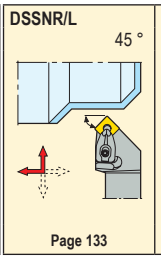
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Inserts SN..

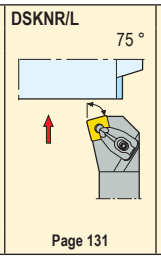




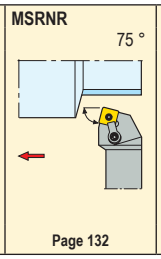
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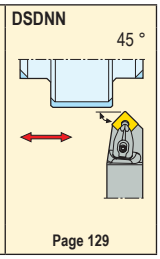
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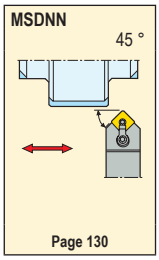
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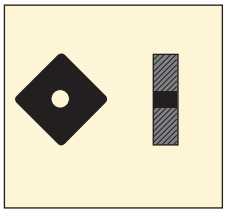


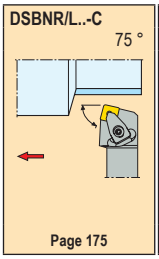
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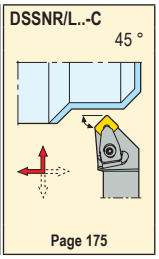
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Inserts SN.A



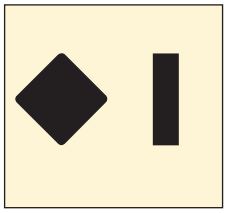


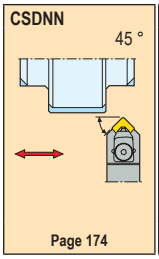
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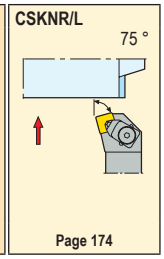


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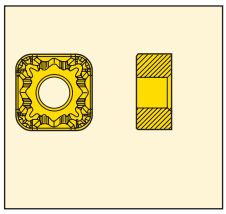
Inserts SN.N

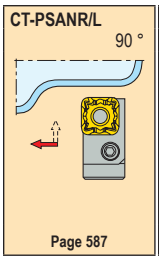


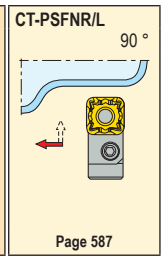




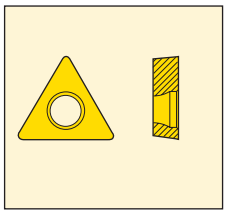
Inserts SNMX6710

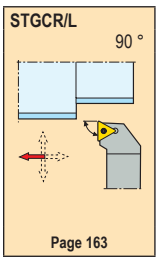




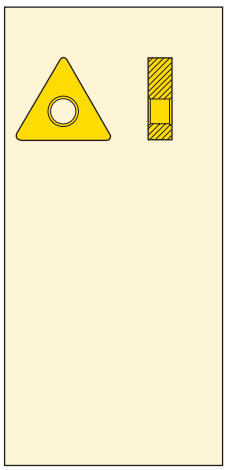


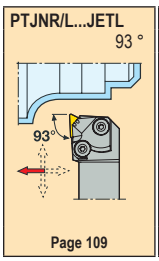
Inserts TC..

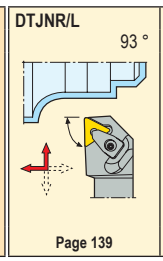


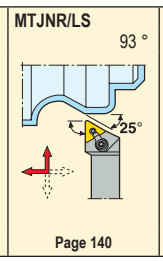


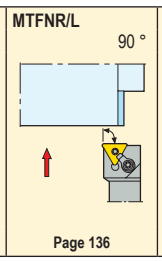
Inserts TN..

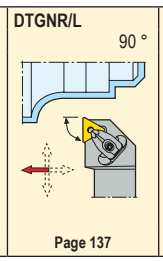


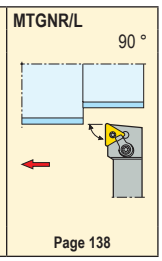


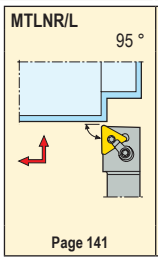


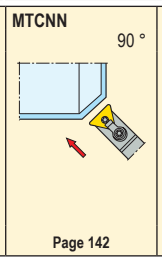


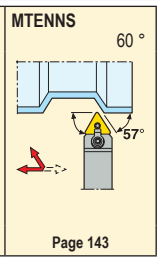




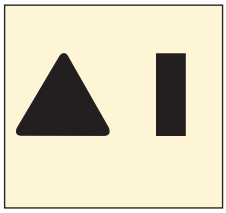


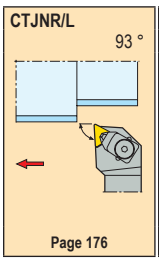


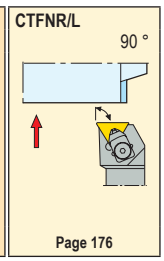




Inserts TN.N

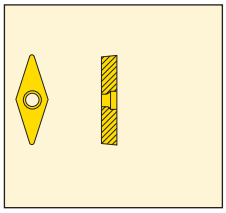


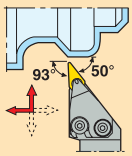




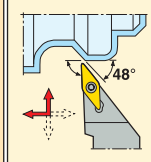
Application overview – Toolholders, external

Inserts VB/VC..

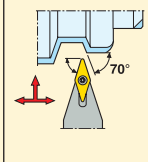




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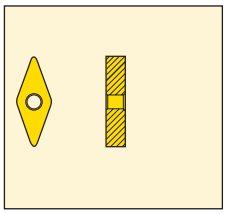


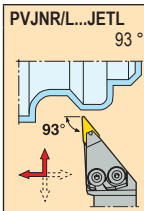
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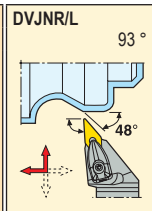
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Inserts VN..

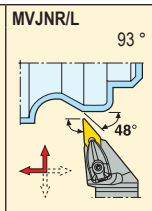




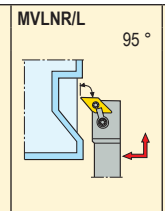
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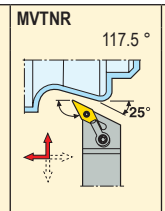
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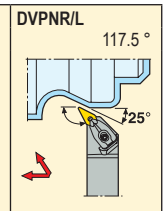
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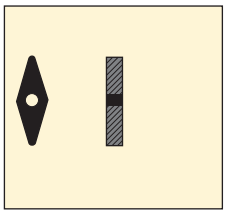


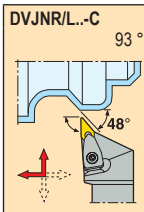
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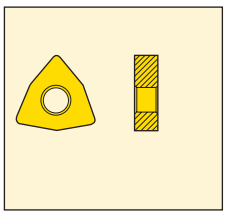
Inserts VN.A

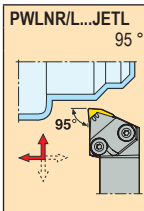




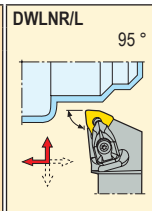
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Inserts WN..

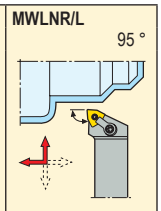




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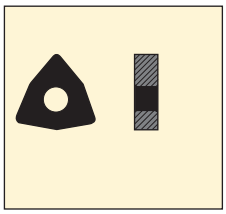


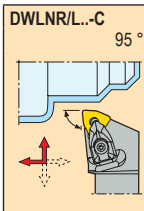
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Inserts WN.A

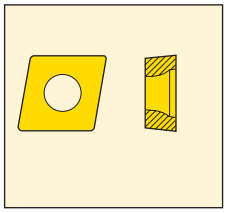


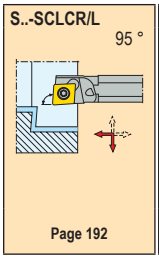


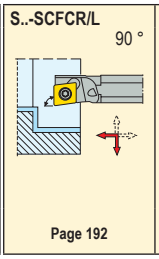
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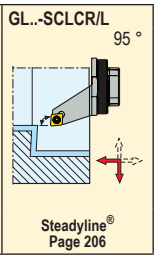
Application overview – Toolholders, internal

Inserts CC..

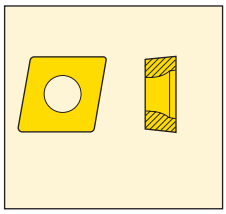


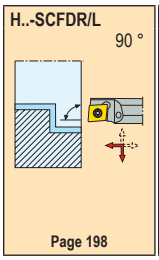


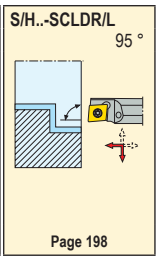




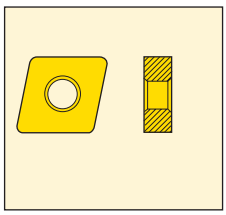
Inserts CD..

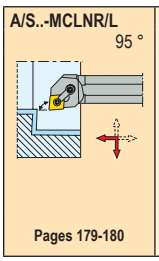


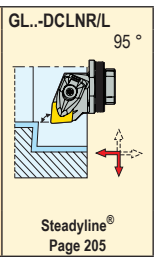




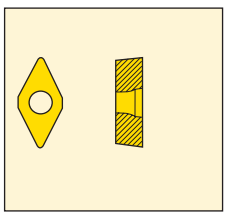
Inserts CN..

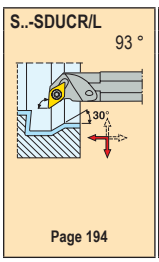


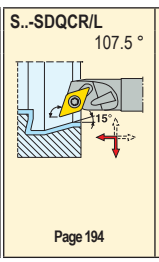


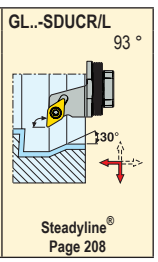


Inserts DC..

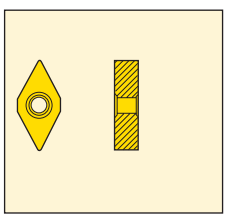


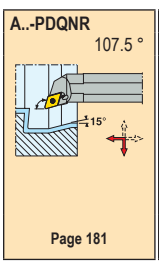


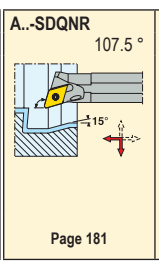


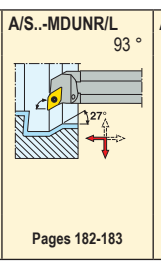


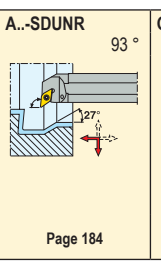
Inserts DN..

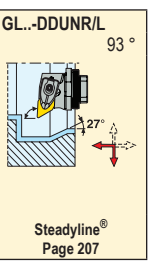




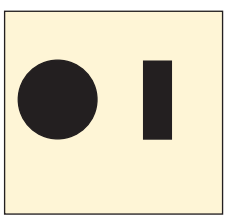


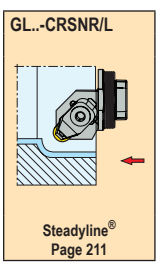






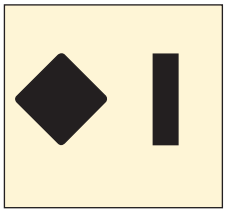
Inserts RN.N



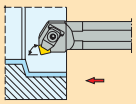


Application overview – Toolholders, internal

Inserts SN.N

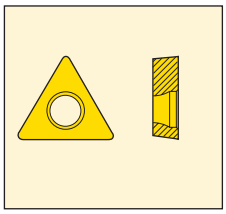


S..-CSKNR/L 75 °

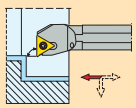


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Inserts TC..

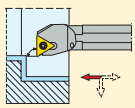


S/E..-STFCR/L 90 °



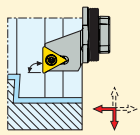
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S..-STUCR/L 93 °



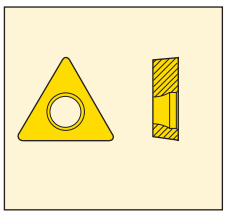
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GL..-STFCR/L 90 °

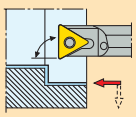


Steadyline®
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Inserts TD..

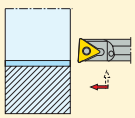


S..-STFDR 90 °



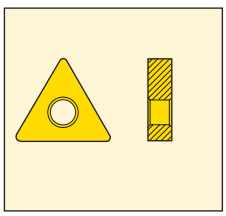
Page 199

S/H..-STLDR 95 °

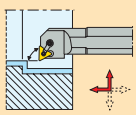


Page 199

Inserts TN..

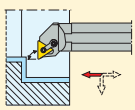


S..-MTUNR/L 93 °



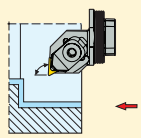
Page 187

A/S..-MTFNR/L 90 °



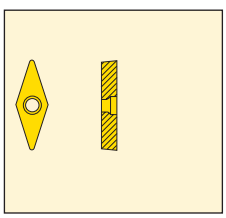
Pages 185-186

GL..-CTUNR/L 93 °

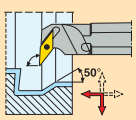


Steadyline®
Page 212

Inserts VB..

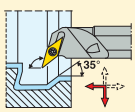


A..-SVUBR/L 93 °



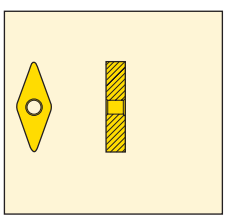
Page 197

A..-SVQBR 107.5 °

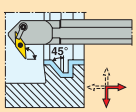


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Inserts VN..

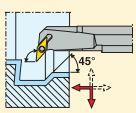


A..-MVLNR/L 95 °



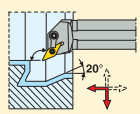
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A..-PVLNR 95 °



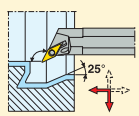
Page 189

A..-MVPNR/L 117.5 °



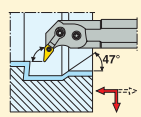
Page 188

A..-PVPNR/L 117.5 °



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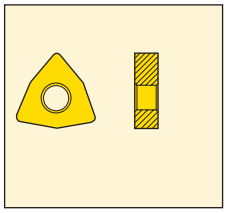
A..-MVUNR/L 93 °

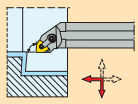


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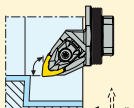
Application overview – Toolholders, internal

Inserts WN..



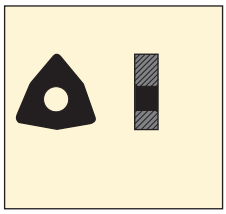


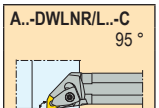
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Steadyline®
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Inserts WN.A

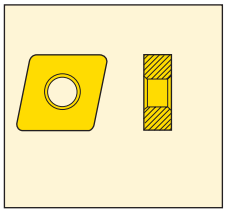




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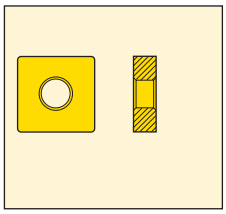
Application overview – Cartridges, Angular mount

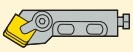
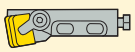
Inserts CN..



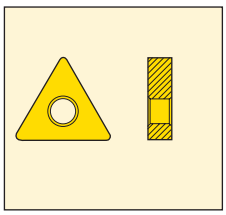
MCFNR/L	MCLNR/L
90 °	95 °
	
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Inserts SN..



MSKNR	MSRNR	MSSNR/L	MSTNR	MSYNR
75 °	75 °	45 °	60 °	85 °
				
Page 220	Page 221	Page 222	Page 223	Page 223

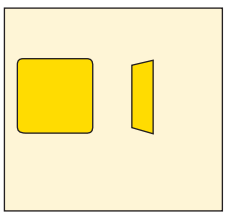
Inserts TN..

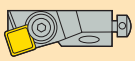


MTFNR/L
90 °

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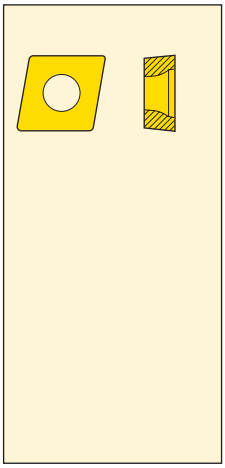
Inserts SP..



CSKPR
75 °

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Application overview – Cartridges, Angular mount

Inserts CC..





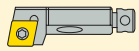
SCFCR/L 90 °

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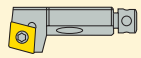
SCLCR/L 95 °

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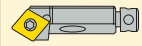
SCGCR/L 90 °

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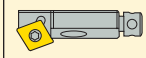
SCRCR/L 75 °

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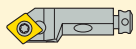
SCTCR/L 60 °

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SCWCR/L 60 °

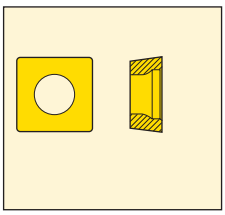
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SCSCR/L 45 °

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Inserts SC..

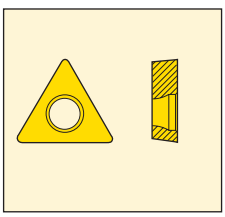




SSKCR/L 75 °

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Inserts TC..





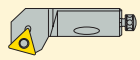
STFCR/L 90 °

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STGCR/L 90 °

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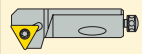
STRCR/L 75 °

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STTCR/L 60 °

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STWCR/L 60 °

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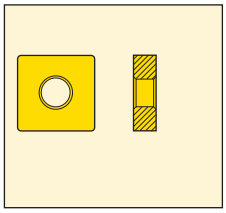


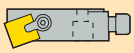
STSCR/L 45 °

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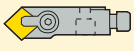
Application overview – Cartridges, 90° mount

Inserts SN..

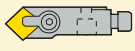




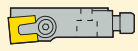
Page 232



Page 232

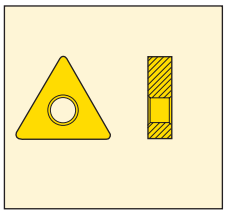


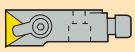
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Inserts TN..

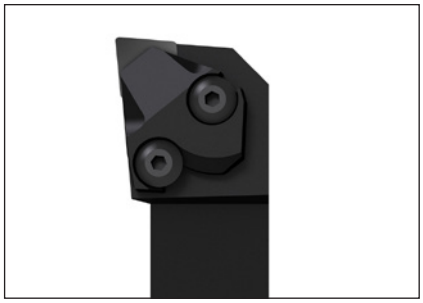




Page 234

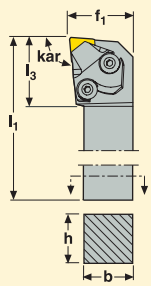
Toolholders for inserts CNGA, CNGP, CNMA, CNMG and CNMM

Jetstream Tooling Duo technology



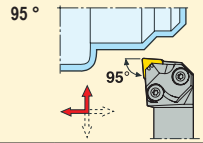
- For insert program, see pages 241-248, 301
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

PCLNR/L...JETL



Right-hand version shown
kar (κ_r) = 95°

PCLNR/L...JETL



I.C.	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	γ_o°	λ_s°	lbs	
1/2	19800	PCLNR -12-4BJETL	0.75	0.75	4.50	1.06	1.38	-6	-6	1.1	CN..43.
	19792	-16-4DJETL	1.00	1.00	6.00	1.26	1.38	-6	-6	1.8	CN..43.
	19883	-20-4DJETL	1.25	1.25	6.00	1.50	1.38	-6	-6	2.9	CN..43.
	19835	PCLNL -12-4BJETL	0.75	0.75	4.50	1.06	1.38	-6	-6	1.1	CN..43.
	19886	-16-4DJETL	1.00	1.00	6.00	1.26	1.38	-6	-6	1.8	CN..43.
	19832	-20-4DJETL	1.25	1.25	6.00	1.50	1.38	-6	-6	2.9	CN..43.

Spare Parts, Parts included in delivery

Accessories*

Toolholder/ Insert dimension	Anvil	Lever	Anvil pin	Punch	Screw	Key	Finishing inducer	Screw	O-ring	Roughing inducer
PCLNR	PCN422	PP4713	RP6757	MP0912	LS0818	3SMS795	CILC12RA-F	117.26-655	ORING-8X1.5	CILC12RA-R
PCLNL	PCN422	PP4713	RP6757	MP0912	LS0818	3SMS795	CILC12LA-F	117.26-655	ORING-8X1.5	CILC12LA-R

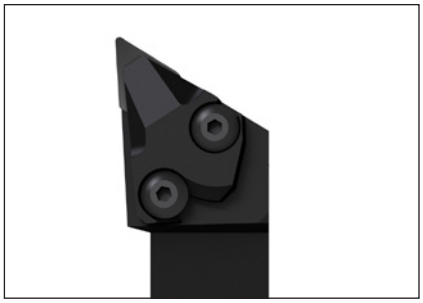
Please check availability in current price and stock-list

*To be ordered separately

For more information on Jetstream Tooling® and accessories, please see pages 86-89

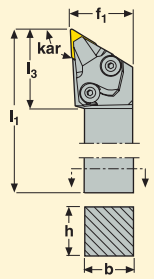
Toolholders for inserts DNGA, DNGP, DNMA, DNMG, DNMM and DNMX

Jetstream Tooling Duo technology



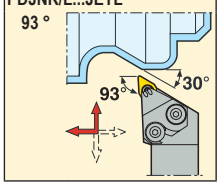
- For insert program, see pages 253-257, 259, 304-305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

PDJNR/L...JETL



Right-hand version shown
kar (κ_r) = 93°

PDJNR/L...JETL 93 °



I.C.	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	γ_o°	λ_s°	lbs	
1/2	19887	PDJNR -12-4BJETL	0.75	0.75	4.50	1.06	1.57	-6	-6	1.1	DN..43.
	19798	-16-4DJETL	1.00	1.00	6.00	1.26	1.61	-6	-6	2.0	DN..43.
	19833	-20-4DJETL	1.25	1.25	6.00	1.50	1.65	-6	-6	2.6	DN..43.
	19894	PDJNL -12-4BJETL	0.75	0.75	4.50	1.06	1.57	-6	-6	1.1	DN..43.
	19888	-16-4DJETL	1.00	1.00	6.00	1.26	1.61	-6	-6	2.0	DN..43.
	19837	-20-4DJETL	1.25	1.25	6.00	1.50	1.65	-6	-6	2.6	DN..43.

Spare Parts, Parts included in delivery

Accessories*

Toolholder/ Insert dimension	Anvil	Lever	Anvil pin	Punch	Screw	Key	Finishing inducer	Screw	O-ring	Roughing inducer
PDJNR	PDN432	PP4716	RP6757	MP0912	LS0822	3SMS795	CILD15RA-F	117.26-655	ORING-8X1.5	CILD15RA-R
PDJNL	PDN432	PP4716	RP6757	MP0912	LS0822	3SMS795	CILD15LA-F	117.26-655	ORING-8X1.5	CILD15LA-R

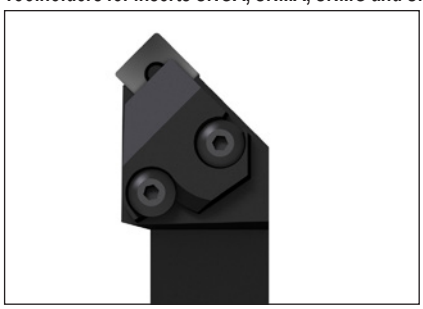
Please check availability in current price and stock-list

*To be ordered separately

For more information on Jetstream Tooling® and accessories, please see pages 86-89

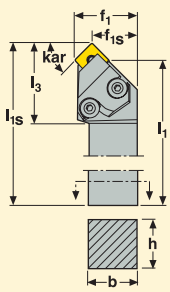
Toolholders for inserts SNGA, SNMA, SNMG and SNMM

Jetstream Tooling Duo technology



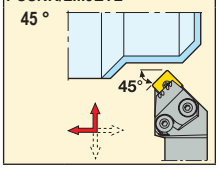
- For insert program, see pages 269-273, 311, 313
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

PSSNR/L...JETL



Right-hand version shown
kar (κ_r) = 45°

PSSNR/L...JETL



I.C.	EDP No.	Part No.	Dimensions in inch h	b	l_1	l_{1s}	f_1	f_{1s}	l_3	γ_o°	λ_s°	lbs	
1/2	19975	PSSNR -12-4BJETL	0.75	0.75	4.50	4.83	1.06	0.74	1.55	-8	0	1.1	SN..43.
	76096	-16-4DJETL	1.00	1.00	6.00	6.41	1.26	0.94	1.59	-8	0	2.0	SN..43.
	19940	-20-4DJETL	1.25	1.25	6.00	6.41	1.50	1.17	1.63	-8	0	2.9	SN..43.
	76101	PSSNL -12-4BJETL	0.75	0.75	4.50	4.83	1.06	0.74	1.55	-8	0	1.1	SN..43.
	76099	-16-4DJETL	1.00	1.00	6.00	6.41	1.26	0.94	1.59	-8	0	2.0	SN..43.
	19966	-20-4DJETL	1.25	1.25	6.00	6.41	1.50	1.17	1.63	-8	0	2.9	SN..43.

Spare Parts, Parts included in delivery

Accessories*

Toolholder/ Insert dimension	Anvil	Lever	Anvil pin	Punch	Screw	Key	Finishing inducer	Screw	O-ring	Roughing inducer
PSSNR	PSN423	PP4713	RP6757	MP0912	LS0818	3SMS795	CILS12RA-F	117.26-655	ORING-6.07X1.78	CILS12RA-R
PSSNL	PSN423	PP4713	RP6757	MP0912	LS0818	3SMS795	CILS12LA-F	117.26-655	ORING-6.07X1.78	CILS12LA-R

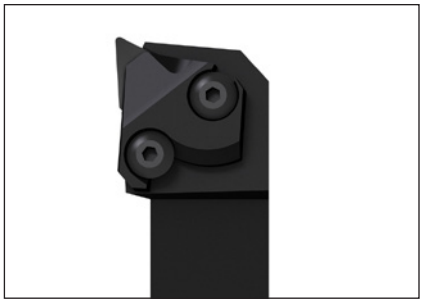
Please check availability in current price and stock-list

*To be ordered separately

For more information on Jetstream Tooling® and accessories, please see pages 86-89

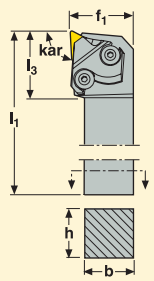
Toolholders for inserts TNGA, TNMA, TNMG, TNMM and TNMX

Jetstream Tooling Duo technology



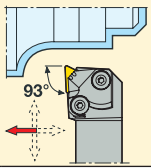
- For insert program, see pages 282-287, 317
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

PTJNR/L...JETL



Right-hand version shown
kar (κ_r) = 93°

PTJNR/L...JETL
93 °



I.C.	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	γ_o°	λ_s°	lbs	
3/8	76102	PTJNR -12-3BJETL	0.75	0.75	4.50	1.07	1.54	-6	-6	1.1	TN..33.
	19934	-16-3DJETL	1.00	1.00	6.00	1.27	1.54	-6	-6	1.8	TN..33.
	76098	-20-3DJETL	1.25	1.25	6.00	1.50	1.61	-6	-6	2.6	TN..33.
	76095	PTJNL -12-3BJETL	0.75	0.75	4.50	1.07	1.54	-6	-6	1.1	TN..33.
	19937	-16-3DJETL	1.00	1.00	6.00	1.27	1.54	-6	-6	1.8	TN..33.
	70347	-20-3DJETL	1.25	1.25	6.00	1.50	1.61	-6	-6	2.6	TN..33.

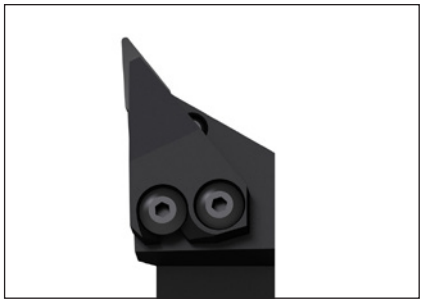
Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Anvil	Lever	Anvil pin	Punch	Screw	Key	Finishing inducer	Screw	Key	O-ring
PTJNR	PTN31.52	PP3612	RP5152	MP0912	LS0616	2.5SMS795	CILT16RA-F	117.26-655	3SMS795	ORING-8X1.5
PTJNL	PTN31.52	PP3612	RP5152	MP0912	LS0616	2.5SMS795	CILT16LA-F	117.26-655	3SMS795	ORING-8X1.5

Please check availability in current price and stock-list

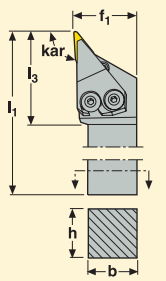
For more information on Jetstream Tooling® and accessories, please see pages 86-89

Toolholders for inserts VNGA, VNGP and VNMG



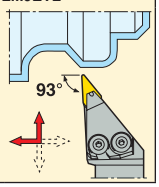
- For insert program, see pages 292-293, 324
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

PVJNR/L...JETL



Right-hand version shown
kar (κ_r) = 93°

PVJNR/L...JETL
93 °



I.C.	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	γ_o°	λ_s°	lbs	
3/8	76104	PVJNR -12-3BJETL	0.75	0.75	4.50	1.07	1.85	-5	-14	0.9	VN..33.
	19932	-16-3DJETL	1.00	1.00	6.00	1.27	1.85	-5	-14	1.8	VN..33.
	19938	-20-3DJETL	1.25	1.25	6.00	1.50	1.85	-5	-14	2.6	VN..33.
	19933	PVJNL -12-3BJETL	0.75	0.75	4.50	1.07	1.85	-5	-14	0.9	VN..33.
	76103	-16-3DJETL	1.00	1.00	6.00	1.27	1.85	-5	-14	1.8	VN..33.
	76100	-20-3DJETL	1.25	1.25	6.00	1.50	1.85	-5	-14	2.6	VN..33.

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Anvil	Lever	Anvil pin	Punch	Screw	Key	Finishing inducer	Screw	Key	O-ring
PVJNR	PVN321	PP3512	RP5153	MP0912	LS0616	2.5SMS795	CILV16RC-F	117.26-655	3SMS795	ORING-6.07X1.78
PVJNL	PVN321	PP3512	RP5153	MP0912	LS0616	2.5SMS795	CILV16LC-F	117.26-655	3SMS795	ORING-6.07X1.78

Please check availability in current price and stock-list

For more information on Jetstream Tooling® and accessories, please see pages 86-89

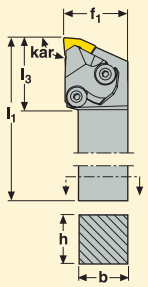
Toolholders for inserts WNGA, WNMA, WNMG and WNMM

Jetstream Tooling Duo technology



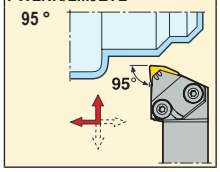
- For insert program, see pages 296-299, 326-327
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

PWLNR/L...JETL



Right-hand version shown
kar (κ_r) = 95°

PWLNR/L...JETL



I.C.	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	γ_o°	λ_s°	lbs	
3/8	19842	PWLNR -12-3BJETL	0.75	0.75	4.50	1.06	1.50	-6	-6	1.1	WN..33.
	19884	-16-3DJETL	1.00	1.00	6.00	1.26	1.50	-6	-6	2.0	WN..33.
	19836	PWLNL -12-3BJETL	0.75	0.75	4.50	1.06	1.50	-6	-6	1.1	WN..33.
	19877	-16-3DJETL	1.00	1.00	6.00	1.26	1.50	-6	-6	2.0	WN..33.
1/2	19885	PWLNR -12-4BJETL	0.75	0.75	4.50	1.06	1.42	-6	-6	1.1	WN..43.
	19831	-16-4DJETL	1.00	1.00	6.00	1.26	1.42	-6	-6	1.8	WN..43.
	19902	-20-4DJETL	1.25	1.25	6.00	1.50	1.46	-6	-6	2.9	WN..43.
	19897	PWLNL -12-4BJETL	0.75	0.75	4.50	1.06	1.42	-6	-6	1.1	WN..43.
	19830	-16-4DJETL	1.00	1.00	6.00	1.26	1.42	-6	-6	1.8	WN..43.
	19922	-20-4DJETL	1.25	1.25	6.00	1.50	1.46	-6	-6	2.9	WN..43.

Spare Parts, Parts included in delivery

Accessories*

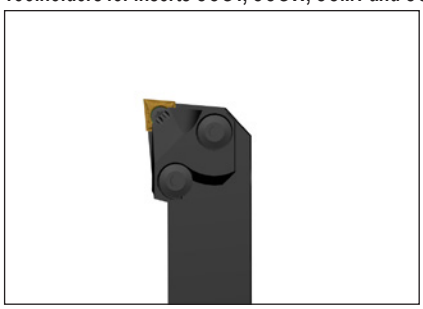
Toolholder/ Insert dimension	Anvil	Lever	Anvil pin	Punch	Screw	Key	Finishing inducer	Screw	Key	O-ring	Roughing inducer
PWLNR-06	PWN323	PP3612	RP5152	MP0912	LS0616	2.5SMS795	CILW08RA-F	117.26-655	3SMS795	ORING-8X1.5	CILW08RA-R
PWLNL-06	PWN323	PP3612	RP5152	MP0912	LS0616	2.5SMS795	CILW08LA-F	117.26-655	3SMS795	ORING-8X1.5	CILW08LA-R
PWLNR-08	PWN423	PP4713	RP6757	MP0912	LS0818	3SMS795	CILW08RA-F	117.26-655	3SMS795	ORING-8X1.5	CILW08RA-R
PWLNL-08	PWN423	PP4713	RP6757	MP0912	LS0818	3SMS795	CILW08LA-F	117.26-655	3SMS795	ORING-8X1.5	CILW08LA-R

Please check availability in current price and stock-list

*To be ordered separately

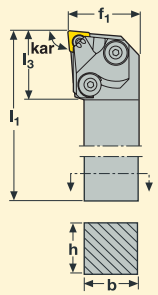
For more information on Jetstream Tooling® and accessories, please see pages 86-89

Toolholders for inserts CCGT, CCGW, CCMT and CCMW



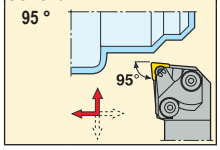
- For insert program, see pages 236, 238-240, 300, 328
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

SCLCR/L....JET/JETB



Right-hand version shown
kar (κ_r) = 95°

SCLCR/L
95 °



I.C.	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	γ_o°	λ_s°	lbs	
3/8	37848	SCLCR -12-3JET	0.75	0.75	4.5	1.09	1.2	0	0	1.01	CC..32.5.
	37852	-16-3JET	1.00	1.00	6.0	1.27	1.2	0	0	1.94	CC..32.5.
	37856	-20-3JET	1.25	1.25	6.0	1.50	1.2	0	0	2.78	CC..32.5.
	37849	SCLCL -12-3JET	0.75	0.75	4.5	1.09	1.2	0	0	1.01	CC..32.5.
	37853	-16-3JET	1.00	1.00	6.0	1.27	1.2	0	0	1.94	CC..32.5.
	37857	-20-3JET	1.25	1.25	6.0	1.50	1.2	0	0	2.78	CC..32.5.
1/2	37850	SCLCR -12-4JET	0.75	0.75	4.5	1.09	1.2	0	0	1.04	CC..43.
	37854	-16-4JET	1.00	1.00	6.0	1.27	1.2	0	0	1.81	CC..43.
	37858	-20-4JET	1.25	1.25	6.0	1.50	1.2	0	0	2.87	CC..43.
	37851	SCLCL -12-4JET	0.75	0.75	4.5	1.09	1.2	0	0	1.04	CC..43.
	37855	-16-4JET	1.00	1.00	6.0	1.27	1.2	0	0	1.81	CC..43.
	37859	-20-4JET	1.25	1.25	6.0	1.50	1.2	0	0	2.87	CC..43.

Spare Parts, Parts included in delivery

Accessories*

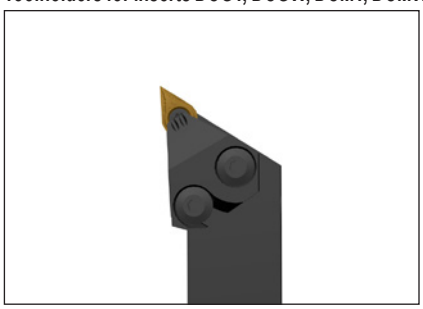
For size	Inducer kit	Inducer screw	Insert/inducer key	Insert screw	Insert shim	O-ring	Plug	Shim screw	Shim key
..R-3JET	JET-CIKC12RA-KIT	117.26-655	3SMS795/T15P	C04008-T15P	–	ORING-8X1.5	JET-P1/8-5MM	–	–
..L-3JET	JET-CIKC12LA-KIT	117.26-655	3SMS795/T15P	C04008-T15P	–	ORING-8X1.5	JET-P1/8-5MM	–	–
..12R-4JET	JET-CIKC12RA-KIT	117.26-655	3SMS795/T15P	C05012-T15P	123.19-621	ORING-8X1.5	JET-P1/8-5MM	CA5008	5SMS795
..16R-4JET	JET-CIKC12RB-KIT	117.26-655	3SMS795/T15P	C05012-T15P	123.19-621	ORING-8X1.5	JET-P1/8-5MM	CA5008	5SMS795
..20R-4JET	JET-CIKC12RB-KIT	117.26-655	3SMS795/T15P	C05012-T15P	123.19-621	ORING-8X1.5	JET-P1/8-5MM	CA5008	5SMS795
..12L-4JET	JET-CIKC12LA-KIT	117.26-655	3SMS795/T15P	C05012-T15P	123.19-621	ORING-8X1.5	JET-P1/8-5MM	CA5008	5SMS795
..16L-4JET	JET-CIKC12LB-KIT	117.26-655	3SMS795/T15P	C05012-T15P	123.19-621	ORING-8X1.5	JET-P1/8-5MM	CA5008	5SMS795
..20L-4JET	JET-CIKC12LB-KIT	117.26-655	3SMS795/T15P	C05012-T15P	123.19-621	ORING-8X1.5	JET-P1/8-5MM	CA5008	5SMS795

Please check availability in current price and stock-list

*To be ordered separately

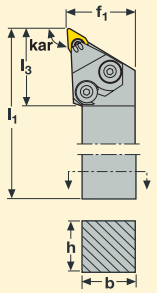
For more information on Jetstream Tooling® and accessories, please see pages 86-89

Toolholders for inserts DCGT, DCGW, DCMT, DCMW and DCMX

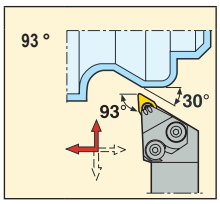


- For insert program, see pages 250-253, 303, 329
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

SDJCR/L...JET/JETB



Right-hand version shown
kar (κ_r) = 93°



I.C.	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	γ_o°	λ_s°	lbs	
3/8	37860	SDJCR -12-3JET	0.75	0.75	4.5	1.05	1.5	0	0	0.84	DC..32.5.
	37862	-16-3JET	1.00	1.00	6.0	1.27	1.5	0	0	1.76	DC..32.5.
	37864	-20-3JET	1.25	1.25	6.0	1.50	1.5	0	0	2.50	DC..32.5.
	37861	SDJCL -12-3JET	0.75	0.75	4.5	1.05	1.5	0	0	0.84	DC..32.5.
	37863	-16-3JET	1.00	1.00	6.0	1.27	1.5	0	0	1.76	DC..32.5.
	37865	-20-3JET	1.25	1.25	6.0	1.50	1.5	0	0	2.50	DC..32.5.

Spare Parts, Parts included in delivery

Accessories*

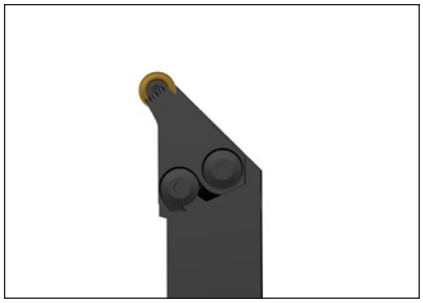
For size	Inducer kit	Inducer screw	Insert/inducer key	Insert screw	Insert shim	O-ring	Plug	Shim screw	Shim key
..L-3JET	JET-CIKD11LA-KIT	117.26-655	3SMS795/T15P	C03510-T15P	126.19-620	ORING-6.07X1.78	JET-P1/8-5MM	CA3510	9/64SMS875
..R-3JET	JET-CIKD11RA-KIT	117.26-655	3SMS795/T15P	C03510-T15P	126.19-620	ORING-6.07X1.78	JET-P1/8-5MM	CA3510	9/64SMS875

Please check availability in current price and stock-list

*To be ordered separately

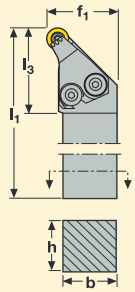
For more information on Jetstream Tooling® and accessories, please see pages 86-89

Toolholders for inserts RCMT

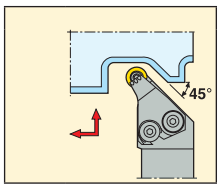


- For insert program, see pages 264
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

SRSCR/L...JET



Right-hand version shown



I.C.	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	γ_o°	λ_s°	lbs	
0.393 (10mm)	37866	SRSCR -12-10JET	0.75	0.75	4.5	1.12	1.6	0	0	0.93	RC.T10T3..
	37870	-16-10JET	1.00	1.00	6.0	1.27	1.6	0	0	1.76	RC.T10T3..
	37874	-20-10JET	1.25	1.25	6.0	1.50	1.6	0	0	2.65	RC.T10T3..
	37867	SRSCL -12-10JET	0.75	0.75	4.5	1.12	1.5	0	0	0.93	RC.T10T3..
	37871	-16-10JET	1.00	1.00	6.0	1.27	1.5	0	0	1.76	RC.T10T3..
	37875	-20-10JET	1.25	1.25	6.0	1.50	1.5	0	0	2.65	RC.T10T3..
0.472 (12mm)	37868	SRSCR -12-12JET	0.75	0.75	4.5	1.16	1.6	0	0	0.97	RC.T1204..
	37872	-16-12JET	1.00	1.00	6.0	1.27	1.6	0	0	1.72	RC.T1204..
	37876	-20-12JET	1.25	1.25	6.0	1.50	1.6	0	0	2.60	RC.T1204..
	37869	SRSCL -12-12JET	0.75	0.75	4.5	1.16	1.5	0	0	0.97	RC.T1204..
	37873	-16-12JET	1.00	1.00	6.0	1.27	1.5	0	0	1.72	RC.T1204..
	37877	-20-12JET	1.25	1.25	6.0	1.50	1.5	0	0	2.60	RC.T1204..

Spare Parts, Parts included in delivery

Accessories*

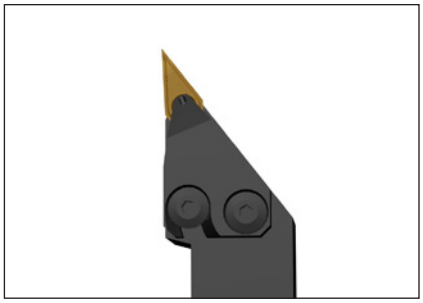
For size	Inducer kit	Inducer screw	Insert/inducer key	Insert screw	Insert shim	O-ring	Plug	Shim screw	Shim key
..R-10JET	JET-CIKR00RA-KIT	117.26-655	3SMS795/T15P	C03510-T15P	111.19-620	ORING-6.07X1.78	JET-P1/8-5MM	CA3510	9/64SMS875
..L-10JET	JET-CIKR00LA-KIT	117.26-655	3SMS795/T15P	C03510-T15P	111.19-620	ORING-6.07X1.78	JET-P1/8-5MM	CA3510	9/64SMS875
..R-12JET	JET-CIKR00RA-KIT	117.26-655	3SMS795/T15P	C03510-T15P	111.19-621	ORING-6.07X1.78	JET-P1/8-5MM	CA3510	9/64SMS875
..L-12JET	JET-CIKR00LA-KIT	117.26-655	3SMS795/T15P	C03510-T15P	111.19-621	ORING-6.07X1.78	JET-P1/8-5MM	CA3510	9/64SMS875

Please check availability in current price and stock-list

*To be ordered separately

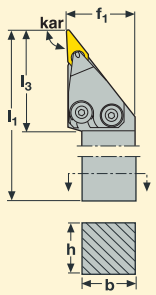
For more information on Jetstream Tooling® and accessories, please see pages 86-89

Toolholders for inserts VBMT, VBGT, VBGW, VBMW and VCGT

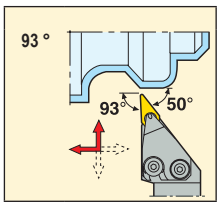


- For insert program, see pages 289-291, 323, 331
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

SVJBR/L...JET



Right-hand version shown
kar (κ_r) = 93°



I.C.	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	γ_o°	λ_s°	lbs	
3/8	37882	SVJBR -12-3JET	0.75	0.75	4.5	1.06	1.9	0	0	0.93	VB../VC..33.
	37878	-16-3JET	1.00	1.00	6.0	1.27	1.9	0	0	1.68	VB../VC..33.
	37880	-20-3JET	1.25	1.25	6.0	1.50	1.9	0	0	2.51	VB../VC..33.
	37883	SVJBL -12-3JET	0.75	0.75	4.5	1.06	1.9	0	0	0.93	VB../VC..33.
	37879	-16-3JET	1.00	1.00	6.0	1.27	1.9	0	0	1.68	VB../VC..33.
	37881	-20-3JET	1.25	1.25	6.0	1.50	1.9	0	0	2.51	VB../VC..33.

Spare Parts, Parts included in delivery

Accessories*

For size	Inducer kit	Inducer screw	Insert/inducer key	Insert screw	Insert shim	O-ring	Plug	Shim screw	Shim key
..R-3JET	JET-CIKV16RA-KIT	117.26-655	3SMS795/T15P	C03512-T15P	171.19-620	ORING-6.07X1.78	JET-P1/8-5MM	CA3510	9/64SMS875
..L-3JET	JET-CIKV16LA-KIT	117.26-655	3SMS795/T15P	C03512-T15P	171.19-620	ORING-6.07X1.78	JET-P1/8-5MM	CA3510	9/64SMS875

Please check availability in current price and stock-list

*To be ordered separately

For more information on Jetstream Tooling® and accessories, please see pages 86-89

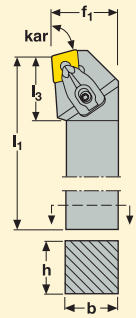
Toolholders for inserts CNGA, CNGP, CNMA, CNMG, CNMM and CNMP

D style first choice



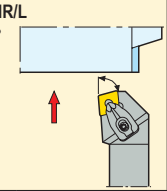
- For insert program, see pages 241-248, 301
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DCKNR/L



Right-hand version shown
kar (κ_r) = 75°

DCKNR/L
75 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/2	31081	DCKNR -16-4D	1.00	1.00	1.25	6.0	1.30	-6	-6	2.0	CN..43.
	31082	-20-4D	1.25	1.25	1.50	6.0	1.30	-6	-6	2.9	CN..43.
	31086	DCKNL -16-4D	1.00	1.00	1.25	6.0	1.30	-6	-6	2.0	CN..43.
	31087	-20-4D	1.25	1.25	1.50	6.0	1.30	-6	-6	2.9	CN..43.
5/8	31088	DCKNR -16-5D	1.00	1.00	1.25	6.0	1.54	-6	-6	2.0	CN..54.
	31089	-20-5D	1.25	1.25	1.50	6.0	1.54	-6	-6	2.9	CN..54.
	31090	DCKNL -16-5D	1.00	1.00	1.25	6.0	1.65	-6	-6	2.0	CN..54.
	31091	-20-5D	1.25	1.25	1.50	6.0	1.54	-6	-6	2.9	CN..54.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-4	FP2012	L85021-T15P	CD12-S	DCN444	T15P-7	C04008-T15P	S6912
..-5	FP2012	L86026-T20P	CD16-S	DCN544	T20P-7L	C05010-T20P	S7010

Accessories*

Clamp kit
CD12-S12
CD16-S16

Please check availability in current price and stock-list

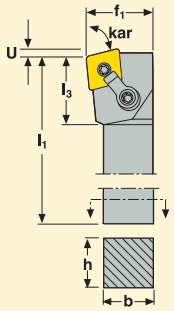
*Ordered separately

Toolholders for inserts CNGA, CNGP, CNMA, CNMG, CNMM and CNMP

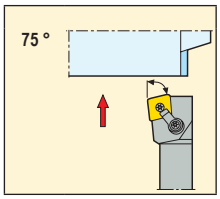


- For insert program, see pages 241-248, 301
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MCKNR/L



Right-hand version shown
kar (κ_r) = 75°



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch						γ_o°	λ_s°	lbs	
			h	b	f_1	l_1	l_3	U				
3/4	12996	MCKNR -20-6D	1.25	1.25	1.50	6.02	1.50	0.184	-6	-6	2.9	CN..64.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-6	CL-12	XNS-510	NL-68	CSN-633

Accessories*

Insert shim	Shim screw
CSN-642	S-68

Please check availability in current price and stock-list

*Ordered separately
*Anvil CSN-642 for insert CN..63. ordered separately

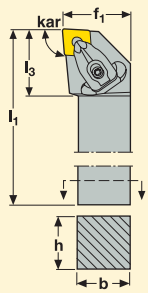
Toolholders for inserts CNGA, CNGP, CNMA, CNMG, CNMM and CNMP

D style first choice



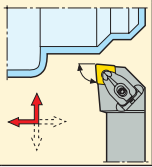
- For insert program, see pages 241-248, 301
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DCLNR/L



Right-hand version shown
kar (κ_r) = 95°

DCLNR/L 95 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/2	31003	DCLNR -12-4B	0.75	0.75	1.00	4.5	1.30	-6	-6	0.9	CN..43.
	32303	-16-4D	1.00	1.00	1.25	6.0	1.30	-6	-6	2.0	CN..43.
	34513	-20-4D	1.25	1.25	1.50	6.0	1.30	-6	-6	2.9	CN..43.
	31060	-24-4D	1.50	1.50	2.00	6.0	1.30	-6	-6	4.2	CN..43.
	31061	DCLNL -12-4B	0.75	0.75	1.00	4.5	1.30	-6	-6	0.9	CN..43.
	32304	-16-4D	1.00	1.00	1.25	6.0	1.30	-6	-6	2.0	CN..43.
	31064	-20-4D	1.25	1.25	1.50	6.0	1.30	-6	-6	2.9	CN..43.
	31065	-24-4D	1.50	1.50	2.00	6.0	1.30	-6	-6	4.2	CN..43.
5/8	31066	DCLNR -16-5D	1.00	1.00	1.25	6.0	1.65	-6	-6	2.0	CN..54.
	31067	-20-5D	1.25	1.25	1.50	6.0	1.57	-6	-6	2.9	CN..54.
	31069	DCLNL -16-5D	1.00	1.00	1.25	6.0	1.65	-6	-6	2.0	CN..54.
	31070	-20-5D	1.25	1.25	1.50	6.0	1.57	-6	-6	2.9	CN..54.
3/4	31074	DCLNR -20-6D	1.25	1.25	1.50	6.0	1.34	-6	-6	2.9	CN..64.
	31075	-24-6D	1.50	1.50	2.00	6.0	1.65	-6	-6	4.0	CN..64.
	31077	DCLNL -20-6D	1.25	1.25	1.50	6.0	1.34	-6	-6	2.9	CN..64.
	31078	-24-6D	1.50	1.50	2.00	6.0	1.65	-6	-6	4.0	CN..64.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-4	FP2012	L85021-T15P	CD12-S	DCN444	T15P-7	C04008-T15P	S6912
..-5	FP2012	L86026-T20P	CD16-S	DCN544	T20P-7L	C05010-T20P	S7010
..-6	FP2012	L86026-T20P	CD19-S	DCN634	T20P-7L	C05010-T20P	S7010

Accessories*

Clamp kit
CD12-S12
CD16-S16
CD19-S19

Please check availability in current price and stock-list

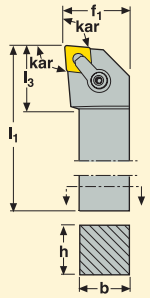
*Ordered separately

Toolholders for inserts CNGA, CNGN, CNGP, CNMA, CNMG, CNMM and CNMP



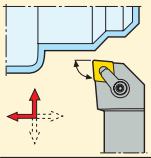
- For insert program, see pages 241-248, 301
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MCLNR/L



Right-hand version shown
kar (κ_r) = 95°

MCLNR/L
95 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/2	12658	MCLNR -16-4C	1.00	1.00	1.25	6.0	1.20	-6	-6	1.5	CN..43.
	12678	-24-4D	1.50	1.50	2.00	6.0	1.20	-6	-6	4.0	CN..43.
	12657	MCLNL -12-4B	0.75	0.75	1.00	4.5	1.20	-6	-6	0.9	CN..43.
5/8	13013	MCLNR -16-5D	1.00	1.00	1.25	6.0	1.20	-6	-6	1.8	CN..54.
	12673	-20-5D	1.25	1.25	1.50	6.0	1.37	-6	-6	2.9	CN..54.
	13002	MCLNL -16-5D	1.00	1.00	1.25	6.0	1.20	-6	-6	1.8	CN..54.
	12674	-20-5D	1.25	1.25	1.50	6.0	1.37	-6	-6	2.9	CN..54.
3/4	12668	MCLNR -16-6D	1.00	1.00	1.25	6.0	1.20	-6	-6	2.0	CN..64.
	12676	-20-6D	1.25	1.25	1.50	6.0	1.46	-6	-6	2.9	CN..64.
	12669	MCLNL -16-6D	1.00	1.00	1.25	6.0	1.20	-6	-6	2.0	CN..64.
	12677	-20-6D	1.25	1.25	1.50	6.0	1.46	-6	-6	2.9	CN..64.
	13003	-24-6E	1.50	1.50	2.00	7.0	1.49	-6	-6	4.9	CN..64.
1	13016	MCLNR -24-8E	1.50	1.50	2.00	7.0	1.49	-6	-6	5.1	CN..86.
	13004	MCLNL -24-8E	1.50	1.50	2.00	7.0	1.49	-6	-6	5.1	CN..86.

Spare Parts, Parts included in delivery

Accessories*

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim	Shim screw
..-4	CL-20	XNS-48	NL-46	CSN-433	S-46
..-5	CL-12	XNS-510	NL-58	CSN-533	S-58
..-6	CL-12	XNS-510	NL-68	CSN-633	S-68
..-8	CL-24	XNS610	NL-810	CSN-846	S-810

Please check availability in current price and stock-list

*Ordered separately

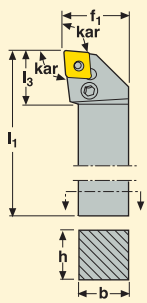
Toolholders for inserts CNMG and CNMM

Metric holders



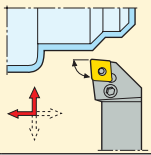
- For insert program, see pages 246
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

PCLNR/L



Right-hand version shown
kar (κ_r) = 95°

PCLNR/L
95 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in mm h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1.0	70235	PCLNR 4040S25	40	40	50	250	48	-6	-6	6.8	CN..86.
	70236	PCLNL 4040S25	40	40	50	250	48	-6	-6	6.8	CN..86.

Spare Parts, Parts included in delivery

For size	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
..25	PP1325	PCN250620	5SMS795	LS1236	MP25	RP1312

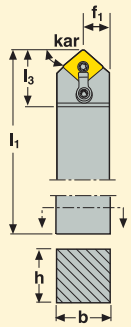
Please check availability in current price and stock-list

Toolholders for inserts CNGP, CNMA, CNMG, CNMM, CNMN and CNMP



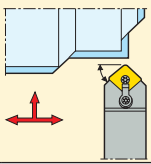
- For insert program, see pages 241-248, 302
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MCMNN



Right-hand version shown
kar (κ_r) = 40°

MCMNN
40 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch					γ_o°	λ_s°	lbs	
			h	b	f_1	l_1	l_3				
1/2	42505	MCMNN -16-4	1.00	1.00	0.500	6.0	1.38	0	-7	1.8	CN..43.
3/4	42506	MCMNN -20-6	1.25	1.25	0.625	7.0	1.66	0	-7	3.3	CN..64.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-4	CL-20	XNS-48	NL-46	CSN-433
..-6	CL-12	XNS-510	NL-68	CSN-633

Accessories*

Anvil	Shim screw
–	S-46
CSN-642	S-68

Please check availability in current price and stock-list

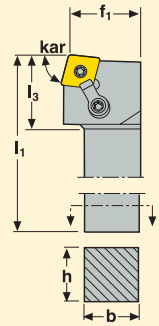
*Ordered separately

Toolholders for inserts CNGA, CNGN, CNGP, CNMA, CNMG, CNMM and CNMP



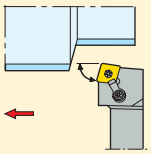
- For insert program, see pages 241-248, 301
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MCRNR/L



Right-hand version shown
kar (κ_r) = 75°

MCRNR/L
75 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/2	13033	MCRNR -16-4D	1.00	1.00	1.25	6.0	1.24	-6	-6	1.8	CN..43.
	12574	MCRNL -16-4D	1.00	1.00	1.25	6.0	1.24	-6	-6	1.8	CN..43.
5/8	43237	MCRNR -16-5D	1.00	1.00	1.25	6.0	1.34	-6	-6	1.8	CN..54.
3/4	13038	MCRNR -20-6D	1.25	1.25	1.50	6.0	1.50	-6	-6	2.9	CN..64.
	13031	MCRNL -24-6E	1.50	1.50	2.00	7.0	1.50	-6	-6	4.9	CN..64.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-4	CL-9	XNS58	NL-46	CSN-433
..-5	CL-9	XNS-510	NL-58	CSN-533
..-6	CL-12	XNS-510	NL-68	CSN-633

Accessories*

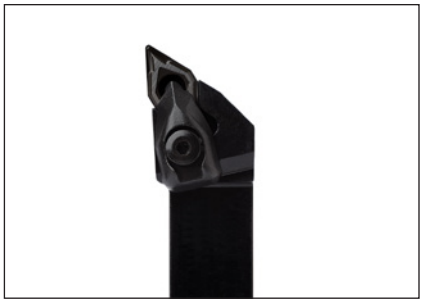
Insert shim	Shim screw
–	S-46
–	S-58
CSN-642	S-68

Please check availability in current price and stock-list

*Ordered separately
*Anvil CSN-642 for insert CN..63. ordered separately

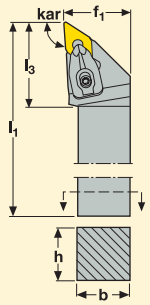
Toolholders for inserts DNGA, DNGM, DNGP, DNMA, DNMG, DNMP, DNMU and DNMX

D style first choice



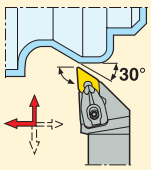
- For insert program, see pages 253-259, 304-305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DDJNR/L, ..-M



Right-hand version shown
kar (κ_r) = 93°

DDJNR/L
93 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	31094	DDJNR -10-3A	0.62	0.62	0.87	4.0	1.18	-6	-6	0.7	DN..33.
	31095	-12-3B	0.75	0.75	1.00	4.5	1.18	-6	-6	0.9	DN..33.
	31097	-16-3D	1.00	1.00	1.25	6.0	1.18	-6	-6	1.8	DN..33.
	31099	DDJNL -10-3A	0.62	0.62	0.88	4.0	1.18	-6	-6	0.7	DN..33.
	31100	-12-3B	0.75	0.75	1.00	4.5	1.18	-6	-6	0.9	DN..33.
	31102	-16-3D	1.00	1.00	1.25	6.0	1.18	-6	-6	1.8	DN..33.
1/2	31104	DDJNR -12-4B	0.75	0.75	1.00	4.5	1.65	-6	-6	0.9	DN..43.
	32307	-16-4D-M	1.00	1.00	1.25	6.0	1.65	-6	-6	1.8	DN..43.
	31107	-20-4D	1.25	1.25	1.50	6.0	1.65	-6	-6	2.4	DN..43.
	31109	DDJNL -12-4B	0.75	0.75	1.00	4.5	1.65	-6	-6	0.9	DN..43.
	32308	-16-4D-M	1.00	1.00	1.25	6.0	1.65	-6	-6	1.8	DN..43.
	31114	-20-4D	1.25	1.25	1.50	6.0	1.65	-6	-6	2.4	DN..43.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
..-3	FP1508	L84017-T09P	CD09-S	DDN322.5	T09P-2	C03007-T09P	S5608	CD09-S09
..-4	FP2012	L85021-T15P	CD12-S	DDN444	T15P-7	C04008-T15P	S6912	CD12-S12

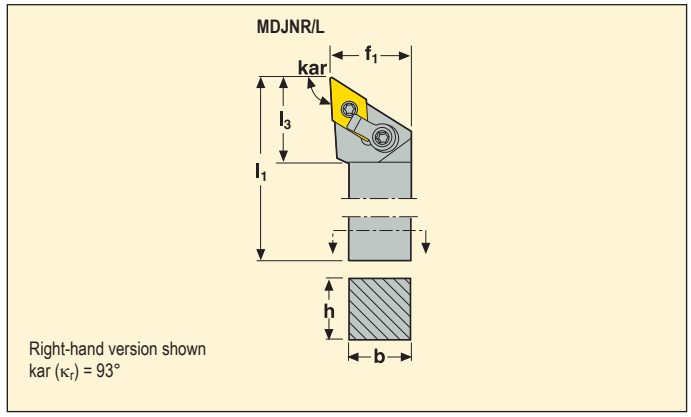
Please check availability in current price and stock-list

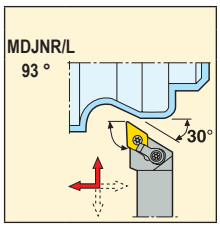
*Ordered separately
*Insert shim DDN434 for insert DN..44. ordered separately

Toolholders for inserts DNGA, DNGM, DNGP, DNMA, DNMG, DNMP, DNMU and DNMX



- For insert program, see pages 253-259, 304-305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13





Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f1	l1	l3	γo°	λs°	lbs	
3/8	56405	MDJNR -10-3A	0.250	0.620	0.88	4.0	1.19	-4	-9	0.7	DN..33.
	56408	-12-3B	0.750	0.750	1.00	4.5	1.19	-6	-6	0.9	DN..33.
	56412	-16-3D	1.000	1.000	1.25	6.0	1.19	-6	-6	1.8	DN..33.
	56406	MDJNL -10-3A	0.625	0.625	0.88	4.0	1.19	-4	-9	0.7	DN..33.
	56409	-12-3B	0.750	0.750	1.00	4.5	1.19	-6	-6	0.9	DN..33.
	56413	-16-3D	1.000	1.000	1.25	6.0	1.19	-6	-6	1.8	DN..33.
1/2	12703	MDJNR -20-4D	1.250	1.250	1.50	6.0	1.24	-6	-6	2.6	DN..43.
	12708	-24-4D	1.500	1.500	2.00	6.0	1.50	-6	-6	3.7	DN..43.
	13043	MDJNL -12-4B	0.750	0.750	1.00	4.5	1.36	-6	-6	0.9	DN..43.
	12704	-20-4D	1.250	1.250	1.50	6.0	1.24	-6	-6	2.6	DN..43.
	12709	-24-4D	1.500	1.500	2.00	6.0	1.50	-6	-6	3.7	DN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-3	CL-20	XNS-46	NL-34L	DSN-323
..-4	CL-20	XNS-48	NL-46	DSN-433

Accessories*

Insert shim	Shim screw
–	–
DSN-423	S-46

Please check availability in current price and stock-list

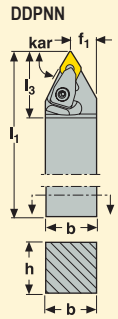
*Ordered separately.

Toolholders for inserts DNGA, DNGM, DNGP, DNMA, DNMG, DNMP and DNMU

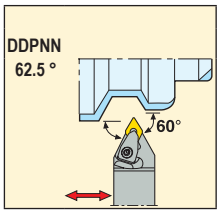
D style first choice



- For insert program, see pages 253-258, 304-305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13



Right-hand version shown
kar (κ_r) = 62.5°



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	31120	DDPNN -16-3D	1.00	1.00	0.500	6.0	1.10	0	-10	1.8	DN..33.
	31121	-20-3D	1.25	1.25	0.625	6.0	1.10	0	-10	2.6	DN..33.
1/2	31123	DDPNN -16-4D	1.00	1.00	0.500	6.0	1.69	0	-10	1.8	DN..43.
	31124	-20-4D	1.25	1.25	0.625	6.0	1.69	0	-10	2.4	DN..43.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-3	FP1508	L84017-T09P	CD09-S	DDN322.5	T09P-2	C03007-T09P	S5608
..-4	FP2012	L85021-T15P	CD12-S	DDN444	T15P-7	C04008-T15P	S6912

Accessories*

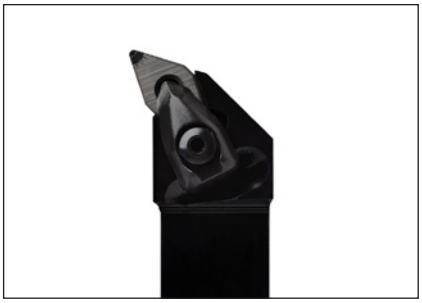
Clamp kit
CD09-S09
CD12-S12

Please check availability in current price and stock-list

*Ordered separately.
Insert shim DDN434 for insert DN..44. ordered separately.

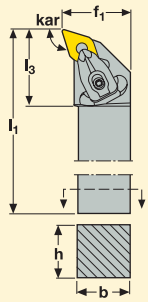
Toolholders for inserts DNGA, DNGM, DNGP, DNMA, DNMG, DNMP, DNMU and DNMX

D style first choice



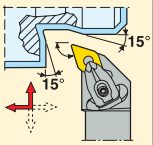
- For insert program, see pages 253-259, 304-305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DDQNR/L



Right-hand version shown
kar (κ_r) = 107.5°

DDQNR/L
107.5 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	83446	DDQNR -12-3B	0.75	0.75	1.00	4.5	1.18	-6	-6	0.9	DN..33.
	83447	-16-3D	1.00	1.00	1.25	6.0	1.18	-6	-6	1.8	DN..33.
	83444	DDQNL -12-3B	0.75	0.75	1.00	4.5	1.18	-6	-6	0.9	DN..33.
	83445	-16-3D	1.00	1.00	1.25	6.0	1.18	-6	-6	1.8	DN..33.
1/2	92020	DDQNR -12-4B	0.75	0.75	1.06	4.5	1.34	-6	-6	0.9	DN..43.
	92018	-16-4D	1.00	1.00	1.26	6.0	1.57	-6	-6	1.8	DN..43.
	92019	DDQNL -12-4B	0.75	0.75	1.06	4.5	1.34	-6	-6	0.9	DN..43.
	92017	-16-4D	1.00	1.00	1.26	6.0	1.57	-6	-6	1.8	DN..43.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-3	FP1508	L84017-T09P	CD09-S	DDN322.5	T09P-2	C03007-T09P	S5608
..-4	FP2012	L85021-T15P	CD12-S	DDN434	T15P-7	C04008-T15P	S6912

Accessories*

Clamp kit
CD09-S09
CD12-S12

Please check availability in current price and stock-list

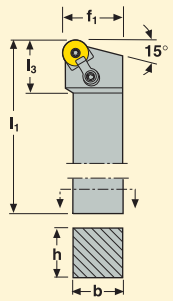
*Ordered separately.
Insert shim DDN434 for insert DN..44. ordered separately.

Toolholders for inserts RNGN, RNMA, RNMG and RNMN



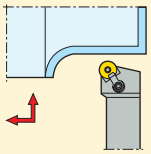
- For insert program, see pages 266, 307-309, 330
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MRGNR/L



Right-hand version shown

MRGNR/L



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/2	13087	MRGNR -12-4B	0.75	0.75	1.00	4.5	1.17	-6	-6	0.9	RNM.43
	13092	-20-4D	1.25	1.25	1.50	6.0	1.17	-6	-6	2.9	RNM.43
	13073	MRGNL -12-4B	0.75	0.75	1.00	4.5	1.17	-6	-6	0.9	RNM.43
	13078	-20-4D	1.25	1.25	1.50	6.0	1.17	-6	-6	2.9	RNM.43

Spare Parts, Parts included in delivery

Accessories*

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim	Shim screw
..-4	CL-9	XNS59	NL-46	IRSN-43	S-46

Please check availability in current price and stock-list

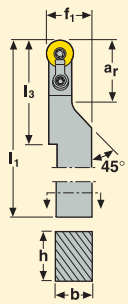
*Ordered separately.

Toolholders for inserts RCMM



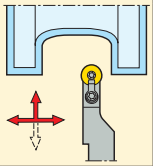
- For insert program, see pages 263
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MRGOR/L



Right-hand version shown

MRGOR/L



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch						γ_o°	λ_s°	lbs	
			h	b	f_1	l_1	l_3	a_r				
1/2	13107	MRGOR -85-4D	1.25	1.00	1.25	6.0	1.04	1.00	0	25	1.8	RCMM43
	13103	MRGOL -85-4D	1.25	1.00	1.25	7.0	2.36	1.00	0	0	1.8	RCMM43
3/4	13104	MRGOR -20-6E	1.25	1.25	1.43	7.0	1.80	1.75	0	0	2.4	RCMM64
	13101	MRGOL -20-6E	1.25	1.25	1.43	7.0	1.80	1.75	0	0	2.4	RCMM64
1	13106	MRGOR -24-8E	1.50	1.50	2.29	7.0	2.01	2.00	0	0	3.5	RCMM84
	13102	MRGOL -24-8E	1.50	1.50	2.29	7.0	2.01	2.00	0	0	3.5	RCMM84

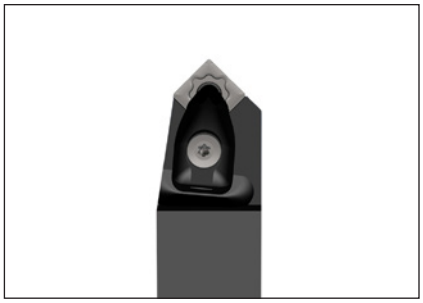
Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-4	CL-6	XNS-36	PL-46	RS-43P
..-6	CL-9	XNS58	PL-68	RS-63P
..-8	CL-12	XNS58	PL-68	RS-83P

Please check availability in current price and stock-list

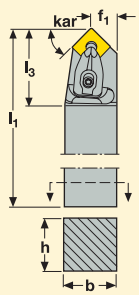
Toolholders for inserts SNGA, SNMA, SNMG and SNMM

D style first choice



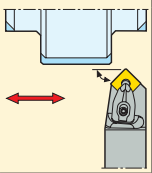
- For insert program, see pages 269-273, 311, 313
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DSDNN



Neutral version shown
kar (κ_r) = 45°

DSDNN
45 °



Insert I.C. inch	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/2	DSDNN -12-4B	0.75	0.75	0.39	4.5	1.26	-6	-6	0.9	SN..43.
	-16-4D	1.00	1.00	0.51	6.0	1.57	-6	-6	1.8	SN..43.
	-20-4D	1.25	1.25	0.64	6.0	1.57	-6	-6	2.4	SN..43.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
..-4	FP2012	L85021-T15P	CD12-S	DSN444	T15P-7	C04008-T15P	S6912	CD12-S12

Please check availability in current price and stock-list

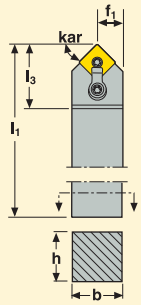
*Ordered separately.
Insert shim DSN434 for insert SN..44., ordered separately

Toolholders for inserts SNG, SNGA, SNGN, SNMA, SNMG, SNMM, SNMN and SNMP



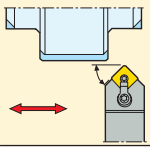
- For insert program, see pages 269-273, 311-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MSDNN



Neutral version shown
kar (κ_r) = 45°

MSDNN
45 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	13325	MSDNN -8-3	0.500	0.500	0.250	4.5	1.14	-6	-6	0.4	SN..32.
	13330	-10-3	0.625	0.625	0.313	4.5	0.75	-6	-6	0.7	SN..32.
	13335	-12-3	0.750	0.750	0.375	4.5	1.38	-6	-6	0.9	SN..32.
1/2	13340	MSDNN -12-4	0.750	0.750	0.375	4.5	1.38	-6	-6	0.9	SN..43.
	13345	-16-4	1.000	1.000	0.500	6.0	1.38	-6	-6	1.8	SN..43.
5/8	13360	MSDNN -16-5	1.000	1.000	0.500	6.0	1.59	-6	-6	1.8	SN..54.
	42536	-20-5	1.250	1.250	0.625	7.0	1.59	-6	-6	3.1	SN..54.
3/4	13375	MSDNN -20-6	1.250	1.250	0.625	7.0	1.71	-6	-6	3.3	SN..64.
	13390	-24-6	1.500	1.500	0.750	7.0	1.71	-6	-6	4.2	SN..64.
1	42538	MSDNN -24-8	1.500	1.500	0.750	7.0	2.23	-6	-6	4.4	SN..86.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-3	CL-6	XNS-36	NL-34	ISSN-322
..-4	CL-9	XNS59	NL-46	ISSN-433
..-5	CL-12	XNS-510	NL-58	SSN533
..-6	CL-12	XNS-510	NL-68	ISSN-633
..-8	CL-24	XNS610	NL-810	SSN844

Accessories*

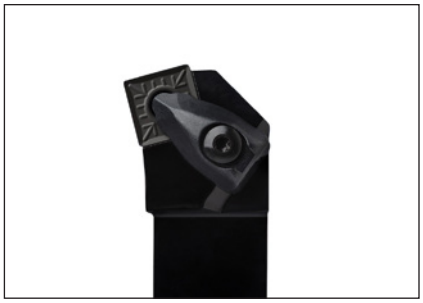
Insert shim	Shim screw
–	S-34
ISSN-443	S-46
ISSN-543	S-58
ISSN-643	S-68
–	S-810

Please check availability in current price and stock-list

*Ordered separately.

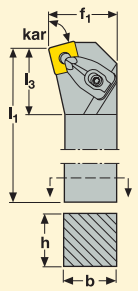
Toolholders for inserts SNGA, SNMA, SNMG, SNMM and SNMP

D style first choice



- For insert program, see pages 269-273, 311, 313
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DSKNR/L



Right-hand version shown
kar (κ_r) = 75°

DSKNR/L
75 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/2	31150	DSKNR -12-4B	0.75	0.75	1.00	4.5	1.30	-6	-6	0.9	SN..43.
	31151	-16-4D	1.00	1.00	1.25	6.0	1.38	-6	-6	2.0	SN..43.
	31153	DSKNL -12-4B	0.75	0.75	1.00	4.5	1.30	-6	-6	0.9	SN..43.
	31154	-16-4D	1.00	1.00	1.25	6.0	1.38	-6	-6	2.0	SN..43.
5/8	31156	DSKNR -16-5D	1.00	1.00	1.25	6.0	1.40	-6	-6	2.0	SN..54.
	31160	DSKNL -16-5D	1.00	1.00	1.25	6.0	1.40	-6	-6	2.0	SN..54.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
..-4	FP2012	L85021-T15P	CD12-S	DSN444	T15P-7	C04008-T15P	S6912	CD12-S12
..-5	FP2012	L86026-T20P	CD19-S	DSN646	T20P-7L	C05010-T20P	S7010	CD19-S19

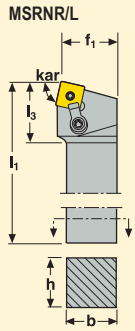
Please check availability in current price and stock-list

*Ordered separately.
Insert shim DSN434 for insert SN..44., ordered separately

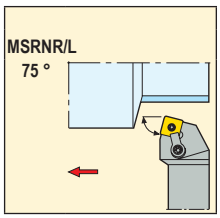
Toolholders for inserts SNGA, SNGN, SNMA, SNMG, SNMM, SNMN and SNMP



- For insert program, see pages 269-273, 311-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13



Right-hand version shown
kar (κ_r) = 75°



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/2	12743	MSRNR -12-4B	0.75	0.75	0.878	4.5	1.23	-6	-6	0.9	SN..43.
	12744	MSRNL -12-4B	0.75	0.75	0.878	4.5	1.23	-6	-6	0.9	SN..43.
5/8	12753	MSRNR -20-5D	1.25	1.25	1.350	6.0	1.46	-6	-6	2.9	SN..54.
	71776	MSRNL -16-5D	1.00	1.00	1.100	6.0	1.46	-6	-6	2.0	SN..54.
	12754	-20-5D	1.25	1.25	1.350	6.0	1.46	-6	-6	2.9	SN..54.
3/4	12756	MSRNR -20-6D	1.25	1.25	1.318	6.0	1.50	-6	-6	2.9	SN..64.
	12757	MSRNL -20-6D	1.25	1.25	1.318	6.0	1.50	-6	-6	2.9	SN..64.
	13118	MSRNR -24-6E	1.50	1.50	1.818	7.0	1.50	-6	-6	4.6	SN..64.
	13114	MSRNL -24-6E	1.50	1.50	1.818	7.0	1.50	-6	-6	4.6	SN..64.
1	42534	MSRNR -24-8	1.50	1.50	1.762	7.0	1.62	-6	-6	5.1	SN..86.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-4	CL-9	XNS59	NL-46	ISSN-433
..-5	CL-12	XNS-510	NL-58	SSN533
..-6	CL-12	XNS-510	NL-68	ISSN-633
..-8	CL-24	XNS610	NL-810	SSN844

Accessories*

Insert shim	Shim screw
ISSN-443	S-46
ISSN-543	S-58
ISSN-643	S-68
–	S-810

Please check availability in current price and stock-list

*Ordered separately.

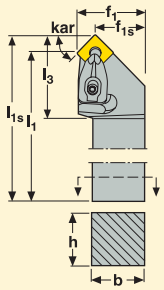
Toolholders for inserts SNGA, SNGN, SNMA, SNMG, SNMM, SNMN and SNMP

D style first choice



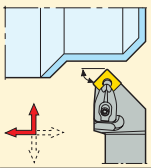
- For insert program, see pages 269-273, 311-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DSSNR/L



Right-hand version shown
kar (κ_r) = 45°

DSSNR/L
45 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	f_{1s}	l_1	l_{1s}	l_3	γ_o°	λ_s°	lbs	
1/2	31166	DSSNR -12-4B	0.75	0.75	0.66	0.99	4.5	4.17	1.57	-6	-6	0.9	SN..43.
	31168	-16-4D	1.00	1.00	0.75	1.08	6.0	5.67	1.57	-6	-6	1.8	SN..43.
	31169	-20-4D	1.25	1.25	0.99	1.32	6.0	5.67	1.57	-6	-6	2.6	SN..43.
	31170	DSSNL -12-4B	0.75	0.75	0.66	0.99	4.5	4.17	1.57	-6	-6	0.9	SN..43.
	31171	-16-4D	1.00	1.00	0.75	1.08	6.0	5.67	1.57	-6	-6	1.8	SN..43.
	31172	-20-4D	1.25	1.25	0.99	1.32	6.0	5.67	1.57	-6	-6	2.6	SN..43.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
..-4	FP2012	L85021-T15P	CD12-S	DSN444	T15P-7	C04008-T15P	S6912	CD12-S12

Please check availability in current price and stock-list

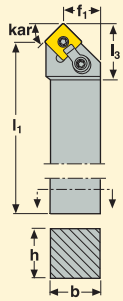
*Ordered separately.
Insert shim DSN434 for insert SN..44., ordered separately

Toolholders for inserts SNGA, SNGN, SNMA, SNMG, SNMM, SNMN and SNMP



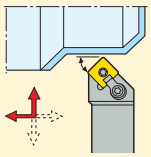
- For insert program, see pages 269-273, 311-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MSSNR/L



Right-hand version shown
kar (κ_r) = 45°

MSSNR/L
45 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/2	12761	MSSNR -12-4B	0.75	0.75	0.662	4.16	1.22	-10	0	0.9	SN..43.
	12766	-16-4D	1.00	1.00	0.912	5.66	1.22	-10	0	1.8	SN..43.
	12767	MSSNL -16-4D	1.00	1.00	0.912	5.66	1.22	-10	0	1.8	SN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-4	CL-9	XNS59	NL-46	ISSN-433

Accessories*

Shim screw
S-46

Please check availability in current price and stock-list

*Ordered separately.

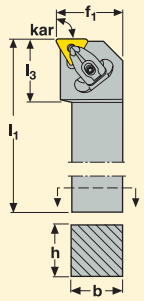
Toolholders for inserts TNGA, TNMA, TNMG, TNMM and TNMP

D style first choice



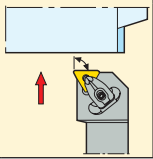
- For insert program, see pages 282-286, 317
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DTFNR/L



Right-hand version shown
kar (κ_r) = 90°

DTFNR/L
90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	31338	DTFNR -12-3B	0.75	0.75	1.00	4.5	1.18	-6	-6	0.7	TN..33.
	83457	-16-3D	1.00	1.00	1.25	6.0	1.18	-6	-6	1.8	TN..33.
	31340	DTFNL -12-3B	0.75	0.75	1.00	4.5	1.18	-6	-6	0.7	TN..33.
	83455	-16-3D	1.00	1.00	1.25	6.0	1.18	-6	-6	1.8	TN..33.
1/2	31342	DTFNR -16-4D	1.00	1.00	1.25	6.0	1.38	-6	-6	1.8	TN..43.
	31343	-20-4D	1.25	1.25	1.50	6.0	1.38	-6	-6	2.6	TN..43.
	31344	DTFNL -16-4D	1.00	1.00	1.25	6.0	1.38	-6	-6	1.8	TN..43.
	31345	-20-4D	1.25	1.25	1.50	6.0	1.38	-6	-6	2.6	TN..43.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
..-3	FP1508	L84017-T09P	CD09-S	DTN344	T09P-2	C03007-T09P	S5608	CD09-S09
..-4	FP2012	L85021-T15P	CD12-S	DTN444	T15P-7	C04008-T15P	S6912	CD12-S12

Please check availability in current price and stock-list

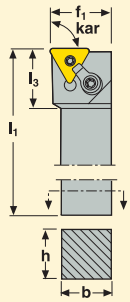
*Ordered separately.

Toolholders for inserts TNG, TNGA, TNGN, TNMA, TNMG, TNMM, TNMN and TNMP



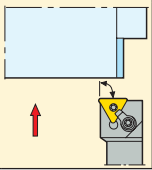
- For insert program, see pages 282-286, 317-318, 321
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MTFNR/L



Right-hand version shown
kar (κ_r) = 90°

MTFNR/L
90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	13930	MTFNR -10-3	0.625	0.625	0.87	4.5	0.93	-5	-6	0.7	TN..33.
	12776	-12-3B	0.750	0.750	0.93	4.5	0.94	-5	-6	0.9	TN..33.
	12778	-16-3C	1.000	1.000	0.93	6.0	0.94	-5	-6	1.8	TN..33.
	12779	MTFNL -16-3C	1.000	1.000	0.93	6.0	0.94	-5	-6	1.8	TN..33.
1/2	12783	MTFNR -16-4D	1.000	1.000	1.25	6.0	1.22	-5	-6	1.8	TN..43.
	12784	MTFNL -16-4D	1.000	1.000	1.25	6.0	1.22	-5	-6	1.8	TN..43.
5/8	13144	MTFNR -16-5D	1.000	1.000	1.25	6.0	1.41	-5	-6	2.0	TN..54.
3/4	13148	MTFNR -24-6E	1.500	1.500	2.29	7.0	1.47	-5	-6	4.9	TN..66.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-3	CL-6	XNS-36	NL-34L	ITSN-323
..-4	CL-9	XNS-510	NL-46	ITSN-433
..-5	CL-12	XNS-510	NL-58	ITSN-533
..-6	CL-12	XNS-510	NL-68L	TSN-637

Accessories*

Insert shim	Shim screw
ITSN-333	S-34
TS-424	S-46
–	S-58
–	S-68

Please check availability in current price and stock-list

*Ordered separately.

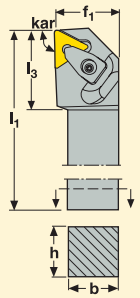
Toolholders for inserts TNGA, TNMA, TNMG, TNMM and TNMP

D style first choice



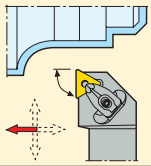
- For insert program, see pages 282-286, 317
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DTGNR/L



Right-hand version shown
kar (κ_r) = 90°

DTGNR/L
90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	31181	DTGNR -12-3B	0.75	0.75	1.00	4.5	1.18	-6	-6	0.9	TN..33.
	31182	-16-3D	1.00	1.00	1.25	6.0	1.18	-6	-6	1.8	TN..33.
	31183	DTGNL -12-3B	0.75	0.75	1.00	4.5	1.18	-6	-6	0.9	TN..33.
	31184	-16-3D	1.00	1.00	1.25	6.0	1.18	-5	-6	1.8	TN..33.
1/2	31185	DTGNR -16-4D	1.00	1.00	1.25	6.0	1.38	-6	-6	2.0	TN..43.
	31186	-20-4D	1.25	1.25	1.50	6.0	1.38	-6	-6	2.9	TN..43.
	31187	DTGNL -16-4D	1.00	1.00	1.25	6.0	1.38	-5	-6	2.0	TN..43.
	31188	-20-4D	1.25	1.25	1.50	6.0	1.38	-6	-6	2.9	TN..43.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-3	FP1508	L84017-T09P	CD09-S	DTN322.5	T09P-2	C03007-T09P	S5608
..-3	FP1508	L84017-T09P	CD09-S	DTN344	T09P-2	C03007-T09P	S5608
..-4	FP2012	L85021-T15P	CD12-S	DTN444	T15P-7	C04008-T15P	S6912

Accessories*

Clamp kit
CD09-S09
CD12-S12

Please check availability in current price and stock-list

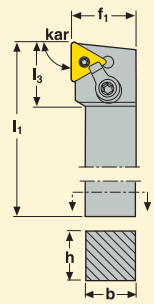
*Ordered separately.

Toolholders for inserts TNGA, TNGN, TNMA, TNMG, TNMM, TNMN and TNMP



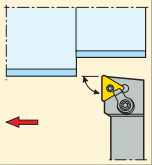
- For insert program, see pages 282-286, 317-319, 321
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MTGNR/L



Right-hand version shown
kar (κ_r) = 90°

MTGNR/L
90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/4	14171	MTGNR -8-2A	0.500	0.500	0.63	4.5	0.94	-5	-5	0.4	TN..22.
	14176	MTGNL -8-2A	0.500	0.500	0.63	4.5	0.94	-5	-5	0.4	TN..22.
3/8	13167	MTGNR -10-3A	0.625	0.625	0.88	4.0	1.12	-5	-5	0.7	TN..33.
	13153	MTGNL -10-3A	0.625	0.625	0.88	4.0	1.12	-5	-5	0.7	TN..33.
5/8	12816	MTGNR -24-5D	1.500	1.500	2.00	6.0	1.44	-5	-5	4.4	TN..54.
	12817	MTGNL -24-5D	1.500	1.500	2.00	6.0	1.44	-5	-5	4.4	TN..54.
3/4	12818	MTGNR -24-6D	1.500	1.500	2.00	6.0	1.50	-5	-5	4.4	TN..66.

Spare Parts, Parts included in delivery

Accessories*

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim	Insert shim	Shim screw
..-2	CL-19	XNS-36	NL-23	–	–	–
..-3	CL-6	XNS-36	NL-34L	ITSN-323	ITSN-333	S-34
..-5	CL-9	XNS-510	NL-58	ITSN-533	–	S-58
..-6	CL-12	XNS-510	NL-68L	TSN-637	–	S-68

Please check availability in current price and stock-list

*Ordered separately.

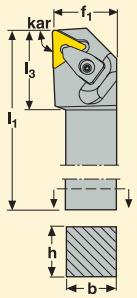
Toolholders for inserts TNGA, TNMA, TNMG, TNMM, TNMP and TNMX

D style first choice



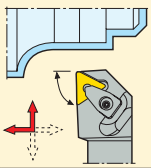
- For insert program, see pages 282-287, 317
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DTJNR/L



Right-hand version shown
kar (κ_r) = 93°

DTJNR/L
93 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	31193	DTJNR -12-3B	0.75	0.75	1.00	4.5	1.18	-6	-6	0.9	TN..33.
	31194	-16-3D	1.00	1.00	1.25	6.0	1.18	-6	-6	2.0	TN..33.
	31195	DTJNL -12-3B	0.75	0.75	1.00	4.5	1.18	-6	-6	0.9	TN..33.
	31196	-16-3D	1.00	1.00	1.25	6.0	1.18	-6	-6	2.0	TN..33.
1/2	31197	DTJNR -16-4D	1.00	1.00	1.25	6.0	1.38	-6	-6	2.0	TN..43.
	31198	-20-4D	1.25	1.25	1.50	6.0	1.38	-6	-6	2.9	TN..43.
	31199	DTJNL -16-4D	1.00	1.00	1.25	6.0	1.38	-6	-6	2.0	TN..43.
	31200	-20-4D	1.25	1.25	1.50	6.0	1.38	-6	-6	2.9	TN..43.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-3	FP1508	L84017-T09P	CD09-S	DTN322.5	T09P-2	C03007-T09P	S5608
..-4	FP2012	L85021-T15P	CD12-S	DTN444	T15P-7	C04008-T15P	S6912

Accessories*

Clamp kit
CD09-S09
CD12-S12

Please check availability in current price and stock-list

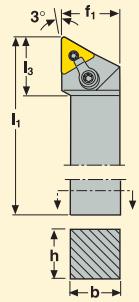
*Ordered separately.

Toolholders for inserts TNGA, TNMA, TNMG, TNMM and TNMP



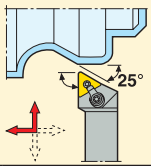
- For insert program, see pages 282-286, 317
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MTJNRS/LS



Right-hand version shown
kar (κ_r) = 93°

MTJNRS/LS
93 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	40974	MTJNRS -12-3	0.75	0.75	1.00	4.50	1.12	-5	-5	0.9	TN..33.
	40975	MTJNLS -12-3	0.75	0.75	1.00	4.50	1.12	-5	-5	0.9	TN..33.
1/2	14440	MTJNRS -16-4D	1.00	1.00	1.25	6.00	1.19	-5	-5	1.8	TN..43.
	14445	MTJNLS -16-4	1.00	1.00	1.25	6.00	1.19	-5	-5	2.0	TN..43.
5/8	14450	MTJNRS -20-5	1.25	1.25	1.50	7.01	1.44	-5	-5	3.3	TN..54.
	14460	-24-5	1.50	1.50	2.00	7.01	1.44	-5	-5	4.4	TN..54.
	14455	MTJNLS -20-5	1.25	1.25	1.50	7.01	1.44	-5	-5	3.3	TN..54.
	14465	-24-5	1.50	1.50	2.00	7.01	1.44	-5	-5	4.4	TN..54.
3/4	40978	MTJNRS -24-6	1.50	1.50	2.00	7.01	1.67	-5	-5	4.6	TN..66.
	40979	MTJNLS -24-6	1.50	1.50	2.00	7.01	1.67	-5	-5	4.6	TN..66.

Spare Parts, Parts included in delivery

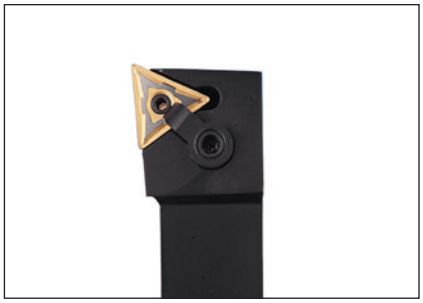
Accessories*

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim	Insert shim
..-3	CL-6	XNS-36	NL-34L	ITSN-323	ITSN-333
..-4	CL-9	XNS-510	NL-46	ITSN-433	–
..-5	CL-9	XNS-510	NL-58	ITSN-533	–
..-6	CL-9	XNS-510	NL-68L	TSN-637	–

Please check availability in current price and stock-list

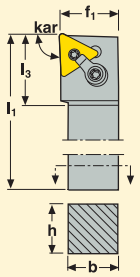
*Ordered separately.
Insert shim ITSN333 for insert TN..32. ordered separately.

Toolholders for inserts TNGA, TNGN, TNMA, TNMG, TNMM, TNMN and TNMP



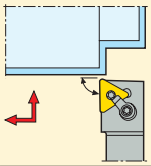
- For insert program, see pages 282-286, 317-319, 321
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MTLNR/L



Right-hand version shown
kar (κ_r) = 95°

MTLNR/L
95 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/2	42542	MTLNR -16-4	1.00	1.00	1.25	6.0	1.25	-5	-5	2.0	TN..43.
	42543	MTLNL -16-4	1.00	1.00	1.25	6.0	1.25	-5	-5	2.0	TN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-4	CL-9	XNS-510	NL-46	TS-424

Accessories*

Shim screw
S-46

Please check availability in current price and stock-list

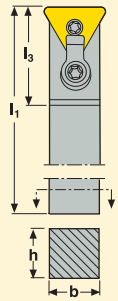
*Ordered separately.

Toolholders for inserts TNGN, TNMA, TNMG, TNMM, TNMN and TNMP



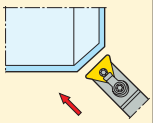
- For insert program, see pages 282-286, 318, 321
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MTCNN



Neutral version shown

MTCNN



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	13835	MTCNN -44-3	1.00	0.50	8.0	1.13	0	-7	1.3	TN..33.
1/2	13830	MTCNN -12-4	0.75	0.75	6.0	1.43	0	-7	1.1	TN..43.
	13840	-64-4	1.00	0.75	8.0	1.43	0	-7	1.8	TN..43.
	13845	-66-4	1.50	0.50	8.0	1.43	0	-7	2.9	TN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-3	CL-7	XNS-36	NL-34L	ITSN-323
..-4	CL-12	XNS-510	NL-46	ITSN-433

Accessories*

Insert shim	Shim screw
ITSN-333	S-34
TS-424	S-46

Please check availability in current price and stock-list

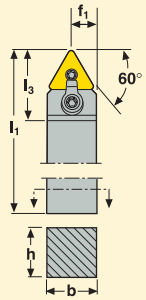
*Ordered separately.

Toolholders for inserts TNGA, TNMA, TNMG, TNMM and TNMP



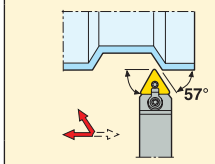
- For insert program, see pages 282-286, 317
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MTENNS



Neutral version shown
kar (κ_r) = 60°

MTENNS



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/4	13850	MTENNS -8-2	0.500	0.500	0.25	4.5	0.99	0	-10	0.4	TN..22.
3/8	13855	MTENNS -10-3	0.625	0.625	0.31	4.5	1.18	0	-10	0.7	TN..33.
	13860	-12-3	0.750	0.750	0.38	4.5	1.16	0	-10	0.9	TN..33.
	13890	-64-3	1.000	0.750	0.38	6.0	0.38	0	-10	1.1	TN..33.
1/2	13865	MTENNS -12-4	0.750	0.750	0.37	4.5	1.50	0	-10	0.9	TN..43.
	13870	-16-4	1.000	1.000	0.50	6.0	1.50	0	-10	1.8	TN..43.
5/8	13875	MTENNS -20-5	1.250	1.250	0.63	7.0	1.65	0	-10	3.1	TN..54.
	13880	-24-5	1.500	1.500	0.75	7.0	1.65	0	-10	4.2	TN..54.
3/4	13885	MTENNS -24-6	1.500	1.500	0.75	7.0	1.97	0	-10	4.2	TN..66.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-2	CL-6	XNS-36	NL-23	–
..-3	CL-6	XNS-36	NL-34L	ITSN-323
..-4	CL-9	XNS59	NL-46	ITSN-433
..-5	CL-9	XNS-510	NL-58	ITSN-533
..-6	CL-12	XNS-510	NL-68L	TSN-637

Accessories*

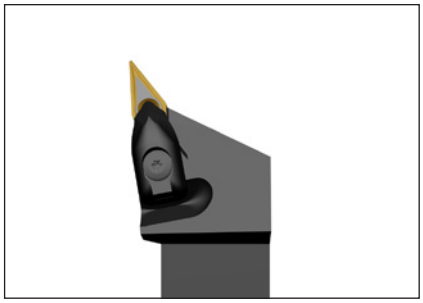
Insert shim
–
ITSN-333
–
–
–

Please check availability in current price and stock-list

*Ordered separately.

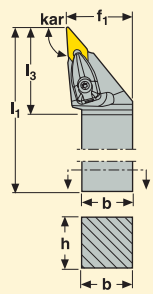
Toolholders for inserts VNGA, VNGM, VNGP, VNMA, VNMG, VNMP and VNMU

D style first choice



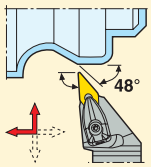
- For insert program, see pages 292-294, 324-325
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DVJNR/L



Right-hand version shown
kar (κ_r) = 93°

DVJNR/L
93 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
5/16	81719	DVJNR -12-2.5B	0.75	0.75	1.00	4.5	1.46	-5	-14	0.9	VN..2.53.
	81721	-16-2.5C	1.00	1.00	1.25	5.0	1.46	-5	-14	1.5	VN..2.53.
	81720	DVJNL -12-2.5B	0.75	0.75	1.00	4.5	1.46	-5	-14	0.9	VN..2.53.
	81722	-16-2.5C	1.00	1.00	1.25	5.0	1.46	-5	-14	1.5	VN..2.53.
3/8	81713	DVJNR -12-3B	0.75	0.75	1.00	4.5	1.77	-5	-14	0.9	VN..33.
	81715	-16-3C	1.00	1.00	1.25	5.0	1.77	-5	-14	1.3	VN..33.
	81717	-20-3D	1.25	1.25	1.50	6.0	1.65	-5	-14	2.6	VN..33.
	81714	DVJNL -12-3B	0.75	0.75	1.00	4.5	1.77	-5	-14	0.9	VN..33.
	81716	-16-3C	1.00	1.00	1.25	5.0	1.77	-5	-14	1.3	VN..33.
	81718	-20-3D	1.25	1.25	1.50	6.0	1.65	-5	-14	2.6	VN..33.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
..-2.5	FP1508	L84017-T09P	CD08-S	PVN2.522	T09P-2	CS5008-T09P	S5608	CD08-V13
..-3	FP2012	L85021-T15P	CD19-S-V16	DVN322.5	T15P-7	C03508-T15P	S6912	CD19-V16

Please check availability in current price and stock-list

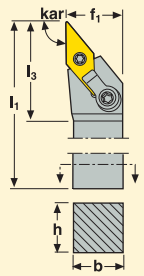
*Ordered separately.

Toolholders for inserts VNGA, VNGM, VNGP, VNMA, VNMG, VNMP and VNMU



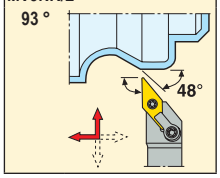
- For insert program, see pages 292-294, 324-325
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MVJNR/L



Right-hand version shown
kar (κ_r) = 93°

MVJNR/L
93 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	12867	MVJNR -12-3B	0.75	0.75	1.00	4.5	1.68	-4	-13	0.9	VN..33.
	71714	-16-3D	1.00	1.00	1.25	6.0	1.66	-4	-13	1.5	VN..33.
	12886	-20-3D	1.25	1.25	1.50	6.0	1.66	-4	-13	2.4	VN..33.
	12868	MVJNL -12-3B	0.75	0.75	1.00	6.0	1.68	-4	-13	0.9	VN..33.
	71708	-16-3D	1.00	1.00	1.25	6.0	1.66	-4	-13	1.5	VN..33.
	12887	-20-3D	1.25	1.25	1.50	6.0	1.66	-4	-13	2.4	VN..33.
1/2	12879	MVJNR -16-4D	1.00	1.00	1.25	6.0	2.00	-4	-13	1.5	VN..43.
	12888	-20-4D	1.25	1.25	1.50	6.0	2.00	-4	-13	2.4	VN..43.
	12883	MVJNL -16-4D	1.00	1.00	1.25	6.0	2.00	-4	-13	1.5	VN..43.
	12889	-20-4D	1.25	1.25	1.50	6.0	2.00	-4	-13	2.4	VN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-3	CL-30	XNS-510	NL-34L	IVSN-324
..-4	CL-30	XNS-510	NL-46	IVSN-433

Accessories*

Shim screw
S-34
S-46

Please check availability in current price and stock-list

*Ordered separately.

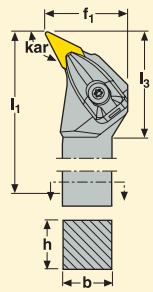
Toolholders for inserts VNGA, VNGM, VNGP, VNMA, VNMG, VNMP and VNMU

D style first choice



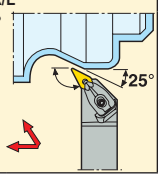
- For insert program, see pages 292-294, 324-325
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DVPNR/L



Right-hand version shown
kar (κ_r) = 117.5°

DVPNR/L
117.5 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	83453	DVPNR -12-3B	0.75	0.75	1.00	4.5	1.57	-4	-13	0.9	VN..33.
	83461	-16-3D	1.00	1.00	1.25	6.0	1.77	-4	-13	1.8	VN..33.
	83462	-20-3D	1.25	1.25	1.50	6.0	1.77	-4	-13	2.4	VN..33.
	83451	DVPNL -12-3B	0.75	0.75	1.00	4.5	1.57	-4	-13	0.9	VN..33.
	83459	-16-3D	1.00	1.00	1.25	6.0	1.77	-4	-13	1.8	VN..33.
	83460	-20-3D	1.25	1.25	1.50	6.0	1.77	-4	-13	2.4	VN..33.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-3	FP2012	L85021-T15P	CD19-S-V16	DVN322.5	T15P-7	C03508-T15P	S6912

Accessories*

Clamp kit
CD19-V16

Please check availability in current price and stock-list

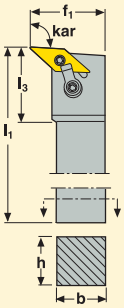
*Ordered separately.

Toolholders for inserts VNGA, VNGM, VNGP, VNMA, VNMG and VNMP



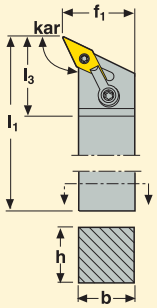
- For insert program, see pages 292-294, 324-325
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MVLNR/L



Right-hand version shown
kar (κ_r) = 95°

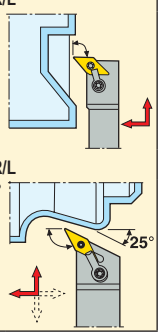
MVTNR/L



Right-hand version shown
kar (κ_r) = 117.5°

MVLNR/L
95 °

MVTNR/L
117.5 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/2	13206	MVLNR -16-4D	1.00	1.00	1.75	6.0	1.50	-13	-13	2.2	VN..43.
	13207	-20-4D	1.25	1.25	2.00	6.0	1.50	-13	-13	3.1	VN..43.
	13198	MVLNL -16-4D	1.00	1.00	1.75	6.0	1.50	-13	-13	2.2	VN..43.
	13199	-20-4D	1.25	1.25	2.00	6.0	1.50	-13	-13	3.1	VN..43.
3/8	49604	MVTNR -12-3B	0.75	0.75	1.00	6.0	1.72	-4	-13	0.9	VN..33.
	13222	-16-3D	1.00	1.00	1.25	6.0	1.72	-4	-13	1.8	VN..33.
	13223	-20-3D	1.25	1.25	1.50	6.0	1.72	-4	-13	2.9	VN..33.
	13216	MVTNL -20-3D	1.25	1.25	1.50	6.0	1.72	-4	-13	2.9	VN..33.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-3	CL-30	XNS-510	NL-34L	IVSN-324
..-4	CL-12	XNS-510	NL-46	IVSN-433

Accessories*

Shim screw
S-34
S-46

Please check availability in current price and stock-list

*Ordered separately.

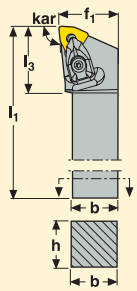
Toolholders for inserts WNGA, WNGP, WNMA, WNMG, WNMM and WNMP

D style first choice



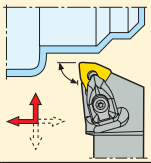
- For insert program, see pages 295-299, 326-327
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DWLNR/L



Right-hand version shown
kar (κ_r) = 95°

DWLNR/L
95 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	83464	DWLNR -10-3B	0.625	0.625	0.875	4.5	1.18	-6	-6	0.7	WN..33.
	31213	-12-3B	0.750	0.750	1.000	4.5	1.26	-6	-6	0.9	WN..33.
	31215	-16-3D	1.000	1.000	1.250	6.0	1.26	-6	-6	2.0	WN..33.
	31216	-20-3D	1.250	1.250	1.500	6.0	1.26	-6	-6	2.9	WN..33.
	83463	DWLNL -10-3B	0.625	0.625	0.875	4.5	1.18	-6	-6	0.7	WN..33.
	31217	-12-3B	0.750	0.750	1.000	4.5	1.26	-6	-6	0.9	WN..33.
	31219	-16-3D	1.000	1.000	1.250	6.0	1.26	-6	-6	2.0	WN..33.
	31220	-20-3D	1.250	1.250	1.500	6.0	1.26	-6	-6	2.9	WN..33.
1/2	31221	DWLNR -12-4B	0.750	0.750	1.000	4.5	1.38	-6	-6	0.9	WN..43.
	32305	-16-4D	1.000	1.000	1.250	6.0	1.38	-6	-6	2.0	WN..43.
	31225	-20-4D	1.250	1.250	1.500	6.0	1.38	-6	-6	2.9	WN..43.
	31226	DWLNL -12-4B	0.750	0.750	1.000	4.5	1.38	-6	-6	0.9	WN..43.
	32306	-16-4D	1.000	1.000	1.250	6.0	1.38	-6	-6	2.0	WN..43.
	31229	-20-4D	1.250	1.250	1.500	6.0	1.38	-6	-6	2.9	WN..43.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
..-3	FP1508	L84017-T09P	CD09-S	DWN322.5	T09P-2	C03007-T09P	S5608	CD09-S09
..-4	FP2012	L85021-T15P	CD12-S	DWN434	T15P-7	C04008-T15P	S6912	CD12-S12

Please check availability in current price and stock-list

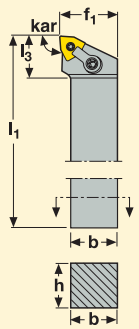
*Ordered separately.
Insert shim DWN424 for insert WN..44. to be ordered separately.

Toolholders for inserts WNGA, WNGP, WNMA, WNMG, WNMM and WNMP



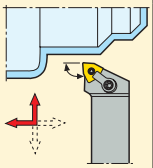
- For insert program, see pages 295-299, 326-327
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

MWLNR/L



Right-hand version shown
kar (κ_r) = 95°

MWLNR/L
95 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	56399	MWLNR -10-3A	0.625	0.625	0.87	4.0	1.20	-5	-6	0.7	WN..33.
	51581	-12-3B	0.750	0.750	1.00	4.5	1.20	-5	-6	0.9	WN..33.
	51583	-16-3D	1.000	1.000	1.25	6.0	1.20	-5	-6	2.9	WN..33.
	56400	MWLNL -10-3A	0.625	0.625	0.87	4.0	1.20	-5	-6	0.7	WN..33.
1/2	43244	MWLNR -12-4B	0.750	0.750	1.00	4.5	1.20	-5	-6	0.9	WN..43.
	50014	-16-4D	1.000	1.000	1.25	6.0	1.20	-5	-6	1.8	WN..43.
	43246	-20-4D	1.250	1.250	1.50	7.0	1.19	-5	-6	2.9	WN..43.
	43243	MWLNL -20-4D	1.250	1.250	1.50	7.0	1.19	-5	-6	2.9	WN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-3	CL-6	XNS-36	NL-34L	IWSN323
..-4	CL-20	XNS-47	NL-46	IWSN-433

Accessories*

Insert shim
–
IWSN-423

Please check availability in current price and stock-list

*Ordered separately.
Insert shim IWSN423 for insert WN..44. ordered separately.

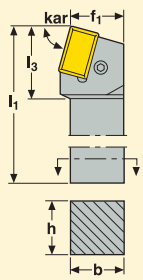
Toolholders for inserts LNMX

Metric holders



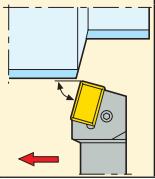
- For insert program, see page 261
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

PLBNR/L



Right-hand version shown
kar (κ_r) = 75°

PLBNR/L
75 °



	EDP No.	Part No.	Dimensions in mm h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
40	75681	PLBNR 6060V40-A	60	60	61.35	400	62	-6	-6	24.9	LNMX401432
	75682	PLBNL 6060V40-A	60	60	61.35	400	62	-6	-6	24.9	LNMX401432
50	75684	PLBNR 6060V50	60	60	60	400	68	-6	-6	25.4	LNMX501432
	75683	PLBNL 6060V50	60	60	60	400	68	-6	-6	25.4	LNMX501432

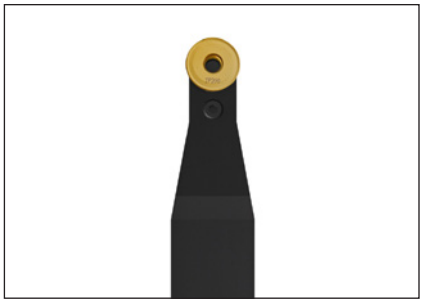
Spare Parts, Parts included in delivery

For size	Insert lever	Insert shim	Lever key	Punch	Screw	Shim pin
..40	PP1325	PLN400632	5SMS795	MP25	LS1240	RP1312
..50	PP1325	PLN500632	5SMS795	MP25	LS1240	RP1312

Please check availability in current price and stock-list

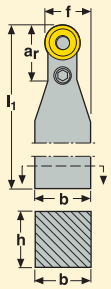
Toolholders for inserts RCMX

Metric holders



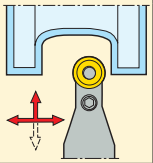
- For insert program, see page 265
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

PRDCN



Neutral version shown

PRDCN



Insert I.C. mm	EDP No.	Part No.	Dimensions in mm h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
20	70227	PRDCN 3232P20	32	32	26	170	55	0	-8	2.6	RCMX200600
25	70226	PRDCN 4040S25	40	40	32.5	250	86	0	-8	6.2	RCMX250700
32	70225	PRDCN 5050T32	50	50	40.9	300	108	0	-8	11.7	RCMX320900

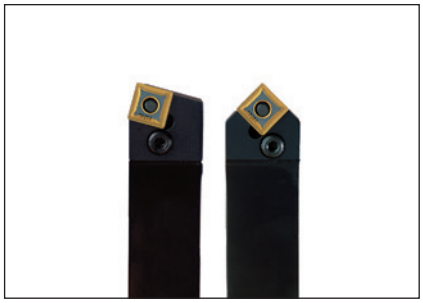
Spare Parts, Parts included in delivery

For size	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
..20	PP5620	PRN2004MO	3SMS795	LS0823	MP1519	RP8286
..25	PP6224	PRN2506MO	4SMS795	LS1030	MP1519	RP9811
..32	PP8030	PRN3206MO	5SMS795	LS1236	MP25	RP1312

Please check availability in current price and stock-list

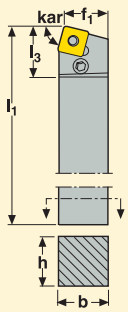
Toolholders for inserts SNMG and SNMM

Metric holders



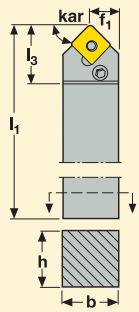
- For insert program, see pages 271-273
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

PSBNR/L



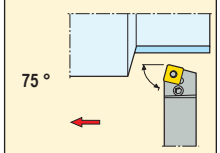
Right-hand version shown
kar (κ_r) = 75°

PSDNN

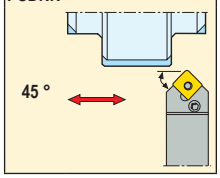


Neutral version shown
kar (κ_r) = 45°

PSBNR/L



PSDNN



Insert I.C. inch	EDP No.	Part No.	Dimensions in mm h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1.0	70231	PSBNR 4040S25	40	40	35.2	250	48	-6	-6	6.8	SN..85.
	70262	5050S25	50	50	43.2	250	48	-6	-6	10.4	SN..85.
	70232	PSBNL 4040S25	40	40	35.2	250	48	-6	-6	6.8	SN..85.
	70259	5050S25	50	50	43.2	250	48	-6	-6	10.4	SN..85.
1.0	70239	PSBNR 4040S2509	40	40	35.2	250	48	-6	-6	6.6	SN..86.
	70234	5050T2509	50	50	43.2	300	48	-6	-6	12.6	SN..86.
1.0	70233	PSDNN 4040S25	40	40	20.2	250	48	-6	-6	6.6	SN..85.
	70238	4040T25	40	40	20.2	300	48	-6	-6	7.9	SN..85.

Spare Parts, Parts included in delivery

For size	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
..25	PP1325	PSN250624	5SMS795	LS1236	MP25	RP1312
..2509	PP1325	PSN250624	5SMS795	LS1236	MP25	RP1312

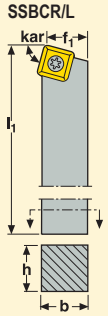
Please check availability in current price and stock-list

Toolholders for inserts SCMT and SCMW

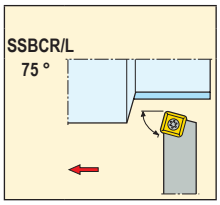
Metric holders



- For insert program, see pages 267-268
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13



Right-hand version shown
kar (κ_r) = 75°



Insert I.C. inch	EDP No.	Part No.	Dimensions in mm h	b	f_1	l_1	γ_o°	λ_s°	lbs	
1.0	70230	SSBCR 4040S25	40	40	35	250	0	0	7.1	SC..866
1.5	70237	SSBCR 5050T38	50	50	43	300	0	0	12.3	SC..1268
	70228	6060V38	60	60	53	400	0	0	24.0	SC..1268
	70256	SSBCL 5050T38	50	50	43	300	0	0	12.3	SC..1268
	70229	6060V38	60	60	53	400	0	0	24.0	SC..1268

Spare Parts, Parts included in delivery

Accessories*

For size	Insert key	Insert screw	Insert shim	Shim screw	Shim key
..25	T30P-7	C08020-T30P	110.19-629	CA8020SEATSCREW	5SMS795
..38	T30P-7	C08020-T30P	112.19-624	CA8020SEATSCREW	5SMS795

Please check availability in current price and stock-list

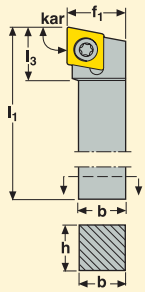
*Ordered separately.

Toolholders for inserts CCGT, CCGW, CCMT and CCMW



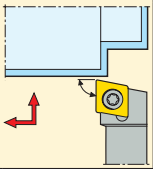
- For insert program, see pages 236, 238-240, 300, 328
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

SCGCR/L



Right-hand version shown
kar (κ_r) = 90°

SCGCR/L
90 °



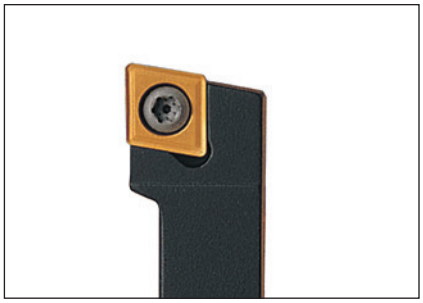
Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	13326	SCGCR -8-3	0.50	0.50	0.625	3.5	0.62	0	0	0.4	CC..32.5.
	13327	SCGCL -8-3	0.50	0.50	0.625	3.5	0.62	0	0	0.4	CC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw
..-3	T15P-2	C04008-T15P

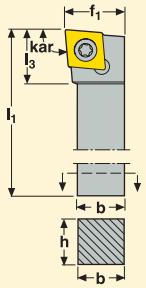
Please check availability in current price and stock-list

Toolholders for inserts CCGT, CCGW, CCMT and CCMW



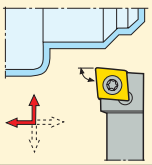
- For insert program, see pages 236, 238-240, 300, 328
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

SCLCR/L



Right-hand version shown
kar (κ_r) = 95°

SCLCR/L
95 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/4	71951	SCLCR -6-2	0.375	0.375	0.500	2.5	0.48	0	0	0.2	CC..21.5.
	71943	SCLCL -6-2	0.375	0.375	0.500	2.5	0.48	0	0	0.2	CC..21.5.
3/8	71949	SCLCR -8-3	0.500	0.500	0.625	3.5	0.67	0	0	0.4	CC..32.5.
	71955	-10-3	0.625	0.625	0.750	4.0	0.69	0	0	0.7	CC..32.5.
	13336	-12-3	0.750	0.750	1.000	4.5	0.69	0	0	0.9	CC..32.5.
	73924	-16-3	1.000	1.000	1.252	6.0	0.67	0	0	2.0	CC..32.5.
	71945	SCLCL -8-3	0.500	0.500	0.625	3.5	0.67	0	0	0.4	CC..32.5.
	71931	-10-3	0.625	0.625	0.750	4.0	0.69	0	0	0.7	CC..32.5.
	13337	-12-3	0.750	0.750	1.000	4.5	0.69	0	0	0.9	CC..32.5.
	73925	-16-3	1.000	1.000	1.250	6.0	0.67	0	0	2.0	CC..32.5.
1/2	43250	SCLCR -16-4	1.000	1.000	1.250	5.0	0.79	0	0	1.8	CC..43.
	43248	SCLCL -16-4	1.000	1.000	1.250	5.0	0.79	0	0	1.8	CC..43.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
..-2	T07P-2	C02506-T07P	–	–
..-3	T15P-2	C04008-T15P	–	–
..-4	T15P-2	C05012-T15P	123.19-621	CA5008

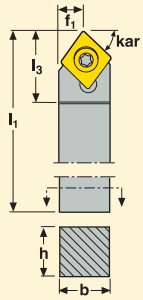
Please check availability in current price and stock-list

Toolholders for inserts CCGT, CCGW, CCMT and CCMW



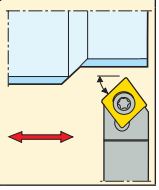
- For insert program, see pages 238-240, 300, 328
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

SCMCN



Neutral version shown
kar (κ_r) = 50°

SCMCN
50 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/4	13318	SCMCN -6-2	0.375	0.375	0.195	2.5	0.43	0	0	0.2	CC..21.5.
3/8	13319	SCMCN -8-3	0.500	0.500	0.264	3.5	0.61	0	0	0.4	CC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw
..-2	T07P-2	C02506-T07P
..-3	T15P-2	C04008-T15P

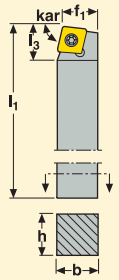
Please check availability in current price and stock-list

Toolholders for inserts CCGT, CCGW and CCMT



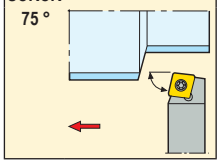
- For insert program, see pages 238-240
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

SCRCR



Right-hand version shown
kar (κ_r) = 75°

SCRCR 75 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	13316	SCRCR -8-3	0.500	0.500	0.551	3.5	0.68	0	0	0.4	CC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw
..-3	T15P-2	C04008-T15P

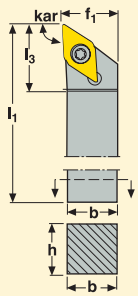
Please check availability in current price and stock-list

Toolholders for inserts DCGT, DCGW, DCMT, DCMW and DCMX



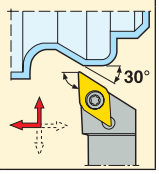
- For insert program, see pages 250-253, 303, 329
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

SDJCR/L



Right-hand version shown
kar (κ_r) = 93°

SDJCR/L
93 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/4	71938	SDJCR -6-2	0.375	0.375	0.500	2.5	0.68	0	0	0.2	DC..21.5.
	13341	-8-2	0.500	0.500	0.625	3.5	0.68	0	0	0.4	DC..21.5.
	71941	SDJCL -6-2	0.375	0.375	0.500	2.5	0.68	0	0	0.2	DC..21.5.
	13342	-8-2	0.500	0.500	0.625	3.5	0.68	0	0	0.4	DC..21.5.
3/8	71952	SDJCR -8-3	0.500	0.500	0.625	3.5	1.00	0	0	0.4	DC..32.5.
	71948	-10-3	0.625	0.625	0.750	4.0	1.00	0	0	0.6	DC..32.5.
	43256	-12-3	0.750	0.750	1.000	4.5	1.00	0	0	0.7	DC..32.5.
	73937	-16-3	1.000	1.000	1.250	6.0	0.98	0	0	1.4	DC..32.5.
	71939	SDJCL -8-3	0.500	0.500	0.625	3.5	1.00	0	0	0.4	DC..32.5.
	71947	-10-3	0.625	0.625	0.750	4.0	1.00	0	0	0.6	DC..32.5.
	43252	-12-3	0.750	0.750	1.000	4.5	1.00	0	0	0.7	DC..32.5.
	73938	-16-3	1.000	1.000	1.250	6.0	0.98	0	0	1.4	DC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw
..-2	T07P-2	C02506-T07P
..-3	T15P-2	C04008-T15P

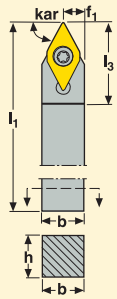
Please check availability in current price and stock-list

Toolholders for inserts DCGT, DCGW, DCMT and DCMW



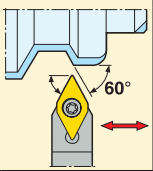
- For insert program, see pages 250-252, 303, 329
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

SDPCN



Neutral version shown
kar (κ_r) = 62.5°

SDPCN
62.5 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	γ_o°	λ_s°	lbs	
3/8	73942	SDPCN -16-3	1.00	1.00	0.500	6.0	0	0	1.8	DC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw
..-3	T15P-2	C04008-T15P

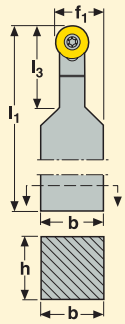
Please check availability in current price and stock-list

Toolholders for inserts RCMT



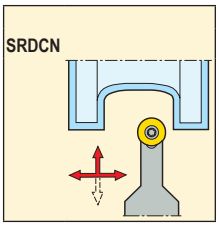
- For insert program, see page 264
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

SRDCN



Neutral version shown

SRDCN



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
0.236	71932	**SRDCN -10-06**	0.625	0.625	0.53	4.0	0.63	0	0	0.7	RCMT0602
0.315	57603	**SRDCN -12-08**	0.750	0.750	0.43	5.0	0.79	0	0	0.7	RCMT0803
0.393	71935	**SRDCN -12-10**	0.750	0.750	0.53	5.0	0.79	0	0	0.9	RCMT10T3
0.472	71928	**SRDCN -16-12**	1.000	1.000	0.74	7.0	0.98	0	0	2.0	RCMT1204
	71953	**-85-12**	1.250	1.000	0.74	7.0	0.98	0	0	2.4	RCMT1204

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
..-06	T07P-2	C02506-T07P	–	–
..-08	T09P-2	C03007-T09P	–	–
..-10	T15P-2	C03510-T15P	111.19-620	CA3510
..-12	T15P-2	C03510-T15P	111.19-621	CA3510

Accessories*

Shim key
–
–
5SMS795
9/64SMS875

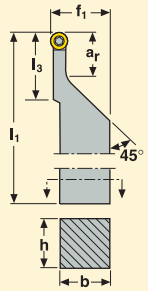
Please check availability in current price and stock-list

Toolholders for inserts RCMT

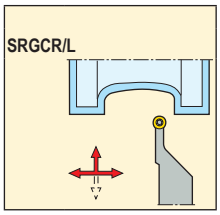


- For insert program, see page 264
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

SRGCR/L



Neutral version shown



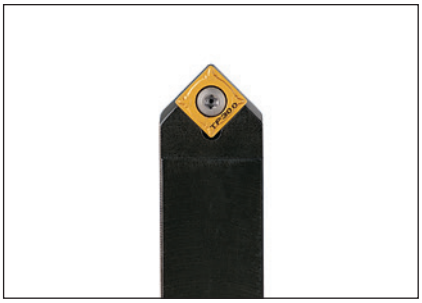
Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/4	13346	SRGCR -12-2	0.75	0.75	1.00	4.5	1.48	0	0	1.5	RCMT22
	13351	-16-2	1.00	1.00	1.25	6.0	1.48	0	0	1.5	RCMT22
	13352	SRGCL -16-2	1.00	1.00	1.25	6.0	1.48	0	0	1.5	RCMT22
	13357	-20-2	1.25	1.25	1.50	6.0	1.48	0	0	2.0	RCMT22
3/8	13348	SRGCR -12-3	0.75	0.75	1.00	4.5	1.73	0	0	0.9	RCMT32.5
	13353	-16-3	1.00	1.00	1.25	6.0	1.73	0	0	1.5	RCMT32.5
	13358	-20-3	1.25	1.25	1.50	6.0	1.73	0	0	2.2	RCMT32.5
	13349	SRGCL -12-3	0.75	0.75	1.00	4.5	1.73	0	0	0.9	RCMT32.5
	13354	-16-3	1.00	1.00	1.25	6.0	1.73	0	0	1.5	RCMT32.5
	13359	-20-3	1.25	1.25	1.50	6.0	1.73	0	0	2.2	RCMT32.5
1/2	13361	SRGCR -20-4	1.25	1.25	1.50	6.0	1.72	0	0	2.4	RCMT43
	13362	SRGCL -20-4	1.25	1.25	1.50	6.0	1.72	0	0	2.4	RCMT43

Spare Parts, Parts included in delivery

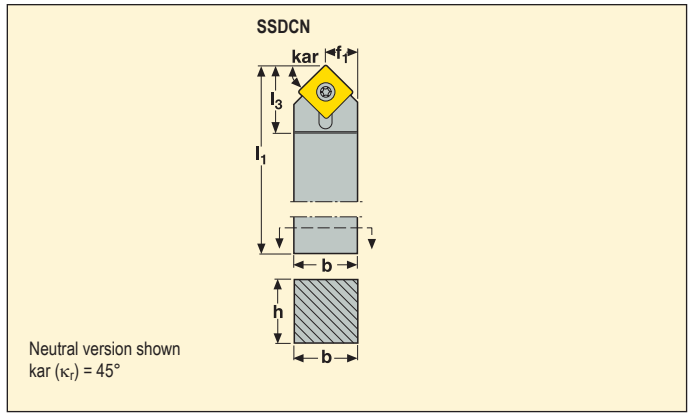
For size	Insert key	Insert screw	Insert shim	Shim screw
..-2	T07P-2	C02506-T07P	–	–
..-3	TX-3.5	TS-35	RS-32C	SLS-35
..-4	T15P-2	C04011-T15P	RS-43C	SLS-40

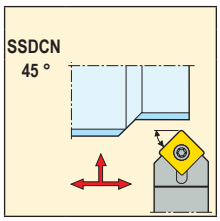
Please check availability in current price and stock-list

Toolholders for inserts SCGW and SCMT



- For insert program, see pages 267, 310
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13





Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	43262	SSDCN -8-3	0.500	0.500	0.250	3.5	0.63	0	0	0.2	SC..32.5.
	43259	-10-3	0.625	0.625	0.312	4.0	0.63	0	0	0.4	SC..32.5.
1/2	43260	SSDCN -12-4	0.750	0.750	0.375	4.5	0.81	0	0	0.7	SC..43.

Spare Parts, Parts included in delivery

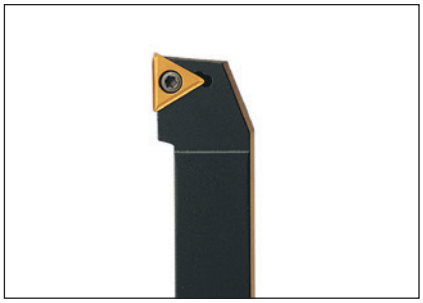
For size	Insert key	Insert screw	Insert shim	Shim screw
..-3	T15P-2	C04008-T15P	–	–
..-4	T15P-2	C05012-T15P	110.19-621	CA5008

Accessory*

Shim key
–
5SMS795

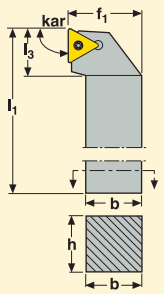
Please check availability in current price and stock-list

Toolholders for inserts TCGT, TCGW, TCMT and TCMW



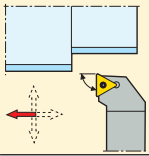
- For insert program, see pages 277, 279, 316, 330
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

STGCR/L



Right-hand version shown
kar (κ_r) = 90°

STGCR/L 90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/4	13373	STGCR -6-2	0.375	0.375	0.500	2.5	0.60	0	0	0.2	TC..21.5.
	13376	-8-2	0.500	0.500	0.625	3.5	0.62	0	0	0.4	TC..21.5.
	13374	STGCL -6-2	0.375	0.375	0.500	2.5	0.60	0	0	0.2	TC..21.5.
	13377	-8-2	0.500	0.500	0.625	3.5	0.62	0	0	0.4	TC..21.5.
3/8	13378	STGCR -10-3	0.625	0.625	0.750	4.0	0.85	0	0	0.7	TC..32.5.
	13379	STGCL -10-3	0.625	0.625	0.750	4.0	0.85	0	0	0.7	TC..32.5.

Spare Parts, Parts included in delivery

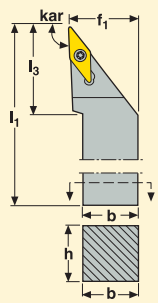
For size	Insert key	Insert screw
..-2	T07P-2	C02506-T07P
..-3	T15P-2	C04008-T15P

Please check availability in current price and stock-list

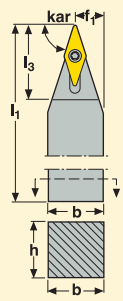
Toolholders for inserts VBGT, VBGW and VBMT



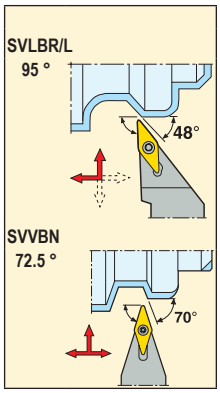
- For insert program, see pages 289-290, 323
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13



Right-hand version shown
kar (κ_r) = 95°



Neutral version shown
kar (κ_r) = 72.5°



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	71930	SVLBR -12-3	0.75	0.75	0.88	4.5	1.18	0	0	0.9	VB..33.
	71929	-16-3	1.00	1.00	1.12	6.0	1.18	0	0	1.8	VB..33.
	71944	SVLBL -12-3	0.75	0.75	0.88	4.5	1.18	0	0	0.9	VB..33.
	71950	-16-3	1.00	1.00	1.12	6.0	1.18	0	0	1.8	VB..33.
	71940	SVVBN -12-3	0.75	0.75	0.37	4.5	–	0	0	0.9	VB..33.
	71946	-16-3	1.00	1.00	0.50	6.0	–	0	0	1.8	VB..33.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
..-3	T15P-2	C03512-T15P	171.19-620	CA3510

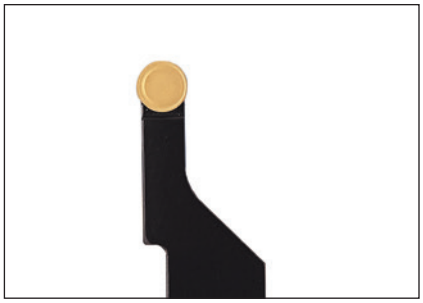
Accessories*

Shim key
9/64SMS875

Please check availability in current price and stock-list

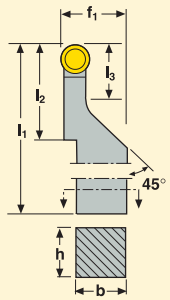
*Ordered separately.

Toolholders for inserts RCGS



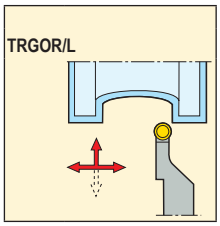
- For insert program, see pages 262, 306
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

TRGOR/L



Right-hand version shown

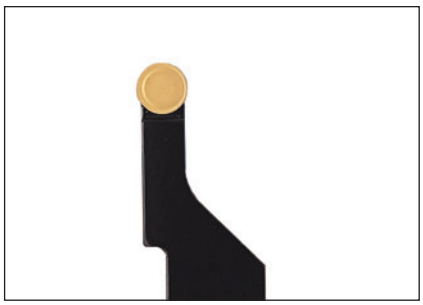
TRGOR/L



	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/16	41032	TRGOR- 16-1.5	1.00	1.00	1.25	6.0	0.76	0	0	1.5	RCGS1.5
	41040	20-1.5	1.25	1.25	1.50	7.0	0.76	0	0	2.6	RCGS1.5
	41033	TRGOL- 16-1.5	1.00	1.00	1.25	6.0	0.76	0	0	1.5	RCGS1.5
	41041	20-1.5	1.25	1.25	1.50	7.0	0.76	0	0	2.6	RCGS1.5
1/4	41034	TRGOR- 16-2	1.00	1.00	1.25	6.0	0.77	0	0	1.5	RCGS2
	41042	20-2	1.25	1.25	1.50	7.0	0.77	0	0	2.9	RCGS2
	41035	TRGOL- 16-2	1.00	1.00	1.25	6.0	0.77	0	0	1.5	RCGS2
	41043	20-2	1.25	1.25	1.50	7.0	0.77	0	0	2.9	RCGS2

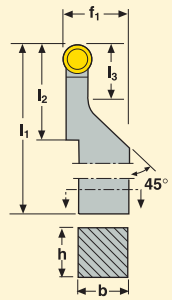
Please check availability in current price and stock-list

Toolholders for inserts RCGS



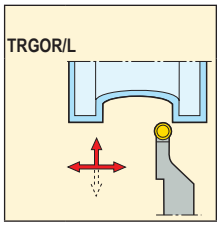
- For insert program, see pages 262, 306
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

TRGOR/L



Right-hand version shown

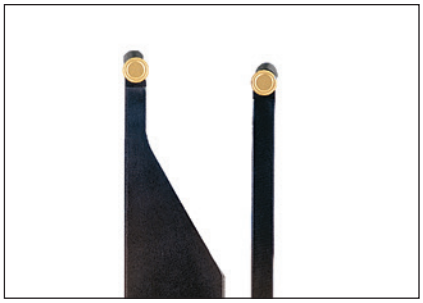
TRGOR/L



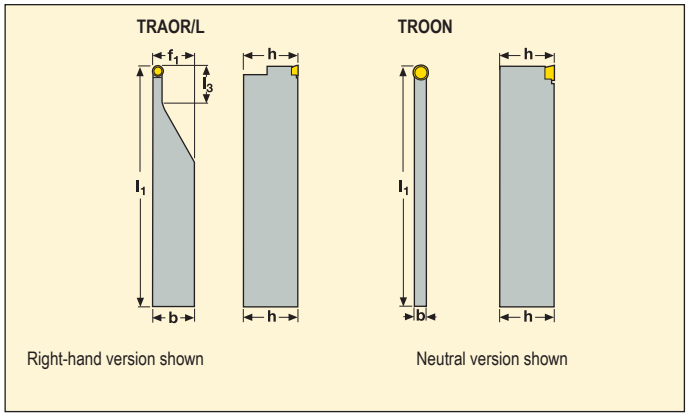
	EDP No.	Part No.	Dimensions in inch					γ_o°	λ_s°	lbs	
			h	b	f_1	l_1	l_3				
3/8	41036	TRGOR- 16-3	1.00	1.00	1.25	6.0	1.03	0	0	1.5	RCGS3
	41044	20-3	1.25	1.25	1.50	7.0	1.03	0	0	2.6	RCGS3
	47816	24-3	1.50	1.50	2.00	7.0	1.03	0	0	3.7	RCGS3
	41037	TRGOL- 16-3	1.00	1.00	1.25	6.0	1.03	0	0	1.5	RCGS3
	41045	20-3	1.25	1.25	1.50	7.0	1.03	0	0	2.6	RCGS3
	47817	24-3	1.50	1.50	2.00	7.0	1.03	0	0	3.7	RCGS3
1/2	41038	TRGOR- 16-4	1.00	1.00	1.25	6.0	1.04	0	0	1.5	RCGS4
	41046	20-4	1.25	1.25	1.50	7.0	1.04	0	0	2.9	RCGS4
	41048	24-4	1.50	1.50	2.00	7.0	1.04	0	0	3.7	RCGS4
	41039	TRGOL- 16-4	1.00	1.00	1.25	6.0	1.04	0	0	1.5	RCGS4
	41047	20-4	1.25	1.25	1.50	7.0	1.04	0	0	2.9	RCGS4
	41049	24-4	1.50	1.50	2.00	7.0	1.04	0	0	3.7	RCGS4

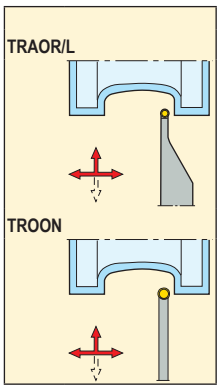
Please check availability in current price and stock-list

Toolholders for inserts RCGS



- For insert program, see pages 262, 306
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13





	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/16	17945	TRAOR- 85-1.5	1.25	1.000	1.014	6.0	0.76	0	0	1.8	RCGS1.5
	53455	TRAOL- 85-1.5	1.25	1.000	1.014	6.0	0.76	0	0	1.8	RCGS1.5
1/4	17950	TRAOR- 85-2	1.25	1.000	1.020	6.0	0.77	0	0	1.8	RCGS2
	48374	TRAOL- 85-2	1.25	1.000	1.020	6.0	0.77	0	0	1.8	RCGS2
3/8	17955	TRAOR- 85-3	1.25	1.000	1.030	8.0	1.03	0	0	2.6	RCGS3
	46228	TRAOL- 85-3	1.25	1.000	1.030	8.0	1.03	0	0	2.6	RCGS3
3/16	17975	TROON- 153-1.5	0.75	0.156	–	4.0	–	0	0	0.2	RCGS1.5
1/4	17980	TROON- 23-2	0.75	0.218	–	4.0	–	0	0	0.2	RCGS2
3/8	17985	TROON- 34-3	1.00	0.312	–	4.0	–	0	0	0.4	RCGS3
1/2	17990	TROON- 45-4	1.25	0.437	–	4.0	–	0	0	0.7	RCGS4

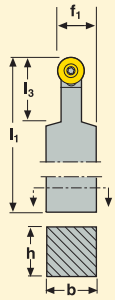
Please check availability in current price and stock-list

Toolholders for inserts RCMM



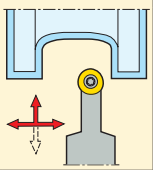
- For insert program, see page 263
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

PROON



Neutral version shown

PROON 90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/2	15040	PROON -85-4	1.25	1.00	0.750	6.0	1.50	0	0	2.0	RCMM43
3/4	15025	PROON -20-6	1.25	1.25	1.000	7.0	2.00	0	0	2.6	RCMM64
1	15030	PROON -20-8	1.25	1.25	1.125	10.0	2.50	0	0	4.2	RCMM84

Spare Parts, Parts included in delivery

For size	Insert shim	Insert pin
..-4	RS-43P	PL-46
..-6	RS-63P	PL-68
..-8	RS-83P	PL-68

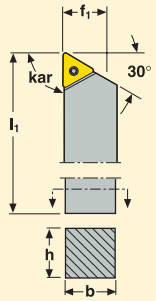
Please check availability in current price and stock-list

Toolholders for inserts TPMM



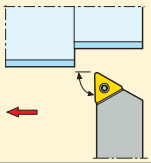
- For insert program, see page 288
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

PTAPRS/LS



Right-hand version shown
kar (κ_r) = 90°

PTAPRS/LS
90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	γ_o°	λ_s°	lbs	
5/16	15715	PTAPRS -8-2.5	0.50	0.50	0.512	4.5	5	0	0.4	TPMM2.52.
	15720	PTAPLS -8-2.5	0.50	0.50	0.512	4.5	5	0	0.4	TPMM2.52.

Spare Parts, Parts included in delivery

For size	Insert pin
..-2.5	PL-2.53

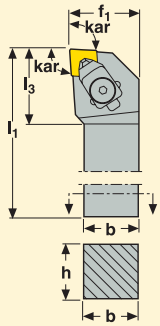
Please check availability in current price and stock-list

Toolholders for PCBN inserts CNGN and CNMN



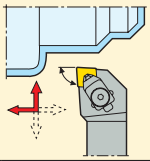
- For insert program, see page 302
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

CCLNR/L



Right-hand version shown
kar (κ_r) = 95°

CCLNR/L
95 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	73816	CCLNR -16-3	1.00	1.00	1.25	6.0	1.18	-6	-6	2.0	CN.N32.
	73817	-20-3	1.25	1.25	1.50	6.0	1.18	-6	-6	3.1	CN.N32.
	73818	CCLNL -16-3	1.00	1.00	1.25	6.0	1.18	-6	-6	2.0	CN.N32.
	73819	-20-3	1.25	1.25	1.50	6.0	1.18	-6	-6	3.1	CN.N32.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp key	Insert shim	Pressure plate	Shim screw
..-3	CC17P-09	4SMS795	CCN090316	P1311-09	174.10-652-T07P

*Accessories

Shim key
T07P-2

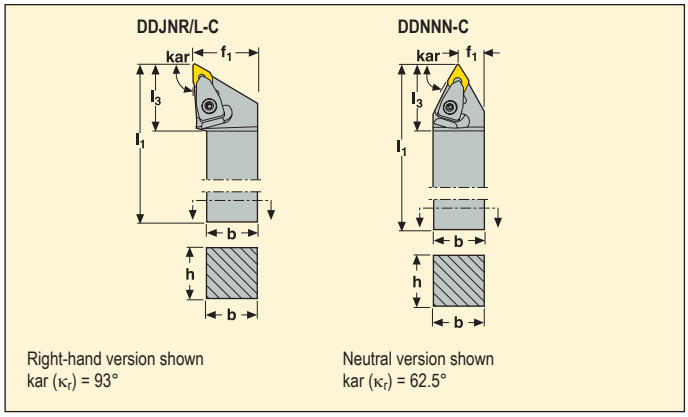
Please check availability in current price and stock-list

*Ordered separately.

Toolholders for PCBN inserts DNGA and DNMA

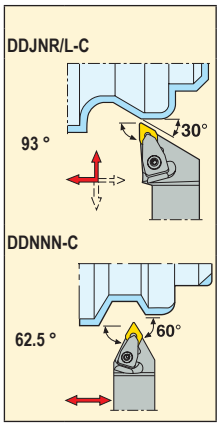


- For insert program, see pages 304-305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13



Right-hand version shown
kar (κ_r) = 93°

Neutral version shown
kar (κ_r) = 62.5°



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	37368	DDJNR -20-3D-C	1.25	1.25	1.500	6.0	1.22	-6	-6	2.4	DN.A33.
	37369	DDJNL -20-3D-C	1.25	1.25	1.500	6.0	1.22	-6	-6	2.4	DN.A33.
3/8	37370	DDNNN -20-3D-C	1.25	1.25	0.625	6.0	1.30	-5	-9	2.4	DN.A33.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
..-3D-C	CC09P-SET	FP1508	L84017-T09P	CD09-S	DDN322.5	T09P-2	C03007-T09P	S5608	CC09P-D11

Please check availability in current price and stock-list

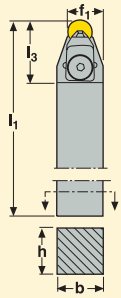
*Ordered separately.

Toolholders for PCBN inserts RNGN and RNMN



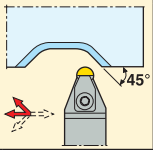
- For insert program, see pages 307-309
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

CRDNN



Neutral version shown

CRDNN



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/4	73874	CRDNN -16-2	1.00	1.00	0.750	6.0	1.38	0	-7	1.8	RN.N22
3/8	73877	CRDNN -16-3	1.00	1.00	0.500	6.0	1.38	0	-7	1.8	RN.N32
	73878	-20-3	1.25	1.25	0.875	6.0	1.38	0	-7	2.6	RN.N32
1/2	73880	CRDNN -20-4	1.25	1.25	0.875	6.0	1.70	0	-7	2.9	RN.N42
	73881	-24-4	1.50	1.50	1.000	7.0	1.70	0	-7	4.6	RN.N42

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp key	Insert shim	Pressure plate	Shim key	Shim screw
..-2	CC17P-06	4SMS795	CRN0603M0	P1311-06	T07P-2	CS2507-T07P
..-3	CC17P-09	4SMS795	117.10-620	P1311-09	T07P-2	174.10-652-T07P
..-4	CC17P	4SMS795	117.10-622	P1311	T09P-2	F94009-T09P

Please check availability in current price and stock-list

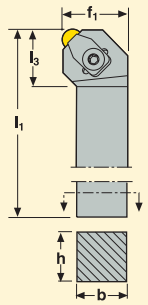
*Ordered separately.

Toolholders for PCBN inserts RNGN and RNMN



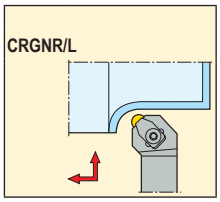
- For insert program, see pages 307-309
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

CRGNR/L



Right-hand version shown

CRGNR/L



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/2	73892	CRGNR -16-4	1.00	1.00	1.25	6.0	1.38	-5	-5	1.8	RN.N42
	73898	-20-4	1.25	1.25	1.50	6.0	1.38	-5	-5	3.1	RN.N42
	73908	CRGNL -16-4	1.00	1.00	1.25	6.0	1.38	-5	-5	1.8	RN.N42
	73909	-20-4	1.25	1.25	1.50	6.0	1.38	-5	-5	3.1	RN.N42

Spare Parts, Parts included in delivery

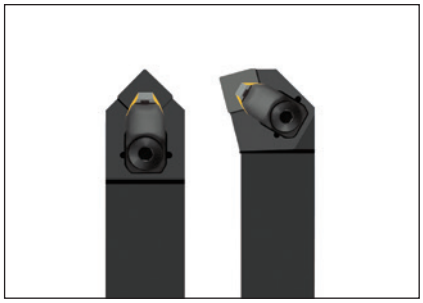
*Accessories

For size	Cantilever clamp	Clamp key	Insert shim	Pressure plate	Shim screw	Shim key
..-4	CC17P	4SMS795	117.10-622	P1311	F94009-T09P	T09P-2

Please check availability in current price and stock-list

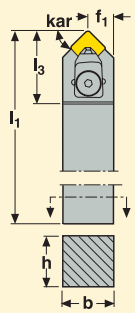
*Ordered separately.

Toolholders for PCBN inserts SNGN and SNMN



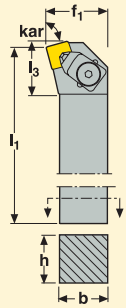
- For insert program, see pages 312-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

CSDNN



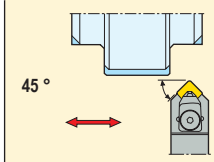
Neutral version shown
kar (κ_r) = 45°

CSKNR/L

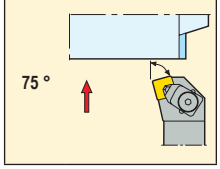


Right-hand version shown
kar (κ_r) = 75°

CSDNN



CSKNR/L



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/2	73786	CSDNN -16-4	1.00	1.00	0.500	6.0	1.70	0	-7	1.8	SN.N42.
	73787	-20-4	1.25	1.25	0.626	6.0	1.70	0	-7	2.7	SN.N42.
	73788	-24-4	1.50	1.50	0.689	6.0	1.70	0	-7	4.2	SN.N42.
1/2	88489	CSKNR -20-4	1.25	1.25	1.500	7.0	1.41	-5	-5	3.3	SN.N42.
	88490	CSKNL -20-4	1.25	1.25	1.500	7.0	1.41	-5	-5	3.3	SN.N42.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp key	Insert shim	Pressure plate	Shim screw
..-42	CC20P	4SMS795	174.10-622	P1311	F94009-T09P
..-43*	CC20P	4SMS795	174.10-621	P1311	F94009-T09P

Accessories*

Shim key
T09P-2
T09P-2

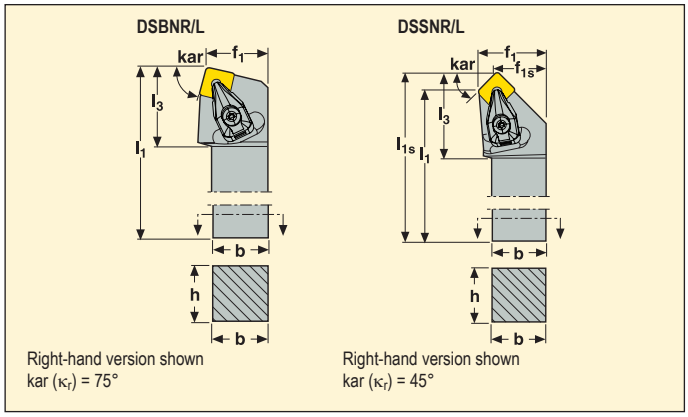
Please check availability in current price and stock-list

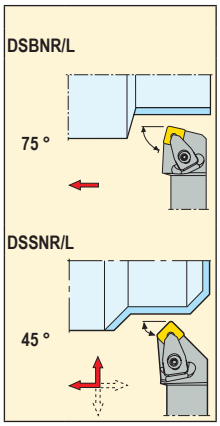
*Ordered separately.

Toolholders for PCBN inserts SNGA and SNMA



- For insert program, see pages 311, 313
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13





Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	f_{1s}	l_3	γ_o°	λ_s°	lbs	
1/2	37371	DSBNR -20-4D-C	1.25	1.25	1.38	6.0	–	1.26	-6	-6	2.9	SN.A43.
	37372	DSBNL -20-4D-C	1.25	1.25	1.38	6.0	–	1.26	-6	-6	2.9	SN.A43.
1/2	37373	DSSNR -20-4D-C	1.25	1.25	1.48	6.0	1.09	1.57	-8	0	2.4	SN.A43.
	37374	DSSNL -20-4D-C	1.25	1.25	1.48	6.0	1.09	1.57	-8	0	2.4	SN.A43.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-4D-C	FP2012	L85021-T15P	CC12P-SET	DSN444	T15P-2	C04008-T15P	S6912

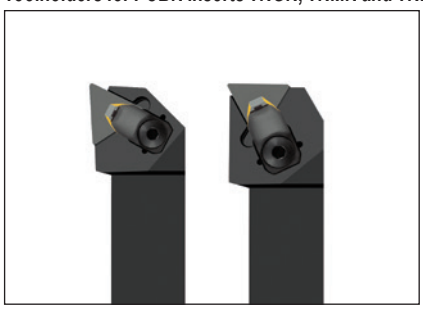
Accessories*

Clamp kit
CC12P-S12

Please check availability in current price and stock-list

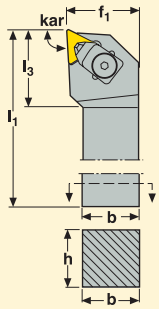
*Ordered separately.

Toolholders for PCBN inserts TNGN, TNMN and TNMX



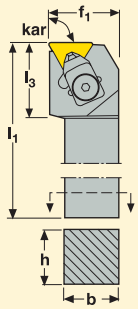
- For insert program, see pages 318-319, 321
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13
- TNMX insert for CTJNR/L toolholder kar (κ_r) = 93°

CTJNR/L



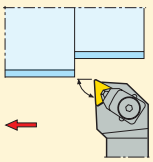
Right-hand version shown
kar (κ_r) = 93°

CTFNR/L

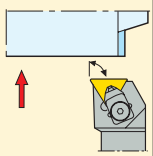


Right-hand version shown
kar (κ_r) = 90°

CTJNR/L



CTFNR/L



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
1/4	73868	CTJNR -16-2	1.00	1.00	1.25	6.0	1.18	-6	-6	2.0	TN..22.
	73870	-20-2	1.25	1.25	1.50	6.0	1.18	-6	-6	3.1	TN..22.
	73871	CTJNL -16-2	1.00	1.00	1.25	6.0	1.18	-6	-6	2.0	TN..22.
	73872	-20-2	1.25	1.25	1.50	6.0	1.18	-6	-6	3.1	TN..22.
1/4	73861	CTFNR -16-2	1.00	1.00	1.25	6.0	1.18	-6	-6	2.0	TN..22.
	73863	CTFNL -16-2	1.00	1.00	1.25	6.0	1.18	-6	-6	2.0	TN..22.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp key	Insert shim	Shim screw
..-2	CC16	4SMS795	CTN110308	CS2507-T07P

Accessories*

Shim key
T07P-2

Please check availability in current price and stock-list

*Ordered separately
Anvil CTN110312 for insert TNMN 223, ordered separately

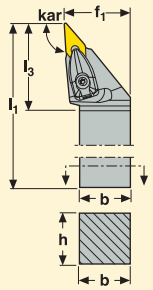
Toolholders for inserts VNMA

D style first choice



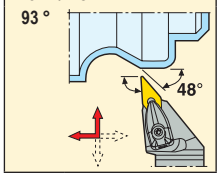
- For insert program, see pages 325
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DVJNR/L-C



Right-hand version shown
kar (κ_r) = 93°

DVJNR/L-C



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
5/16	37375	DVJNR -20-2.5D-C	1.25	1.25	1.50	6.0	1.46	-5	-14	2.4	VNMA2.53.
	37376	DVJNL -20-2.5D-C	1.25	1.25	1.50	6.0	1.46	-5	-14	2.4	VNMA2.53.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-2.5D-C	FP1508	L84017-T09P	CD08-S	PVN2.522	T09P-2	CS5008-T09P	S5608

Accessories*

Clamp kit
CD08-V13

Please check availability in current price and stock-list

*Ordered separately.

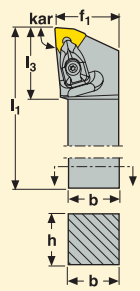
Toolholders for inserts WNGA and WNMA

D style first choice



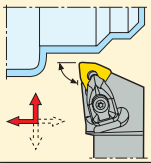
- For insert program, see pages 326-327
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 12-13

DWLNR/L-C



Right-hand version shown
kar (κ_r) = 95°

DWLNR/L-C
95 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	γ_o°	λ_s°	lbs	
3/8	37378	DWLNR -16-3D-C	1.00	1.00	1.25	6.0	1.26	-6	-6	1.8	WN.A33.
	37381	DWLNL -16-3D-C	1.00	1.00	1.25	6.0	1.26	-6	-6	1.8	WN.A33.
1/2	37379	DWLNR -16-4D-C	1.00	1.00	1.25	6.0	1.38	-6	-6	1.8	WN.A43.
	37380	-20-4D-C	1.25	1.25	1.50	6.0	1.38	-6	-6	3.1	WN.A43.
	37382	DWLNL -16-4D-C	1.00	1.00	1.25	6.0	1.38	-6	-6	1.8	WN.A43.
	37383	-20-4D-C	1.25	1.25	1.50	6.0	1.38	-6	-6	3.1	WN.A43.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
..-3D-C	FP1508	L84017-T09P	CD09-S	DWN322.5	T09P-2	C03007-T09P	S5608	CD09-S09
..-4D-C	FP2012	L85021-T15P	CD12-S	DWN434**	T15P-7	C04008-T15P	S6912	CD12-S12
..-4D-C	FP2012	L85021-T15P	CC12P-SET	DWN434**	T15P-7	C04008-T15P	S6912	CC12P-SET

Please check availability in current price and stock-list

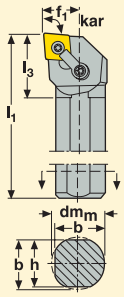
*Ordered separately.
**DWN424 for insert WN..44. to be ordered separately.

Toolholders for inserts CNGA, CNGP, CNMA, CNMG, CNMM, CNMN and CNMP



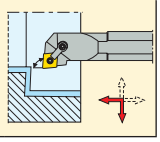
- For insert program, see pages 241-248, 301-302
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

MCLNR/L



Right-hand version shown
kar (κ_r) = 95°

MCLNR/L
95 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
3/8	43201	S12-MCLNR-3	0.75	0.73	0.71	10.00	1.75	0.500	1.00	-5	-14	1.5	CN..32.
	43196	S12-MCLNL-3	0.75	0.73	0.71	10.00	1.75	0.500	1.00	-5	-14	1.5	CN..32.
1/2	43203	S16-MCLNR-4	1.00	0.87	0.81	12.00	0.96	0.640	1.28	-5	-14	2.6	CN..43.
	43198	S16-MCLNL-4	1.00	0.87	0.81	12.00	0.96	0.640	1.28	-5	-14	2.6	CN..43.
	43204	S20-MCLNR-4	1.25	1.14	1.12	14.00	1.17	0.765	1.52	-5	-14	4.6	CN..43.
	43205	S24-MCLNR-4	1.50	1.34	1.30	14.00	1.20	0.890	1.78	-5	-14	6.6	CN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
..-3	CL-7	XNS-35	NL-33	–
16/20-4	CL-20	XNS-47	NL-44	–
24-4	CL-20	XNS-47	NL-46	CSN-432

Accessories*

Shim screw
–
–
S-46

Please check availability in current price and stock-list

*To be ordered separately

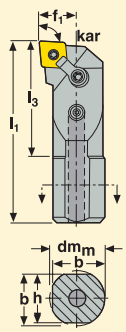
Toolholders for inserts CNGA, CNGP, CNMA, CNMG, CNMM, CNMN and CNMP

With coolant port



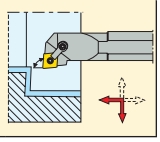
- For insert program, see pages 241-248, 301-302
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

MCLNR/L



Right-hand version shown
kar (κ_r) = 95°

MCLNR/L
95 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
1/2	12116	A16-MCLNR-4	1.00	0.96	0.92	12.0	1.26	0.64	1.28	-5	-14	2.4	CN..43.
	12112	A16-MCLNL-4	1.00	0.96	0.92	12.0	1.50	0.64	1.28	-5	-14	2.4	CN..43.
	41050	A20-MCLNR-4	1.25	1.21	1.17	14.0	2.13	0.76	1.53	-5	-14	4.4	CN..43.
	41051	A20-MCLNL-4	1.25	1.21	1.17	14.0	2.13	0.76	1.53	-5	-14	4.4	CN..43.
	41052	A24-MCLNR-4	1.50	1.46	0.90	14.0	2.22	0.89	1.78	-5	-12	6.2	CN..43.
	41053	A24-MCLNL-4	1.50	1.46	0.90	14.0	2.22	0.89	1.78	-5	-12	6.2	CN..43.
	41054	A28-MCLNR-4	1.75	1.75	1.63	14.0	2.41	1.01	2.03	-5	-12	8.6	CN..43.
	02683	A32-MCLNR-4	2.00	1.94	1.88	16.0	2.41	1.28	2.56	-5	-12	13.4	CN..43.
	02684	A32-MCLNL-4	2.00	1.94	1.88	16.0	2.41	1.28	2.56	-5	-12	13.4	CN..43.
5/8	12118	A32-MCLNR-5	2.00	1.94	1.88	16.0	2.41	1.28	2.56	-5	-12	13.4	CN..54.
	12114	A32-MCLNL-5	2.00	1.94	1.88	16.0	2.41	1.28	2.56	-5	-12	13.4	CN..54.

Spare Parts, Parts included in delivery

Accessories*

For size	Cantilever clamp	Clamp screw	Coolant port	Insert pin	Insert shim	Shim screw
						
16-4	CL-20	XNS-47	CP-0800	NL-44	–	–
20-4	CL-20	XNS-47	CP-0800	NL-44	–	–
24/28/32-4	CL-20	XNS-47	CP-0800	NL-46	CSN-432	S-46
32-5	CL-12	XNS-510	CP-0800	NL-58	CSN-533	S-58

Please check availability in current price and stock-list

*To be ordered separately

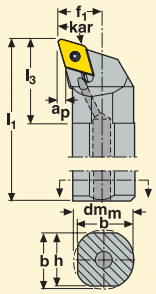
Toolholders for inserts DNMA, DNMG, DNMP and DNMU

With coolant through



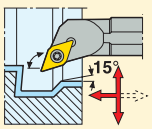
- For insert program, see pages 258, 305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

P/SDQNR

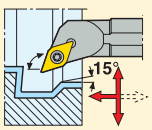


Right-hand version shown
kar (κ_r) = 107.5°

SDQNR
107.5 °



PDQNR
107.5 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
3/8	15216	A12-SDQNR-3	0.75	0.73	0.71	10.0	1.84	0.56	0.98	-6	-14	1.5	DNM.33.
	15218	A16-PDQNR-3	1.00	0.93	0.87	12.0	1.92	0.75	1.30	-5	-12	2.4	DNM.33.

Spare Parts, Parts included in delivery

For size	Insert key	Insert pin	Insert screw	Insert shim	Key	Shim screw
12-3	T09P-2	–	C03511-T09P	DSN-323	–	CA3507
16-3	–	PL1403-T09P	–	DSN-323	T09P-2	–

Accessories*

Key
3.5SMS795
–

Please check availability in current price and stock-list

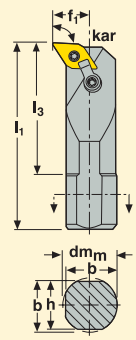
*To be ordered separately

Toolholders for inserts DNGA, DNGM, DNGP, DNMA, DNMG, DNMM, DNMP and DNMU



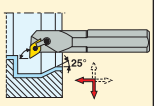
- For insert program, see pages 258, 305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

MDUNR/L



Right-hand version shown
kar (κ_r) = 93°

MDUNR/L
93 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
3/8	56415	S12-MDUNL-3	0.75	0.71	0.69	10.00	0.80	0.562	0.98	-5	-14	1.3	DN..33.
	56416	S16-MDUNR-3	1.00	0.87	0.85	12.00	0.91	0.750	1.30	-5	-14	2.6	DN..33.
	56417	S16-MDUNL-3	1.00	0.87	0.85	12.00	0.91	0.750	1.30	-5	-14	2.6	DN..33.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim
12-3	CL-6	XNS-36	NL-34L	DSN-323
16-3	CL-20	XNS-46	NL-34L	DSN-323

Please check availability in current price and stock-list

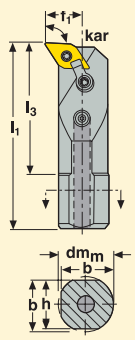
Toolholders for inserts DNGA, DNGM, DNGP, DNMA, DNMG, DNMM and DNMP

With coolant port



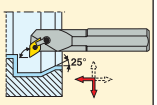
- For insert program, see pages 253-257, 304-305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

MDUNR/L



Right-hand version shown
kar (κ_r) = 93°

MDUNR/L
93 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
1/2	41062	A20-MDUNR-4	1.25	1.20	1.14	14.0	2.18	1.00	2.00	-5	-10	4.4	DN..43.
	41063	A20-MDUNL-4	1.25	1.20	1.14	14.0	2.18	1.00	2.00	-5	-10	4.4	DN..43.
	41064	A24-MDUNR-4	1.50	1.42	1.34	14.0	2.14	1.13	2.25	-5	-10	6.2	DN..43.
	41065	A24-MDUNL-4	1.50	1.42	1.34	14.0	2.14	1.13	2.25	-5	-10	6.2	DN..43.
	43209	A32-MDUNR-4	2.00	1.94	1.88	16.0	2.76	1.38	3.00	-5	-10	13.2	DN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Coolant port	Insert pin	Insert shim
..-4	CL-12	XNS59	CP-0800	NL-46	DSN-433

Accessories*

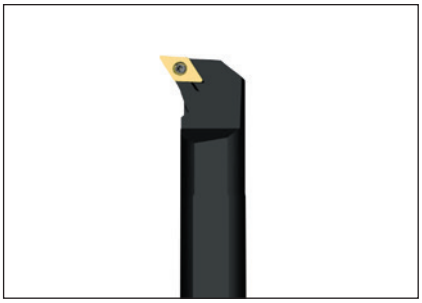
Insert shim	Shim screw
DSN-423	S-46

Please check availability in current price and stock-list

*To be ordered separately

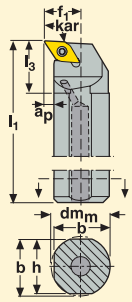
Toolholders for inserts DNMU

With coolant through



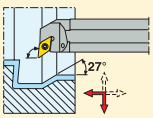
- For insert program, see pages 258
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

SDUNR/L



Right-hand version shown
kar (κ_r) = 93°

SDUNR
93 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
	14820	A10-SDUNR-3	0.625	0.60	0.53	10.0	1.60	0.50	0.85	-5	-14	1.1	DNMU33.
	14822	A12-SDUNR-3	0.750	0.73	0.71	10.0	1.80	0.56	0.98	-5	-14	1.5	DNMU33.

Spare Parts, Parts included in delivery

Accessories*

For size	Insert key	Insert screw	Insert shim	Shim screw	Shim key
..10-3	T09P-2	C03511-T09P	–	–	–
..12-3	T09P-2	C03511-T09P	DSN-323	CA3507	3.5SMS795

Please check availability in current price and stock-list

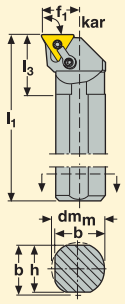
*To be ordered separately

Toolholders for inserts TNG, TNGA, TNGN, TNMA, TNMG, TNMM, TNMN and TNMP



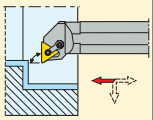
- For insert program, see pages 282-286, 317
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

MTFNR/L



Right-hand version shown
kar (κ_r) = 90°

MTFNR/L
90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
3/8	43212	**S12-MTFNR-3**	0.75	0.71	0.65	10.0	1.75	0.50	1.00	-5	-14	1.5	TN..33.
	43210	**S12-MTFNL-3**	0.75	0.71	0.65	10.0	1.75	0.50	1.00	-5	-14	1.5	TN..33.
	43214	**S16-MTFNR-3**	1.00	0.87	0.85	12.0	0.91	0.64	1.28	-5	-13	2.6	TN..33.

Spare Parts, Parts included in delivery

For size	Insert pin	Clamp screw	Cantilever clamp
..-3	NL-33L	XNS-35	CL-7

Please check availability in current price and stock-list

*To be ordered separately

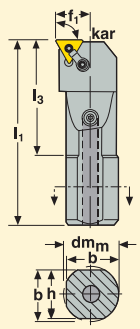
Toolholders for inserts TNG, TNGA, TNGN, TNMA, TNMG, TNMM, TNMN and TNMP

With coolant port



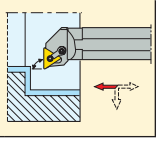
- For insert program, see pages 282-286, 317-318, 321
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

MTFNR/L



Right-hand version shown
kar (κ_r) = 90°

MTFNR/L
90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
3/8	41090	A16-MTFNR-3	1.000	0.93	0.87	12.0	1.92	0.64	1.28	-5	-12	2.2	TN..33.
	41092	A20-MTFNR-3	1.250	0.57	0.47	14.0	1.90	0.76	1.53	-5	-12	4.4	TN..33.
1/2	41094	A24-MTFNR-4	1.500	1.42	1.34	14.0	1.97	1.03	2.56	-5	-10	6.4	TN..43.
	41098	A32-MTFNR-4	2.000	1.94	1.88	16.0	2.20	1.29	2.56	-5	-8	11.7	TN..43.
5/8	41104	A48-MTFNR-5	3.000	2.95	2.88	22.0	1.12	1.78	3.56	-5	-8	41.0	TN..53.

Spare Parts, Parts included in delivery

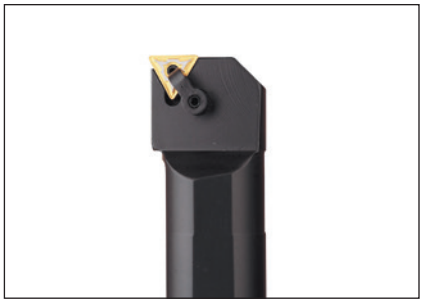
Accessories*

For size	Cantilever clamp	Clamp screw	Coolant port	Insert pin	Insert shim	Insert shim	Shim screw
A16..-3	CL-7	XNS-35	CP-0800	NL-33L	–	–	–
A20..-3	CL-7	XNS-35	CP-0800	NL-33L	–	–	–
A24..-4	CL-9	XNS59	CP-0800	NL-46	ITSN-433	TS-424	S-46
A32..-4	CL-9	XNS59	CP-0800	NL-46	ITSN-433	TS-424	S-46
A48..-5	CL-12	XNS-510	CP-0800	NL-58	ITSN-533	–	S-58

Please check availability in current price and stock-list

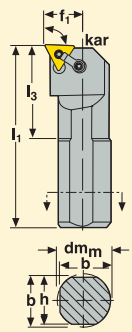
*To be ordered separately

Toolholders for inserts TNG, TNGA, TNGN, TNMA, TNMG, TNMM, TNMN and TNMP



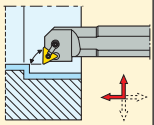
- For insert program, see pages 282-285
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

MTUNR/L



Right-hand version shown
kar (κ_r) = 93°

MTUNR/L
93 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
3/8	43219	**S16-MTUNR-3**	1.00	0.87	0.85	12.0	0.90	0.64	1.28	-5	-13	2.6	TN..32.
	43220	**S20-MTUNR-3**	1.25	1.20	1.14	14.0	2.12	0.76	1.53	-5	-11	10.4	TN..32.
	53661	**S20-MTUNL-3**	1.25	1.20	1.14	14.0	2.12	0.76	1.53	-5	-11	10.4	TN..32.

Spare Parts, Parts included in delivery

For size	Insert shim	Insert pin	Clamp screw	Cantilever clamp
16-3	ITSN-323	NL-34	XNS-35	CL-7
20-3	ITSN-323	NL-34	XNS-35	CL-7

Please check availability in current price and stock-list

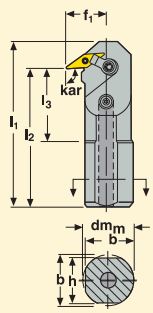
Toolholders for inserts VNGA, VNGM, VNGP, VNMA, VNMG, VNMN and VNMP

With coolant port



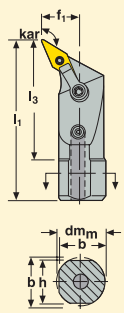
- For insert program, see pages 292-294, 324-325
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

MVLNR/L



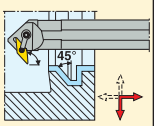
Right-hand version shown
kar (κ_r) = 95°

MVPNR/L

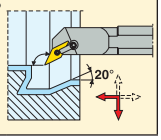


Right-hand version shown
kar (κ_r) = 117.5°

MVLNR/L
95 °



MVPNR/L
117.5 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
3/8	41118	**A24-MVLNR-3**	1.50	1.42	1.34	14.0	2.62	1.13	2.25	-5	-12	6.8	VN..33.
	41119	**A24-MVLNL-3**	1.50	1.42	1.34	14.0	2.62	1.13	2.25	-5	-12	6.8	VN..33.
1/2	41122	**A32-MVLNR-4**	2.00	1.94	1.88	16.0	3.25	1.50	3.00	-5	-12	11.7	VN..43.
	41123	**A32-MVLNL-4**	2.00	1.94	1.88	16.0	3.25	1.50	3.00	-5	-12	11.7	VN..43.
3/8	41126	**A20-MVPNR-3**	1.25	1.20	1.14	14.0	3.00	0.88	1.75	-5	-12	4.4	VN..33.
	41127	**A20-MVPNL-3**	1.25	1.20	1.14	14.0	3.00	0.88	1.75	-5	-12	4.4	VN..33.
	41128	**A32-MVPNR-3**	2.00	1.94	1.88	16.0	3.36	1.25	2.50	-5	-12	12.8	VN..33.
	41129	**A32-MVPNL-3**	2.00	1.94	1.88	16.0	3.36	1.25	2.50	-5	-12	12.8	VN..33.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Coolant port	Insert pin	Insert shim
Style L/..-3	CL-20	XNS-47	CP-0800	NL-34L	IVSN-324
Style L/..-4	CL-12	XNS-510	CP-0800	NL-46	IVSN-433
Style P/..-3	CL-30	XNS58	CP-0800	NL-34L	IVSN-324

Accessories*

Shim screw
S-34
S-46
S-34

Please check availability in current price and stock-list

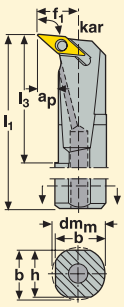
*To be ordered separately

Toolholders for inserts VNMU



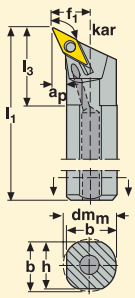
- For insert program, see pages 294
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

PVLNR/L



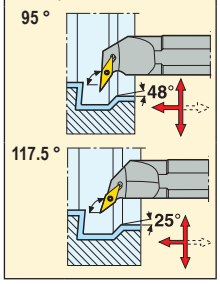
Right-hand version shown
kar (κ_r) = 95°

PVPNR/L



Right-hand version shown
kar (κ_r) = 117.5°

PVLNR/L



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
5/16	15229	A16-PVLNR-2.5	1.00	0.91	0.87	12.0	1.00	0.64	1.20	-3	-12	2.4	VNMU2.53.
	15234	A16-PVPNR-2.5	1.00	0.91	0.87	12.0	1.10	0.75	1.30	-3	-12	2.4	VNMU2.53.
	15235	A16-PVPNL-2.5	1.00	0.91	0.87	12.0	1.10	0.75	1.30	-3	-12	2.4	VNMU2.53.

Spare Parts, Parts included in delivery

For size	Insert shim	Insert pin	Insert key
			
..-2.5	PVN2.522	PL1403-T09P	T09P-2

Please check availability in current price and stock-list

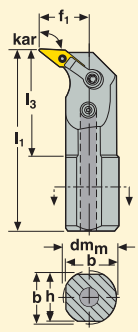
Toolholders for inserts VNGA, VNGM, VNGP, VNMA, VNMG, VNMN and VNMP

With coolant port



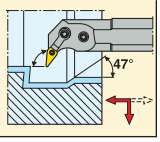
- For insert program, see pages 292-294, 324-325
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

MVUNR/L



Right-hand version shown
kar (κ_r) = 93°

MVUNR/L
93 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
3/8	41106	**A20-MVUNR-3**	1.25	1.20	1.14	14.0	1.97	1.13	2.25	-5	-12	4.6	VN..33.
	41107	**A20-MVUNL-3**	1.25	1.20	1.14	14.0	1.97	1.13	2.25	-5	-12	4.6	VN..33.
	41108	**A24-MVUNR-3**	1.50	1.42	1.34	14.0	1.97	1.25	2.06	-5	-12	6.4	VN..33.
1/2	41112	**A32-MVUNR-4**	2.00	1.94	1.88	16.0	1.97	1.63	3.25	-5	-12	13.4	VN..43.

Spare Parts, Parts included in delivery

Accessories*

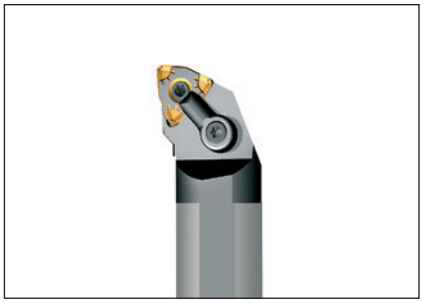
For size	Cantilever clamp	Clamp screw	Coolant port	Insert pin	Insert shim	Shim screw
..-3	CL-30	XNS-510	CP-0800	NL-34L	IVSN-324	S-34
..-4	CL-30	XNS-510	CP-0800	NL-46	IVSN-433	S-46

Please check availability in current price and stock-list

*To be ordered separately

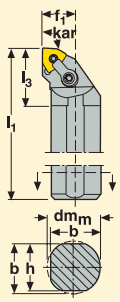
Toolholders for inserts WNGA, WNGP, WNMA, WNMG, WNMM and WNMP

(A32 has coolant port)



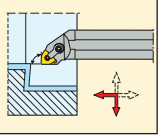
- For insert program, see pages 295-299, 326-327
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

MWLNR/L



Right-hand version shown
kar (κ_r) = 95°

MWLNR/L
95 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
3/8	51589	S12-MWLNR-3	0.75	0.73	0.71	10.0	1.75	0.50	0.93	-5	-14	1.3	WN..33.
	51592	S12-MWLNL-3	0.75	0.73	0.71	10.0	1.75	0.50	0.93	-5	-14	1.3	WN..33.
	51590	S16-MWLNR-3	1.00	0.87	0.85	12.0	0.91	0.64	1.20	-5	-14	3.1	WN..33.
	51593	S16-MWLNL-3	1.00	0.87	0.85	12.0	0.91	0.64	1.20	-5	-14	3.1	WN..33.
	51591	S20-MWLNR-3	1.25	1.14	1.12	14.0	1.17	0.76	1.47	-5	-14	4.6	WN..33.
	51595	S20-MWLNL-3	1.25	1.14	1.12	14.0	1.17	0.76	1.47	-5	-14	4.6	WN..33.
1/2	43225	S16-MWLNR-4	1.00	0.87	0.85	12.0	0.90	0.64	1.28	-5	-14	2.4	WN..43.
	43222	S16-MWLNL-4	1.00	0.87	0.85	12.0	0.90	0.64	1.28	-5	-14	2.4	WN..43.
	43226	S20-MWLNR-4	1.25	1.14	1.12	14.0	1.17	0.76	1.47	-5	-14	4.6	WN..43.
	43223	S20-MWLNL-4	1.25	1.14	1.12	14.0	1.17	0.76	1.47	-5	-14	4.6	WN..43.
	43227	S24-MWLNR-4	1.50	1.34	1.32	14.0	1.19	0.89	1.78	-5	-13	6.6	WN..43.
	43224	S24-MWLNL-4	1.50	1.34	1.32	14.0	1.19	0.89	1.78	-5	-13	6.6	WN..43.
	14792	A32-MWLNR-4	2.00	1.94	1.88	16.0	2.23	1.28	2.56	-5	-12	13.4	WN..43.
	14793	A32-MWLNL-4	2.00	1.94	1.88	16.0	2.23	1.28	2.56	-5	-12	13.4	WN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Coolant port	Insert pin	Insert shim
12/16-3	CL-6	XNS-36	–	NL-33L	–
20-3	CL-6	XNS-36	–	NL-34L	IWSN-323
16-4	XNS-47	CL-20	–	NL-44	–
20/24-4	CL-20	XNS-47	–	NL-46	IWSN-433
A32-4	CL-20	XNS-47	CP-0800	NL-46	IWSN-433

Accessories*

Insert pin	Insert shim
–	–
–	–
–	–
NL-46L	IWSN-423
NL-46L	IWSN-423

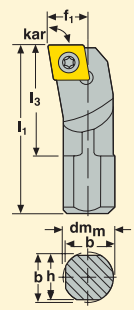
Please check availability in current price and stock-list

*To be ordered separately

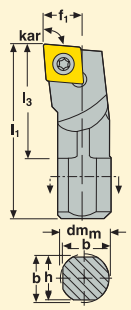
Toolholders for inserts CCGT, CCGW, CCMT and CCMW



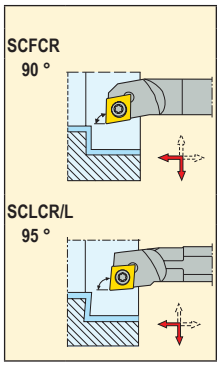
- For insert program, see pages 236, 238-240, 300, 328
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15



Right-hand version shown
kar (κ_r) = 90°



Right-hand version shown
kar (κ_r) = 95°



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
1/4	43496	**S06-SCFCR-2**	0.375	0.37	0.37	6.0	1.40	0.25	0.51	0	-11	0.44	CC..21.5.
3/8	43497	**S08-SCFCR-3**	0.500	0.47	0.43	8.0	0.98	0.31	0.62	0	-11	0.66	CC..32.5.
1/4	43272	**S06-SCLCR-2**	0.375	0.35	0.31	6.0	1.02	0.25	0.50	0	-11	0.44	CC..21.5.
	43266	**S06-SCLCL-2**	0.375	0.35	0.31	6.0	1.02	0.25	0.50	0	-11	0.44	CC..21.5.
	43274	**S08-SCLCR-2**	0.500	0.47	0.43	8.0	1.55	0.31	0.62	0	-9	0.66	CC..21.5.
	43267	**S08-SCLCL-2**	0.500	0.47	0.43	8.0	0.98	0.31	0.62	0	-9	0.66	CC..21.5.
	43268	**S10-SCLCR-2**	0.625	0.59	0.53	10.0	1.25	0.41	0.81	0	-7	1.10	CC..21.5.
	43263	**S10-SCLCL-2**	0.625	0.59	0.53	10.0	1.25	0.41	0.81	0	-7	1.10	CC..21.5.
3/8	43304	**S08-SCLCR-3**	0.500	0.47	0.43	8.0	1.55	0.31	0.62	0	-11	0.66	CC..32.5.
	43303	**S08-SCLCL-3**	0.500	0.47	0.43	8.0	0.98	0.31	0.62	0	-11	0.66	CC..32.5.
	43302	**S10-SCLCR-3**	0.625	0.59	0.53	10.0	1.25	0.41	0.81	0	-7	0.88	CC..32.5.
	43301	**S10-SCLCL-3**	0.625	0.59	0.53	10.0	1.25	0.41	0.81	0	-7	0.88	CC..32.5.
	43269	**S12-SCLCR-3**	0.750	0.71	0.73	10.0	1.75	0.50	1.00	0	-10	1.32	CC..32.5.
	43264	**S12-SCLCL-3**	0.750	0.71	0.73	10.0	1.75	0.50	1.00	0	-10	1.32	CC..32.5.
	43270	**S16-SCLCR-3**	1.000	0.96	0.90	12.0	1.75	0.62	1.25	0	-5	2.43	CC..32.5.
	43265	**S16-SCLCL-3**	1.000	0.96	0.90	12.0	1.75	0.62	1.25	0	-5	2.43	CC..32.5.

Spare Parts, Parts included in delivery

For size	Insert screw	Insert key
		
..-2	C02506-T07P	T07P-2
..-3	C04008-T15P	T15P-2

Please check availability in current price and stock-list

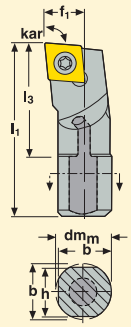
Toolholders for inserts CCGT, CCGW, CCMT and CCMW

Carbide shank with coolant through



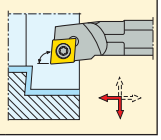
- For insert program, see pages 236, 238-240, 300, 328
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

SCLCR/L



Right-hand version shown
kar (κ_r) = 95°

SCLCR/L
95 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
1/4	93165	E06-SCLCR-2	0.375	0.35	0.31	6.0	1.06	0.25	0.50	0	-15	0.44	CC..21.5.
	93166	E06-SCLCL-2	0.375	0.35	0.31	6.0	1.06	0.25	0.50	0	-15	0.44	CC..21.5.
	93167	E08-SCLCR-2	0.500	0.47	0.43	8.0	1.06	0.31	0.62	0	-9	0.88	CC..21.5.
	93178	E08-SCLCL-2	0.500	0.47	0.43	8.0	1.06	0.31	0.62	0	-9	0.88	CC..21.5.
	93179	E10-SCLCR-2	0.625	0.59	0.53	10.0	1.34	0.41	0.81	0	-7	1.76	CC..21.5.
	93181	E10-SCLCL-2	0.625	0.59	0.53	10.0	1.34	0.41	0.81	0	-7	1.76	CC..21.5.
3/8	93183	E12-SCLCR-3	0.750	0.71	0.65	10.0	1.46	0.50	1.00	0	-10	2.20	CC..32.5.
	93184	E12-SCLCL-3	0.750	0.71	0.65	10.0	0.98	0.50	1.00	0	-10	2.20	CC..32.5.

Spare Parts, Parts included in delivery

For size	Insert screw	Insert key
..-2	C02506-T07P	T07P-2
..-3	C04008-T15P	T15P-2

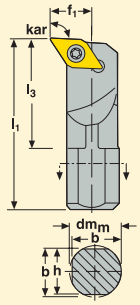
Please check availability in current price and stock-list

Toolholders for inserts DCGT, DCGW, DCMT and DCMW



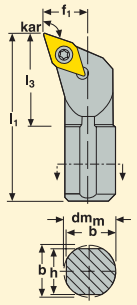
- For insert program, see pages 250-252, 303, 329
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

SDUCR/L



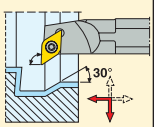
Right-hand version shown
kar (κ_r) = 93°

SDQCR

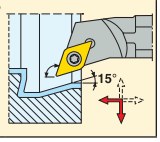


Right-hand version shown
kar (κ_r) = 107.5°

SDUCR/L
93 °



SDQCR
107.5 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
1/4	43282	**S08-SDUCR-2**	0.500	0.47	0.43	8.0	1.17	0.44	0.78	0	-5	0.7	DC..21.5.
	43279	**S10-SDUCR-2**	0.625	0.59	0.53	10.0	1.25	0.50	0.84	0	-5	0.9	DC..21.5.
	43275	**S10-SDUCL-2**	0.625	0.59	0.53	10.0	1.25	0.50	0.84	0	-5	0.9	DC..21.5.
3/8	43280	**S12-SDUCR-3**	0.750	0.71	0.65	10.0	1.75	0.56	0.85	0	-6	1.3	DC..32.5.
	43276	**S12-SDUCL-3**	0.750	0.71	0.65	10.0	1.75	0.56	1.13	0	-6	1.3	DC..32.5.
	43281	**S16-SDUCR-3**	1.000	0.96	0.90	12.0	1.91	0.75	1.50	0	-4	2.4	DC..32.5.
	43277	**S16-SDUCL-3**	1.000	0.96	0.90	12.0	1.91	0.75	1.50	0	-4	2.4	DC..32.5.
1/4	73944	**S08-SDQCR-2**	0.500	0.43	0.39	8.0	1.17	0.44	0.78	0	-11	0.7	DC..21.5.
	73945	**S10-SDQCR-2**	0.625	0.59	0.53	10.0	1.25	0.50	0.84	0	-5	1.1	DC..21.5.
3/8	73949	**S12-SDQCR-3**	0.750	0.71	0.67	10.0	1.75	0.56	1.12	0	-6	1.5	DC..32.5.
	73951	**S16-SDQCR-3**	1.000	0.86	0.82	12.0	1.91	0.75	1.50	0	-4	2.6	DC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw
		
..-2	T07P-2	C02506-T07P
..-3	T15P-2	C04008-T15P

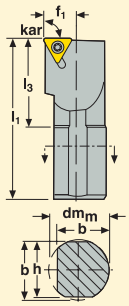
Please check availability in current price and stock-list

Toolholders for inserts TCMT and TCMW



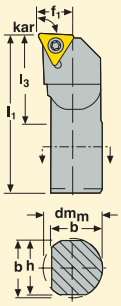
- For insert program, see pages 279, 330
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

STFCR



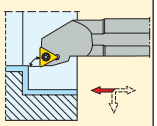
Right-hand version shown
kar (κ_r) = 90°

STUCR/L

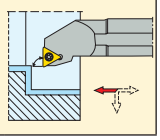


Right-hand version shown
kar (κ_r) = 93°

STFCR
90 °



STUCR/L
93 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
1/4	43288	**S06-STFCR-2**	0.375	0.35	0.31	6.0	1.40	0.25	0.50	0	-11	0.44	TC..21.5.
	43289	**S08-STFCR-2**	0.500	0.50	0.43	8.0	1.55	0.31	0.62	0	-9	0.66	TC..21.5.
	43286	**S10-STFCR-2**	0.625	0.59	0.59	10.0	1.25	0.41	0.81	0	-7	1.10	TC..21.5.
	43287	**S12-STFCR-2**	0.750	0.71	0.65	10.0	1.75	0.50	1.00	0	-6	1.54	TC..21.5.
	73980	**S06-STUCR-2**	0.375	0.31	0.28	6.0	1.40	0.25	0.50	0	-11	0.44	TC..21.5.
	76567	**S08-STUCL-2**	0.500	0.43	0.39	8.0	1.55	0.31	0.62	0	-9	0.66	TC..21.5.
	73981	**S08-STUCR-2**	0.500	0.43	0.39	8.0	1.55	0.31	0.62	0	-9	0.66	TC..21.5.
	76568	**S10-STUCL-2**	0.625	0.59	0.59	10.0	1.25	0.41	0.81	0	-7	1.10	TC..21.5.
	73982	**S10-STUCR-2**	0.625	0.59	0.59	10.0	1.25	0.41	0.81	0	-7	1.10	TC..21.5.
3/8	76569	**S12-STUCL-3**	0.750	0.71	0.65	10.0	1.75	0.50	1.00	0	-10	1.32	TC..32.5.
	76564	**S12-STUCR-3**	0.750	0.71	0.65	10.0	1.75	0.50	1.00	0	-10	1.32	TC..32.5.
	76565	**S16-STUCR-3**	1.000	0.86	0.79	12.0	1.91	0.64	1.28	0	-4	2.43	TC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw
..-2	T07P-2	C02506-T07P
..-3	T15P-2	C04008-T15P

Please check availability in current price and stock-list

*To be ordered separately

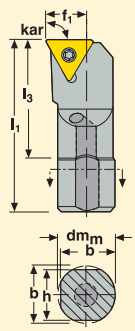
Toolholders for inserts TCGT, TCGW, TCMT and TCMW

Carbide shank with coolant through



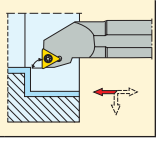
- For insert program, see pages 277, 279, 316, 330
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

STFCR



Right-hand version shown
kar (κ_r) = 90°

STFCR 90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
1/4	93116	**E06-STFCR-2**	0.375	0.35	0.31	6.0	1.06	0.25	0.50	0	-15	0.4	TC..21.5.
	93118	**E08-STFCR-2**	0.500	0.47	0.43	8.0	1.06	0.31	0.62	0	-9	0.9	TC..21.5.

Spare Parts, Parts included in delivery

For size	Insert screw	Insert key
..-2	C02506-T07P	T07P-2

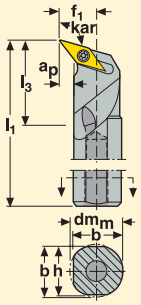
Please check availability in current price and stock-list

Toolholders for inserts VBGT and VBMT



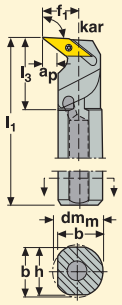
- For insert program, see pages 289-290
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

SVQBR



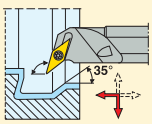
Right-hand version shown
kar (κ_r) = 107.5°

SVUBR/L

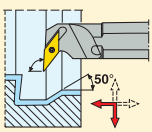


Right-hand version shown
kar (κ_r) = 93°

SVQBR
107.5 °



SVUBR/L
93 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	b	h	l_1	l_3	f_1	D_{m1}				
1/4	02730	A12-SVQBR-2	0.750	0.73	0.71	10.0	1.43	1.13	1.13	0	-5	1.3	VB..21.5.
	02696	A10-SVUBR-2	0.625	0.60	0.53	10.0	1.24	0.84	0.84	0	-7	0.9	VB..21.5.
	02703	A12-SVUBL-2	0.750	0.73	0.71	10.0	1.43	1.13	1.13	0	-5	1.3	VB..21.5.
	02698	A12-SVUBR-2	0.750	0.73	0.71	10.0	1.43	1.13	1.13	0	-5	1.3	VB..21.5.
	02725	A16-SVUBR-2	1.000	0.93	0.87	12.0	1.92	1.50	1.50	0	-3	2.4	VB..21.5.

Spare Parts, Parts included in delivery

For size	Insert screw	Insert key
..-2	C02506-T07P	T07P-2

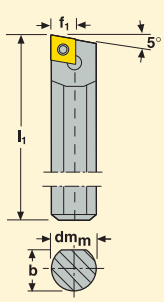
Please check availability in current price and stock-list

Toolholders for inserts CDCB



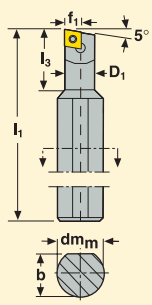
- For insert program, see pages 241
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

SCLDR/L



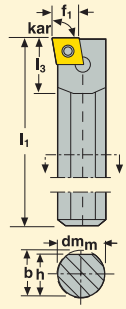
Right-hand version shown
kar (κ_r) = 95°

SCLDR



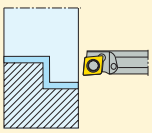
Right-hand version shown
kar (κ_r) = 95°

SCFDR

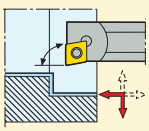


Right-hand version shown
kar (κ_r) = 90°

SCLDR/L
95 °



SCFDR
90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch								γ_o°	λ_s°	lbs	
			dm_m	D_1	h	b	l_1	l_3	f_1	D_{m1}				
5/32	57644	**S03-SCLDR-1.2**	0.187	0.14	0.18	0.19	2.5	0.53	0.10	0.180	0	-17	0.22	CDCB1.21.2.
	57645	**S03-SCLDL-1.2**	0.187	0.14	0.18	0.19	2.5	0.53	0.10	0.180	0	-17	0.22	CDCB1.21.2.
	57646	**S04-SCLDR-1.2**	0.250	–	0.23	0.25	3.0	0.39	0.14	0.265	0	-12	0.22	CDCB1.21.2.
	57647	**S04-SCLDL-1.2**	0.250	–	0.23	0.25	3.0	0.52	0.14	0.265	0	-12	0.22	CDCB1.21.2.
	57648	**H03-SCLDR-1.2**	0.187	–	0.18	0.19	4.0	0.39	0.11	0.204	0	-17	0.22	CDCB1.21.2.
	57649	**S0306-SCLDR-1.2**	0.375	0.14	0.36	0.37	2.5	0.52	0.10	0.183	0	-12	0.22	CDCB1.21.2.
	57650	**S0406-SCLDR-1.2**	0.375	0.25	0.36	0.36	2.5	1.25	0.15	0.277	0	-12	0.22	CDCB1.21.2.
	57651	**H0308-SCLDR-1.2**	0.500	0.19	0.48	0.50	4.0	1.12	0.12	0.212	0	-17	0.44	CDCB1.21.2.
	57654	**H03-SCFDR-1.2**	0.187	–	0.19	0.18	4.0	0.39	0.11	0.205	0	-17	0.22	CDCB1.21.2.

Bar descriptions that begin with H denotes heavy metal construction.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw
H..	T06-2	CS115
S0306-SCLDR	T06-2	CS110
S03-SCLDR/L	T06-2	CS110
S0406-SCLDR	T06-2	CS115
S04-SCLDR/L	T06-2	CS115

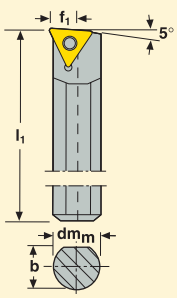
Please check availability in current price and stock-list

Toolholders for inserts TDAB and TDCH



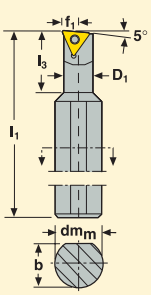
- For insert program, see pages 280-281
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

STLDR



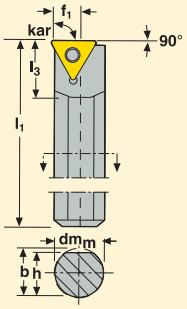
Right-hand version shown
kar (κ_r) = 95°

STLDR



Right-hand version shown
kar (κ_r) = 95°

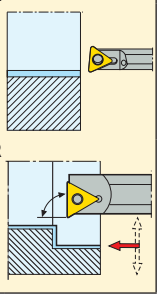
STFDR



Right-hand version shown
kar (κ_r) = 90°

STLDR 95 °

STFDR 90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch								γ_o°	λ_s°	lbs	
			dm_m	D_1	h	b	l_1	l_3	f_1	D_{m1}				
5/32	57658	S04-STLDR-1.2	0.250	–	0.23	0.25	4.0	0.39	0.16	0.290	0	-12	0.22	TD..1.21.5.
	57659	S05-STLDR-1.2	0.313	–	0.29	0.29	4.0	–	0.19	0.350	0	-12	0.22	TD..1.21.5.
	57661	H04STLDR-1.2	0.250	–	0.24	0.25	4.0	0.39	0.16	0.290	0	-12	0.22	TD..1.21.5.
	57662	H05STLDR-1.2	0.313	–	0.30	0.31	6.0	0.39	0.19	0.350	0	-8	0.44	TD..1.21.5.
	57663	S0308-STLDR-1.2	0.500	0.19	0.47	0.47	2.9	0.98	0.14	0.212	0	-17	0.22	TD..1.21.5.
	57664	S0408-STLDR-1.2	0.500	0.25	0.48	0.48	3.2	1.25	0.17	0.300	0	-12	0.22	TD..1.21.5.
	57666	H0408STLDR-1.2	0.500	0.25	0.48	0.50	3.2	1.25	0.18	0.300	0	-12	0.44	TD..1.21.5.
	57667	S05-STFDR-1.2	0.313	–	0.29	0.29	4.0	–	0.19	0.350	0	-12	0.22	TD..1.21.5.

Bar descriptions that begin with H denotes heavy metal construction.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw
..-1.2	T06-2	CS120

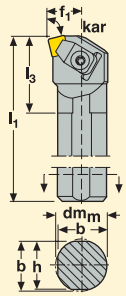
Please check availability in current price and stock-list

Toolholders for PCBN inserts SNGF, SNGN AND SNMN



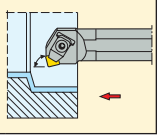
- For insert program, see pages 311, 313-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

CSKNR/L



Right-hand version shown
kar (κ_r) = 75°

CSKNR/L
75 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	h	b	l_1	l_3	f_1	D_{m1}				
1/2	73823	S20-CSKNR-4	1.25	1.14	1.20	14.0	2.15	0.76	1.53	-5	-12	4.6	SN..42.
	73830	S20-CSKNL-4	1.25	1.14	1.20	14.0	2.15	0.76	1.53	-5	-12	4.6	SN..42.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp key	Insert shim	Pressure plate	Shim key	Shim screw
20-4	CC20P	4SMS795	174.10-622	P1311	T09P-2	F94009-T09P

Accessories*

Insert shim
174.10-621

Please check availability in current price and stock-list

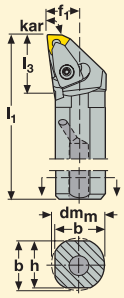
*174.10-621 optional anvil for SNMN 43 insert must be ordered separately

Toolholders for PCBN inserts WNGA and WNMA

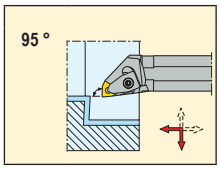


- For insert program, see pages 326-327
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 14-15

DWLNR/L..-C



Right-hand version shown
kar (κ_r) = 95°



I.C.	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			dm_m	h	b	l_1	f_1	l_3	D_m min				
3/8	37388	**A16-DWLNR-3-C**	1.00	0.90	0.96	12.0	0.433	1.38	1.30	-5	-11	2.2	WN.A33.
	37390	**A16-DWLNL-3-C**	1.00	0.90	0.96	12.0	0.433	1.38	1.30	-5	-11	2.2	WN.A33.
1/2	37389	**A20-DWLNR-4-C**	1.25	1.15	1.21	14.1	0.756	1.61	1.53	-6	-14	4.2	WN.A43.
	37391	**A20-DWLNL-4-C**	1.25	1.15	1.21	14.1	0.756	1.61	1.53	-6	-14	4.2	WN.A43.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
-3-C	FP1508	L84017-T09P	CC09P-SET	DWD060210	T09P-2	C03007-T09P	S5608
-4-C	FP2012	L85021-T15P	CC12P-SET	DWD080316	T15P-2	C04008-T15P	S6912

Accessories*

Clamp kit
CC09P-D11
CC12P-S12

Please check availability in current price and stock-list

*To be ordered separately

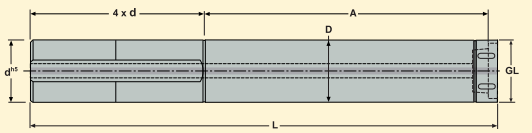
Steadyline vibration damping holders with GL connection

Inch – Cylindrical shank

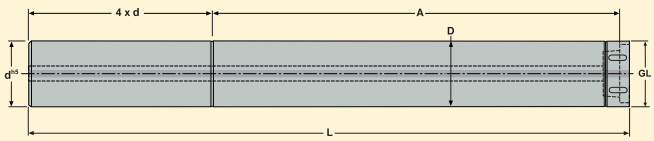


- With dynamic damping, ready to use
- With through coolant
- For GL heads program, see pages 205-218

Design 1



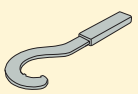
Design 2*



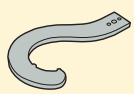
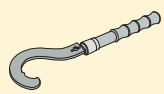
* Without flat

Shank d^{h5} inch	GL connection size	EDP No.	Part No.	Dimensions in inch A	Dimensions in inch d^{h5}	Dimensions in inch L	Design	lbs
1.25								
	GL32	75358	**DA20-6.50-GL32**	6.50	1.25	11.58	1	4.0
	GL32	75359	**DA20-9.00-GL32**	9.00	1.25	14.22	1	5.1
	GL32	75360	**DA20-11.50-GL32**	11.50	1.25	16.72	2	6.0
1.50								
	GL40	75361	**DA24-8.00-GL40**	8.00	1.50	14.43	1	7.7
	GL40	75362	**DA24-11.00-GL40**	11.00	1.50	17.43	1	9.5
	GL40	75363	**DA24-14.00-GL40**	14.00	1.50	20.43	2	11.5
2.00								
	GL50	75364	**DA32-10.50-GL50**	10.50	2.00	18.62	1	16.8
	GL50	75365	**DA32-14.50-GL50**	14.50	2.00	22.62	1	20.3
	GL50	75366	**DA32-18.50-GL50**	18.50	2.00	26.62	2	24.5

Spare Parts, Parts included in delivery

For nut of GL bore size	Locking key
	
GL32	SL32
GL40	SL40
GL50	SL50

Accessories*

For nut of GL bore size	Replaceable end	Torque key
		
GL32	SL00-32	SL00-32.250
GL40	SL00-40	SL00-40.350
GL50	SL00-50	SL00-50.550

Please check availability in current price and stock-list

*Ordered separately

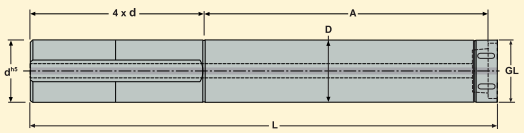
Steadyline vibration damping holders with GL connection

Metric – Cylindrical shank

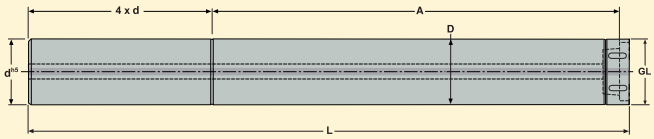


- With dynamic damping, ready to use
- With through coolant
- For GL heads program, see pages 205-218

Design 1



Design 2*



* Without flat

Shank d^{h5} mm	GL connection size	EDP No.	Part No.	Dimensions in mm A	D	L	Design	lbs
32								
	GL32	75349	**D32-160-GL32**	160	32	293.5	1	4.0
	GL32	75350	**D32-224-GL32**	224	32	357.5	1	5.1
	GL32	75351	**D32-288-GL32**	288	32	421.5	2	6.0
40								
	GL40	75352	**D40-208-GL40**	208	40	374.5	1	8.4
	GL40	75353	**D40-288-GL40**	288	40	454.5	1	10.1
	GL40	75354	**D40-368-GL40**	368	40	534.5	2	12.1
50								
	GL50	75355	**D50-268-GL50**	268	50	475.5	1	16.5
	GL50	75356	**D50-368-GL50**	368	50	575.5	1	20.1
	GL50	75357	**D50-468-GL50**	468	50	675.5	2	24.3

Spare Parts, Parts included in delivery

For nut of GL bore size	Locking key
GL32	SL32
GL40	SL40
GL50	SL50

Accessories*

For nut of GL bore size	Replaceable end	Torque key
GL32	SL00-32	SL00-32.250
GL40	SL00-40	SL00-40.350
GL50	SL00-50	SL00-50.550

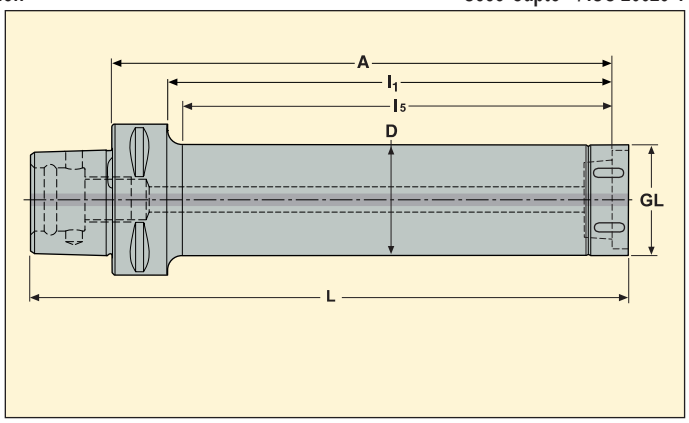
Please check availability in current price and stock-list

*To be ordered separately

Steadyline vibration damping holders with GL connection

Seco-Capto™/ ISO 26623-1



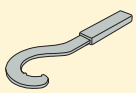


- With dynamic damping, ready to use
- With through coolant
- For GL heads program, see pages 205-218

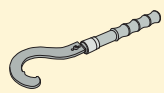
Seco-Capto™ shank size	GL connection size	EDP No.	Part No.	Dimensions in inch A	D	L	l_1	l_5	Max. RPM*	Balancing	lbs
C4											
	GL32	75331	**C4-D32-160-GL32**	6.30	1.26	7.45	5.51	5.39	4000	2	2.6
	GL32	75332	**C4-D32-224-GL32**	8.82	1.26	9.97	8.03	7.91	4000	2	3.7
	GL32	75333	**C4-D32-288-GL32**	11.34	1.26	12.50	10.55	10.43	4000	2	4.6
C5											
	GL32	75334	**C5-D32-160-GL32**	6.30	1.26	7.70	5.51	5.35	4000	2	3.1
	GL32	75335	**C5-D32-224-GL32**	8.82	1.26	10.22	8.03	7.87	4000	2	4.0
	GL32	75336	**C5-D32-288-GL32**	11.34	1.26	12.74	10.55	10.39	4000	2	4.9
	GL40	75337	**C5-D40-208-GL40**	8.19	1.57	9.63	7.40	7.24	3500	2	5.5
	GL40	75338	**C5-D40-288-GL40**	11.34	1.57	12.77	10.55	10.39	3500	2	7.3
	GL40	75339	**C5-D40-368-GL40**	14.49	1.57	15.93	13.70	13.54	3500	2	9.5
C6											
	GL32	75340	**C6-D32-160-GL32**	6.30	1.26	8.01	5.31	5.08	4000	2	4.0
	GL32	75341	**C6-D32-224-GL32**	8.82	1.26	10.52	7.83	7.60	4000	2	4.9
	GL32	75342	**C6-D32-288-GL32**	11.34	1.26	13.05	10.35	10.12	4000	2	5.7
	GL40	75343	**C6-D40-208-GL40**	8.19	1.57	9.94	7.20	6.97	3500	2	6.4
	GL40	75344	**C6-D40-288-GL40**	11.34	1.57	13.08	10.35	10.12	3500	2	8.2
	GL40	75345	**C6-D40-368-GL40**	14.49	1.57	16.24	13.50	13.27	3500	2	10.1
	GL50	75346	**C6-D50-268-GL50**	10.55	1.97	12.34	9.57	9.37	2500	2	11.0
	GL50	75347	**C6-D50-368-GL50**	14.49	1.97	16.28	13.50	13.31	2500	2	14.6
	GL50	75348	**C6-D50-468-GL50**	18.43	1.97	20.22	17.44	17.24	2500	2	18.7

* Max. RPM only when used in rotating boring

Spare Parts, Parts included in delivery

For nut of GL bore size	Locking key
	
GL32	SL32
GL40	SL40
GL50	SL50

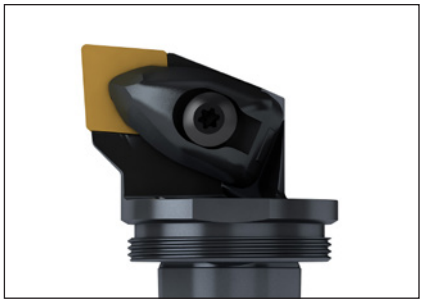
Accessories*

For nut of GL bore size	Replaceable end	Torque key
		
GL32	SL00-32	SL00-32.250
GL40	SL00-40	SL00-40.350
GL50	SL00-50	SL00-50.550

Please check availability in current price and stock-list

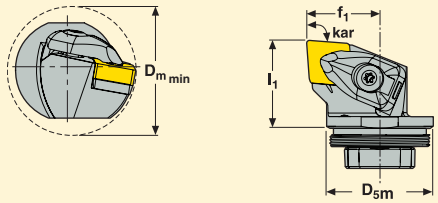
*Ordered separately

Toolholders for inserts CNGP, CNMA, CNMG and CNMM

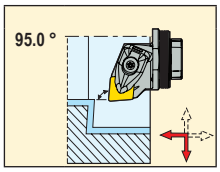


- For insert program, see pages 241-248
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages
- For damping holders program, see pages 202-204

GL..-DCLNR/L



Right-hand version shown
kar (κ_r) = 95°



Size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_m min	f_1	l_1	γ_o°	λ_s°	lbs	
GL32										
	1/2	10667	GL32-DCLNR-22032-12	1.57	0.87	1.26	-6	-10	0.44	CN..43.
		10668	GL32-DCLNL-22032-12	1.57	0.87	1.26	-6	-10	0.44	CN..43.
GL40										
	1/2	10582	GL40-DCLNR-27032-12	1.97	1.06	1.26	-6	-10	0.44	CN..43.
		10585	GL40-DCLNL-27032-12	1.97	1.06	1.26	-6	-10	0.44	CN..43.
GL50										
	1/2	10639	GL50-DCLNR-32032-12	2.36	1.26	1.26	-6	-8	0.66	CN..43.
		10641	GL50-DCLNL-32032-12	2.36	1.26	1.26	-6	-8	0.66	CN..43.
	5/8	10904	GL50-DCLNR-32037-16	2.36	1.26	1.46	-5	-14	0.88	CN..54.
		10905	GL50-DCLNL-32037-16	2.36	1.26	1.46	-5	-14	0.88	CN..54.
	3/4	10908	GL50-DCLNR-32040-19	2.36	1.26	1.57	-5	-14	0.88	CN..64.
		10909	GL50-DCLNL-32040-19	2.36	1.26	1.57	-5	-14	0.88	CN..64.

Spare Parts, Parts included in delivery

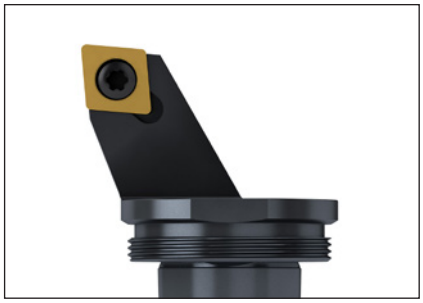
Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
..-12	FP2012	L85021-T15P	CD12-S	DCO120310	T15P-7	C04008-T15P	S6912	CD12-S12
..-16	FP2012	L86026-T20P	CD16-S	DCN544	T20P-7L	C05010-T20P	S7010	CD16-S16
..-19	FP2012	L86026-T20P	CD19-S	DCN634	T20P-7L	C05010-T20P	S7010	CD19-S19

Please check availability in current price and stock-list

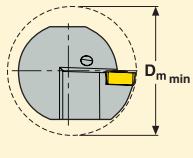
*Ordered separately

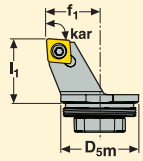
Toolholders for inserts CCGT, CCGX and CCMT



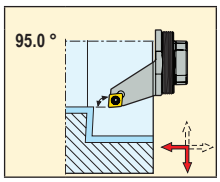
- For insert program, see pages 236-240
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages
- For damping holders program, see pages 202-204

GL..-SCLCR/L





Right-hand version shown
kar (κ_r) = 95°



Size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_m min	f_1	l_1	γ_o°	λ_s°	lbs	
GL32										
	1/4	10676	GL32-SCLCR-22032-06	1.57	0.87	1.26	0	-2	0.22	CC..21.5.
		10698	GL32-SCLCL-22032-06	1.57	0.87	1.26	0	-2	0.22	CC..21.5.
	3/8	10589	GL32-SCLCR-22032-09	1.57	0.87	1.26	0	-2	0.22	CC..32.5.
		10591	GL32-SCLCL-22032-09	1.57	0.87	1.26	0	-2	0.22	CC..32.5.
	1/2	10701	GL32-SCLCR-22032-12	1.57	0.87	1.26	0	-8	0.22	CC..43.
		10706	GL32-SCLCL-22032-12	1.57	0.87	1.26	0	-8	0.22	CC..43.
GL40										
	1/4	10898	GL40-SCLCR-27032-06	1.97	1.06	1.26	0	-2	0.44	CC..21.5.
		10899	GL40-SCLCL-27032-06	1.97	1.06	1.26	0	-2	0.44	CC..21.5.
	3/8	10632	GL40-SCLCR-27032-09	1.97	1.06	1.26	0	-2	0.44	CC..32.5.
		10638	GL40-SCLCL-27032-09	1.97	1.06	1.26	0	-2	0.44	CC..32.5.
	1/2	10754	GL40-SCLCR-27032-12	1.97	1.06	1.26	0	-8	0.44	CC..43.
		10757	GL40-SCLCL-27032-12	1.97	1.06	1.26	0	-8	0.44	CC..43.
GL50										
	1/4	10917	GL50-SCLCR-32032-06	2.36	1.26	1.26	0	-2	0.66	CC..21.5.
		10918	GL50-SCLCL-32032-06	2.36	1.26	1.26	0	-2	0.66	CC..21.5.
	3/8	10642	GL50-SCLCR-32032-09	2.36	1.26	1.26	0	-2	0.66	CC..32.5.
		10657	GL50-SCLCL-32032-09	2.36	1.26	1.26	0	-2	0.66	CC..32.5.
	1/2	10801	GL50-SCLCR-32032-12	2.36	1.26	1.26	0	-5	0.66	CC..43.
		10802	GL50-SCLCL-32032-12	2.36	1.26	1.26	0	-5	0.66	CC..43.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
..-06	T07P-2	C02506-T07P	–	–
..-09	T15P-2	C04008-T15P	–	–
..-12	T15P-2	C05012-T15P	123.19-621	CA5008

Accessories*

Shim key
–
–
5SMS795

Please check availability in current price and stock-list

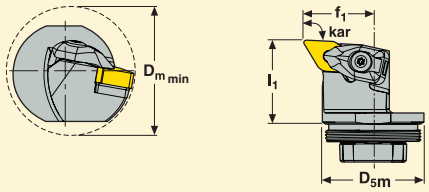
*Ordered separately

Toolholders for inserts DNGP, DNGM, DNMA, DNMG, DNMM, DNMU and DNMX

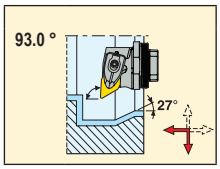


- For insert program, see pages 253-259, 305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages
- For damping holders program, see pages 202-204

GL..-DDUNR/L



Right-hand version shown
kar (κ_r) = 93°



Size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_m min	f_1	l_1	γ_o°	λ_s°	lbs	
GL32										
	3/8	10866	GL32-DDUNR-22032-11	1.57	0.87	1.26	-6	-10	0.44	DN..33.
		10869	GL32-DDUNL-22032-11	1.57	0.87	1.26	-6	-10	0.44	DN..33.
GL40										
	3/8	10887	GL40-DDUNR-27032-11	1.97	1.06	1.26	-5	-10	0.44	DN..33.
		10889	GL40-DDUNL-27032-11	1.97	1.06	1.26	-5	-10	0.44	DN..33.
	1/2	10587	GL40-DDUNR-27032-15	1.97	1.06	1.26	-6	-12	0.44	DN..43.
		10588	GL40-DDUNL-27032-15	1.97	1.06	1.26	-6	-12	0.44	DN..43.
GL50										
	1/2	10788	GL50-DDUNR-32032-15	2.36	1.06	1.26	-6	-12	0.66	DN..43.
		10789	GL50-DDUNL-32032-15	2.36	1.06	1.26	-6	-12	0.66	DN..43.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-11	FP1508	L84017-T09P	CD09-S	DDN322.5	T09P-2	C03007-T09P	S5608
..-15	FP2012	L85021-T15P	CD12-S	DDN434	T15P-7	C04008-T15P	S6912

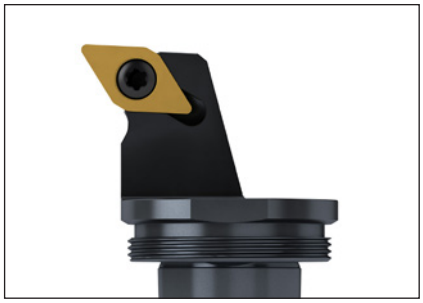
Accessories*

Clamp kit
CD09-S09
CD12-S12

Please check availability in current price and stock-list

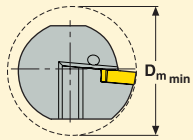
*Ordered separately

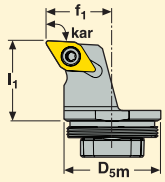
Toolholders for inserts DCGT, DCGW, DCMT, and DCMX



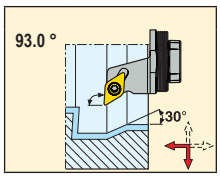
- For insert program, see pages 250-253
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages
- For damping holders program, see pages 202-204

GL..-SDUCR/L





Right-hand version shown
kar (κ_r) = 93°



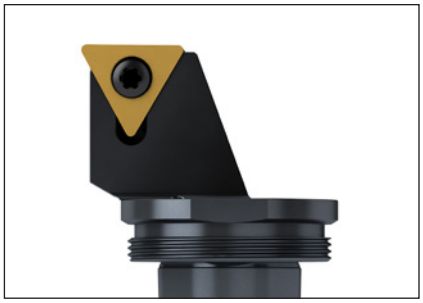
Size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_m min	f_1	l_1	γ_o°	λ_s°	lbs	
GL32										
	3/8	10601	GL32-SDUCR-22032-11	1.73	0.87	1.26	0	-5	0.22	DC..32.5.
		10612	GL32-SDUCL-22032-11	1.73	0.87	1.26	0	-5	0.22	DC..32.5.
GL40										
	3/8	10762	GL40-SDUCR-27032-11	1.97	1.06	1.26	0	-5	0.44	DC..32.5.
		10768	GL40-SDUCL-27032-11	1.97	1.06	1.26	0	-5	0.44	DC..32.5.
GL50										
	3/8	10804	GL50-SDUCR-32032-11	2.36	1.26	1.26	0	-5	0.66	DC..32.5.
		10806	GL50-SDUCL-32032-11	2.36	1.26	1.26	0	-5	0.66	DC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw
..-11	T15P-2	C04008-T15P

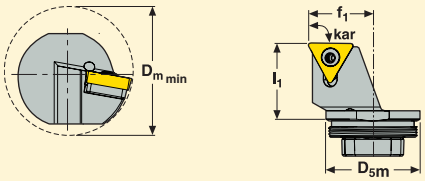
Please check availability in current price and stock-list

Toolholders for inserts TCGT, TCGX, TCMT, TCMW and TCMX

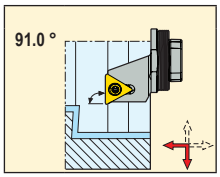


- For insert program, see pages 277-280, 330
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages
- For damping holders program, see pages 202-204

GL..-STFCR/L



Right-hand version shown
kar (κ_r) = 91°



Size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_m min	f_1	l_1	γ_o°	λ_s°	lbs	
GL32										
	3/8	10617	GL32-STFCR-22032-16	1.57	0.87	1.26	0	-10	0.44	TC..32.5.
		10629	GL32-STFCL-22032-16	1.57	0.87	1.26	0	-10	0.44	TC..32.5.
GL40										
	3/8	10771	GL40-STFCR-27032-16	1.97	1.06	1.26	0	-8	0.44	TC..32.5.
		10776	GL40-STFCL-27032-16	1.97	1.06	1.26	0	-8	0.44	TC..32.5.
GL50										
	3/8	10920	GL50-STFCR-32032-16	2.36	1.26	1.26	0	-8	0.66	TC..32.5.
		10845	GL50-STFCL-32032-16	2.36	1.26	1.26	0	-8	0.66	TC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
..-16	T15P-2	C03509-T15P	STN323	CA3510

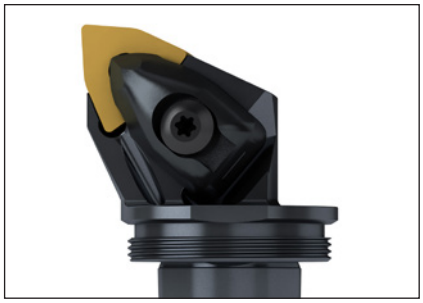
Accessories*

Shim key
9/64SMS875

Please check availability in current price and stock-list

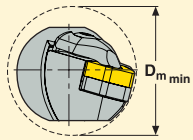
*Ordered separately

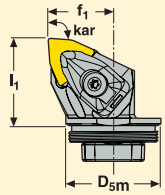
Toolholders for inserts WNGP, WNMA, WNMG and WNMM



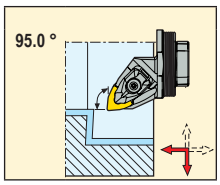
- For insert program, see pages 296-299, 327
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages
- For damping holders program, see pages 202-204

GL..-DWNLR/L





Right-hand version shown
kar (κ_r) = 95°



Size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch: D_m min	f_1	l_1	γ_o°	λ_s°	lbs	
GL32										
	3/8	10870	GL32-DWLNR-22032-06	1.57	0.87	1.26	-5	-12	0.44	WN..33.
		10873	GL32-DWLNL-22032-06	1.57	0.87	1.26	-5	-12	0.44	WN..33.
	1/2	10874	GL32-DWLNR-22035-08	1.57	0.87	1.38	-5	-14	0.44	WN..43.
		10884	GL32-DWLNL-22035-08	1.57	0.87	1.38	-5	-14	0.44	WN..43.
GL40										
	3/8	10891	GL40-DWLNR-27032-06	1.97	1.06	1.26	-5	-12	0.44	WN..33.
		10892	GL40-DWLNL-27032-06	1.97	1.06	1.26	-5	-12	0.44	WN..33.
	1/2	10895	GL40-DWLNR-27037-08	1.97	1.06	1.46	-5	-12	0.44	WN..43.
		10897	GL40-DWLNL-27037-08	1.97	1.06	1.46	-5	-12	0.44	WN..43.
GL50										
	3/8	10910	GL50-DWLNR-32032-06	2.36	1.26	1.26	-5	-12	0.66	WN..33.
		10911	GL50-DWLNL-32032-06	2.36	1.26	1.26	-5	-12	0.66	WN..33.
	1/2	10913	GL50-DWLNR-32038-08	2.36	1.26	1.50	-5	-12	0.66	WN..43.
		10915	GL50-DWLNL-32038-08	2.36	1.26	1.50	-5	-12	0.66	WN..43.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
..-06	FP1508	L84017-T09P	CD09-S	DWN322.5	T09P-2	C03007-T09P	S5608	CD09-S09
..-08	FP2012	L85021-T15P	CD12-S	DWN434	T15P-7	C04008-T15P	S6912	CD12-S12

Please check availability in current price and stock-list

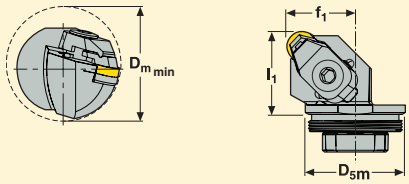
*Ordered separately

Toolholders for PCBN inserts RNGN-LF, RNGN and RNMN

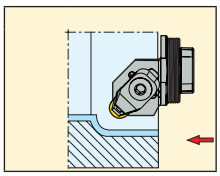


- For insert program, see pages 307-309, 330, 333
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages
- For damping holders program, see pages 202-204

GL..-CSRNR/L



Right-hand version shown



Size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_m min	f_1	l_1	γ_o°	λ_s°	lbs	
GL32										
	3/8	10707	GL32-CRSNR-22032-09	1.57	0.87	1.26	-6	-12	0.44	RN.N32.
		10711	GL32-CRSNL-22032-09	1.57	1.26	1.26	-6	-12	0.44	RN.N32.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp key	Insert shim	Pressure plate	Shim screw
..-09	CC17P-09	4SMS795	117.10-620	P1311-09	174.10-652-T07P

Accessories*

Shim key
T07P-2

Please check availability in current price and stock-list

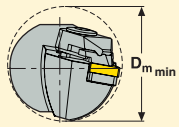
*Ordered separately

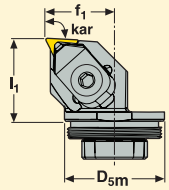
Toolholders for PCBN inserts TNGN-LF, TNGN, TNGX, TNMN and TNMX



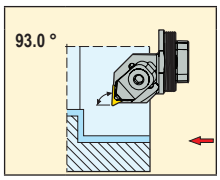
- For insert program, see pages 287, 318-321
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages
- For damping holders program, see pages 202-204

GL..-CTUNR/L





Right-hand version shown
kar (κ_r) = 93°



Size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch: D_m min	f_1	l_1	γ_o°	λ_s°	lbs	
GL32										
	1/4	10630	GL32-CTUNR-22032-11	1.57	0.87	1.26	-6	-10	0.44	TN..22.
		10631	GL32-CTUNL-22032-11	1.57	0.87	1.26	-6	-10	0.44	TN..22.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp key	Insert shim	Pressure plate	Shim screw
..-11	CC17P-06	4SMS795	CTN110308	P1311-06	CS2507-T07P

Accessories*

Shim key
T07P-2

Please check availability in current price and stock-list

*Ordered separately

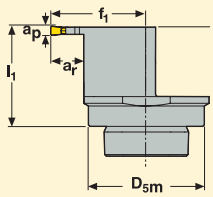
Toolholders for LCGF, LCGN, LCMF and LCMR

MDT 2 mm



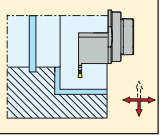
- For insert program, see pages 420-420
- For damping holders program, see pages 202-204

GL.-CGJR/L-..JET



Right-hand version shown

GL.-CGJR/L-..JET
90 °



Size	ap	EDP No.	Part No.	Dimensions in inch					lbs	
				D_{5m}	f_1	l_1	a_r	DCINN*		
GL32										
	2.0	13177	GL32-CGJR-25032-1902JET	1.26	0.98	1.26	0.295	1.69	0.44	LC..1902..
		13182	GL32-CGJL-25032-1902JET	1.26	0.98	1.26	0.295	1.69	0.44	LC..1902..
GL40										
	2.0	13184	GL40-CGJR-29032-1902JET	1.57	1.14	1.26	0.295	2.01	0.44	LC..1902..
		13188	GL40-CGJL-29032-1902JET	1.57	1.14	1.26	0.295	2.01	0.44	LC..1902..
GL50										
	2.0	13191	GL50-CGJR-34032-1902JET	1.97	1.34	1.26	0.295	2.40	0.66	LC..1902..
		13192	GL50-CGJL-34032-1902JET	1.97	1.34	1.26	0.295	2.40	0.66	LC..1902..

*DCINN – minimum bore diameter, see MN Turning 2015 page(s) 477

Spare Parts, Parts included in delivery

For size	Clamp key	Clamp screw
		
1902	T15P-7	L85011-T15P

Please check availability in current price and stock-list

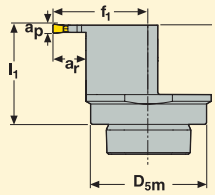
Toolholders for LCGF, LCGN, LCMF and LCMR

MDT 3 mm



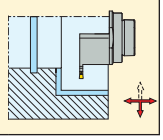
- For insert program, see pages 426-438, 440-441
- For damping holders program, see pages 202-204

GL.-CGIR/L-..JET



Right-hand version shown

GL.-CGIR/L-..JET
90 °



Size	ap	EDP No.	Part No.	Dimensions in inch					lbs	
				D_{5m}	f_1	l_1	a_r	DCINN*		
GL32										
	3.0	13193	GL32-CGIR-26032-1603JET	1.26	1.04	1.26	0.354	1.73	0.44	LC..1603..
		13194	GL32-CGIL-26032-1603JET	1.26	1.04	1.26	0.354	1.73	0.44	LC..1603..
GL40										
	3.0	13203	GL40-CGIR-30032-1603JET	1.57	1.20	1.26	0.354	2.05	0.44	LC..1603..
		13204	GL40-CGIL-30032-1603JET	1.57	1.20	1.26	0.354	2.05	0.44	LC..1603..
GL50										
	3.0	13210	GL50-CGIR-35032-1603JET	1.97	1.40	1.26	0.354	2.44	0.66	LC..1603..
		13211	GL50-CGIL-35032-1603JET	1.97	1.40	1.26	0.354	2.44	0.66	LC..1603..

*DCINN – minimum bore diameter, see MN Turning 2015 page(s) 477

Spare Parts, Parts included in delivery

For size	Clamp key	Clamp screw
		
1603	T15P-7	L85011-T15P

Please check availability in current price and stock-list

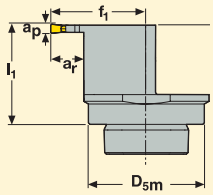
Toolholders for LCGF, LCGN, LCMF and LCMR

MDT 4 mm



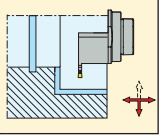
- For insert program, see pages 426-435, 440-441
- For damping holders program, see pages 202-204

GL.-CGHR/L-..JET



Right-hand version shown

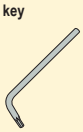
GL.-CGHR/L-..JET
90 °



Size	ap	EDP No.	Part No.	Dimensions in inch					lbs	
				D_{5m}	f_1	l_1	a_r	DCINN*		
GL32										
	4.0	13232	GL32-CGHR-27032-1604JET	1.26	1.08	1.26	0.394	1.77	0.44	LC..1604..
		13235	GL32-CGHL-27032-1604JET	1.26	1.08	1.26	0.394	1.77	0.44	LC..1604..
GL40										
	4.0	13236	GL40-CGHR-31032-1604JET	1.57	1.24	1.26	0.394	2.09	0.44	LC..1604..
		13242	GL40-CGHL-31032-1604JET	1.57	1.24	1.26	0.394	2.09	0.44	LC..1604..
GL50										
	4.0	13243	GL50-CGHR-36032-1604JET	1.97	1.44	1.26	0.394	2.48	0.66	LC..1604..
		13246	GL50-CGHL-36032-1604JET	1.97	1.44	1.26	0.394	2.48	0.66	LC..1604..

*DCINN – minimum bore diameter, see MN Turning 2015 page(s) 477

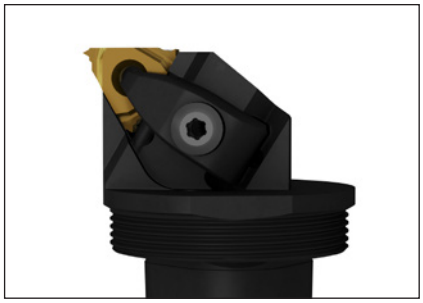
Spare Parts, Parts included in delivery

For size	Clamp key	Clamp screw
		
1604	T15P-7	L85011-T15P

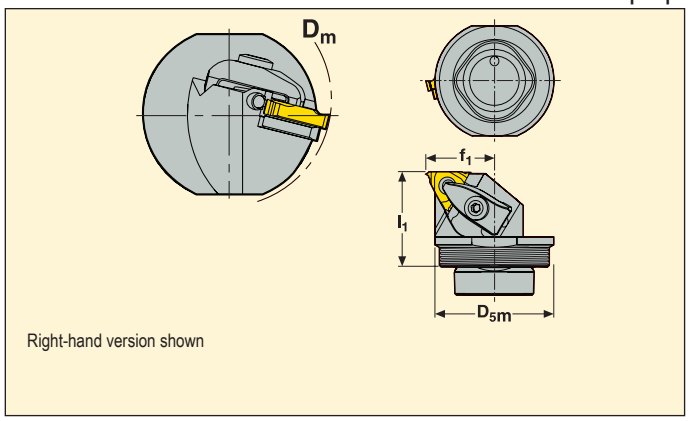
Please check availability in current price and stock-list

Toolholders for S - inserts

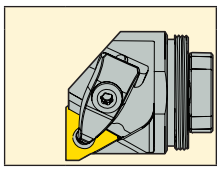
Snap-Tap®



- Inserts, please see threading section beginning on page 495
- For damping holders program, see pages 202-204



Right-hand version shown



EDP No.	Part No.	Dimensions in inch				lbs	
		D_{5m}	l_1	f_1	D_m		
10670	GL32- CNR-20032-16AHD	1.26	1.26	0.78	1.42	0.44	16NR..
10671	CNL-20032-16AHD	1.26	1.26	0.78	1.42	0.44	16NL..
10900	GL40- CNR-24032-16AHD	1.57	1.26	0.94	1.97	0.66	16NR..
10901	CNL-24032-16AHD	1.57	1.26	0.94	1.97	0.66	16NL..
10921	GL50- CNR-29032-16AHD	1.97	1.26	1.14	2.48	0.88	16NR..
10922	CNL-29032-16AHD	1.97	1.26	1.14	2.48	0.88	16NL..
10672	GL32- CNR-22032-22AHD	1.26	1.26	0.84	1.50	0.44	22NR..
10673	CNL-22032-22AHD	1.26	1.26	0.84	1.50	0.44	22NL..
10902	GL40- CNR-26032-22AHD	1.57	1.26	1.02	1.97	0.66	22NR..
10903	CNL-26032-22AHD	1.57	1.26	1.02	1.97	0.66	22NL..
10924	GL50- CNR-31032-22AHD	1.97	1.26	1.22	2.48	0.88	22NR..
10925	CNL-31032-22AHD	1.97	1.26	1.22	2.48	0.88	22NL..
10782	GL40- CNR-27037-27AHD	1.57	1.46	1.06	1.97	0.66	27NR..
10669	GL50- CNR-32037-27AHD	1.97	1.46	1.26	2.48	0.88	27NR..

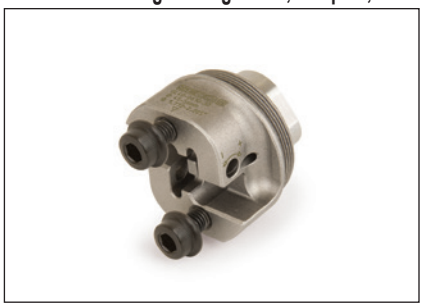
Spare Parts, Parts included in delivery

For size	Clamp key	Clamp screw	Floating wedge clamp	Cantilever clamp	Insert shim (S)	Shim/clamp key	Shim key	Shim screw	Spring
..-16	T15P-2	L85020-T15P	CHD16		GX16-1	–	T09P-2	CS3507-T09P	S6912
..-22	T15P-2	–	–	CSP22HD-T15P	NX22-1	–	T15P-2	CS4009-T15P	–
..-27	–	L86025-T20P	CHD27		VX27-1	T20P-7L	T15P-2	C05012-T15P	S7616

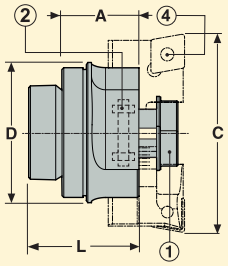
Please check availability in current price and stock-list

EPB 610 GL – Rough boring heads, compact, with GL connection

GL



- Compact design and GL connection for best damping performance when used on Steadyline turning and boring bar GL
- Symmetrical and staggered boring modes are possible
- Individual insert holder adjusting driving mechanism
- Internal coolant supply against cutting edges

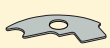
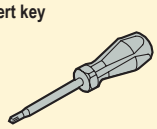
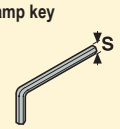
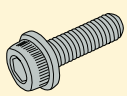


1. Clamp screw and clamp key
2 & 4 Insert key for diameter setting and insert screw clamping

Machine side Graflex size	Capacity C ∅ inch	EDP No.	Part No.	Dimensions in inch A	 D	 L	Max. RPM **	* lbs
GL32	1.417-1.811	92130	**GL32-0610-20**	0.831	1.26	1.087	7500	0.22
GL40	1.772-2.205	92132	**GL40-0610-30**	0.870	1.57	1.244	5700	0.44
GL50	2.165-2.717	92133	**GL50-0610-40**	0.874	1.97	1.327	4500	0.66

Insert holders have to be ordered separately, see MN Holemaking. ** Notes about max RPM, see Instruction pages MN Holemaking. * Without insert holders.

Spare parts

For head	Shim, staggered boring	Insert key	Clamp key	Assembly screw
				
GL32-0610-20	AU6102003	T07P-3	03HL03	950DC0412
GL40-0610-30	AU6103003	T15P-3	03HL05	950DC0616
GL50-0610-40	AU6104003	T15P-3	03HL05	950D0616

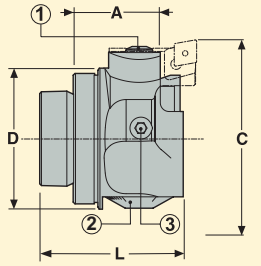
Please check availability in current price and stock-list.

EPB 620 GL – Fine boring heads, compact, with GL connection

GL



- Compact design and GL connection for best damping performance when used on Steadyline turning and boring bar GL
- Adjusting increment 0.0004 inch and 0.0001 inch on vernier scale, on the diameter
- Internal coolant supply against cutting edge



1. Clamp screw
2. Clamp key for diameter setting, screw 1 and screw 3.
3. Locking screw

Machine side Graflex size	Capacity C ∅ inch	EDP No.	Part No.	Dimensions in inch A	 D	 L	Max. RPM **	* lbs
GL32	1.339-1.811	92145	**GL32-0620-20**	0.935	1.26	1.386	7000	0.29
GL40	1.654-2.205	92146	**GL40-0620-30**	0.974	1.57	1.602	5600	0.49
GL50	2.047-2.717	92165	**GL50-0620-40**	1.014	1.97	1.720	4800	0.71

Insert holders common to EPB 780 / 790/ 620 boring heads : have to be ordered separately, see MN Holemaking.
** Notes about max RPM, see Instruction pages MN Holemaking.

* Without insert holders.

Spare parts

For head	Locking screw	Clamp key	Assembly screw
GL32-0620-20	950L0406	H2.0-2D	19TB0305
GL40-0620-30	950L0608	03M03C	19TB04075
GL50-0620-50	950L0608	03M03C	19TB04075

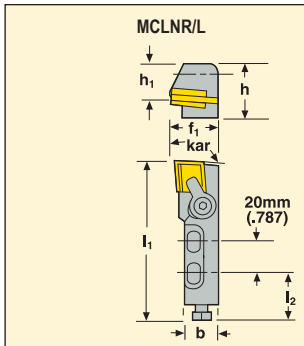
Please check availability in current price and stock-list.

Cartridges for inserts CNGA, CNGN, CNGP, CNMA, CNMG, CNMM, CNMN and CNMP

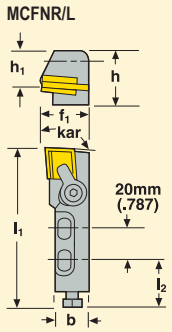
Angular Mount ~ M-Type



- For insert program, see pages 241-248, 301-302, 332
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235



Right-hand version shown
kar (κ_r) = 95°



Right-hand version shown
kar (κ_r) = 90°

MCLNR/L
95 °



MCFNR
90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	l_1	l_2	f_1	h_1	D_m min	γ_o°	λ_s°	lbs	
1/2	41850	MCLNR -12CA-12	0.787	0.551	2.165	0.787	0.787	0.472	1.969	-5	-10	0.22	CN..43.
	54313	MCLNL -12CA-12	0.787	0.551	2.165	0.787	0.787	0.472	1.969	-5	-10	0.22	CN..43.
	41851	MCLNR -16CA-12	0.984	0.709	2.480	0.984	0.984	0.630	2.362	-5	-10	0.44	CN..43.
	54314	MCLNL -16CA-12	0.984	0.709	2.480	0.984	0.984	0.630	2.362	-5	-10	0.44	CN..43.
	41852	MCLNR -20CA-12	1.181	0.710	2.756	1.181	0.984	0.870	2.756	-5	-10	0.66	CN..43.
3/4	41853	MCLNR -25CA-19	1.378	0.945	3.937	1.181	1.260	0.984	3.937	-6	-9	1.10	CN..64.
1/2	24039	MCFNR -12CA-12	0.791	0.551	2.165	0.787	0.787	0.472	1.969	-5	-10	0.22	CN..43.
	24042	MCFNR -16CA-12	0.984	0.709	2.480	0.984	0.984	0.630	2.362	-5	-10	0.44	CN..43.

Spare Parts, Parts included in delivery

Accessories*

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim	Setting screw (axial)	Setting screw (radial)	Shim screw
12CA-12	CLM-17	XNSM-0515	NLM-43	–	EASM-0510F	SASM-0412	–
16CA-12	CLM-17	XNSM-0515	NLM-46S	CSN-433	EASM-0610F	SASM-0516	S-46MS
20CA-12	CLM-6	XNSM-0515	NLM-46	CSN-433	EASM-0610F	SASM-0516	S-46M
25CA-19	CLM-12	XNSM-0825	NLM-68	CSN-633	EASM-0816F	SASM-0820	S-68M

Please check availability in current price and stock-list

*Ordered separately

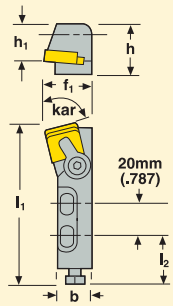
Cartridges for inserts SNG, SNGA, SNGN, SNMA, SNMG, SNMM, SNMN and SNMP

Angular Mount ~ M-Type



- For insert program, see pages 269-273, 311-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235

MSKNR



Right-hand version shown
kar (κ_r) = 75°

MSKNR
75 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			h	b	l_1	l_2	f_1	h_1	D_m min				
3/8	41854	**MSKNR -10CA-09**	0.591	0.394	1.969	0.787	0.551	0.394	1.575	-10	-5	0.22	SN..33.
1/2	41855	**MSKNR -12CA-12**	0.787	0.551	2.165	0.787	0.787	0.472	1.969	-10	-5	0.22	SN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Setting screw (axial)	Setting screw (radial)
					
10CA-09	CLM-5	XNSM-0515	NLM-33	EASM-0510F	SASM-0412
12CA-12	CLM-6	XNSM-0515	NLM-43	EASM-0510F	SASM-0412

Please check availability in current price and stock-list

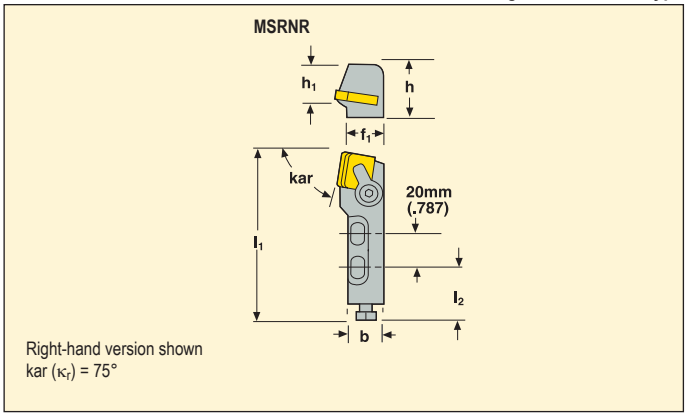
*Ordered separately

Cartridges for inserts SNG, SNGA, SNGN, SNMA, SNMG, SNMM, SNMN and SNMP

Angular Mount ~ M-Type

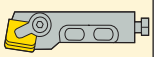


- For insert program, see pages 269-273, 311-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235



Right-hand version shown
kar (κ_r) = 75°

MSRNR 75 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			h	b	l_1	l_2	f_1	h_1	D_m min				
1/2	41860	**MSRNR -12CA-12**	0.787	0.551	2.165	0.787	0.787	0.472	1.969	-10	-5	0.22	SN..43.

Spare Parts, Parts included in delivery

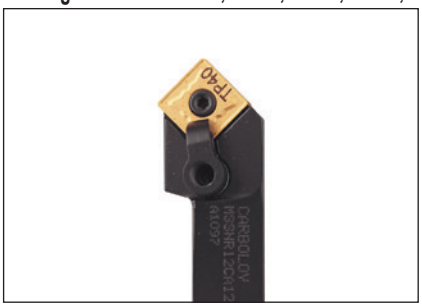
For size	Cantilever clamp	Clamp screw	Insert pin	Setting screw (axial)	Setting screw (radial)
12CA-12	CLM-6	XNSM-0515	NLM-43	EASM-0510F	SASM-0412

Please check availability in current price and stock-list

*Ordered separately

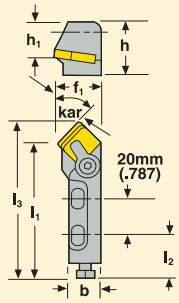
Cartridges for inserts SNG, SNGA, SNGN, SNMA, SNMG, SNMM, SNMN and SNMP

Angular Mount ~ M-Type



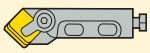
- For insert program, see pages 269-273, 311-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235

MSSNR/L



Right-hand version shown
kar (κ_r) = 45°

MSSNR/L
45 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	l_1	l_2	f_1	h_1	D_m min	γ_o°	λ_s°	lbs	
3/8	41864	**MSSNR -10CA-09**	0.591	0.394	1.969	0.787	0.551	0.394	1.575	-9	-9	0.22	SN..32.
1/2	41865	**MSSNR -12CA-12**	0.787	0.551	2.177	0.787	0.787	0.472	1.969	-9	-9	0.22	SN..43.
	41776	**MSSNL -12CA-12**	0.787	0.551	2.177	0.787	0.787	0.472	1.969	-9	-9	0.22	SN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Setting screw (axial)	Setting screw (radial)
10CA-09	CLM-5	XNSM-0515	NLM-33	EASM-0510F	SASM-0412
12CA-12	CLM-6	XNSM-0515	NLM-43	EASM-0510F	SASM-0412

Please check availability in current price and stock-list

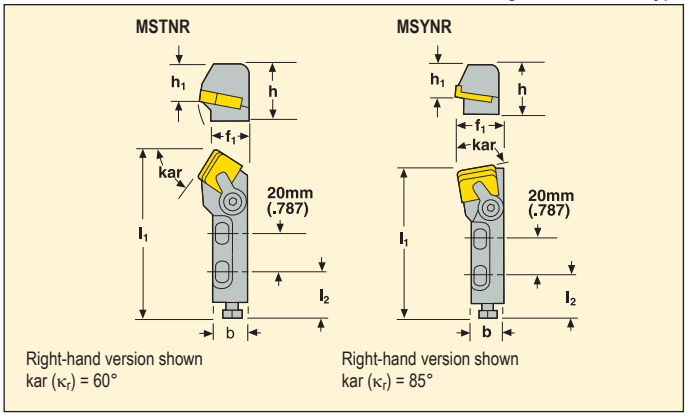
*Ordered separately

Cartridges for inserts SNG, SNGA, SNGN, SNMA, SNMG, SNMM, SNMN and SNMP

Angular Mount ~ M-Type



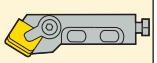
- For insert program, see pages 269-273, 311-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235



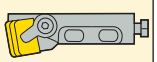
Right-hand version shown
kar (κ_r) = 60°

Right-hand version shown
kar (κ_r) = 85°

MSTNR
60 °



MSYNR
85 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			h	b	l_1	l_2	h_1	f_1	D_m min				
1/2	41870	**MSTNR -12CA-12**	0.787	0.551	2.165	0.787	0.472	0.512	1.969	-10	-6	0.22	SN..43.
	24037	**MSYNR -16CA-12**	0.984	0.710	2.480	0.984	0.718	0.984	2.362	-10	-6	0.44	SN..43.

Spare Parts, Parts included in delivery

Accessories*

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim	Setting screw (axial)	Setting screw (radial)	Shim screw
12CA-12	CLM-6	XNSM-0515	NLM-43	–	EASM-0510F	SASM-0412	–
16CA-12	CLM-17	XNSM-0515	NLM-46S	ISSN-433	EASM-0610F	SASM-0412	S-46MS

Please check availability in current price and stock-list

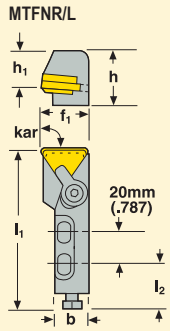
*Ordered separately

Cartridges for inserts TNG, TNGA, TNGN, TNMA, TNMG, TNMM, TNMN and TNMP

Angular Mount ~ M-Type

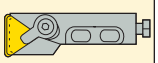


- For insert program, see pages 282-286, 317-318, 321
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235



Right-hand version shown
kar (κ_r) = 90°

MTFNR/L
90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	l_1	l_2	h_1	f_1	D_m min	γ_o°	λ_s°	lbs	
3/8	41880	MTFNR -12CA-16	0.787	0.551	2.165	0.787	0.472	0.787	1.969	-5	-10	0.22	TN..32.
	41771	MTFNL -12CA-16	0.787	0.551	2.165	0.787	0.472	0.787	1.969	-5	-10	0.22	TN..32.
1/2	41882	MTFNR -20CA-22	1.181	0.709	2.756	1.181	0.787	0.984	2.756	-5	-10	0.45	TN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Insert shim	Setting screw (axial)	Setting screw (radial)
12CA-16	CLM-17	XNSM-0515	NLM-33	–	EASM-0510F	SASM-0412
20CA-22	CLM-20	XNSM-0620	NLM-46	ITSN-433	EASM-0610F	SASM-0516

Accessories*

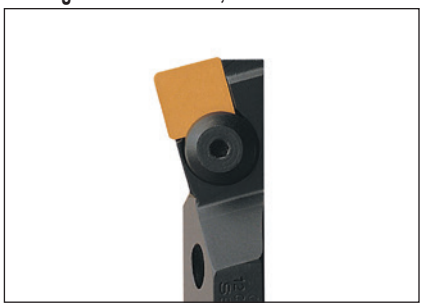
Shim screw
–
S-46M

Please check availability in current price and stock-list

*Ordered separately

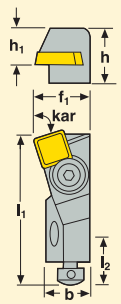
Cartridges for inserts SPG, SPMR and SPU

Angular Mount ~ PC-Type



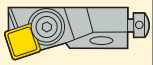
- For insert program, see page 276
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235

CSKPR



Right-hand version shown
kar (κ_r) = 75°

CSKPR
75 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
			h	b	l_1	l_2	h_1	f_1	D_m min				
3/8	54297	CSKPR -10CA-09	0.551	0.419	1.969	0.787	0.394	0.551	1.575	0	6	0.22	SP..32.
1/2	41805	CSKPR -12CA-12	0.748	0.602	2.165	0.787	0.472	0.787	1.575	0	6	0.22	SP..42.

Spare Parts, Parts included in delivery

For size	Setting screw (radial)	Setting screw (axial)	Clamp screw
			
10CA-09	179.17-686	179.17-680	174.18-638
12CA-12	179.17-687	179.17-680	174.18-634

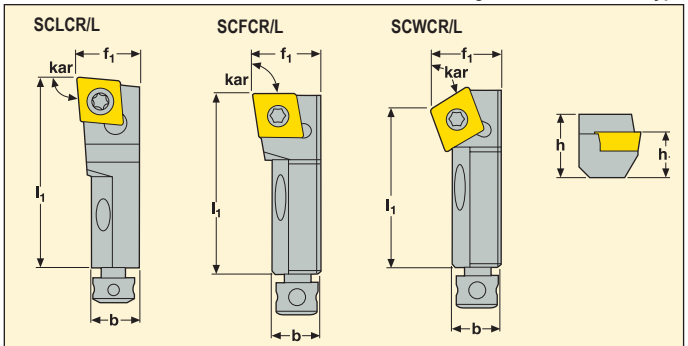
Please check availability in current price and stock-list

Cartridges for inserts CCGT, CCGW, CCGX, CCMT and CCMW

Angular Mount ~ C-lock type



- For insert program, see pages 236-240, 328
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235

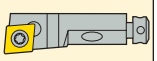


Right-hand version shown
kar (κ_r) = 95°

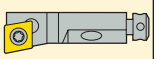
Right-hand version shown
kar (κ_r) = 90°

Right-hand version shown
kar (κ_r) = 60°

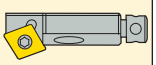
SCLCR/L 95 °



SCFCR/L 90 °



SCWCR/L 60 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	l_1	h_1	f_1	D_m min	γ_o°	λ_s°	lbs	
3/8	51490	SCLCR-10CA-09	0.591	0.433	1.654	0.394	0.551	1.575	0	0	0.22	CC..32.5.
	09143	SCLCL10CA-09	0.591	0.433	1.654	0.394	0.551	1.575	0	0	0.22	CC..32.5.
1/2	13239	SCLCR-12CA-12	0.787	0.630	1.850	0.472	0.787	1.969	0	0	0.22	CC..43.
	06498	SCLCL-12CA-12	0.787	0.630	1.850	0.472	0.787	1.969	0	0	0.22	CC..43.
1/4	29427	SCFCR-08CA-06	0.433	0.276	1.024	0.315	0.394	0.984	0	0	0.22	CC..21.5.
	08880	SCFCL-08CA-06	0.433	0.276	1.024	0.315	0.394	0.984	0	0	0.22	CC..21.5.
3/8	43109	SCFCR-10CA-09	0.591	0.433	1.654	0.394	0.551	1.575	0	0	0.22	CC..32.5.
	43133	SCFCL-10CA-09	0.591	0.433	1.654	0.394	0.551	1.575	0	0	0.22	CC..32.5.
1/2	48845	SCFCR12CA-12	0.787	0.630	1.850	0.472	0.787	1.969	0	0	0.22	CC..43.
	43143	SCFCL-12CA-12	0.787	0.630	1.850	0.472	0.787	1.969	0	0	0.22	CC..43.
1/4	08678	SCWCR08CA-06	0.433	0.276	0.866	0.315	0.394	0.984	0	0	0.22	CC..21.5.
	08682	SCWCL-08CA-06	0.433	0.276	0.866	0.315	0.394	0.984	0	0	0.22	CC..21.5.
3/8	08694	SCWCR-10CA-09	0.591	0.433	1.417	0.394	0.551	1.575	0	0	0.22	CC..32.5.
	08698	SCWCL-10CA-09	0.591	0.433	1.417	0.394	0.551	1.575	0	0	0.22	CC..32.5.
1/2	08721	SCWCR-12CA-12	0.787	0.630	1.535	0.472	0.787	1.969	0	0	0.22	CC..43.
	08722	SCWCL-12CA-12	0.787	0.630	1.535	0.472	0.787	1.969	0	0	0.22	CC..43.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Fastening screw	Setting screw (axial)	Setting screw (radial)
08CA-06	T07P-2	C02505-T07P	179.17-698-T09P	179.17-683	179.17-684
10CA-09	T15P-2	C04008-T15P	179.17-697-T25P	179.17-680	179.17-686
12CA-12	T20P-7	C05010-T20P	179.17-697-T25P	179.17-680	179.17-687

Accessories*

Locking key	Setting key
T09P-2	1.5SMS795
T25P-7	2SMS795
T25P-7	2SMS795

Please check availability in current price and stock-list

*Ordered sepatately

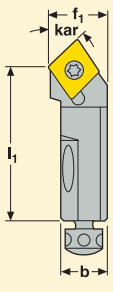
Cartridges for inserts CCGT, CCGW, CCMT and CCMW

Angular Mount ~ C-lock type



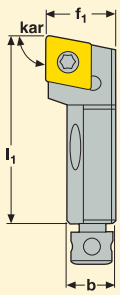
- For insert program, see pages 236, 238-240, 328
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235

SCSCR/L

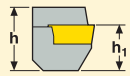


Right-hand version shown
kar (κ_r) = 45°

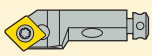
SCGCR/L



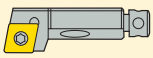
Right-hand version shown
kar (κ_r) = 90°



SCSCR/L
45 °



SCGCR/L
90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	l_1	h_1	f_1	D_m min	γ_o°	λ_s°	lbs	
1/4	08677	SCSCR-08CA-06	0.433	0.276	0.866	0.315	0.394	0.984	0	0	0.22	CC..21.5.
	08877	SCSCL08CA-06	0.433	0.276	0.866	0.315	0.394	0.984	0	0	0.22	CC..21.5.
3/8	11683	SCSCR-10CA-09	0.591	0.433	1.417	0.394	0.551	1.575	0	0	0.22	CC..32.5.
	08687	SCSCL-10CA-09	0.591	0.433	1.417	0.394	0.551	1.575	0	0	0.22	CC..32.5.
1/2	54298	SCSCR-12CA-12	0.787	0.630	1.535	0.472	0.787	1.969	0	0	0.22	CC..43.
	08704	SCSCL-12CA-12	0.787	0.630	1.535	0.472	0.787	1.969	0	0	0.22	CC..43.
1/4	09129	SCGCR08CA-06	0.433	0.276	1.024	0.315	0.394	0.984	0	0	0.22	CC..21.5.
	08883	SCGCL-08CA-06	0.433	0.276	1.024	0.315	0.394	0.984	0	0	0.22	CC..21.5.
3/8	09131	SCGCR10CA-09	0.591	0.433	1.654	0.394	0.551	1.575	0	0	0.22	CC..32.5.
	08683	SCGCL10CA-09	0.591	0.433	1.654	0.394	0.551	1.575	0	0	0.22	CC..32.5.
1/2	11096	SCGCR-12CA-12	0.787	0.630	1.850	0.472	0.787	1.969	0	0	0.22	CC..43.
	45802	SCGCL-12CA-12	0.787	0.630	1.850	0.472	0.787	1.969	0	0	0.22	CC..43.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Fastening screw	Setting screw (axial)	Setting screw (radial)
08CA-06	T07P-2	C02505-T07P	179.17-698-T09P	179.17-683	179.17-684
10CA-09	T15P-2	C04008-T15P	179.17-697-T25P	179.17-680	179.17-686
12CA-12	T20P-7	C05010-T20P	179.17-697-T25P	179.17-680	179.17-687

Accessories*

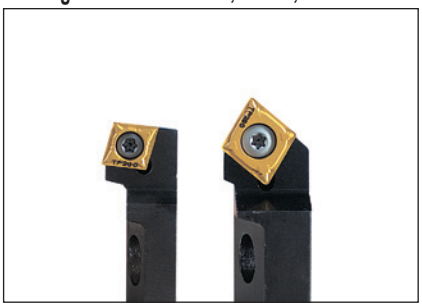
Locking key	Setting key
T09P-2	1.5SMS795
T25P-7	2SMS795
T25P-7	2SMS795

Please check availability in current price and stock-list

*Ordered separately

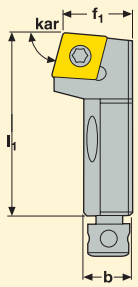
Cartridges for inserts CCGT, CCGW, CCMT and CCMW

Angular Mount ~ C-lock type



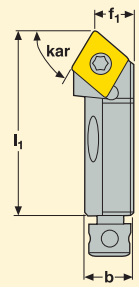
- For insert program, see pages 236, 238-240, 328
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235

SCRCR/L

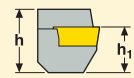


Right-hand version shown
kar (κ_r) = 75°

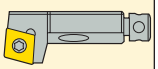
SCTCR/L



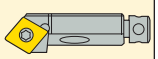
Right-hand version shown
kar (κ_r) = 60°



SCRCR/L 75 °



SCTCR/L 60 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	l_1	h_1	f_1	D_m min	γ_o°	λ_s°	lbs	
1/4	08899	SCRCR08CA-06	0.433	0.276	1.024	0.315	0.394	0.984	0	0	0.22	CC..21.5.
	08900	SCRCL-08CA-06	0.433	0.276	1.024	0.315	0.394	0.984	0	0	0.22	CC..21.5.
3/8	08684	SCRCR-10CA-09	0.591	0.433	1.654	0.394	0.551	1.575	0	0	0.22	CC..32.5.
	08685	SCRCL-10CA-09	0.591	0.433	1.654	0.394	0.551	1.575	0	0	0.22	CC..32.5.
1/2	08701	SCRCR-12CA-12	0.787	0.630	1.850	0.472	0.787	1.969	0	0	0.22	CC..43.
	08702	SCRCL-12CA-12	0.787	0.630	1.850	0.472	0.787	1.969	0	0	0.22	CC..43.
1/4	08891	SCTCR-08CA-06	0.433	0.276	1.024	0.315	0.236	0.984	0	0	0.22	CC..21.5.
	08991	SCTCL-08CA-06	0.433	0.276	1.024	0.315	0.236	0.984	0	0	0.22	CC..21.5.
3/8	34258	SCTCR-10CA-09	0.591	0.433	1.654	0.394	0.354	1.575	0	0	0.22	CC..32.5.
	08689	SCTCL-10CA-09	0.591	0.433	1.654	0.394	0.354	1.575	0	0	0.22	CC..32.5.
1/2	08705	SCTCR-12CA-12	0.787	0.630	1.850	0.472	0.512	1.969	0	0	0.22	CC..43.
	08720	SCTCL-12CA-12	0.787	0.630	1.850	0.472	0.512	1.969	0	0	0.22	CC..43.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Fastening screw	Setting screw (axial)	Setting screw (radial)
08CA-06	T07P-2	C02505-T07P	179.17-698-T09P	179.17-683	179.17-684
10CA-09	T15P-2	C04008-T15P	179.17-697-T25P	179.17-680	179.17-686
12CA-12	T20P-7	C05010-T20P	179.17-697-T25P	179.17-680	179.17-687

Accessories*

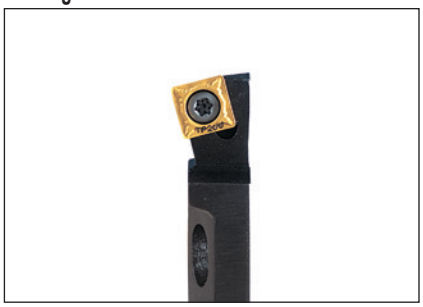
Locking key	Setting key
T09P-2	1.5SMS795
T25P-7	2SMS795
T25P-7	2SMS795

Please check availability in current price and stock-list

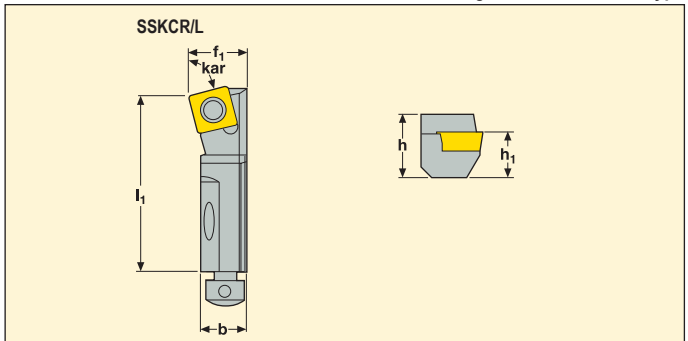
*Ordered separately

Cartridges for inserts SCGW and SCMT

Angular Mount ~ C-lock type



- For insert program, see pages 267-268, 310
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235



Right-hand version shown
kar (κ_r) = 75°

SSKCR/L
75 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	l_1	h_1	f_1	D_m min	γ_o°	λ_s°	lbs	
3/8	09139	**SSKCR-10CA-09**	0.591	0.433	1.654	0.394	0.551	1.575	0	0	0.22	SC..32.5.
	09709	**SSKCL-10CA-09**	0.591	0.433	1.654	0.394	0.551	1.575	0	0	0.22	SC..32.5.
1/2	09167	**SSKCR-12CA-12**	0.787	0.630	1.850	0.472	0.787	1.969	0	0	0.22	SC..43.
	09168	**SSKCL-12CA-12**	0.787	0.630	1.850	0.472	0.787	1.969	0	0	0.22	SC..43.
	09191	**SSKCR-16CA-12**	0.984	0.787	2.165	0.630	0.984	2.362	-4	0	0.44	SC..43.
	09188	**SSKCL-16CA-12**	0.984	0.787	2.165	0.630	0.984	2.362	-4	-4	0.44	SC..43.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Fastening screw	Setting screw (axial)	Setting screw (radial)	Shim screw
10CA-09	T15P-2	C04008-T15P	–	179.17-696-T25P	179.17-680	179.17-686	–
12CA-12	T20P-7	C05010-T20P	–	179.17-697-T25P	179.17-680	179.17-687	–
16CA-12	T15P-2	C05012-T15P	110.19-621	179.17-693	179.17-680	179.17-685	CA5008

Accessories*

Locking key	Setting key
T25P-7	2SMS795
T25P-7	2SMS795
5SMS795	2.5SMS795

Please check availability in current price and stock-list

*Ordered separately

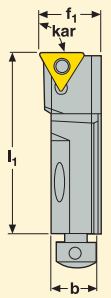
Cartridges for inserts TCGT, TCGW, TCMT and TCMW

Angular Mount ~ C-lock type



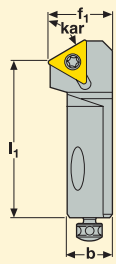
- For insert program, see pages 277, 279, 316, 330
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235

STFCR/L



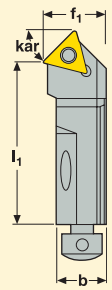
Right-hand version shown
kar (κ_r) = 90°

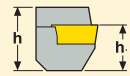
STWCR/L



Right-hand version shown
kar (κ_r) = 60°

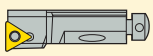
STSCR/L





Right-hand version shown
kar (κ_r) = 45°

STFCR/L
90 °



STWCR/L
60 °



STSCR/L
45 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	l_1	h_1	f_1	D_m min	γ_o°	λ_s°	lbs	
1/4	09706	**STFCR-10CA-11**	0.591	0.433	1.654	0.394	0.551	1.575	0	0	0.22	TC..21.5.
	09710	**STFCL-10CA-11**	0.591	0.433	1.654	0.394	0.551	1.575	0	0	0.22	TC..21.5.
	09166	**STFCR-12CA-11**	0.787	0.630	1.850	0.472	0.787	1.969	0	0	0.22	TC..21.5.
3/8	09184	**STFCR-16CA-16**	0.984	0.787	2.165	0.630	0.984	2.362	-2	0	0.44	TC..32.5.
	09187	**STFCL-16CA-16**	0.984	0.787	2.165	0.630	0.984	2.362	-2	0	0.44	TC..32.5.
	08753	**STWCR-16CA-16**	0.984	0.787	1.772	0.630	0.984	2.362	0	0	0.44	TC..32.5.
	08754	**STWCL-16CA-16**	0.984	0.787	1.772	0.630	0.984	2.362	0	0	0.44	TC..32.5.
1/4	09707	**STSCR-10CA-11**	0.591	0.433	1.417	0.394	0.551	1.575	0	0	0.22	TC..21.5.
	15088	**STSCL-10CA-11**	0.591	0.433	1.417	0.394	0.551	1.575	0	0	0.22	TC..21.5.
3/8	09171	**STSCR-12CA-16**	0.787	0.630	1.535	0.472	0.787	1.969	0	0	0.22	TC..32.5.
	09169	**STSCL-12CA-16**	0.787	0.630	1.535	0.472	0.787	1.969	0	0	0.22	TC..32.5.
	09192	**STSCR-16CA-16**	0.984	0.787	1.772	0.630	0.984	2.362	-6	0	0.44	TC..32.5.
	09193	**STSCL-16CA-16**	0.984	0.787	1.772	0.630	0.984	2.362	-6	0	0.44	TC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Fastening screw	Setting screw (axial)	Setting screw (radial)	Shim screw
10CA-11	T07P-2	C02506-T07P	–	179.17-696-T25P	179.17-680	179.17-686	–
12CA-11	T07P-2	C02506-T07P	–	179.17-697-T25P	179.17-680	179.17-687	–
12CA-16	T15P-2	C03509-T15P	–	179.17-697-T25P	179.17-680	179.17-687	–
16CA-16	T15P-2	C03509-T15P	STN323	179.17-693	179.17-680	179.17-685	CA3510

Accessories*

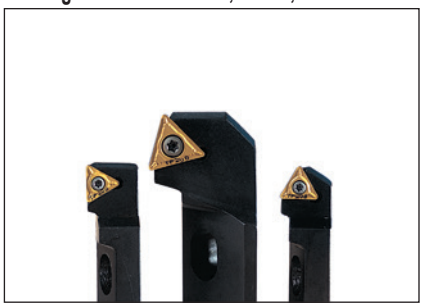
Locking key	Setting key	Shim key
T25P-7	2SMS795	–
T25P-7	2SMS795	–
T25P-7	2SMS795	–
5SMS795	2.5SMS795	9/64SMS875

Please check availability in current price and stock-list

*Ordered separately

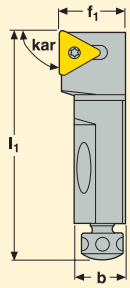
Cartridges for inserts TCGT, TCGW, TCMT and TCMW

Angular Mount ~ C-lock type



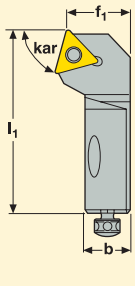
- For insert program, see pages 277, 279, 316, 330
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235

STGCR/L



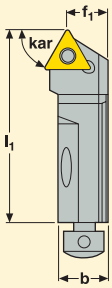
Right-hand version shown
kar (κ_r) = 90°

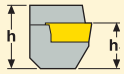
STRCR/L



Right-hand version shown
kar (κ_r) = 75°

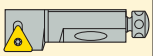
STTCR/L



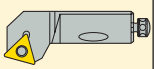


Right-hand version shown
kar (κ_r) = 60°

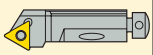
STGCR/L 90 °



STRCR/L 75 °



STTCR/L 60 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	l_1	h_1	f_1	D_m min	γ_o°	λ_s°	lbs	
1/4	15087	STGCR-10CA-11	0.591	0.433	1.654	0.394	0.551	1.575	0	0	0.22	TC..21.5.
3/8	09175	STGCR-12CA-16	0.787	0.630	1.850	0.472	0.787	1.969	0	0	0.22	TC..32.5.
	09174	STGCL-12CA-16	0.787	0.630	1.850	0.472	0.787	1.969	0	0	0.22	TC..32.5.
	09196	STGCR-16CA-16	0.984	0.787	2.165	0.630	0.984	1.969	-5	0	0.44	TC..32.5.
	09197	STGCL-16CA-16	0.984	0.787	2.165	0.630	0.984	1.969	-5	0	0.44	TC..32.5.
1/2	36182	STGCL-16CA-22	0.787	0.689	2.165	0.630	0.984	2.756	0	0	0.44	TC..43.
3/8	08747	STRCR-16CA-16	0.984	0.787	2.165	0.630	0.984	2.362	-5	0	0.44	TC..32.5.
	08750	STRCL-16CA-16	0.984	0.787	2.165	0.630	0.984	2.362	-5	0	0.44	TC..32.5.
1/2	33525	STRCL-16CA-22	0.787	0.689	2.165	0.630	0.984	2.756	0	0	0.44	TC..43.
1/4	09708	STTCR-10CA-11	0.591	0.433	1.654	0.394	0.354	1.575	0	0	0.22	TC..21.5.
	09711	STTCL-10CA-11	0.591	0.433	1.654	0.394	0.354	1.575	0	0	0.22	TC..21.5.
3/8	09172	STTCR-12CA-16	0.787	0.630	1.850	0.472	0.512	1.969	0	0	0.22	TC..32.5.
	09173	STTCL-12CA-16	0.787	0.630	1.850	0.472	0.512	1.969	0	0	0.22	TC..32.5.
	09195	STTCR-16CA-16	0.984	0.787	2.165	0.630	0.591	2.362	-4	0	0.44	TC..32.5.
	09194	STTCL-16CA-16	0.984	0.787	2.165	0.630	0.591	2.362	-4	0	0.44	TC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Fastening screw	Setting screw (axial)	Setting screw (radial)	Shim screw
10CA-11	T07P-2	C02506-T07P	–	179.17-696-T25P	179.17-680	179.17-686	–
12CA-16	T15P-2	C03509-T15P	–	179.17-697-T25P	179.17-680	179.17-687	–
16CA-16	T15P-2	C03509-T15P	STN323	179.17693	179.17-680	179.17-685	CA3510
16CA-22	T15P-2	C05012-T15P	–	179.17-693	179.17-680	179.17-690-T15P	–

Accessories*

Locking key	Setting key	Shim key
T25P-7	2SMS795	–
T25P-7	2SMS795	–
5SMS795	2.5SMS795	9/64SMS875
5SMS795	2SMS795	–

Please check availability in current price and stock-list

*Ordered separately

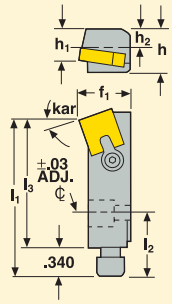
Cartridges for inserts SNG, SNGA, SNGN, SNMA, SNMG, SNMM, SNMN and SNMP

90° Mount ~ M-Type



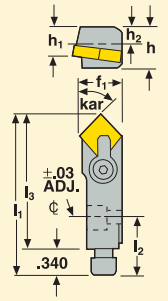
- For insert program, see pages 269-273, 311-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235

MSKNR



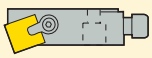
Right-hand version shown
kar (κ_r) = 15°

MSSNR

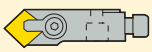


Right-hand version shown
kar (κ_r) = 45°

MSKNR
15 °



MSSNR
45 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch									γ_o°	λ_s°	lbs	
			h	b	l_1	l_2	l_3	h_1	h_2	f_1	D_m min				
3/8	36450	MSKNR -41CX-3	0.563	0.441	1.969	0.840	1.625	0.406	0.280	0.531	1.50	-5	-8	0.22	SN..32.
	36420	MSSNR -41CX-3	0.563	0.441	1.969	0.840	1.625	0.406	0.280	0.528	1.50	-8	-8	0.22	SN..32.
1/2	36422	MSSNR -41CX-4	0.563	0.559	2.306	0.840	1.966	0.406	0.280	0.528	2.00	-8	-8	0.22	SN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Setting screw (axial)	Setting screw (radial)
					
41CX-3	CL-5	XNS-35	NL-33	EAS-253	SC-605
41CX-4	CL-6	XNS-35	NL-43	EAS-253	SC-605

Please check availability in current price and stock-list

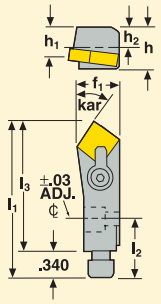
Cartridges for inserts SNG, SNGA, SNGN, SNMA, SNMG, SNMM, SNMN and SNMP

90° Mount ~ M-Type



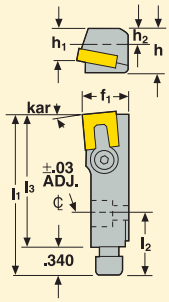
- For insert program, see pages 269-273, 311-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235

MSTNR



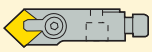
Right-hand version shown
kar (κ_r) = 30°

MSYNR

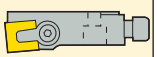


Right-hand version shown
kar (κ_r) = 5°

MSTNR
30 °



MSYNR
5 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch									γ_o°	λ_s°	lbs	
			h	b	l_1	l_2	l_3	h_1	h_2	f_1	D_m min				
3/8	36470	MSTNR -41CX-3	0.563	0.441	1.969	0.840	1.625	0.406	0.280	0.531	1.500	-6	-10	0.22	SN..32.
1/2	54341	MSTNR -41CX-4	0.563	0.563	2.386	0.840	2.047	0.406	0.280	0.689	2.000	-6	-10	0.22	SN..43.
	36432	MSYNR -41CX-4	0.563	0.560	1.969	0.840	1.625	0.406	–	0.689	1.500	-5	-10	0.22	SN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Setting screw (axial)	Setting screw (radial)
41CX-3	CL-5	XNS-35	NL-33	EAS-253	SC-605
41CX-4	CL-6	XNS-35	NL-43	EAS-253	SC-605

Please check availability in current price and stock-list

*Ordered separately

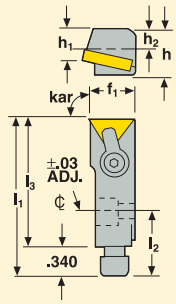
Cartridges for inserts TNG, TNGA, TNGN, TNMA, TNMG, TNMM, TNMN and TNMP

90° Mount ~ M-Type



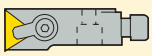
- For insert program, see pages 282-286, 317-319, 321
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 16-17
- For cartridge mounting information see page 235

MTFNR



Right-hand version shown
kar (κ_r) = 90°

MTFNR
90 °



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch									γ_o°	λ_s°	lbs	
			h	b	l_1	l_2	l_3	h_1	h_2	f_1	D_m min				
	36500	MTFNR -41CX-2	0.563	0.441	1.969	0.840	1.625	0.406	0.280	0.531	1.500	-5	-10	0.22	TN..22.
3/8	36502	MTFNR -41CX-3	0.563	0.559	1.969	0.840	1.625	0.406	0.280	0.685	2.000	-5	-8	0.22	TN..33.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert pin	Setting screw (axial)	Setting screw (radial)
41CX-2	CL-5	XNS-35	NL-23	EAS-253	SC-605
41CX-3	CL-6	XNS-35	NL-33L	EAS-253	SC-605

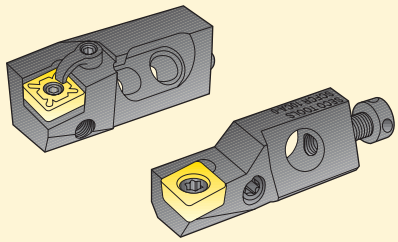
Please check availability in current price and stock-list

*Ordered separately

Cartridges – Mounting information

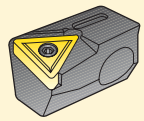
Angular Mount Cartridges

- Conform to ISO-ANSI standards
- Accomodate positive and negative rakes
- Use standard, interchangeable Seco seats and chipbreakers
- Fit any cat-head, boring bar or tool block
- now using ISO-ANSI cartridges
- Allow axial and radial adjustment
- Instant metric/inch conversion with simple substitution of components

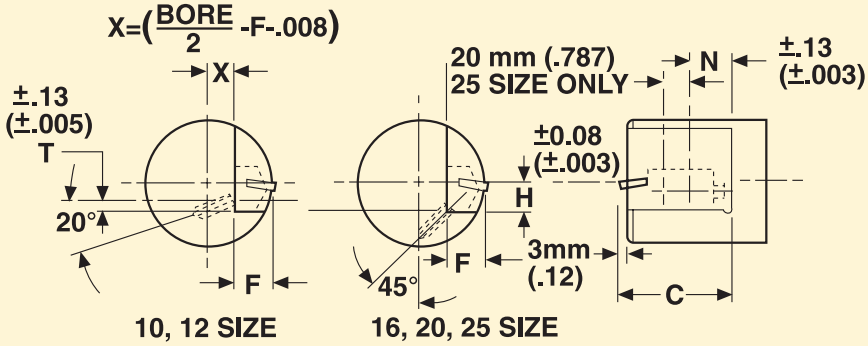


90° Mount Cartridges

- Provide close-tolerance machining with radial and axial adjustments of M and PC types



Mounting Information:
ISO-ANSI
Angular Mount Cartridges



Cartridge Size							Hold Down Screw	
Metric Std.	Inch Std.	C	F	H	T	N	Metric Std.	Inch Std.
10	39	50 mm (1.968)	14 mm (.551)	10 mm (.394)	5 mm (.196)	20 mm (.787)	M6 (Low Hd.)	1/4 (Low Hd.)
12	47	55 mm (2.165)	20 mm (.787)	12 mm (.472)	6 mm (.236)	20 mm (.787)	M6	1/4
16	63	63 mm (2.480)	24 mm (.945)	16 mm (.630)	–	25 mm (.984)	M8	5/16
20	79	70 mm (2.756)	25 mm (.984)	20 mm (.787)	–	30 mm (1.181)	M8	5/16
25	98	100 mm (3.937)	32 mm (1.260)	25 mm (.984)	–	30 mm (1.181)	M10 (2)	3/8 (2)

Cartridge Reference Guide

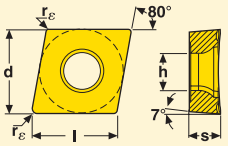
Cartridges are stocked with metric parts as standard.
Components with inch drives are available as optional spare parts.
See substitution charts below.

Lock Pins	
Metric (standard)	Inch (optional)
NLM-23	NLC-23
NLM-33	NLC-33
NLM-34L	NLC-34L
NLM-43	NLC-43
NLM-46S	NLC-46S
NLM-54	NLC-54
NLM-58	NLC-58
NLM-68	NLC-68

Clamp Screws	
Metric (standard)	Inch (optional)
XNSM-0515	XNSC-0515
XNSM-0620	XNSC-0620
XNSM-0825	XNSC-0825

Rad. Adj. Screws	
Metric (standard)	Inch (optional)
SASM-0406	SASC-0406
SASM-0412	SASC-0412
SASM-0516	SASC-0516
SASM-0620	SASC-0620
SASM-0820	SASC-0820

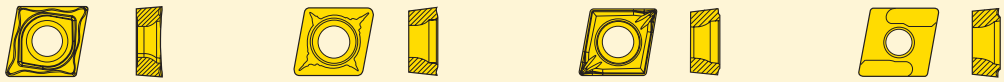
CCGT



Tolerances:
d = ±0.001
s = ±0.002
r_ε = (≥1/128) = ±0.004
r_ε = (≤1/256) = ±0.001

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
21.5	1/4	3/32	0.256	0.110	1/512-1/64
32.5	3/8	5/32	0.382	0.173	1/256-1/32
43	1/2	3/16	0.508	0.217	1/64-1/32

CCGT-AL -F1 -MF2 -UX*

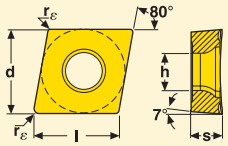


Inserts	Part No.	Grades (EDP No.)		
		Coated	Uncoated	Cermet
		CP500	KX	TP1020
CCGT-AL				
	CCGT 21.50.5F-AL		15622	
	21.51F-AL		15710	
	CCGT 32.50.5F-AL		06793	
	32.51F-AL		15731	
	32.52F-AL		15754	
	CCGT 431F-AL		15778	
	432F-AL		15790	
CCGT-F1				
	CCGT 21.50.0-F1	06790		
	21.50-F1	06791		
	21.51-F1			66770
	CCGT 32.50-F1	06792		
	32.51-F1			66788
CCGT-MF2				
	CCGT 21.50-MF2	66769		
	21.51-MF2	66771		
	CCGT 32.51-MF2	66789		
CCGT-UX				
	CCGT 21.51R-UX	07557		
	21.51L-UX	07556		
	CCGT 32.51R-UX	07559		
	32.51L-UX	07558		
	CCGT 432R-UX	52189		
	432L-UX	52193		

Please check availability in current price and stock-list.

*Right-hand version shown

CCGX



Tolerances:
d = ±0.001
s = ±0.002
r_ε = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
21.5	1/4	3/32	0.256	0.114	1/128
32.5	3/8	5/32	0.382	0.177	1/128

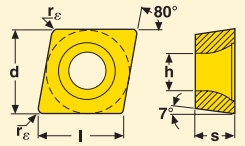
CCGX...W-F1



Inserts	Part No.	Grades (EDP No.)	
		Coated	
		TP2501	CP500
CCGX...W-F1			
	CCGX 21.50.5W-F1	15856	03366
	CCGX 32.50.5W-F1	15857	03398

Please check availability in current price and stock-list.

CCMT



Tolerances:
d = ±0.002
d = ±0.003
s = ±0.002
s = ±0.005
r_ε = ±0.004

Size:
21.5-32.5
43
21.5-32.5
43

Size	Dimensions in inch d (I.C.)	s	l	h	r_ε
21.5	1/4	3/32	0.256	0.114	1/128-1/32
32.5	3/8	5/32	0.382	0.177	1/128-1/32
43	1/2	3/16	0.508	0.220	1/64-3/64

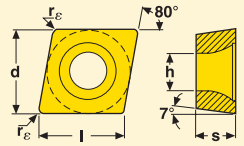
CCMT-FF1 -F1 W-F1



Inserts	Part No.	Grades (EDP No.) Coated TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK2001	TS2000	CP200	CP500	CP600	Cermet TP1020	TP1030
CCMT-FF1																	
	CCMT 21.50.5-FF1		19361														
	21.51-FF1		19404														
	CCMT 32.51-FF1		19486														
CCMT-F1																	
	CCMT 21.50.5-F1	15858	15859	50444		08497				31365		38464	06756	96853		66790	66772
	21.51-F1	19554	19555	50448	66010	08505	18950	18940	31509	31411	69564	38941	06671	96854	92028	66795	66797
	21.52-F1		19588	50451		08507				31413				77895			68475
	CCMT 32.50.5-F1	19369	19474	50453		08509				31416				96856		66810	66811
	32.51-F1	19405	19594	50454	77212	08510	63959	63961	31513	31417	69568	38942	06757	96857	92030	66816	66817
	32.52-F1	19550	19599	50456	65997	08518	63960	63962	31515	31419	69571	38945	06758	96858			66826
	CCMT 431-F1		19482	50458								38946	06759				
	432-F1		19551	50463							69574	38948	06760				
	433-F1		19367														
CCMT...W-F1																	
	CCMT 21.51W-F1		19338													66805	66806
	CCMT 32.51W-F1	19225	19161													66825	
	32.52W-F1	19223	19306													66834	66835
	CCMT 431W-F1		18965														
	432W-F1		18975														

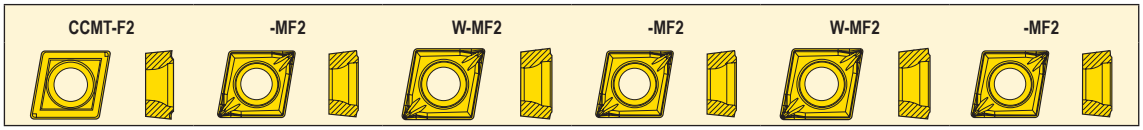
Please check availability in current price and stock-list.

CCMT



Tolerances:	Size:
d = ±0.002	21.5-32.5
d = ±0.003	43
d = ±0.004	53.5
d = ±0.005	86
s = ±0.002	21.5-32.5
s = ±0.005	43-86
r_ε = ±0.004	

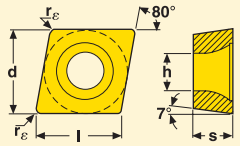
Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
21.5	1/4	3/32	0.256	0.114	1/128-1/32
32.5	3/8	5/32	0.382	0.177	1/128-3/64
321	3/8	1/8	0.382	0.177	1/64
43	1/2	3/16	0.508	0.220	1/64-3/64
53.5	5/8	7/32	0.634	0.220	1/32-3/64
86	1	3/8	1.016	0.343	3/32



Inserts	Part No.	Grades (EDP No.)														
		Coated												Uncoated	Cermet	
		TP0501	TP1501	TP2501	TP3500	TP200	TP40	TM2000	TM4000	TS2000	CP200	CP500	CP600	HX	TP1020	TP1030
CCMT-F2																
	CCMT 21.50.5-F2				50445	68122	18885		31410					11802		
	21.51-F2				50450	68123	18652		31412					11732		
	21.52-F2				50452	68124	18654		31414					11757		
	CCMT 321-F2													11834		
	CCMT 32.50.5-F2					68125								11987		
	32.51-F2				50455	68126	18656		31418	38944	07544			11753		
	32.52-F2				50457	68127	18668	31516	31420					11755		
	32.53-F2															
	CCMT 431-F2				50462	82328								16297		
	432-F2				50464	82329	19531	31517	31421					16182		
	433-F2				50465											
	CCMT 53.52-F2					18067			31422							
	53.53-F2					18082			31423							
	CCMT 866-F2					69610										
CCMT-MF2																
	CCMT 21.50.5-MF2			14244	66794							66791			66792	66793
	21.51-MF2	14934	14937	14245	66804				66799			66798	92029		66800	66801
	21.52-MF2	14938	14939	14247	66809							66807				
CCMT...W-MF2																
	CCMT 21.51W-MF2			14246								85469				
CCMT-MF2																
	CCMT 32.50.5-MF2			14248	66815							66812			66813	
	32.51-MF2		14943	14249	66824				66819			66818	92031		66820	66821
	32.52-MF2	14951	14952	14251	66833				66828			66827				66829
CCMT...W-MF2																
	CCMT 32.51W-MF2		14944	14250								85470				
	32.52W-MF2		14953	14252					85472			85471				
CCMT-MF2																
	CCMT 432-MF2		14957	14253	66838											

Please check availability in current price and stock-list.

CCMT



Tolerances:	Size:
d = ±0.002	21.5-32.5
d = ±0.003	43
d = ±0.004	53.5
s = ±0.002	21.5-32.5
s = ±0.005	43-53.5
r_ε = ±0.004	

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
21.5	1/4	3/32	0.256	0.114	1/128-1/32
32.5	3/8	5/32	0.382	0.177	1/128-3/64
43	1/2	3/16	0.508	0.220	1/64-3/64
53.5	5/8	7/32	0.634	0.220	1/32-1/16

CCMT-M3



W-M3



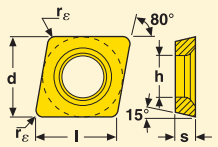
-M5



Inserts	Part No.	Grades (EDP No.)						
		Coated						
		TP0501	TP1501	TP2501	TP3500	TP40	TK1001	TK2001
CCMT-M3								
	CCMT 21.50.5-M3		19356	19397				
	21.51-M3		19523	19559			69565	69566
	21.52-M3			19463				69567
	CCMT 32.50.5-M3		19359	19371				
	CCMT 321-M3			19358				
	CCMT 32.51-M3		19541	20359			69569	69570
	32.52-M3		19613	19616			69572	69573
	32.53-M3		19366	19372				
	CCMT 431-M3		19392	19516				70176
	432-M3		19552	19617			69575	69576
	433-M3		19398	19408			69577	69578
	CCMT 53.52-M3			19632				70177
	53.53-M3							70178
CCMT...W-M3								
	CCMT 32.52W-M3		19353					
CCMT-M5								
	CCMT 32.51-M5	14940	14941	14271		74953		74809
	32.52-M5	14945	14947	14272	74948	74954	74791	74810
	CCMT 432-M5	14954	14955	14274	74949	74955	74793	74812
	433-M5	14960	14962	14275				74813
	CCMT 53.53-M5			14276				
	53.54-M5			14277				

Please check availability in current price and stock-list.

CDCB



Tolerances:
d = ±0.001
s = ±0.001
r_ε = ±0.001

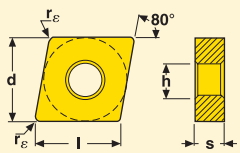
Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
1.21	5/32	0.038	0.159	0.080	1/512-1/64

CDCB



Inserts	Part No.	Grades (EDP No.)		
		Coated		Uncoated
		TS2500	CP500	883
CDCB				
	CDCB 1.21.20		62589	62591
	1.21.20.5	30263	98795	54263
	1.21.21	81535	98796	54268

CNGP



Tolerances:
d = ±0.001
s = ±0.005
r_ε = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
43	1/2	3/16	0.508	0.203	1/256-1/32

CNGP-MF1



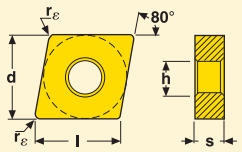
-M1



Inserts	Part No.	Grades (EDP No.)					
		Coated				Uncoated	
		TS2000	TS2500	CP200	CP500	883	890
CNGP-MF1							
	CNGP 430-MF1	38962		72175			81639
	430.5-MF1	38963		72177	96859		50190
	431-MF1	38964		72184	96861		50191
	432-MF1	38965		72230	96862		50192
CNGP-M1							
	CNGP 430.5-M1		39036			48718	
	431F-M1					48719	
	432F-M1					48720	

Please check availability in current price and stock-list.

CNMA, CNMG and CNMP



Tolerances:
d = ±0.003
d = ±0.004
s = ±0.005
r_ε = ±0.004

Size:
43
54-64

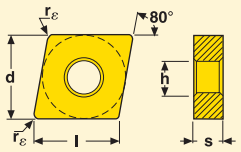
Size	Dimensions in inch d (I.C.)	s	l	h	r_ε
43	1/2	3/16	0.508	0.203	1/128-1/16
54	5/8	1/4	0.634	0.250	1/32-1/16
64	3/4	1/4	0.760	0.312	3/64-1/16



Inserts	Part No.	Grades (EDP No.) Coated TP0501	TP1501	TP2501	TP3500	TP200	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	CP200	CP500	Uncoated 883	890	Cermet TP1020	TP1030
CNMA																			
	CNMA 431										69579								
	432										69580	69581							
	433										69582	69583							
	433F															45531			
	434											69584							
	CNMA 542										70179	70180							
	543										69585	69586							
	544										69587	70181							
	CNMA 643										69588	70182							
	643F															00280			
	644										69590	70183							
CNMG -FF1																			
	CNMG 431-FF1			17593															
CNMG -FF2																			
	CNMG 430.5-FF2			15587											74981				70346
	431-FF2			15588	74984										74986				74985
	432-FF2	15591	15718	14293	74989														74990
CNMG ...W-FF2																			
	CNMG 431W-FF2			15589															75029
	432W-FF2		15592	14294															75031
CNMP -MF1																			
	CNMP 431-MF1						63794		31518	31424			38966	45365	96863		50197		
	432-MF1						63796		31521	31427			38967	54151	96864		50198		
CNMG ...W-MF1																			
	CNMG 431W-MF1														15508				
	432W-MF1														85489				
	433W-MF1														85473				
CNMG -MF2																			
	CNMG 431-MF2	15009		15051	49973	68344						70184						66839	66840
	432-MF2	15021	15022	15061	49979	68347	63797	63818										66842	66843
	433-MF2	15722	15723	15063		68350	63798	63820											

Please check availability in current price and stock-list.

CNMG



Tolerances:
d = ±0.003
d = ±0.004
s = ±0.005
r_ε = ±0.004

Size:
43
54-64

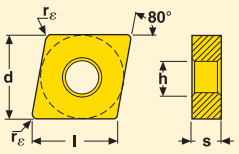
Size	Dimensions in inch d (I.C.)	s	l	h	r_ε
43	1/2	3/16	0.508	0.203	1/64-1/16
54	5/8	1/4	0.634	0.250	1/32-3/64
64	3/4	1/4	0.760	0.312	1/32-3/64



Inserts	Part No.	Grades (EDP No.) Coated TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2500	CP500	Uncoated 883	Cermet TP1020
CNMG ...W-MF2	CNMG 431W-MF2		15672	15673														66841
	432W-MF2	15674	15675	15676									69601					66844
	433W-MF2	15677																
CNMG -MF3	CNMG 431-MF3				49978						76865							
	432-MF3				49998	24328	30598				76868		69597					
	CNMG 433-MF3				50019		30600											
CNMG -MF4	CNMG 431-MF4									31519	31425			38998	39075	32582		
	432-MF4			18500	50000					31522	31428			39006	39077	32583		
	433-MF4			16493						31524	31430			39007	39078			
	434-MF4									31525	31431							
	CNMG 542-MF4									31526	31432							
	543-MF4									31528	31434							
	CNMG 643-MF4									31530	31437							
CNMG ...W-MF4	CNMG 431W-MF4										15506					85474		
	432W-MF4									85477	85478							
	433W-MF4									85479	85480							
CNMG -MF5	CNMG 432-MF5	18488	18559	18562	49980			63800	63822					39023	39090			
	433-MF5	15981	15983	15987	50020			63801	63823					39024	39091			
	434-MF5		16062	16064														
CNMG ...W-MF5	CNMG 432W-MF5		16713	16747				29651	29661			70185						

Please check availability in current price and stock-list.

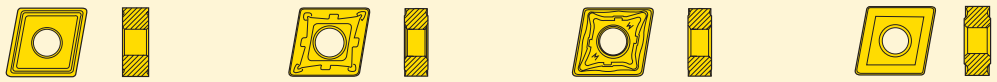
CNMG and CNMP



Tolerances:
d = ±0.002
d = ±0.003
d = ±0.004
s = ±0.005
r_ε = ±0.004

Size:
32
43
54-64

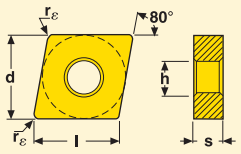
Size	Dimensions in inch d (I.C.)	s	l	h	r_ε
32	3/8	1/8	0.382	0.150	1/64-1/32
43	1/2	3/16	0.508	0.203	1/64-1/16
54	5/8	1/4	0.634	0.250	1/32-1/16
64	3/4	1/4	0.760	0.312	1/32-1/16



Inserts	Part No.	Grades (EDP No.) Coated TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1500	TK1001	TK2001	TS2000	TS2500	Uncoated 883
CNMP-M1													
	CNMP 431-M1										39037		41450
	432-M1											39038	40564
	433-M1												44671
	CNMP 542-M1												41454
	543-M1												41458
	CNMP 642-M1												41461
	643-M1												40568
CNMG-M3													
	CNMG 321-M3			17489									
	322-M3			17577									
	CNMG 431-M3			15328	49977	68353	18469						
	432-M3	15330	15332	15333	49981	37351		18096		69592			
	CNMG 432-M3(O)						18470						
	CNMG 433-M3	15335	15338	15339	50003	66067	18471						
	434-M3		15724	15728									
	CNMG 542-M3		15340	15341	50063								
	543-M3	15342	15345	15346	50071								
	544-M3												
	CNMG 642-M3		15954	15955	50260								
	643-M3		15348	15349	50263								
	644-M3		15956	15353	50273								
CNMG...W-M3													
	CNMG 432W-M3	15556	15557	15559						69600			
	433W-M3	15560	15561	15562						69611			
CNMG-M4													
	CNMG 432-M4								69593	69594			
	433-M4								69602	69603			

Please check availability in current price and stock-list.

CNMG

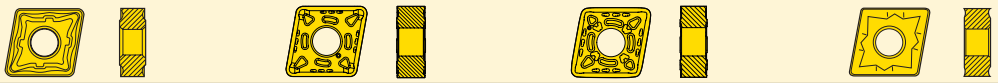


Tolerances:
d = ±0.003
d = ±0.004
d = ±0.005
s = ±0.005
r_ε = ±0.004

Size:
43
54-64
86

Size	Dimensions in inch d (I.C.)	s	l	h	r_ε
43	1/2	3/16	0.508	0.203	1/64-1/16
54	5/8	1/4	0.634	0.250	1/32-3/32
64	3/4	1/4	0.760	0.312	1/32-1/16

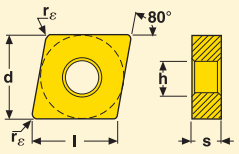
CNMG-M5 -M6 W-M6 -MR3



Inserts	Part No.	Grades (EDP No.) Coated TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TM2000	TM4000	TK1001	TK2001	TS2000	CP200	CP500	Uncoated 883	890
CNMG-M5																	
	CNMG 431-M5			16492	49820							69591					
	432-M5	16095	16096	16097	49997	23678	23680	18143	31520	31426	69595	69596					
	433-M5	16098	16099	16104	50004	23682	23684	18149	31523	31429	69604	69605					
	434-M5		16105	16106	50050		38282										
	CNMG 542-M5		16107	16108	50069							69614					
	543-M5	16494	16495	16496	50072	27194	27196		31527	31433		69615					
	544-M5	16109	16110	16113	50080	38246	38250			31436		69617					
	CNMG 642-M5		16114	16116	50261		38254										
	643-M5		16500	16502	50264	38256	38259					70188					
	644-M5			16503	50274	38261	38264			31438		70189					
CNMG-M6																	
	CNMG 432-M6	15104	15108	15109	81086							81823					
	433-M6	15120	15122	15125	76197							81824					
	434-M6		15128	15129													
	CNMG 543-M6	15130	15131	15132	76198							81828					
	544-M6	15134	15136	15137								81829					
	546-M6		15142	15143													
	CNMG 643-M6	48951	48961	48973													
	644-M6	48974	48975	49007													
	646-M6	49009	49010	49018													
CNMG...W-M6																	
	CNMG 432W-M6			15117													
	433W-M6		15126	15127													
	CNMG 543W-M6			15133													
	544W-M6		15138	15139													
CNMG-MR3																	
	CNMG 432-MR3												38968	72233	96865		50193
	433-MR3												38969	72235	96866		50195

Please check availability in current price and stock-list.

CNMG

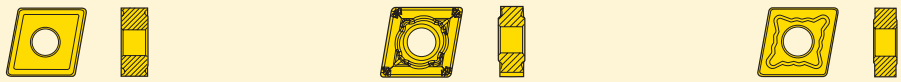


Tolerances:
d = ±0.003
d = ±0.004
d = ±0.005
s = ±0.005
r_ε = ±0.004

Size:
43-44
54-64
86

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
43	1/2	3/16	0.508	0.203	1/64-1/16
44	1/2	1/4	0.508	0.203	3/64
54	5/8	1/4	0.634	0.250	1/32-3/32
64	3/4	1/4	0.760	0.312	1/32-3/32
86	1	3/8	1.016	0.359	3/32

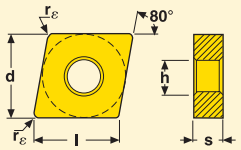
CNMG-MR4 -MR6 -MR7



Inserts	Part No.	Grades (EDP No.)										
		Coated										Uncoated
		TP0501	TP1501	TP2501	TP3500	TP200	TP40	TM4000	TK1001	TK2001	TS2500	883
CNMG-MR4												
	CNMG 431-MR4											41713
	432-MR4										39039	00305
	433-MR4										39040	41716
	434-MR4										39041	41376
	CNMG 542-MR4										39042	40714
	543-MR4										39043	41718
	CNMG 643-MR4										39044	00375
	644-MR4											47161
	CNMG 866-MR4				50557							
CNMG-MR6												
	CNMG 432-MR6		18220	18163	50001							
	433-MR6		16034	16054	50018							
	434-MR6				50057							
	CNMG 443-MR6				50060							
	CNMG 543-MR6			16069	50073							
	544-MR6				50082							
	CNMG 643-MR6				50267							
CNMG-MR7												
	CNMG 432-MR7		15976	15977	50002		17309	35164	69598	69599		
	433-MR7	16057	16059	16060	50021		17603	35166	69606	69609		
	434-MR7		16065	16068	50058		03549		69612	70186		
	CNMG 542-MR7				50062							
	543-MR7	16071	16072	16073	50070		78217	35167	70187	69616		
	544-MR7	16074	16075	16076	50074		78305	35168		69618		
	546-MR7		16077							81549		
	CNMG 642-MR7				50262		17604					
	643-MR7	16078	16081	16083	50270	79794	17606	35169		69621		
	644-MR7	16086	16523	16529	50279		19712	35170		69622		
	646-MR7		16088	16089								
	CNMG 866-MR7		18569	18769	50558	79798						

Please check availability in current price and stock-list.

CNMM



Tolerances:
d = ±0.003
d = ±0.004
s = ±0.005
r_ε = ±0.004

Size:
43
54-64

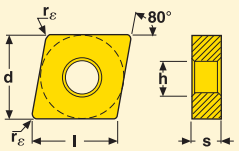
Size	Dimensions in inch d (I.C.)	s	l	h	r_ε
43	1/2	3/16	0.508	0.203	1/32-1/16
54	5/8	1/4	0.634	0.250	3/64-1/16
64	3/4	1/4	0.760	0.312	3/64-3/32



Inserts	Part No.	Grades (EDP No.) Coated TP0501	TP1501	TP2501	TP3500	TP200	TP40
CNMM-MR6							
	CNMM 543-MR6				50090		
	CNMM 644-MR6		18015				
CNMM-R4							
	CNMM 432-R4		17020	17064	50086	69062	
	433-R4	16845	17026	17075	50088	69063	17394
	434-R4	16863	16908	16911			
	CNMM 543-R4	16932	16954	17062	50094	69065	
	544-R4	16948	17045	16982	50103		
	CNMM 643-R4	16889	16925	17028	50283		
	644-R4	16930	17081	16997	50290	69068	
	646-R4	16903	16952	16966	50304		
CNMM...W-R4							
	CNMM 433W-R4		16690	16653			
CNMM-R5							
	CNMM 544-R5	17444	17347				
	CNMM 644-R5	17175			50292		
	646-R5	17277					
CNMM-R6							
	CNMM 432-R6			17424	50087		19154
	433-R6				50089		
	CNMM 543-R6				50097		17392
	CNMM 643-R6				50284		17401
	644-R6						03894

Please check availability in current price and stock-list.

CNMM



Tolerances:
d = ±0.003
d = ±0.004
s = ±0.005
r_ε = ±0.004

Size:
43
54-64

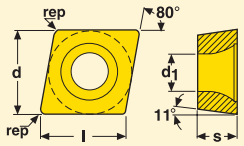
Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
43	1/2	3/16	0.508	0.203	1/32-3/64
54	5/8	1/4	0.634	0.250	3/64-3/32
64	3/4	1/4	0.760	0.312	3/64-3/32



Inserts	Part No.	Grades (EDP No.)						
		Coated						
		TP0501	TP1501	TP2501	TP3500	TP200	TP40	TM4000
CNMM-R7								
	CNMM 543-R7				50099			
	544-R7	17136		17137	50102			
	546-R7	17440						
	CNMM 643-R7			17165	50288			
	644-R7		17181	17334	50293	69392		
	646-R7	17192		17447	50306			
CNMM...W-R7								
	CNMM 644W-R7		16669	16693				
	646W-R7	16657	16658	16766				
CNMM-R8								
	CNMM 433-R8						19571	
	CNMM 644-R8				50295			
CNMM-RR6								
	CNMM 432-RR6				50560			
	433-RR6				50564			
	CNMM 543-RR6			17270				32501
	544-RR6		17323	17155				32502
	CNMM 643-RR6			17172				32503
	644-RR6			17350	50300			32504
	646-RR6	17206		17437	50307			32500
CNMM-RR9								
	CNMM 644-RR9						19220	

Please check availability in current price and stock-list.

CPMT



Tolerances:
d = ±0.002
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
21.5	1/4	3/32	0.256	0.114	1/64-1/16
32.5	3/8	5/32	0.382	0.177	1/64-1/16

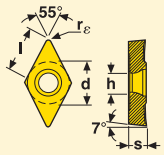
CPMT-F1



Inserts	Part No.	Grades (EDP No.)		
		Coated		
		TP200	CP200	CP500
CPMT-F1				
	CPMT 21.50-F1		64901	
	21.50.5-F1		64899	
	21.51-F1	92724	64903	04654
	21.52-F1	92727		
	CPMT 32.50-F1		64905	
	32.50.5-F1		64904	
	32.51-F1	92732	64906	04658
	32.52-F1	92735		16778

Please check availability in current price and stock-list.

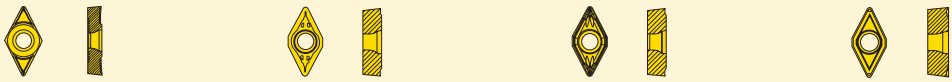
DCGT



Tolerances:
d = ±0.001
s = ±0.002
r_ε = (≥1/128) = ±0.004
r_ε = (≤1/256) = ±0.001

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
21.5	1/4	3/32	0.307	0.110	1/512-1/64
32.5	3/8	5/32	0.457	0.177	1/256-1/32
431	1/2	3/16	0.610	0.220	1/64

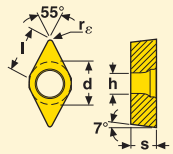
DCGT-AL **-F1** **-MF2** **-M3**



Inserts	Part No.	Grades (EDP No.)			
		Coated	Uncoated		Cermet
		CP500	HX	KX	TP1020
DCGT-AL					
	DCGT 21.50.0F-AL			52989	
	21.50F-AL			52986	
	21.50.5F-AL			07603	
	21.51F-AL			15835	
	DCGT 32.50.5F-AL			06798	
	32.51F-AL			15848	
	32.52F-AL			07606	
DCGT-F1					
	DCGT 21.50.0-F1	06794			
	21.50-F1	06795			
	DCGT 32.50-F1	06797			
	32.51-F1				66845
DCGT-MF2					
	DCGT 32.51-MF2	66941			
DCGT-M3					
	DCGT 21.50.5-M3		49306		
	21.51-M3		49310		
	DCGT 32.50.5-M3		49321		
	32.51-M3		49332		
	32.52-M3		49337		
	DCGT 431-M3		49351		

Please check availability in current price and stock-list.

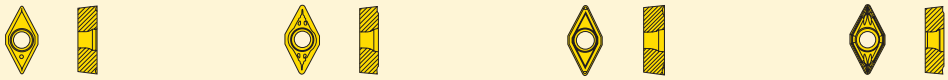
DCMT



Tolerances:	Size:
d = ±0.002	21.5-32.5
d = ±0.003	43
s = ±0.002	21.5-32.5
s = ±0.005	43
r_ε = ±0.004	

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
21.5	1/4	3/32	0.307	0.114	1/128-1/32
32.5	3/8	5/32	0.457	0.177	1/128-3/64
43	1/2	3/16	0.610	0.220	1/64-3/64

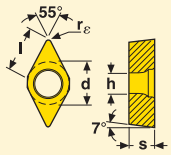
DCMT-FF1 **-F1** **-F2** **-MF2**



Inserts	Part No.	Grades (EDP No.)																		
		Coated																Uncoated	Cermet	
		TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	CP200	CP500	CP600	HX	TP1020	TP1030
DCMT -FF1																				
	DCMT 32.50.5-FF1			19684																
	32.51-FF1			19955																
	32.52-FF1			19957																
DCMT -F1																				
	DCMT 21.50.5-F1			19787	50466									38949	06761	96867				
	21.51-F1		19919	19974	50470		08519			31531	31440			38950	06762	96868				66847
	21.52-F1		19789		50472											06796				66852
	DCMT 32.50.5-F1			19971	50474											96869			66854	66855
	32.51-F1	15860	19983	20179	50482	65688	08520	18209	18217	31534	31443	70190	69626	38951	06763	96871	92053		66859	66860
	32.52-F1	15862	20182	20220	50485	03991		21656			39787	70192	69629	38953	06764	96872			66867	66868
	32.53-F1		19920	19939																
DCMT -F2																				
	DCMT 21.50.5-F2						19279				31439							11800		
	21.51-F2				50471	68129	18672			31532	31441							11759		
	21.52-F2				50473		18658			31533	31442							11761		
	DCMT 32.50.5-F2																	16111		
	32.51-F2				50483	68132	18660			31535	31444			38952	21094			11734		
	32.52-F2				50486	68133	18662			31536	31446							11763		
	DCMT 431-F2				49822	68135												16289		
	432-F2				50488	68136	05403											16257		
	433-F2				50489															
DCMT -MF2																				
	DCMT 21.50.5-MF2															66942			66846	
	21.51-MF2		14963	14255	66851											66943	92038		66848	
	21.52-MF2				66853															
	DCMT 32.50.5-MF2		14964	14256												66944	92052		66856	66857
	32.51-MF2	14966	14970	14257	66866						66861					66945	92058		66862	66863
	32.52-MF2	14976	14977	14258	66874						66869					66946	92055		66870	66871
	32.53-MF2			14259																

Please check availability in current price and stock-list.

DCMT



Tolerances:	Size:
d = ±0.002	21.5-32.5
d = ±0.003	43
s = ±0.002	21.5-32.5
s = ±0.005	43
r_ε = ±0.004	

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
21.5	1/4	3/32	0.307	0.114	1/128-1/32
32.5	3/8	5/32	0.457	0.177	1/128-3/64
43	1/2	3/16	0.610	0.220	1/64-3/64

DCMT-M3



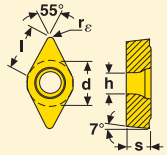
-M5



Inserts	Part No.	Grades (EDP No.)						
		Coated						
		TP0501	TP1501	TP2501	TP3500	TP40	TM4000	TK2001
DCMT-M3								
	DCMT 21.50.5-M3		20236	20284				
	21.51-M3		20285	20296				
	21.52-M3		20265	20291				
	DCMT 32.50.5-M3		20237	20288				
	32.51-M3	15904	20293	20298				70191
	32.52-M3		20289	20299				70193
	DCMT 431-M3		20266	20292				
	432-M3		20282	20294				
	433-M3		20283	20286				
DCMT-M5								
	DCMT 32.52-M5	14971	14975	14278	74950	74956	74918	
	32.53-M5			14283				

Please check availability in current price and stock-list.

DCMX



Tolerances:
d = ±0.002
s = ±0.002
r_ε = ±0.004

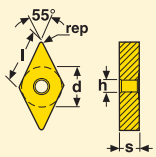
Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
32.5	3/8	5/32	0.457	0.177	1/64-1/32

DCMX...W-F1



Inserts	Part No.	Grades (EDP No.)			
		Coated		Cermet	
		TP1501	TP2501	TP1020	TP1030
DCMX...W-F1					
	DCMX 32.51W-F1	19130	19307	66876	66877
	32.52W-F1	19308	19224	66878	

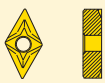
DNGM and DNGP



Tolerances:
d = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
43	1/2	3/16	0.610	0.203	1/128-1/32
44	1/2	1/4	0.610	0.203	1/32

DNGM-MF1



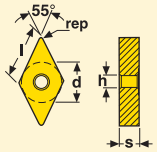
DNGP-M1



Inserts	Part No.	Grades (EDP No.)			
		Coated			Uncoated
		TS2000	CP200	CP500	883
DNGM-MF1					
	DNGM 432-MF1	38970	72238		
	DNGM 442F-MF1	38971		96873	
DNGP-M1					
	DNGP 430.5F-M1				50064
	431F-M1				50065
	432F-M1	62450			48722

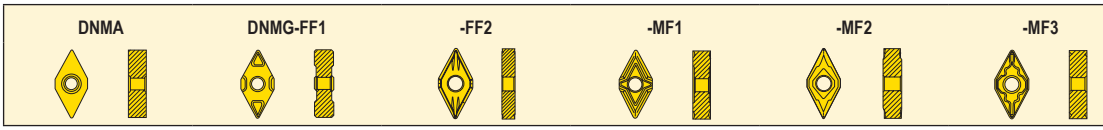
Please check availability in current price and stock-list.

DNMA, DNMG and DNMP



Tolerances:
d = ±0.003
s = ±0.005
rep = ±0.004

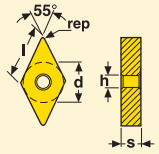
Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
43	1/2	3/16	0.610	0.203	1/64-3/64
44	1/2	1/4	0.610	0.203	1/64-1/16



Inserts	Part No.	Grades (EDP No.)																
		Coated														Uncoated	Cermet	
		TP0501	TP1501	TP2501	TP3500	TP200	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	CP200	CP500	890	TP1020	TP1030
DNMA	DNMA 432										69632	69633						
	DNMA 442										69634	70194						
	443										69635							
	444										70195							
DNMG-FF1	DNMG 441-FF1																	66879
DNMG-FF2	DNMG 431-FF2		15593	15594														74993
	432-FF2	15599	15600	14296														74996
	DNMG 441-FF2		15605	15606	75001										75006			75003
	442-FF2	15611	15612	14297	75009													75010
DNMP-MF1	DNMP 431-MF1						71457						38972	72240		69656		
	432-MF1						03141						38973	72242		81225		
	DNMP 441-MF1						63802		31541	31453			38976	72251	96874	69658		
	442-MF1						63803		31543	31455			38977	50965	96875	37186		
DNMG-MF2	DNMG 431-MF2	15023	15028	15064	50340													
	432-MF2	15029	15031	15065	50348		71278					69639						
	433-MF2			15066														
	DNMG 441-MF2		15729	15067	50355	69692											66880	66881
	442-MF2	15732	15733	15068	50361	69695	63804	63824									66882	66883
	443-MF2	15736	15737	15069		69698	63805	63825				69650						
DNMG-MF3	DNMG 431-MF3				50344													
	432-MF3				50349	35484												
	DNMG 441-MF3				50356													
	442-MF3				50362							69648						

Please check availability in current price and stock-list.

DNMG and DNMP



Tolerances:
d = ±0.003
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
43	1/2	3/16	0.610	0.203	1/64-1/16
44	1/2	1/4	0.610	0.203	1/64-1/16





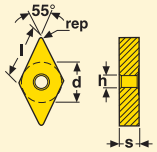




Inserts	Part No.	Grades (EDP No.)														
		Coated														Uncoated
		TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	TS2500	883
DNMG-MF4																
	DNMG 431-MF4										31451					
	432-MF4									37665	31452			39016	39086	
	433-MF4													39017	39087	
	DNMG 441-MF4									31542	31454					
	442-MF4			18104						31544	31456			39018	39088	
	443-MF4									31545	31457			39019	39089	
DNMG-MF5																
	DNMG 432-MF5		18100	18251				71283	71292					39029	39097	
	433-MF5		18025	18235										39030	39098	
	DNMG 442-MF5	18222	18225	18238				63806	63826			70198		39031	39099	
	443-MF5	18046	18230	18164				63807	63827					39032	39100	
	444-MF5			18181												
DNMP-M1																
	DNMP 431-M1															41468
	432-M1															40571
	433-M1															40575
DNMG-M3																
	DNMG 431-M3		15406	15407	50330								81545			
	432-M3	15411	15417	15419	50346	69177							70196			
	433-M3	15427	15445	15450	50350								69644			
	DNMG 441-M3		15454	15455	50353	37343	18568						69645			
	442-M3	15458	15461	15463	50357	37345	18479						69646			
	443-M3	15464	15734	15466	50365		18480						70199			
	444-M3		15738	15475												

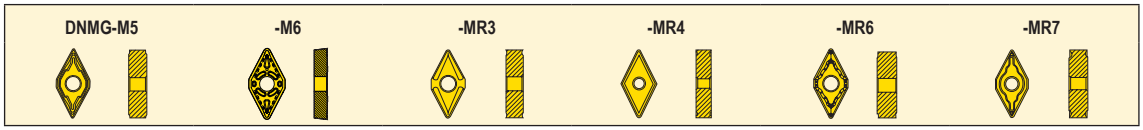
Please check availability in current price and stock-list.

DNMG



Tolerances:
d = ±0.003
s = ±0.005
rep = ±0.004

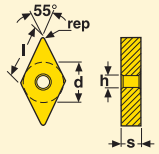
Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
43	1/2	3/16	0.610	0.203	1/64-3/64
44	1/2	1/4	0.610	0.203	1/64-1/16
54	5/8	1/4	0.763	0.250	1/32-3/64



Inserts	Part No.	Grades (EDP No.)															
		Coated														Uncoated	
		TP0501	TP1501	TP2501	TP3500	TP200	TP40	TM2000	TM4000	TK1001	TK2001	TS2000	TS2500	CP200	CP500	883	890
DNMG-M5																	
	DNMG 431-M5				50332												
	432-M5	16223	16237	16238	50347			42649			69636						
	433-M5		16595	16596	50351			42756									
	DNMG 441-M5			16251	50354												
	442-M5	16258	16266	16267	50360	39727		56225	44008	70197	69647						
	443-M5	16604	16605	16606	50366	39732		56233		81546	69649						
	444-M5	16607	16608	16610	50372												
	DNMG 542-M5					59820											
DNMG-M6																	
	DNMG 432-M6		15180	15182													
	433-M6		15183	15184	81822												
	434-M6			15188													
	DNMG 442-M6		15189	15190							81830						
	443-M6	15191	15192	15204	76205						81831						
	444-M6		15206	15211													
DNMG-MR3																	
	DNMG 432-MR3											38974		72250	03124		73005
	433-MR3											38975		76036			
	DNMG 442-MR3											38978		72256	98001		37187
	443-MR3														98002		30813
DNMG-MR4																	
	DNMG 432-MR4												39045			40684	
	433-MR4															47167	
	DNMG 543-MR4															00820	
DNMG-MR6																	
	DNMG 442-MR6				50364												
DNMG-MR7																	
	DNMG 442-MR7		16597				17608										
	443-MR7	16408	16412		50368						69654						

Please check availability in current price and stock-list.

DNMG and DNMM



Tolerances:
d = ±0.003
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
44	1/2	1/4	0.610	0.203	1/64-1/16

DNMG-UX* DNMM-R4 -R6

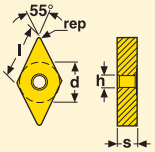


Inserts	Part No.	Grades (EDP No.)					
		Coated					
		TP0501	TP1501	TP2501	TP3500	TP40	TS2500
DNMG-UX							
	DNMG 441L-UX		17510	17578			39046
	441R-UX		17541	17597			39047
	442L-UX		17559	17585			39048
	442R-UX		17566	17596			39049
DNMM-R4							
	DNMM 442-R4		16797	16801	50373		
	443-R4	16802	16833	16832	50374		
	444-R4		16819	16831			
DNMM-R6							
	DNMM 442-R6					17404	
	444-R6					04182	

Please check availability in current price and stock-list.

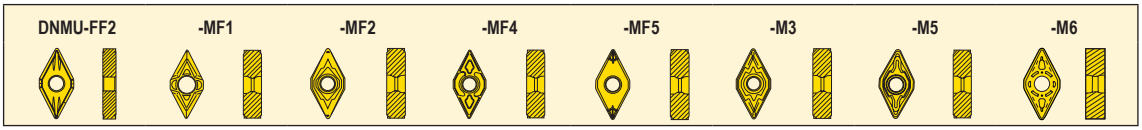
*Right-hand version shown

DNMU



Tolerances:
d = ±0.002
s = ±0.005
rep = ±0.004

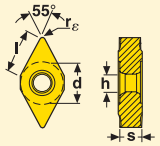
Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
33	3/8	3/16	0.457	0.150	1/128-3/64



Inserts	Part No.	Grades (EDP No.)											
		Coated											Cermet
		TP0501	TP1501	TP2501	TP3500	TP200	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	CP500	TP1030
DNMU-FF2														
	DNMU 331-FF2		15619	14298			92069						75035	75034
	332-FF2	15620	15621	14299	75038		92100						75040	75039
DNMU-MF1														
	DNMU 331-MF1								39815	39816			43360	
	332-MF1								39823	39824				
DNMU-MF2														
	DNMU 331-MF2	15033	15034	15070	50310	43862	92101				70200			66884
	332-MF2	15741	15743	15071	50320	43871	92102					69663		66885
	333-MF2			15072					52201					
DNMU-MF4														
	DNMU 331-MF4								39818	39819				
	332-MF4								39826	39827				
DNMU-MF5														
	DNMU 331-MF5			18182										
	332-MF5			18231										
	333-MF5			18114										
DNMU-M3														
	DNMU 330.5-M3		15479	15483										
	331-M3		15739	15485	50309	43358	18895	18954				69657		
	332-M3	15496	15500	15504	50319	52208	18900	18945				69660		
	333-M3	15509	15510									69664		
DNMU-M5														
	DNMU 332-M5		16277									69662		
	333-M5		16280									70201		
DNMU-M6														
	DNMU 332-M6		49028	49037										
	333-M6		49063	49070										

Please check availability in current price and stock-list.

DNMX



Tolerances:
d = ±0.002
d = ±0.003
s = ±0.005
r_ε = ±0.004

Size:
33
44

Size	Dimensions in inch d (I.C.)	s	l	h	r_ε
33	3/8	3/16	0.457	0.150	1/64-1/32
43	1/2	3/16	0.610	0.203	1/32-3/64
44	1/2	1/4	0.610	0.203	1/32-3/64

DNMX...W-MF2



W-MF4



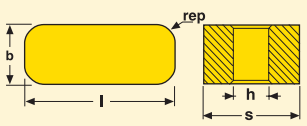
W-M3



Inserts	Part No.	Grades (EDP No.) Coated TP0501	TP1501	TP2501	TM2000	TM4000	Cermet TP1030
DNMX...W-MF2							
	DNMX 331W-MF2		15694	15695			
	332W-MF2		15696	15697			66886
DNMX...W-MF4							
	DNMX 432W-MF4				85485	85486	
	DNMX 442W-MF4				85487	85488	
DNMX...W-M3							
	DNMX 432W-M3		15563				
	433W-M3		15565				
	DNMX 442W-M3	15567	15568				
	443W-M3	15569	15570				

Please check availability in current price and stock-list.

LNMX



Tolerances:
d = ±0.005
l = ±0.006
s = ±0.006
r_ε = ±0.004

Size	Dimensions in inch				
	d (I.C.)	l	s	d_1	r_ε
1919	0.394	0.750	0.750	0.250	1/64
3019	0.472	1.181	0.750	0.250	1/64

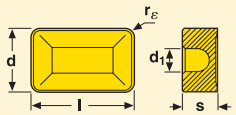
LNMX-MF **-MR** **-R2** **-RR94** **-RR97**



Inserts	Part No.	Grades (EDP No.)				
		Coated				
		TP0501	TP1501	TP2501	TP200	TK2001
LNMX-MF						
	LNMX 191940-MF		18889	18828		69666
	LNMX 301940-MF		18850	18873		69668
LNMX-MR						
	LNMX 191940-MR		18829	18846		69667
	LNMX 301940-MR		18852	18854		
LNMX-R2						
	LNMX 191940-R2	18848	18872		75619	
	LNMX 301940-R2	18855	18856		75634	
LNMX-RR94						
	LNMX 191940-RR94	18849	18894		75622	03959
	LNMX 301940-RR94	18875	18857		75637	03972
LNMX-RR97						
	LNMX 301940-RR97	18859	18860		75625	

Please check availability in current price and stock-list.

LNMX



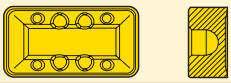
Tolerances:
d = ±0.005
l = ±0.006
s = ±0.006
r_ε = ±0.004

Size	Dimensions in inch				
	d (I.C.)	l	s	d_1	r_ε
4014	0.992	1.575	0.551	0.366	1/8
5014	1.000	2.000	0.551	0.366	1/8
5014..-1	1.000	2.000	0.551	0.250	1/8

LNMX-RR93



-RR96



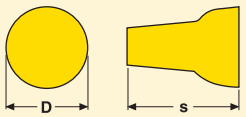
-RR97



Inserts	Part No.	Grades				
		Coated				
		TP0501	TP1501	TP2501	TP200	TP40
LNMX-RR93						
	LNMX 401432-RR93	18882	18862		03484	
LNMX-RR96						
	LNMX 401432-RR96		18863	18864	75614	
	LNMX 501432-RR96		18866	18867	75631	
LNMX-RR97						
	LNMX 501432-1-RR97				75615	75616

Please check availability in current price and stock-list.

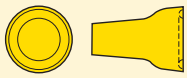
RCGS



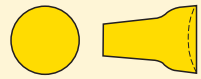
Tolerances:
D = ±0.001
s = ±0.010

Size	Dimensions in inch	
	D	s
1.5	3/16	1/4
2	1/4	23/64
3	3/8	33/64
4	1/2	21/32

RCGS-46



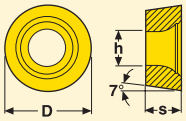
-PS



Inserts	Part No.	Grades (EDP No.)				
		Coated			Uncoated	
		TS2000	TS2500	CP200	883	890
RCGS-46						
	RCGS 1.5-46	39102	81894	72263	43728	50185
	RCGS 2-46	39104	81896	72266	43731	50187
	RCGS 3-46	39106	81898	72270	43759	50189
	RCGS 4-46	39101	81899	72260	43769	55799
RCGS-PS						
	RCGS 1.5-PS	39103		72265	43774	
	RCGS 2-PS	39105		72267	43776	50186
	RCGS 3-PS	39107		72271	43778	50188
	RCGS 4F-PS				43770	

Please check availability in current price and stock-list.

RCMM



Tolerances:
D = ±0.003
D = ±0.003
D = ±0.004
s = ±0.005

Size:
43
64
84

Size	Dimensions in inch D	s	h
43	0.500	3/16	0.205
64	0.750	1/4	0.315
84	1.000	1/4	0.315

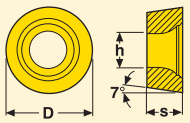
RCMM-46



Inserts	Part No.	Grades (EDP No.) Coated TP200	Uncoated 883
RCMM-46			
	RCMM 43-46	92721	01415
	RCMM 64-46	92723	01430
	RCMM 84-46		01445

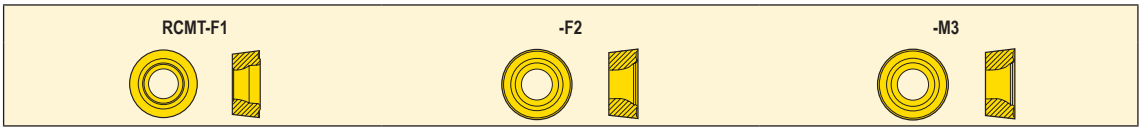
Please check availability in current price and stock-list.

RCMT



Tolerances:	Size:
D = ±0.002	06, 08, 10
D = ±0.003	12
D = ±0.004	16
s = ±0.002	06, 08, 10
s = ±0.005	12, 16

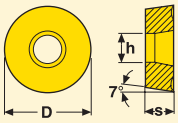
Size	Dimensions in inch D	s	h
22	0.250	1/8	0.110
32.5	0.375	5/32	0.154
43	0.500	3/16	0.173
0602	0.236	3/32	0.114
0803	0.315	1/8	0.138
10T3	0.394	5/32	0.177
1204	0.472	3/16	0.177
1606	0.630	1/4	0.220



Inserts	Part No.	Grades (EDP No.) Coated TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TK1001	TK2001	TS2000	CP200	CP500	Uncoated HX	883
RCMT-F1	**RCMT 22-F1 (O)**					96281									48219
	RCMT 32.5-F1												04668		28704
	RCMT 32.5-F1 (O)					96282									
	RCMT 43-F1												04669		
	RCMT 43-F1 (O)					96283									
	RCMT 0602M0-F1			15863									98008		
	RCMT 0803M0-F1			15864				29608					98012		
	RCMT 10T3M0-F1			15865	50515			92066					98302		
	RCMT 1204M0-F1		15866	15867	50517			92067		69678			99703		
	RCMT 1606M0-F1	15868	15869	15870											
RCMT-F2															
	RCMT 0602M0-F2					68139					38954			16153	
	RCMT 0803M0-F2				58989	68141					38956	16249		16151	
	RCMT 10T3M0-F2				50516	68143	34254				39020			16149	
	RCMT 1204M0-F2				50519	68145	34255				39021			16259	
	RCMT 1606M0-F2				50521		93911							93929	
RCMT-M3															
	RCMT 0602M0-M3			15906											
	RCMT 0803M0-M3		15907	15908						69672					
	RCMT 10T3M0-M3		15909	15911						69675					
	RCMT 1204M0-M3		15912	15913				29560	69679	69682					
	RCMT 1606M0-M3	15914	15915	15916											

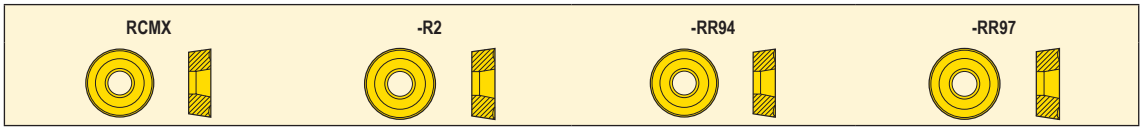
Please check availability in current price and stock-list.

RCMX



Tolerances:	Size:
D = ±0.003	10, 12, 16, 20
D = ±0.004	25, 32
s = ±0.002	10
s = ±0.005	12 - 32

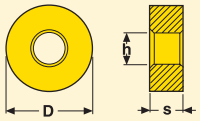
Size	Dimensions in inch D	s	h
100300	0.394	1/8	0.142
120400	0.472	3/16	0.165
200600	0.787	1/4	0.256
250700	0.984	5/16	0.283
320900	1.260	3/8	0.374



Inserts	Part No.	Grades (EDP No.) Coated TP0501	TP1501	TP2501	TP3500	TP200	TH1500	TK1001	TK2001
RCMX									
	RCMX 100300				50522				
	RCMX 120400				50523				
	RCMX 200600				49849	35989			69685
	RCMX 250700				50553	35987		70202	69688
	RCMX 320900				50554	35986			69700
RCMX-R2									
	RCMX 200600-R2	20309		20310					
	RCMX 250700-R2	20333		20334					
	RCMX 320900-R2	20321		20325					
RCMX-RR94									
	RCMX 120400-RR94			20318					
	RCMX 160600-RR94		20313	20315					
	RCMX 250700-RR94	20349	20345	20341			92064		75408
	RCMX 200600-RR94	20316	20317	20314					
	RCMX 320900-RR94	20347	20340	20336			92063		03961
RCMX-RR97									
	RCMX 200600-RR97	20311		20312					
	RCMX 250700-RR97	20342		20335					
	RCMX 320900-RR97	20328		20330					

Please check availability in current price and stock-list.

RNMA, RNMG

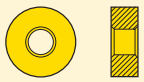


Tolerances:
D = ±0.003
D = ±0.004
D = ±0.005
s = ±0.005

Size:
43
64
86

Size	Dimensions in inch D	s	h
43	1/2	3/16	0.203
64	3/4	1/4	0.312
86	1	3/8	0.359

RNMA



RNMG-M3



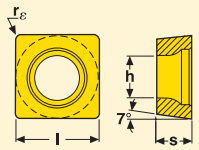
-MR4



Inserts	Part No.	Grades (EDP No.) Coated TP1501	TP2501	TP3500	TK1001	TK2001	TS2500	Uncoated 883
RNMA								
	RNMA 43				70203	69701		
	RNMA 64					69702		
RNMG-M3								
	RNMG 43-M3	15527	15528	50614				
RNMG-MR4								
	RNMG 43-MR4						39050	01905
	RNMG 64-MR4						39051	01950
	RNMG 86-MR4						39052	01975

Please check availability in current price and stock-list.

SCMT



Tolerances:	Size:
l = ±0.002	21.5-32.5
l = ±0.003	43
l = ±0.005	53.5, 86
s = ±0.002	21.5-32.5
s = ±0.005	43-86
r_ε = ±0.004	

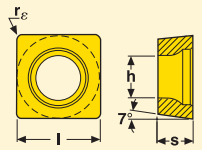
Size	Dimensions in inch l (I.C.)	s	h	r_ε
2.52	5/16	1/8	0.138	1/32
21.5	1/4	3/32	0.114	1/64
32.5	3/8	5/32	0.177	1/64-3/64
43	1/2	3/16	0.220	1/32-3/64
53	5/8	7/32	0.343	3/64
86	1	3/8	0.343	3/32



Inserts	Part No.	Grades (EDP No.) Coated TP0501	TP1501	TP2501	TP3500	TP200	TP40	TM2000	TM4000	TK1001	TK2001	CP500	Cermet TP1030
SCMT-F1													
	SCMT 32.51-F1			15871	50528							99707	
	32.52-F1			15880	50534	69789					69703	99708	66888
	32.53-F1				50538								
	SCMT 432-F1			15884	50542							99804	
	433-F1		15886			77210						99807	
SCMT-F2													
	SCMT 21.51-F2					37533	07347						
	SCMT 2.522-F2				50525		19737						
	SCMT 32.51-F2				50533		18897	31546	31458				
	32.52-F2				50535	79821	17616	31547	31459				
	SCMT 432-F2				50544	79822	19327	31548	31460				
	SCMT 53.53-F2						07348						
	SCMT 866T-F2					69613							
SCMT-MF2													
	SCMT 32.51-MF2			14260									
	32.52-MF2			14261	66890							66947	66889
	32.53-MF2				66891								
	SCMT 432-MF2			14262	66893								
SCMT-M3													
	SCMT 21.51-M3			15917									
	SCMT 2.522-M3			15918									
	SCMT 32.51-M3			15919									
	32.52-M3		15921	15927						69704	69705		
	SCMT 432-M3		15929	15946						69706	69707		
	433-M3										69708		
SCMT-M5													
	SCMT 432-M5	14978		14285	74951		74958			74798			

Please check availability in current price and stock-list.

SCMT

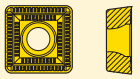


Tolerances:
l = ±0.005
l = ±0.006
s = ±0.005
s = ±0.006
r_ε = ±0.004

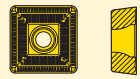
Size:
866
126
866
126

Size	Dimensions in inch			
	l (I.C.)	s	h	r_ε
1268	1 1/2	3/8	0.343	1/8
866	1	3/8	0.343	3/32

SCMT-RR96



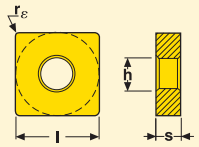
-RR97



Inserts	Part No.	Grades (EDP No.)		
		Coated		
		TP0501	TP2501	TP200
SCMT-RR96				
	SCMT 866-RR96	61107		71608
	SCMT 1268-RR96			75423
SCMT-RR97				
	SCMT 866-RR97	20337	20338	
	SCMT 1268-RR97	20339		75425

Please check availability in current price and stock-list.

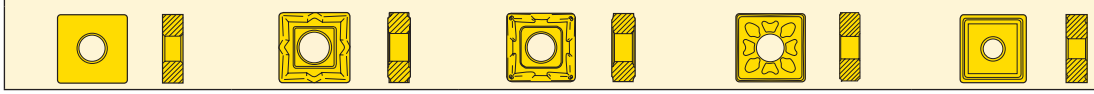
SNMA, SNMG and SNMP



Tolerances:
l = ±0.002
l = ±0.003
l = ±0.004
s = ±0.005
r_ε = ±0.004

Size:
32
43
54, 64

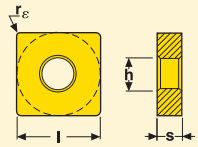
Size	Dimensions in inch l (I.C.)	s	h	r_ε
32	3/8	1/8	0.150	1/64-1/32
43	1/2	3/16	0.203	1/32-1/16
54	5/8	1/4	0.250	3/64
64	3/4	1/4	0.312	3/64-1/16



Inserts	Part No.	Grades (EDP No.) Coated TP1501	TP2501	TP3500	TP200	TH1000	TM2000	TM4000	TK1001	TK2001	TS2000	CP200	CP500	Uncoated 883	890	Cermet TP1030
SNMA																
	SNMA 322								69714							
	SNMA 432								69722	70204						
	433								69723							
	434								69727							
	SNMA 543								69730	70205						
	SNMA 643								69731							
	644								69732	70206						
SNMP-MF1																
	SNMP 432-MF1						31550	31462			38979	54152	99808		37179	
	433-MF1										38981	72275	92607		37183	
SNMG-MF2																
	SNMG 321-MF2		18499													
	322-MF2		18258													
	SNMG 432-MF2	15744	15073	50111	69710	29228										66894
	433-MF2	15035	15074			29559										66895
SNMG-MF4																
	SNMG 432-MF4						31551	31463								
	433-MF4						31553	31466								
SNMP-M1																
	SNMP 432-M1													40583		
	SNMP 543-M1													40588		
	SNMP 644-M1													40593		

Please check availability in current price and stock-list.

SNMG

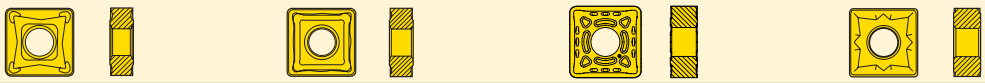


Tolerances:
l = ±0.002
l = ±0.003
l = ±0.004
s = ±0.005
r_ε = ±0.004

Size:
32
43
54-64

Size	Dimensions in inch l (I.C.)	s	h	r_ε
32	3/8	1/8	0.150	1/32
43	1/2	3/16	0.203	1/64-1/16
54	5/8	1/4	0.250	1/32-1/16
64	3/4	1/4	0.312	3/64-3/32

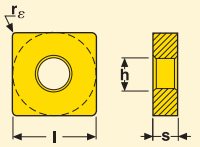
SNMG-M3 -M5 -M6 -MR3



Inserts	Part No.	Grades (EDP No.) Coated TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TM2000	TM4000	TK1001	TK2001	TS2000	CP200	CP500	Uncoated 890
SNMG-M3																
	SNMG 431-M3			15529	50106											
	432-M3		15530	15531	50107	69719	18473					81543				
	433-M3		15533	15534	50113	69624	18474									
	434-M3		15535	15536												
	SNMG 543-M3		15537	15538												
	SNMG 643-M3			15539	50375											
	644-M3			15540												
SNMG-M5																
	SNMG 322-M5			18259	50105											
	SNMG 432-M5			16611	50109	38284	38288	29577	31549	31461	81547	69733				
	433-M5		16299	16303	50114		38294	29580	31552	31464		70207				
	434-M5		16304	16312	50117											
	SNMG 542-M5			16316												
	543-M5		16320	16345	50377		38046			43673						
	544-M5	16346	16360	16368	50384		38051									
	SNMG 643-M5			16612	50387		38091		31554	31467		69735				
	644-M5	16407	16614	16622	50390		38097			31468						
SNMG-M6																
	SNMG 433-M6		15297	15307												
	SNMG 543-M6		15312	15313												
	544-M6	15314	15316	15319												
	SNMG 643-M6	49073	49080	49109												
	644-M6	49126	49143	49147												
	646-M6	49155	49156	49158												
	SNMG 432-M6		15272	15280												
SNMG-MR3																
	SNMG 432-MR3												38980	72273	99812	37181
	433-MR3												38982	72277	98982	
	SNMG 644-MR3													72279	98983	66247

Please check availability in current price and stock-list.

SNMG, SNMM

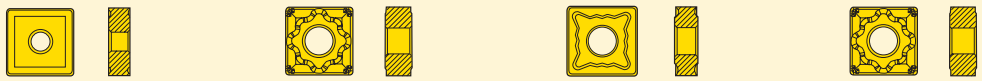


Tolerances:
l = ±0.003
l = ±0.004
l = ±0.005
s = ±0.005
r_ε = ±0.004

Size:
43-44
54-64
86

Size	Dimensions in inch l (I.C.)	s	h	r_ε
43	1/2	3/16	0.203	1/32-1/16
44	1/2	1/4	0.203	3/64
54	5/8	1/4	0.250	3/64-3/32
64	3/4	1/4	0.312	3/64-3/32
86	1	3/8	0.359	3/32

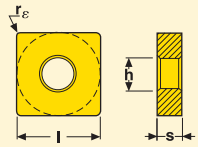
SNMG-MR4 -MR6 -MR7 SNMM-MR6



Inserts	Part No.	Grades (EDP No.) Coated TP0501	TP1501	TP2501	TP3500	TP200	TP40	TM4000	TK2001	TS2500	Uncoated 883
SNMG-MR4											
	SNMG 432-MR4									39053	03195
	433-MR4									39054	03215
	434-MR4									39055	03240
	SNMG 543-MR4									39056	03275
	SNMG 643-MR4									39057	03325
	644-MR4										03345
	SNMG 866-MR4										03385
SNMG-MR6											
	SNMG 443-MR6				50376						
	SNMG 543-MR6			18210							
SNMG-MR7											
	SNMG 432-MR7		16414	16420	50112		17610	35171			
	433-MR7			16446	50116		17612	35172	69734		
	434-MR7			16470							
	SNMG 543-MR7			16475	50380		05616		70209		
	544-MR7			16476			04228		70210		
	SNMG 643-MR7			16489	50388		17613	35173			
	644-MR7	16490	16636	16637	50391		17614	35174			
	646-MR7			16491							
	SNMG 866-MR7	18617		18827	49853	79808					
SNMM-MR6											
	SNMM 546-MR6				50399						

Please check availability in current price and stock-list.

SNMM



Tolerances:
l = ±0.003
l = ±0.004
l = ±0.005
s = ±0.005
r_ε = ±0.004

Size:
43
54-64
85-86

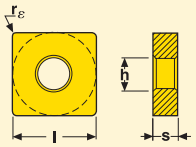
Size	Dimensions in inch			
	l (I.C.)	s	h	r_ε
43	1/2	3/16	0.203	1/32-3/64
54	5/8	1/4	0.250	3/64-3/32
64	3/4	1/4	0.312	3/64-3/32
85	1	5/16	0.359	3/32
86	1	3/8	0.359	3/32



Inserts	Part No.	Grades (EDP No.)					
		Coated					
		TP0501	TP1501	TP2501	TP3500	TP200	TP40
SNMM-R4							
	SNMM 432-R4				50392		
	433-R4			16775	50393		
	SNMM 543-R4			18475	50398		
	544-R4	18271		18507			
	SNMM 643-R4			16792	50400		
	644-R4	16770	16784	16793	50408	79825	04245
	646-R4	16771		16790	50414		
SNMM-R5							
	SNMM 644-R5			17207			
	646-R5			17215			
SNMM-R6							
	SNMM 432-R6						17416
	SNMM 643-R6				50401		04259
	644-R6				50409		
SNMM-R7							
	SNMM 546-R7			17340			
	SNMM 643-R7			17286			
	644-R7			17421	50410	38895	
	646-R7	17235		17346	50415	69401	
	SNMM 856-R7	18627		18813	50569	69412	
	SNMM 866-R7	18634		18821	50572	69415	
SNMM...W-R7							
	SNMM 644W-R7			16694			
	646W-R7			16663			
SNMM-R8							
	SNMM 433-R8						17422
	SNMM 644-R8				50411		04282

Please check availability in current price and stock-list.

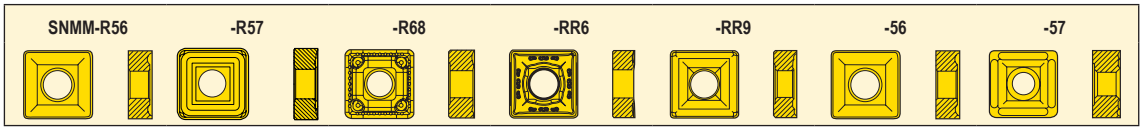
SNMM



Tolerances:
l = ±0.003
l = ±0.004
l = ±0.005
s = ±0.005
r_ε = ±0.004

Size:
43
64
85-86

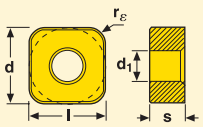
Size	Dimensions in inch l (I.C.)	s	h	r_ε
43	1/2	3/16	0.203	1/32
64	3/4	1/4	0.312	3/64-3/32
85	1	5/16	0.359	3/32
86	1	3/8	0.359	3/32



Inserts	Part No.	Grades (EDP No.) Coated TP0501	TP2501	TP3500	TP200	TP40	TM4000
SNMM-R56							
	SNMM 856-R56		18567				
SNMM-R57							
	SNMM 644-R57		17291				
	646-R57	17229					
	SNMM 856-R57		18621				
SNMM-R68							
	SNMM 866-R68	18629	18633				
SNMM-RR6							
	SNMM 432-RR6						54124
	SNMM 643-RR6			50405			
	644-RR6		17213	50412			32507
	646-RR6		17315				
	SNMM 856-RR6		18676	50570			
SNMM-RR9							
	SNMM 644-RR9					19266	
	SNMM 856-RR9			50571		19502	
SNMM-56							
	SNMM 644-56			50407			
	SNMM 856-56			50565			
SNMM-57							
	SNMM 644-57				36029		
	646-57			50413			
	SNMM 856-57			50567	35990		

Please check availability in current price and stock-list.

SNMX



Tolerances:
l = ±0.004
s = ±0.005
r_ε = ±0.004

Size	Dimensions in inch			
	l	s	d_1	r_ε
6710	0.750	0.433	0.305	0.157

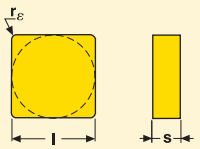
SNMX-R2



Inserts	Part No.	Grades (EDP No.)		
		Coated		
		TP1501	TP2501	TP200
SNMX-R2				
	SNMX 6710-R2	61105	61102	75628

Please check availability in current price and stock-list.

SNU



Tolerances:
l = ±0.005
s = ±0.005
r_ε = ±0.004

Size	Dimensions in inch		
	l (I.C.)	s	r_ε
43	1/2	3/16	3/64
63	3/4	3/16	3/64

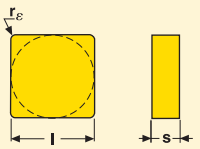
SNU



Inserts	Part No.	Grades (EDP No.)	
		Coated	Uncoated
		TK2001	S25M
SNU			
	SNU 433	81544	06197
	SNU 633		06335

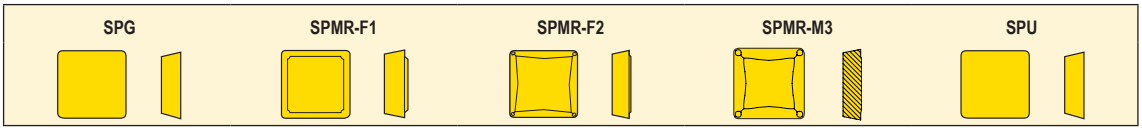
Please check availability in current price and stock-list.

SPG, SPMR and SPU



Tolerances:
s = ±0.005
r_ε = ±0.004

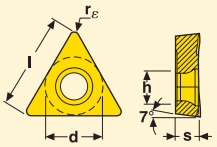
Size	Dimensions in inch		
	l (I.C.)	s	r_ε
32	3/8	1/8	1/64-1/32
42	1/2	1/8	1/64-1/16
43	1/2	3/16	1/64-3/64
53	5/8	3/16	3/64
63	3/4	3/16	3/64-1/16



Inserts	Part No.	Grades				
		Coated			Uncoated	
		TP2501	TP40	CP200	HX	883
SPG						
	SPG 321F					47649
	SPG 422F			64907		03860
	423F					03930
SPMR-F1						
	SPMR 321-F1	18283				
	322-F1	18481				
	SPMR 421-F1	18484				
	422-F1	17626				
	423-F1	18448				
SPMR-F2						
	SPMR 422-F2		26087			
	423-F2		26090			
SPMR-M3						
	SPMR 422-M3	17735				
SPU						
	SPU 322				10679	
	SPU 421	17900			42886	
	422	17997			10681	
	SPU 533					
	SPU 633	17870				
	634T	17835				

Please check availability in current price and stock-list.

TCGT



Tolerances:
d = ±0.001
s = ±0.002
r_ε (≥1/128) = ±0.004
r_ε (≤1/256) = ±0.001

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
1.81	7/32	3/32	0.379	0.098	1/128-1/64
21.5	1/4	3/32	0.433	0.110	1/256-1/32
32.5	3/8	5/32	0.650	0.173	1/64-1/32

TCGT-AL



-F1



-UX*

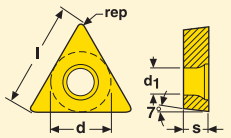


Inserts	Part No.	Grades (EDP No.)	
		Coated	Uncoated
		CP500	KX
TCGT-AL			
	TCGT 1.81.50.5F-AL		16091
	1.81.51F-AL		16100
	TCGT 21.50.5F-AL		16112
	21.51F-AL		16137
	21.52F-AL		16228
	TCGT 32.51F-AL		15861
	32.52F-AL		15875
TCGT-F1			
	TCGT 21.50-F1	06799	
TCGT-UX			
	TCGT 21.50.5R-UX	07542	
	21.50.5L-UX	07543	
	21.51R-UX	07550	
	21.51L-UX	07554	

Please check availability in current price and stock-list.

*Right-hand version shown

TCGX



Tolerances:
d = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
32.5	3/8	5/32	0.650	0.177	1/128

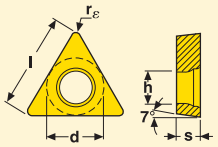
TCGX-F1



Inserts	Part No.	Grades (EDP No.) Coated TP2501	Grades (EDP No.) Coated CP500
TCGX-F1			
	TCGX 32.50.5WR-F1	15888	69232
	32.50.5WL-F1	15887	69230

Please check availability in current price and stock-list.

TCMT



Tolerances:	Size:
d = ±0.002	21.5, 32.5
d = ±0.003	43
s = ±0.002	21.5, 32.5
s = ±0.005	43
r_ε = ±0.004	

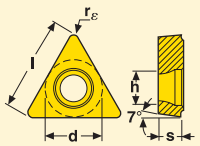
Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
21.5	1/4	3/32	0.433	0.114	1/128-1/32
32.5	3/8	5/32	0.650	0.177	1/128-3/64
43	1/2	3/16	0.866	0.220	1/64-1/32



Inserts	Part No.	Grades (EDP No.)														
		Coated													Uncoated	Cermet
		TP0501	TP1501	TP2501	TP3500	TP200	TP40	TM2000	TM4000	TK1001	TK2001	TS2000	CP200	CP500	HX	TP1030
TCMT-F1																
	TCMT 21.50.5-F1				50503		08593		31469					06800		
	21.51-F1(O)														04037	
	21.51-F1		15889	15890	50505		08596	31556	31470					06801		
	21.52-F1(O)														04042	
	21.52-F1		15891	15892	50506	66013	08521	31557	31471					98986		
	TCMT 32.50.5-F1				50507				31472							
	32.51-F1		15893	15894	50508		08601	31558	31473			38957	06781			67234
	32.52-F1		15895	15896	50510	66002	04572	31559	31474			38958		91357		
	32.53-F1		15897		50512				31477							
TCMT-F2																
	TCMT 32.51-F2				50509	68148									11846	
	32.52-F2				50511	68149	18666	31560	31476						11849	
	TCMT 431-F2														11851	
	432-F2				50513	68150										
TCMT-MF2																
	TCMT 21.51-MF2			14263	66897									66948		
	21.52-MF2			14264	66899									66949		
	TCMT 32.51-MF2			14265	66901									66950		
	32.52-MF2			14266	66903									66951		
TCMT-M3																
	TCMT 32.51-M3		15947	15948							69766					
	32.52-M3		15949	15951						69767	69768					
	TCMT 432-M3		15952	15953												
TCMT-M5																
	TCMT 32.52-M5	14979		14286			74959		74919	74799	74817					
	32.53-M5			14288							74818					

Please check availability in current price and stock-list.

TCMX



Tolerances:
d = ±0.002
s = ±0.002
r_ε = ±0.004

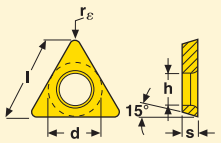
Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
32.5	3/8	5/32	0.650	0.177	1/32

TCMX...W-F1



Inserts	Part No.	Grades (EDP No.) Coated TP1501	Coated TP2501
TCMX...W-F1	TCMX 32.52W-F1	15902	15903

TDAB



Tolerances:
d = ±0.001
s = ±0.001
r_ε = ±0.001

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
1.21	0.160	0.047	0.268	0.093	1/512-1/64

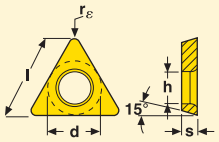
TDAB



Inserts	Part No.	Grades (EDP No.) Coated CP500	Uncoated 883
TDAB	TDAB 1.21.50.5	98798	54282
	1.21.51	98799	54288
	1.21.50	62587	62590

Please check availability in current price and stock-list.

TDCH



Tolerances:
d = ±0.001
s = ±0.001
r_ε = ±0.001

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
1.21	5/32	0.047	0.268	0.093	1/128-1/64

TDCH*

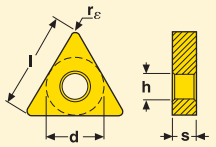


Inserts	Part No.	Grades (EDP No.) Coated CP500
TDCH		
	TDCH 1.21.50.5L	98800
	1.21.50.5R	98801
	1.21.51L	98802
	1.21.51R	98803

Please check availability in current price and stock-list.

*Right-hand version shown

TNMA, TNMG and TNMP



Tolerances:
d = ±0.002
d = ±0.003
s = ±0.005
r_ε = ±0.004

Size:
22, 32, 33
43

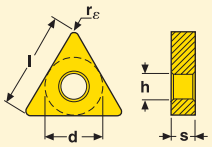
Size	Dimensions in inch d (I.C.)	s	l	h	r_ε
22	1/4	1/8	0.433	0.089	1/64-1/32
32	3/8	1/8	0.650	0.150	1/64-1/16
33	3/8	3/16	0.650	0.150	1/64-1/16
43	1/2	3/16	0.866	0.203	1/64-1/16



Inserts	Part No.	Grades (EDP No.) Coated TP0501	TP1501	TP2501	TP3500	TP200	TH1000	TM2000	TM4000	TK1001	TK2001	TS2000	CP200	CP500	Uncoated 883	890	Cermet TP1020	TP1030
TNMA																		
	TNMA 222F														07100			
	TNMA 322F														07130			
	TNMA 331									70211								
	332									69774	69783							
	333									69785	69823							
	334									69827								
	TNMA 432									69829								
	433									69831	69832							
	434									70212	69833							
TNMG-FF1																		
	TNMG 331-FF1																	66904
	332-FF1		17572	17574														
TNMG-FF2																		
	TNMG 331-FF2		15623	15658	75013									75015				75014
	332-FF2		15749	15659	75016													75017
TNMP-MF1																		
	TNMP 331-MF1							31561	31478			38983	17769					
	332-MF1							31564	31481			38984	72284	91359		37189		
	333-MF1											38985	72288	91388				
TNMG-MF2																		
	TNMG 221-MF2			15746														
	TNMG 331-MF2		15748	15076	50123	69737											66905	66906
	332-MF2	15037	15038	15077	50131	69740	29562										66907	66908
	333-MF2		15755	15078			29667											
	TNMG 431-MF2			15079														
	432-MF2		15041	15080														

Please check availability in current price and stock-list.

TNMG and TNMP



Tolerances:
d = ±0.002
d = ±0.003
d = ±0.004
s = ±0.005
r_ε = ±0.004

Size:
32, 33
43
54

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
32	3/8	1/8	0.650	0.150	1/64-3/64
33	3/8	3/16	0.650	0.150	1/64-3/64
43	1/2	3/16	0.866	0.203	1/64-1/16
54	5/8	1/4	1.083	0.250	3/64


TNMG-MF3


-MF4


-MF5

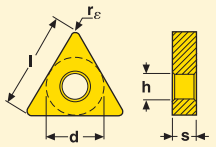

TNMP-M1


TNMG-M3

Inserts	Part No.	Grades (EDP No.)														
		Coated														Uncoated
		TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK2001	TS2000	TS2500	CP500	883
TNMG-MF3																
	TNMG 322-MF3				50119											
	TNMG 331-MF3				50127											
	332-MF3				50134	35509	30602									
	TNMG 431-MF3				50151											
	432-MF3				50152											
TNMG-MF4																
	TNMG 331-MF4									31562	31479					
	332-MF4				50135					31565	31482		39011	39081	32584	
	333-MF4									31566	31483		39012	39083		
	TNMG 432-MF4									31567	31484					
	433-MF4									31568	31485					
TNMG-MF5																
	TNMG 331-MF5							18162	18204							
	332-MF5		18240	18253				18159	18205				39027	39095		
	333-MF5		18211	18136									39028	39096		
TNMP-M1																
	TNMP 321-M1															40595
	TNMP 322-M1															40597
	TNMP 332-M1															41505
	TNMP 432-M1													39063		40604
	433-M1															41511
	434-M1															41514
TNMG-M2																
	TNMG 544-M2					96235										
TNMG-M3																
	TNMG 331-M3		15747	15541	50121	69746	18476					70213				
	332-M3	15750	15751	15546	50128	69749	18456									
	333-M3		15752	15548	50136		18478									
	TNMG 432-M3		15757	15549	50153	69764										
	433-M3		15550	15553	50183											
	TNMG 543-M3			18792	50575	69630										

Please check availability in current price and stock-list.

TNMG

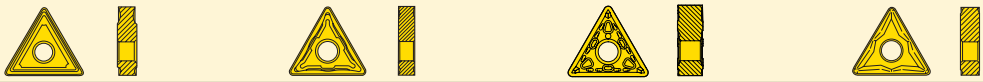


Tolerances:
d = ±0.002
d = ±0.003
d = ±0.004
s = ±0.005
r_ε = ±0.004

Size:
32, 33
43
54

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
32	3/8	1/8	0.650	0.150	1/32
33	3/8	3/16	0.650	0.150	1/64-1/16
43	1/2	3/16	0.866	0.203	1/64-1/16
54	5/8	1/4	1.083	0.250	1/32-1/16

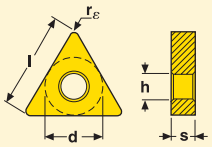
TNMG-M4 -M5 -M6 -MR3



Inserts	Part No.	Grades (EDP No.)													
		Coated													Uncoated
		TP0501	TP1501	TP2501	TP3500	TP200	TP40	TM2000	TM4000	TK1001	TK2001	TS2000	CP200	CP500	890
TNMG-M4															
	TNMG 332-M4										70214				
TNMG-M5															
	TNMG 322-M5				50118		39761								
	TNMG 331-M5			15957	50122										
	332-M5	15960	15964	15966	50130	40403	40492	31563	31480	69835	69836				
	333-M5	16638	16639	16640	50139						69837				
	334-M5										69839				
	TNMG 431-M5			15967	50142										
	432-M5	15968	16648	16649	50154	40509	40535	42607	39633		69841				
	433-M5	15969	15970	15971	50194						69842				
	434-M5	15972	15973	15974	50196		40628								
	TNMG 542-M5				50574		59830								
	543-M5		18677	18826	50576	59832	59834								
	544-M5		18824	18669	50578	59837	59839								
TNMG-M6															
	TNMG 332-M6		15320	15323											
	333-M6		15324	15326											
	TNMG 432-M6	49159	49160	49161											
	433-M6	49162	49163	49164											
	434-M6	49165	49166	49175											
	TNMG 543-M6		49176	49177											
	544-M6		49178	49179											
TNMG-MR3															
	TNMG 333-MR3													91641	37192
	TNMG 433-MR3											38986	72291	91855	67977

Please check availability in current price and stock-list.

TNMG



Tolerances:
d = ±0.002
d = ±0.003
d = ±0.004
s = ±0.005
r_ε = ±0.004

Size:
22, 32, 33
43
54, 66

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
22	1/4	1/8	0.433	0.089	1/64-1/32
32	3/8	1/8	0.650	0.150	1/64-1/16
33	3/8	3/16	0.650	0.150	1/32-3/64
43	1/2	3/16	0.866	0.203	1/64-1/8
54	5/8	1/4	1.083	0.250	1/32-1/8
66	3/4	3/8	1.299	0.312	3/32

TNMG-MR4



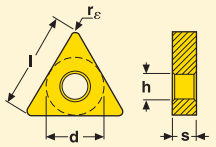
-MR6



Inserts	Part No.	Grades (EDP No.)	
		Coated	Uncoated
		TS2500	883
TNMG-MR4			
	TNMG 221-MR4		07320
	222-MR4		07335
	TNMG 321-MR4		07350
	322-MR4		07370
	324-MR4		07410
	TNMG 332-MR4	39060	07440
	TNMG 431-MR4		07475
	432-MR4	39064	07495
	433-MR4	39065	07520
	434-MR4	39066	07545
	436-MR4		07585
	438-MR4	39067	07605
	TNMG 542-MR4	39068	07625
	543-MR4		07645
	544-MR4		07670
	548-MR4		07690
	TNMG 666-MR4		07710
TNMG-MR6			
	TNMG 332-MR6		
	333-MR6		
	TNMG 432-MR6		
	433-MR6		

Please check availability in current price and stock-list.

TNMG and TNMM



Tolerances:
d = ±0.002
d = ±0.003
d = ±0.004
s = ±0.005
r_ε = ±0.004

Size:
33
43
54, 66

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
33	3/8	3/16	0.650	0.150	1/64-3/64
43	1/2	3/16	0.866	0.203	1/32-1/16
54	5/8	1/4	1.083	0.250	3/64-1/16
66	3/4	3/8	1.299	0.312	3/32


TNMG-MR7


-UX*


TNMM-R4

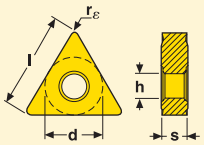

-R6

Inserts	Part No.	Grades (EDP No.)					
		Coated					
		TP1501	TP2501	TP3500	TP200	TP40	TS2500
TNMG-MR7							
	TNMG 332-MR7			50133		05401	
	333-MR7	16646		50140			
	TNMG 432-MR7			50164		17472	
	433-MR7			50172		17379	
	TNMG 543-MR7		18684	50577			
	544-MR7		18825	50579	79816		
	TNMG 666-MR7		18690	50580	79818	78278	
TNMG-UX							
	TNMG 331R-UX		17602				39059
	331L-UX		17592				39058
	332R-UX		17594				39062
	332L-UX		17591				39061
TNMM-R4							
	TNMM 332-R4		16795	50222			
	333-R4		18493				
	TNMM 432-R4		16796	50223			
	433-R4	16791	16794	50233	69078		
	434-R4	16800	16789	50235	69079		
TNMM-R6							
	TNMM 331-R6			50210			
	332-R6					17435	
	TNMM 432-R6					17443	
	434-R6			50236			

Please check availability in current price and stock-list.

*Right-hand version shown

TNMX



Tolerances:
d = ±0.002
s = ±0.005
r_ε = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
33	3/8	3/16	0.650	0.150	1/32-3/64

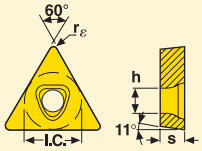
TNMX...W-M3



Inserts	Part No.	Grades (EDP No.) Coated TP1501	Grades (EDP No.) Coated TP2501
TNMX...W-M3	TNMX 332W-M3	15571	15572
	333W-M3	15573	

Please check availability in current price and stock-list.

TPMM



Tolerances:
d = ±0.002
s = ±0.005
r_ε = ±0.004

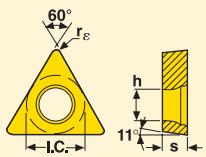
Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
2.52	5/16	1/8	0.512	0.105	1/64-1/32
32	3/8	1/8	0.650	0.165	1/64-1/16
43	1/2	3/16	0.866	0.203	1/64-3/64

TPMM-46



Inserts	Part No.	Grades (EDP No.) Coated 883
TPMM-46		
	TPMM 2.521-46	09085
	2.522-46	09105
	TPMM 321-46	09125
	322-46	09150
	323-46	09170
	324-46	09190
	TPMM 431-46	09205
	432-46	09225
	433-46	09245

TPMT



Tolerances:
d = ±0.002
s = ±0.005
r_ε = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
21.5	1/4	3/32	0.433	0.114	1/64-1/32
32.5	3/8	5/32	0.650	0.114	1/32

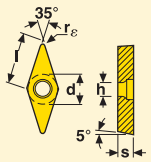
TPMT-F1



Inserts	Part No.	Grades (EDP No.) Coated TP200	CP500
TPMT-F1			
	TPMT 21.51-F1	02665	04670
	21.52-F1		04672
	TPMT 32.52-F1	02671	

Please check availability in current price and stock-list.

VBGT



Tolerances:
d = ±0.001
s = ±0.002
r_ε = ±0.001

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
21.5	1/4	3/32	0.433	0.114	1/256
33	3/8	3/16	0.630	0.177	1/256-1/32

VBGT-F1



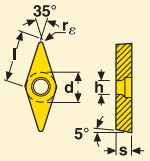
-M3



Inserts	Part No.	Grades (EDP No.)		
		Coated		Uncoated
		TS2050	CP500	HX
VBGT-F1				
	VBGT 21.50-F1		06802	
	VBGT 330-F1		06803	
	331-F1	13928		
	332-F1	13929		
VBGT-M3				
	VBGT 331-M3			49339
	332-M3			49340

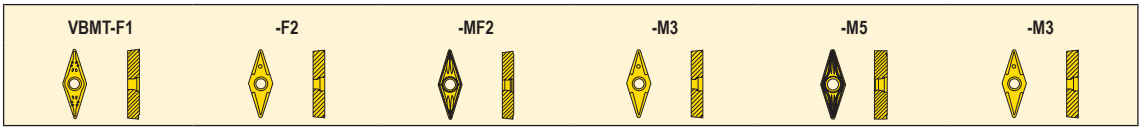
Please check availability in current price and stock-list.

VBMT



Tolerances:
d = ±0.002
s = ±0.002
r_ε = ±0.004

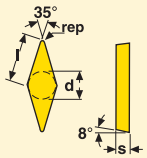
Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
21.5	1/4	3/32	0.433	0.114	1/128-1/32
22	1/4	1/8	0.433	0.114	1/128-1/32
33	3/8	3/16	0.630	0.177	1/128-3/64



Inserts	Part No.	Grades (EDP No.)																		
		Coated																Uncoated	Cermet	
		TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	CP200	CP500	CP600	HX	TP1020	TP1030
VBMT -F1	VBMT 21.50.5-F1			19861	50490											92488				66909
	21.51-F1			19972	50491	65699										96708			66911	66912
	21.52-F1			19970												00166				
	VBMT 220.5-F1			19672	54122											39635				
	221-F1			19952	54123											39638				
	222-F1			19673												39641				
	VBMT 330.5-F1			19953	50493											06804				
	331-F1		19973	20223	50494	91156		18218			43669			38959	06780	00169			66916	66917
	332-F1		20227	20235	50497	69661			18219		43670		81548	38960	13927	00175			66924	66925
	333-F1		20126	19862	50499															
VBMT -F2	VBMT 331-F2				50495	68151	03926			31569	31491							16087		
	332-F2				50496	68152	19545			31570	31492			38961	07564			16024		
	333-F2				50501		05658				31493									
VBMT -MF2	VBMT 21.50.5-MF2															66952	92056		66910	
	21.51-MF2		14980	14267												66953	92057		66913	
	VBMT 330.5-MF2				66915											66964				
	331-MF2	14981	14983	14268	66923						66918					66954			66919	66920
	332-MF2	14988	14989	14269	66931						66926					66955			66927	66928
	333-MF2	14993	14994	14270																
VBMT -M3	VBMT 331-M3		20290	20300								69851	70215							
	332-M3	20287	20295	20308									69933							
VBMT -M5	VBMT 332-M5	14985	14986	14291	74952		74960				74921		74819							
	VBMT 333-M3		20267	20297																

Please check availability in current price and stock-list.

VCGR



Tolerances:
d = ±0.001
s = ±0.002
rep = ±0.004

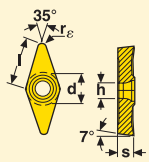
Size	Dimensions in inch			
	d (I.C.)	s	l	rep
33	3/8	3/16	0.654	1/64-1/32

VCGR



Inserts	Part No.	Grades (EDP No.)	
		Coated	Uncoated
		CP200	890
VCGR	VCGR 331	72293	50181
	332	72296	50182

VCGT



Tolerances:
d = ±0.001
s = ±0.002
r_ε = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
22	1/4	1/8	0.437	0.110	1/128-1/64
33	3/8	3/16	0.654	0.173	1/128-3/64

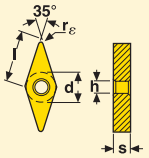
VCGT-AL



Inserts	Part No.	Grades (EDP No.)
		Uncoated
		KX
VCGT-AL	VCGT 220.5F-AL	01549
	221F-AL	15920
	VCGT 330.5F-AL	06805
	331F-AL	15937
	332F-AL	15958
	333F-AL	15965

Please check availability in current price and stock-list.

VNGM and VNGP



Tolerances:
d = ±0.001
s = ±0.005
r_ε = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
33	3/8	3/16	0.630	0.150	1/256-1/32
43	1/2	3/16	0.866	0.203	1/32

VNGM-MF1



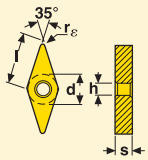
VNGP-M1



Inserts	Part No.	Grades (EDP No.)					
		Coated				Uncoated	
		TS2000	TS2500	CP200	CP500	883	890
VNGM-MF1							
	VNGM 331F-MF1	38987		72305	00186		50203
	332F-MF1	38988		72307	00210		50205
VNGP-M1							
	VNGP 330.5-M1	38608	39069			50066	
	331-M1	39034	39070			50067	
	332-M1	39035	39071			50068	
	VNGP 432F-M1-203	39072				48723	

Please check availability in current price and stock-list.

VNMG



Tolerances:
d = ±0.002
d = ±0.003
s = ±0.005
r_ε = ±0.004

Size:
33
43

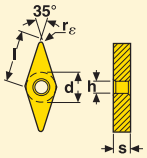
Size	Dimensions in inch d (I.C.)	s	l	h	r_ε
33	3/8	3/16	0.630	0.150	1/128-3/64
43	1/2	3/16	0.866	0.203	1/64-1/16



Inserts	Part No.	Grades (EDP No.) Coated TP0501	TP1501	TP2501	TP3500	TP200	TH1000	TM2000	TM4000	TK2001	TS2000	TS2500	CP500	Uncoated 883	Cermet TP1030
VNMG-FF1															
	VNMG 331-FF1		17571												
VNMG-FF2															
	VNMG 330.5-FF2		15669	14302									75022		75020
	331-FF2		15670	14303									75044		75043
	332-FF2		15671	14304											75048
VNMG-MF2															
	VNMG 331-MF2		15046	15090											
	332-MF2	15048	15049	15092											
	333-MF2		15050	15100											
VNMG-MF3															
	VNMG 331-MF3				50437										
	332-MF3				50440										
	VNMG 432-MF3-203					92746									
VNMG-MF4															
	VNMG 331-MF4							31571	31494		39013	39084			
	332-MF4							31572	31496		39014	39085			
VNMG-MF5															
	VNMG 332-MF5						71602								
VNMG-M3															
	VNMG 331-M3		15511	15512	50438	92230				76115					
	332-M3	15514	15770	15515	50439	92233				69903					
VNMG-MR4															
	VNMG 332-MR4											39073		09615	
	333-MR4											39074		09635	
	VNMG 431-MR4													09655	
	432-MR4													09670	
	433-MR4													09690	
	434-MR4													09692	
	432-MR4-203													63607	
	433-MR4-203													02681	

Please check availability in current price and stock-list.

VNMP and VNMU



Tolerances:
d = ±0.002
s = ±0.005
r_ε = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
2.53	5/16	3/16	0.512	0.150	1/64-1/32
33	3/8	3/16	0.630	0.150	1/64-1/32

VNMP-M1



VNMU-MF2



VNMU-M3



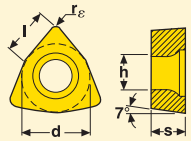
VNMU-M6



Inserts	Part No.	Grades (EDP No.)					
		Coated					Uncoated
		TP0501	TP1501	TP2501	TP3500	TS2000	883
VNMP-M1							
	VNMP 331-M1						41523
	332-M1						40622
VNMU-MF2							
	VNMU 2.531-MF2		47501	47502			
	2.532-MF2		47504	47505			
VNMU-M3							
	VNMU 2.531-M3		15516	15520	50441		
	2.532-M3	15522	15524	15526	50442	52214	
VNMU-M6							
	VNMU 2.532-M6		49180	49181			

Please check availability in current price and stock-list.

WCMT



Tolerances:
d = ±0.002
s = ±0.002
r_ε = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	h	r_ε
32.52	3/8	5/32	0.257	0.177	1/32
32.52W	3/8	5/32	0.260	0.177	1/32

WCMT-F1

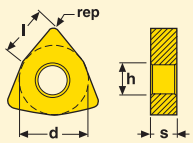


W-F1



Inserts	Part No.	Grades (EDP No.)	
		Coated	
		TP2501	CP500
WCMT-F1			
	WCMT 32.52-F1	19956	78550
WCMT...W-F1			
	WCMT 32.52W-F1	18970	91648

WNGP



Tolerances:
d = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
33	3/8	3/16	0.260	0.150	1/128
43	1/2	3/16	0.343	0.203	1/256-1/32

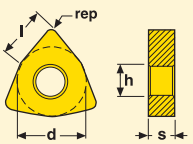
WNGP-MF1



Inserts	Part No.	Grades (EDP No.)			
		Coated			Uncoated
		TS2000	CP200	CP500	890
WNGP-MF1					
	WNGP 330.5-MF1	38990	72302	00177	82013
	WNGP 430-MF1	57325			
	430.5-MF1	57326			
	431-MF1	57327			
	432-MF1	57328			

Please check availability in current price and stock-list.

WNMA, WNMG and WNMP



Tolerances:
d = ±0.002
d = ±0.003
s = ±0.005
rep = ±0.004

Size:
33
43

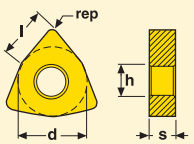
Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
33	3/8	3/16	0.260	0.150	1/64-3/64
43	1/2	3/16	0.343	0.203	1/64-1/16



Inserts	Part No.	Grades (EDP No.)															
		Coated													Uncoated	Cermet	
		TP1501	TP2501	TP3500	TP200	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001	TS2000	CP200	CP500	890	TP1020	TP1030
WNMA																	
	WNMA 332									69853	69854						
	333										69855						
	WNMA 432									69857	69858						
	433									69859	69861						
	434									69862	70216						
WNMG -FF2																	
	WNMG 331-FF2	15660	15661	75025										75027			75026
	332-FF2	15664	15665														75051
	WNMG 431-FF2	15667	14300														
	432-FF2	15668	14301														
WNMG ...W-FF2																	
	WNMG 331W-FF2		15662														75057
	332W-FF2		15666														75059
WNMP -MF1																	
	WNMP 331-MF1							31573	31497			38991	72308	00212	37194		
	332-MF1							31579	31499			38992	72312	00218	37195		
	333-MF1													00221			
	WNMP 431-MF1					63808		31585	31502			38996	54165				
	432-MF1					63809		31588	31505			38997	54166				
WNMG -MF2																	
	WNMG 331-MF2	15760	15082	50417	37321											66934	66935
	332-MF2	15043	15083	50420	37323	29668											66937
	333-MF2		15084														
	WNMG 431-MF2	15765	15085														
	432-MF2	15044	15089		37366	63810	63828										
	433-MF2	15045				63811	63829										
WNMG ...W-MF2																	
	WNMG 331W-MF2	15703	15704														66936
	332W-MF2	15706	15708														66938
	WNMG 431W-MF2		15709														
	432W-MF2	15712	15716														

Please check availability in current price and stock-list.

WNMG and WNMP



Tolerances:
d = ±0.002
d = ±0.003
s = ±0.005
rep = ±0.004

Size:
33
43

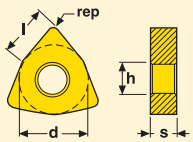
Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
33	3/8	3/16	0.260	0.150	1/64-3/64
43	1/2	3/16	0.343	0.203	1/64-1/16



Inserts	Part No.	Grades (EDP No.)													
		Coated													Uncoated
		TP0501	TP1501	TP2501	TP3500	TP40	TH1000	TH1500	TM2000	TM4000	TK2001	TS2000	TS2500	CP500	883
WNMG-MF3															
	WNMG 332-MF3				50421										
	WNMG 431-MF3					78309									
	432-MF3				50238	78314				76869	69873				
WNMG-MF4															
	WNMG 331-MF4								31577	31498					
	332-MF4			18191					31581	31500				32580	
	333-MF4								31583	31501					
	WNMG 431-MF4								31586	31503					
	432-MF4			18232	50240				31589	31506		39008	39079	32581	
	433-MF4			18203					31591	31508		39009	39080		
WNMG...W-MF4															
	WNMG 332W-MF4								85481	85482					
	WNMG 432W-MF4								85483	85484					
	433W-MF4									15507					
WNMG-MF5															
	WNMG 331-MF5			18140											
	332-MF5			18256	50422										
	333-MF5		18212	18087											
	WNMG 432-MF5	18144	18239	18257	50241		63816	63830				39025	39092		
	433-MF5	18207	18161	18234	50250		63817	63831				39026	39093		
	434-MF5			18250											
WNMG...W-MF5															
	WNMG 332W-MF5		16683	16696											
	WNMG 432W-MF5		16687	16688											
WNMP-M1															
	WNMP 431-M1														54167
	432-M1														54173
	433-M1														54174

Please check availability in current price and stock-list.

WNMG



Tolerances:
d = ±0.002
d = ±0.003
s = ±0.005
rep = ±0.004

Size:
33
43, 44

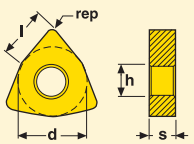
Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
33	3/8	3/16	0.260	0.150	1/128-3/64
43	1/2	3/16	0.343	0.203	1/64-1/16
44	1/2	1/4	0.343	0.203	1/32-1/16



Inserts	Part No.	Grades (EDP No.)											
		Coated											
		TP0501	TP1501	TP2501	TP3500	TP200	TP40	TH1000	TH1500	TM2000	TM4000	TK1001	TK2001
WNMG-M3													
	WNMG 330.5-M3			15373									
	331-M3		15759	15374	50416	37315							
	332-M3	15761	15763	15376	50418	37317	08868						69863
	333-M3	15378	15382	15386	50423		26334						
	WNMG 431-M3		15764	15395	50237	37360							69868
	432-M3	15766	15767	15397	50242	37354	02196						69869
	433-M3	15768	15769	15402	50247								69878
	434-M3			15403									
WNMG...W-M3													
	WNMG 332W-M3		15574	15575									69866
	333W-M3		15576	15577									
	WNMG 432W-M3	15578	15580	15582									69877
	433W-M3	15584	15585	15586									69899
WNMG-M4													
	WNMG 432-M4												69870
	433-M4												69879
WNMG-M5													
	WNMG 332-M5	16546	16550	16555	50419	39741						69864	69865
	333-M5	16120		16124	50425								69867
	WNMG 432-M5	16560	16567	16589	50243	23686	23688		18151	31587	31504	69871	69872
	433-M5	16590	16591	16592	50248	23690	23692	18153	18158	31590	31507	69880	69881
	434-M5	16185	16189	16205	50255								69900
	WNMG 442-M5				50426								
	443-M5		16207	16210	50428								
	444-M5		16216	16221	50434								
WNMG-M6													
	WNMG 432-M6	15145	15149	15151	76199								81832
	433-M6	15156	15158	15159	76200								81833
	434-M6	15164	15165	15172									
WNMG...W-M6													
	WNMG 432W-M6		15152	15155									
	433W-M6		15160	15163									
WNMG-M6													
	WNMG 443-M6	15173	15175	15177									
	444-M6		15178										

Please check availability in current price and stock-list.

WNMG and WNMM

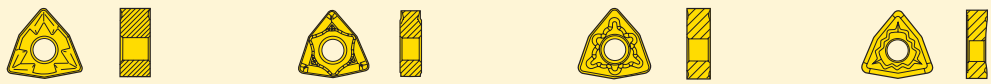


Tolerances:
d = ±0.002
d = ±0.003
s = ±0.005
rep = ±0.004

Size:
33
43

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
33	3/8	3/16	0.260	0.150	1/32-3/64
43	1/2	3/16	0.343	0.203	1/32-1/16
44	1/2	1/4	0.343	0.203	3/64-1/16

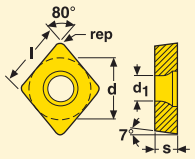
WNMG-MR3 -MR6 -MR7 WNMM-R6



Inserts	Part No.	Grades (EDP No.)											
		Coated											Uncoated
		TP1501	TP2501	TP3500	TP200	TP40	TM4000	TK1001	TK2001	TS2000	CP200	CP500	890
WNMG-MR3													
	WNMG 332-MR3									38993	72313	00219	37196
	333-MR3									38994	72326	00225	
WNMG-MR6													
	WNMG 432-MR6	18202	18213	50244									
	433-MR6	18215		50249									
	WNMG 443-MR6			50429									
WNMG-MR7													
	WNMG 432-MR7		16090	50246	54233			69874	69876				
	433-MR7	16593	16594	50251			44720	69897	69898				
	434-MR7	16093	16094	50252				69902					
WNMM-R6													
	WNMM 432-R6			50245		78338							
	433-R6					78341							

Please check availability in current price and stock-list.

CCGW



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
21.5	1/4	3/32	0.256	0.114	1/128-1/32
32.5	3/8	5/32	0.382	0.177	1/64-1/32
43	1/2	3/16	0.508	0.220	1/64-1/32

CCGW...-B



CCGW...-LF

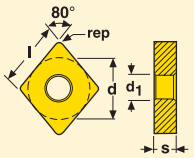


Inserts	Part No.	Grades (EDP No.)					Toolholders	
		Uncoated			Coated			
		CBN010	CBN150	CBN200	CBN060K	CBN160C	External	Internal
CCGW								
	CCGW 21.51E-L1-B	76110		44142	68933		SCFCR/L..2 SCGCR/L..2 SCLCR/L..2 SCMCN..2	..-SCFCR/L..2 ..-SCLCR/L..2
	21.52E-L1-B			44144				
	21.51S-00420-L1-B	09042						
	21.51S-00625-L1-B				62791			
	21.52S-00625-L1-B					33334		
	21.52S-00820-L1-B			44146				
	CCGW 21.50.5S-00420-LF			20902				
	21.51S-00420-LF	94733		20903				
	21.52S-00420-LF			20904				
	CCGW 21.52S-L1-WZP-B				81786		SCLCR/L..2	..-SCLCR/L..2
	CCGW 32.51E-L1-B	76113		44147	68934		SCFCR/L..3 SCGCR/L..3 SCLCR/L..3 SCMCN..3	..-SCFCR/L..3 ..-SCLCR/L..3
	32.52E-L1-B	11278		44148	68936			
	32.51S-00420-L1-B	09048						
	32.51S-00625-L1-B				54025			
	32.52S-00420-L1-B	76114	44163					
	32.52S-00625-L1-B				62790	33335		
	32.52S-00820-L1-B			44149				
	32.51S25-00820-L1-B			41234				
	32.52S25-00820-L1-B			41235				
	CCGW 32.51S-00420-LF	94734		20906				
	32.52S-00420-LF			20907				
	CCGW 32.51E-L1-WZ-B	91558					SCLCR/L..3	..-SCLCR/L..3
	32.51S-00420-L1-WZ-B	81768						
	32.51S-00625-L1-WZ-B				68935			
	32.52S-00625-L1-WZ-B				68937			
	32.51S-L1-WZP-B				81790			
	32.52S-L1-WZP-B				81787			
	CCGW 431S-00420-L1-B	11279					SCLCR/L..4	..-SCLCR/L..4
	432S-00420-L1-B	78910						
	432S-00820-L1-B			06586				

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

CNGA



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
43	1/2	3/16	0.508	0.203	1/64-3/64

CNGA...-B



CNGA...-U

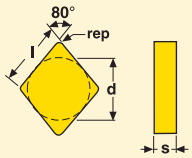


Inserts	Part No.	Grades (EDP No.)						Toolholders	
		Uncoated				Coated			
		CBN010	CBN150	CBN170	CBN200	CBN060K	CBN160C	External	Internal
CNGA									
	CNGA 432E-L1-B				06602			MCLNR/L..4 MCFNR/L..4 MCGNR/L..4	..-MCLNR/L..4
	431S-00420-L1-B	09050							
	432S-00420-L1-B	09051							
	432S-00625-L1-B		44591			45198	33336		
	432S-00820-L1-B				04560				
	433S-00420-L1-B	76128							
	433S-00625-L1-B		04680			45207	33337		
	CNGA 432E25-L1-U			63019					
	431S-00625-L1-U					68938			
	432S-00420-L1-U	81784							
	432S-00625-L1-U					62792			
	433S-00625-L1-U					62793			
	CNGA 432S25-00820-L1-B				41236				
	432S-00420-L1-WZ-B	09059						MCLNR/L..4	
	432S-00625-L1-WZ-B					45209	33338		
	433S-00625-L1-WZ-B						33339		
	CNGA 432S-00420-L1-WZ-U	81785							
	432S-00625-L1-WZ-U					62794			
	433S-00625-L1-WZ-U					62797			
	CNGA 432S-L1-WZN-B					54026			
	432S-00625-L1-WZP-B	76123				54027			
	CNGA 432S-L1-WZN-U					62796			

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

CNMN



Tolerances:
d = ±0.002
d = ±0.003
s = ±0.005
rep = ±0.004

Size:
32
43

Size	Dimensions in inch			
	d (I.C.)	s	l	rep
32	3/8	1/8	0.382	1/32-1/16
43	1/2	3/16	0.508	1/32-1/16

CNMN

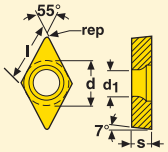


Inserts	Part No.	Grades (EDP No.)					Toolholders	
		Uncoated			Coated			
		CBN300	CBN500	CBN600	CBN300P	CBN400C	External	Internal
CNMN								
	CNMN 322S	97836					CCLNR/L..3	..-MCLNR/L-3*
	322S-00820		68750	13152		29350		
	322S-00820			13771				
	323S	97838			14850			
	324S	97839			14851			
	CNMN 322S-WZ	99229						
	CNMN 433S	97919			14853		MCFNR/L..4	..-MCLNR/L-4*
	433S-00820					24446	MCGNR/L..4	
	433S-00820P			12465			MCKNR/L..4	
	434S	97920					MCLNR/L..4	
	434S-00820					29573	MCMNN..4	
	434S-00820P			12473			MCRNR/L..4	
	CNMN 432S-WZ	95621					MCLNR/L..4*	
	432S-00820-WZ					29352		

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61
*For optional spare parts see page 65

DCGW



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
21.5	1/4	3/32	0.307	0.114	1/128-1/32
32.5	3/8	5/32	0.457	0.177	1/128-1/32

DCGW...-B

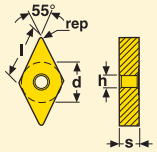


Inserts	Part No.	Grades (EDP No.)					Toolholders	
		Uncoated			Coated			
		CBN010	CBN150	CBN200	CBN060K	CBN160C	External	Internal
DCGW								
	DCGW 21.51E-L1-B	11280		44150			SDJCR/L..2 SDPCN..2	..-SDUCR/L..2 ..-SDQCR/L..2
	21.50.5S-00420-L1-B		44175					
	21.50.5S-00625-L1-B					33340		
	21.51S-00420-L1-B	93831	44176					
	21.51S-00625-L1-B					33341		
	21.51S-00820-L1-B			44151				
	21.52S-00625-L1-B					33342		
	21.52S-00820-L1-B			44153				
	21.51S25-00820-L1-B			41237				
	DCGW 32.50E-L1-B			44154			SDJCR/L..3 SDPCN..3	..-SDUCR/L..3 ..-SDQCR/L..3
	32.51E-L1-B	78911						
	32.52E-L1-B	76130						
	32.50S-00420-L1-B	81769						
	32.51S-00420-L1-B	09062						
	32.51S-00625-L1-B				54028			
	32.51S-00820-L1-B			44155				
	32.52S-00420-L1-B	09063						
	32.52S-00625-L1-B				54029			
	32.52S-00820-L1-B			44156				
	32.51S25-00820-L1-B			41238				
	32.52S25-00820-L1-B			41239				

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

DNGA



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
43	1/2	3/16	0.591	0.203	1/64-3/64
44	1/2	1/4	0.591	0.203	1/64-3/64

DNGA...-B



DNGA...-U

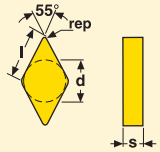


Inserts	Part No.	Grades (EDP No.)						Toolholders	
		Uncoated				Coated			
		CBN010	CBN150	CBN170	CBN200	CBN060K	CBN160C	External	Internal
DNGA	DNGA 431S-00420-L1-B	78912						MDJNR/L..4 MDPNN..4 MDQNR/L..4	..-MDUNR/L..4
	432S-00420-L1-B	09064							
	432S-00625-L1-B		44177			54030	33343		
	432S-00820-L1-B				06600				
	433S-00625-L1-B						33344		
	432S25-00820-L1-B				41240				
	DNGA 432S-00625-L1-U					62798			
	DNGA 441S-00420-L1-B	76131						MDJNR/L..4* MDPNN..4* MDQNR/L..4*	..-MDUNR/L..4*
	442S-00420-L1-B	09065							
	442S-00625-L1-B		44178			54031	33345		
	442S-00820-L1-B				06604				
	443S-00420-L1-B	78913							
	443S-00625-L1-B						33346		
	DNGA 442E25-L1-U			63020					
	441S-00625-L1-U					68939			
	442S-00625-L1-U					62799			
	443S-00625-L1-U					62800			
	DNGA 442S-00420-L1-WZ-93-B	76132						MDJNR/L..4*	

Please check availability in current price and stock-list.
*Anvil DSN 423 for insert DN..44., to be ordered separately.

Tip sizes, see page 64
Edge preparation, see page 61

DNGN



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

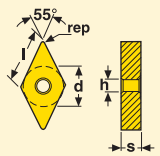
Size	Dimensions in inch			
	d (I.C.)	s	l	rep
32	3/8	1/8	0.457	1/32-3/64

DNGN



Inserts	Part No.	Grades (EDP No.)		Toolholders	
		Uncoated			
		CBN010	CBN170	External	Internal
DNGN					
	DNGN 322E25		63021	–	–
	322S-00420	81770			
	323S-00420	78914			

DNMA



Tolerances:
d = ±0.002
d = ±0.003
s = ±0.005
rep = ±0.004

Size:
33
43

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
33	3/8	3/16	0.457	0.150	1/32-1/16
43	1/2	3/16	0.591	0.203	1/16

DNMA

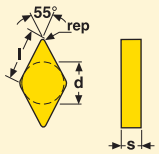


Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CBN300	External	Internal
DNMA				
	DNMA 332S	03227	MDJNR/L..3 MDPNN..3 MDQNR/L..3	..-MDUNR/L-3
	334S	03229		
	DNMA 434S	03234	MDJNR/L..4 MDPNN..4 MDQNR/L..4	..-MDUNR/L-4

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

DNMN



Tolerances:
d = ±0.002
s = ±0.005
rep = ±0.004

Size	Dimensions in inch			
	d (I.C.)	s	l	rep
32	3/8	1/8	0.457	1/31-3/64

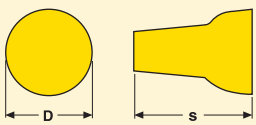
DNMN



Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CBN300	External	Internal
DNMN				
	DNMN 322S	97847	MDJNR/L..3* MDPNN..3* MDQNR/L..3*	..-MDUNR/L-3*
	323S	97849		

*For optional spare parts see page 65

RCGS



Tolerances:
D = ±0.001
s = ±0.005

Size	Dimensions in inch	
	D	s
2S	1/4	23/64

RCGS

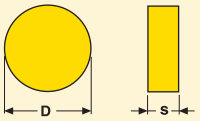


Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CBN010	External	Internal
RCGS				
	RCGS 2S-00820-LF	11277	TRAOR/L..-2 TRGOR/L..-2 TROON..-2	–

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

RNGN



Tolerances:
I.C. = ±0.001
s = ±0.005

Size	Dimensions in inch	
	D (I.C.)	s
22	1/4	1/8
32	3/8	1/8
42	1/2	1/8

RNGN

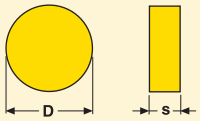


Inserts	Part No.	Grades (EDP No.)				Toolholders	
		Uncoated			Coated		
		CBN010	CBN100	CBN170	CBN060K	External	Internal
RNGN							
	RNGN 22E	11281	51288			CRDNN..2 CRGNR/L..2	..-CRGNR/L..2
	22S-00420	09066					
	22S-00625				54032		
	RNGN 32E25			63027		CRDNN..3 CRGNR/L..3 MRGNR/L..3	..-CRGNR/L..3
	32S-00420	81775					
	32S-00625				54033		
	RNGN 42S-00420	11283	51302			CRDNN..4 CRGNR/L..4 MRGNR/L..4* MRGOR/L..4*	..-CRGNR/L..4

Please check availability in current price and stock-list.

Edge preparation, see page 61
*For optional spare parts see page 65

RNGN-LF



Tolerances:
D = ±0.0001
s = ±0.005

Size	Dimensions in inch	
	D	s
22	1/4	1/8
32	3/8	1/8
43	1/2	3/16

RNGN-LF

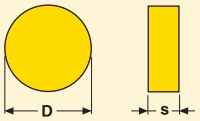


Inserts	Part No.	Grades (EDP No.)				Toolholders	
		Uncoated			Coated		
		CBN010	CBN150	CBN200	CBN160C	External	Internal
RNGN-LF							
	RNGN 22S-00625-LF		21110		33347	CRDNN..2 CRGNR/L..2	..-CRGNR/L-2
	22S-00820-LF			06606			
	RNGN 32S-00625-LF		55122		33348	CRDNN..3 CRGNR/L..3 MRGNR/L..3	..-CRGNR/L-3
	32S-00820-LF	94741		06607			
	RNGN 43S-00820-LF			12646		CRDNN..4** CRGNR/L..4** MRGNR/L..4* MRGOR/L..4*	..-CRGNR/L-4**

Please check availability in current price and stock-list.
*For optional spare parts see page 65.

Tip sizes, see page 64
Edge preparation, see page 61
**Shim 117.10-621 for insert RNGN43.., to be ordered separately

RNMN



Tolerances:
D = ±0.002
D = ±0.003
D = ±0.004
s = ±0.005

Size:
22, 32
42, 43
63

Size	Dimensions in inch D	s
22	1/4	1/8
32	3/8	1/8
42	1/2	1/8
43	1/2	3/16
63	3/4	3/16

RNMN

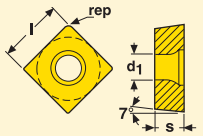


Inserts	Part No.	Grades (EDP No.) Uncoated CBN300	Uncoated CBN500	Uncoated CBN600	Coated CBN300P	Coated CBN400C	Toolholders External	Toolholders Internal
RNMN								
	RNMN 22S	97851			14856		CRDNN..2 CRGNR/L..2	..-CRGNR/L-2
	22S-00820P			12479				
	RNMN 32E	97852				29353	CRDNN..3 CRGNR/L..3 MRGNR/L..3	..-CRGNR/L-3
	RNMN 32S	97853			14858			
	32S-00820		68763			29373		
	32S-00820			13772				
	RNMN 42E	97854				29008	CRDNN..4** CRGNR/L..4** MRGNR/L..4* MRGOR/L..4*	..-CRGNR/L-4
	RNMN 42S	97855			14860			
	42S-00820		68764	13162				
	42S-00820P			13773				
	RNMN 43S	97921			14861			
	43S-00820		68806	99274				
	RNMN 43S-00820P			14429				
	RNMN 43S-01515	97856	68807	13163	07513			
	43S-01515P			13774				
	43S25-02815			13776				
	RNMN 43X-02015		68808					
	RNMN 63S-04020		68809				MRGNR/L..6 MRGOR/L..6	–

Please check availability in current price and stock-list.
*For optional spare parts see page 65.

Tip sizes, see page 64
Edge preparation, see page 61
**Shim 117.10-621 for insert RNMN43.., to be ordered separately

SCGW



Tolerances:
l = ±0.001
s = ±0.005
rep = ±0.004

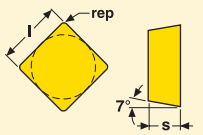
Size	Dimensions in inch			
	l	s	d_1	rep
21	1/4	3/32	0.114	1/32
32	3/8	5/32	0.177	1/64-1/32

SCGW



Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CBN200	External	Internal
SCGW				
	SCGW 21.52S-00420-LF	20919	–	–
	SCGW 32.51S-00420-LF	20921		
	32.52S-00420-LF	21448		

SCMN



Tolerances:
l = ±0.002
s = ±0.005
rep = ±0.004

Size	Dimensions in inch		
	l	s	rep
332	3/8	3/16	1/32

SCMN

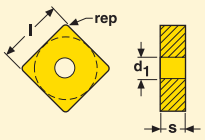


Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CBN300	External	Internal
SCMN				
	SCMN 332S-WZ-85	18396	–	–

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

SNGA



Tolerances:
l = ±0.001
s = ±0.005
rep = ±0.004

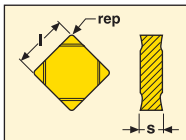
Size	Dimensions in inch			
	l	s	d_1	rep
432	1/2	3/16	0.203	1/32

SNGA



Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CBN200	External	Internal
SNGA	SNGA 432S-00820-L1-D	06636	CSKNR/L..4 MSDNN..4 MSRNR/L..4 MSSNR/L..4	..-CSKNR-4 ..-MSKNR/L-4

SNGF



Tolerances:
l = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch		
	l	s	rep
32	3/8	1/8	1/32-3/64

SNGF

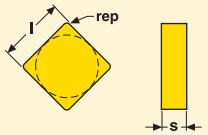


Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Coated		
		CBN400C	External	Internal
SNGF	SNGF 322E	29366	–	–
	323E	29367		

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

SNGN



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch		
	l (I.C.)	s	rep
22	1/4	1/8	1/32
32	3/8	1/8	1/32-1/16

SNGN

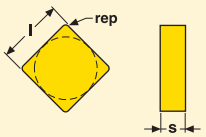


Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CBN010	External	Internal
SNGN				
	SNGN 222S-00420	77158	–	–
	SNGN 322S-00420	81776	MSDNN..3* MSKNR/L..3* MSRNR/L..3*	..-CSKNR/L..3
	323S-00420	11285		

Please check availability in current price and stock-list.

Edge preparation, see page 61
*For optional spare parts see page 65

SNGN-LF



Tolerances:
l = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch		
	l	s	rep
432	1/2	3/16	1/32

SNGN-LF

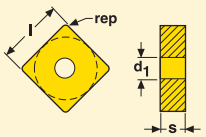


Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CBN200	External	Internal
SNGN-LF	SNGN 432S-00820-LF	06637	CSDNN..4** CSKNR/L..4** MSDNN..4* MSRNR/L..4* MSSNR/L..4*	..CSKNR/..4** ..MSKNR/L..4*

*Optional spare parts see page 65.

**Alternate anvil 174.10-621 for SNMN43 to be ordered separately.

SNMA



Tolerances:
l = ±0.003
s = ±0.005
rep = ±0.004

Size	Dimensions in inch			
	l	s	d_1	rep
434	1/2	3/16	0.203	1/16

SNMA

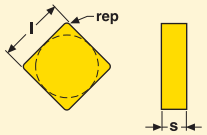


Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CBN300	External	Internal
SNMA	SNMA 434S	03255	MSSNR/L..4 MSRNR/L..4 MSDNN..4 CSKNR/L..4	..-MSKNR/L-4 ..-CSKNR-4

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

SNMN



Tolerances:
l = ±0.002
l = ±0.003
s = ±0.005
rep = ±0.004

Size:
22, 32, 33
42, 43

Size	Dimensions in inch		
	l (I.C.)	s	rep
22	1/4	1/8	1/32
32	3/8	1/8	1/32-1/16
33	3/8	3/16	1/16
42	1/2	1/8	3/64
43	1/2	3/16	1/32-1/16

SNMN

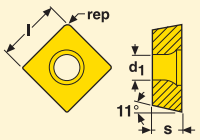


Inserts	Part No.	Grades (EDP No.)					Toolholders	
		Uncoated			Coated			
		CBN300	CBN500	CBN600	CBN300P	CBN400C	External	Internal
SNMN								
	SNMN 222E					29364	–	–
	SNMN 222S	97859						
	SNMN 322E	97860					MSDNN..3*	..-CSKNR/L-3
	323E	97862						
	SNMN 322S	97861			14867			
	322S-00820					29368		
	323S	97863			14869			
	323S-00820P			12480				
	324S	97864						
	SNMN 322S-WZ	17890					–	–
	SNMN 322S-WZ-85	18397						
	SNMN 334S	05723					MSDNN..3*	..-CSKNR/L-3
	SNMN 423S	97865					CSDNN..4** CSKNR/L..4** MSDNN..4* MSRNR/L..4* MSSNR/L..4*	..-CSKNR/L-4** ..-MSKNR/L-4*
	SNMN 433S	97924						
	433S-00820					29356		
	434S	97925			14874			
	434S-00820		68811					
	434S-00820P			12537				
	434S-01515	97868						
	SNMN 432S-WZ-85	18387					–	–
	432S-00820-WZ-85			12508		29372		

Please check availability in current price and stock-list.
*For optional spare parts see page 65.

Tip sizes, see page 64
Edge preparation, see page 61
**Shim 174.10-621 for insert SNMN43.., to be ordered separately

SPGW



Tolerances:
l = ±0.001
s = ±0.005
rep = ±0.004

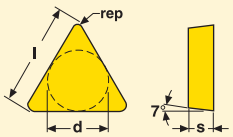
Size	Dimensions in inch			
	l	s	d_1	rep
1.82	7/32	1/8	0.102	1/128

SPGW



Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CBN200	External	Internal
SPGW				
	SPGW 1.820.5S-00420-LF	20922	–	–

TCGN



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch			
	d (I.C.)	s	l	rep
1.2	12/77	1/16	0.217	1/64

TCGN

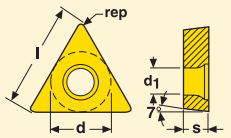


Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CBN010	External	Internal
TCGN				
	TCGN 1.211E-LF	77160	CTLCR/L..1.2 CTLNR/L..1.2	–

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

TCGW



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
1.81	7/32	3/32	0.354	0.102	1/64
21.5	1/4	3/32	0.433	0.114	1/64-1/32

TCGW...-C



TCGW...-LF

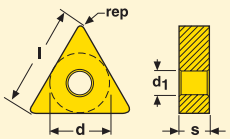


Inserts	Part No.	Grades (EDP No.)				Toolholders	
		Uncoated		Coated			
		CBN010	CBN200	CBN060K	CBN160C	External	Internal
TCGW							
	TCGW 1.81.51S-00420-LF	94743	20926			–	–
	TCGW 21.51E-L1-C	78981		68940		STDCR/L..2 STFCR/L..2 STGCR/L..2	..STFCR/L..2 ..STUCR/L..2
	21.52E-L1-C	79016					
	21.51S-00420-L1-C	77161					
	21.51S-00625-L1-C			54034			
	21.51S-00820-L1-C		44157				
	21.52S-00420-L1-C	77162					
	21.52S-00625-L1-C			54035	33349		
	21.52S-00820-L1-C		44158				
	TCGW 21.51S-00420-LF		20929				
	21.52S-00420-LF		20931				

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

TNGA



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
33	3/8	3/16	0.650	0.150	1/64-3/64

TNGA...-C



TNGA...-V

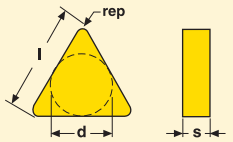


Inserts	Part No.	Grades (EDP No.)					Toolholders	
		Uncoated			Coated			
		CBN010	CBN150	CBN200	CBN060K	CBN160C	External	Internal
TNGA								
	TNGA 331S-00420-L1-C	11346					DTGNR/L..3 DTJNR/L..3	..-MTFNR/L..3
	332S-00420-L1-C	81777						
	332S-00625-L1-C		44170			33350		
	332S-00820-L1-C			06641				
	333S-00625-L1-C					33351		
	TNGA 332S-00625-L1-V				62801			

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

TNGN



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch			
	d (I.C.)	s	l	rep
22	1/4	1/8	0.433	1/64-3/64
32	3/8	1/8	0.650	1/64

TNGN

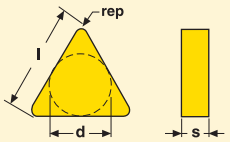


Inserts	Part No.	Grades (EDP No.)			Toolholders	
		Uncoated		Coated		
		CBN010	CBN170	CBN060K	External	Internal
TNGN						
	TNGN 221E	94744			CTFNR/L..2 CTJNR/L..2	–
	222E25		63036			
	221S-00420	82083				
	221S-00625			68941		
	222S-00420	09068				
	222S-00625			45210		
	223S-00420	81783				
	223S-00625			45211		
	TNGN 321S-00420	77163			MTFNR/L..3* MTGNR/L..3* MTRNR/L..3* MTCNN..3*	

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61
*For optional spare parts see page 65

TNGN-LF



Tolerances:
d = ±0.0001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch			
	d (I.C.)	s	l	rep
22	1/4	1/8	0.433	1/64-3/64

TNGN

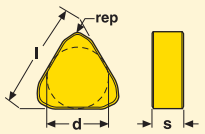


Inserts	Part No.	Grades (EDP No.)			Toolholders	
		Uncoated		Coated		
		CBN150	CBN200	CBN160C	External	Internal
TNGN						
	TNGN 222S-00625-LF	18364		33352	CTFNR/L..2 CTJNR/L..2	–
	223S-00625-LF	18366		33353		
	223S-00820-LF		06647			

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

TNGX



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch			
	d (I.C.)	s	l	rep
22	1/4	1/8	0.433	1/32

TNGX-...R/L-WZ Crossbill™



TNGX...-WZ

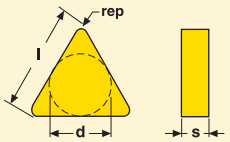


Inserts	Part No.	Grades (EDP No.)		Toolholders	
		Uncoated	Coated		
		CBN010	CBN060K	External	Internal
TNGX...-WZ					
	TNGX 222S-00420-WZ	09071		CTJNR/L..2 MTFNR/L..2 MTGNR/L..2	–
	222S-00625-WZ		45212		
TNGX-...R/L-WZ Crossbill™					
	TNGX 222S-00420-R-WZ	79019			
	222S-00420-L-WZ	79018			

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

TNMN



Tolerances:
d = ±0.002
s = ±0.005
rep = ±0.004

Size	Dimensions in inch			
	d (I.C.)	s	l	rep
22	1/4	1/8	0.433	1/64-3/64
33	3/8	3/16	0.650	3/64

TNMN

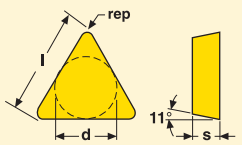


Inserts	Part No.	Grades (EDP No.)		Toolholders	
		Uncoated	Coated		
		CBN300	CBN300P	External	Internal
TNMN					
	TNMN 222E	97871		CTFNR/L..2 CTJNR/L..2 MTFNR/L..2 MTGNR/L..2	–
	223E	97873			
	TNMN 221S	97870			
	222S	97872	14875		
	223S	97874	14876		
	TNMN 333S	95560		MTCNN..3* MTGNR/L..3* MTFNR/L..3*	..-MTFNR/L-3* ..-MTUNR/L-3*

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61
*For optional spare parts see page 65

TPGN



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch			
	d (I.C.)	s	l	rep
22	1/4	1/8	0.433	1/64-1/32

TPGN

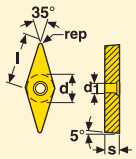


Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CBN010	External	Internal
TPGN				
	TPGN 222E	81779	–	–
	222S-00420	11297		

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

VBGW



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
33	3/8	3/16	0.630	0.177	1/128-1/32

VBGW



VBGW...-B

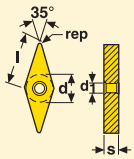


Inserts	Part No.	Grades (EDP No.)				Toolholders	
		Uncoated		Coated			
		CBN010	CBN150	CBN060K	CBN160C	External	Internal
VBGW							
	VBGW 332E-L1-B			71743		SVLBR/L..3 SVVBN..3	–
	330.5S-00420-L1-B	81781					
	330.5S-00625-L1-B				33354		
	331S-00420-L1-B	09072					
	331S-00625-L1-B		44165	68942	33355		
	332S-00420-L1-B	09073					
	332S-00625-L1-B		44166	68943	33356		
	VBGW 331S-00820-L2	81780					
	332S-00820-L2	11304					

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

VNGA



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
33	3/8	3/16	0.630	0.150	1/128-1/32





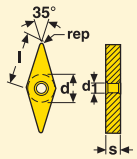


Inserts	Part No.	Grades (EDP No.)					Toolholders	
		Uncoated			Coated			
		CBN010	CBN150	CBN200	CBN060K	CBN160C	External	Internal
VNGA								
	VNGA 330.5S-00420-L1-B	93833					MVJNR/L..3 MVTNR/L..3	..-MVPNR/L..3 ..-MVLNR/L..3 ..-MVUNR..3
	330.5S-00625-L1-B					33357		
	331S-00420-L1-B	09074						
	331S-00625-L1-B		44168			33358		
	331S-00820-L1-B			06642				
	332S-00420-L1-B	79041						
	332S-00625-L1-B		44169			33359		
	332S-00820-L1-B			06644				
	VNGA 331S-00625-L1-U				71600			
	332S-00625-L1-U				68944			
	VNGA 332S25-00820-L1-B			41244				
	VNGA 332S-00820-L2	11291						

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

VNMA



Tolerances:
d = ±0.002
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
334	3/8	3/16	0.630	0.150	1/16

VNMA

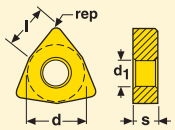


Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CBN300	External	Internal
VNMA				
	VNMA 334S	03242	MVJNR/L..3 MVTNR/L..3	..-MVPNR/L-3 ..-MVLNR/L-3 ..-MVUNR-3

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

WNGA



Tolerances:
I.C. = ±0.001
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
33	3/8	3/16	0.260	0.150	1/32
43	1/2	3/16	0.343	0.203	1/32-3/64





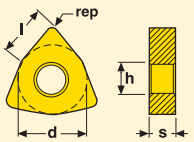


Inserts	Part No.	Grades (EDP No.)				Toolholders	
		Uncoated		Coated			
		CBN010	CBN200	CBN060K	CBN160C	External	Internal
WNGA							
	WNGA 332S-00625-WZ			68945		MWLNR/L..3	..-MWLNR/L..3
	WNGA 332S-00820-L1-C		06650				
	332S25-00820-L1-C		41243				
	WNGA 432S-00420-L1-C	79039				MWLNR/L..4	..-MWLNR/L..4
	432S-00625-L1-C				33360		
	WNGA 432S-00625-L1-V			62802			
	433S-00625-L1-V			62803			
	WNGA 432S-00420-L1-WZ-C	79040					
	432S-00625-L1-WZ-C				33361		
	WNGA 432S-00625-L1WZV			71597			
	433S-00625-L1-WZ-V			68946			

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

WNMA



Tolerances:
d = ±0.003
s = ±0.005
rep = ±0.004

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
332	3/8	3/16	0.260	0.150	1/32
334	3/8	3/16	0.260	0.150	1/16
432	1/2	3/16	0.343	0.203	1/32

WNMA

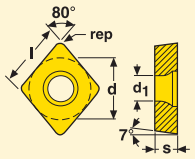


Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CBN300	External	Internal
WNMA				
	WNMA 332S	03221	MWLNR/L..3	..-MWLNR/L-3
	334S	03246		
	WNMA 432S	03248	MWLNR/L..4	..-MWLNR/L-4

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

CCMW



Tolerances:
d = ±0.002
d = ±0.003
s = ±0.005
rep = ±0.002

Size:
21.5, 32.5
43

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
21.5	1/4	3/32	0.256	0.114	1/128-1/32
32.5	3/8	5/32	0.382	0.177	1/128-1/32
43	1/2	3/16	0.508	0.220	1/64-1/32

CCMW

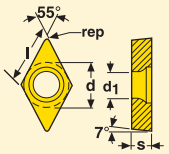


Inserts	Part No.	Grades (EDP No.)		Toolholders	
		PCD20	PCD30	External	Internal
CCMW					
	CCMW 21.50.5F-L1	89760		SCFCR/L..2 SCGCR/L..2 SCLCR/L..2 SCMCN..2	..-SCFCR/L 2 ..-SCLCR/L 2
	21.51F-L1	05684	30767		
	21.52F-L1	05685			
	CCMW 21.52F-L1-WZ	30769		SCLCR/L..2	..-SCLCR/L 2
	CCMW 32.50.5F-L1	89769		SCFCR/L..3 SCGCR/L..3 SCLCR/L..3 SCMCN..3	..-SCFCR/L 3 ..-SCLCR/L 3
	32.51F-L1	05686			
	32.52F-L1	34757			
	CCMW 32.51F-L1-WZ	30762		SCLCR/L..3	..-SCLCR/L 3
	CCMW 431F-L1	89761		–	–
	432F-L1	89762			

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

DCMW



Tolerances:
d = ±0.002
s = ±0.005
rep = ±0.002

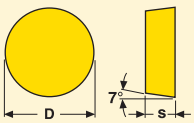
Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
21.5	1/4	3/32	0.307	0.114	1/128-1/64
32.5	3/8	5/32	0.457	0.177	1/128-1/64

DCMW



Inserts	Part No.	Grades (EDP No.)	Toolholders	
		PCD20	External	Internal
DCMW	DCMW 21.50.5F-L1	89763	SDJCR/L..2	..-SDQCR/L 2
	21.51F-L1	05687	SDPCN..2	..-SDUCR/L 2
	DCMW 32.50.5F-L1	89764	SDJCR/L..3	..-SDQCR/L 3
	32.51F-L1	05688	SDPCN..3	..-SDUCR/L 3

RCGN



Tolerances:
D = ±0.001
s = ±0.005

Size	Dimensions in inch	
	D	s
32	3/8	1/8

RCGN

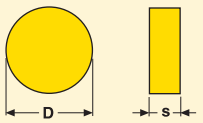


Inserts	Part No.	Grades (EDP No.)	Toolholders	
		PCD20	External	Internal
RCGN	RCGN 32F-LF	89765	–	–

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

RNGN



Tolerances:
D = ±0.001
s = ±0.005

Size	Dimensions in inch	
	D	s
22	1/4	1/8
32	3/8	1/8
42	1/2	1/8

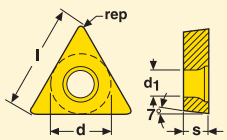
RNGN



Inserts	Part No.	Grades (EDP No.)			Toolholders	
		PCD20	PCD30	PCD30M	External	Internal
RNGN						
	RNGN 22F-LF			32741	CRDNN..2 CRGNR/L..2	..-CRGNR/L 2
	RNGN 32F-LF	89767	30768		CRDNN..3 CRGNR/L..3 MRGNR/L..3	..-CRGNR/L 3
	RNGN 42F-LF	89768			CRDNN..4 CRGNR/L..4 MRGNR/L..4*	..-CRGNR/L 4

*See page 65 for optional spare parts.

TCMW



Tolerances:
d = ±0.002
s = ±0.005
rep = ±0.002

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
1.81.51	7/32	3/32	0.354	0.098	1/64
21.51	1/4	3/32	0.433	0.114	1/64
32.51	3/8	5/32	0.650	0.177	1/64

TCMW

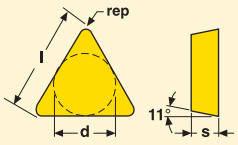


Inserts	Part No.	Grades (EDP No.)	Toolholders	
		PCD20	External	Internal
TCMW				
	TCMW 1.81.51F-L1	89756	–	–
	TCMW 21.51F-L1	05689	STDCR/L..2 STFCR/L..2 STGCR/L..2	E..STFCR/L 2 E..STUCR/L 2
	TCMW 32.51F-L1	05690	STDCR/L..3 STFCR/L..3 STGCR/L..3	E..STFCR/L 3 E..STUCR/L 3

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

TPGN



Tolerances:
d = ±0.0001
s = ±0.005
rep = ±0.002

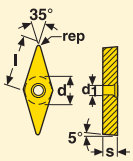
Size	Dimensions in inch			
	d (I.C.)	s	l	rep
22	1/4	1/8	0.433	1/32
32	3/8	1/8	0.650	1/128-1/32

TPGN



Inserts	Part No.	Grades (EDP No.) PCD20	Toolholders External	Toolholders Internal
TPGN	TPGN 222F-L1	05678	–	–
	TPGN 320.5F-L1	89770	CTCPR/L..3 CTCPN..3 CTTFPR/L..3 CTGPR/L..3 CTRPR/L..3	A..-CTFPR/L..3
	321F-L1	05680		
	322F-L1	05682		

VBMW



Tolerances:
d = ±0.002
s = ±0.005
rep = ±0.002

Size	Dimensions in inch				
	d (I.C.)	s	l	d_1	rep
33	3/8	3/16	0.630	0.177	1/128-1/64

VBMW

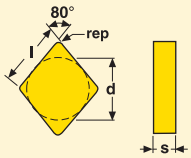


Inserts	Part No.	Grades (EDP No.) PCD20	Toolholders External	Toolholders Internal
VBMW	VBMW 330.5F-L1	89758	SVLBR/L..3 SVVBN..3	–
	331F-L1	89759		

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

CNGN



Tolerances:
d = ±0.001
s = ±0.005
rep = ±0.004

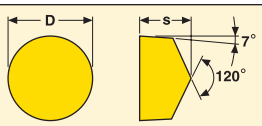
Size	Dimensions in inch			
	d (I.C.)	l	s	rep
432	0.500	0.508	0.187	1/32
452	0.500	0.508	0.313	1/32-3/64
453	0.500	0.508	0.313	1/32-3/64

CNGN



Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CS100	External	Internal
CNGN				
	CNGN 432S-00420	09092	CCBNR/L..12 CCLNR/L..12	..-MCLNR/L12 (without pin)
	CNGN 452S-00420	09093	CCBNR/L..12C CCLNR/L..12C	***
	453S-00420	09094		

RCGX



Tolerances:
d = ±0.001
s = ±0.005

Size	Dimensions in inch	
	d (I.C.)	s
24	0.250	0.250
35	0.375	0.313
45	0.500	0.313

RCGX

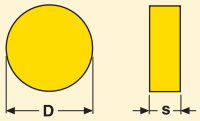


Inserts	Part No.	Grades (EDP No.)	Toolholders	
		Uncoated		
		CS100	External	Internal
RCGX				
	RCGX 24S-00420	09095	CRDCN..06C	***
	24T-00420	05571		
	RCGX 35S-00420	09098	CRDCR/L..09C	
	35T-00420	05629	CRDCN..09C	
	RCGX 45S-00420	09099	CRDCR/L..12C	
	45T-00420	05589	CRDCN..12C	

Please check availability in current price and stock-list.

*** For information, contact your local Seco office

RNGN



Tolerances:
d = ±0.001
s = ±0.005

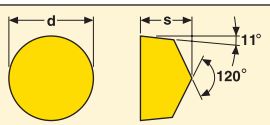
Size	Dimensions in inch d (I.C.)	s
43	0.500	0.187
45	0.500	0.313	

RNGN



Inserts	Part No.	Grades (EDP No.) Uncoated CS100	Toolholders External	Toolholders Internal
RNGN				
	RNGN 43S-00420	09103	CRSNR/L..12 CRDNN..12	***
	RNGN 45S-00420	09104	CRSNR/L..12C CRDNN..12C	

RPGX



Tolerances:
d = ±0.001
s = ±0.005

Size	Dimensions in inch d (I.C.)	s
35	0.375	0.313
45	0.500	0.313

RPGX

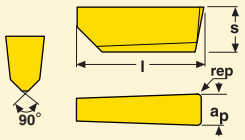


Inserts	Part No.	Grades (EDP No.) Uncoated CS100	Toolholders External	Toolholders Internal
RPGX				
	RPGX 35S-00420	09106	CRDCR/L..09C CRDCN..09C	***
	35T-00420	05590		
	RPGX 45S-00420	09107	CRDCR/L..12C CRDCN..12C	
	45T-00420	05591		

Please check availability in current price and stock-list.

*** For information, contact your local Seco office

LPGN



Tolerances:
a_p = ±0.001
l = ±0.002
s = ±0.002
rep = ±0.001

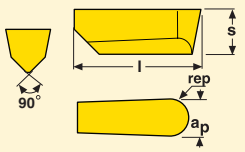
Size	Dimensions in inch			
	a_p	l	s	rep
1204	0.125	0.500	0.177	0.015
1906	0.250	0.750	0.240	0.015
2508	0.312	1.000	0.327	0.031

LPGN



Inserts	Part No.	Grades (EDP No.) Uncoated CW100
LPGN		
	LPGN 120404-03175E	94703
	LPGN 190608-0635E	94704
	LPGN 250808-07925E	94705

LPGN



Tolerances:
a_p = ±0.001
l = ±0.002
s = ±0.002
rep = ±0.001

Size	Dimensions in inch			
	a_p	l	s	rep
1906	0.250	0.750	0.240	0.125

LPGN...M0



Inserts	Part No.	Grades (EDP No.) Uncoated CW100
LPGN...M0		
	LPGN 1906M0-0635E	94706

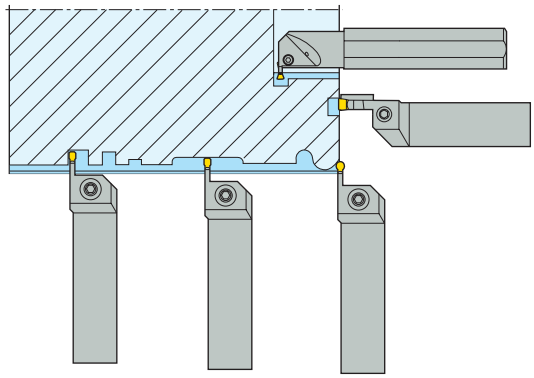
General information

The Seco MDT (Multi Directional Turning) system consists of holders and inserts for external radial, external axial and internal machining.

The system can be used for:

- Turning
- Profiling
- Grooving
- Cut-off
- Threading

Suitable applications are turning of parts with many different diameters, complicated profiles and grooves. For complex parts of this type several standard and special tools can be replaced by one Seco MDT tool. Savings can be achieved through fewer tool changes and reduced tool stock.



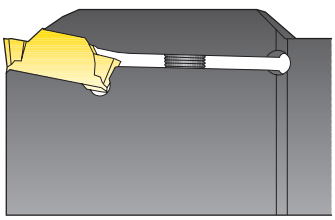
Seco MDT has a unique insert clamping method – Secoloc™.

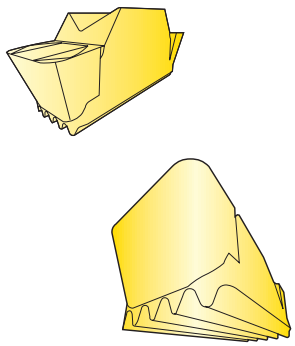
A combination of V-shaped top clamp and serrated contact surfaces between the underside of the insert and the toolholder offers superb stability.

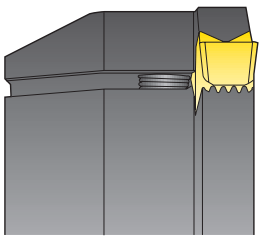
The relatively long insert also increases the stability.

The excellent stability gives a number of benefits

- Improved process safety
- Increased metal removal capacity/productivity
- Improved surface finish
- Reduced vibration risk
- Good repeatability (±0.001 inch)







Seco Jetstream Tooling®

Seco Jetstream Tooling® holders feature a rake face coolant jet, that may provide even better chip control and significantly longer tool life. For more information on Jetstream Tooling® and accessories, please see pages 86-89.



External toolholders

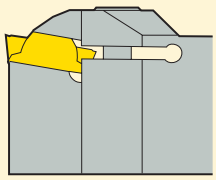


C	F	Z	R	100	2802	D	RB	JET
1	2	3	4	5	6	7	11	12

C	F	I	R	100	04	D	R	4.00	2.75
1	2	3	4	5	6	7	8	9	10

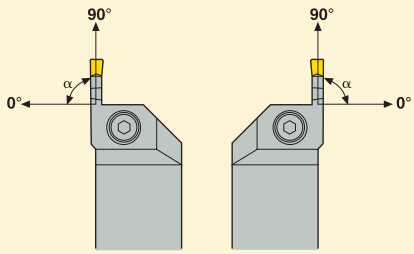
1. Insert clamping

C



Clamp

2. Toolholder setting angle



α
G = 0°
R = 15°
T = 30°
S = 45°
W = 60°
K = 75°
F = 90°
B = 105°
E = 120°
D = 135°

3. Maximum grooving/turning depth

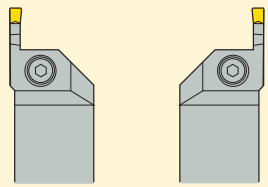


E = 1.0 x a_p
F = 1.5 x a_p
G = 2.0 x a_p
H = 2.5 x a_p
I = 3.0 x a_p
J = 3.5 x a_p
K = 4.0 x a_p
L = 4.5 x a_p

M = 5.0 x a_p
N = 5.5 x a_p
O = 6.0 x a_p
P = 6.25 x a_p
S = 8.0 x a_p
T = 8.5 x a_p
Z = 12.5 x a_p

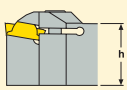
X = Specal

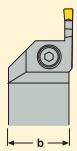
4. Version



R L

5. Shank height and width

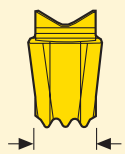




050 = 0.50”
063 = 0.625”
075 = 0.75”

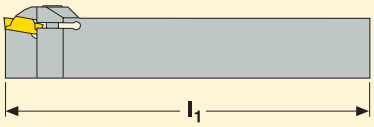
100 = 1.00”
125 = 1.25”
150 = 1.50”

6. Seat size



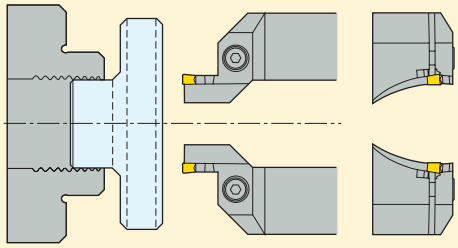
1303 = 2.4 mm
1304 = 3.4 mm
1603 = 2.3 mm (0.125”)
1604 = 3.1 mm
1605 = 4.1 mm (0.187”)
1606 = 5.1 mm (0.250”)
1902 = 1.6 mm
2802 = 1.6 mm
3008 = 6.8 mm
etc

7. Tool length



A = 4.0”
B = 4.5”
C = 5.0”
D = 6.0”
E = 7.0”

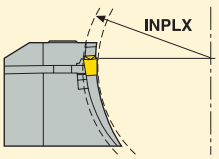
8. Tang curvature direction



Additional information for axial machining

9. Maximum diameter

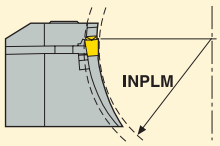
4.00 = 4.00 in (D_1)



Additional information for axial machining

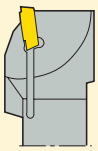
10. Minimum diameter

2.75 = 2.75 in (D_2)



Additional information for axial machining

11. Holder modification

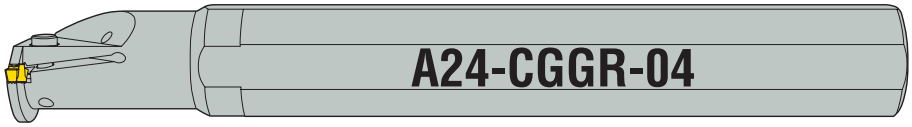


RB = Reinforced blade for specified diameter

12. Cooling system

JET = Jetstream Tooling®

Internal toolholders and GL heads



A	24	C	G	G	R	04
1	2	3	4	5	6	7

1. Toolholder type

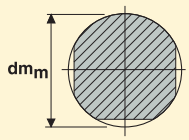
A = Steel with coolant passage

S = Solid steel

E = Solid carbide with brazed* cutting head and coolant passage

*Brazed or equivalent

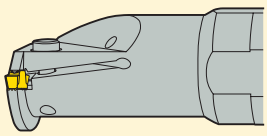
2. Shank diameter



10 = 0.625”
12 = 0.75”
16 = 1.00”
20 = 1.25”
24 = 1.50”

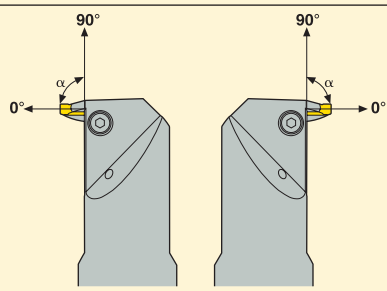
3. Insert clamping

C



Clamp

4. Toolholder setting angle



α
G = 0°
R = 15°
T = 30°
S = 45°
W = 60°
K = 75°
F = 90°
B = 105°
E = 120°
D = 135°

5. Maximum grooving/turning depth

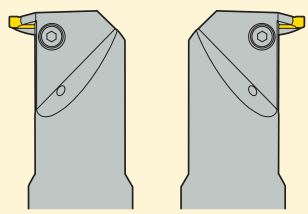


E = 1.0 x a_p
F = 1.5 x a_p
G = 2.0 x a_p
H = 2.5 x a_p
I = 3.0 x a_p
J = 3.5 x a_p
K = 4.0 x a_p

L = 4.5 x a_p
M = 5.0 x a_p
N = 5.5 x a_p
O = 6.0 xa_p
S = 8.0 x a_p
T = 8.5 x a_p
Z = 12.5 x a_p

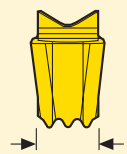
X = Specal

6. Version



R L

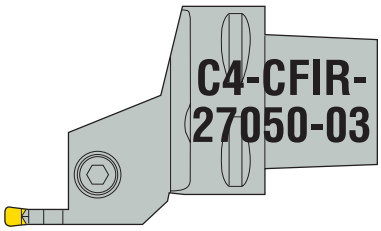
7. Seat size



Seat size

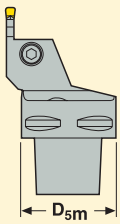
1303 = 2.4 mm
1304 = 3.4 mm
1603 = 2.3 mm
1604 = 3.1 mm
1605 = 4.1 mm
1606 = 5.1 mm
1902 = 1.6 mm
2802 = 1.6 mm

External toolholders



C4	-	C	F	I	R	-	27	050	-	03
1		2	3	4	5		6	7		8

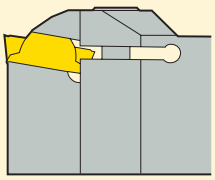
1. Seco-Capto™ size



C3 = 32 mm
C4 = 40 mm
C5 = 50 mm
C6 = 63 mm

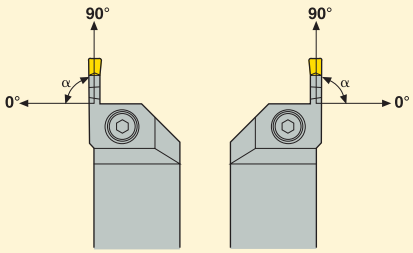
2. Insert clamping

C



Clamp

3. Toolholder setting angle



α
G = 0°
R = 15°
T = 30°
S = 45°
W = 60°
K = 75°
F = 90°
B = 105°
E = 120°
D = 135°

4. Maximum grooving/turning depth

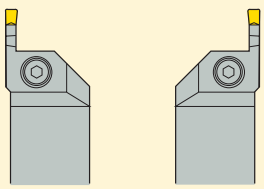


E = 1.0 x a_p
F = 1.5 x a_p
G = 2.0 x a_p
H = 2.5 x a_p
I = 3.0 x a_p
J = 3.5 x a_p
K = 4.0 x a_p

L = 4.5 x a_p
M = 5.0 x a_p
N = 5.5 x a_p
O = 6.0 xa_p
S = 8.0 x a_p
T = 8.5 x a_p
Z = 12.5 x a_p

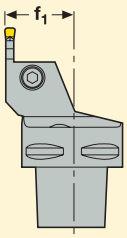
X = Specal

5. Version



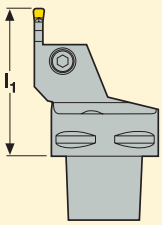
R L

6. f_1-dimension



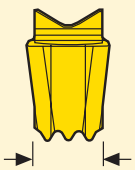
27 = 27 mm
35 = 35 mm
45 = 45 mm
etc

7. l_1-dimension



050 = 50 mm
060 = 60 mm
065 = 65 mm
etc

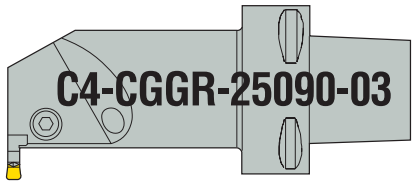
8. Seat size



Seat size

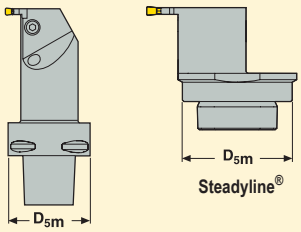
03 = 2.3 mm
04 = 3.1 mm
05 = 4.1 mm
06 = 5.1 mm
08 = 6.8 mm
2802 = 1.6 mm
etc

Internal toolholders



C4	-	C	G	G	R	-	25	090	-	03
1		2	3	4	5		6	7		8

1. Seco-Capto™ size

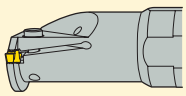


C3 = 32 mm
C4 = 40 mm
C5 = 50 mm
C6 = 63 mm

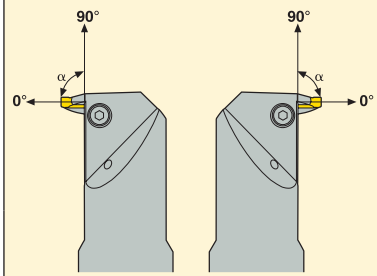
GL32 = 32 mm
GL40 = 40 mm
GL50 = 50 mm

2. Insert clamping

C



3. Toolholder setting angle



α
G = 0°
R = 15°
T = 30°
S = 45°
W = 60°
K = 75°
F = 90°
B = 105°
E = 120°
D = 135°

4. Maximum grooving/turning depth

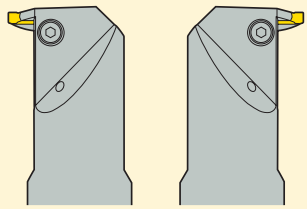


E = 1.0 x a_p
F = 1.5 x a_p
G = 2.0 x a_p
H = 2.5 x a_p
I = 3.0 x a_p
J = 3.5 x a_p
K = 4.0 x a_p

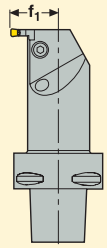
L = 4.5 x a_p
M = 5.0 x a_p
N = 5.5 x a_p
O = 6.0 x a_p
S = 8.0 x a_p
T = 8.5 x a_p
Z = 12.5 x a_p

X = Specal

5. Version

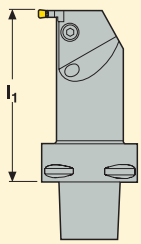


6. f_1-dimension



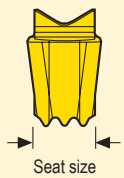
12 = 12 mm
16 = 16 mm
20 = 20 mm
etc

7. l_1-dimension



065 = 65 mm
075 = 75 mm
080 = 80 mm
etc

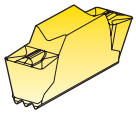
8. Seat size



1303 = 2.4 mm
1304 = 3.4 mm
03, 1603 = 2.3 mm
04, 1604 = 3.1 mm
05, 1605 = 4.1 mm
06, 1606 = 5.1 mm
1902 = 1.6 mm
etc

Inch inserts





L	C	M	F	16	05	05	A	187	MT
1	2	3	4	5	6	7	8	9	10

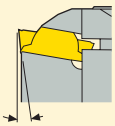
1. Shape

L



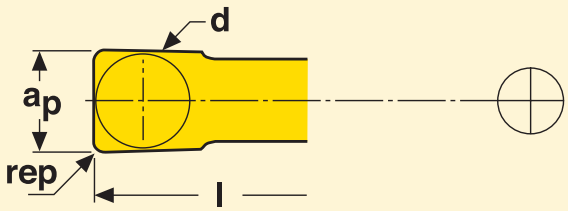
Rectangular

2. Front clearance angle



C = 7°

3. Tolerances



Tolerance class	Tolerance ± inch				For insert width, a_p inch		
	a_p	d	rep	l	0.125	0.1875	0.250
M	0.002	0.002	0.002	0.003	•	•	•

4. Insert type

R



Single ended with chipbreaker

N



Single ended without chipbreaker

F



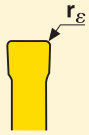
Double ended with chipbreaker

A



Double ended without chipbreaker

7. Corner radius

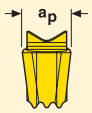


M0,00	= round	-A/G55	= thread profile
01	= 0.1 mm (0.004")	-A/G60	= thread profile
02	= 0.2 mm (0.008")	etc	
04	= 0.4 mm (0.016")		
08	= 0.8 mm (0.031")		

8. Inch size

A = Inch size

9. Insert width

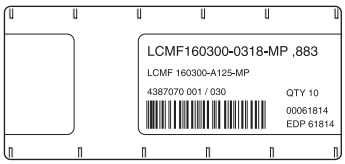


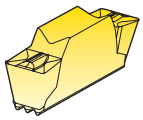
125 = 0.125"
187 = 0.1875"
250 = 0.250"

10. Insert type code (for further information, please see pages 350-351

FT	= Chipbreaker for fine turning	FG	= For lock rings
FTR/L	= Right or left hand version with a specified setting angle, for parting-off	DY	= For dynamic O-rings
MT	= Chipbreaker for medium turning	ST	= For static O-rings
MG	= Chipbreaker for medium grooving	D76	= For thread undercuts
MC	= Chipbreaker for medium cut-off	R	= For radius
MCR/L	= Right or left hand version with a specified setting angle, for parting-off	A55/A60 G55/G60 ISO	= For threading
GG	= Chipbreaker for medium grooving		
GS	= Chipbreaker for fine grooving		
MP	= Chipbreaker for medium profiling		
RP	= Chipbreaker for fine and medium profiling		

Metric inserts





L	C	M	F	16	03	00	-	0318		-	MP
1	2	3	4	5	6	7		8	9		10

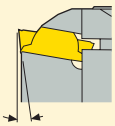
1. Shape

L



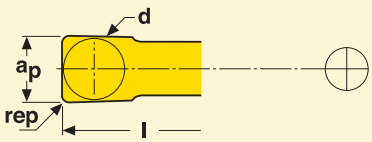
Rectangular

2. Front clearance angle



C = 7°

3. Tolerances



Tol.-class	Tolerance ± mm				For insert width, a_p mm					
	a_p	d	rep	l	2	3	4	5	6	8
G	0.025	0.025	0.025	0.040		•	•	•	•	•
M	0.050	0.050	0.050	0.080	•	•	•	•	•	•

4. Insert type

R



Single ended with chipbreaker

N



Single ended without chipbreaker

F



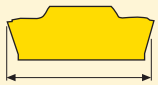
Double ended with chipbreaker

A

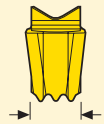


Double ended without chipbreaker

5. Insert gauge length

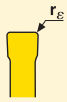


6. Insert gauge width



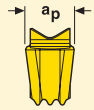
Seat size

7. Corner radius



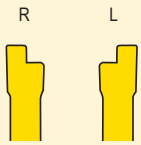
M0,00	= round	-A/G55	= thread profile
01	= 0.1 mm	-A/G60	= thread profile
02	= 0.2 mm	etc	
04	= 0.4 mm		
08	= 0.8 mm		

8. Insert width



0200 = 2.0 mm
0300 = 3.0 mm
0400 = 4.0 mm
0500 = 5.0 mm
etc

9. Version

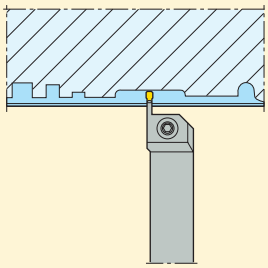


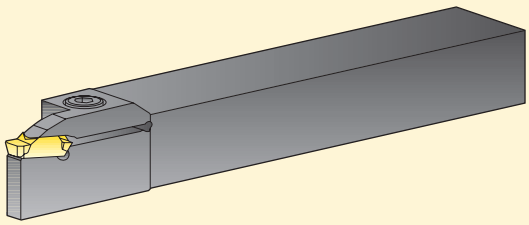
10. Insert type code (for further information, please see pages 350-351

FT	= Chipbreaker for fine turning	FG	= For lock rings
FTR/L	= Right or left hand version with a specified setting angle, for parting-off	DY	= For dynamic O-rings
MT	= Chipbreaker for medium turning	ST	= For static O-rings
MG	= Chipbreaker for medium grooving	D76	= For thread undercuts
MC	= Chipbreaker for medium cut-off	R	= For radius
MCR/L	= Right or left hand version with a specified setting angle, for parting-off	A55/A60 G55/G60 ISO	= For threading
GG	= Chipbreaker for medium grooving		
GS	= Chipbreaker for fine grooving		
MP	= Chipbreaker for medium profiling		
RP	= Chipbreaker for fine and medium profiling		

CFIR/L – Basic choice

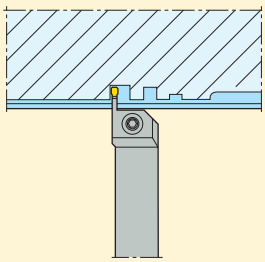
- For external turning, profiling and grooving
- Maximum working depth 3 x the insert width (can be limited by double ended inserts)
- Size 16 – For general machining
- Size 30 – For heavy machining

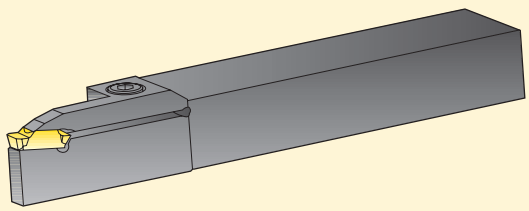




CFMR/L – Long reach

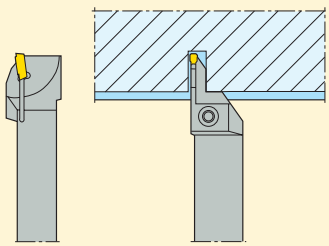
- For external turning, profiling and grooving
- Maximum working depth 5 x the insert width
- Single ended inserts should be used (CFMR/L, CFSR/L)
- Size 16 – For general machining
- Size 28 – For general machining
- Size 30 – For heavy machining

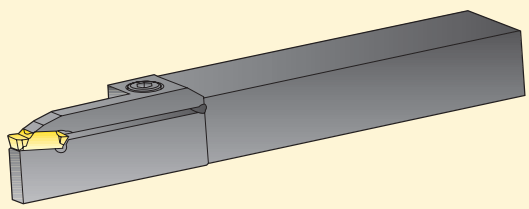




CFOR/L, CFPR/L, CFSR/L, CFTR/L, CFZR/L – Extra long reach, 6 x insert width up to 12.5 x insert width

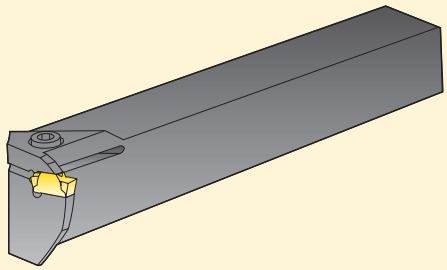
- For grooving and cut-off
- Single ended inserts should be used (CFOR/L, CFPR/L, CFTR/L)
- Size 16 – For general machining
- Size 19 – For small part machining
- Size 28 – For general machining



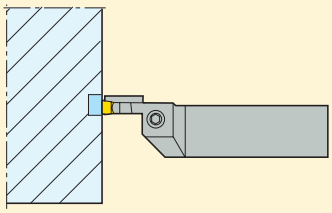


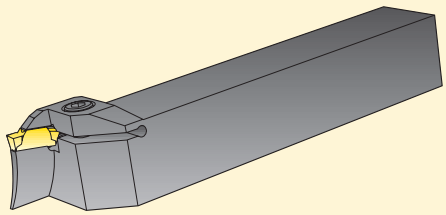
CGIR/L, CFIR/L, CFOR/L – Axial machining

- For axial turning, profiling and grooving
- Maximum working depth 3-6 x the insert width (can be limited by double ended inserts).
- These toolholders demand that the first cut must be made between two specified diameters (see code key)
- Size 16 – For general machining
- Size 30 – For heavy machining



CGIR

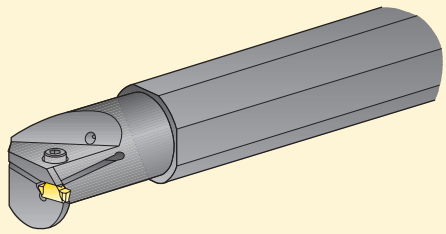




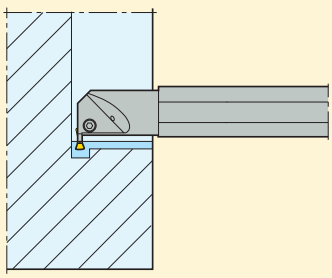
CFIL

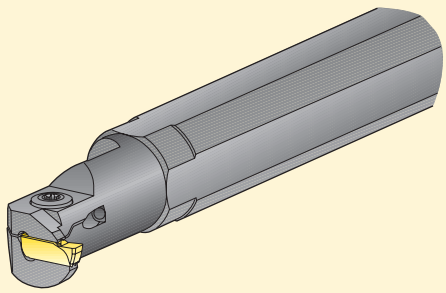
CG.IR/L – Internal machining

- For internal turning, profiling and grooving
- Maximum working depth 1–3.5 x the insert width for size 13
- Maximum working depth 3 x the insert width for size 16
- Maximum working depth 2.5–3.5 x the insert width for size 19
- For through coolant supply
- Size 13 – For machining in small bore sizes
- Size 16 – For general machining
- Size 19 – For machining in small bore size



MDT16

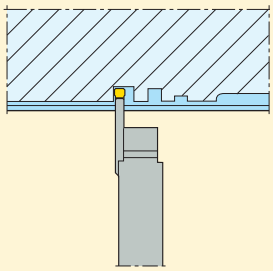


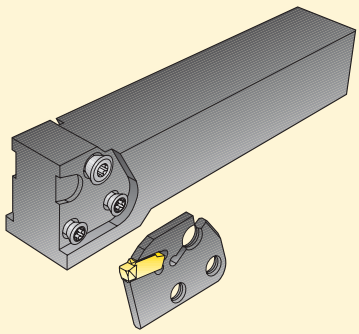


MDT13

Single ended blades

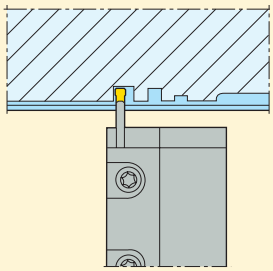
- Holder with both right and left hand blade mounting available
- Size 16 – For general machining

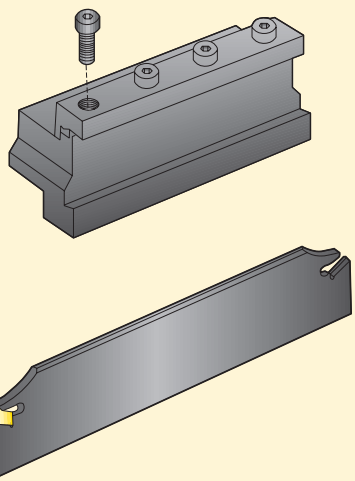




Double ended blades

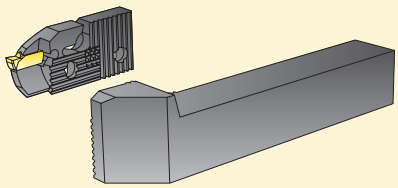
- To be used in standard 150.10 toolblocks
- Size 16 – For cut-off

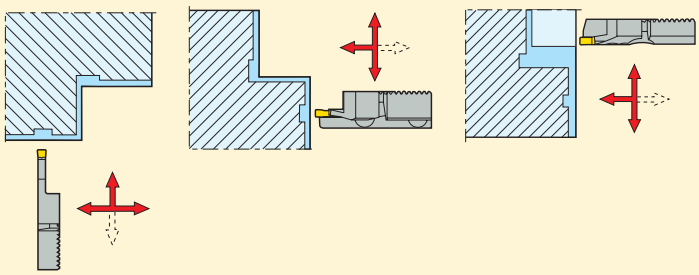


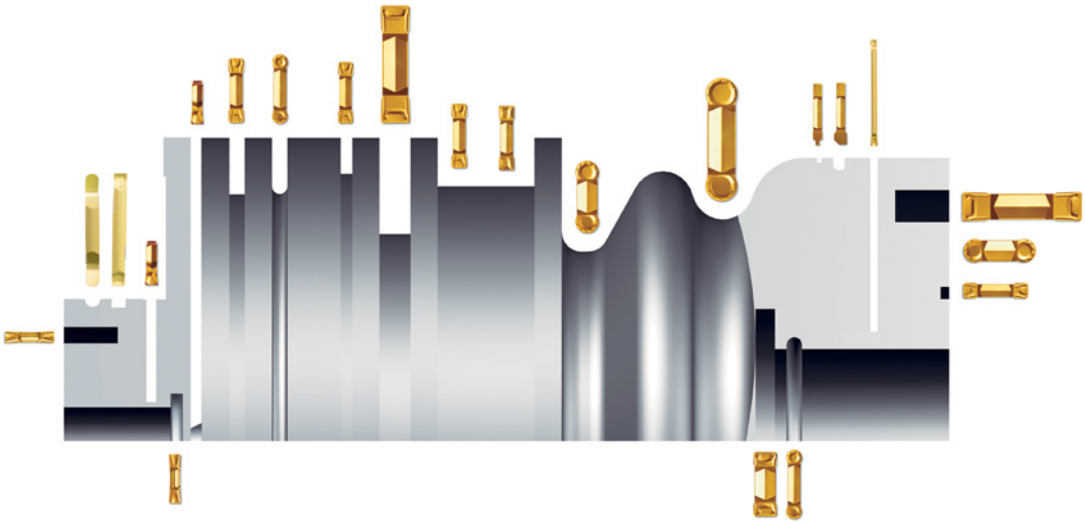


Modular holders, axial/radial

- For axial/radial turning, profiling and grooving
- Maximum working depth up to 6 x the insert width
- Axial toolholders demand that the first cut must be made between two specified diameters (see code key)
- Size 13 – For axia/radial machining at small diameters
- Size 16 – For axial/radial machining









LCMF – Basic choice

- Double ended
- Economy (cutting edges at both ends)
- Size 13 – For machining in small bore sizes and axial machining at small diameters
- Size 16 – For general machining
- Size 19 – For small part machining
- Size 28 – For general machining
- Size 30 – For heavy machining

MDT13



MDT16
MDT30



MDT19
MDT28



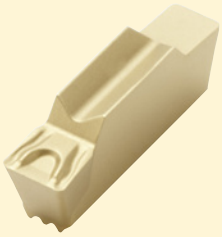
LCMR

- Single ended
- Flexibility
- Reach (full length clearance)
- Size 13 – For machining in small bore sizes and axial machining at small diameters
- Size 16 – For general machining
- Size 30 – For heavy machining

MDT13



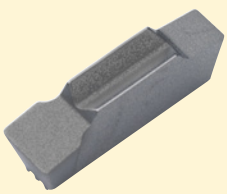
MDT16
MDT30



LCG.

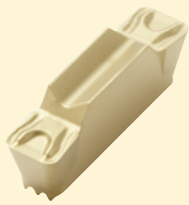
- Special applications
- Standard and (customer specified) custom made profiles
- Double or single ended
- With or without chipbreaker
- Closer tolerance

- Size 13 – For machining in small bore sizes and axial machining at small diameters
- Size 16 – For general machining
- Size 30 – For heavy machining



FT (Fine Turning)

- For fine turning
- For deep grooving



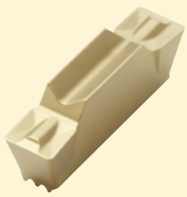
FT 19 and 28 (Fine Turning)

- For fine turning
- For cut-off
- For deep grooving



MT (Medium Turning)

- For medium turning
- For shallow grooving



MG (Medium Grooving)

- For medium turning
- For deep grooving
- For cut-off



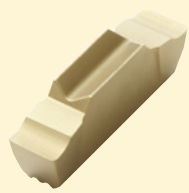
MC (Medium Cut-off)

- For cuting-off tubes and small diameter workpieces
- For deep grooving
- For fine turning
- Reduces vibration risk



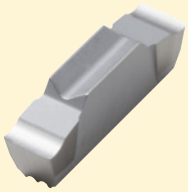
GG (Grooving Ground)

- Ground chipgroove
- For medium grooving, complement to FT for precision grooves



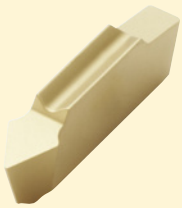
GS (Grooving Sharp)

- Sharp edge
- For fine grooving in non-ferrous materials/superalloys
- Precision grooves



A55/A60, G55/G60, ISO

- For threading applications



Note! The helix angle should not exceed λ +2°.

MP (Medium Profiling)

- For medium profiling
- For medium turning
- For medium grooving
- Good accessibility

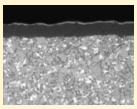
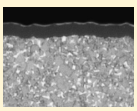
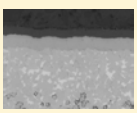
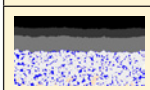
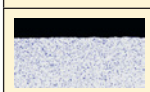


RP (Round Profiling)

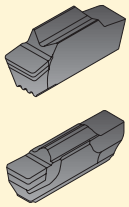
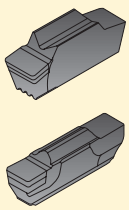
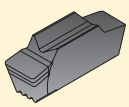
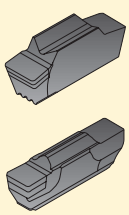
- For fine and medium profiling, turning and grooving
- Sharp periphery ground edges
- For superalloys, titanium alloys and non-ferrous materials



Grades

	**CP200**	PVD-coated, hard micrograin grade with great wear resistance, intended for grooving, cut-off and profiling superalloys, titanium alloys and hardened steels. A more wear resistant alternative to grade 890. (Ti,Al)N + TiN
	**CP500**	Tough versatile PVD-coated micrograin grade intended for grooving in a variety of workpiece materials. Universal choice. (Ti,Al)N + TiN
	**CP600**	Very tough PVD-coated fine-grain grade intended for deep grooving and cut-off at low to moderate cutting speeds. Well-suited in deep grooving and in interrupted cuts. Tougher alternative to CP500. (Ti,Al)N + TiN
	**TGK1500**	Wear-resistant, hard **Duratomic®** CVD-coated grade intended for grooving and profiling grey cast iron and nodular cast iron. Ti(C,N) + Al_2O_3
	**TGP25**	A wear-resistant **Duratomic®** CVD-coated grade intended for grooving, turning and profiling steels at high cutting speeds. Ti(C,N) + Al_2O_3
	**883**	Uncoated, hard grade intended for grooving, cut-off and profiling superalloys, titanium alloys, hardened steels and non-ferrous materials.
	**890**	Uncoated, very hard micrograin grade intended for grooving and profiling superalloys, titanium alloys, hardened steels and non-ferrous materials. More wear resistant alternative to grade 883.

Grades, PCBN

CBN010 	Single-ended inserts with brazed tip, intended for hardened steels and Ni-based superalloys. Composition: 50% cBN content grade with an average grain size of 2 µm and a TiC ceramic binder. Coating: No coating.
CBN10 	Single-ended inserts with brazed tip, intended for hardened steels. Composition: 50% cBN content grade with an average grain size of 2 µm and a TiC ceramic binder. Coating: No coating.
CBN170 	Single-ended inserts with brazed tip, intended for Ni-based superalloys. Composition: 65% cBN content grade with an average grain size of 2 µm and a TiCN+SiCw ceramic binder. Coating: No coating.
CBN200 	Single-ended inserts with brazed tip, intended for perlitic cast iron and hardened steels. Composition: 90% cBN content grade with an average grain size of 3-6 µm and a Al ceramic binder. Coating: No coating.

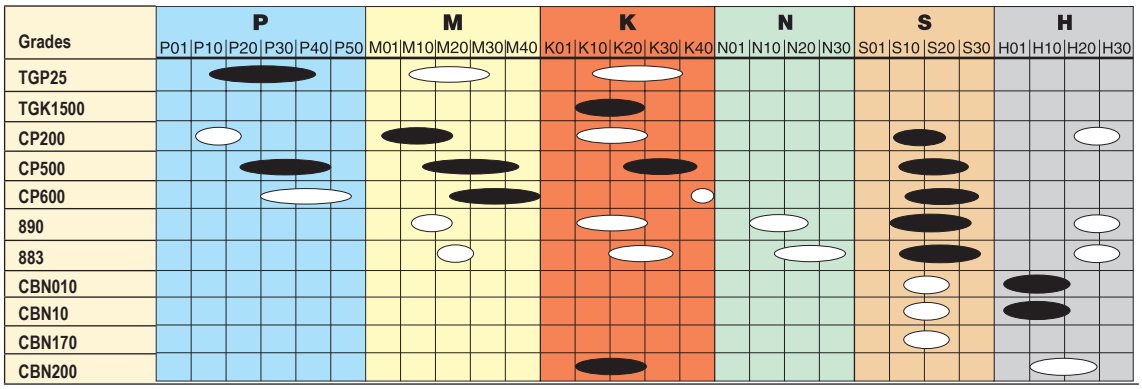
For information regarding CBN grades for MDT, please see page 354.

Grades

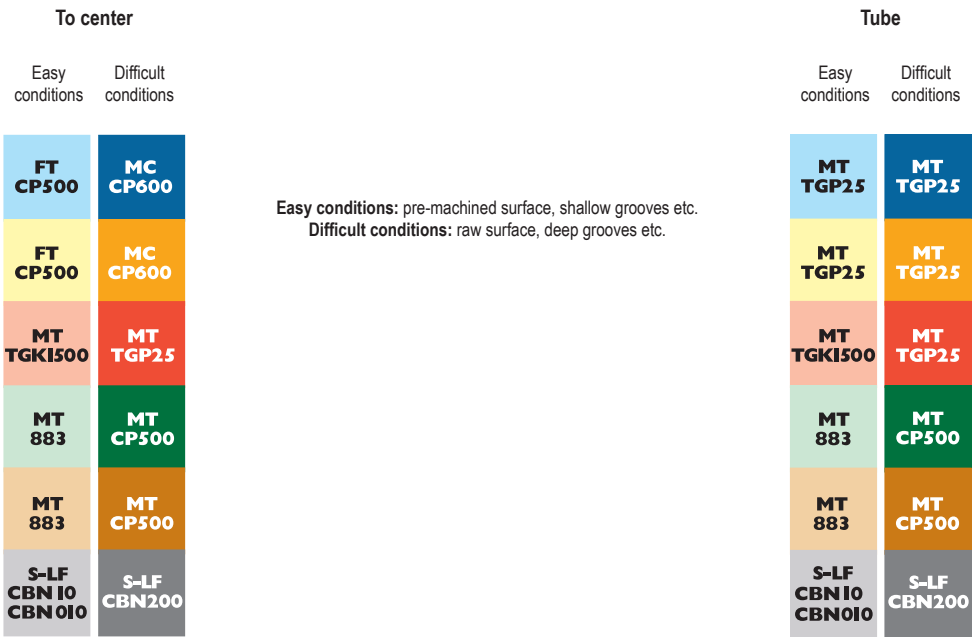
The chart below shows application areas for grades available in the MDT system.

The black areas in the chart indicate a grade's main ISO application groups and the white areas indicate other supplementary application groups.

ISO classification of the grades

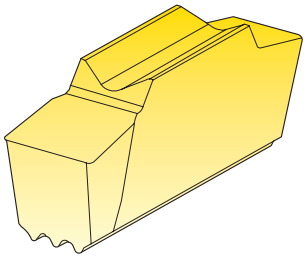


MDT – Secolor



Inserts for special grooves

Standard program
- Double-ended LCGA (MDT13)
- Single-ended LCGN (MDT16)



FG – For locking rings 	**DY** – For dynamic O-rings 	**ST** – For static O-rings 
R – For full radius grooving 	**D76** – For thread undercuts 	

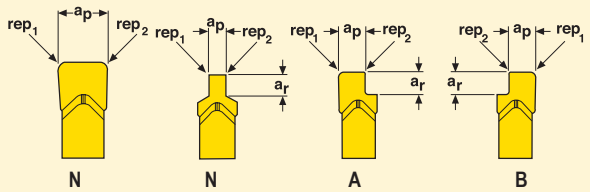
Remember to check the toolholder clearance before using these inserts.

Special applications

- Tailor-made inserts
- LCG.

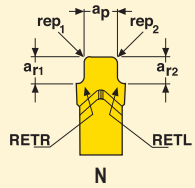
Special inserts can easily be produced in the styles below.
They are made from blanks, single or double ended, with or without chipbreaker.
(Available as Custom Design at your local Seco website or contact your Seco representative for a special order form to define the required insert.)

Style A



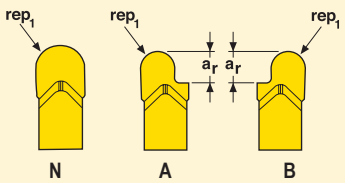
Standard or special widths with corner radii

Style B



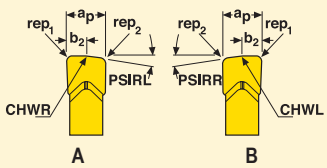
Standard or special widths
with corner and crest radii

Style C



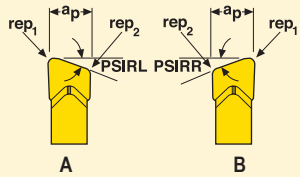
Standard or special widths
with full radius

Style D



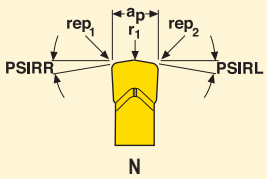
Standard or special widths
with front angle and corner radii

Style E



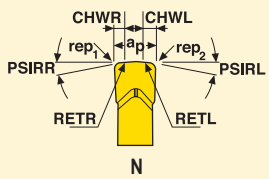
Special widths with front angle
and corner radii

Style F



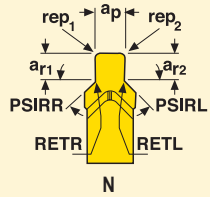
Special widths with double
front angles and corner radii

Style G



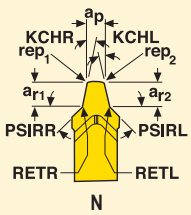
Special widths with double
front angles and corner radii

Style J



Special widths
with radii and chamfers

Style K

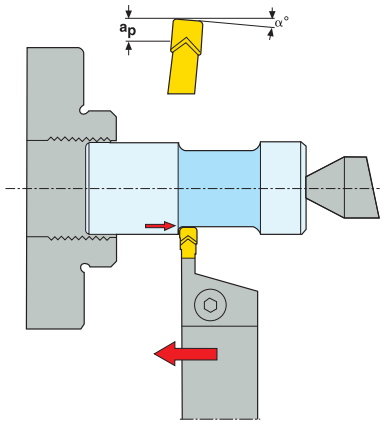


Special widths
with radii, chamfers and angles

Remember to check the toolholder clearance before using these inserts.

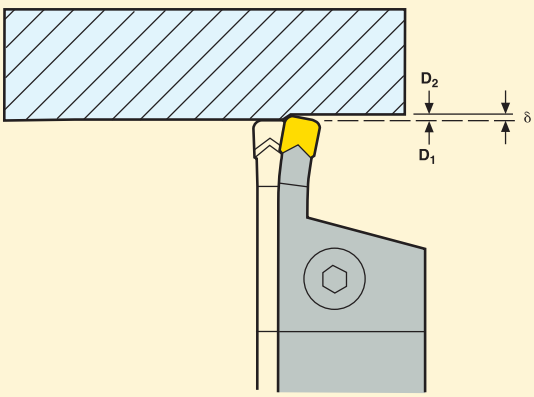
Principles

During turning the axial forces deflect the tool generating a necessary trailing edge clearance angle.



This angle depends on

- Feed
- Depth of cut
- Tool overhang
- Insert width
- Cutting speed
- Workpiece material



The deflection arising during turning causes a minor change of the actual tool length. This influences the received diameter on the workpiece. The exact amount can be figured by running a test piece. First make a groove and then a turning operation to the same diameter with the selected cutting data. Compare the two different diameters and use the formula to calculate a compensation measure.

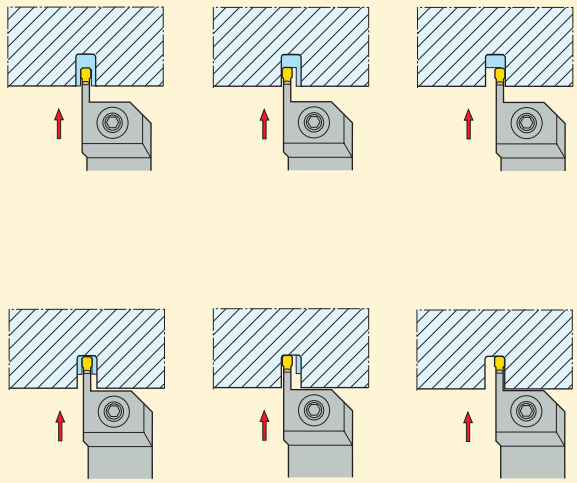
$$\delta = \frac{D_1 - D_2}{2}$$

Technical tips

Use the following technical tips for a favorable cutting process considering chipbreaking, cutting forces and tool life.

Machining a deep groove

- Make a central groove to half of the total depth.
- Make infeeds at both sides to the same depth.
- Machine a central groove to full depth.
- Make infeeds at both sides to the full depth.
- Always outfeed, do not rapid traverse.



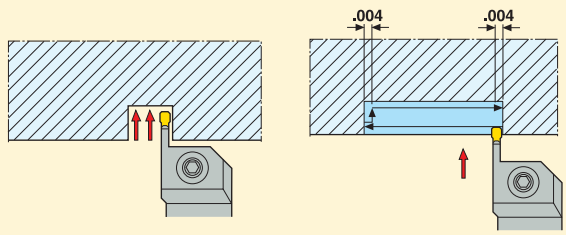
Roughing a recess

If the depth is larger than the width

- Use successive infeeds to required diameter.
- Increment a distance of the insert width – 2 x the insert corner radius to get a flat bottom surface.
- Always outfeed, do not use rapid traverse.

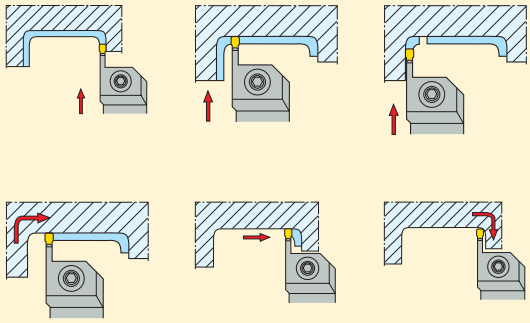
If the width is larger than the depth.

- Start with an infeed at one end.
- Use successive alternating turning with infeeds at the end.
- Release the tool deflection after turning before infeeding (reverse feed and reposition the insert before infeed – 0.004 inch).



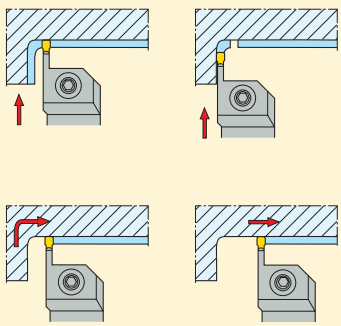
Finishing a recess with corner radius or chamfer

- Machine the face down to the end point of the radius or chamfer.
- Make a groove to the required depth at the end point of the radius or chamfer.
- Machine down to the end point of the radius or chamfer.
- Machine the radius or chamfer.
- Machine the diameter until the end point of the radius or chamfer is reached (remember to compensate for the deflection).
- Machine the radius or chamfer.



Machining a large corner radius or chamfer

- Make a groove to the required depth at the end point of the radius or chamfer.
- Machine the face down to the end point of the radius or chamfer.
- Machine the radius or chamfer.
- Continue with turning starting from the groove (remember to compensate for the deflection).

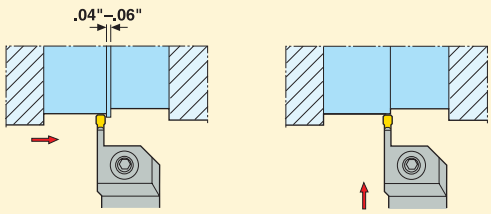


Eliminating a hanging ring

Turning towards the end of a component or towards a recess sometimes produces a hanging ring.

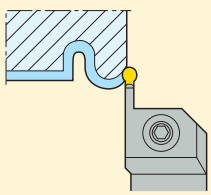
To avoid this

- Stop the turning operation 0.04–0.06” before the end of the component or the recess.
- Plunge down to the turned diameter.



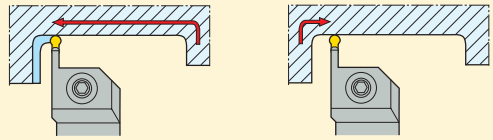
Profiling with round inserts

- The cutting depth should be maximum 0.4 x the insert diameter.
- There is no requirement to generate a trailing edge clearance angle as the geometry will provide that.



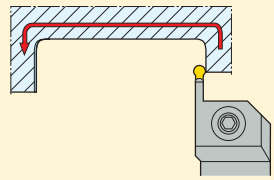
Roughing a recess with round inserts

- Machine the face down to the end point of the radius or chamfer.
- Track around the radius.
- Turn to the end point of the radius or chamfer on the other side.
- Machine down the other side and track around the radius or chamfer.

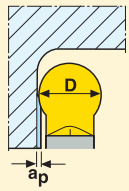


Finishing a recess with round inserts

- Make the cut in one continuous movement.
- Notice the maximum cutting depth allowed during outfeeding (see table).

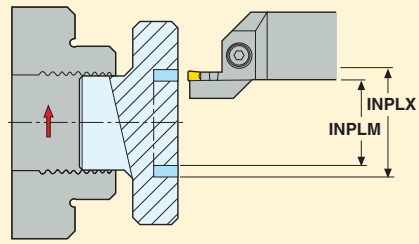


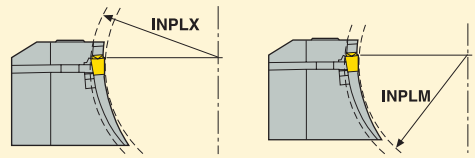
D mm (inch)	a_p inch
2	0.005
3 (0.125)	0.006
4	0.008
5 (0.187)	0.009
6 (0.250)	0.010
8, 10	0.016



Axial machining

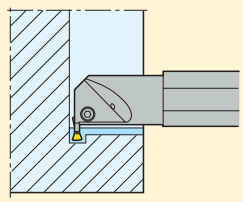
- In axial grooving operations the tool must be adapted to the radius of the groove.
- The toolholder code tells the maximum and minimum diameters that can be handled (see code key).
- The diameter measured on the outside of the blade (D_1) determines the largest diameter of initial plunge.
- The diameter measured on the inside of the blade (D_2) determines the smallest diameter of initial plunge.
- This applies to the initial groove only. Changing to turning means no general restrictions besides collision risk if machining towards center.





Internal machining

- Generally the same technique as for external machining should be used.
- In blind holes problems can occur with chip evacuation. To avoid that start with making a groove at the inner wall and turn towards the outside.



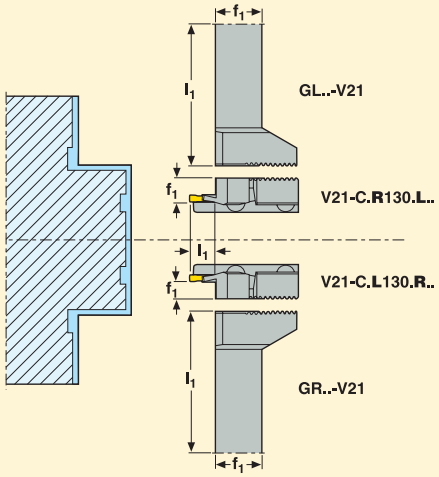
Modular holders, calculation of dimensions after mounting

Example, left hand version (L):
- Blade holder G**L** (alternative Seco-Capto G**L**).
- Blade type V21-C.**R**130.**L**..

$l_1 = l_1$ holder + f_1 blade
$f_1 = f_1$ holder + l_1 blade

Example, right hand version (R):
- Blade holder G**R** (alternative Seco-Capto G**R**).
- Blade type V21-C.**L**130.**R**..

$l_1 = l_1$ holder + f_1 blade
$f_1 = f_1$ holder + l_1 blade

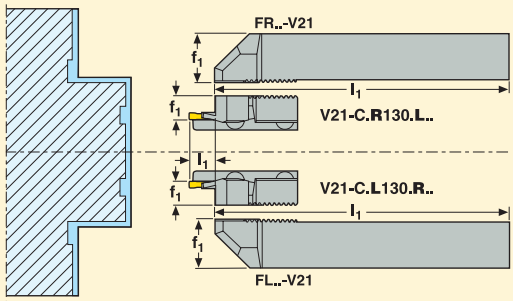


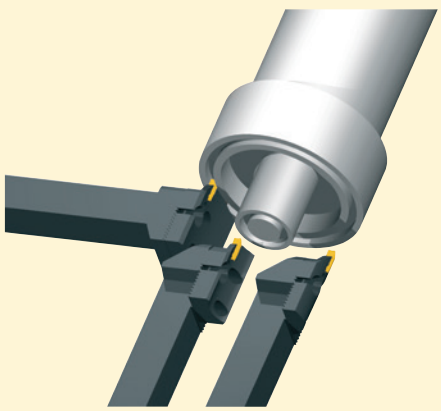
Example, right hand version (R):
- Blade holder F**R** (alternative Seco-Capto F**R**).
- Blade type V21-C.**R**130.**L**..

$l_1 = l_1$ holder + l_1 blade
$f_1 = f_1$ holder + f_1 blade

Example, left hand version (L):
- Blade holder F**L** (alternative Seco-Capto F**L**).
- Blade type V21-C.**L**130.**R**..

$l_1 = l_1$ holder + l_1 blade
$f_1 = f_1$ holder + f_1 blade

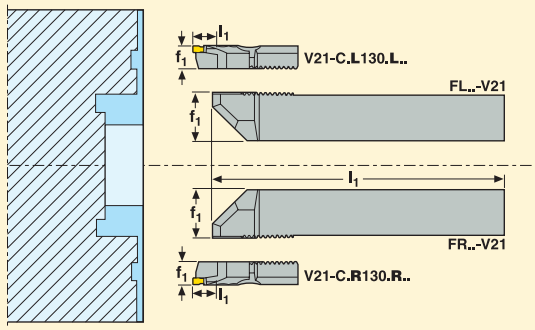




Modular holders, calculation of dimensions after mounting

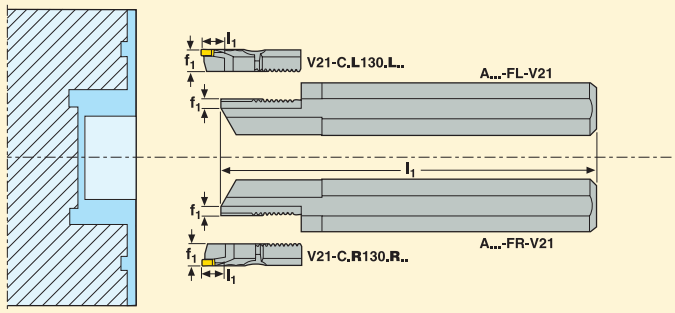
Example, left hand version (L):
• Blade holder F**L** (alternative Seco-Capto F**L**).
• Blade type V21-C.**L**130.**L**..
$l_1 = l_1$ holder + l_1 blade
$f_1 = f_1$ holder + f_1 blade

Example, right hand version (R):
• Blade holder F**R** (alternative Seco-Capto F**R**).
• Blade type V21-C.**R**130.**R**..
$l_1 = l_1$ holder + l_1 blade
$f_1 = f_1$ holder + f_1 blade

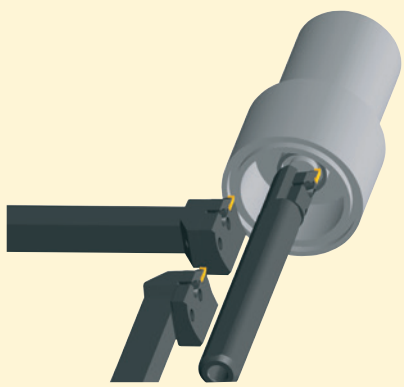


Example, left hand version (L):
• Blade holder A..F**L** (alternative Seco-Capto A..F**L**).
• Blade type V21-C.**L**130.**L**..
$l_1 = l_1$ holder + l_1 blade
$f_1 = f_1$ holder + f_1 blade

Example, right hand version (R):
• Blade holder A..F**R** (alternative Seco-Capto A..F**R**).
• Blade type V21-C.**R**130.**R**..
$l_1 = l_1$ holder + l_1 blade
$f_1 = f_1$ holder + f_1 blade

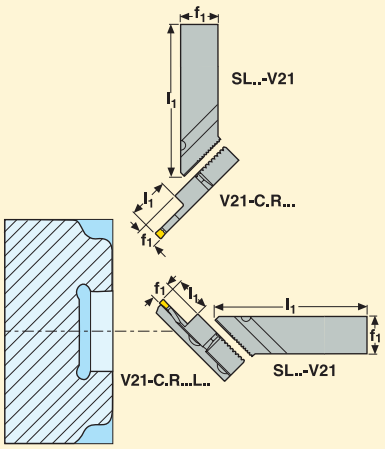


Bars A16-F... can enter a minimum diameter DCINN ≥ 1.00 inch.
Bars A20-F... can enter a minimum diameter DCINN ≥ 1.25 inch.

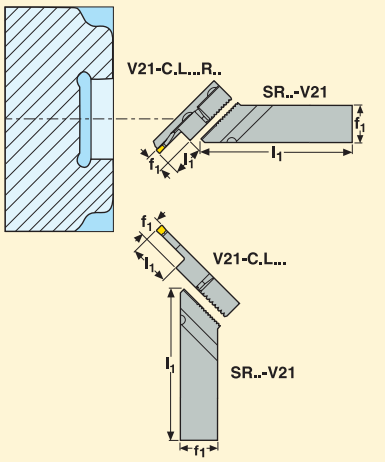


Modular holders, calculation of dimensions after mounting

Example, left hand version (L):
• Blade holder S**L** (alternative Seco-Capto S**L**).
• Blade type V21-C.**R**....or V21-C.**R**....**L**..
$l_1 = l_1$ holder + 0.71 x (f_1 blade + l_1 blade)
$f_1 = f_1$ holder + 0.71 x (l_1 blade - f_1 blade)

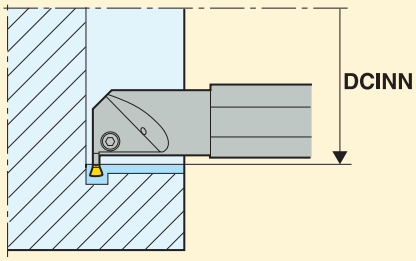


Example, right hand version (R):
• Blade holder S**R** (alternative Seco-Capto S**R**).
• Blade type V21-C.**L**....or V21-C.**L**....**R**..
$l_1 = l_1$ holder + 0.7$_1$ x (f_1 blade + l_1 blade)
$f_1 = f_1$ holder + 0.71 x (l_1 blade - f_1 blade)

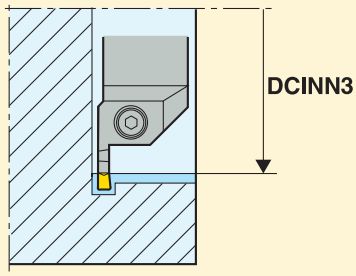


Dimensions relevant for toolholder use

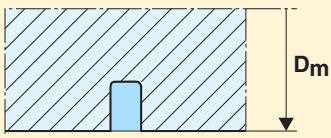
DCINN
(D_m min)



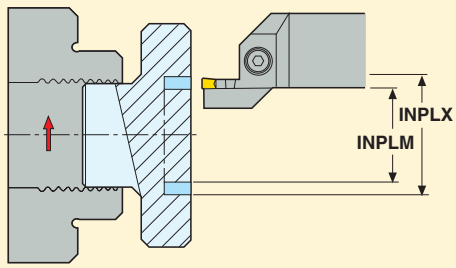
DCINN3
(D_{m2})



D_m
(D_{max})

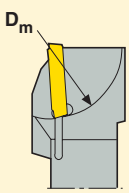


INPLM/INPLX

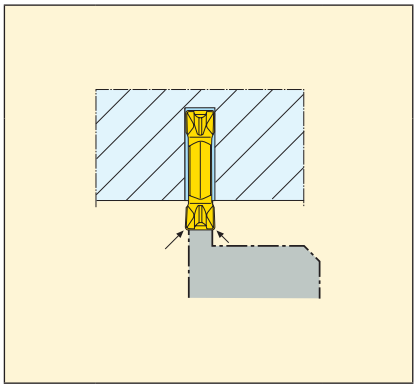


INPLM = Initial plunge minimum
INPLX = Initial plunge maximum

D_m
..RB



Working depths



These working depths can be limited when using double ended inserts because of their design.

L...13 = a_r max 0.433 inch

L...16 = a_r max 0.551 inch

L...19 = a_r max 0.629 inch

L...28 = a_r max 1.023 inch

L...30 = a_r max 1.102 inch

Torque values for clamping screws

Screw	in/lbs	Nm
L85011-T15P	44	5.0
L85012-T15P	44	5.0
L86015-T20P	53	6.0
MC6S4..	35	4.0
MC6S5..	53	6.0
TCEI04..	31	3.5
TCEI05..	53	6.0
TCEI06..	71	8.0
TCEI08..	89	10.0
TCEI10..	133	15.0

Torque keys, please see page 84.

General recommendations

- Use medium to high feeds for general grooving.
- Use medium to low feeds for precision grooving.
- Always use reverse feed instead of rapid traverse out of grooves.
- Do not use too low cutting depths and feed rates for finishing and semi-finishing turning operations.
- The appropriate deflection must be achieved. Minimum cutting depths and feed rates are shown in the table below.
- When profiling with round inserts do not use cutting depths over 0.4 x the insert diameter.
- Lower the cutting data when using holders with reach $a_r \geq 5 \times a_p$ because the extra length makes them deflect more.
- Maximum overhang with CGGR/L holders should be 3 x the tool diameter.

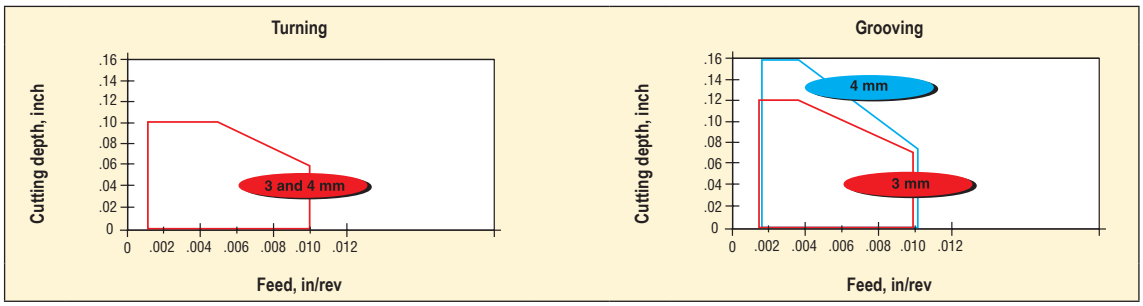
Minimum cutting depth (a_p) and feed rate (f)

Insert	Min a_p (inch)	Min f (in/rev)	Insert	Min a_p (inch)	Min f (in/rev)
2-FT	0.006	0.002	**5-FT**	0.020	0.004
3-FT	0.012	0.002	**5-MT**	0.020	0.007
3-MT	0.012	0.004	**5-MG**	0.020	0.004
3-MG	0.020	0.002	**5-MC**	0.020	0.002
3-MC	0.020	0.002	**6-FT**	0.024	0.004
4-FT	0.016	0.003	**6-MT**	0.024	0.008
4-MT	0.016	0.006	**6-MG**	0.024	0.004
4-MG	0.020	0.004	**6-MC**	0.020	0.004
4-MC	0.020	0.002	**8-FT**	0.028	0.010

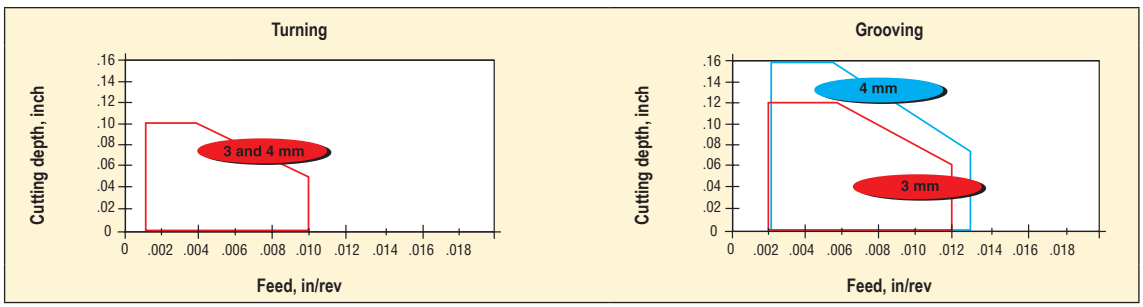
MDT 13 – Cutting depth and feed rate recommendations

Recommended cutting depths and feed rates for the different insert geometries are found in the charts below.

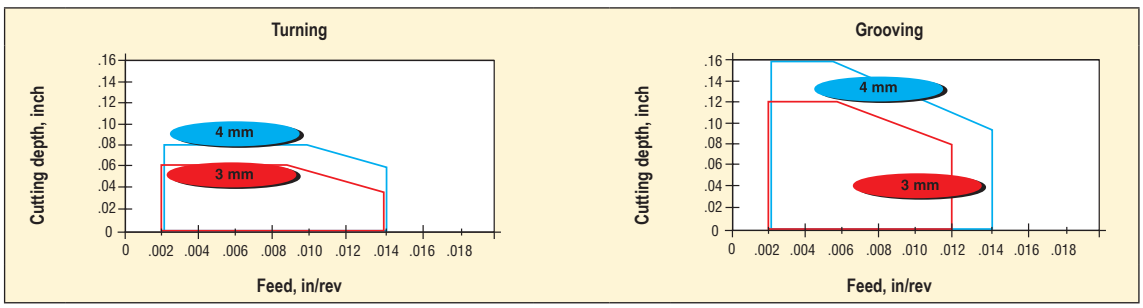
Geometry -FT



Geometry -MC



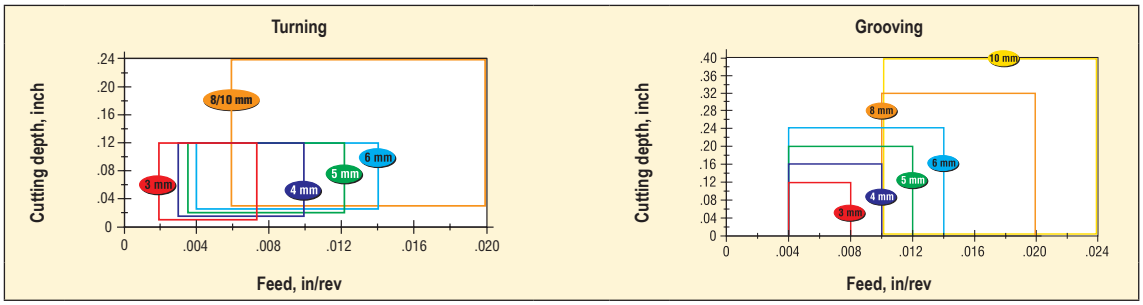
Geometry -MP



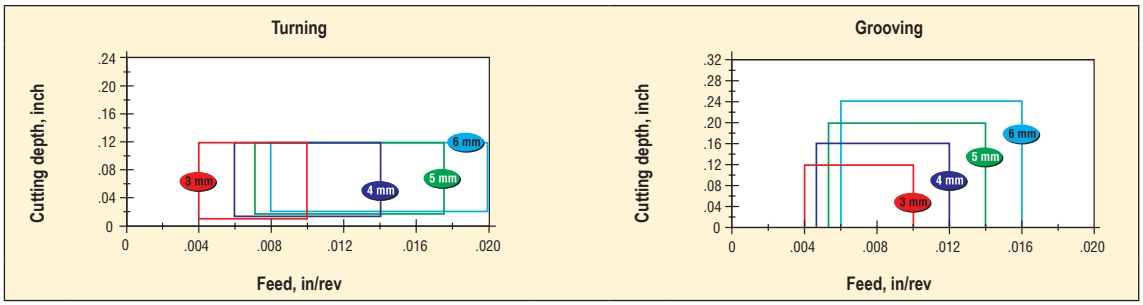
MDT 16 and 30 – Cutting depth and feed rate recommendations

Recommended cutting depths and feed rates for the different insert geometries are found in the charts below.

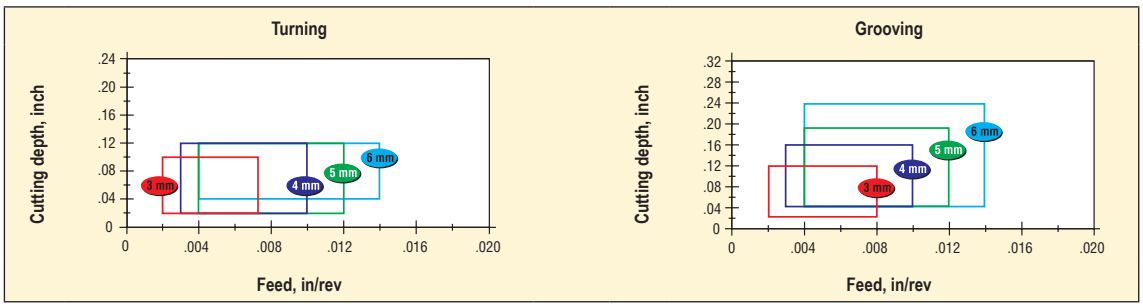
Geometry -FT



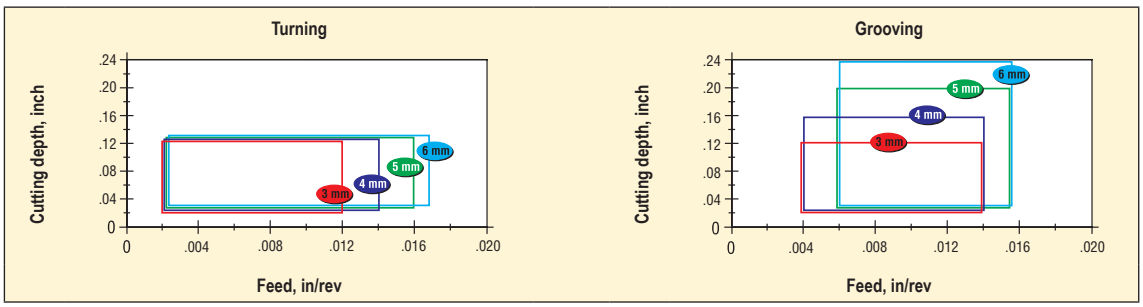
Geometry -MT



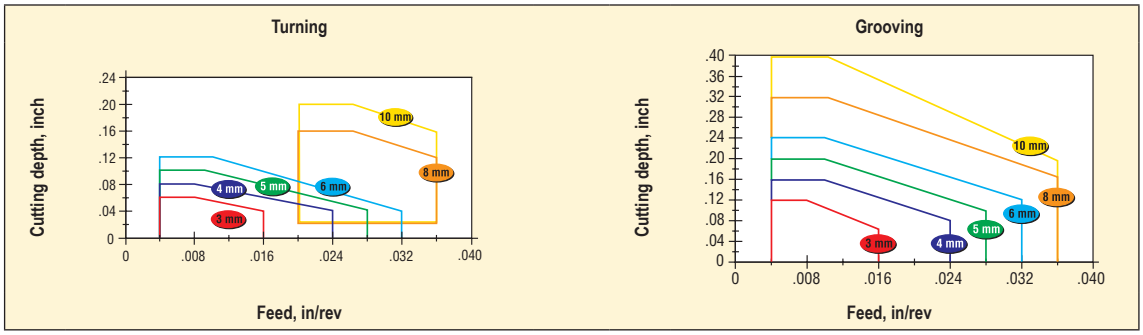
Geometry -MG



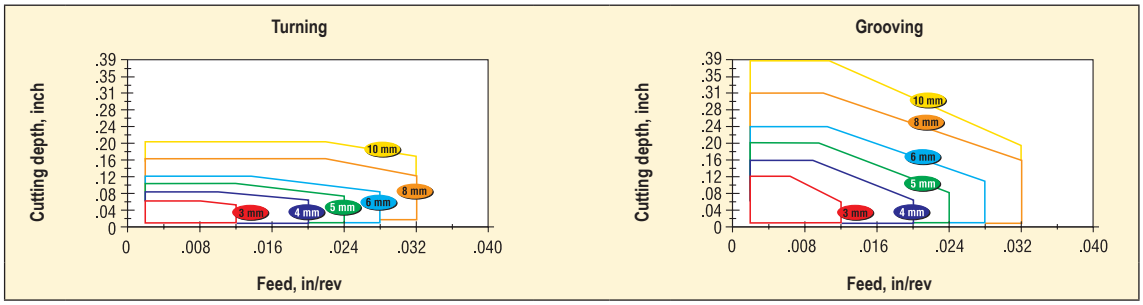
Geometry -MC



Geometry -MP



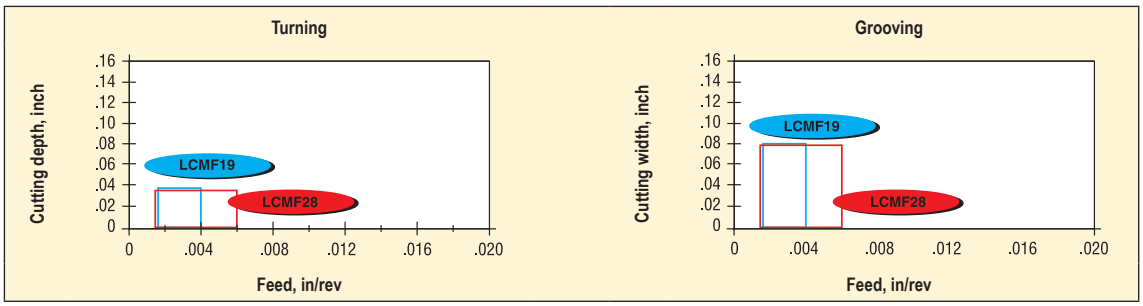
LCGF..-RP



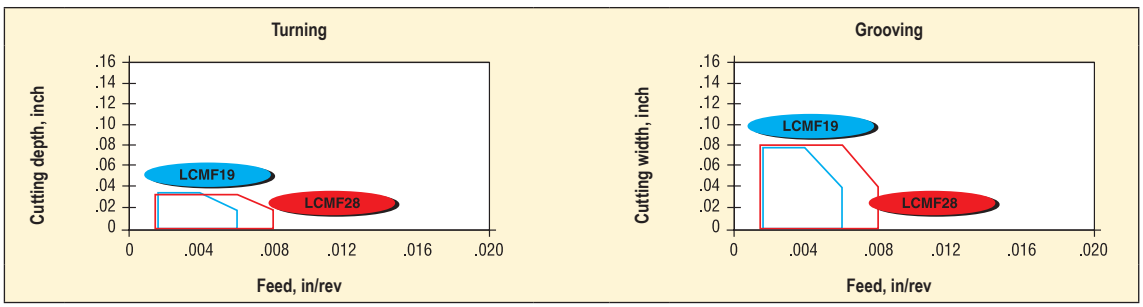
MDT 19 and 28 – Cutting depth and feed rate recommendations

Recommended cutting depths and feed rates for the different insert geometries are found in the charts below.

LCMF..-FT



LCMF..-MP



Cutting speed, v_c (sf/min)

In this section a recommended cutting speed is indicated under specified conditions.

Use the tables beginning on page 770 to classify the workpiece material into a SMG.

The cutting data tables provide a recommendation of chipbreaker and a start value for feed rate (f) and cutting speed (v_c).

The cutting data tables are based on grooving with full cutting width (a_p).

The recommended cutting speeds in the tables are calculated for 15 minutes tool life with use of external flood coolant.

In order to increase the accuracy towards the actual cutting conditions and requirements of the applications the recommendation is to use My Pages – Suggest on www.secotools.com

v_c = cutting speed (sf/min)

a_p = insert width (mm)

f = feed rate (in/rev)

CP500

SMG		ap = 2		ap = 3		ap = 4		ap = 5-6		ap =8-10	
		f	v_c	f	v_c	f	v_c	f	v_c	f	v_c
P1	-FT CP500	0.0034	780	0.0065	610	0.0075	570	0.010	495	0.014	425
P2	-FT CP500	0.0034	760	0.0065	600	0.0075	550	0.010	485	0.014	415
P3	-FT CP500	0.0034	650	0.0060	530	0.0070	485	0.0095	430	0.013	365
P4	-FT CP500	0.0032	580	0.0060	460	0.0070	430	0.0095	380	0.013	320
P5	-FT CP500	0.0032	560	0.0055	450	0.0070	410	0.0095	360	0.013	305
P6	-FT CP500	0.0032	620	0.0055	510	0.0065	470	0.0095	405	0.013	355
P7	-FT CP500	0.0032	590	0.0055	480	0.0065	440	0.0095	380	0.013	335
P8	-FT CP500	0.0034	550	0.0060	440	0.0070	410	0.0095	360	0.013	305
P11	-FT CP500	0.0032	570	0.0055	465	0.0065	430	0.0095	370	0.013	325
M1	-FT CP500	0.0034	870	0.0065	650	0.0075	560	0.010	405	0.014	265
M2	-FT CP500	0.0032	710	0.0055	570	0.0070	475	0.0095	355	0.013	230
M3	-FT CP500	0.0026	540	0.0048	470	0.0055	425	0.0075	335	0.010	240
M4	-FT CP500	0.0022	395	0.0040	380	0.0048	345	0.0065	275	0.0095	195
M5	-FT CP500	0.0022	330	0.0040	315	0.0048	290	0.0065	230	0.0095	165
K1	-FT CP500	0.0034	700	0.0065	540	0.0075	500	0.010	440	0.014	380
K2	-FT CP500	0.0032	620	0.0055	475	0.0070	415	0.0095	350	0.013	275
K3	-FT CP500	0.0032	520	0.0055	400	0.0070	350	0.0095	295	0.013	235
K4	-FT CP500	0.0032	500	0.0055	385	0.0070	335	0.0095	280	0.013	225
K5	-FT CP500	0.0028	310	0.0050	235	0.0065	210	0.0085	175	0.012	145
K6	-FT CP500	0.0032	440	0.0055	350	0.0070	315	0.0095	280	0.013	240
K7	-FT CP500	0.0028	395	0.0050	300	0.0065	270	0.0085	225	0.012	185
N11	-FT CP500	0.0044	465	0.0080	365	0.0095	335	0.013	285	0.018	245
S1	-FT CP500	0.0022	95	0.0040	80	0.0048	75	0.0065	65	0.0095	55
S2	-FT CP500	0.0022	80	0.0040	70	0.0048	65	0.0065	55	0.0095	48
S3	-FT CP500	0.0020	70	0.0038	60	0.0044	55	0.0060	50	0.0085	43

SMG = Seco Material Group
v_c = sf/min
f = in/rev
a_p = mm
All cutting data are start values

TPG25

SMG		ap = 3		ap = 4		ap = 5		ap = 6		ap = 8-10	
		f	v_c	f	v_c	f	v_c	f	v_c	f	v_c
P1	-FT TGP25	0.0065	1250	0.0075	1125	0.0095	980	0.010	930	0.014	740
P2	-FT TGP25	0.0065	1225	0.0075	1100	0.0095	950	0.010	900	0.014	720
P3	-FT TGP25	0.0060	880	0.0070	810	0.0085	740	0.0095	710	0.013	600
P4	-FT TGP25	0.0060	950	0.0070	860	0.0085	760	0.0095	720	0.013	570
P5	-FT TGP25	0.0055	760	0.0070	680	0.0085	620	0.0095	600	0.013	510
P6	-FT TGP25	0.0055	1050	0.0065	950	0.0085	810	0.0095	770	0.013	630
P7	-FT TGP25	0.0055	800	0.0065	740	0.0085	660	0.0095	630	0.013	550
P8	-FT TGP25	0.0060	740	0.0070	680	0.0085	620	0.0095	600	0.013	510
P11	-FT TGP25	0.0055	780	0.0065	720	0.0085	640	0.0095	620	0.013	540
M1	-MC TGP25	0.0065	940	0.0075	870	0.0095	730	0.010	680	0.014	470
M2	-MC TGP25	0.0055	790	0.0070	720	0.0085	630	0.0095	590	0.013	405
M3	-MC TGP25	0.0048	610	0.0055	600	0.0065	550	0.0075	520	0.010	405
M4	-MC TGP25	0.0040	460	0.0048	460	0.0060	435	0.0065	415	0.0095	325
K1	-MT TGP25	0.0070	850	0.0085	760	0.010	680	0.011	650	0.015	520
K2	-MT TGP25	0.0065	570	0.0075	540	0.0095	490	0.010	475	0.013	415
K3	-MT TGP25	0.0065	485	0.0075	455	0.0095	415	0.010	400	0.013	355
K4	-MT TGP25	0.0065	465	0.0075	435	0.0095	400	0.010	385	0.013	335
K5	-MT TGP25	0.0060	280	0.0070	265	0.0080	255	0.0085	245	0.012	210
K6	-MT TGP25	0.0065	550	0.0075	500	0.0095	440	0.010	420	0.013	345
K7	-MT TGP25	0.0060	360	0.0070	340	0.0080	325	0.0085	310	0.012	270

CP600

SMG		ap = 3		ap = 4		ap = 5		ap = 6	
		f	v_c	f	v_c	f	v_c	f	v_c
P1	-MC CP600	0.010	510	0.011	455	0.012	440	0.012	435
P2	-MC CP600	0.010	495	0.011	445	0.012	425	0.013	410
P3	-MC CP600	0.0095	435	0.011	380	0.011	375	0.012	365
P4	-MC CP600	0.0095	385	0.010	345	0.011	330	0.011	330
P5	-MC CP600	0.0095	370	0.010	330	0.011	315	0.011	315
P6	-MC CP600	0.0095	415	0.010	370	0.011	355	0.011	355
P7	-MC CP600	0.0095	390	0.010	350	0.011	335	0.011	335
P8	-MC CP600	0.0095	370	0.011	320	0.011	315	0.012	305
P11	-MC CP600	0.0095	380	0.010	340	0.011	325	0.011	325
M1	-MC CP600	0.010	475	0.011	365	0.012	330	0.013	300
M2	-MC CP600	0.0095	410	0.010	320	0.011	285	0.011	280
M3	-MC CP600	0.0075	370	0.0080	310	0.0085	275	0.0085	275
M4	-MC CP600	0.0065	305	0.0070	250	0.0075	235	0.0080	225
M5	-MC CP600	0.0065	255	0.0070	210	0.0075	195	0.0080	185
K1	-MC CP600	0.010	445	0.011	400	0.012	385	0.013	375
K2	-MC CP600	0.0095	370	0.010	315	0.011	300	0.011	295
K3	-MC CP600	0.0095	310	0.010	270	0.011	255	0.011	250
K4	-MC CP600	0.0095	295	0.010	255	0.011	240	0.011	240
K5	-MC CP600	0.0085	185	0.0095	160	0.0095	155	0.010	150
K6	-MC CP600	0.0095	285	0.010	255	0.011	245	0.011	245
K7	-MC CP600	0.0085	235	0.0095	205	0.0095	200	0.010	190
N11	-MC CP600	0.013	305	0.014	265	0.015	255	0.016	245
S1	-MC CP600	0.0065	65	0.0070	60	0.0075	55	0.0080	55
S2	-MC CP600	0.0065	55	0.0070	50	0.0075	50	0.0080	49
S3	-MC CP600	0.0060	50	0.0065	45	0.0070	44	0.0070	44

SMG = Seco Material Group
v_c = sf/min
f = in/rev
a_p = mm
All cutting data are start values

CP600

SMG		ap = 2	
		f	v_c
P1	-FT CP600	0.0034	690
P2	-FT CP600	0.0036	660
P3	-FT CP600	0.0034	580
P4	-FT CP600	0.0032	520
P5	-FT CP600	0.0032	495
P6	-FT CP600	0.0032	560
P7	-FT CP600	0.0032	520
P8	-FT CP600	0.0034	485
P11	-FT CP600	0.0032	510
M1	-FT CP600	0.0036	780
M2	-FT CP600	0.0032	650
M3	-FT CP600	0.0026	500
M4	-FT CP600	0.0022	375
M5	-FT CP600	0.0022	315
K1	-FT CP600	0.0036	610
K2	-FT CP600	0.0032	550
K3	-FT CP600	0.0032	460
K4	-FT CP600	0.0032	440
K5	-FT CP600	0.0028	275
K6	-FT CP600	0.0032	390
K7	-FT CP600	0.0028	350
N11	-FT CP600	0.0044	410
S1	-FT CP600	0.0022	85
S2	-FT CP600	0.0022	75
S3	-FT CP600	0.0022	65

TGK1500

SMG		ap = 2		ap = 3		ap = 4		ap = 5		ap = 6-8	
		f	v_c	f	v_c	f	v_c	f	v_c	f	v_c
K1	-MT, -FT TGK1500	0.0040	960	0.0070	750	0.0085	670	0.010	600	0.012	550
K2	-MT, -FT TGK1500	0.0038	590	0.0065	510	0.0080	470	0.0095	435	0.011	405
K3	-MT, -FT TGK1500	0.0038	500	0.0065	430	0.0080	395	0.0095	370	0.011	345
K4	-MT, -FT TGK1500	0.0038	475	0.0065	410	0.0080	380	0.0095	350	0.011	330
K5	-MT, -FT TGK1500	0.0034	290	0.0060	250	0.0075	230	0.0085	215	0.0095	210
K6	-MT, -FT TGK1500	0.0038	600	0.0065	485	0.0080	430	0.0095	390	0.011	350
K7	-MT, -FT TGK1500	0.0034	370	0.0060	320	0.0075	295	0.0085	275	0.0095	265

883, 890

SMG		ap = 3		ap = 4		ap = 5		ap = 6		ap = 8-10	
		f	v_c	f	v_c	f	v_c	f	v_c	f	v_c
K1	-MT 883, 890	0.0075	310	0.0085	290	0.010	265	0.011	255	0.015	220
K2	-MT 883, 890	0.0065	280	0.0080	260	0.0095	240	0.010	230	0.013	200
K3	-MT 883, 890	0.0065	235	0.0080	220	0.0095	200	0.010	195	0.013	170
K4	-MT 883, 890	0.0065	225	0.0080	210	0.0095	195	0.010	185	0.013	160
K5	-MT 883, 890	0.0060	140	0.0070	130	0.0080	125	0.0085	120	0.012	100
K6	-MT 883, 890	0.0065	200	0.0080	185	0.0095	170	0.010	165	0.013	145
K7	-MT 883, 890	0.0060	180	0.0070	165	0.0080	155	0.0085	150	0.012	130
N1	-MT 883, 890	0.0095	900	0.011	830	0.013	770	0.014	730	0.019	620
N2	-MT 883, 890	0.0095	730	0.011	670	0.013	620	0.014	590	0.019	500
N3	-MT 883, 890	0.0095	485	0.011	445	0.013	415	0.014	390	0.019	335
N11	-MT 883, 890	0.0095	550	0.011	510	0.013	475	0.014	450	0.019	385
S1	-MT 883, 890	0.0048	65	0.0055	60	0.0065	55	0.0070	55	0.0095	46
S2	-MT 883, 890	0.0048	50	0.0055	47	0.0065	45	0.0070	43	0.0095	37
S3	-MT 883, 890	0.0044	45	0.0050	42	0.0060	39	0.0065	37	0.0085	33
S11	-MT 883, 890	0.0050	90	0.0065	80	0.0075	75	0.0080	75	0.011	65
S12	-MT 883, 890	0.0050	70	0.0065	65	0.0075	60	0.0080	55	0.011	48
S13	-MT 883, 890	0.0048	55	0.0055	50	0.0065	48	0.0070	46	0.0095	40
H5	-MT 883, 890	0.0044	110	0.0050	100	0.0065	95	0.0065	90	0.0095	80

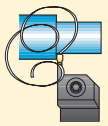
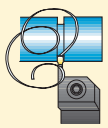
CP200

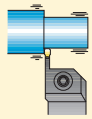
SMG		ap = 3		ap = 4		ap = 5		ap = 6		ap = 8	
		f	v_c	f	v_c	f	v_c	f	v_c	f	v_c
M1	-FT CP200	0.0065	690	0.0075	590	0.0095	470	0.010	425	0.014	270
M2	-FT CP200	0.0055	600	0.0070	500	0.0085	410	0.0095	375	0.013	255
M3	-FT CP200	0.0048	490	0.0055	450	0.0065	390	0.0075	355	0.010	250
M4	-FT CP200	0.0040	390	0.0048	365	0.0060	320	0.0065	290	0.0085	225
M5	-FT CP200	0.0040	325	0.0048	305	0.0060	265	0.0065	240	0.0085	185
S1	-FT CP200	0.0040	90	0.0048	85	0.0060	80	0.0065	75	0.0085	65
S2	-FT CP200	0.0040	75	0.0048	70	0.0060	65	0.0065	60	0.0085	55
S3	-FT CP200	0.0038	65	0.0044	60	0.0055	55	0.0060	55	0.0080	48
S11	-FT CP200	0.0048	125	0.0055	115	0.0065	105	0.0075	105	0.010	90
S12	-FT CP200	0.0048	95	0.0055	90	0.0065	85	0.0075	80	0.010	70
S13	-FT CP200	0.0040	80	0.0048	75	0.0060	65	0.0065	65	0.0085	55

SMG = Seco Material Group
v_c = sf/min
f = in/rev
a_p = mm
All cutting data are start values

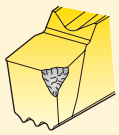
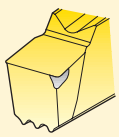
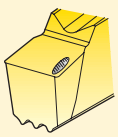
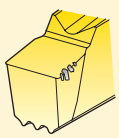
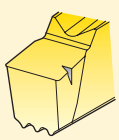
MDT – Troubleshooting

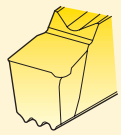
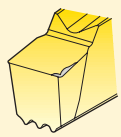
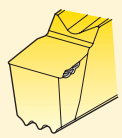
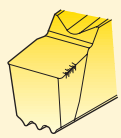
Machining problems

Chipbreaking problems/ turning 	• Increase feed rate or cutting depth • Use narrower insert with smaller radius
Chipbreaking problems/ grooving 	• Reduce the cutting speed • Increase the feed rate • Use interrupted feed

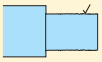
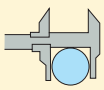
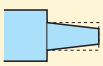
Vibrations 	• Change the cutting speed • Increase the feed rate • Reduce the cutting depth • Improve the stability of the tool and workpiece • Select an insert with smaller radius

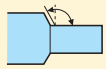
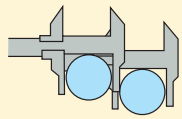
Tool life problems

Breakage 	• Reduce the feed rate • Reduce the cutting depth • Select a tougher grade • Select an insert with larger radius
Rapid flank wear 	• Reduce the cutting speed • Select a more wear resistant grade
Rapid crater wear 	• Reduce the cutting speed • Reduce the feed rate • Use coolant • Select a more wear resistant grade
Chipping 	• Increase the cutting speed • Reduce the feed rate • Select a tougher grade
Notch wear 	• Reduce the cutting speed • Reduce the feed rate

Plastic deformation 	• Reduce the cutting speed • Reduce the feed rate • Use coolant • Select a more wear resistant grade • Select an insert with larger radius
Built-up edge 	• Increase the cutting speed • Increase the feed rate • Do not use coolant
Chip hammering 	• Change the feed rate • Change the cutting depth
Comb cracks 	• Reduce the cutting speed • Reduce the feed rate • Use abundant coolant flow or no coolant at all

Workpiece out of tolerance

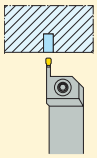
Poor surface finish 	• Reduce the feed rate • Increase the cutting speed • Reduce the cutting depth • Use coolant • Improve the stability of the tool and workpiece
Diameter out of tolerance 	• Check the tool length compensation measure • Reduce the cutting speed • Select a more wear resistant grade
Diameter variation 	• After grooving the tool must be retracted in accordance with the compensation measurement before proceeding with turning • Keep machining conditions constant during turning operation

Inaccurate square facing 	• Final facing should be made as radial machining from outside to center
Repeatability problems 	• Keep machining conditions constant • Check the insert wear

MDT – Application overview

External

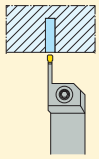
CFIR/L
CIIR/L (Swiss style)



3 x insert width

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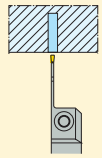
CFRMR/L



5 x insert width

Pages 388-389

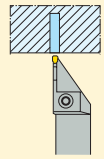
CFSR/L, CFZR/L



CFSF/L 8 x insert width
CFZR/L 12.5 x insert width

Pages 383-384, 390

CFOR/L, CFPR/L, CFSR/L, CFTR/L, CFZR/L...RB

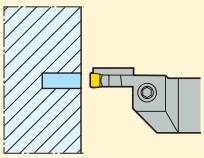


CFOR/L 6 x insert width
CFPR/L 6.5 x insert width
CFSR/L 8 x insert width
CFTR/L 8.5 x insert width
CFZR/L 12.5 x insert width

Pages 385, 391

External axial machining

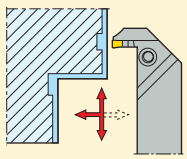
CFIR/L



3 x insert width

Pages 402-404

CGIR/L



3 x insert width

Pages 405-406

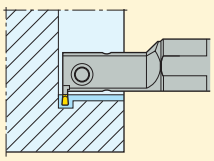
MDT AXIAL GROOVING SELECTION CALCULATOR



This software guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

Internal

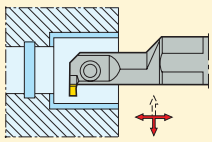
A...-CGHR/L, CGJR/L



CGHR/L 2.5 x insert width
CGJR/L 3.5 x insert width

Page 407

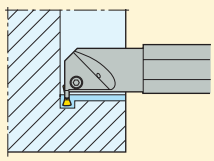
A...-CGER/L, CGFR/L, CGHR/L, CGJR/L



CGER/L 1 x insert width
CGFR/I 1.5 x insert width
CGHR/L 2.5 x insert width
CGJR/L 3.5 x insert width

Page 408

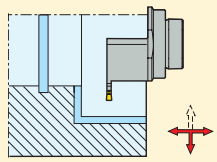
A...-CGFR/L, CGGR/L, CGIR/L



CGFR/L 1.5 x insert width
CGGR/L 2 x insert width
CGIR/L 3 x insert width

Pages 409-410

GL..-CG.R/L



CGJR/L 3.5 x insert width
CGIR/L 3 x insert width
CGHR/L 2.5 x insert width

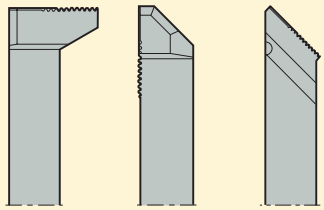
Steadyline®

Pages 213-215

MDT – Application overview

Holders for modular blades

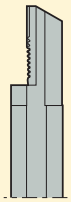
External



GR/L (0°) FR/L (90°) SR/L (45°)

Page 411

Internal

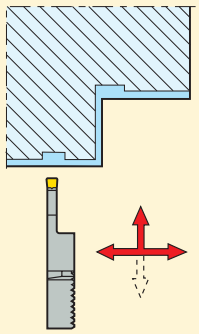


A...-FR/L

Page 412

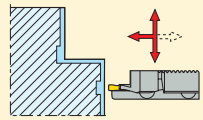
Blades, modular

CIR/L, CMR/L



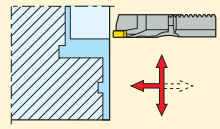
Page 413

CHR/L, CIR/L, CJR/L, CKR/L, CMR/L, COR/L



Pages 414-415

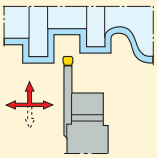
CHR/L, CIR/L, CJR/L, CKR/L, CMR/L, COR/L



Pages 416-417

Holder and Blade

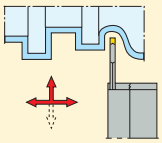
SFN/CF.N



MDT blade and holder

Page 418

CF.N (150.10)

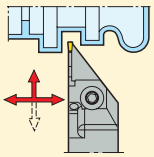


MDT blade for
150.10 system

Page 419

Jetstream Tooling®

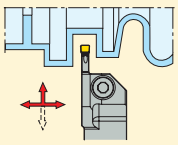
CFSR/L...RB-JET
CFZR/L.../RB-JET



CFSR/L 8 x insert width
CFZR/L 12.5 x insert width

Pages 382-383

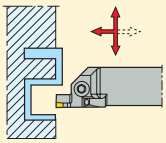
CFIR/L...JET
CFMR/L...JET



CFIR/L 3 x insert width
CFMR/L 5 x insert width

Pages 378-380

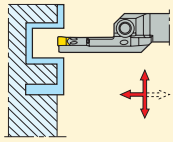
CFIR/L...JET



CFIR/L 3 x insert width

Pages 393-395

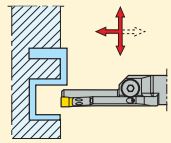
CFOR/L...JET
CFOL/R...JET



CFOR/L 6 x insert width

Pages 396-398

CFOR/R...JET
CFOL/L...JET

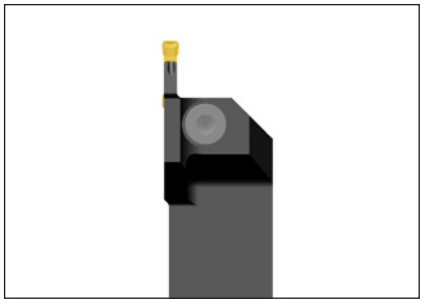


CFOR/L 6 x insert width

Pages 399-401

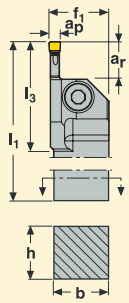
Toolholders for inserts LCGF, LCGN, LCMF and LCMR

3, 4, 5 mm width



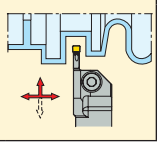
- For insert program, see pages 425-438, 440-441

CFIR/L...JET



Right-hand version shown
$a_r = 3 \times a_p$

CFIR/L 90 °



ap	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	a_r**	lbs	Seat size	
3	37822	CFIR 07503BJET	0.75	0.75	4.5	0.81	1.30	0.35	0.9	3	LC..1603
	37830	10003DJET	1.00	1.00	6.0	1.06	1.30	0.35	1.8	3	LC..1603
	37838	12503DJET	1.25	1.25	6.0	1.31	1.30	0.35	2.6	3	LC..1603
	37823	CFIL 07503BJET	0.75	0.75	4.5	0.81	1.30	0.35	0.9	3	LC..1603
	37831	10003DJET	1.00	1.00	6.0	1.06	1.30	0.35	1.8	3	LC..1603
	37839	12503DJET	1.25	1.25	6.0	1.31	1.30	0.35	2.6	3	LC..1603
4	37824	CFIR 07504BJET	0.75	0.75	4.5	0.81	1.54	0.47	1.1	4	LC..1604
	37832	10004DJET	1.00	1.00	6.0	1.06	1.54	0.47	1.3	4	LC..1604
	37840	12504DJET	1.25	1.25	6.0	1.31	1.54	0.47	2.6	4	LC..1604
	37825	CFIL 07504BJET	0.75	0.75	4.5	0.81	1.54	0.47	1.1	4	LC..1604
	37833	10004DJET	1.00	1.00	6.0	1.06	1.54	0.47	1.3	4	LC..1604
	37841	12504DJET	1.25	1.25	6.0	1.31	1.54	0.47	2.6	4	LC..1604
5	37826	CFIR 07505BJET	0.75	0.75	4.5	0.81	1.57	0.59	1.1	5	LC..1605
	37834	10005DJET	1.00	1.00	6.0	1.06	1.57	0.59	1.8	5	LC..1605
	37842	12505DJET	1.25	1.25	6.0	1.31	1.57	0.59	2.6	5	LC..1605
	37827	CFIL 07505BJET	0.75	0.75	4.5	0.81	1.57	0.59	1.1	5	LC..1605
	37835	10005DJET	1.00	1.00	6.0	1.06	1.57	0.59	1.8	5	LC..1605
	37843	12505DJET	1.25	1.25	6.0	1.31	1.57	0.59	2.6	5	LC..1605

**Max depth of cut for LCGF/LCMF16.. = 0.551 inch

Spare Parts, Parts included in delivery

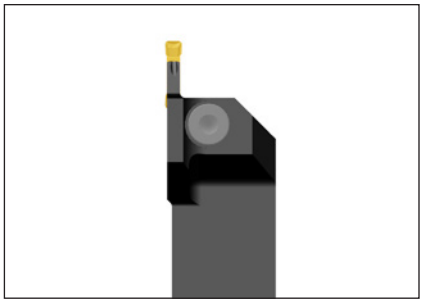
For holder	Clamp key	Clamp screw	Plug	Torque value in/lbs
..03	4SMS795	TCEI0513	JET-P1/8-5MM	53
..04	5SMS795	TCEI0613	JET-P1/8-5MM	71
..05	5SMS795	TCEI0613	JET-P1/8-5MM	71

Please check availability in current price and stock-list

For more information on Jetstream Tooling® and accessories, please see pages 86-89

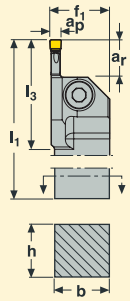
Toolholders for inserts LCGF, LCGN, LCMF and LCMR

6, 8 mm width



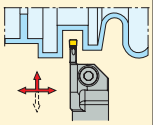
- For insert program, see pages 425-433, 435-436, 440-441

CFIR/L...JET



Right-hand version shown
$a_r = 3 \times a_p$

CFIR/L
90 °



ap	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	a_r**	lbs	Seat size	
6	37836	CFIR 10006DJET	1.00	1.00	6.0	1.06	1.85	0.71	1.8	6	LC..1606..
	37844	12506DJET	1.25	1.25	6.0	1.31	1.85	0.71	2.6	6	LC..1606..
	37837	CFIL 10006DJET	1.00	1.00	6.0	1.06	1.85	0.71	1.8	6	LC..1606..
	37845	12506DJET	1.25	1.25	6.0	1.31	1.85	0.71	2.6	6	LC..1606..
8	43641	CFIR 10008DJET	1.00	1.00	6.0	1.11	2.24	0.94	1.8	8	LC..3008..
	43643	12508EJET	1.25	1.25	7.0	1.37	2.24	0.94	2.6	8	LC..3008..
	43642	CFIL 10008DJET	1.00	1.00	6.0	1.11	2.24	0.94	1.8	8	LC..3008..
	43644	12508EJET	1.25	1.25	7.0	1.37	2.24	0.94	2.6	8	LC..3008..

**Max depth of cut for LCGF/LCMF16.. = 0.551 inch, LCGF/LCMF30.. = 1.102 inch

Spare Parts, Parts included in delivery

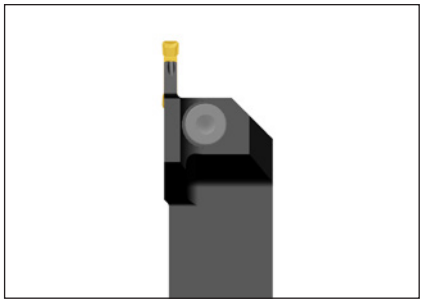
For holder	Clamp key	Clamp screw	Plug	Torque value in/lbs
..06	6SMS795	TCEI0815	JET-P1/8-5MM	89
..08	6SMS795	TCEI1020	JET-P1/8-5MM	133

Please check availability in current price and stock-list

For more information on Jetstream Tooling® and accessories, please see pages 86-89

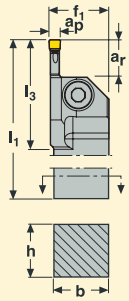
Toolholders for inserts LCGF, LCGN, LCMF and LCMR

3, 4, 5, 6 mm width



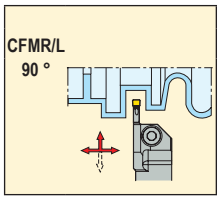
- For insert program, see pages 425-438, 440-441

CFMR/L...JET



Right-hand version shown
$a_r = 5 \times a_p$

CFMR/L
90 °



ap	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	a_r**	lbs	Seat size	
3	62476	CFMR 07503BJET	0.75	0.75	4.5	0.80	1.57	0.59	0.9	3	LC..1603
	62477	10003DJET	1.00	1.00	6.0	1.04	1.57	0.59	1.5	3	LC..1603
	62478	12503DJET	1.25	1.25	6.0	1.30	1.73	0.59	2.2	3	LC..1603
	62479	CFML 07503BJET	0.75	0.75	4.5	0.80	1.57	0.59	0.9	3	LC..1603
	62480	10003DJET	1.00	1.00	6.0	1.04	1.57	0.59	1.5	3	LC..1603
	62481	12503DJET	1.25	1.25	6.0	1.30	1.73	0.59	2.2	3	LC..1603
4	62482	CFMR 07504BJET	0.75	0.75	4.5	0.80	1.73	0.79	0.9	4	LC..1604
	62483	10004DJET	1.00	1.00	6.0	1.04	1.73	0.79	1.8	4	LC..1604
	62484	12504DJET	1.25	1.25	6.0	1.30	1.73	0.79	2.0	4	LC..1604
	62493	CFML 07504BJET	0.75	0.75	4.5	0.80	1.73	0.79	0.9	4	LC..1604
	62494	10004DJET	1.00	1.00	6.0	1.04	1.73	0.79	1.8	4	LC..1604
	62495	12504DJET	1.25	1.25	6.0	1.30	1.73	0.79	2.0	4	LC..1604
5	62496	CFMR 10005DJET	1.00	1.00	6.0	1.25	1.97	0.98	1.3	5	LC..1605
	62497	12505DJET	1.25	1.25	6.0	1.30	2.17	0.98	2.0	5	LC..1605
	62498	CFML 10005DJET	1.00	1.00	6.0	1.25	1.97	0.98	1.3	5	LC..1605
	62499	12505DJET	1.25	1.25	6.0	1.30	2.17	0.98	2.0	5	LC..1605
6	62500	CFMR 10006DJET	1.00	1.00	6.0	1.04	2.60	1.18	1.3	6	LC..1606
	62501	12506DJET	1.25	1.25	6.0	1.30	2.60	1.18	2.0	6	LC..1606
	62502	CFML 10006DJET	1.00	1.00	6.0	1.04	2.60	1.18	1.3	6	LC..1606
	62503	12506DJET	1.25	1.25	6.0	1.30	2.60	1.18	2.0	6	LC..1606

**Max depth of cut for LCGF/LCMF16.. = 0.551 inch

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Plug	Torque value in/lbs
..03	4SMS795	TCEI0513	JET-P1/8-5MM	53
..04	5SMS795	TCEI0613	JET-P1/8-5MM	71
..05	5SMS795	TCEI0613	JET-P1/8-5MM	71
..06	6SMS795	TCEI0815	JET-P1/8-5MM	89

Please check availability in current price and stock-list

For more information on Jetstream Tooling® and accessories, please see pages 86-89

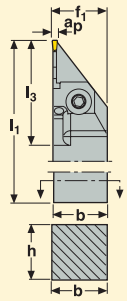
Toolholders for inserts LCMF

2 mm inserts



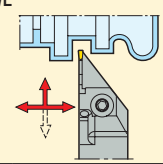
- For insert program, see pages 420

CFOR/L..RBJET



Right-hand version shown
$a_r = 6 \times a_p$

CFOR/L
90 °



ap	EDP No.	Part No.	Dimensions in inch						lbs	Seat size	
			h	b	l_1	f_1	l_3	D_m*			
2	76168	CFOR 0501902CRBJET	0.500	0.500	5.0	0.500	1.06	1.00	0.44	2	LC..1902..
	76169	0631902CRBJET	0.625	0.625	5.0	0.625	1.06	1.00	0.66	2	LC..1902..
	76172	CFOL 0501902CRBJET	0.500	0.500	5.0	0.500	1.06	1.00	0.44	2	LC..1902..
	76170	0631902CRBJET	0.625	0.625	5.0	0.625	1.06	1.00	0.66	2	LC..1902..

*Due to the design, grooving depth is limited, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
..02	T15P-7S	L85012-T15P	44

Please check availability in current price and stock-list
For more information on Jetstream Tooling® and accessories, please see pages 86-89

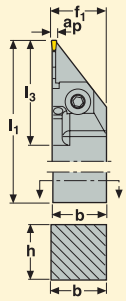
Toolholders for inserts LCMF

2 mm inserts



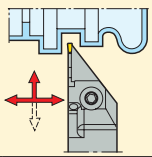
- For insert program, see page 420

CFSR/L..RBJET



Right-hand version shown
$a_r = 8 \times a_p$

CFSR/L
90 °



ap	EDP No.	Part No.	Dimensions in inch						lbs	Seat size	
			h	b	l_1	f_1	l_3	D_m*			
2	65706	CFSR 0751902DRBJET	0.75	0.75	6.0	0.75	1.50	1.30	0.9	2	LC..1902..
	65707	CFSL 0751902DRBJET	0.75	0.75	6.0	0.75	1.50	1.30	0.9	2	LC..1902..

*Due to the design, grooving depth is limited, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Plug	Torque value in/lbs
..02	4SMS795	TCEI0513	JET-P1/8-5MM	53

Please check availability in current price and stock-list
For more information on Jetstream Tooling® and accessories, please see pages 86-89

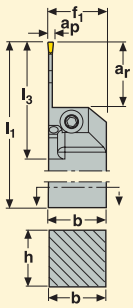
Toolholders for inserts LCMF

2 mm inserts

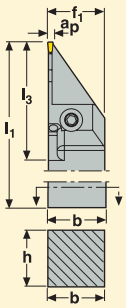


- For insert program, see page 420

CFZR/L..JET



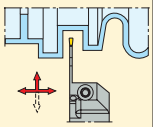
CFZR/L..RBJET



Right-hand version shown

$a_r = 12.5 \times a_p$

CFZR/L 90 °



ap	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	a_r	D_m*	lbs	Seat size	
2	65722	CFZR 0752802DJET	0.75	0.75	6.0	0.75	1.97	0.98	–	0.9	2	LC..2802..
	65712	1002802DJET	1.00	1.00	6.0	1.00	1.97	0.98	–	1.5	2	LC..2802..
	65714	CFZL 0752802DJET	0.75	0.75	6.0	0.75	1.97	0.98	–	0.9	2	LC..2802..
	65719	1002802DJET	1.00	1.00	6.0	1.00	1.97	0.98	–	1.5	2	LC..2802..
2	65711	CFZR 0752802DRBJET	0.75	0.75	6.0	0.75	2.03	–	2.05	0.9	2	LC..2802..
	65723	1002802DRBJET	1.00	1.00	6.0	1.00	2.03	–	2.05	1.4	2	LC..2802..
	65725	CFZL 0752802DRBJET	0.75	0.75	6.0	0.75	2.03	–	2.05	0.9	2	LC..2802..
	65726	1002802DRBJET	1.00	1.00	6.0	1.00	2.03	–	2.05	1.4	2	LC..2802..

*Due to the design, grooving depth is limited, see page 364.

Spare Parts, Parts included in delivery

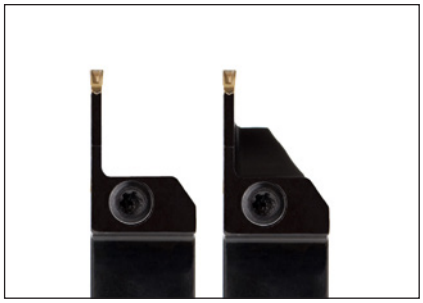
For holder	Clamp key	Clamp screw	Plug	Torque value in/lbs
..02	4SMS795	TCEI0513	JET-P1/8-5MM	53

Please check availability in current price and stock-list

For more information on Jetstream Tooling® and accessories, please see pages 86-89

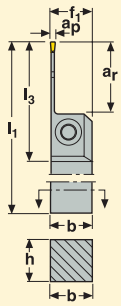
Toolholders for inserts LCMF

2 mm inserts

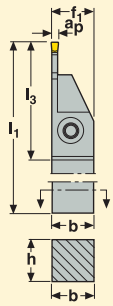


• For insert program, see page 420

CFZR/L



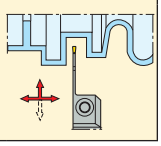
CFZR/L..RB



Right-hand version shown

$a_r = 12.5 \times a_p$

CFZR/L 90 °



ap	EDP No.	Part No.	Dimensions in inch							lbs	Seat size	
			h	b	l_1	f_1	l_3	a_r	D_m*			
2	65710	CFZR 0632802D	0.625	0.625	6.0	0.625	1.81	0.98	–	0.7	2	LC..2802..
	65713	CFZL 0632802D	0.625	0.625	6.0	0.625	1.81	0.98	–	0.7	2	LC..2802..
	65720	CFZR 0632802DRB	0.625	0.625	6.0	0.625	1.81	–	2.05	0.7	2	LC..2802..
	65724	CFZL 0632802DRB	0.625	0.625	6.0	0.625	1.81	–	2.05	0.7	2	LC..2802..

*Due to the design, grooving depth is limited, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFZR/L	4SMS795	TCEI0513	53

Please check availability in current price and stock-list

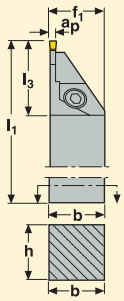
Swiss style toolholders for inserts LCMF

2 mm inserts



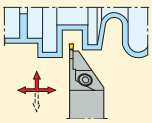
- For insert program, see page 420

CF.R/L..RB



Right-hand version shown

CF.R/L
90 °



ap	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	D_m*	lbs	Seat size	
	65684	CFOR 0501902CRB	0.500	0.500	5.0	0.500	0.87	1.00	0.44	2	LC..1902..
2	65691	0631902CRB	0.625	0.625	5.0	0.625	0.87	1.00	0.66	2	LC..1902..
	65690	CFOL 0501902CRB	0.500	0.500	5.0	0.500	0.87	1.00	0.44	2	LC..1902..
	65692	0631902CRB	0.625	0.625	5.0	0.625	0.87	1.00	0.66	2	LC..1902..
	65693	CFSR 0501902CRB	0.500	0.500	5.0	0.500	0.98	1.30	0.44	2	LC..1902..
2	65702	0631902CRB	0.625	0.625	5.0	0.625	0.98	1.30	0.66	2	LC..1902..
	65694	CFSL 0501902CRB	0.500	0.500	5.0	0.500	0.98	1.30	0.44	2	LC..1902..
	65705	0631902CRB	0.625	0.625	5.0	0.625	0.98	1.30	0.66	2	LC..1902..

*Due to the design, grooving depth is limited, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CF.R/L	T15P-7S	L85012-T15P	44

Please check availability in current price and stock-list

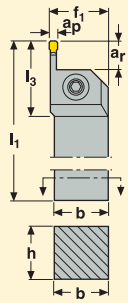
Toolholders for inserts LCGF, LCGN, LCMF and LCMR

Standard reach holders



- For insert program, see pages 425-438, 440-441

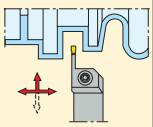
CFIR/L



Right-hand version shown

$a_r = 3 \times a_p$

CFIR/L 90 °



ap	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	a_r	DCINN3*	lbs	Seat size	
3	02795	CFIR 06303B	0.625	0.625	4.5	0.875	1.14	0.35	–	0.7	3	LC..1603..
	87626	07503B	0.750	0.750	4.5	1.000	1.14	0.35	–	1.3	3	LC..1603..
	87628	10003D	1.000	1.000	6.0	1.250	1.14	0.35	7.68	1.8	3	LC..1603..
	02809	12503D	1.250	1.250	6.0	1.500	1.14	0.35	7.68	2.9	3	LC..1603..
	02800	CFIL 06303B	0.625	0.625	4.5	0.875	1.14	0.35	–	0.7	3	LC..1603..
	87627	07503B	0.750	0.750	4.5	1.000	1.14	0.35	–	1.3	3	LC..1603..
	87629	10003D	1.000	1.000	6.0	1.250	1.14	0.35	7.68	1.8	3	LC..1603..
	02811	12503D	1.250	1.250	6.0	1.500	1.14	0.35	7.68	2.9	3	LC..1603..
4	87630	CFIR 07504B	0.750	0.750	4.5	1.000	1.22	0.47	–	0.9	4	LC..1604..
	87632	10004D	1.000	1.000	6.0	1.250	1.22	0.47	7.68	1.8	4	LC..1604..
	02813	12504D	1.250	1.250	6.0	1.500	1.22	0.47	7.68	2.9	4	LC..1604..
	87631	CFIL 07504B	0.750	0.750	4.5	1.000	1.22	0.47	–	0.9	4	LC..1604..
	87633	10004D	1.000	1.000	6.0	1.250	1.22	0.47	7.68	1.8	4	LC..1604..
	02817	12504D	1.250	1.250	6.0	1.500	1.22	0.47	7.68	2.9	4	LC..1604..

*DCINN3 – minimum bore diameter for internal application, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
..03	4SMS795	TCEI0513	53
..04	5SMS795	TCEI0613	71

Please check availability in current price and stock-list

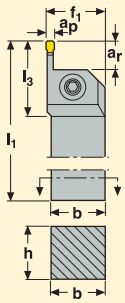
Toolholders for inserts LCGF, LCGN, LCMF and LCMR

Standard reach holders



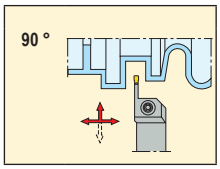
- For insert program, see pages 425-436, 440-441

CFIR/L



Right-hand version shown

$a_r = 3 \times a_p$



ap	EDP No.	Part No.	Dimensions in inch h	b	l1	f1	l3	ar	DCINN3*	lbs	Seat size	
5	89897	CFIR 07505B	0.750	0.750	4.5	1.000	1.42	0.59	–	0.9	5	LC..1605..
	90975	10005D	1.000	1.000	6.0	1.250	1.30	0.59	7.68	1.8	5	LC..1605..
	02821	12505D	1.250	1.250	6.0	1.500	1.61	0.59	7.68	2.9	5	LC..1605..
	89896	CFIL 07505B	0.750	0.750	4.5	1.000	1.42	0.59	–	0.9	5	LC..1605..
	90974	10005D	1.000	1.000	6.0	1.250	1.30	0.59	7.68	1.8	5	LC..1605..
	02822	12505D	1.250	1.250	6.0	1.500	1.61	0.59	7.68	2.9	5	LC..1605..
6	87634	CFIR 10006D	1.000	1.000	6.0	1.250	1.61	0.71	7.68	1.8	6	LC..1606..
	87636	12506D	1.250	1.250	6.0	1.500	1.61	0.71	7.68	2.6	6	LC..1606..
	87635	CFIL 10006D	1.000	1.000	6.0	1.250	1.61	0.71	7.68	1.8	6	LC..1606..
	87637	12506D	1.250	1.250	6.0	1.500	1.61	0.71	7.68	2.6	6	LC..1606..
8	57717	CFIR 10008D	1.000	1.000	6.0	1.250	2.17	1.00	7.68	1.8	8	LC..3008..
	57719	12508E	1.250	1.250	7.0	1.500	2.17	0.94	7.68	2.9	8	LC..3008..
	57718	CFIL 10008D	1.000	1.000	6.0	1.250	2.17	1.00	7.68	1.8	8	LC..3008..
	57720	12508E	1.250	1.250	7.0	1.500	2.17	0.94	7.68	2.9	8	LC..3008..

*DCINN3 – minimum bore diameter for internal application, see page 364.

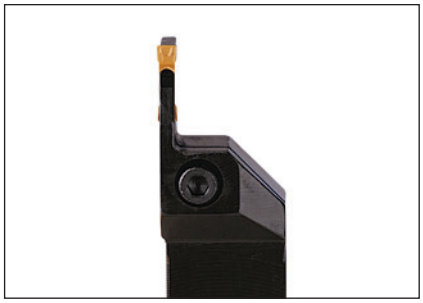
Spare Parts, Parts included in delivery

For holder	Clamp screw	Clamp key	Torque value in/lbs
..05	TCEI0613	5SMS795	71
..06	TCEI0815	6SMS795	89
..08	TCEI1020	6SMS795	133

Please check availability in current price and stock-list

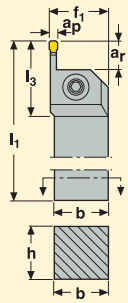
Toolholders for inserts LCGF, LCGN, LCMF and LCMR

Long reach holders



- For insert program, see pages 425-438, 440-441

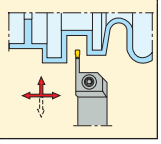
CFMR/L



Right-hand version shown

$a_r = 5 \times a_p$

CFMR/L 90 °



ap	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	a_r**	DCINN3*	lbs	Seat size	
3	02849	CFMR 07503B	0.75	0.75	4.5	1.00	1.34	0.59	–	0.9	3	LC..1603..
	96174	10003D	1.00	1.00	6.0	1.25	1.38	0.59	7.68	1.5	3	LC..1603..
	02852	12503D	1.25	1.25	6.0	1.50	1.38	0.59	7.68	2.2	3	LC..1603..
	59805	15003E	1.50	1.50	7.0	2.00	1.61	0.59	7.68	3.7	3	LC..1603..
	02850	CFML 07503B	0.75	0.75	4.5	1.00	1.34	0.59	–	0.9	3	LC..1603..
	96175	10003D	1.00	1.00	6.0	1.25	1.38	0.59	7.68	1.5	3	LC..1603..
	02863	12503D	1.25	1.25	6.0	1.50	1.38	0.59	7.68	2.2	3	LC..1603..
	59806	15003E	1.50	1.50	7.0	2.00	1.61	0.59	7.68	3.7	3	LC..1603..
4	02918	CFMR 07504B	0.75	0.75	4.5	1.00	1.57	0.79	–	0.9	4	LC..1604..
	96176	10004D	1.00	1.00	6.0	1.25	1.61	0.79	7.68	1.5	4	LC..1604..
	02920	12504D	1.25	1.25	6.0	1.50	1.61	0.79	7.68	2.2	4	LC..1604..
	59807	15004E	1.50	1.50	7.0	2.00	1.97	0.79	7.68	3.7	4	LC..1604..
	02919	CFML 07504B	0.75	0.75	4.5	1.00	1.57	0.79	–	0.9	4	LC..1604..
	96177	10004D	1.00	1.00	6.0	1.25	1.61	0.79	7.68	1.5	4	LC..1604..
	02922	12504D	1.25	1.25	6.0	1.50	1.61	0.79	7.68	2.2	4	LC..1604..
	59808	15004E	1.50	1.50	7.0	2.00	1.97	0.79	7.68	3.7	4	LC..1604..

*DCINN3 – minimum bore diameter for internal application, see page 364.

**Max depth of cut for LCGF/LCMF16.. = 0.550 inch

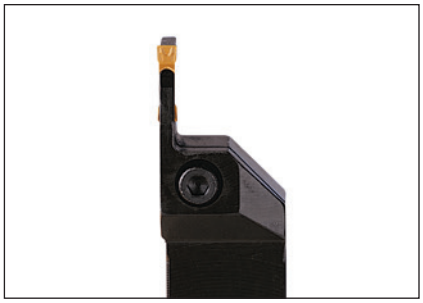
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
..03	4SMS795	TCEI0513	53
..04	5SMS795	TCEI0613	71

Please check availability in current price and stock-list

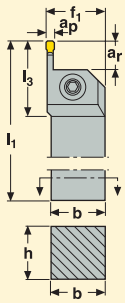
Toolholders for inserts LCGF, LCGN, LCMF and LCMR

Long reach holders



- For insert program, see page 425-436, 440-441

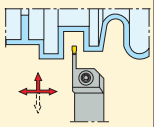
CFMR/L



Right-hand version shown

$a_r = 5 \times a_p$

CFMR/L 90 °



ap	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	a_r**	DCINN3*	lbs	Seat size	
5	96178	CFMR 10005D	1.00	1.00	6.0	1.25	2.01	0.98	7.68	1.5	5	LC..1605..
	02923	12505D	1.25	1.25	6.0	1.50	1.97	0.98	7.68	2.4	5	LC..1605..
	59809	15005E	1.50	1.50	7.0	2.00	2.24	0.98	7.68	3.7	5	LC..1605..
	96179	CFML 10005D	1.00	1.00	6.0	1.25	2.01	0.98	7.68	1.5	5	LC..1605..
	02924	12505D	1.25	1.25	6.0	1.50	1.97	0.98	7.68	2.4	5	LC..1605..
	59810	15005E	1.50	1.50	7.0	2.00	2.24	0.98	7.68	3.7	5	LC..1605..
6	96180	CFMR 10006D	1.00	1.00	6.0	1.25	2.36	1.18	7.68	1.5	6	LC..1606..
	02970	12506D	1.25	1.25	6.0	1.50	2.36	1.18	7.68	2.4	6	LC..1606..
	59811	15006E	1.50	1.50	7.0	2.00	2.60	1.18	7.68	4.0	6	LC..1606..
	96181	CFML 10006D	1.00	1.00	6.0	1.25	2.36	1.18	7.68	1.5	6	LC..1606..
	02972	12506D	1.25	1.25	6.0	1.50	2.36	1.18	7.68	2.4	6	LC..1606..
	59812	15006E	1.50	1.50	7.0	2.00	2.60	1.18	7.68	4.0	6	LC..1606..
8	59847	CFMR 10008D	1.00	1.00	6.0	1.25	2.80	1.57	7.68	1.8	8	LC..3008..
	59849	12508E	1.25	1.25	7.0	1.50	2.80	1.57	7.68	2.4	8	LC..3008..
	59813	15008E	1.50	1.50	7.0	2.00	2.80	1.57	7.68	3.7	8	LC..3008..
	59848	CFML 10008D	1.00	1.00	6.0	1.25	2.80	1.57	7.68	1.8	8	LC..3008..
	59850	12508E	1.25	1.25	7.0	1.50	2.80	1.57	7.68	2.4	8	LC..3008..
	59814	15008E	1.50	1.50	7.0	2.00	2.80	1.57	7.68	3.7	8	LC..3008..

*DCINN3 – minimum bore diameter for internal application, see page 364.

**Max depth of cut for LCMF16.. = 0.550 in, LCMF30.. = 1.100 in.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
..05	5SMS795	TCEI0613	71
..06	6SMS795	TCEI0815	89
..08	6SMS795	TCEI1020	133

Please check availability in current price and stock-list

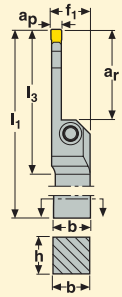
Toolholders for inserts LCGF, LCGN, LCMF and LCMR

Long reach holders

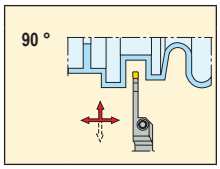


- For insert program, see pages 425-438, 440-441

CFSR/L



Right-hand version shown
$a_r = 8 \times a_p$



ap	EDP No.	Part No.	Dimensions in inch h	b	l1	f1	l3	ar**	DCINN3*	lbs	Seat size	
3	56994	CFSR 10003D	1.00	1.00	6.0	1.25	1.81	0.94	7.68	1.8	3	LC..1603..
	57003	12503D	1.25	1.25	6.0	1.50	1.81	0.94	7.68	2.2	3	LC..1603..
	56990	CFSL 10003D	1.00	1.00	6.0	1.25	1.81	0.94	7.68	2.4	3	LC..1603..
	56999	12503D	1.25	1.25	6.0	1.50	1.81	0.94	7.68	2.4	3	LC..1603..
4	56995	CFSR 10004E	1.00	1.00	7.0	1.25	2.17	1.26	7.68	2.4	4	LC..1604..
	57004	12504E	1.25	1.25	7.0	1.50	2.17	1.26	7.68	2.9	4	LC..1604..
	56991	CFSL 10004E	1.00	1.00	7.0	1.25	2.17	1.26	7.68	2.0	4	LC..1604..
	57000	12504E	1.25	1.25	7.0	1.50	2.17	1.26	7.68	2.9	4	LC..1604..
5	56996	CFSR 10005E	1.00	1.00	7.0	1.25	2.60	1.57	7.68	2.0	5	LC..1605..
	57005	12505E	1.25	1.25	7.0	1.50	2.60	1.57	7.68	2.4	5	LC..1605..
	56992	CFSL 10005E	1.00	1.00	7.0	1.25	2.60	1.57	7.68	2.0	5	LC..1605..
	57001	12505E	1.25	1.25	7.0	1.50	2.60	1.57	7.68	2.9	5	LC..1605..
6	56997	CFSR 10006F	1.00	1.00	8.0	1.25	3.19	1.89	7.68	2.0	6	LC..1606..
	57006	12506F	1.25	1.25	8.0	1.50	3.19	1.89	7.68	2.9	6	LC..1606..
	56993	CFSL 10006F	1.00	1.00	8.0	1.25	3.19	1.89	7.68	2.0	6	LC..1606..
	57002	12506F	1.25	1.25	8.0	1.50	3.19	1.89	7.68	2.9	6	LC..1606..
8	57008	CFSR 12508F	1.25	1.25	8.0	1.50	4.09	2.52	7.68	2.4	8	LC..3008..
	57007	CFSL 12508F	1.25	1.25	8.0	1.50	4.09	2.52	7.68	3.1	8	LC..3008..

*DCINN3 – minimum bore diameter for internal application, see page 364.

**Max depth of cut for LCGF/LCMF16..= 0.550 inch, LCGF/LCMF30..= 1.100 inch

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
..03	4SMS795	TCEI0513	53
..04	5SMS795	TCEI0613	71
..05	5SMS795	TCEI0613	71
..06	6SMS795	TCEI0815	89
..08	6SMS795	TCEI1020	133

Please check availability in current price and stock-list

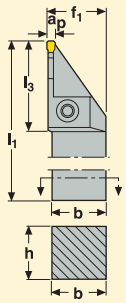
Toolholders for inserts LCGN and LCMR



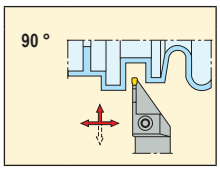
- For insert program, see pages 427, 429-430, 433-438, 440-441

Deep grooving/Cut-off holders

CFTR/L (Reinforced blade)



Right-hand version shown



ap	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	D_m*	lbs	Seat size	
3	86323	CFTR 07503C	0.75	0.75	5.0	1.00	1.65	–	0.9	3	LC..1603..
	86326	10003D	1.00	1.00	6.0	1.25	1.65	7.68	1.8	3	LC..1603..
	86332	CFTL 07503C	0.75	0.75	5.0	1.00	1.65	–	0.9	3	LC..1603..
	86333	10003D	1.00	1.00	6.0	1.25	1.65	7.68	1.8	3	LC..1603..

*Due to the design, grooving depth is limited, see page 364.

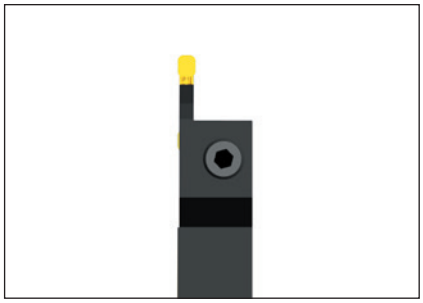
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
..03	4SMS795	TCEI0513	53

Please check availability in current price and stock-list

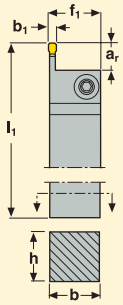
Toolholders for inserts LCMF, LCMR and LCGN

Swiss style toolholders



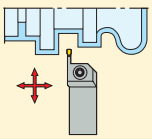
- For insert program, see pages 425-430, 433-438, 440-441

CIIR/L



Right-hand version shown

CIIR/L
90 °



ap	EDP No.	Part No.	Dimensions in inch h	b	l1	f1	ar*	lbs	Seat size	
3	57794	CIIR 05003D	0.500	0.500	6.0	0.500	0.433	0.44	3	LC..1603..
	57792	062503B	0.625	0.625	4.5	0.625	0.433	0.66	3	LC..1603..
	57795	CIIL 05003D	0.500	0.500	6.0	0.500	0.433	0.44	3	LC..1603..
	57793	062503B	0.625	0.625	4.5	0.625	0.433	0.66	3	LC..1603..

*Max. depth of cut for LCMF16.. = 0.550 inch.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
..03	4SMS795	TCEI0513	53

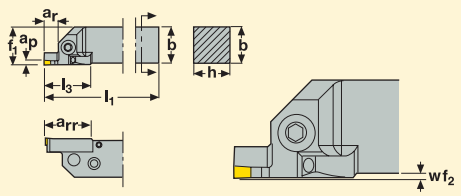
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

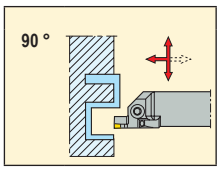


- For insert program, see pages 425-438, 440-441

CFIR...R...JET, CFIL...L...JET



Right-hand version with right-hand blade shown
$a_r = 3 \times a_p$

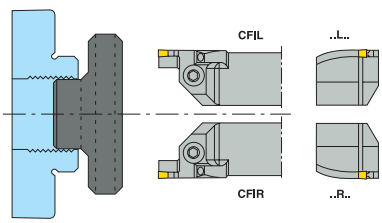


ap	EDP No.	Part No.	Dimensions in inch											lbs	
			INPLM	INPLX	h	b	l_1	f_1	wf_2	l_3	a_r	a_{rr}			
3	62080	CFIR 10003D-R3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	1.30	0.35	1.30	1.5	LC..1603..
	57118	10003D-R4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	1.30	0.35	1.30	1.5	LC..1603..
	57120	10003D-R5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	1.30	0.35	1.30	1.5	LC..1603..
	57121	10003D-R6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	1.30	0.35	1.30	1.5	LC..1603..
	62072	CFIL 10003D-L3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	1.30	0.35	1.30	1.5	LC..1603..
	57099	10003D-L4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	1.30	0.35	1.30	1.5	LC..1603..
	57100	10003D-L5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	1.30	0.35	1.30	1.5	LC..1603..
	57101	10003D-L6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	1.30	0.35	1.30	1.5	LC..1603..
4	62081	CFIR 10004D-R3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	1.42	0.47	1.42	1.5	LC..1604..
	57122	10004D-R4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	1.42	0.47	1.42	1.5	LC..1604..
	57123	10004D-R5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	1.42	0.47	1.42	1.5	LC..1604..
	57124	10004D-R6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	1.42	0.47	1.42	1.5	LC..1604..
	57125	10004D-R9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	0.06	1.42	0.47	1.42	1.5	LC..1604..
	62074	CFIL 10004D-L3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	1.42	0.47	1.42	1.5	LC..1604..
	57102	10004D-L4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	1.42	0.47	1.42	1.5	LC..1604..
	57103	10004D-L5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	1.42	0.47	1.42	1.5	LC..1604..
	57104	10004D-L6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	1.42	0.47	1.42	1.5	LC..1604..
	57105	10004D-L9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	0.06	1.42	0.47	1.42	1.5	LC..1604..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

Spare Parts, Parts included in delivery

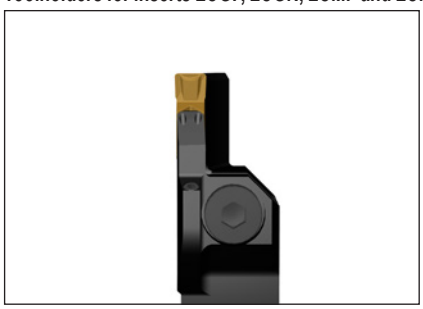
For holder	Clamp key	Clamp screw	Plug	Torque value in/lbs
CFIR/L..-03	4SMS795	TCEI0513	JET-P1/8-5MM	53
CFIR/L..-04	5SMS795	TCEI0613	JET-P1/8-5MM	71



Please check availability in current price and stock-list
For more information on Jetstream Tooling® and accessories, please see pages 86-89

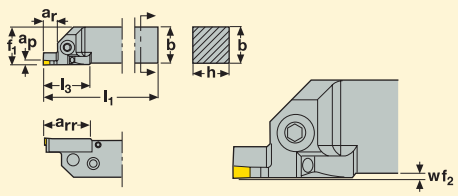
MDT AXIAL GROOVING SELECTION CALCULATOR
This software guides you in finding the suitable tool for your axial grooving application. The application is free and available at
http://www.secotools.com/customerzoneus

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

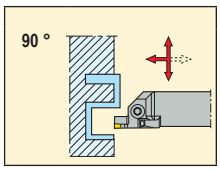


- For insert program, see pages 425-436, 440-441

CFIR...R...JET, CFIL...L...JET



Right-hand version with right-hand blade shown
$a_r = 3 \times a_p$



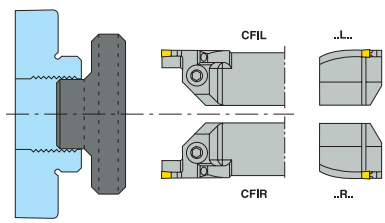
ap	EDP No.	Part No.	Dimensions in inch										lbs	
			INPLM	INPLX	h	b	l_1	f_1	wf_2	l_3	a_r**	a_{rr}		
5	62090	CFIR 10005D-R3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	1.57	0.59	1.57	1.8	LC..1605..
	57126	10005D-R4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	1.57	0.59	1.57	1.8	LC..1605..
	57127	10005D-R5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	1.57	0.59	1.57	1.8	LC..1605..
	57128	10005D-R6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	1.57	0.59	1.57	1.8	LC..1605..
	57129	10005D-R9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	0.06	1.57	0.59	1.57	1.8	LC..1605..
	62076	CFIL 10005D-L3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	1.57	0.59	1.57	1.8	LC..1605..
	57106	10005D-L4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	1.57	0.59	1.57	1.8	LC..1605..
	57107	10005D-L5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	1.57	0.59	1.57	1.8	LC..1605..
	57108	10005D-L6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	1.57	0.59	1.57	1.8	LC..1605..
	57109	10005D-L90.05.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	0.06	1.57	0.59	1.57	1.8	LC..1605..
6	62091	CFIR 10006D-R3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	1.81	0.71	1.81	1.8	LC..1606..
	57130	10006D-R4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	1.81	0.71	1.81	1.8	LC..1606..
	57131	10006D-R5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	1.81	0.71	1.81	1.8	LC..1606..
	57132	10006D-R6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	1.81	0.71	1.81	1.8	LC..1606..
	57134	10006D-R9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	0.06	1.81	0.71	1.81	1.8	LC..1606..
	62079	CFIL 10006D-L3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	1.81	0.71	1.81	1.8	LC..1606..
	57110	10006D-L4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	1.81	0.71	1.81	1.8	LC..1606..
	57111	10006D-L5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	1.81	0.71	1.81	1.8	LC..1606..
	57112	10006D-L6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	1.81	0.71	1.81	1.8	LC..1606..
	57113	10006D-L9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	0.06	1.81	0.71	1.81	1.8	LC..1606..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

**Max depth of cut for LCGF/LCMF16.. = 0.551 inch

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Plug	Torque value in/lbs
CFIR/L..-05	5SMS795	TCEI0613	JET-P1/8-5MM	71
CFIR/L..-06	6SMS795	TCEI0815	JET-P1/8-5MM	89



Please check availability in current price and stock-list
For more information on Jetstream Tooling® and accessories, please see pages 86-89

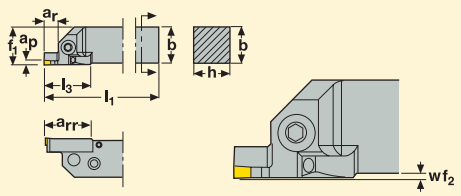
MDT AXIAL GROOVING SELECTION CALCULATOR
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http://www.secotools.com/customerzoneus

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

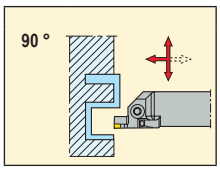


- For insert program, see pages 425, 428-432

CFIR...R...JET, CFIL...L...JET



Right-hand version with right-hand blade shown
$a_r = 3 \times a_p$

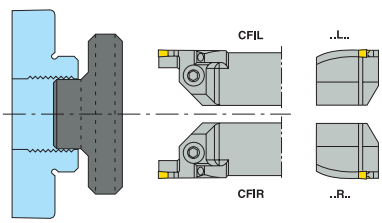


ap	EDP No.	Part No.	Dimensions in inch										lbs	
			INPLM	INPLX	h	b	l_1	f_1	wf_2	l_3	a_r**	a_{rr}		
8	57135	CFIR 12508E-R5.003.50-JET	3.54	5.12	1.25	1.25	7.0	1.04	0.06	2.20	0.94	2.20	2.9	LC..3008..
	57136	12508E-R6.704.30-JET	4.33	6.69	1.25	1.25	7.0	1.04	0.06	2.20	0.94	2.20	2.9	LC..3008..
	57137	12508E-R9.005.50-JET	5.51	9.06	1.25	1.25	7.0	1.04	0.06	2.20	0.94	2.20	2.9	LC..3008..
	57138	12508E-R19.78.00-JET	7.87	19.69	1.25	1.25	7.0	1.04	0.06	2.20	0.94	2.20	2.9	LC..3008..
	57114	CFIL 12508E-L5.003.50-JET	3.54	5.12	1.25	1.25	7.0	1.04	0.06	2.20	0.94	2.20	2.9	LC..3008..
	57115	12508E-L6.704.30-JET	4.33	6.69	1.25	1.25	7.0	1.04	0.06	2.20	0.94	2.20	2.9	LC..3008..
	57116	12508E-L9.005.50-JET	5.51	9.06	1.25	1.25	7.0	1.04	0.06	2.20	0.94	2.20	2.9	LC..3008..
	67701	12508E-L19.78.00-JET	7.87	19.69	1.25	1.25	7.0	1.04	0.06	2.20	0.94	2.20	2.9	LC..3008..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Plug	Torque value in/lbs
CFIR/L..-08	6SMS795	TCEI1020	JET-P1/8-5MM	133



Please check availability in current price and stock-list
For more information on Jetstream Tooling® and accessories, please see pages 86-89

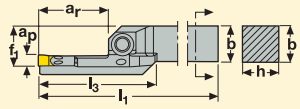
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Toolholders for inserts LCGF, LCGN, LCMF and LCMR

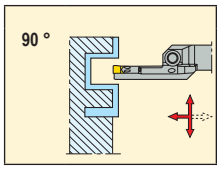


- For insert program, see pages 425-438, 440-441

CFOR...L...JET, CFOL...R...JET



Right-hand version with left-hand blade shown
$a_r = 6 \times a_p$



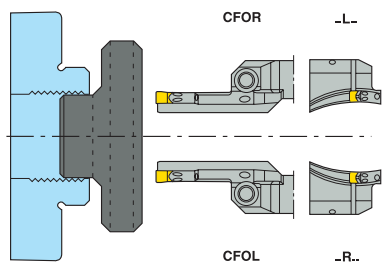
a_p	EDP No.	Part No.	Dimensions in inch								lbs	
			INPLM	INPLX	h	b	l_1	f_1	l_3	a_r**		
3	62062	CFOR 10003D-L3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	1.69	0.75	1.8	LC..1603..
	57027	10003D-L4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	1.69	0.75	1.8	LC..1603..
	57028	10003D-L5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	1.69	0.75	1.8	LC..1603..
	57029	10003D-L6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	1.69	0.75	1.8	LC..1603..
	56985	10003D-L9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	1.69	0.75	1.8	LC..1603..
	56986	10003D-L19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	1.69	0.75	1.8	LC..1603..
	62052	CFOL 10003D-R3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	1.69	0.75	1.8	LC..1603..
	56277	10003D-R4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	1.69	0.75	1.8	LC..1603..
	57009	10003D-R5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	1.69	0.75	1.8	LC..1603..
	57010	10003D-R6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	1.69	0.75	1.8	LC..1603..
	56955	10003D-R9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	1.69	0.75	1.8	LC..1603..
	56981	10003D-R19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	1.69	0.75	1.8	LC..1603..
4	62064	CFOR 10004D-L3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	2.01	0.94	1.8	LC..1604..
	57030	10004D-L4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	2.01	0.94	1.8	LC..1604..
	57031	10004D-L5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	2.01	0.94	1.8	LC..1604..
	57033	10004D-L6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	2.01	0.94	1.8	LC..1604..
	57034	10004D-L9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	2.01	0.94	1.8	LC..1604..
	56987	10004D-L19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	2.01	0.94	1.8	LC..1604..
	62055	CFOL 10004D-R3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	2.01	0.94	1.8	LC..1604..
	57011	10004D-R4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	2.01	0.94	1.8	LC..1604..
	57012	10004D-R5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	2.01	0.94	1.8	LC..1604..
	57013	10004D-R6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	2.01	0.94	1.8	LC..1604..
	57014	10004D-R9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	2.01	0.94	1.8	LC..1604..
	56982	10004D-R19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	2.01	0.94	1.8	LC..1604..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

**Max depth of cut for LCGF/LCMF16.. = 0.551 inch

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Plug	Torque value in/lbs
CFOR/L..-03	4SMS795	TCEI0513	JET-P1/8-5MM	53
CFOR/L..-04	5SMS795	TCEI0613	JET-P1/8-5MM	71



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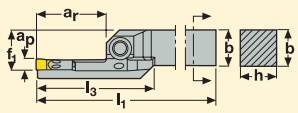
Please check availability in current price and stock-list
For more information on Jetstream Tooling® and accessories, please see pages 86-89

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

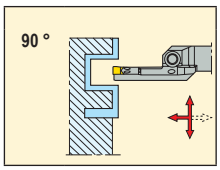


- For insert program, see pages 425-436, 440-441

CFOR...L...JET, CFOL...R...JET



Right-hand version with left-hand blade shown
$a_r = 6 \times a_p$



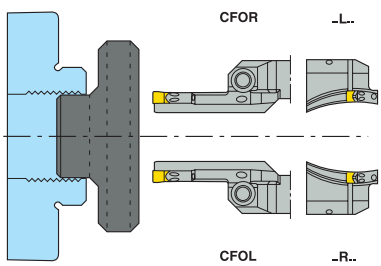
a_p	EDP No.	Part No.	Dimensions in inch								lbs	
			INPLM	INPLX	h	b	l_1	f_1	l_3	a_r**		
5	62070	CFOR 10005D-L3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	2.30	1.12	1.8	LC..1605..
	57035	10005D-L4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	2.30	1.12	1.8	LC..1605..
	57036	10005D-L5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	2.30	1.12	1.8	LC..1605..
	57037	10005D-L6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	2.30	1.12	1.8	LC..1605..
	57038	10005D-L9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	2.30	1.12	1.8	LC..1605..
	56988	10005D-L19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	2.30	1.12	1.8	LC..1605..
	62057	CFOL 10005D-R3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	2.30	1.12	1.8	LC..1605..
	57015	10005D-R4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	2.30	1.12	1.8	LC..1605..
	57016	10005D-R5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	2.30	1.12	1.8	LC..1605..
	57017	10005D-R6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	2.30	1.12	1.8	LC..1605..
	57018	10005D-R9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	2.30	1.12	1.8	LC..1605..
	56983	10005D-R19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	2.30	1.12	1.8	LC..1605..
6	62071	CFOR 10006D-L3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	2.81	1.50	1.8	LC..1606..
	57039	10006D-L4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	2.81	1.50	1.8	LC..1606..
	57040	10006D-L5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	2.81	1.50	1.8	LC..1606..
	57041	10006D-L6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	2.81	1.50	1.8	LC..1606..
	57042	10006D-L9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	2.81	1.50	1.8	LC..1606..
	56989	10006D-L19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	2.81	1.50	1.8	LC..1606..
	62060	CFOL 10006D-R3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	2.81	1.50	1.8	LC..1606..
	57019	10006D-R4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	2.81	1.50	1.8	LC..1606..
	57020	10006D-R5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	2.81	1.50	1.8	LC..1606..
	57021	10006D-R6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	2.81	1.50	1.8	LC..1606..
	57022	10006D-R9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	2.81	1.50	1.8	LC..1606..
	56984	10006D-R19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	2.81	1.50	1.8	LC..1606..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

**Max depth of cut for LCGF/LCMF16.. = 0.551 inch

Spare Parts, Parts included in delivery

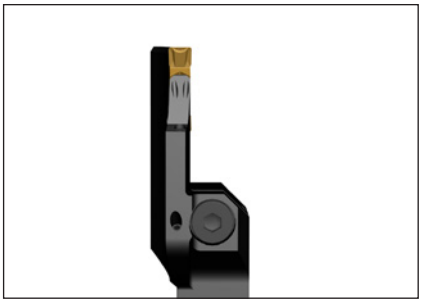
For holder	Clamp key	Clamp screw	Plug	Torque value in/lbs
CFOR/L..-05	5SMS795	TCEI0613	JET-P1/8-5MM	71
CFOR/L..-06	6SMS795	TCEI0815	JET-P1/8-5MM	89



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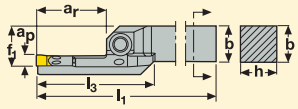
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Toolholders for inserts LCGF, LCGN, LCMF and LCMR

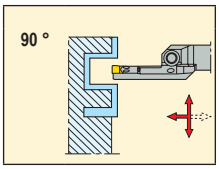


- For insert program, see pages 425, 428-432

CFOR...L...JET, CFOL...R...JET



Right-hand version with left-hand blade shown
$a_r = 6 \times a_p$



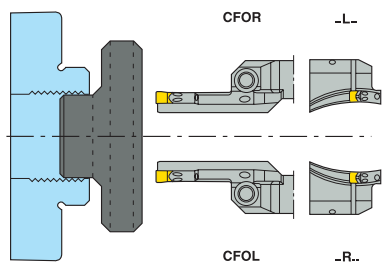
a_p	EDP No.	Part No.	Dimensions in inch								lbs	
			INPLM	INPLX	h	b	l_1	f_1	l_3	a_r**		
8	57043	CFOR 12508E-L5.003.50-JET	3.54	5.12	1.25	1.2	7.0	1.31	3.27	1.89	2.6	LC..3008..
	57044	12508E-L6.704.30-JET	4.33	6.69	1.25	1.2	7.0	1.31	3.27	1.89	2.6	LC..3008..
	57045	12508E-L9.005.50-JET	5.51	9.06	1.25	1.2	7.0	1.31	3.27	1.89	2.6	LC..3008..
	57046	12508E-L19.78.00-JET	7.87	19.69	1.25	1.2	7.0	1.31	3.27	1.89	2.6	LC..3008..
	57023	CFOL 12508E-R5.003.50-JET	3.54	5.12	1.25	1.2	7.0	1.31	3.27	1.89	2.6	LC..3008..
	57024	12508E-R6.704.30-JET	4.33	6.69	1.25	1.2	7.0	1.31	3.27	1.89	2.6	LC..3008..
	57025	12508E-R9.005.50-JET	5.51	9.06	1.25	1.2	7.0	1.31	3.27	1.89	2.6	LC..3008..
	57026	12508E-R19.78.00-JET	7.87	19.69	1.25	1.2	7.0	1.31	3.27	1.89	2.6	LC..3008..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

**Max depth of cut for LCGF/LCMF16.. = 0.551 inch

Spare Parts, Parts included in delivery

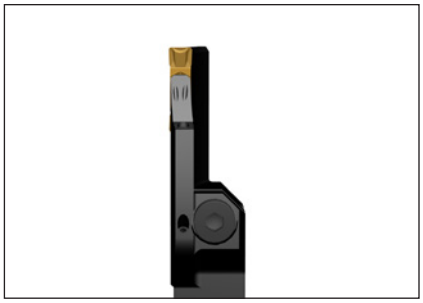
For holder	Clamp key	Clamp screw	Plug	Torque value in/lbs
CFOR/L..-08	6SMS795	TCEI1020	JET-P1/8-5MM	133



Please check availability in current price and stock-list
For more information on Jetstream Tooling® and accessories, please see pages 86-89

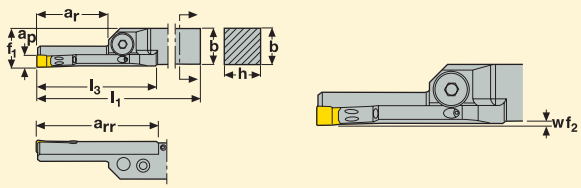
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Toolholders for inserts LCGF, LCGN, LCMF and LCMR

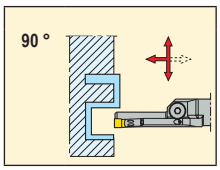


- For insert program, see pages 425-438, 440-441

CFOR...R...JET, CFOL...L...JET



Right-hand version with right-hand blade shown
$a_r = 6 \times a_p$

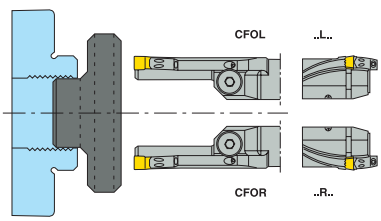


a_p	EDP No.	Part No.	Dimensions in inch										lbs	
			INPLM	INPLX	h	b	l_1	f_1	wf_2	l_3	a_r	a_{rr}		
3	62101	CFOR 10003D-R3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	1.69	0.71	1.69	1.8	LC..1603..
	57071	10003D-R4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	1.69	0.71	1.69	1.8	LC..1603..
	57072	10003D-R5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	1.69	0.71	1.69	1.8	LC..1603..
	57073	10003D-R6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	1.69	0.71	1.69	1.8	LC..1603..
	57074	10003D-R9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	0.06	1.69	0.71	1.69	1.8	LC..1603..
	57075	10003D-R19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	0.06	1.69	0.71	1.69	1.8	LC..1603..
	62094	CFOL 10003D-L3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	1.69	0.71	1.69	1.8	LC..1603..
	57047	10003D-L4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	1.69	0.71	1.69	1.8	LC..1603..
	57048	10003D-L5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	1.69	0.71	1.69	1.8	LC..1603..
	57049	10003D-L6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	1.69	0.71	1.69	1.8	LC..1603..
	57050	10003D-L9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	0.06	1.69	0.71	1.69	1.8	LC..1603..
	57051	10003D-L19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	0.06	1.69	0.71	1.69	1.8	LC..1603..
4	62102	CFOR 10004D-R3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	2.01	0.94	2.01	1.8	LC..1604..
	57076	10004D-R4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	2.01	0.94	2.01	1.8	LC..1604..
	57077	10004D-R5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	2.01	0.94	2.01	1.8	LC..1604..
	57078	10004D-R6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	2.01	0.94	2.01	1.8	LC..1604..
	57079	10004D-R9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	0.06	2.01	0.94	2.01	1.8	LC..1604..
	57080	10004D-R19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	0.06	2.01	0.94	2.01	1.8	LC..1604..
	62095	CFOL 10004D-L3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	2.01	0.94	2.01	1.8	LC..1604..
	57052	10004D-L4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	2.01	0.94	2.01	1.8	LC..1604..
	57053	10004D-L5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	2.01	0.94	2.01	1.8	LC..1604..
	57054	10004D-L6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	2.01	0.94	2.01	1.8	LC..1604..
	57055	10004D-L9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	0.06	2.01	0.94	2.01	1.8	LC..1604..
	57056	10004D-L19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	0.06	2.01	0.94	2.01	1.8	LC..1604..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

Spare Parts, Parts included in delivery

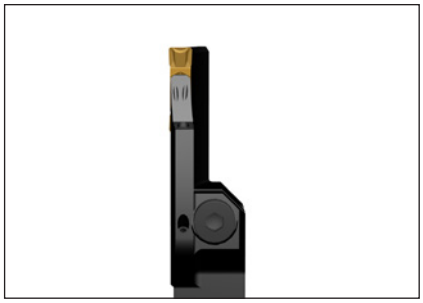
For holder	Clamp key	Clamp screw	Plug	Torque value in/lbs
CFOR/L..-03	4SMS795	TCEI0513	JET-P1/8-5MM	53
CFOR/L..-04	5SMS795	TCEI0613	JET-P1/8-5MM	71



Please check availability in current price and stock-list
For more information on Jetstream Tooling® and accessories, please see pages 86-89

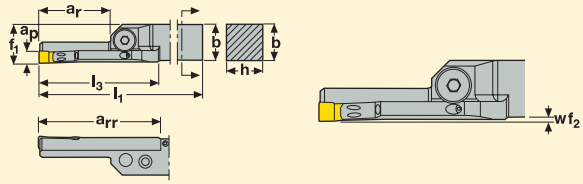
MDT AXIAL GROOVING SELECTION CALCULATOR
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http://www.secotools.com/customerzoneus

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

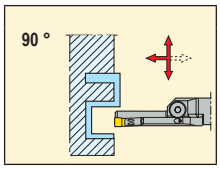


- For insert program, see pages 425-436, 440-441

CFOR...R...JET, CFOL...L...JET



Right-hand version with right-hand blade shown
$a_r = 6 \times a_p$

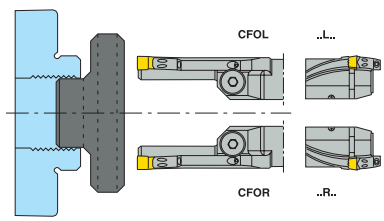


a_p	EDP No.	Part No.	Dimensions in inch										lbs	
			INPLM	INPLX	h	b	l_1	f_1	wf_2	l_3	a_r	a_{rr}		
5	62105	CFOR 10005D-R3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	2.28	1.18	2.28	1.8	LC..1605..
	57081	10005D-R4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	2.28	1.18	2.28	1.8	LC..1605..
	57082	10005D-R5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	2.28	1.18	2.28	1.8	LC..1605..
	57087	10005D-R6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	2.28	1.18	2.28	1.8	LC..1605..
	57088	10005D-R9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	0.06	2.28	1.18	2.28	1.8	LC..1605..
	57089	10005D-R19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	0.06	2.28	1.18	2.28	1.8	LC..1605..
	62098	CFOL 10005D-L3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	2.28	1.18	2.28	1.8	LC..1605..
	57057	10005D-L4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	2.28	1.18	2.28	1.8	LC..1605..
	57058	10005D-L5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	2.28	1.18	2.28	1.8	LC..1605..
	57059	10005D-L6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	2.28	1.18	2.28	1.8	LC..1605..
	57060	10005D-L9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	0.06	2.28	1.18	2.28	1.8	LC..1605..
	57061	10005D-L19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	0.06	2.28	1.18	2.28	1.8	LC..1605..
6	62107	CFOR 10006D-R3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	2.76	1.42	2.76	1.8	LC..1606..
	57090	10006D-R4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	2.76	1.42	2.76	1.8	LC..1606..
	57091	10006D-R5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	2.76	1.42	2.76	1.8	LC..1606..
	57092	10006D-R6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	2.76	1.42	2.76	1.8	LC..1606..
	57093	10006D-R9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	0.06	2.76	1.42	2.76	1.8	LC..1606..
	57094	10006D-R19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	0.06	2.76	1.42	2.76	1.8	LC..1606..
	62100	CFOL 10006D-L3.102.17-JET	2.17	3.15	1.0	1.0	6.0	1.04	0.06	2.76	1.42	2.76	1.8	LC..1606..
	57062	10006D-L4.002.75-JET	2.76	3.94	1.0	1.0	6.0	1.04	0.06	2.76	1.42	2.76	1.8	LC..1606..
	57063	10006D-L5.003.50-JET	3.54	5.12	1.0	1.0	6.0	1.04	0.06	2.76	1.42	2.76	1.8	LC..1606..
	57064	10006D-L6.704.30-JET	4.33	6.69	1.0	1.0	6.0	1.04	0.06	2.76	1.42	2.76	1.8	LC..1606..
	57065	10006D-L9.005.50-JET	5.51	9.06	1.0	1.0	6.0	1.04	0.06	2.76	1.42	2.76	1.8	LC..1606..
	57066	10006D-L19.78.00-JET	7.87	19.69	1.0	1.0	6.0	1.04	0.06	2.76	1.42	2.76	1.8	LC..1606..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

Spare Parts, Parts included in delivery

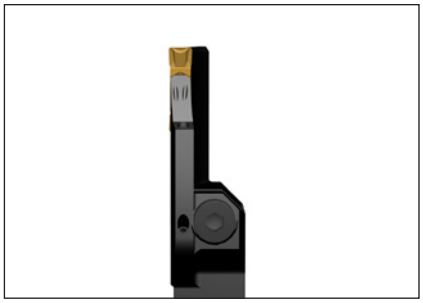
For holder	Clamp key	Clamp screw	Plug	Torque value in/lbs
CFOR/L..-05	5SMS795	TCEI0613	JET-P1/8-5MM	71
CFOR/L..-06	6SMS795	TCEI0815	JET-P1/8-5MM	88



Please check availability in current price and stock-list
For more information on Jetstream Tooling® and accessories, please see pages 86-89

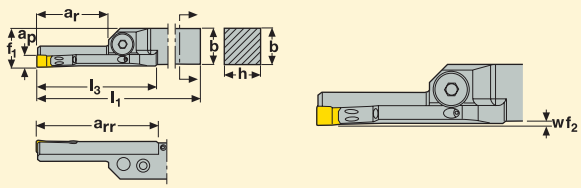
MDT AXIAL GROOVING SELECTION CALCULATOR
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http://www.secotools.com/customerzoneus

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

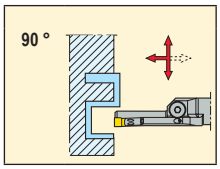


- For insert program, see pages 425, 428-432

CFOR...R...JET, CFOL...L...JET



Right-hand version with right-hand blade shown
$a_r = 6 \times a_p$

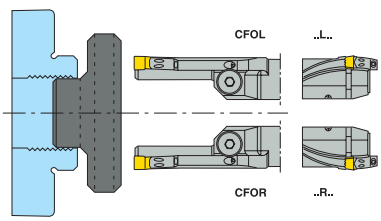


a_p	EDP No.	Part No.	Dimensions in inch										lbs	
			INPLM	INPLX	h	b	l_1	f_1	wf_2	l_3	a_r	a_{rr}		
8	57095	CFOR 12508E-R5.003.50-JET	3.54	5.12	1.25	1.25	7.0	1.04	0.06	3.27	1.89	3.27	2.4	LC..3008..
	57096	12508E-R6.704.30-JET	4.33	6.69	1.25	1.25	7.0	1.04	0.06	3.27	1.89	3.27	2.4	LC..3008..
	57097	12508E-R9.005.50-JET	5.51	9.06	1.25	1.25	7.0	1.04	0.06	3.27	1.89	3.27	2.4	LC..3008..
	57098	12508E-R19.78.00-JET	7.87	19.69	1.25	1.25	7.0	1.04	0.06	3.27	1.89	3.27	2.4	LC..3008..
	57067	CFOL 12508E-L5.003.50-JET	3.54	5.12	1.25	1.25	7.0	1.04	0.06	3.27	1.89	3.27	2.4	LC..3008..
	57068	12508E-L6.704.30-JET	4.33	6.69	1.25	1.25	7.0	1.04	0.06	3.27	1.89	3.27	2.4	LC..3008..
	57069	12508E-L9.005.50-JET	5.51	9.06	1.25	1.25	7.0	1.04	0.06	3.27	1.89	3.27	2.4	LC..3008..
	57070	12508E-L19.78.00-JET	7.87	19.69	1.25	1.25	7.0	1.04	0.06	3.27	1.89	3.27	2.4	LC..3008..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Plug	Torque value in/lbs
CFOR/L..-08	6SMS795	TCEI1020	JET-P1/8-5MM	133



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For more information on Jetstream Tooling® and accessories, please see pages 86-89

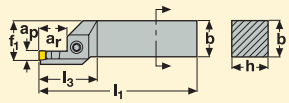
MDT AXIAL GROOVING SELECTION CALCULATOR
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Toolholders for inserts LCGF, LCGN, LCMF and LCMR

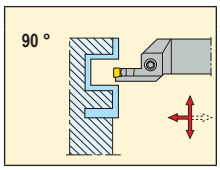


- For insert program, see pages 425-438, 440-441

CFIR/L



Right-hand version with left-hand blade shown
$a_r = 3 \times a_p$



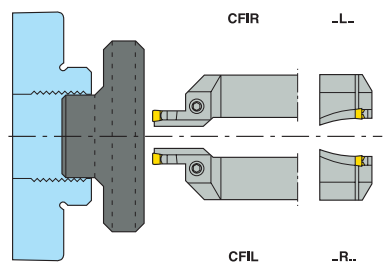
a_p	EDP No.	Part No.	Dimensions in inch								lbs	Seat size	
			INPLM	INPLX	h	b	f_1	l_1	l_3	a_r			
3	87773	CFIR10003D-L4.002.75	2.76	3.94	1.00	1.00	1.25	6.0	1.14	0.35	1.8	3	LC..1603..
	87777	CFIR10003D-L5.003.50	3.54	5.00	1.00	1.00	1.25	6.0	1.14	0.35	1.8	3	LC..1603..
	02840	CFIR10003D-L6.704.30	4.33	6.69	1.00	1.00	1.25	6.0	1.14	0.35	1.8	3	LC..1603..
	87774	CFIL10003D-R4.002.75	2.76	3.94	1.00	1.00	1.25	6.0	1.14	0.35	1.8	3	LC..1603..
	87778	CFIL10003D-R5.003.50	3.54	5.00	1.00	1.00	1.25	6.0	1.14	0.35	1.8	3	LC..1603..
	02841	CFIL10003D-R6.704.30	4.33	6.69	1.00	1.00	1.25	6.0	1.14	0.35	1.8	3	LC..1603..
4	87785	CFIR10004D-L4.002.75	2.76	3.94	1.00	1.00	1.25	6.0	1.30	0.47	1.8	4	LC..1604..
	87789	CFIR10004D-L5.003.50	3.54	5.00	1.00	1.00	1.25	6.0	1.30	0.47	1.8	4	LC..1604..
	02842	CFIR10004D-L9.005.50	5.51	8.98	1.00	1.00	1.25	6.0	1.30	0.47	1.8	4	LC..1604..
	87786	CFIL10004D-R4.002.75	2.76	3.94	1.00	1.00	1.25	6.0	1.30	0.47	1.8	4	LC..1604..
	87790	CFIL10004D-R5.003.50	3.54	5.00	1.00	1.00	1.25	6.0	1.30	0.47	1.8	4	LC..1604..
	02844	CFIL10004D-R9.005.50	5.51	8.98	1.00	1.00	1.25	6.0	1.30	0.47	1.8	4	LC..1604..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
..03	4SMS795	TCEI0513	53
..04	5SMS795	TCEI0613	71

Please check availability in current price and stock-list



MDT AXIAL GROOVING SELECTION CALCULATOR

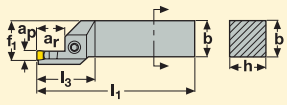
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Toolholders for inserts LCGF, LCGN, LCMF and LCMR

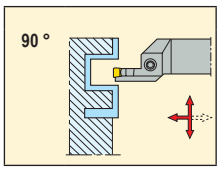


- For insert program, see pages 425-436, 440-441

CFIR/L



Right-hand version with left-hand blade shown
$a_r = 3 \times a_p$



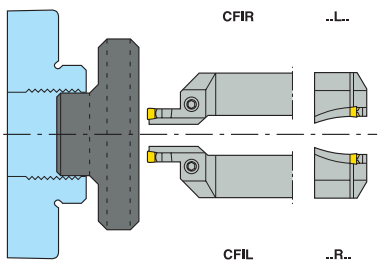
ap	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	h	b	f1	l1	l3	ar	lbs	Seat size	
5	57796	CFIR10005D-L4.002.75	2.76	3.94	1.00	1.00	1.25	6.0	1.42	0.59	1.8	5	LC..1605..
	02828	CFIR10005D-L5.003.50	3.54	5.00	1.00	1.00	1.25	6.0	1.42	0.59	1.8	5	LC..1605..
	02835	CFIR10005D-L6.704.30	4.33	6.69	1.00	1.00	1.25	6.0	1.42	0.59	1.8	5	LC..1605..
	02838	CFIR10005D-L9.005.50	5.51	8.98	1.00	1.00	1.25	6.0	1.42	0.59	1.8	5	LC..1605..
	57797	CFIL10005D-R4.002.75	2.76	3.94	1.00	1.00	1.25	6.0	1.42	0.59	1.8	5	LC..1605..
	02831	CFIL10005D-R5.003.50	3.54	5.00	1.00	1.00	1.25	6.0	1.42	0.59	1.8	5	LC..1605..
	02836	CFIL10005D-R6.704.30	4.33	6.69	1.00	1.00	1.25	6.0	1.42	0.59	1.8	5	LC..1605..
	02839	CFIL10005D-R9.005.50	5.51	8.98	1.00	1.00	1.25	6.0	1.42	0.59	1.8	5	LC..1605..
6	59845	CFIR10006D-L4.002.75	2.76	3.94	1.00	1.00	1.25	6.0	1.69	0.71	1.8	6	LC..1606..
	87795	CFIR10006D-L5.003.50	3.54	5.00	1.00	1.00	1.25	6.0	1.69	0.71	1.8	6	LC..1606..
	87799	CFIR10006D-L6.704.30	4.33	6.69	1.00	1.00	1.25	6.0	1.69	0.71	1.8	6	LC..1606..
	92656	CFIR10006D-L9.005.50	5.51	8.98	1.00	1.00	1.25	6.0	1.69	0.71	1.8	6	LC..1606..
	59846	CFIL10006D-R4.002.75	2.76	3.94	1.00	1.00	1.25	6.0	1.69	0.71	1.8	6	LC..1606..
	87796	CFIL10006D-R5.003.50	3.54	5.00	1.00	1.00	1.25	6.0	1.69	0.71	1.8	6	LC..1606..
	92653	CFIL10006D-R6.704.30	4.33	6.69	1.00	1.00	1.25	6.0	1.69	0.71	1.8	6	LC..1606..
	92657	CFIL10006D-R9.005.50	5.51	8.98	1.00	1.00	1.25	6.0	1.69	0.71	1.8	6	LC..1606..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
..05	5SMS795	TCEI0613	71
..06	6SMS795	TCEI0815	89

Please check availability in current price and stock-list



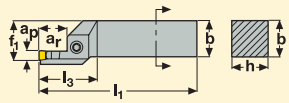
MDT AXIAL GROOVING SELECTION CALCULATOR
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http://www.secotools.com/customerzoneus

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

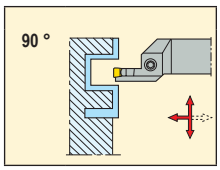


- For insert program, see pages 425, 428-432

CFIR/L



Right-hand version with left-hand blade shown
$a_r = 3 \times a_p$



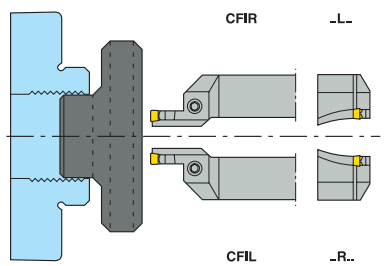
a_p	EDP No.	Part No.	Dimensions in inch								lbs	Seat size	
			INPLM	INPLX	h	b	f_1	l_1	l_3	a_r			
8	64884	CFIR10008D-L5.003.50	3.54	5.00	1.00	1.00	1.25	6.0	2.20	0.94	1.8	8	LC..3008..
	64886	CFIR10008D-L6.704.30	4.33	6.69	1.00	1.00	1.25	6.0	2.20	0.94	1.8	8	LC..3008..
	64888	CFIR10008D-L9.005.50	5.51	8.98	1.00	1.00	1.25	6.0	2.20	0.94	1.8	8	LC..3008..
	64891	CFIR10008D-L19.78.00	7.99	19.69	1.00	1.00	1.25	6.0	2.20	0.94	1.8	8	LC..3008..
	64885	CFIL10008D-R5.003.50	3.54	5.00	1.00	1.00	1.25	6.0	2.20	0.94	1.8	8	LC..3008..
	64887	CFIL100_08D-R6.704.30	4.33	6.69	1.00	1.00	1.25	6.0	2.20	0.94	1.8	8	LC..3008..
	64889	CFIL100_08D-R9.005.50	5.51	8.98	1.00	1.00	1.25	6.0	2.20	0.94	1.8	8	LC..3008..
	64892	CFIL10008D-R19.78.00	7.99	19.69	1.00	1.00	1.25	6.0	2.20	0.94	1.8	8	LC..3008..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
..08	6SMS795	TCEI1020	133

Please check availability in current price and stock-list



MDT AXIAL GROOVING SELECTION CALCULATOR

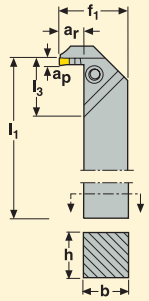
This software guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

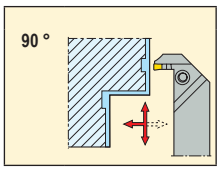


- For insert program, see pages 425-438, 440-441

CGIR/L



Right-hand version with right-hand blade shown
$a_r = 3 \times a_p$



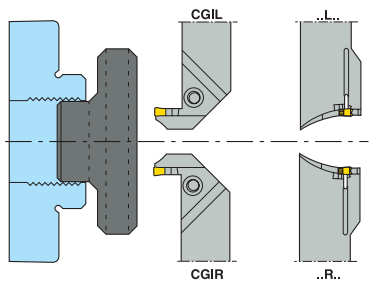
ap	EDP No.	Part No.	Dimensions in inch								lbs	Seat size	
			INPLM	INPLX	h	b	f_1	l_1	l_3	a_r			
3	96157	CGIR10003D-R4.00-2.75	2.76	3.94	1.00	1.00	1.43	6.0	1.30	0.35	1.5	3	LC..1603..
	96159	CGIR10003D-R5.00-3.50	3.54	5.00	1.00	1.00	1.43	6.0	1.30	0.35	1.5	3	LC..1603..
	96158	CGIL10003D-L4.00-2.75	2.76	3.94	1.00	1.00	1.43	6.0	1.30	0.35	1.5	3	LC..1603..
	96160	CGIL10003D-L5.00-3.50	3.54	5.00	1.00	1.00	1.43	6.0	1.30	0.35	1.5	3	LC..1603..
4	96161	CGIR10004D-R4.00-2.75	2.76	3.94	1.00	1.00	1.53	6.0	1.30	0.47	1.5	4	LC..1604..
	96163	CGIR10004D-R5.00-3.50	3.54	5.00	1.00	1.00	1.53	6.0	1.30	0.47	1.5	4	LC..1604..
	96162	CGIL10004D-L4.00-2.75	2.76	3.94	1.00	1.00	1.53	6.0	1.30	0.47	1.5	4	LC..1604..
	96164	CGIL10004D-L5.00-3.50	3.54	5.00	1.00	1.00	1.53	6.0	1.30	0.47	1.5	4	LC..1604..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
..03	4SMS795	TCEI0513	53
..04	5SMS795	TCEI0613	71

Please check availability in current price and stock-list



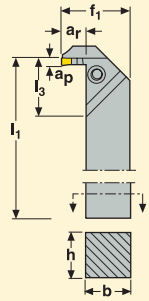
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http://www.secotools.com/customerzoneus

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

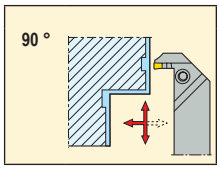


- For insert program, see pages 425-433

CGIR/L



Right-hand version with right-hand blade shown
$a_r = 3 \times a_p$

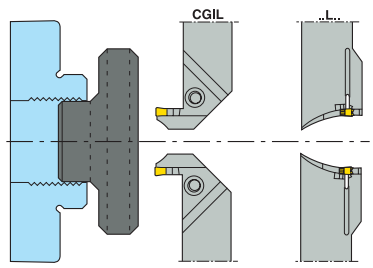


ap	EDP No.	Part No.	Dimensions in inch								lbs	Seat size	
			INPLM	INPLX	h	b	f_1	l_1	l_3	a_r			
6	96165	CGIR10006D-R5.00-3.50	3.54	5.00	1.00	1.00	1.81	6.0	1.34	0.71	1.5	6	LC1606..
	96167	CGIR10006D-R6.70-4.30	4.33	6.69	1.00	1.00	1.81	6.0	1.34	0.71	1.5	6	LC1606..
	96169	CGIR10006D-R9.00-5.50	5.51	8.98	1.00	1.00	1.81	6.0	1.34	0.71	1.5	6	LC1606..
	96166	CGIL10006D-L5.00-3.50	3.54	5.00	1.00	1.00	1.81	6.0	1.34	0.71	1.5	6	LC1606..
	96168	CGIL10006D-L6.70-4.30	4.33	6.69	1.00	1.00	1.81	6.0	1.34	0.71	1.5	6	LC1606..
	96170	CGIL10006D-L9.00-5.50	5.51	8.98	1.00	1.00	1.81	6.0	1.34	0.71	1.5	6	LC1606..
8	64875	CGIR10008D-R5.003.50	3.54	5.00	1.00	1.00	2.00	6.0	2.17	0.94	1.5	8	LC..3008..
	64877	CGIR10008D-R6.704.30	4.33	6.69	1.00	1.00	2.00	6.0	2.17	0.94	1.5	8	LC..3008..
	64879	CGIR10008D-R9.005.50	5.51	8.98	1.00	1.00	2.00	6.0	2.17	0.94	1.5	8	LC..3008..
	64882	CGIR10008D-R19.78.00	7.99	19.69	1.00	1.00	2.00	6.0	2.17	0.94	1.5	8	LC..3008..
	64881	CGIL10008D-L9.005.50	5.51	8.98	1.00	1.00	2.00	6.0	2.17	0.94	1.5	8	LC..3008..
	64883	CGIL10008D-L19.78.00	7.99	19.69	1.00	1.00	2.00	6.0	2.17	0.94	1.5	8	LC..3008..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
..06	6SMS795	TCEI0815	89
..08	6SMS795	TCEI1020	133

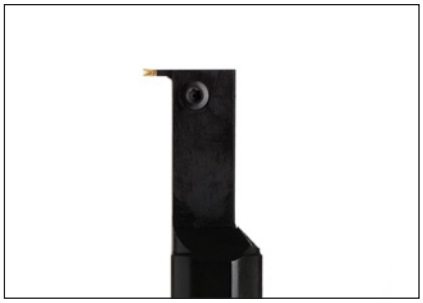


Please check availability in current price and stock-list

MDT AXIAL GROOVING SELECTION CALCULATOR
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http://www.secotools.com/customerzoneus

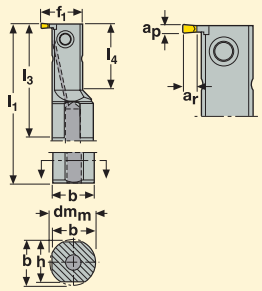
Toolholders for inserts LCMF

2 mm inserts



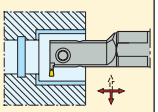
• For insert program, see page 420

CG.R/L



Right-hand version shown

90 °



ap	EDP No.	Part No.	Dimensions in inch									lbs	Seat size	
			dm_m	h	b	l_1	l_3	l_4	f_1	a_r	DCINN*			
2	65727	**A12-CGHR1902**	0.75	0.67	0.71	8.0	1.54	1.18	0.55	0.20	0.79	0.9	2	LC..1902..
	65728	**A12-CGHL1902**	0.75	0.67	0.71	8.0	1.54	1.18	0.55	0.20	0.79	0.9	2	LC..1902..
2	65729	**A16-CGJR1902**	1.00	0.92	0.96	10.0	1.73	1.57	0.75	0.28	0.99	1.8	2	LC..1902..
	65730	**A16-CGJL1902**	1.00	0.92	0.96	10.0	1.73	1.57	0.75	0.28	0.99	1.8	2	LC..1902..

*DCINN – minimum bore diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
A12-..	T15P-7	L85011-T15P	44
A16-..	T15P-7	L85011-T15P	44

Accessories, to be ordered separately

For holder	Coolant adapter
A12-..	SEAL20
A16-..	SEAL25

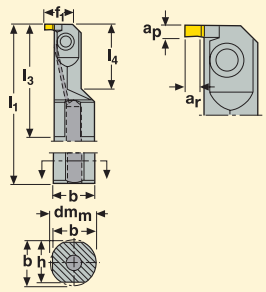
Please check availability in current price and stock-list

Toolholders for inserts LCGA, LCGF, LCGN, LCMF and LCMR



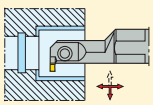
- For insert program, see pages 421-424, 439-439

CG.R/L



Right-hand version shown

90 °



ap	EDP No.	Part No.	Dimensions in inch									lbs	Seat size	
			dm_m	h	b	l_1	l_3	l_4	f_1	a_r	DCINN*			
3	61858	**A10-CGER1303**	0.62	0.59	0.61	7.0	1.62	0.98	0.40	0.12	0.63	0.7	3	LC..1303..
	61859	**A10-CGEL1303**	0.62	0.59	0.61	7.0	1.62	0.98	0.40	0.12	0.63	0.7	3	LC..1303..
3	61863	**A12-CGFR1303**	0.75	0.67	0.71	8.0	2.01	1.18	0.57	0.22	0.79	0.9	3	LC..1303..
	61865	**A12-CGFL1303**	0.75	0.67	0.71	8.0	2.01	1.18	0.57	0.22	0.79	0.9	3	LC..1303..
3	61868	**A16-CGHR1303**	1.00	0.92	0.96	10.0	2.60	1.57	0.75	0.29	0.99	1.5	3	LC..1303..
	61869	**A16-CGHL1303**	1.00	0.92	0.96	10.0	2.60	1.57	0.75	0.29	0.99	1.5	3	LC..1303..
3	61870	**A20-CGJR1303**	1.25	1.17	1.21	12.0	3.09	1.97	1.00	0.41	1.26	3.5	3	LC..1303..
	61871	**A20-CGJL1303**	1.25	1.17	1.21	12.0	3.09	1.97	1.00	0.41	1.26	3.5	3	LC..1303..
4	61866	**A12-CGFR1304**	0.75	0.67	0.71	8.0	2.01	1.18	0.57	0.22	0.79	1.1	4	LC..1304..
	61867	**A12-CGFL1304**	0.75	0.67	0.71	8.0	2.01	1.18	0.57	0.22	0.79	1.1	4	LC..1304..
4	55598	**A16-CGFR1304**	1.00	0.92	0.96	10.0	2.60	1.57	0.75	0.29	0.99	1.8	4	LC..1304..
	55604	**A16-CGFL1304**	1.00	0.92	0.96	10.0	2.60	1.57	0.75	0.29	0.99	1.8	4	LC..1304..
4	61873	**A20-CGHR1304**	1.25	1.17	1.21	12.0	3.09	1.97	1.00	0.41	1.26	3.5	4	LC..1304..
	61875	**A20-CGHL1304**	1.25	1.17	1.21	12.0	3.09	1.97	1.00	0.41	1.26	3.5	4	LC..1304..

*DCINN – minimum bore diameter, see page 364.

Spare Parts, Parts included in delivery

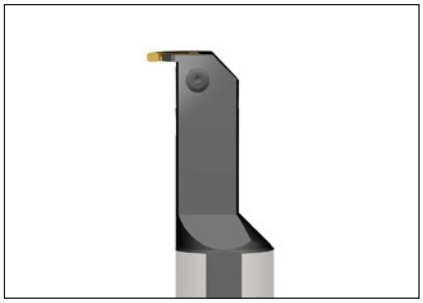
For holder	Clamp key	Clamp screw	Torque value in/lbs
			
A10-..	T15P-7	L85011-T15P	44
A12-..	T15P-7	L85011-T15P	44
A16-..	T15P-7	L85011-T15P	44
A20-..	T15P-7	L85011-T15P	44

Accessories, to be ordered separately

For holder	Coolant adapter
	
A10-..	SEAL16
A12-..	SEAL20
A16-..	SEAL25
A20-..	SEAL32

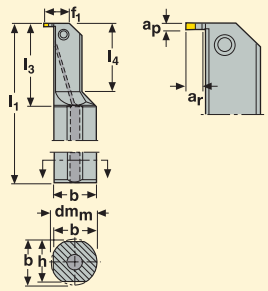
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

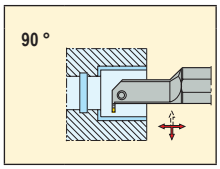


- For insert program, see pages 425-438, 440-441

CG.R/L



Right-hand version shown



ap	EDP No.	Part No.	Dimensions in inch									lbs	Seat size	
			dm_m	h	b	l_1	l_3	l_4	f_1	a_r	DCINN*			
3	59197	**A20-CGIR03**	1.25	1.17	1.21	12.0	2.36	1.97	0.93	0.35	1.26	3.5	3	LC..1603..
	59291	**A20-CGIL03**	1.25	1.17	1.21	12.0	2.36	1.97	0.93	0.35	1.26	3.5	3	LC..1603..
4	59288	**A20-CGGR04**	1.25	1.17	1.21	12.0	2.36	1.97	0.93	0.39	1.26	3.5	4	LC..1604..
	59292	**A20-CGGL04**	1.25	1.17	1.21	12.0	2.36	1.97	0.93	0.39	1.26	3.5	4	LC..1604..
5	59289	**A20-CGFR05**	1.25	1.17	1.21	12.0	2.36	1.97	0.93	0.30	1.26	3.5	5	LC..1605..
	59293	**A20-CGFL05**	1.25	1.17	1.21	12.0	2.36	1.97	0.93	0.30	1.26	3.5	5	LC..1605..
6	59290	**A20-CGFR06**	1.25	1.17	1.21	12.0	2.36	1.97	0.93	0.30	1.26	3.5	6	LC..1606..
	59294	**A20-CGFL06**	1.25	1.17	1.21	12.0	2.36	1.97	0.93	0.30	1.26	3.5	6	LC..1606..

*DCINN – minimum bore diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
..03	T15P-7	L85011-T15P	44
..04	T15P-7	L85011-T15P	44
..05	T20P-7	L86015-T20P	53
..06	T20P-7	L86015-T20P	53

Accessories, to be ordered separately

For holder	Coolant adapter
..03	SEAL32
..04	SEAL32
..05	SEAL32
..06	SEAL32

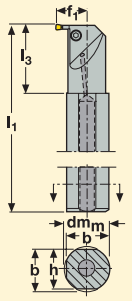
Please check availability in current price and stock-list

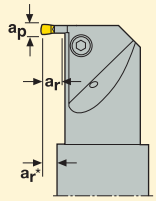
Toolholders for inserts LCGF, LCGN, LCMF and LCMR



- For insert program, see pages 425-438, 440-441

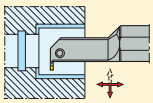
CGGR/L





Right-hand version shown
$a_r = 2 \times a_p$

90 °



a_p	EDP No.	Part No.	Dimensions in inch								lbs	Seat size	
			dm_m	h	b	l_1	l_3	f_1	a_r	DCINN*			
3	03293	**A24-CGGR03**	1.50	1.38	1.43	12.0	2.36	1.13	0.44	1.80	5.5	3	LC..1603..
	03294	**A24-CGGL03**	1.50	1.38	1.43	12.0	2.36	1.13	0.44	1.80	5.5	3	LC..1603..
4	03296	**A24-CGGR04**	1.50	1.38	1.43	12.0	2.36	1.13	0.44	1.80	5.5	4	LC..1604..
	03297	**A24-CGGL04**	1.50	1.38	1.43	12.0	2.36	1.13	0.44	1.80	5.5	4	LC..1604..
5	59841	**A24-CGGR05**	1.50	1.38	1.43	12.0	2.36	1.09	0.44	1.80	5.5	5	LC..1605..
	59842	**A24-CGGL05**	1.50	1.38	1.43	12.0	2.36	1.09	0.44	1.80	5.5	5	LC..1605..
6	59843	**A24-CGGR06**	1.50	1.38	1.43	12.0	2.36	1.13	0.51	1.80	5.5	6	LC..1606..
	59844	**A24-CGGL06**	1.50	1.38	1.43	12.0	2.36	1.13	0.51	1.80	5.5	6	LC..1606..

*DCINN – minimum bore diameter, see page 364.

Spare Parts, Parts included in delivery

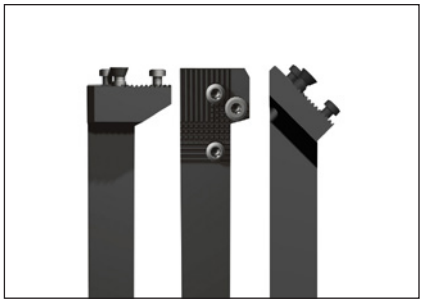
For holder	Clamp key	Clamp screw	Torque value in/lbs
..03	3SMS795	MC6S4X14	31
..04	4SMS795	MC6S5X14	44
..05	4SMS795	MC6S5X14	44
..06	5SMS795	L85011-T15P	44

Accessories, to be ordered separately

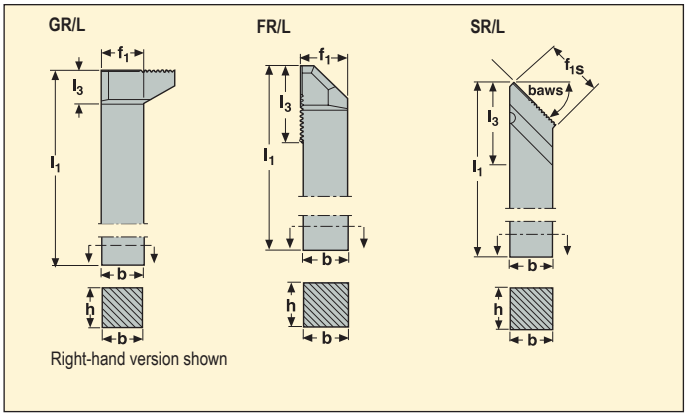
For holder	Coolant adapter
..03	SEAL40
..04	SEAL40
..05	SEAL40
..06	SEAL40

Please check availability in current price and stock-list

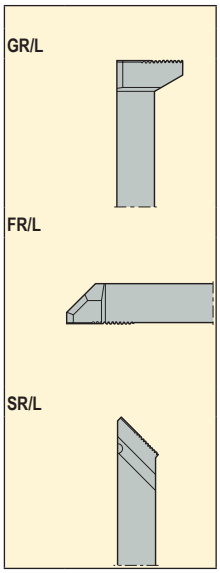
External toolholders



- For blade program, see pages 413-417
- How to assemble, see pages 361-363



Right-hand version shown



EDP No.	Part No.	Dimensions in inch						baws°	lbs
		h	b	f_1	f_{1s}	l_1	l_3		
51869	GR075B-V21	0.75	0.75	0.75	–	4.5	0.63	0	0.9
51907	GR100D-V21	1.00	1.00	1.00	–	6.0	0.63	0	2.0
51927	GR125D-V21	1.25	1.25	1.25	–	6.0	0.63	0	2.6
51879	GL075B-V21	0.75	0.75	0.75	–	4.5	0.63	0	0.9
51909	GL100D-V21	1.00	1.00	1.00	–	6.0	0.63	0	2.0
52403	GL125D-V21	1.25	1.25	1.25	–	6.0	0.63	0	2.6
52447	FR100D-V21	1.00	1.00	1.04	–	6.0	1.33	90	1.5
52454	FL100D-V21	1.00	1.00	1.04	–	6.0	1.33	90	1.5
56024	SR075B-V21	0.75	0.75	–	1.65	4.5	1.65	45	0.9
56025	SR100D-V21	1.00	1.00	–	2.00	6.0	2.00	45	1.8
56026	SR125D-V21	1.25	1.25	–	2.36	6.0	2.36	45	2.6
56010	SL075B-V21	0.75	0.75	–	1.65	4.5	1.65	45	0.9
56011	SL100D-V21	1.00	1.00	–	2.00	6.0	2.00	45	1.8
56017	SL125D-V21	1.25	1.25	–	2.36	6.0	2.36	45	2.6

Spare Parts, Parts included in delivery

For holder	Key	Mounting screw	Insert locking screw	Insert locking screw torque value in/lbs
..-V21	T20P-7L	F85015-T20P	C46017-T20P	53

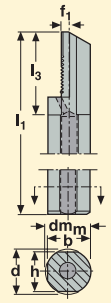
Please check availability in current price and stock-list

Internal toolholders

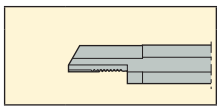


- For blade program, see pages 414-417
- How to assemble, see pages 361-362

FR/L



Right-hand version shown



EDP No.	Part No.	Dimensions in inch						lbs
		dm_m	h	b	f_1	l_1	l_3	
55205	**A16-FR-V21**	1.00	0.921	0.961	0.170	8.0	1.81	1.5
55241	**A16-FL-V21**	1.00	0.921	0.961	0.170	8.0	1.81	1.5
55242	**A20-FR-V21**	1.25	1.171	1.211	0.294	10.0	1.77	3.1
55275	**A20-FL-V21**	1.25	1.171	1.211	0.294	10.0	1.77	3.1
55356	**A24-FR-V21**	1.50	1.382	1.441	0.420	12.0	1.77	5.3
55404	**A24-FL-V21**	1.50	1.382	1.441	0.420	12.0	1.77	5.3

Spare Parts, Parts included in delivery

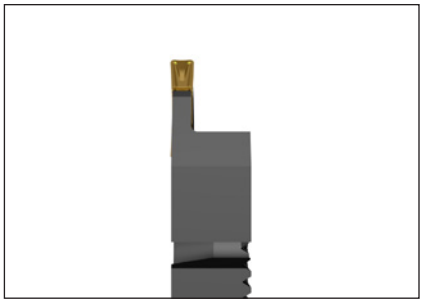
For holder	Key	Mounting screw	Insert locking screw	Insert locking screw torque value in/lbs
A16-	T20P-7L	F85015-T20P	C46017-T20P	53
A20-	T20P-7L	F85015-T20P	C46017-T20P	53
A24-	T20P-7L	F85015-T20P	C46017-T20P	53

Accessories*

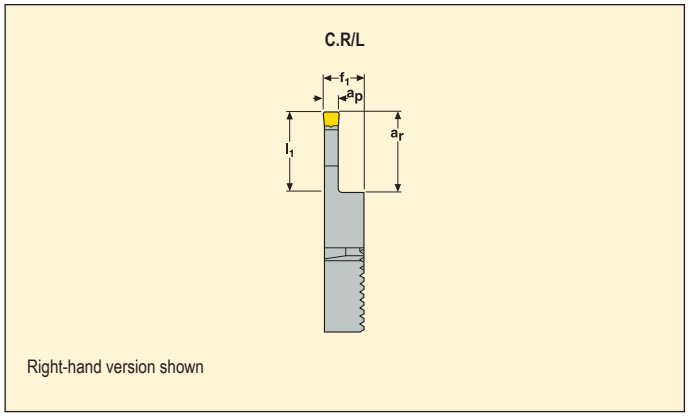
For holder	Coolant adapter
A16-	SEAL25
A20-	SEAL32
A24-	SEAL40

Please check availability in current price and stock-list
***Ordered separately**

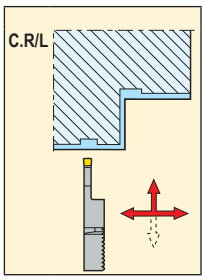
Blades for inserts LCGF, LCGN, LCMF and LCMR



- For holder program, see page 411
- For insert program, see pages 421-441



Right-hand version shown



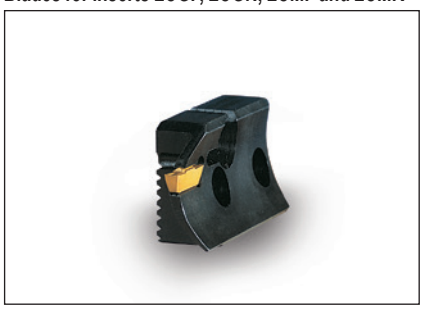
a_p	EDP No.	Part No.	Dimensions in inch l_1	f_1	a_r**	lbs	
3	59213	V21-CIR 1303	0.40	0.36	0.35	0.22	LC..1303..
	61985	V21-CIL 1303	0.40	0.36	0.35	0.22	LC..1303..
	61996	V21-CMR 1303	0.64	0.36	0.59	0.22	LC..1303..
	62114	V21-CML 1303	0.64	0.36	0.59	0.22	LC..1303..
4	62209	V21-CIR 1304	0.52	0.36	0.47	0.22	LC..1304..
	61986	V21-CIL 1304	0.52	0.36	0.47	0.22	LC..1304..
	62120	V21-CMR 1304	0.83	0.36	0.79	0.22	LC..1304..
	62130	V21-CML 1304	0.83	0.36	0.79	0.22	LC..1304..
3	62210	V21-CMR 1603	0.64	0.36	0.59	0.22	LC..1603..
	62131	V21-CML 1603	0.64	0.36	0.59	0.22	LC..1603..
4	62132	V21-CMR 1604	0.83	0.36	0.79	0.22	LC..1604..
	62136	V21-CML 1604	0.83	0.36	0.79	0.22	LC..1604..
5	61988	V21-CIR 1605	0.64	0.36	0.59	0.22	LC..1605..
	61989	V21-CIL 1605	0.64	0.36	0.59	0.22	LC..1605..
	62138	V21-CMR 1605	1.03	0.36	0.98	0.22	LC..1605..
	62140	V21-CML 1605	1.03	0.36	0.98	0.22	LC..1605..
6	61991	V21-CIR 1606	0.76	0.36	0.71	0.22	LC..1606..
	61993	V21-CIL 1606	0.76	0.36	0.71	0.22	LC..1606..
	62142	V21-CMR 1606	1.23	0.36	1.18	0.22	LC..1606..
	62145	V21-CML 1606	1.23	0.36	1.18	0.22	LC..1606..

Please check availability in current price and stock-list

**Max depth of cut for LCGF/LCMF13.. = 0.43 inch, LCGF/LCMF16.. = 0.55 inch

MDT – Modular blades, for axial machining

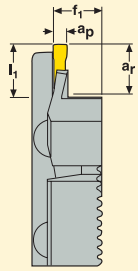
Blades for inserts LCGF, LCGN, LCMF and LCMR



- For holder program, see pages 411-412
- For insert program, see pages 421-432, 439

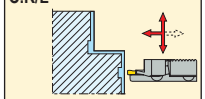
Face machining blades

C.R/L



Right-hand version with left-hand blade shown

C.R/L

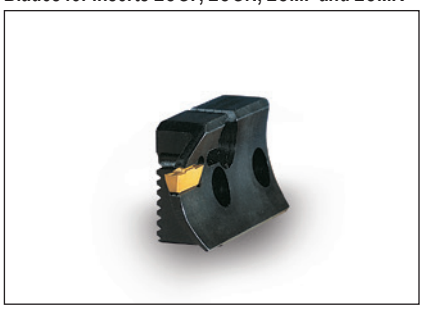


ap	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	l_1	f_1	a_r**	lbs	
3	89095	V21-CJR 1303L1.18-.670	0.67	1.18	0.46	0.36	0.41	0.22	LC..1303..
	89099	1303L1.54-.950	0.94	1.54	0.46	0.36	0.41	0.22	LC..1303..
	89094	V21-CJL 1303R1.18-.670	0.67	1.18	0.46	0.36	0.41	0.22	LC..1303..
	89098	1303R1.54-.950	0.94	1.54	0.46	0.36	0.41	0.22	LC..1303..
	89103	V21-CKR 1303L1.97-1.30	1.30	1.97	0.52	0.36	0.47	0.22	LC..1303..
	89107	1303L2.36-1.70	1.69	2.36	0.52	0.36	0.47	0.22	LC..1303..
	89111	1303L3.00-2.09	2.09	2.99	0.52	0.36	0.47	0.22	LC..1303..
	89102	V21-CKL 1303R1.97-1.30	1.30	1.97	0.52	0.36	0.47	0.22	LC..1303..
	89106	1303R2.36-1.70	1.69	2.36	0.52	0.36	0.47	0.22	LC..1303..
	89110	1303R3.00-2.09	2.09	2.99	0.52	0.36	0.47	0.22	LC..1303..
	61938	V21-COR 1303L1.18-.670	0.67	1.18	0.76	0.36	0.71	0.22	LC..1303..
	61939	1303L1.53-.940	0.94	1.54	0.76	0.36	0.71	0.22	LC..1303..
	61940	1303L1.97-1.30	1.30	1.97	0.76	0.36	0.71	0.22	LC..1303..
	61941	1303L2.36-1.69	1.69	2.36	0.76	0.36	0.71	0.22	LC..1303..
	61942	1303L3.00-2.09	2.09	2.99	0.76	0.36	0.71	0.22	LC..1303..
	61973	1303L3.94-2.75	2.76	3.94	0.76	0.36	0.71	0.22	LC..1303..
	61975	1303L5.35-3.70	3.70	5.35	0.76	0.36	0.71	0.22	LC..1303..
	61977	1303L7.87-5.12	5.12	7.87	0.76	0.36	0.71	0.22	LC..1303..
	61933	V21-COL 1303R1.18-.670	0.67	1.18	0.76	0.36	0.71	0.22	LC..1303..
	61934	1303R1.53-0.94	0.94	1.54	0.76	0.36	0.71	0.22	LC..1303..
	61935	1303R1.97-1.30	1.30	1.97	0.76	0.36	0.71	0.22	LC..1303..
	61936	1303R2.36-1.69	1.69	2.36	0.76	0.36	0.71	0.22	LC..1303..
	61937	1303R3.00-2.09	2.09	2.99	0.76	0.36	0.71	0.22	LC..1303..
	61969	1303R3.94-2.75	2.76	3.94	0.76	0.36	0.71	0.22	LC..1303..
	61971	1303R5.35-3.70	3.70	5.35	0.76	0.36	0.71	0.22	LC..1303..
	61972	1303R7.87-5.12	5.12	7.87	0.76	0.36	0.71	0.22	LC..1303..

Please check availability in current price and stock-list

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.
**Max depth of cut for LCGF/LCMF13.. = 0.43 inch

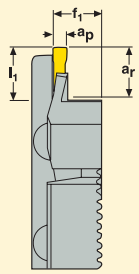
Blades for inserts LCGF, LCGN, LCMF and LCMR



- For holder program, see pages 411-412
- For insert program, see pages 421-432, 439

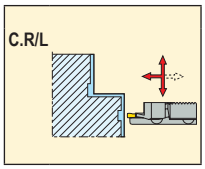
Face machining blades

C.R/L



Right-hand version with left-hand blade shown

C.R/L



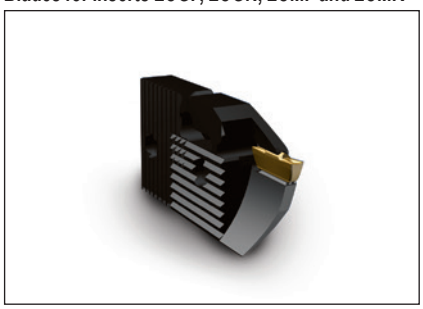
ap	EDP No.	Part No.	Dimensions in inch					lbs	
			INPLM	INPLX	l_1	f_1	a_r**		
4	89115	V21-CHR 1304L1.18-.670	0.67	1.18	0.44	0.36	0.39	0.22	LC..1304..
	89119	1304L1.34-.826	0.83	1.34	0.44	0.36	0.39	0.22	LC..1304..
	89114	V21-CHL 1304R1.18-.670	0.67	1.18	0.44	0.36	0.39	0.22	LC..1304..
	89118	1304R1.34-.826	0.83	1.34	0.44	0.36	0.39	0.22	LC..1304..
	89123	V21-CIR 1304L1.57-1.02	1.02	1.57	0.52	0.36	0.47	0.22	LC..1304..
	89127	1304L1.97-1.26	1.26	1.97	0.52	0.36	0.47	0.22	LC..1304..
	89131	1304L2.36-1.65	1.65	2.36	0.52	0.36	0.47	0.22	LC..1304..
	89135	1304L2.96-2.05	2.05	2.95	0.52	0.36	0.47	0.22	LC..1304..
	89139	1304L3.94-2.64	2.64	3.94	0.52	0.36	0.47	0.22	LC..1304..
	89122	V21-CIL 1304R1.57-1.02	1.02	1.57	0.52	0.36	0.47	0.22	LC..1304..
	89126	1304R1.97-1.26	1.26	1.97	0.52	0.36	0.47	0.22	LC..1304..
	89130	1304R2.36-1.65	1.65	2.36	0.52	0.36	0.47	0.22	LC..1304..
	89134	1304R2.96-2.05	2.05	2.95	0.52	0.36	0.47	0.22	LC..1304..
	89138	1304R3.94-2.64	2.64	3.94	0.52	0.36	0.47	0.22	LC..1304..
	61914	V21-CMR 1304L1.18-.670	0.67	1.18	0.83	0.36	0.79	0.22	LC..1304..
	61915	1304L1.34-.826	0.83	1.34	0.83	0.36	0.79	0.22	LC..1304..
	62201	1304L1.57-1.02	1.02	1.57	0.83	0.36	0.79	0.22	LC..1304..
	61916	1304L1.97-1.26	1.26	1.97	0.83	0.36	0.79	0.22	LC..1304..
	62202	1304L2.36-1.65	1.65	2.36	0.83	0.36	0.79	0.22	LC..1304..
	61917	1304L2.96-2.05	2.05	2.95	0.83	0.36	0.79	0.22	LC..1304..
	61918	1304L3.94-2.64	2.64	3.94	0.83	0.36	0.79	0.22	LC..1304..
	61953	1304L5.31-3.62	3.62	5.31	0.83	0.36	0.79	0.22	LC..1304..
	61955	1304L7.87-5.00	5.00	7.87	0.83	0.36	0.79	0.22	LC..1304..
	61908	V21-CML 1304R1.18-.670	0.67	1.18	0.83	0.36	0.79	0.22	LC..1304..
	62200	1304R1.34-.826	0.83	1.34	0.83	0.36	0.79	0.22	LC..1304..
	61909	1304R1.57-1.02	1.02	1.57	0.83	0.36	0.79	0.22	LC..1304..
	61910	1304R1.97-1.26	1.26	1.97	0.83	0.36	0.79	0.22	LC..1304..
	61911	1304R2.36-1.65	1.65	2.36	0.83	0.36	0.79	0.22	LC..1304..
	61912	1304R2.96-2.05	2.05	2.95	0.83	0.36	0.79	0.22	LC..1304..
	61913	1304R3.94-2.64	2.64	3.94	0.83	0.36	0.79	0.22	LC..1304..
	61949	1304R5.31-3.62	3.62	5.31	0.83	0.36	0.79	0.22	LC..1304..
	61951	1304R7.87-5.00	5.00	7.87	0.83	0.36	0.79	0.22	LC..1304..

Please check availability in current price and stock-list

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.
**Max depth of cut for LCGF/LCMF13.. = 0.43 inch

MDT – Modular blades, for axial machining

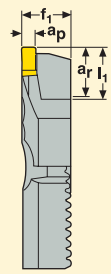
Blades for inserts LCGF, LCGN, LCMF and LCMR



- For holder program, see pages 411-412
- For insert program, see pages 421-424, 439

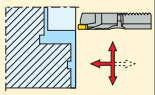
Face machining blades

C.R/L



Right-hand version with right-hand blade shown

C.R/L

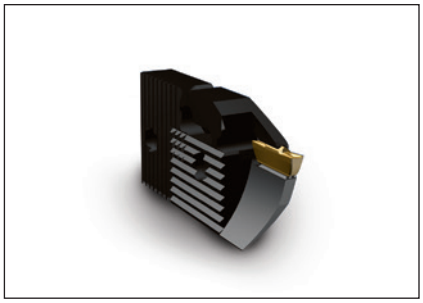


ap	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	l_1	f_1	a_r**	lbs	
3	89093	V21-CJR 1303R1.18-.670	0.67	1.18	0.46	0.36	0.41	0.22	LC..1303..
	89097	1303R1.54-.950	0.94	1.54	0.46	0.36	0.41	0.22	LC..1303..
	89096	V21-CJL 1303L1.18-.670	0.67	1.18	0.46	0.36	0.41	0.22	LC..1303..
	89100	1303L1.54-.950	0.94	1.54	0.46	0.36	0.41	0.22	LC..1303..
	89101	V21-CKR 1303R1.97-1.30	1.30	1.97	0.52	0.36	0.47	0.22	LC..1303..
	89105	1303R2.36-1.70	1.69	2.36	0.52	0.36	0.47	0.22	LC..1303..
	89109	1303R3.00-2.09	2.09	2.99	0.52	0.36	0.47	0.22	LC..1303..
	89104	V21-CKL 1303L1.97-1.30	1.30	1.97	0.52	0.36	0.47	0.22	LC..1303..
	89108	1303L2.36-1.70	1.69	2.36	0.52	0.36	0.47	0.22	LC..1303..
	89112	1303L3.00-2.09	2.09	2.99	0.52	0.36	0.47	0.22	LC..1303..
	62208	V21-COR 1303R1.18-.670	0.67	1.18	0.76	0.36	0.71	0.22	LC..1303..
	61943	1303R1.53-.940	0.94	1.54	0.76	0.36	0.71	0.22	LC..1303..
	61944	1303R1.97-1.30	1.30	1.97	0.76	0.36	0.71	0.22	LC..1303..
	61945	1303R2.36-1.69	1.69	2.36	0.76	0.36	0.71	0.22	LC..1303..
	61946	1303R3.00-2.09	2.09	2.99	0.76	0.36	0.71	0.22	LC..1303..
	61979	1303R3.94-2.75	2.76	3.94	0.76	0.36	0.71	0.22	LC..1303..
	61981	1303R5.35-3.70	3.70	5.35	0.76	0.36	0.71	0.22	LC..1303..
	61984	1303R7.87-5.12	5.12	7.87	0.76	0.36	0.71	0.22	LC..1303..
	61926	V21-COL 1303L1.18-.670	0.67	1.18	0.76	0.36	0.71	0.22	LC..1303..
	61928	1303L1.53-.940	0.94	1.54	0.76	0.36	0.71	0.22	LC..1303..
	62206	1303L1.97-1.30	1.30	1.97	0.76	0.36	0.71	0.22	LC..1303..
	61930	1303L2.36-1.69	1.69	2.36	0.76	0.36	0.71	0.22	LC..1303..
	61932	1303L3.00-2.09	2.09	2.99	0.76	0.36	0.71	0.22	LC..1303..
	61959	1303L3.94-2.75	2.76	3.94	0.76	0.36	0.71	0.22	LC..1303..
	61961	1303L5.35-3.70	3.70	5.35	0.76	0.36	0.71	0.22	LC..1303..
	61967	1303L7.87-5.12	5.12	7.87	0.76	0.36	0.71	0.22	LC..1303..

Please check availability in current price and stock-list

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.
**Max depth of cut for LCGF/LCMF13.. = 0.43 inch

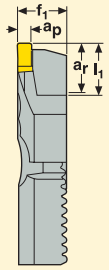
Blades for inserts LCGF, LCGN, LCMF and LCMR



- For holder program, see pages 411-412
- For insert program, see pages 421-424, 439

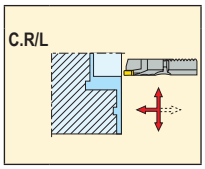
Face machining blades

C.R/L



Right-hand version with right-hand blade shown

C.R/L



ap	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	l_1	f_1	a_r**	lbs	
4	89113	V21-CHR 1304R1.18-.670	0.67	1.18	0.44	0.36	0.39	0.22	LC..1304..
	89117	1304R1.34-.826	0.83	1.34	0.44	0.36	0.39	0.22	LC..1304..
	89116	V21-CHL 1304L1.18-.670	0.67	1.18	0.44	0.36	0.39	0.22	LC..1304..
	89120	1304L1.34-.826	0.83	1.34	0.44	0.36	0.39	0.22	LC..1304..
	89121	V21-CIR 1304R1.57-1.02	1.02	1.57	0.52	0.36	0.47	0.22	LC..1304..
	89125	1304R1.97-1.26	1.26	1.97	0.52	0.36	0.47	0.22	LC..1304..
	89129	1304R2.36-1.65	1.65	2.36	0.52	0.36	0.47	0.22	LC..1304..
	89133	1304R2.96-2.05	2.05	2.95	0.52	0.36	0.47	0.22	LC..1304..
	89137	1304R3.94-2.64	2.64	3.94	0.52	0.36	0.47	0.22	LC..1304..
	89124	V21-CIL 1304L1.57-1.02	1.02	1.57	0.52	0.36	0.47	0.22	LC..1304..
	89128	1304L1.97-1.26	1.26	1.97	0.52	0.36	0.47	0.22	LC..1304..
	89132	1304L2.36-1.65	1.65	2.36	0.52	0.36	0.47	0.22	LC..1304..
	89136	1304L2.96-2.05	2.05	2.95	0.52	0.36	0.47	0.22	LC..1304..
	89140	1304L3.94-2.64	2.64	3.94	0.52	0.36	0.47	0.22	LC..1304..
	61919	V21-CMR 1304R1.18-.670	0.67	1.18	0.83	0.36	0.79	0.22	LC..1304..
	61920	1304R1.34-.826	0.83	1.34	0.83	0.36	0.79	0.22	LC..1304..
	62203	1304R1.57-1.02	1.02	1.57	0.83	0.36	0.79	0.22	LC..1304..
	61921	1304R1.97-1.26	1.26	1.97	0.83	0.36	0.79	0.22	LC..1304..
	61922	1304R2.36-1.65	1.65	2.36	0.83	0.36	0.79	0.22	LC..1304..
	61923	1304R2.96-2.05	2.05	2.95	0.83	0.36	0.79	0.22	LC..1304..
	61924	1304R3.94-2.64	2.64	3.94	0.83	0.36	0.79	0.22	LC..1304..
	61957	1304R5.31-3.62	3.62	5.31	0.83	0.36	0.79	0.22	LC..1304..
	61958	1304R7.87-5.00	5.00	7.87	0.83	0.36	0.79	0.22	LC..1304..
	59267	V21-CML 1304L1.18-.670	0.67	1.18	0.83	0.36	0.79	0.22	LC..1304..
	59210	1304L1.34-.826	0.83	1.34	0.83	0.36	0.79	0.22	LC..1304..
	62198	1304L1.57-1.02	1.02	1.57	0.83	0.36	0.79	0.22	LC..1304..
	61905	1304L1.97-1.26	1.26	1.97	0.83	0.36	0.79	0.22	LC..1304..
	62199	1304L2.36-1.65	1.65	2.36	0.83	0.36	0.79	0.22	LC..1304..
	61906	1304L2.96-2.05	2.05	2.95	0.83	0.36	0.79	0.22	LC..1304..
	61907	1304L3.94-2.64	2.64	3.94	0.83	0.36	0.79	0.22	LC..1304..
	61947	1304L5.31-3.62	3.62	5.31	0.83	0.36	0.79	0.22	LC..1304..
	61948	1304L7.87-5.00	5.00	7.87	0.83	0.36	0.79	0.22	LC..1304..

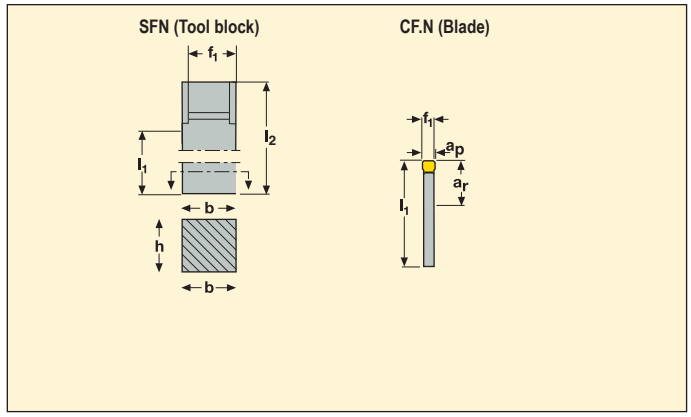
Please check availability in current price and stock-list

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.
**Max depth of cut for LCGF/LCMF13.. = 0.43 inch

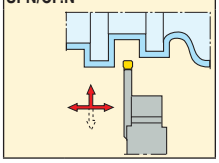
Toolholder and blades for inserts LCGN, LCMF and LCMR



• For insert program, see pages 425-430, 433-438, 440-441



SFN/CF.N



ap	EDP No.	Part No.	Dimensions in inch						lbs	Seat size	
			h	b	l_1	l_2	f_1	a_r*			
	61788	**SFN100N**	1.00	1.00	4.70	6.00	0.854	–	1.98	Tool block	–
3	36564	**CFLN-03**	–	–	1.83	–	0.102	0.512	0.22	3 mm	LC..1603..
4	27198	**CFKN-04**	–	–	1.91	–	0.142	0.591	0.22	4 mm	LC..1604..
	27200	**CFNN-04**	–	–	2.17	–	0.142	0.866	0.22	4 mm	LC..1604..
5	27201	**CFIN-05**	–	–	1.91	–	0.181	0.591	0.22	5 mm	LC..1605..
6	27203	**CFHN-06**	–	–	1.91	–	0.220	0.591	0.22	6 mm	LC..1606..
	27204	**CFJN-06**	–	–	2.17	–	0.220	0.866	0.22	6 mm	LC..1606..

*Max depth of cut for LCMF16.. = 0.551 inch

Spare Parts, Parts included in delivery

For holder	Insert locking screw	Mounting screw	Key
SFN100N	C46017-T20P	C45013-T20P	T20P-7

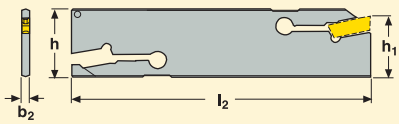
Please check availability in current price and stock-list

Blades for inserts LCGN, LCMF and LCMR

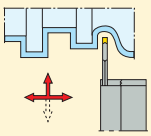


• For insert program, see pages 425-430, 433-438, 440-441

CF.N

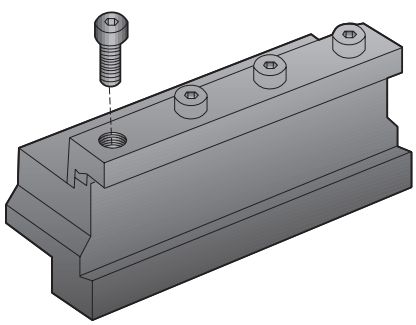


CF.N
90 °



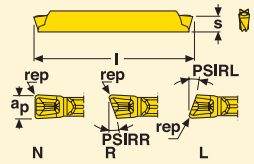
ap	EDP No.	Part No.	Dimensions in inch b_2	l_2	h_1	h	D_m	lbs	Seat size	
3	53878	CFMN26-03	0.094	4.33	0.843	1.024	0.984	0.22	3	LC..1603..
	53889	CFON32-03	0.094	5.91	0.976	1.260	1.339	0.22	3	LC..1603..
4	53883	CFMN32-04	0.118	5.91	0.976	1.260	1.339	0.22	4	LC..1604..
5	53884	CFMN32-05	0.157	5.91	0.976	1.260	1.890	0.44	5	LC..1605..
6	53885	CFKN32-06	0.197	5.91	0.976	1.260	1.890	0.44	6	LC..1606..

D_m max for LCMF16.. = 1.102 inch



To be used in standard 150.10 holder
CF..26... to be used in 150.10-...-20
CF..32... to be used in 150.10-...-25

LCMF



Tolerances:
a_p = ±0.002
l = ±0.003
s = ±0.002

l = Distance cutting edge-rear support

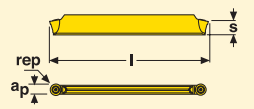
Size	Dimensions in inch			
	a_p	l	s	rep
1902	0.079	0.728	0.112	0.008
2802	0.079	1.102	0.112	0.008

LCMF-FT



Inserts	Part No.	PSIRR°	PSIRL°	Grades (EDP No.) Coated CP500	CP600	TGH1050
LCMF-FT						
	LCMF 190202-0200-FT	–	–	65807	65791	
	190202-0200-FTR6	6	–		65797	
	190202-0200-FTL6	–	6		65793	
	LCMF 280202-0200-FT	–	–	65815	65800	78310
	280202-0200-FTR6	6	–		65802	
	280202-0200-FTL6	–	6		65801	

LCMF



Tolerances:
a_p = ±0.002
l = ±0.003
s = ±0.002

l = Distance cutting edge-rear support

Size	Dimensions in inch			
	a_p	l	s	rep
1902	0.079	0.728	0.112	0.039
2802	0.079	1.102	0.112	0.039

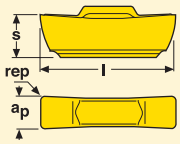
LCMF-MP



Inserts	Part No.	Grades (EDP No.) Coated CP500	TGK1500
LCMF-MP			
	LCMF 1902M0-0200-MP	65814	77573
	LCMF 2802M0-0200-MP	65816	77574

Please check availability in current price and stock-list.

LCMF and LCMR



Tolerances:
a_p = ±0.002
l = ±0.003
s = ±0.002

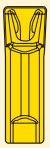
l = Distance cutting edge-rear support

Size	Dimensions in inch			
	a_p	l	s	rep
1303	0.118	0.486	0.157	0.008-0.016
1304	0.157	0.486	0.157	0.008-0.016

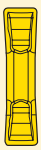
LCMF-FT



LCMR-FT



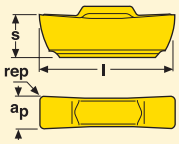
LCMF-MC



Inserts	Part No.	Grades (EDP No.) Coated CP500	TGK1500	TGP25
LCMF-FT				
	LCMF 130302-0300-FT	91031		
	130304-0300-FT	16705	77656	39923
	LCMF 130402-0400-FT	91035		
	130404-0400-FT	16709	77666	39917
LCMR-FT				
	LCMR 130302-0300-FT	57353		
	130304-0300-FT	16724		
	LCMR 130404-0400-FT	16725		
LCMF-MC				
	LCMF 130304-0300-MC	00793		40735
	LCMF 130404-0400-MC	00800		40733

Please check availability in current price and stock-list.

LCGF



Tolerances:
a_p = ±0.0001
l = ±0.0001
s = ±0.002

l = Distance cutting edge-rear support

Size	Dimensions in inch			
	a_p	l	s	rep
1303	0.118	0.486	0.154	0.008
1304	0.157	0.486	0.154	0.008

LCGF-GG



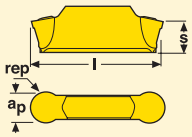
LCGF-GS



Inserts	Part No.	Grades (EDP No.)	
		Coated	Uncoated
		CP500	883
LCGF-GG			
	LCGF 130302-0300-GG	45400	
	LCGF 130402-0400-GG	45051	
LCGF-GS			
	LCGF 130302-0300-GS		52706
	LCGF 130402-0400-GS		52707

Please check availability in current price and stock-list.

LCMF and LCMR



Tolerances:
a_p = ±0.002
l = ±0.003
s = ±0.002

l = Distance cutting edge-rear support

Size	Dimensions in inch			
	a_p	l	s	rep
1303	0.118	0.486	0.157	0.059-0.079
1304	0.157	0.486	0.157	0.059-0.079

LCMF-MP



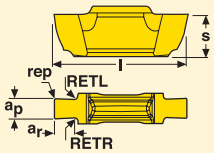
LCMR-MP



Inserts	Part No.	Grades (EDP No.) Coated CP500	TGK1500	TGP25
LCMF-MP				
	LCMF 1303M0-0300-MP	04327	77658	40736
	LCMF 1304M0-0400-MP	04329	77668	40722
LCMR-MP				
	LCMR 1303M0-0300-MP	04332		
	LCMR 1304M0-0400-MP	04333		

Please check availability in current price and stock-list.

LCGA



Tolerances:
a_p = ±0.0001
l = ±0.0001
s = ±0.002

l = Distance cutting edge-rear support

Size	Dimensions in inch						
	a_p	l	s	RETR	RETL	rep	a_r
-0115	0.045	0.486	0.157	0.012	0.012	–	0.055
-0135	0.053	0.486	0.157	0.012	0.012	–	0.063
-0165	0.065	0.486	0.157	0.012	0.012	0.004	0.075
-0190	0.075	0.486	0.157	0.012	0.012	0.004	0.085
-0215	0.085	0.486	0.157	0.012	0.012	0.006	0.094
-0265	0.104	0.486	0.157	0.008	0.008	0.008	0.114
01-0300	0.118	0.486	0.157	–	–	0.004	–
02-0300	0.118	0.486	0.157	–	–	0.008	–
-0400	0.157	0.486	0.157	–	–	0.008	–

LCGA-FG



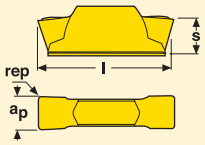
Inserts	For circlip	Part No.	Note	Standard	Grades (EDP No.) Coated CP500
LCGA-FG					
	1.00	**LCGA 130300-0115-FG**	*	**	34019
	1.20	**130300-0135-FG**	*	**	34025
	1.50	**130301-0165-FG**	*	**	34026
	1.75	**130301-0190-FG**	*	**	34027
	2.00	**130301-0215-FG**	*	**	34028
	2.50	**130302-0265-FG**		**	34029
	–	**130301-0300-FG**		**	06806
	–	**130302-0300-FG**		**	38467
	–	**LCGA 130402-0400-FG**		**	38468

Standard
** =
DIN 471
DIN 472
SMS 1581
SMS 1582

Please check availability in current price and stock-list.

*Toolholders have to be modified

LCMF



Tolerances:
a_p = ±0.002
l = ±0.003
s = ±0.002
s = ±0.003

Size:
16
30

l = Distance cutting edge-rear support

Size	Inch version	Dimensions in inch a_p	l	s	rep
1603		0.118	0.626	0.177	0.008-0.016
1604		0.157	0.626	0.177	0.008-0.031
1605		0.197	0.626	0.177	0.016-0.031
1605		0.118	0.626	0.177	0.016-0.031
1606		0.236	0.626	0.177	0.016-0.039
3008-08		0.315	1.144	0.219	0.016-0.047
3008-10		0.394	1.150	0.219	0.031-0.047
1603	■	0.125	0.626	0.177	0.008
1605	■	0.187	0.626	0.177	0.020
1606	■	0.250	0.626	0.177	0.020

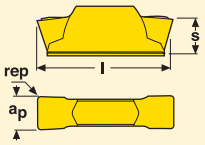
LCMF-FT



Inserts	Part No.	Grades (EDP No.) Coated CP200	CP500	TGH1050	TGK1500	TGP25	Uncoated 883	890
LCMF-FT mm-version								
	LCMF 160302-0300-FT	33224	91088			39920		
	160304-0300-FT		16829	78276		39913		
	LCMF 160402-0400-FT		16478			40700		
	160404-0400-FT	33228	16728	78298		39906		
	160408-0400-FT		91089			39922		
	LCMF 160504-0500-FT	33229	96701	78299		40698		
	160508-0500-FT		91249			40706		
	LCMF 160604-0600-FT		91351			40705		
	160608-0600-FT	33234	16818			40702		34660
	160610-0600-FT		16827			40731		
	LCMF 300804-0800-FT		16664			40721	51355	
	300808-0800-FT		16138		77561	40697	05632	
	300808-1000-FT		88034			40739		
	300812-0800-FT		16342		77686	39925	06923	
	300812-1000-FT		88037				65666	
LCMF-FT inch-version								
	LCMF 160302-0318-FT	32944	17905					
	LCMF 160505-0476-FT	33230	18338					
	LCMF 160605-0635-FT	33233	71644					

Please check availability in current price and stock-list.

LCMF



Tolerances:
a_p = ±0.002
l = ±0.003
s = ±0.002

l = Distance cutting edge-rear support

Size	Inch version	Dimensions in inch a_p	l	s	rep
1603		0.118	0.626	0.177	0.008-0.016
1604		0.157	0.626	0.177	0.016-0.031
1605		0.197	0.626	0.177	0.016-0.031
1606		0.236	0.626	0.177	0.016-0.039
1603	■	0.125	0.626	0.177	0.008
1605	■	0.187	0.626	0.177	0.020
1606	■	0.250	0.626	0.177	0.020

LCMF-MT



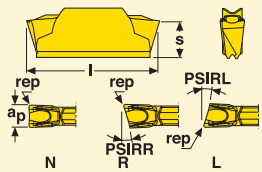
LCMF-MG



Inserts	Part No.	Grades (EDP No.) Coated CP500	Coated TGK1500	Coated TGP25	Uncoated 883
LCMF-MT mm-version					
	LCMF 160302-0300-MT	91355		39924	
	160304-0300-MT	16834	77654	39914	35181
	LCMF 160404-0400-MT	16729	77617	39907	
	160408-0400-MT	91241	77652	39926	35182
	LCMF 160504-0500-MT	77897	77633	39916	
	160508-0500-MT	91263	77676	39921	45720
	LCMF 160604-0600-MT	72762	77677	40699	
	160608-0600-MT	16822	77636	39918	35186
	160610-0600-MT	71648		40703	
LCMF-MT inch-version					
	LCMF 160302-A125-MT	18263			
	LCMF 160505-A187-MT	18388			
	LCMF 160605-A250-MT	71645			61816
LCMF-MG					
	LCMF 160304-0300-MG	77896		40713	
	LCMF 160404-0400-MG	72764		40708	
	LCMF 160504-0500-MG	86117		40710	
	LCMF 160608-0600-MG	86118		40712	

Please check availability in current price and stock-list.

LCMF and LCMR



Tolerances:
a_p = ±0.002
l = ±0.003
s = ±0.002

l = Distance cutting edge-rear support

Size	Dimensions in inch a_p	l	s	rep
1603	0.118	0.626	0.177	0.008-0.016
1604	0.157	0.626	0.177	0.008-0.016
1605	0.197	0.626	0.177	0.016
1606	0.236	0.626	0.177	0.016-0.031

LCMF-MC



LCMR-MC

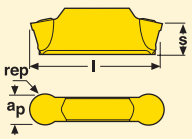


Inserts	Part No.	PSIRR°	PSIRL°	Note	Grades (EDP No.) Coated CP500	CP600	TGP25
LCMF-MC							
	LCMF 160302-0300-MC	–	–		39704	52350	
	160302-0300-MCR6	6	–		35694	88698	
	160302-0300-MCL6	–	6		39702	88697	
	160302-0300-MCR15	15	–	*		88700	
	160302-0300-MCL15	–	15	*		88699	
	160304-0300-MC	–	–		29832	52361	40728
	LCMF 160402-0400-MC	–	–		39705	88705	
	160402-0400-MCR6	6	–	*	39703	88702	
	160402-0400-MCL6	–	6	*		88701	
	160402-0400-MCR15	15	–	*		88704	
	160402-0400-MCL15	–	15	*		88703	
	160404-0400-MC	–	–		29834	93008	40732
	LCMF 160504-0500-MC	–	–		29836	89030	40730
	LCMF 160604-0600-MC	–	–		29838	89031	40723
	160608-0600-MC	–	–		04325		40738
LCMR-MC							
	LCMR 160302-0300-MC	–	–			52391	
	LCMR 160404-0400-MC	–	–			52394	
	LCMR 160504-0500-MC	–	–			89028	
	LCMR 160604-0600-MC	–	–			89029	

Please check availability in current price and stock-list.

*Toolholders have to be modified

LCMF



Tolerances:
a_p = ±0.002
l = ±0.003
s = ±0.002 16
s = ±0.003 30

l = Distance cutting edge-rear support

Size	Inch version	Dimensions in inch a_p	l	s	rep
1603		0.118	0.669	0.169	0.059
1604		0.157	0.673	0.167	0.079
1605		0.197	0.699	0.164	0.098
1606		0.236	0.708	0.162	0.118
1606		0.157	0.708	0.162	0.118
3008..-08		0.315	1.183	0.213	0.157
3008..-10		0.315	1.183	0.216	0.197
1603	■	0.125	0.655	0.172	0.063
1605	■	0.187	0.696	0.164	0.094
1606	■	0.250	0.693	0.165	0.125

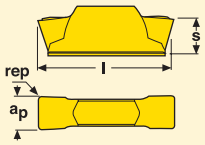
LCMF-MP



Inserts	Part No.	Grades (EDP No.) Coated CP200	CP500	TGH1050	TGK1500	TGP25	Uncoated 883	890
LCMF-MP mm-version	LCMF 1603M0-0300-MP	33135	16837	78304	77620	39915	37252	29882
	LCMF 1604M0-0400-MP	30160	16738	78306	77568	39905	37217	37225
	LCMF 1605M0-0500-MP	30161	91055	78307	77575	39919	45721	37991
	LCMF 1606M0-0600-MP	30159	16823	78303	77576	39904	37224	34661
	LCMF 3008M0-0800-MP		16403		77625	39908	05634	37227
	3008M0-1000-MP	33136	16704			40726		
LCMF-MP inch-version	LCMF 160300-0318-MP	34766	18284				61814	
	LCMF 160500-0476-MP	33226	71643					37226
	LCMF 160600-0635-MP	33232	71646				61817	

Please check availability in current price and stock-list.

LCMR



Tolerances:
a_p = ±0.002
l = ±0.003
s = ±0.002
s = ±0.003

Size:
16
30

l = Distance cutting edge-rear support

Size	Dimensions in inch a_p	l	s	rep
1603	0.118	0.626	0.177	0.016
1604	0.157	0.626	0.177	0.008-0.031
1605	0.197	0.626	0.177	0.016-0.031
1606	0.236	0.626	0.177	0.031
3008-08	0.315	1.144	0.219	0.031-0.047
3008-10	0.394	1.150	0.219	0.031-0.047

LCMR-FT



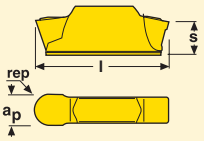
LCMR-MT



Inserts	Part No.	Grades (EDP No.) Coated CP200	Coated CP500	Coated TGP25	Uncoated 883
LCMR-FT					
	LCMR 160304-0300-FT	33238	16841	40734	
	LCMR 160402-0400-FT		16479		
	160404-0400-FT	33239	16756	40729	
	LCMR 160504-0500-FT	33240	91061	40717	
	LCMR 160608-0600-FT	33242	16824	40720	
	LCMR 300808-0800-FT		16401	51120	34658
	300808-1000-FT		88038		
	300812-0800-FT		16402		
	300812-1000-FT		88924		
LCMR-MT					
	LCMR 160304-0300-MT		17237	40725	34651
	LCMR 160404-0400-MT		16806	40711	
	160408-0400-MT				45653
	LCMR 160504-0500-MT		91069	40716	
	160508-0500-MT				51353
	LCMR 160608-0600-MT		16825	39927	34655

Please check availability in current price and stock-list.

LCMR



Tolerances:
a_p = ±0.002
l = ±0.003
s = ±0.002 16
s = ±0.003 30

l = Distance cutting edge-rear support

Size	Dimensions in inch a_p	l	s	rep
1603	0.118	0.669	0.169	0.059
1604	0.157	0.673	0.167	0.079
1605	0.197	0.699	0.164	0.098
1606	0.236	0.708	0.162	0.118
3008..-08	0.315	1.183	0.213	0.157
3008..-10	0.315	1.183	0.216	0.197

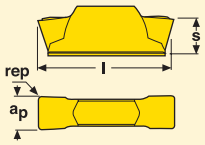
LCMR-MP



Inserts	Part No.	Grades (EDP No.) Coated CP200	Coated CP500	Coated TGP25	Uncoated 883
LCMR-MP					
	LCMR 1603M0-0300-MP	34767	17762	40727	34652
	LCMR 1604M0-0400-MP	34768	16807	40718	34654
	LCMR 1605M0-0500-MP	33241	91087	40724	52438
	LCMR 1606M0-0600-MP	33243	16826	40715	34656
	LCMR 3008M0-0800-MP		16227	40719	34659
	3008M0-1000-MP		91027	40737	

Please check availability in current price and stock-list.

LCGF



Tolerances:
a_p = ±0.0001
l = ±0.0001
s = ±0.002

l = Distance cutting edge-rear support

Size	Dimensions in inch			
	a_p	l	s	rep
1603	0.118	0.654	0.167	0.008
1604	0.157	0.654	0.167	0.008
1605	0.197	0.673	0.163	0.008
1606	0.236	0.685	0.165	0.016
3008	0.315	1.142	0.219	0.016

LCGF-GG



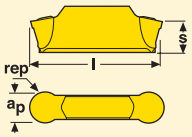
LCGF-GS



Inserts	Part No.	Grades (EDP No.) Coated CP500	Grades (EDP No.) Uncoated 883
LCGF-GG			
	LCGF 160302-0300-GG	50628	
	LCGF 160402-0400-GG	50629	
	LCGF 160502-0500-GG	50630	
	LCGF 160604-0600-GG	50631	
	LCGF 300804-0800-GG	50633	
LCGF-GS			
	LCGF 160302-0300-GS		52708
	LCGF 160402-0400-GS		52709
	LCGF 160502-0500-GS		52711
	LCGF 160604-0600-GS		52715
	LCGF 300804-0800-GS		52716

Please check availability in current price and stock-list.

LCGF



Tolerances:
a_p = ±0.0008
l = ±0.016
s = ±0.002
s = ±0.003

Size:
16
30

l = Distance cutting edge-rear support

Size	Inch version	Dimensions in inch a_p	l	s	rep
1603		0.118	0.669	0.169	0.059
1604		0.157	0.673	0.167	0.079
1605		0.197	0.699	0.164	0.098
1606		0.236	0.708	0.162	0.118
3008..-08		0.315	1.183	0.213	0.157
3008..-10		0.394	1.183	0.216	0.197
1603	■	0.125	0.655	0.172	0.063
1605	■	0.187	0.696	0.164	0.094

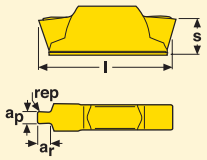
LCGF-RP



Inserts	Part No.	Grades (EDP No.) Coated CP200	Uncoated 883
LCGF-RP mm-version	**LCGF 1603M0-0300-RP**	78322	67757
	LCGF 1604M0-0400-RP	78324	64263
	LCGF 1605M0-0500-RP	78325	64266
	LCGF 1606M0-0600-RP	78327	64265
	LCGF 3008M0-0800-RP	78328	64267
	3008M0-1000-RP	78329	64268
LCGF-RP inch-version	**LCGF 160300-0318-RP**	78330	64271
	LCGF 160500-0476-RP	78332	64272

Please check availability in current price and stock-list.

LCGN and LCGF – Radial grooves



Tolerances:
a_p = ±0.0001
l = ±0.0001
s = ±0.002

l = Distance cutting edge-rear support

Size	Dimensions in inch				
	a_p	l	s	rep	a_r
-0115	0.045	0.654	0.177	–	0.055
-0135	0.053	0.654	0.177	–	0.063
-0165	0.065	0.654	0.177	0.004	0.073
-0190	0.075	0.654	0.177	0.004	0.083
-0215	0.085	0.654	0.177	0.004	0.091
-0265	0.104	0.654	0.177	0.008	–
01-0300	0.118	0.654	0.177	0.004	–
02-0300	0.118	0.654	0.177	0.008	–
-0320	0.126	0.654	0.177	0.008	–
-0340	0.134	0.654	0.177	0.008	–
-0400	0.157	0.654	0.177	0.008	–
-0420	0.165	0.654	0.177	0.008	–
-0440	0.173	0.654	0.177	0.008	–
-0500	0.197	0.673	0.177	0.008	–
-0520	0.205	0.673	0.177	0.008	–
-0600	0.236	0.693	0.177	0.008	–
-0635	0.250	0.693	0.177	0.008	–

LCGN-FG



LCGF-FG



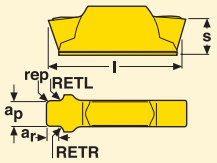
Standard
** =
DIN 471
DIN 472
SMS 1581
SMS 1582

Inserts	For circlip	Part No.	Note	Standard	Grades (EDP No.) Coated CP500
LCGN-FG					
	1.00	LCGN 160300-0115-FG	*	**	71649
	1.20	160300-0135-FG	*	**	71651
	1.50	160301-0165-FG	*	**	71652
	1.75	160301-0190-FG	*	**	71653
	2.00	160301-0215-FG	*	**	71654
LCGF-FG					
	–	LCGF 160301-0300-FG			06808
LCGN-FG					
	2.50	LCGN 160302-0265-FG		**	71661
	–	160302-0300-FG		**	71662
	3.00	160302-0320-FG		**	71664
	–	160302-0340-FG		**	71665
	–	LCGN 160402-0400-FG		**	71667
	4.00	160402-0420-FG		**	71669
	–	160402-0440-FG		**	71673
	–	LCGN 160502-0500-FG		**	71679
	5.00	160502-0520-FG		**	71681
	–	LCGN 160602-0600-FG		**	71682
	–	160602-0635-FG		**	71683

Please check availability in current price and stock-list.

*Toolholders have to be modified

LCGN – O-ring



Tolerances:
a_p = ±0.0001
l = ±0.0001
s = ±0.002

l = Distance cutting edge-rear support

Size	Dimensions in inch						
	a_p	l	s	RETR	RETL	rep	a_r
0180-DY	0.094	0.654	0.177	0.012	0.012	0.020	0.061
0240-DY	0.130	0.654	0.177	0.012	0.012	0.020	0.079
0265-DY	0.142	0.654	0.177	0.012	0.012	0.020	0.091
0300-DY	0.161	0.654	0.177	0.012	0.012	0.039	0.098
0160-ST	0.094	0.654	0.177	0.012	0.012	0.020	0.047
0240-ST	0.126	0.654	0.177	0.012	0.012	0.020	0.075
0300-ST	0.150	0.654	0.177	0.012	0.012	0.039	0.094
0355-ST	0.189	0.673	0.177	0.012	0.012	0.030	0.110

LCGN-DY
O-ring, dynamic



LCGN-ST
O-ring, static



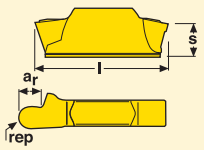
Standard
* =
SMS 1588
BS 4518

** =
ISO 3601
DIN 3771
BS 1806

Inserts	For O-ring mm	For O-ring inch	Standard	Part No.	Grades (EDP No.) Coated CP500
LCGN-DY O-ring, dynamic					
	1.80	0.071	**	LCGN 160305-0180-DY	71685
	2.40	–	*	LCGN 160405-0240-DY	71687
	2.65	0.104	**	160405-0265-DY	71688
	3.00	–	*	160410-0300-DY	72074
LCGN-ST O-ring, static					
	1.60	–	*	LCGN 160305-0160-ST	72079
	2.40	–	*	160305-0240-ST	93074
	3.00	–	*	LCGN 160410-0300-ST	72085
	3.55	0.140	**	LCGN 160507-0355-ST	93076

Please check availability in current price and stock-list.

LCGN – Full radius grooving



Tolerances:
l = ±0.0001
s = ±0.002

l = Distance cutting edge-rear support

Right-hand version shown

Size	Dimensions in inch			
	l	s	rep	a_r
-0100	0.654	0.177	0.039	0.106
-0120	0.654	0.177	0.047	0.106
-0150	0.654	0.177	0.059	–
-0200	0.654	0.177	0.079	–
-0300	0.693	0.177	0.118	–

LCGN..-..R



LCGN..-..L



LCGN

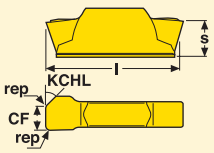


Inserts	For radius mm	Part No.	Note	Grades (EDP No.) Coated CP500
LCGN-R				
	1.0	LCGN 1603M0-0100R-R	*	71655
	1.2	1603M0-0120R-R	*	71658
	1.0	LCGN 1603M0-0100L-R	*	71657
	1.2	1603M0-0120L-R	*	71659
	1.5	LCGN 1603M0-0150-R		93091
	2.0	LCGN 1604M0-0200-R		93019
	3.0	LCGN 1606M0-0300-R		93092

Please check availability in current price and stock-list.

*Toolholders have to be modified

LCGN-D76



Tolerances:
l = ±0.0001
s = ±0.002

l = Distance cutting edge-rear support

Right-hand version shown

Size	Dimensions in inch			
	CF	l	s	rep
1603	0.087	0.654	0.177	0.024
1605	0.126	0.673	0.177	0.030
1606	0.181	0.693	0.177	0.039

LCGN..R-D76



LCGN..L-D76

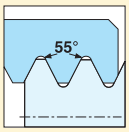


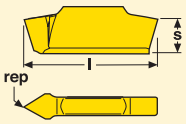
Inserts	For max pitch	Part No.	KCHR°	KCHL°	Note	Grades (EDP No.) Coated CP500
LCGN-D76						
	1.0	**LCGN 160306-0100R-D76**	–	45	*	72081
	1.0	**LCGN 160306-0100L-D76**	45	–	*	86133
	1.5	**LCGN 160507-0150R-D76**	–	45		72084
	1.5	**LCGN 160507-0150L-D76**	45	–		86134
	2.0	**LCGN 160610-0200R-D76**	–	45		72087
	2.0	**LCGN 160610-0200L-D76**	45	–		88032

Please check availability in current price and stock-list.

*Toolholders have to be modified

LCGN – Partial profile 55°





Tolerances:
l = ±0.0001
rep = ±0.0001

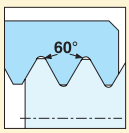
Size	Dimensions in inch		
	l	s	rep
-A55	0.654	0.177	0.003
-G55	0.654	0.177	0.007

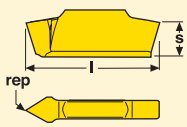
LCGN...-.55



Inserts	Pitch mm	TPI	Part No.	Grades (EDP No.) Coated CP500
LCGN...-.55				
	0.50-1.50	48-16	LCGN 1603-A55	34045
	1.75-3.00	14-8	1603-G55	34046

LCGN – Partial profile 60°





Tolerances:
l = ±0.0001
rep = ±0.0001

Size	Dimensions in inch		
	l	s	rep
-A60	0.654	0.177	0.003
-G60	0.654	0.177	0.007

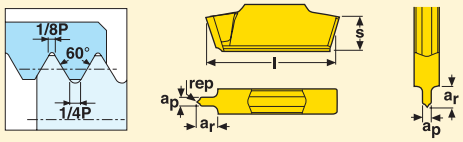
LCGN...-.60



Inserts	Pitch mm	TPI	Part No.	Grades (EDP No.) Coated CP500
LCGN...-.60				
	0.50-1.50	48-16	LCGN 1603-A60	34042
	1.75-3.00	14-8	1603-G60	34044

Please check availability in current price and stock-list.

LCGN – ISO Metric



Tolerances:
l = ±0.0001
s = ±0.002

Size	Dimensions in inch				
	a_p	l	s	rep	a_r
-E0.5	0.030	0.654	0.177	0.003	0.075
-E0.8	0.047	0.654	0.177	0.004	0.118
-E1.0	0.059	0.654	0.177	0.005	0.148
-E1.25	0.074	0.654	0.177	0.007	0.165
-E1.5	0.094	0.654	0.177	0.008	–

LCGN-ISO

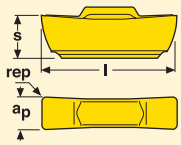


Inserts	Pitch mm	Part No.	Note	Grades (EDP No.) Coated CP500
LCGN-ISO				
	0.50	LCGN 1603-E0.5ISO	*	06846
	0.80	1603-E0.8ISO	*	06847
	1.00	1603-E1.0ISO	*	06848
	1.25	1603-E1.25ISO	*	06849
	1.50	1603-E1.5ISO		06851

Please check availability in current price and stock-list.

*Toolholders have to be modified

LCGN



Tolerances:
a_p = ±0.0001
l = ±0.0016
s = ±0.002
rep = ±0.0001

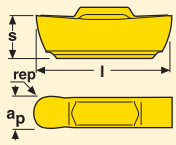
Size	Dimensions in inch			
	a_p	l	s	rep
1303	0.118	0.485	0.157	0.016
1304	0.157	0.485	0.157	0.016

LCGN-LF



Inserts	Part No.	Grades (EDP No.) Uncoated CBN010	Uncoated CBN200
LCGN-LF			
	LCGN 130304-0300S-LF		21129
	130304-0300S-00425-LF	11347	
	LCGN 130404-0400S-LF		21123
	130404-0400S-00425-LF	11349	

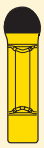
LCGN



Tolerances:
a_p = ±0.0001
l = ±0.0016
s = ±0.002
rep = ±0.0001

Size	Dimensions in inch			
	a_p	l	s	rep
1303	0.118	0.486	0.157	0.059
1304	0.157	0.486	0.157	0.079

LCGN...
M0-LF

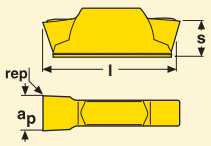


Inserts	Part No.	Grades (EDP No.) Uncoated CBN010
LCGN...M0-LF		
	LCGN 1303M0-0300S-00425-LF	11348
	LCGN 1304M0-0400S-00425-LF	11350

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

LCGN



Tolerances:
a_p = ±0.001
l = ±0.0016
s = ±0.002
rep = ±0.001

Size	Dimensions in inch				
	a_p (mm)	a_p	l	s	rep
1603	3	0.118	0.626	0.177	0.016
1604	4	0.157	0.626	0.177	0.016
1605	5	0.197	0.626	0.177	0.016
1606	6	0.236	0.626	0.177	0.016

LCGN-LF

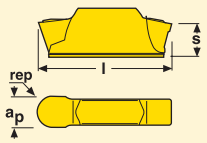


Inserts	Part No.	Grades (EDP No.) Uncoated CBN010	CBN170	CBN200
LCGN-LF				
	LCGN 160304-0300E-LF	94735		
	160304-0300E25-LF		63022	
	160304-0300S-LF			21131
	160304-0300S01025LF	78915		
	LCGN 160404-0400E-LF	94737		
	160404-0400E25-LF		63024	
	160404-0400S-LF			21139
	160404-0400S01025LF	78916		
	LCGN 160504-0500S-LF			21140
	160504-0500S01025LF	78917		
	LCGN 160604-0600S-LF			21134
	160604-0600S01025LF	78918		

Please check availability in current price and stock-list.

Tip sizes, see page 64
Edge preparation, see page 61

LCGN



Tolerances:
a_p = ±0.001
l = ±0.0016
s = ±0.002
rep = ±0.001

Size	Dimensions in inch				
	a_p (mm)	a_p	l	s	rep
1603	3	0.118	0.654	0.173	0.059
1604	4	0.157	0.654	0.171	0.079
1605	5	0.197	0.677	0.169	0.098
1606	6	0.236	0.677	0.165	0.118

LCGN...M0-LF



Inserts	Part No.	Grades (EDP No.) Uncoated CBN010	CBN170	CBN200
LCGN...M0-LF				
	LCGN 1603M0-0300E25-LF	94736	63023	
	1603M0-0300S-LF			21141
	1603M0-0300S01025LF	81771		
	LCGN 1604M0-0400E25-LF	94738	63025	
	1604M0-0400S-LF			21142
	1604M0-0400S01025LF	81772		
	LCGN 1605M0-0500E25-LF	94739	63026	
	1605M0-0500S-LF			21143
	1605M0-0500S01025LF	81773		
	LCGN 1606M0-0600E25-LF	94740		
	1606M0-0600S-LF			21144
	1606M0-0600S01025LF	81774		

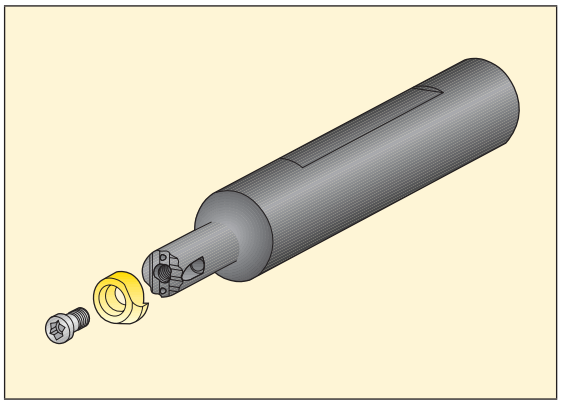
Please check availability in current price and stock-list.

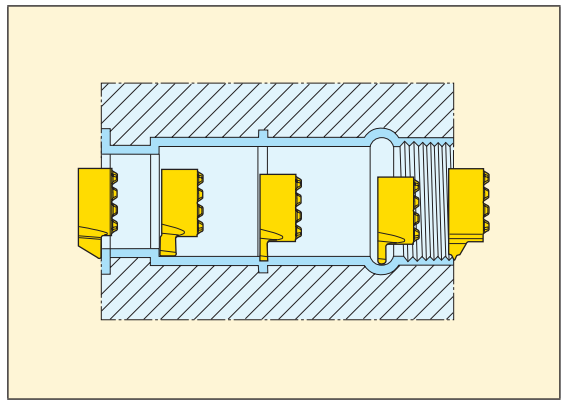
Tip sizes, see page 64
Edge preparation, see page 61

Mini-Shaft™ – General information

General information

Seco Mini-Shaft consists of holders and inserts for internal turning, grooving, precision grooving, profiling, backfacing and threading. To be used in holes as small as ∅0.315 inch (Mini Shaft 08) or ∅0.433 inch (Mini Shaft 11).





Seco Mini-Shaft features a new type of joint, with a double serration, which makes the connection both stable and secure.
It also gives very good repeatability (±0.0008 inch).

All toolholders are used for both R and L -handed inserts, and have through coolant possibility.

Toolholders

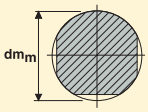


A	10	G	-	S	G	X	N	08	-	078	-	R
1	2	3		4	5	6	7	8		9		10

1. Toolholder type

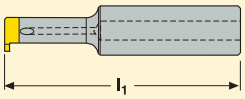
A = Steel with coolant passage
E = Solid carbide with brazed cutting head and coolant passage

2. Shank diameter



04 = 0.250 inch
05 = 0.312 inch
10 = 0.625 inch

3. Tool length

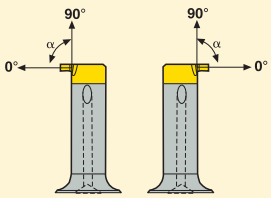


G = 3.58 inch
H = 3.98 inch

4. Insert clamping

S = Screw

5. Toolholder setting angle



G = 0°
F = 90°

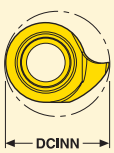
6. Max grooving/turning depth

X = Special

7. Version

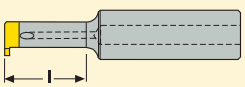
N = Neutral version

8. Insert size



08 = Insert size

9. Extension length

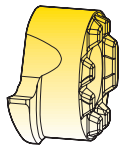


078 = 0.730 inch
098 = 0.890 inch

10. Internal designation

R = Round shank with no flats

Turning and grooving inserts



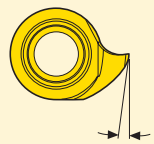
L	C	E	X	08	04	02	-	0150	R	-	FG
1	2	3	4	5	6	7		8	9		10

1. Shape



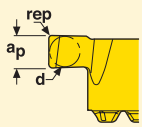
L = Insert shape

2. Front clearance angle



C = 7°

3. Tolerances

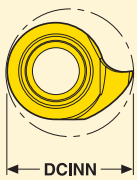


Tolerance class	Tolerance ± inch		
	a_p	d	rep
E	0.001	0.001	0.001

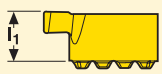
4. Inserts type

X = Special

5. Insert size

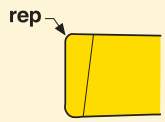


6. Thickness

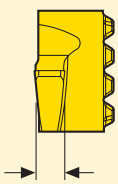


04 = 0.155 in
05 = 0.191 in

7. Corner radius



8. Insert width



0075 = 0.029 in
0080 = 0.031 in
0090 = 0.035 in
etc.

9. Version



R

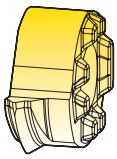


L

10. Inserts type code

FG = For lockring
R = Full radius
etc

Threading inserts



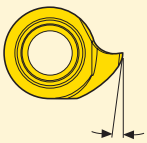
L	C	E	X	11	05	-	1.5	ISO	R
1	2	3	4	5	6		7	8	9

1. Shape



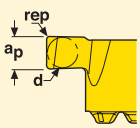
L = Insert shape

2. Front clearance angle



C = 7°

3. Tolerances

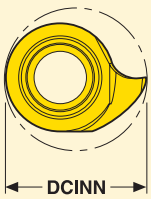


Tolerance class	Tolerance ± inch		
	a_p	d	rep
E	0.001	0.001	0.001

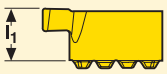
4. Inserts type

X = Special

5. Insert size



6. Thickness



04 = 0.155 in
05 = 0.191 in

7. Pitch

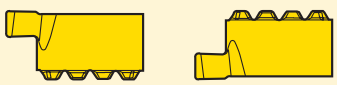
Full profile: (mm)	1.0	1.5	2.0	2.5	3.0
Part profile: (mm)	A = 0.50 - 0.75 48-36 TPI AG = 0.75 - 1.25 36-20 TPI G = 1.25 - 1.75 20-16 TPI				
Full profile: (TPI)	14	16	19	20	24
etc					

8. Insert width

Thread =

60 = V profile 60°
ISO = ISO, metric
W = Whitworth, BSW
TR = Trapezoidal, DIN 103
UN = Am. UN
NPT = Am. NPT

9. Version



R L

Cutting speed, v_c (sf/min)

In this section a recommended cutting speed is indicated under specified conditions.

Use the tables beginning on page 770 to classify the workpiece material into a SMG.

The cutting data tables provide a start value for feed rate (f) and cutting speed (v_c) for the selected cutting width (a_p).

The cutting data tables are based on grooving with full cutting width.

The recommended cutting speeds in the tables are calculated for 15 minutes tool life with use of external flood coolant.

In order to increase the accuracy towards the actual cutting conditions and requirements of the applications the recommendation is to use My Pages – Suggest on www.secotools.com

v_c = cutting speed (sf/min)

a_p = insert width (inch)

f = feed rate (in/rev)

SMG = Seco Material Group

SMG		ap = 0.028-0.118	
		f	v_c
P1	CP500	0.00085	500
P2	CP500	0.00085	485
P3	CP500	0.00080	425
P4	CP500	0.00080	370
P5	CP500	0.00080	355
P6	CP500	0.00080	400
P7	CP500	0.00080	375
P8	CP500	0.00080	355
P11	CP500	0.00080	365
M1	CP500	0.00085	290
M2	CP500	0.00080	215
M3	CP500	0.00065	135
M4	CP500	0.00055	90
M5	CP500	0.00055	75
K1	CP500	0.00085	530
K2	CP500	0.00080	435
K3	CP500	0.00080	365
K4	CP500	0.00080	350
K5	CP500	0.00070	210
K6	CP500	0.00080	340
K7	CP500	0.00070	270
N11	CP500	0.0011	310
S1	CP500	0.00055	60
S2	CP500	0.00055	50
S3	CP500	0.00050	43



Collet chucks

Fully cylindrical shanks (-R) can also be mounted in collet chucks.

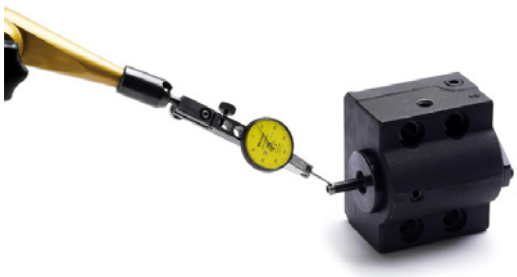
- Use collets or reduction sleeves for hydraulic chucks
- Round shanks combined with collets can prevent vibrations
- Shanks with flats may not be used in collets – as there is a risk of damaging the collet



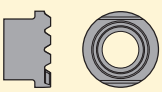
Set-up device for cylindrical shanks

To obtain an accurate centering of the cutting edge use a set-up device.





Accessories

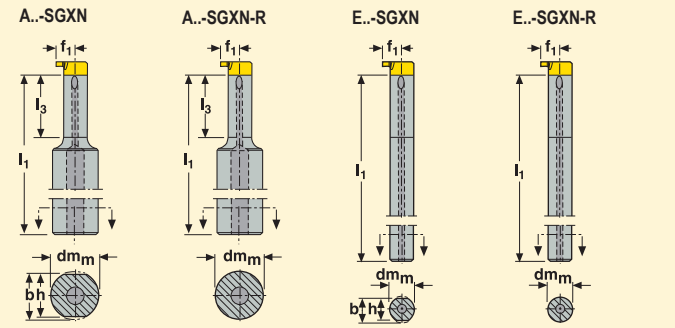
Setting gauge	Part No.	EDP No.
		
	LCEX 0804-N	81904
	1105-N	57405

Stock standard please check acailability in current price and stock-list

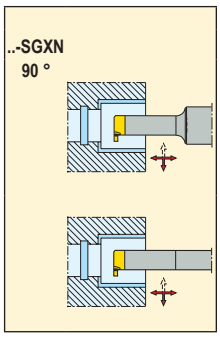
Toolholders for inserts LCEX



- For insert program, see pages 449-456
- E04 and E05, carbide shanks



Right-hand version shown
Note: (-R) designates round shank with no flats



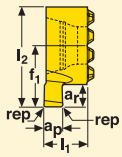
	EDP No.	Part No.	Dimensions in inch							lbs	
			dm_m	h	b	l_1	f_1	l_3	DCINN		
8	19604	A10G-SGXN08-078	0.625	0.586	0.605	3.41	0.188	0.650	0.315	0.21	LCEX08..
	03174	A10G-SGXN08-078-R	0.625	–	–	3.41	0.188	0.650	0.315	0.21	LCEX08..
11	19607	A10H-SGXN11-098	0.625	0.586	0.605	3.78	0.264	0.827	0.433	0.26	LCEX11..
	03178	A10H-SGXN11-098-R	0.625	–	–	3.78	0.264	0.827	0.433	0.35	LCEX11..
8	19606	E04G-SGXN08	0.250	0.217	0.233	3.41	0.189	–	0.315	0.07	LCEX08..
	24787	E04G-SGXN08-R	0.250	–	–	3.41	0.189	–	0.315	0.11	LCEX08..
11	19608	E05H-SGXN11	0.312	0.287	0.300	3.78	0.264	–	0.433	0.12	LCEX11..
	24788	E05H-SGXN11-R	0.312	–	–	3.78	0.264	–	0.433	0.14	LCEX11..

Spare Parts, Parts included in delivery

For holder	Insert key	Insert screw
A10G-..	T08P-2	C02506-T08P
A10H-..	T10P-2	C03509-T10P
E04G-..	T08P-2	C02506-T08P
E05H-..	T10P-2	C03509-T10P

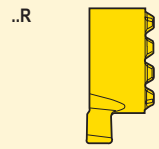
Please check availability in current price and stock-list

Turning



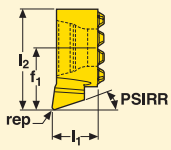
Tolerances:
a_p = ±0.0008
f_1 = ±0.0004
l_1 = ±0.0008
rep = ±0.0008

Size	Dimensions in inch l_2	f_1
0804	0.306	0.188
1105	0.421	0.264



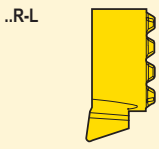
Inserts	Dimensions in inch a_p	a_r	l_1	rep	Part No.	Grades (EDP No.) Coated CP500
LCEX						
	0.079	0.067	0.130	0.004	LCEX 080401-0200R	21051
	0.079	0.067	0.130	0.004	080401-0200L	21042
	0.059	0.067	0.130	0.008	LCEX 080402-0150R	00143
	0.059	0.067	0.130	0.008	080402-0150L	03887
	0.079	0.102	0.157	0.004	LCEX 110501-0200R	21043
	0.079	0.102	0.157	0.004	110501-0200L	21044
	0.059	0.102	0.157	0.008	LCEX 110502-0150R	00185
	0.059	0.102	0.157	0.008	110502-0150L	00187

Profiling



Tolerances:
f_1 = ±0.0004
l_1 = ±0.0008
rep = ±0.0008

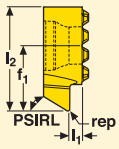
Size	Dimensions in inch l_2	f_1
0804	0.306	0.188
1105	0.421	0.264



Inserts	Dimensions in inch l_1	rep	PSIRR°	PSIRL°	Part No.	Grades (EDP No.) Coated CP500
LCEX						
	0.140	0.008	18	0	LCEX 080402-0250R-L18	03888
	0.140	0.008	0	18	080402-0250L-R18	00146
	0.136	0.008	47	0	LCEX 080402-0250R-L47	00148
	0.136	0.008	0	47	080402-0250L-R47	00149
	0.167	0.008	18	0	LCEX 110502-0270R-L18	00188
	0.167	0.008	0	18	110502-0270L-R18	00189
	0.163	0.008	47	0	LCEX 110502-0250R-L47	00190
	0.163	0.008	0	47	110502-0250L-R47	00191

Please check availability in current price and stock-list

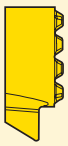
Back facing



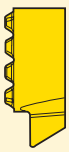
Tolerances:
f_1 = ±0.0004
l_1 = ±0.0008
rep = ±0.0008

Size	Dimensions in inch l_2	f_1
0804	0.306	0.188
1105	0.421	0.264

..R-R

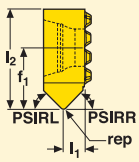


..L-L



Inserts	Dimensions in inch l_1	rep	PSIRR°	PSIRL°	Part No.	Grades (EDP No.) Coated CP500
LCEX						
	0.030	0.008	0	30	LCEX 080402-0250R-R30	00150
	0.030	0.008	30	0	080402-0250L-L30	00151
	0.049	0.008	0	30	LCEX 110502-0270R-R30	00192
	0.049	0.008	30	0	110502-0270L-L30	00193

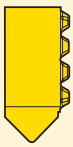
Chamfering



Tolerances:
f_1 = ±0.0004
l_1 = ±0.002
rep = ±0.0008

Size	Dimensions in inch l_2	f_1
0804	0.306	0.188
1105	0.421	0.264

..R



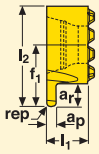
..L



Inserts	Dimensions in inch l_1	rep	PSIRR°	PSIRL°	Part No.	Grades (EDP No.) Coated CP500
LCEX						
	0.067	0.008	45	45	LCEX 080402-0310R-N45	00152
	0.067	0.008	45	45	080402-0310L-N45	00153
	0.087	0.008	45	45	LCEX 110502-0350R-N45	00194
	0.087	0.008	45	45	110502-0350L-N45	00195

Please check availability in current price and stock-list

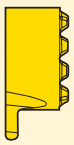
Full radius grooves



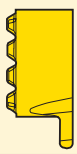
Tolerances:
f_1 = ±0.0004
l_1 = ±0.0008
rep = ±0.0008

Size	Dimensions in inch l_2	f_1
0804	0.306	0.188
1105	0.421	0.264

..R-R



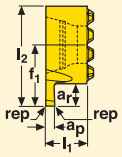
..L-R



Inserts	Dimensions in inch a_p	a_r	l_1	rep	Part No.	Grades (EDP No.) Coated CP500
LCEX	0.031	0.067	0.130	0.016	LCEX 080404-0080R-R	00167
	0.031	0.067	0.130	0.016	080404-0080L-R	00168
	0.047	0.067	0.130	0.024	LCEX 080406-0120R-R	00171
	0.047	0.067	0.130	0.024	080406-0120L-R	00172
	0.071	0.067	0.130	0.035	LCEX 080409-0180R-R	00173
	0.071	0.067	0.130	0.035	080409-0180L-R	00174
	0.031	0.102	0.157	0.016	LCEX 110504-0080R-R	00211
	0.031	0.102	0.157	0.016	110504-0080L-R	00215
	0.047	0.102	0.157	0.024	LCEX 110506-0120R-R	00214
	0.047	0.102	0.157	0.024	110506-0120L-R	00216
	0.071	0.102	0.157	0.035	LCEX 110509-0180R-R	00217
	0.071	0.102	0.157	0.035	110509-0180L-R	00220
	0.079	0.102	0.157	0.039	LCEX 110510-0200R-R	00222
	0.079	0.102	0.157	0.039	110510-0200L-R	00223
	0.118	0.102	0.157	0.059	LCEX 110515-0300R-R	00226
	0.118	0.102	0.157	0.059	110515-0300L-R	00229

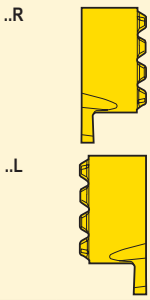
Please check availability in current price and stock-list

Lock ring



Tolerances:
a_p = ±0.0008
f_1 = ±0.0004
l_1 = ±0.0008
rep = ±0.0008

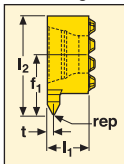
Size	Dimensions in inch l_2	f_1
0804	0.306	0.188
1105	0.421	0.264



Inserts	For lock ring	Dimensions in inch a_p	a_r	l_1	rep	Part No.	Grades (EDP No.) Coated CP500
LCEX							
	0.028	0.030	0.067	0.130	–	LCEX 080400-0075R-FG	00154
	0.028	0.030	0.067	0.130	–	080400-0075L-FG	00155
	0.031	0.033	0.067	0.130	–	LCEX 080400-0085R-FG	00156
	0.031	0.033	0.067	0.130	–	080400-0085L-FG	00157
	0.035	0.037	0.067	0.130	–	LCEX 080400-0095R-FG	00158
	0.035	0.037	0.067	0.130	–	080400-0095L-FG	00159
	0.039	0.045	0.067	0.130	–	LCEX 080400-0115R-FG	00160
	0.039	0.045	0.067	0.130	–	080400-0115L-FG	00161
	0.047	0.053	0.067	0.130	–	LCEX 080400-0135R-FG	03889
	0.047	0.053	0.067	0.130	–	080400-0135L-FG	00163
	0.059	0.065	0.067	0.130	0.004	LCEX 080401-0165R-FG	00164
	0.059	0.065	0.067	0.130	0.004	080401-0165L-FG	00165
	0.028	0.030	0.102	0.157	–	LCEX 110500-0075R-FG	00196
	0.028	0.030	0.102	0.157	–	110500-0075L-FG	00197
	0.031	0.033	0.102	0.157	–	LCEX 110500-0085R-FG	00198
	0.031	0.033	0.102	0.157	–	110500-0085L-FG	00200
	0.035	0.037	0.102	0.157	–	LCEX 110500-0095R-FG	00202
	0.035	0.037	0.102	0.157	–	110500-0095L-FG	00203
	0.039	0.045	0.102	0.157	–	LCEX 110500-0115R-FG	00204
	0.039	0.045	0.102	0.157	–	110500-0115L-FG	00205
	0.047	0.053	0.102	0.157	–	LCEX 110500-0135R-FG	00206
	0.047	0.053	0.102	0.157	–	110500-0135L-FG	00207
	0.059	0.065	0.102	0.157	0.004	LCEX 110501-0165R-FG	00208
	0.059	0.065	0.102	0.157	0.004	110501-0165L-FG	00209

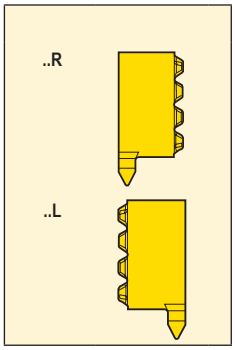
Please check availability in current price and stock-list

Threading – Partial Profile 60°



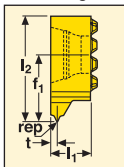
Tolerances:
f_1 = ±0.0004
l_1 = ±0.002

Size	Dimensions in inch f_1	l_1	l_2
0804	0.188	0.130	0.306
1105	0.264	0.157	0.421



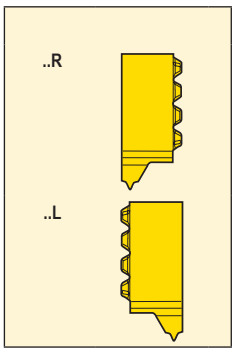
Inserts	Pitch mm	Pitch TPI	Dimensions in mm t	Dimensions in mm rep	Part No.	Grades (EDP No.) Coated CP500
LCEX						
	0.50-0.75	48-36	0.019	0.001	LCEX 0804-A60R	00176
	0.50-0.75	48-36	0.019	0.001	0804-A60L	00178
	0.75-1.25	36-20	0.029	0.003	0804-AG60R	00179
	0.75-1.25	36-20	0.029	0.003	0804-AG60L	00180
	1.25-1.75	20-16	0.039	0.005	0804-G60R	00181
	1.25-1.75	20-16	0.039	0.005	0804-G60L	00182
	0.50-0.75	48-36	0.019	0.001	LCEX 1105-A60R	00230
	0.50-0.75	48-36	0.019	0.001	1105-A60L	00068
	0.75-1.25	36-20	0.029	0.003	1105-AG60R	00098
	0.75-1.25	36-20	0.029	0.003	1105-AG60L	00231
	1.25-1.75	20-16	0.039	0.005	1105-G60R	00232
	1.25-1.75	20-16	0.039	0.005	1105-G60L	00233

Threading – ISO Metric



Tolerances:
f_1 = ±0.0004
l_1 = ±0.002

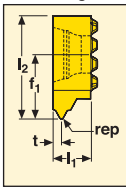
Size	Dimensions in inch f_1	l_1	l_2
1105	0.264	0.157	0.421



Inserts	Pitch mm	Pitch TPI	Dimensions in inch t	Dimensions in inch rep	Part No.	Grades (EDP No.) Coated CP500
LCEX						
	1.00	–	0.024	0.003	LCEX 1105-1.0ISOR	00238
	1.00	–	0.024	0.003	1105-1.0ISOL	00240
	1.50	–	0.031	0.005	1105-1.5ISOR	00245
	1.50	–	0.031	0.005	1105-1.5ISOL	00246
	2.00	–	0.043	0.007	1105-2.0ISOR	00247
	2.00	–	0.043	0.007	1105-2.0ISOL	00248
	2.50	–	0.053	0.007	1105-2.5ISOR	18791
	2.50	–	0.053	0.007	1105-2.5ISOL	18793
	3.00	–	0.063	0.008	1105-3.0ISOR	19556
	3.00	–	0.063	0.008	1105-3.0ISOL	19558

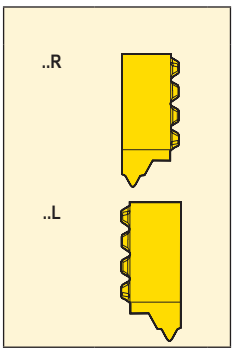
Please check availability in current price and stock-list

Threading – Whitworth, BSW



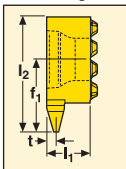
Tolerances:
f_1 = ±0.0004
l_1 = ±0.002

Size	Dimensions in inch f_1	l_1	l_2
1105	0.264	0.157	0.421



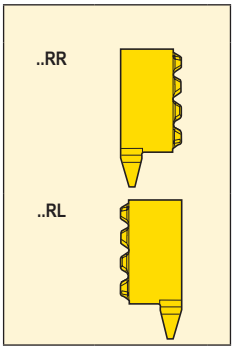
Inserts	Pitch mm	Pitch TPI	Dimensions in inch t	Dimensions in inch rep	Part No.	Grades (EDP No.) Coated CP500
LCEX						
	–	14	0.039	0.009	LCEX 1105-14WR	00249
	–	14	0.039	0.009	1105-14WL	00250
	–	19	0.030	0.006	1105-19WR	00251
	–	19	0.030	0.006	1105-19WL	00256

Threading – TR-DIN103



Tolerances:
f_1 = ±0.0004
l_1 = ±0.002

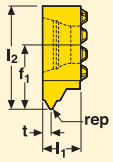
Size	Dimensions in inch f_1	l_1	l_2
1105	0.264	0.157	0.421



Inserts	Pitch mm	Pitch TPI	Dimensions in inch t	Dimensions in inch rep	Part No.	Grades (EDP No.) Coated CP500
LCEX						
	1.50	–	0.031	0.004	LCEX 1105-1.5TRR	00258
	1.50	–	0.031	0.004	1105-1.5TRL	00259
	2.00	–	0.043	0.006	1105-2.0TRR	00260
	2.00	–	0.043	0.006	1105-2.0TRL	00263
	3.00	–	0.063	0.006	1105-3.0TRR	19560
	3.00	–	0.063	0.006	1105-3.0TRL	19561

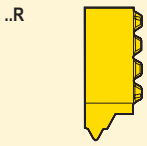
Please check availability in current price and stock-list

Threading – UN



Tolerances:
f_1 = ±0.0004
l_1 = ±0.002

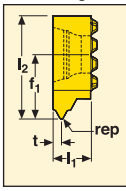
Size	Dimensions in inch f_1	l_1	l_2
0804	0.188	0.130	0.306



Inserts	Pitch mm	Pitch TPI	Dimensions in inch t	Dimensions in inch rep	Part No.	Grades (EDP No.) Coated CP500
LCEX	–	32	0.020	0.002	LCEX 0804-32UNR	19562
	–	32	0.020	0.002	0804-32UNL	19564
	–	24	0.024	0.003	0804-24UNR	19565
	–	24	0.024	0.003	0804-24UNL	19569
	–	20	0.028	0.004	0804-20UNR	19576
	–	20	0.028	0.004	0804-20UNL	19577
	–	16	0.035	0.005	0804-16UNR	19582
	–	16	0.035	0.005	0804-16UNL	19593

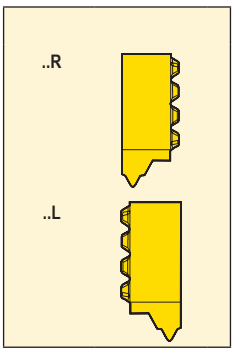
Please check availability in current price and stock-list

Threading – NPT



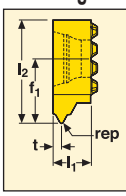
Tolerances:
f_1 = ±0.0004
l_1 = ±0.002

Size	Dimensions in inch		
	f_1	l_1	l_2
0804	0.188	0.130	0.306



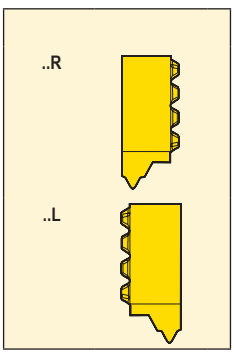
Inserts	Pitch		Dimensions in inch		Part No.	Grades (EDP No.) Coated
	mm	TPI	t	rep		CP500
LCEX						
	–	27	0.022	0.001	LCEX 0804-27NPTR	19600
	–	27	0.022	0.001	0804-27NPTL	19601

Threading – NPTF



Tolerances:
f_1 = ±0.0004
l_1 = ±0.002

Size	Dimensions in inch		
	f_1	l_1	l_2
0804	0.188	0.130	0.306



Inserts	Pitch		Dimensions in inch		Part No.	Grades (EDP No.) Coated
	mm	TPI	t	rep		CP500
LCEX						
	–	27	0.022	0.002	LCEX 0804-27NPTFR	19602
	–	27	0.022	0.002	0804-27NPTFL	19603

Please check availability in current price and stock-list

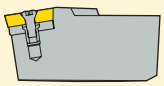
Toolholders



C	E	R		150	6	-	16	Q	-	HD
1	2	3	4	5	6		7	8		9

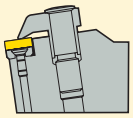
1. Insert clamping

S



Screw

C



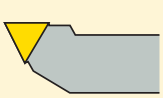
Clamp

2. External/Internal

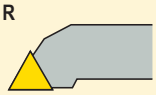
E = External
N = Internal

3. Cutting direction

L



R

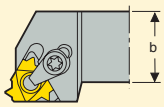


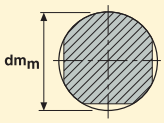
X = Special

4. Shank definition

00 = Boring bars
= Square shanks

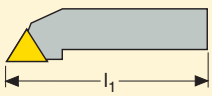
5. Square shank height/width and bar diameter





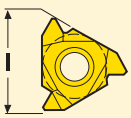
For square shank tools height and width in inches.
For boring bars bar diameter in inches.
075 = 0.75
100 = 1.00
125 = 1.25
etc.

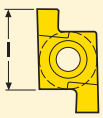
6. Tool length



3 = 3 inches
4 = 4 inches
5 = 5 inches
6 = 6 inches

7. Cutting edge length





If the cutting edge length consists of only one digit, the designation should start with a 0.

Example:

Cutting edge length	= 16.5 mm (0.650")
Symbol	= 16
Cutting edge length	= 9.525 mm (0.375")
Symbol	= 09

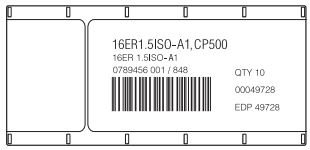
8. Other information

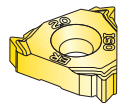
A = Steel with coolant passage
Q = Qualified
CQ = For mounting upside down

9. Other information

HD = Heavy duty

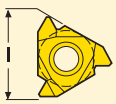
Inserts





16	E	R	1.5	ISO	-	A1
1	2	3	4	5		6

1. Cutting edge length



If the cutting edge length consists of only one digit, the designation should start with a 0.

Example:

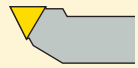
Cutting edge length	= 16.5 mm (0.650")
Symbol	= 16
Cutting edge length	= 9.525 mm (0.375")
Symbol	= 09

2. External/Internal

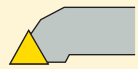
E = External
N = Internal

3. Cutting direction

L



R



X = Special

4. Pitch

Full profile mm: (mm)	0.50	1.25	3.00	6.00	
	0.70	1.50	4.00	8.00	
	0.75	1.75	4.50	10.0	
	0.80	2.00	5.00	12.0	
	1.00	2.50	5.50	14.0	
Full profile: (TPI)	48	18	11	6.0	2.5
	40	16	10	5.0	2.0
	32	14	9	4.5	
	24	13	8	4.0	
	20	12	7	3.0	

Part profile:	A	= 0.50-1.50 mm	48-16 TPI
	AG	= 0.50-3.00 mm	48-8 TPI
	G	= 1.75-3.00 mm	14-8 TPI
	N	= 3.50-5.00 mm	7-5 TPI
	K	= 5.50-10.00 mm	4.5-2.5 TPI

5. Thread

Thread =	
60	= V profile, 60°
55	= V profile, 55°
ISO	= ISO, Metric
UN	= Am. UN
UNJ	= Am. Aerospace
MJ	= Metr. Aerospace
W	= Whitworth, BSW
BSPT	= Whitworth, Taper
NPT	= Am. NPT
NPTF	= Am. NPTF (Dryseal)
RD	= Round, DIN405
TR	= Trapezoidal, DIN103
ACME	= Am. ACME-G
STACME	= Am. Stub-ACME
API 384	= API V 038R 1:4
API 386	= API V 038R 1:6
API 404	= API V 040 1:4
API 504	= API V 050 1:4
API 506	= API V 050 1:6
API RD	= API Round Casing
BUT 2.5	= Buttress, 1°47'
BUT 2.6	= Buttress, 2°23'
VAM	= VAM Vallourec

6. Number of teeth per cutting edge/Type of chipbreaker

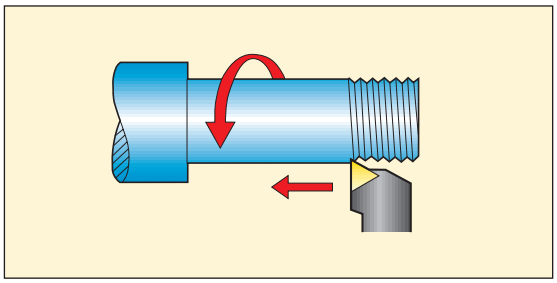
2M = 2 teeth	A = Universal
3M = 3 teeth	A1 = Chipbreaker designation
TT = TWIN THREADER	A2 = Chipbreaker designation

Threading Wizard™

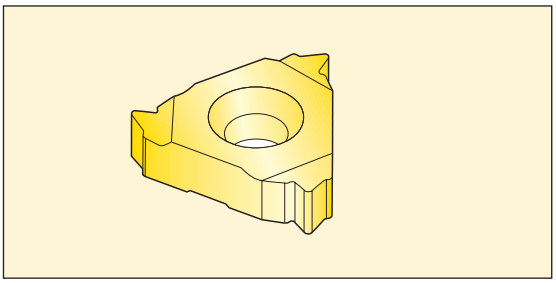
In order to simplify the selection of tools and cutting parameters Seco introduced the Threading Wizard software, which eliminates complicated programming and calculations. The Wizard selects the optimum holder and insert, identifies the best operating parameters and then downloads the information to the CNC machine. The infeed series generated are based on a good control of the OD/ID tolerance for the selected profile. The insert nose radius is relatively small and can be damaged if it is overloaded. The Wizard is free and downloadable at **http://www.secotools.com/customerzoneus**
If not using the Wizard, use the selection process below to choose a suitable tool, insert, cutting data and production method.



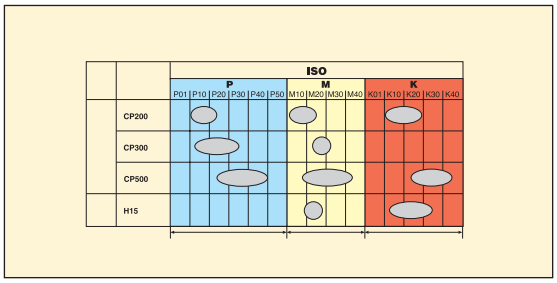
1. Selection of production method, page 460



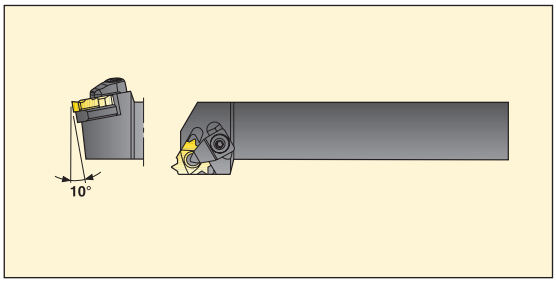
2. Selection of insert type, page 461



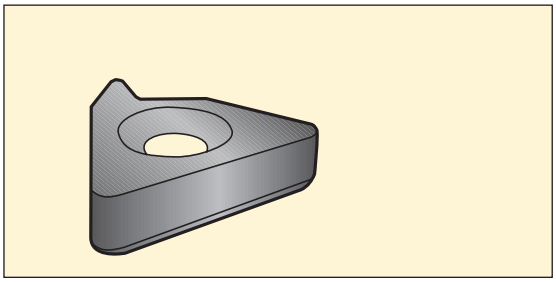
3. Selection of grade, pages 462-463



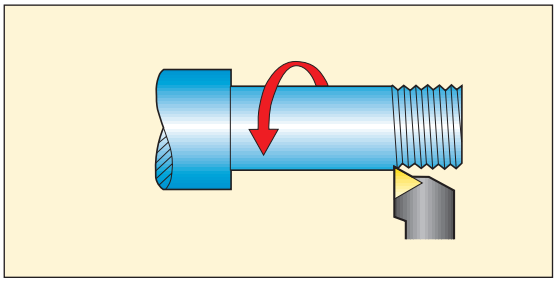
4. Selection of toolholder, page 464



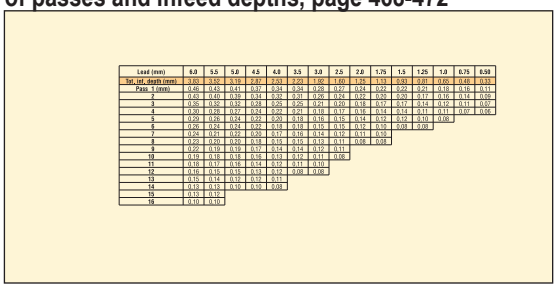
5. Selection of insert shim (anvil), page 465-466



6. Selection of cutting speed, page 467

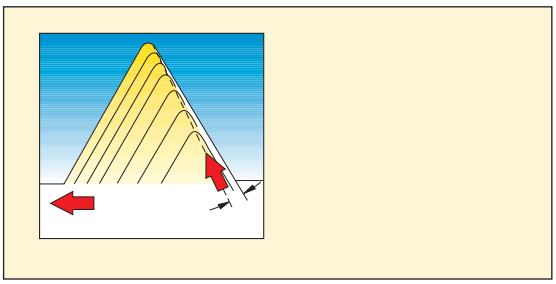


7. Selection of number of passes and infeed depths, page 468-472



Lead (mm)	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.75	1.5	1.25	1.0	0.75	0.50
Tot. inf. depth (mm)	3.65	3.52	3.18	2.87	2.63	2.29	1.90	1.60	1.35	1.15	0.93	0.81	0.65	0.48	0.32
Pass. 1 (mm)	0.46	0.43	0.41	0.37	0.34	0.34	0.28	0.27	0.24	0.22	0.22	0.21	0.18	0.16	0.11
2	0.43	0.40	0.39	0.34	0.32	0.31	0.26	0.24	0.22	0.20	0.20	0.17	0.16	0.14	0.09
3	0.35	0.32	0.30	0.28	0.25	0.25	0.21	0.20	0.18	0.17	0.17	0.14	0.12	0.11	0.07
4	0.30	0.28	0.27	0.24	0.22	0.21	0.18	0.17	0.16	0.14	0.14	0.11	0.11	0.07	0.05
5	0.29	0.26	0.24	0.22	0.20	0.18	0.16	0.15	0.14	0.12	0.12	0.10	0.09		
6	0.26	0.24	0.24	0.22	0.18	0.18	0.15	0.15	0.12	0.10	0.08	0.08			
7	0.24	0.21	0.20	0.20	0.17	0.16	0.14	0.12	0.11	0.10					
8	0.23	0.20	0.20	0.18	0.15	0.15	0.13	0.11	0.08	0.08					
9	0.22	0.19	0.19	0.17	0.14	0.14	0.12	0.11							
10	0.19	0.18	0.18	0.16	0.13	0.12	0.11	0.08							
11	0.18	0.17	0.16	0.14	0.12	0.11	0.09								
12	0.16	0.15	0.15	0.13	0.12	0.08	0.08								
13	0.15	0.14	0.13	0.12	0.11										
14	0.13	0.13	0.12	0.12	0.08										
15	0.13	0.12													
16	0.10	0.10													

8. Selection of infeed method, page 473



Threading – Production methods

The choice of production method is influenced by e.g.

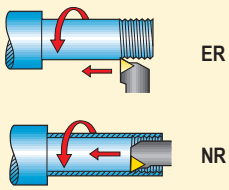
Workpiece
-External or internal thread
-Right or left hand thread
Machine
-Right or left hand tool

Threading towards the chuck

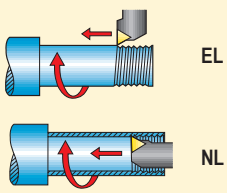
Benefit:
- Best stability
- Originally fitted insert shims can be used for most operations

Note:
- Chip build-up may occur during internal threading, particularly if there is little space between the threading bar and bore of the hole

Right-hand thread – Right-hand tool



Left-hand thread – Left-hand tool



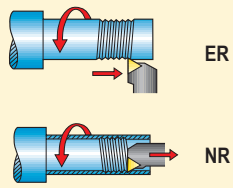
Threading away from the chuck*

Benefit:
- Chip flow is correctly directed during internal threading

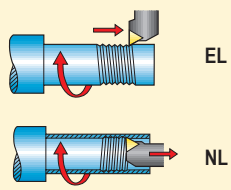
Note:
- Secure clamping of the insert and mounting of the toolholder are necessary

Internal threading:
- Use only CNR/L toolholders

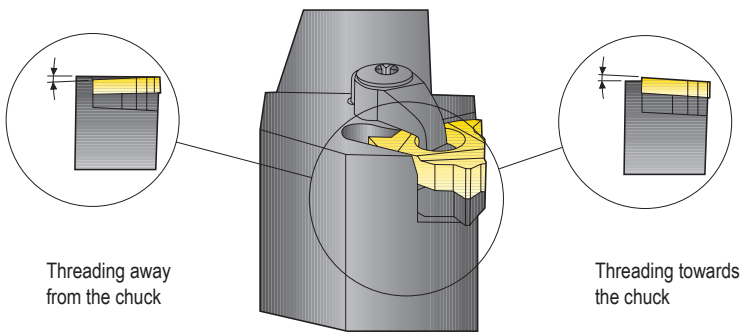
Left-hand thread – Right-hand tool



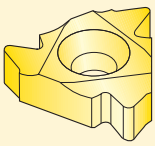
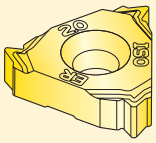
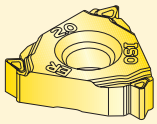
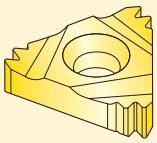
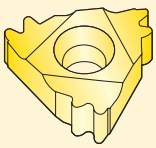
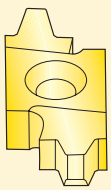
Right-hand thread – Left-hand tool



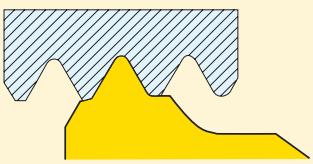
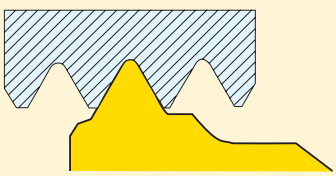
*Notice that the insert shim must be exchanged when threading away from the chuck.



For single tooth inserts choose a full profile or partial profile design

Single-tooth insert (Type S) A or Original  First choice, can be used for applications in a variety of materials.Low cutting forces.	**Single-tooth insert (Type S) A1 chipbreaker**  First choice for general applications in steel.	**Single-tooth insert (Type S) A2 chipbreaker**  First choice for general applications in stainless steel.
Multi-tooth insert (Type M)  First choice for mass production, since fewer passes are necessary. Only for radial infeed. 2M = 2 teeth version 3M = 3 teeth version	**Multi-tooth insert (TWIN THREADER, TT)**  Lower cutting forces than M type. Shorter undercut length than M type. Only for radial infeed. Use insert shim for 2M.	**K insert (Type K)**  First choice for large/coarse threads.

For single tooth inserts choose a full profile or partial profile design

Full profile  By topping the thread, the workpiece need not be pre-machined to the exact diameter and may be a little oversized. The threading operation is simplified since only one tool is needed for the entire thread (no subsequent deburring is needed).	**Partial profile**  Covers a wide range of thread pitches, which simplifies stock-keeping. Requires a correct workpiece diameter prior to threading. The nose radius of the insert is sized to suit the smallest profile within the pitch range of the insert.

Nomenclature and formulae

Revolutions per minute

$$n = \frac{3.82 \times v_c}{D} \quad \text{(rev/min)}$$

Cutting speed

$$v_c = 0.262 \times D \times n \quad \text{(ft/min)}$$

Slide velocity

$$S_v = n \times Ph \quad \text{(in/min)}$$

Lead

$$P_h = P \times \text{number of starts} \quad \text{(inches)}$$

Helix angle

$$\lambda = \arctan \frac{P_h}{D_2 \times \pi} \quad (°)$$

Conversion of pitch to TPI

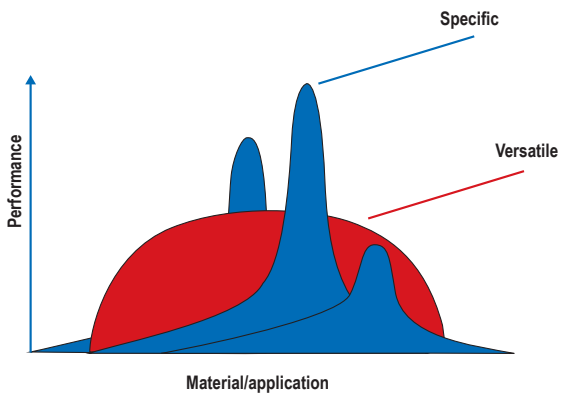
$$P = \frac{1}{TPI} \quad \text{(inches)}$$

n	=	RPM	(rev/min)
D	=	Workpiece diameter	(inches)
v_c	=	Cutting speed	(ft/min)
S_v	=	Slide velocity (feed rate)	(in/min)
P_h	=	Lead	(inches)
P	=	Pitch	(inches)
D_2	=	Pitch diameter (mean diameter)	(inches)
λ	=	Helix angle	(°)
TPI	=	Number of threads per inch	

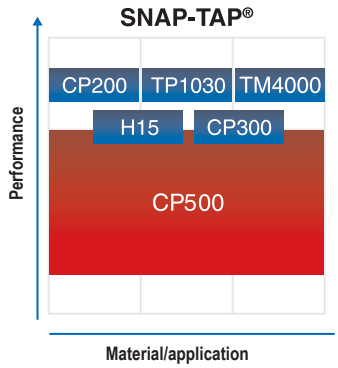
Threading – Insert grades

Thread turning – Insert grades

Product strategy



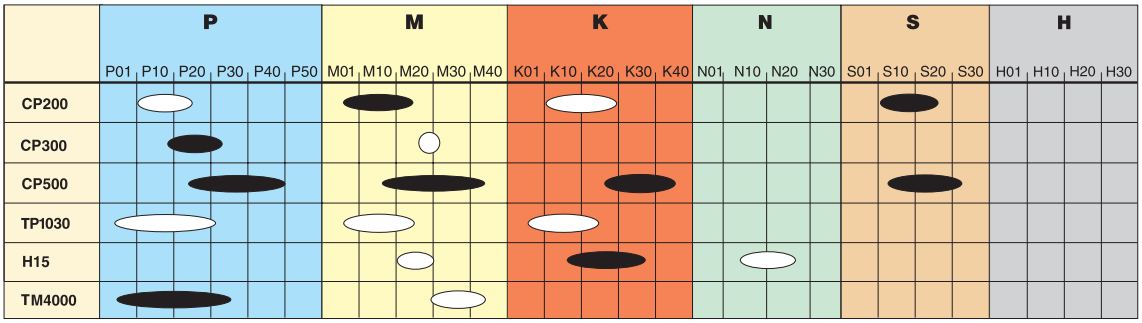
Grade assortment Snap-Tap®



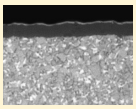
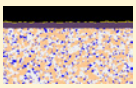
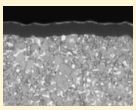
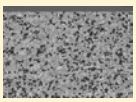
Continuous research and development of better materials, coatings and optimal geometries help fulfil customers requirements. Our product strategy is to provide the market with versatile first choice tools and specific optimized solutions for threading.

Threading – Insert grades

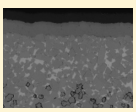
Grades
The black areas in the chart indicate a grade's main ISO application groups and the white areas indicate other supplementary application groups.



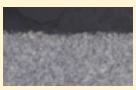
PVD coated grades

	**CP200**	First choice for high-strength steel, martensitic stainless steel, cast iron with low hardness, superalloys and titanium alloys. First choice for high cutting speeds. Hard micrograin with sharp edge, highly resistant to plastic deformation. (Ti,Al)N + TiN
	**CP300**	Wear-resistant grade which is principally intended for high cutting speeds. Optimizing grade in steel and stainless steel. (Ti,Al)N + TiN
	**CP500**	Very tough, universal micrograin grade for all types of threading in most materials. Excellent for stainless steel and difficult operations. (Ti,Al)N + TiN
	**TP1030**	PVD-coated Cermet with very high wear resistance. Primarily intended for high surface finish and productivity requirements with predictability in steel and stainless steel. TiAlSiN nanolaminated coating.

CVD coated grades

	**TM4000**	Thread turning insert in optimizing grade TM4000. Excellent wear resistance with superior edge toughness intended for high cutting speed in steel. Also suitable in difficult stainless steel. CVD coating Ti(C,N) + Al_2O_3 DURATOMIC®

Uncoated grades

	**H15**	First choice for machining normal to hard cast iron. Also suitable for hard steel with a hardness in excess of 350 HB. Micrograin with excellent wear-resistance and sharp edge.

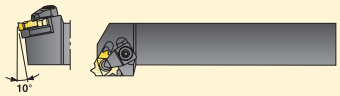
Threading – Toolholders

Use the guidelines below to choose a suitable toolholder type.

External threading

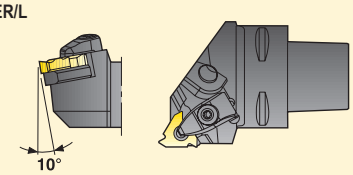
Basic choice
Type C (clamp)

CER/L



Insert size
16, 20, 22, 26, 27
With insert shim

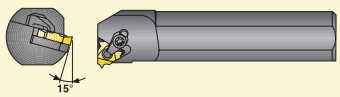
Cx-CER/L



Internal threading

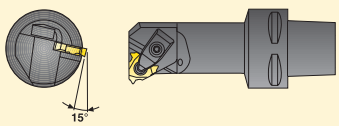
Basic choice
Type C (clamp)

CNR/L



Insert size
16, 20, 22, 26, 27
With insert shim

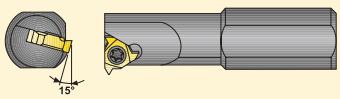
Cx-CNR/L



N.B. On 27 mm inserts this angle is 10°

For small holes
Type-S (screw)

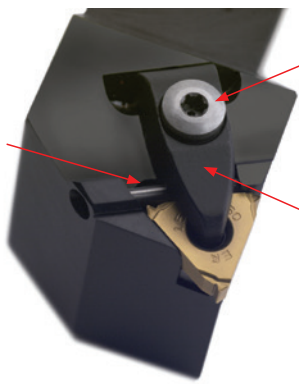
SNR/L



Insert sizes
09,11,16, 22

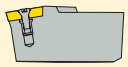
(No insert shim. To be used only when threading towards the chuck)

HD Threading Clamp System

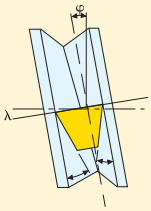


Originally fitted insert shims

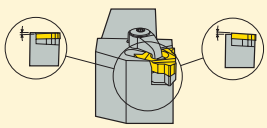
The table below shows the originally fitted insert shims. These insert shims are suitable for most operations when threading towards the chuck.

Toolholder		Clamp  External and internal threading		Screw  Internal threading
Insert type		Single-tooth insert (Type S)	Single-tooth insert (Type K)	Single-tooth insert (Type S)
Insert shim				No insert shim (λ=2°)
Insert size	16	GX 16-1		
	20		KX 20-2	
	22	NX22-1		
	26		KX26-2	
	27	VX27-1		

To receive the correct shape on the thread and uniform wear on the insert the cutting edge helix angle (λ) should be equal to the thread lead angle (φ).



The helix angle can be selected from +5 to -2 by changing the insert shim. The same insert shims are used for both right and left hand holders. The center height remains constant.



SNR/L toolholders have no exchangeable insert shim and can therefore only be used for threading towards the chuck. The table below shows the available insert shim range.

Insert shim range

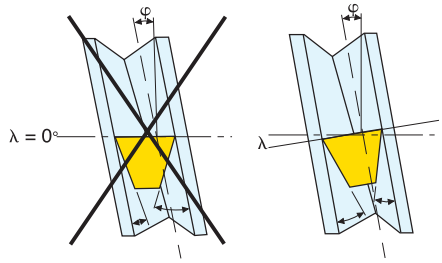
Toolholder		Clamp  External and internal threading				
Insert type		Multi-tooth insert (Type M)	Single-tooth insert (Type S)		Single-tooth insert (Type K)	
Insert shim						
		Threading towards the chuck	Threading towards the chuck	Threading away from the chuck	Threading towards the chuck	Threading away from the chuck
Insert size	16	MX16-1	GX16-0, -1, -2, -3, -4	GX16-0 -99 -98		
	20				KX20-0, -1, -2, -3, -4, -5	KX20-0 -99
	22	MX22-1	NX22-0, -1, -2, -3, -4	NX22-0 -99 -98		
	26				KX26-0, -1, -2, -3, -4, -5	KX26-0 -99
	27	MX27-1	VX27-0, -1, -2, -3, -4	VX27-0 -99 -98		

The helix angle (λ) can also be calculated. See page 462 for formulae.

Threading – Insert shim

Choice of insert shim

Use the graph below to choose the correct insert shim.
The graph gives the last digit in the insert shim code.
Example: GX16-1



Production method

Threading towards the chuck, use right side of the graph.
Threading away from the chuck, use left side of the graph.

Vertical column - lead

Thread with one start, Lead (Ph) = pitch (P).
Thread with several starts, Lead (Ph) = pitch (P) x number of starts.

Horizontal column = pitch diameter (D_2)

Threading away from the chuck

| | | Pitch diameter D_2 (inch) – threading away from the chuck | | |

Cutting speed

Use the SMG tables to classify the workpiece material.
Use the table below to choose cutting speed.

SMG	v_c					
	CP200	CP300	CP500	TP1030	H15	TM4000
P1	—	900	675	675	—	1165
P2	—	885	655	655	—	1130
P3	—	755	560	560	—	970
P4	—	675	490	490	—	855
P5	—	640	475	475	—	820
P6	—	720	540	540	—	920
P7	—	675	510	510	—	870
P8	—	640	475	475	—	820
P11	—	655	490	490	—	835
M1	490	—	445	445	330	360
M2	395	—	360	360	260	295
M3	295	—	280	280	195	230
M4	230	—	215	215	—	165
M5	180	—	165	165	—	140
K1	425	—	395	395	345	—
K2	360	—	345	345	310	—
K3	310	—	295	295	260	—
K4	295	—	280	280	245	—
K5	180	—	165	165	—	—
K6	260	—	245	245	—	—
K7	230	—	215	215	—	—
N1	—	—	—	—	835	—
N2	—	—	—	—	540	—
N3	—	—	—	—	360	—
N11	—	—	—	—	490	—
S1	65	—	65	—	—	—
S2	50	—	50	—	—	—
S3	50	—	50	—	—	—
S11	150	—	130	—	—	—
S12	115	—	100	—	—	—
S13	90	—	75	—	—	—

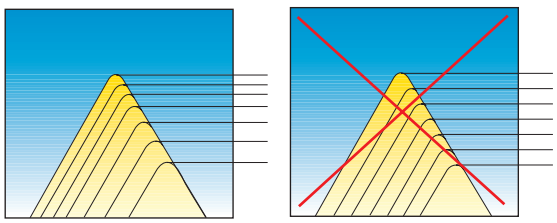
Cutting speeds (v_c) in the table are recommendations for a start value.
Due to machine, material and setup condition it is advisable to optimize cutting data.
Recommended ranges to use for each grade is CP200, CP300,CP500 and H15 +/-15%
TP1030 +15/-30%

SMG=Seco Material Group
v_c = Cutting speed (sf/min)

Note that there is a fixed relationship between rotational speed and feed rate in threading. Check that the chosen cutting speed does not result in a too high feed speed.

Number of passes and infeed depths

A thread cannot be made in one cut because of the relatively brittle cutting edge. The total cutting depth must be divided into several passes. Those passes should all have similar cutting forces (equal chip areas), see figures.



Use the tables on page 468-472 to find recommendations for number of passes and infeed depths. The tables give basic recommendations and are applicable on all geometries - Original, A, A1 and A2.

- The infeed series given is based on a good control of the OD/ID tolerances for the selected profile.
- If insert fracture should occur, the number of passes should be increased.
- The infeed depth should not be less than 0.002 in/pass.
- On stainless steel, the infeed depth per pass should be greater than 0.003 inch.
- The recommendations can also be used for part-profile inserts. The number of passes should then, in most cases, be increased.
- The threading insert nose radius is relatively small and can easily be damaged if it is overloaded.

Seco Threading Wizard™

In order to simplify the selection of tools and cutting parameters Seco introduced the Threading Wizard software, which eliminates complicated programming and calculations. The Wizard selects the optimum holder and insert, identifies the best operating parameters and then downloads the information to the CNC machine. The infeed series generated are based on a good control of the OD/ID tolerance for the selected profile. The insert nose radius is relatively small and can be damaged if it is overloaded. Threading Wizard is free and downloadable at:
www.secotools.com

Number of passes and infeed depths

External ISO-metric threads

Ph	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.75	1.5	1.25	1.0	0.80	0.75	0.50
a_p	0.150	0.139	0.126	0.113	0.100	0.088	0.076	0.063	0.049	0.044	0.037	0.032	0.026	0.020	0.019	0.013
1	0.018	0.017	0.016	0.015	0.013	0.013	0.011	0.011	0.009	0.009	0.009	0.008	0.007	0.007	0.006	0.004
2	0.017	0.016	0.015	0.013	0.013	0.012	0.010	0.009	0.009	0.008	0.008	0.007	0.006	0.006	0.006	0.004
3	0.014	0.013	0.013	0.011	0.010	0.010	0.008	0.008	0.007	0.007	0.007	0.006	0.005	0.005	0.004	0.003
4	0.012	0.011	0.011	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.006	0.004	0.004	0.003	0.003	0.002
5	0.011	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	–	–	–
6	0.010	0.009	0.009	0.009	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.003	–	–	–	–
7	0.009	0.008	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.004	–	–	–	–	–	–
8	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	–	–	–	–	–	–
9	0.009	0.007	0.007	0.007	0.006	0.006	0.005	0.004	–	–	–	–	–	–	–	–
10	0.007	0.007	0.007	0.006	0.005	0.005	0.004	0.003	–	–	–	–	–	–	–	–
11	0.007	0.007	0.006	0.006	0.005	0.004	0.004	–	–	–	–	–	–	–	–	–
12	0.006	0.006	0.006	0.005	0.005	0.003	0.003	–	–	–	–	–	–	–	–	–
13	0.006	0.006	0.005	0.005	0.004	–	–	–	–	–	–	–	–	–	–	–
14	0.005	0.005	0.004	0.004	0.003	–	–	–	–	–	–	–	–	–	–	–
15	0.005	0.005	–	–	–	–	–	–	–	–	–	–	–	–	–	–
16	0.004	0.004	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Internal ISO-metric threads

Ph	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.75	1.5	1.25	1.0	0.80	0.75	0.50
a_p	0.139	0.128	0.117	0.104	0.092	0.081	0.070	0.058	0.046	0.041	0.033	0.030	0.024	0.019	0.018	0.012
1	0.018	0.017	0.017	0.015	0.013	0.013	0.011	0.010	0.009	0.009	0.008	0.007	0.007	0.007	0.006	0.004
2	0.017	0.016	0.016	0.013	0.012	0.012	0.010	0.010	0.008	0.008	0.007	0.007	0.006	0.006	0.005	0.003
3	0.014	0.013	0.013	0.011	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.006	0.004	0.004	0.004	0.003
4	0.012	0.010	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.002
5	0.010	0.009	0.009	0.008	0.007	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	–	–	–
6	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	–	–	–	–
7	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.003	–	–	–	–	–	–
8	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	–	–	–	–	–	–
9	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	–	–	–	–	–	–	–	–
10	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	–	–	–	–	–	–	–	–
11	0.006	0.006	0.006	0.005	0.004	0.004	0.004	–	–	–	–	–	–	–	–	–
12	0.006	0.006	0.006	0.005	0.004	0.003	0.003	–	–	–	–	–	–	–	–	–
13	0.006	0.005	0.005	0.004	0.004	–	–	–	–	–	–	–	–	–	–	–
14	0.005	0.005	0.004	0.004	0.003	–	–	–	–	–	–	–	–	–	–	–
15	0.005	0.005	–	–	–	–	–	–	–	–	–	–	–	–	–	–
16	0.004	0.004	–	–	–	–	–	–	–	–	–	–	–	–	–	–

External/Internal Whitworth threads

TPI	4.0	4.5	5	6	7	8	9	10	11	12	14	16	18	19	20	26	28
a_p	0.169	0.150	0.135	0.114	0.098	0.085	0.076	0.069	0.062	0.057	0.047	0.044	0.040	0.038	0.036	0.028	0.027
1	0.019	0.018	0.018	0.015	0.015	0.013	0.012	0.011	0.011	0.011	0.009	0.009	0.009	0.009	0.008	0.007	0.007
2	0.018	0.017	0.017	0.014	0.014	0.012	0.011	0.011	0.010	0.010	0.009	0.009	0.009	0.009	0.008	0.007	0.007
3	0.015	0.015	0.015	0.012	0.011	0.009	0.009	0.009	0.009	0.009	0.007	0.007	0.007	0.007	0.007	0.006	0.006
4	0.014	0.013	0.013	0.010	0.010	0.008	0.008	0.007	0.007	0.007	0.006	0.006	0.006	0.006	0.006	0.005	0.005
5	0.013	0.011	0.011	0.009	0.009	0.007	0.007	0.007	0.006	0.006	0.005	0.005	0.005	0.005	0.004	0.003	0.003
6	0.012	0.010	0.010	0.008	0.007	0.007	0.006	0.006	0.006	0.006	0.004	0.004	0.003	0.003	0.003	–	–
7	0.011	0.009	0.009	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	–	–	–	–	–
8	0.011	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.005	0.003	0.003	–	–	–	–	–	–
9	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.005	0.003	–	–	–	–	–	–	–	–
10	0.009	0.007	0.007	0.006	0.006	0.005	0.005	0.003	–	–	–	–	–	–	–	–	–
11	0.008	0.007	0.007	0.006	0.005	0.005	0.003	–	–	–	–	–	–	–	–	–	–
12	0.007	0.006	0.006	0.006	0.003	0.003	–	–	–	–	–	–	–	–	–	–	–
13	0.007	0.006	0.005	0.005	–	–	–	–	–	–	–	–	–	–	–	–	–
14	0.006	0.006	0.004	0.004	–	–	–	–	–	–	–	–	–	–	–	–	–
15	0.005	0.005	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
16	0.004	0.004	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Ph = Pitch (mm)
TPI = Threads per inch
a_p = Total infeed depth (inch)
Recommendations are for steel with a hardness < 300 HB

Number of passes and infeed depths

External UN threads

TPI	4.0	4.5	5	6	7	8	9	10	11	12	13	14	16	18	20	24	28	32
a_p	0.160	0.143	0.130	0.107	0.092	0.082	0.072	0.065	0.060	0.055	0.051	0.047	0.041	0.037	0.033	0.028	0.024	0.021
1	0.019	0.018	0.017	0.014	0.014	0.012	0.011	0.011	0.011	0.011	0.010	0.009	0.009	0.009	0.008	0.007	0.007	0.007
2	0.017	0.016	0.016	0.013	0.013	0.011	0.010	0.010	0.010	0.010	0.009	0.009	0.008	0.008	0.007	0.007	0.006	0.006
3	0.016	0.015	0.014	0.011	0.010	0.010	0.008	0.008	0.008	0.008	0.007	0.007	0.006	0.006	0.006	0.006	0.004	0.005
4	0.014	0.012	0.012	0.009	0.009	0.008	0.008	0.007	0.007	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003
5	0.013	0.010	0.010	0.009	0.008	0.007	0.007	0.006	0.006	0.006	0.006	0.005	0.005	0.005	0.004	0.003	0.003	–
6	0.011	0.009	0.009	0.008	0.007	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	–	–	–
7	0.010	0.008	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	–	–	–	–	–
8	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.005	0.004	0.003	0.003	0.003	–	–	–	–	–	–
9	0.009	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.003	–	–	–	–	–	–	–	–	–
10	0.008	0.007	0.007	0.006	0.005	0.005	0.004	0.003	–	–	–	–	–	–	–	–	–	–
11	0.007	0.006	0.007	0.005	0.004	0.004	0.003	–	–	–	–	–	–	–	–	–	–	–
12	0.007	0.006	0.006	0.005	0.003	0.003	–	–	–	–	–	–	–	–	–	–	–	–
13	0.006	0.006	0.005	0.004	–	–	–	–	–	–	–	–	–	–	–	–	–	–
14	0.006	0.006	0.004	0.004	–	–	–	–	–	–	–	–	–	–	–	–	–	–
15	0.005	0.005	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
16	0.004	0.004	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Internal UN threads

TPI	4	4.5	5	6	7	8	9	10	11	12	13	14	16	18	20	24	28	32
a_p	0.147	0.131	0.118	0.097	0.084	0.074	0.065	0.059	0.054	0.049	0.045	0.042	0.037	0.033	0.030	0.025	0.022	0.019
1	0.017	0.016	0.017	0.014	0.013	0.012	0.011	0.011	0.011	0.011	0.010	0.009	0.009	0.009	0.008	0.007	0.007	0.007
2	0.016	0.015	0.015	0.013	0.013	0.011	0.010	0.010	0.009	0.009	0.008	0.007	0.007	0.007	0.006	0.006	0.006	0.006
3	0.015	0.013	0.013	0.010	0.009	0.009	0.007	0.007	0.007	0.007	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.004
4	0.013	0.011	0.011	0.008	0.008	0.007	0.006	0.006	0.006	0.006	0.005	0.005	0.005	0.005	0.004	0.004	0.003	0.003
5	0.011	0.009	0.009	0.007	0.007	0.006	0.006	0.005	0.005	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.003	–
6	0.009	0.008	0.008	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.003	0.003	–	–	–
7	0.009	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.003	–	–	–	–	–
8	0.008	0.007	0.007	0.006	0.005	0.004	0.004	0.004	0.004	0.003	0.003	0.003	–	–	–	–	–	–
9	0.008	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	–	–	–	–	–	–	–	–	–
10	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	–	–	–	–	–	–	–	–	–	–
11	0.007	0.006	0.006	0.005	0.004	0.004	0.003	–	–	–	–	–	–	–	–	–	–	–
12	0.006	0.006	0.006	0.004	0.003	0.003	–	–	–	–	–	–	–	–	–	–	–	–
13	0.006	0.006	0.005	0.004	–	–	–	–	–	–	–	–	–	–	–	–	–	–
14	0.006	0.005	0.004	0.004	–	–	–	–	–	–	–	–	–	–	–	–	–	–
15	0.005	0.005	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
16	0.004	0.004	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

External multi-tooth inserts

	ISO Metric						UN					Whitworth		NPT		
Type	3M	2M	3M	2M	3M	2M	2M	3M	2M	3M	2M	2M		2M	3M	2M
Ph (mm)	1.0	1.5	1.5	2.0	2.0	3.0	–	–	–	–	–	–		–	–	–
TPI	–	–	–	–	–	–	16	16	12	12	8	11		11.5	11.5	8
a_p (inch)	0.026	0.037	0.037	0.049	0.049	0.076	0.041	0.041	0.055	0.055	0.082	0.062		0.069	0.069	0.100
Pass 1 (inch)	0.014	0.017	0.022	0.022	0.030	0.026	0.019	0.025	0.025	0.033	0.028	0.029		0.023	0.032	0.035
2	0.011	0.012	0.015	0.016	0.020	0.021	0.013	0.016	0.017	0.022	0.022	0.020		0.020	0.022	0.025
3	–	0.008	–	0.011	–	0.017	0.009	–	0.012	–	0.018	0.014		0.015	0.015	0.022
4	–	–	–	–	–	0.013	–	–	–	–	0.014	–		0.012	–	0.018

Internal multi-tooth inserts

	ISO Metric						UN					Whitworth		NPT		
Type	3M	2M	3M	2M	3M	2M	2M	3M	2M	3M	2M	2M		2M	3M	2M
Ph (mm)	1.0	1.5	1.5	2.0	2.0	3.0	–	–	–	–	–	–		–	–	–
TPI	–	–	–	–	–	–	16	16	12	12	8	11		11.5	11.5	8
a_p (inch)	0.024	0.033	0.033	0.046	0.046	0.070	0.037	0.037	0.049	0.049	0.074	0.062		0.069	0.069	0.100
Pass 1 (inch)	0.013	0.015	0.020	0.020	0.028	0.022	0.017	0.022	0.022	0.030	0.023	0.029		0.023	0.032	0.035
2	0.011	0.011	0.013	0.015	0.019	0.019	0.012	0.015	0.016	0.020	0.020	0.020		0.020	0.022	0.025
3	–	0.008	–	0.011	–	0.017	0.008	–	0.011	–	0.017	0.014		0.015	0.015	0.022
4	–	–	–	–	–	0.013	–	–	–	–	0.014	–		0.012	–	0.018

Number of passes and infeed depths

External/Internal NPT threads

TPI	8	11.5	14	18	27
a_p	0.100	0.069	0.057	0.044	0.030
1	0.011	0.010	0.009	0.009	0.007
2	0.010	0.009	0.009	0.007	0.006
3	0.009	0.007	0.007	0.006	0.005
4	0.007	0.006	0.006	0.006	0.004
5	0.007	0.006	0.006	0.005	0.004
6	0.007	0.006	0.005	0.005	0.003
7	0.007	0.006	0.005	0.004	–
8	0.007	0.005	0.004	0.003	–
9	0.006	0.005	0.004	–	–
10	0.006	0.004	0.003	–	–
11	0.006	0.004	–	–	–
12	0.005	0.003	–	–	–
13	0.005	–	–	–	–
14	0.004	–	–	–	–
15	0.003	–	–	–	–

External Round DIN 405

TPI	4	6	8	10
a_p	0.135	0.088	0.068	0.055
1	0.017	0.013	0.011	0.010
2	0.016	0.011	0.010	0.010
3	0.013	0.010	0.008	0.009
4	0.013	0.009	0.007	0.008
5	0.011	0.008	0.007	0.006
6	0.010	0.007	0.006	0.005
7	0.009	0.006	0.006	0.004
8	0.009	0.006	0.005	0.003
9	0.008	0.006	0.004	–
10	0.007	0.005	0.003	–
11	0.007	0.004	–	–
12	0.006	0.003	–	–
13	0.005	–	–	–
14	0.004	–	–	–

Internal Round DIN 405

TPI	4	6	8	10
a_p	0.141	0.096	0.065	0.059
1	0.018	0.015	0.010	0.011
2	0.017	0.013	0.009	0.010
3	0.016	0.012	0.008	0.010
4	0.014	0.010	0.007	0.009
5	0.012	0.008	0.007	0.007
6	0.010	0.007	0.006	0.005
7	0.009	0.007	0.006	0.004
8	0.009	0.006	0.005	0.003
9	0.008	0.006	0.004	–
10	0.007	0.005	0.003	–
11	0.007	0.004	–	–
12	0.006	0.003	–	–
13	0.005	–	–	–
14	0.004	–	–	–

TPI = Threads per Inch

a_p = Total infeed depth (inch)

Recommendations are for steel with a hardness < 300 HB

Number of passes and infeed depths

External ACME

TPI	2	3	4	5	6	8	10	12	14	16
a_p	0.265	0.18	0.138	0.112	0.095	0.074	0.063	0.050	0.041	0.039
1	0.028	0.019	0.013	0.012	0.011	0.010	0.010	0.009	0.008	0.009
2	0.026	0.018	0.012	0.011	0.011	0.010	0.009	0.009	0.008	0.009
3	0.023	0.016	0.011	0.010	0.010	0.009	0.009	0.007	0.007	0.007
4	0.022	0.015	0.011	0.01	0.009	0.007	0.007	0.007	0.006	0.006
5	0.019	0.013	0.010	0.009	0.008	0.006	0.006	0.005	0.005	0.005
6	0.017	0.011	0.010	0.008	0.007	0.005	0.005	0.005	0.004	0.003
7	0.015	0.011	0.009	0.007	0.006	0.005	0.005	0.004	0.003	–
8	0.013	0.009	0.008	0.007	0.006	0.005	0.004	0.004	–	–
9	0.013	0.009	0.008	0.007	0.006	0.005	0.004	–	–	–
10	0.011	0.009	0.007	0.006	0.006	0.004	0.004	–	–	–
11	0.011	0.008	0.007	0.006	0.006	0.004	–	–	–	–
12	0.01	0.007	0.006	0.006	0.005	0.004	–	–	–	–
13	0.009	0.007	0.006	0.005	0.004	–	–	–	–	–
14	0.009	0.007	0.006	0.004	–	–	–	–	–	–
15	0.008	0.006	0.006	0.004	–	–	–	–	–	–
16	0.007	0.005	0.004	–	–	–	–	–	–	–
17	0.007	0.005	0.004	–	–	–	–	–	–	–
18	0.006	0.005	–	–	–	–	–	–	–	–
19	0.006	–	–	–	–	–	–	–	–	–
20	0.005	–	–	–	–	–	–	–	–	–

Internal ACME

TPI	2	3	4	5	6	8	10	12	14	16
a_p	0.265	0.182	0.142	0.114	0.098	0.078	0.065	0.049	0.042	0.040
1	0.028	0.020	0.013	0.012	0.012	0.011	0.010	0.009	0.009	0.009
2	0.026	0.018	0.012	0.012	0.011	0.011	0.010	0.009	0.008	0.009
3	0.023	0.016	0.012	0.011	0.011	0.009	0.009	0.007	0.007	0.008
4	0.022	0.015	0.011	0.010	0.009	0.007	0.007	0.006	0.006	0.006
5	0.019	0.013	0.011	0.009	0.008	0.006	0.006	0.005	0.005	0.005
6	0.017	0.011	0.010	0.008	0.007	0.006	0.006	0.005	0.004	0.003
7	0.015	0.011	0.009	0.007	0.007	0.005	0.005	0.004	0.003	–
8	0.013	0.009	0.008	0.007	0.006	0.005	0.004	0.004	–	–
9	0.013	0.009	0.008	0.007	0.006	0.005	0.004	–	–	–
10	0.011	0.009	0.007	0.006	0.006	0.005	0.004	–	–	–
11	0.011	0.008	0.007	0.006	0.006	0.004	–	–	–	–
12	0.010	0.007	0.006	0.006	0.005	0.004	–	–	–	–
13	0.009	0.007	0.006	0.005	0.004		–	–	–	–
14	0.009	0.007	0.006	0.004	–	–	–	–	–	–
15	0.008	0.006	0.006	0.004	–	–	–	–	–	–
16	0.007	0.006	0.005	–	–	–	–	–	–	–
17	0.007	0.005	0.005	–	–	–	–	–	–	–
18	0.006	0.005		–	–	–	–	–	–	–
19	0.006	–	–	–	–	–	–	–	–	–
20	0.005	–	–	–	–	–	–	–	–	–

TPI = Threads per Inch

a_p = Total infeed depth (inch)

Recommendations are for steel with a hardness < 300 HB

Number of passes and infeed depths, multi-tooth insert TWIN THREADER, TT

External 60° threads

Ph	2.0	1.5	1.0
a_p (inch)	0.049	0.037	0.026
Pass 1 (inch)	0.010	0.009	0.009
2	0.014	0.012	0.010
3	0.010	0.009	0.007
4	0.008	0.007	–
5	0.007	–	–

Internal 60° threads

Ph	2.0	1.5	1.0
a_p (inch)	0.046	0.033	0.024
Pass 1 (inch)	0.009	0.008	0.007
2	0.013	0.011	0.009
3	0.009	0.008	0.007
4	0.007	0.007	–
5	0.007	–	–

External and internal Whitworth and BSPT threads

TPI	11	14
a_p (inch)	0.062	0.047
Pass 1 (inch)	0.010	0.009
2	0.015	0.014
3	0.011	0.009
4	0.010	0.008
5	0.009	0.007
6	0.008	–

External UN threads

TPI	12	16
a_p (inch)	0.055	0.041
Pass 1 (inch)	0.011	0.010
2	0.015	0.014
3	0.011	0.010
4	0.010	0.007
5	0.008	–

Internal UN threads

TPI	12	16
a_p (inch)	0.049	0.037
Pass 1 (inch)	0.009	0.008
2	0.014	0.013
3	0.010	0.009
4	0.009	0.007
5	0.007	–

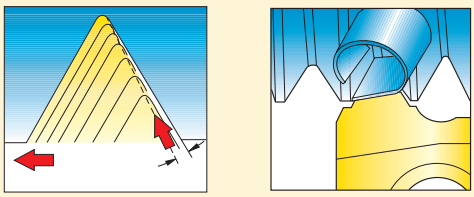
Ph = Pitch (mm)
TPI = Threads per inch
a_p = Total infeed depth (inch)
Recommendations are for steel with a hardness < 300 HB

Infeed method

The choice of infeed method is most important for long chipping materials to ensure good chip control.

Modified flank infeed

For CNC machines and conventional machines

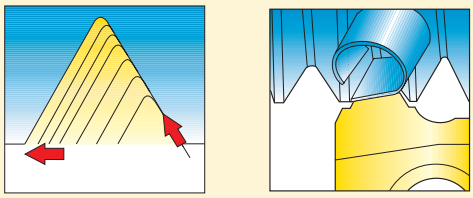


First choice for CNC machines
The infeed angle should be 2.5–5% less than the flank angle

- Good chip control (important for internal threading)
- Good surface finish on thread
- Long tool life

Flank infeed

For CNC machines and conventional machines

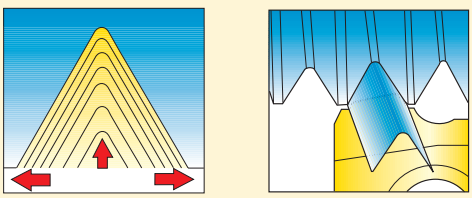


Choose flank infeed when modified flank infeed cannot be used

- Good chip control
- Can result in bad surface on thread
- Not suitable for work hardening materials

Radial infeed

For conventional machines and multi-tooth inserts

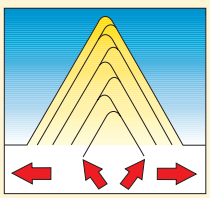


Multitooth inserts demand radial infeed
First choice for work hardening materials

- Difficult to control the chip
- High cutting forces

Alternate flank infeed

For CNC machines



First choice for large coarse threads

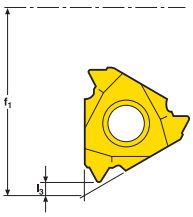
- Long tool life
- Chipbreaking problems can arise

Threading – Toolholder modifications to thread small ID

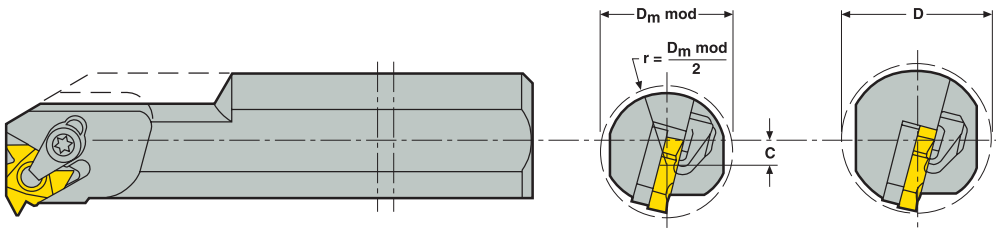
It is often necessary to cut internal threads which are too small to be made with a standard toolholder.
Several standard internal toolholders can be modified by a simple reworking so that threads can be cut in approximately 30% smaller bores.
This modification work can be made on an lathe with a four-jaw chuck. In the dimension table D_m min* at pages 'Toolholders Internal' you will find the dimensions required for the alteration.

On demand, these internal toolholders can also be supplied as special design.

For some holders it is possible to work inside smaller bores than indicated by the Dm mod dimension, here it is necessary "to back off" the bottom corner of the insert (possibly also the insert shim).



f_1 and l_3 dimensions can be found on the pages for internal toolholders (pages 489-493) and threading inserts (pages 494-526).



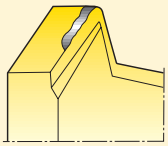
$$C = f_1 - l_3 + r - D_m mod$$

C = Center-point displacement when modifying the tool.
D = Minimum bore diameter of standard tool.
$D_m$mod = Minimum bore diameter with a modified tool.

Troubleshooting

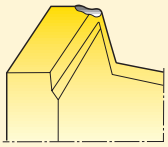
Rapid flank wear

- Reduce the cutting speed
- Increase the infeed per pass
- Use modified flank infeed
- Check that the correct insert shim has been selected
- Select a more wear-resistant grade



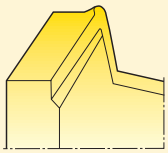
Insert fracture

- Increase the number of passes
- Check the workpiece mounting
- Check the center height of the cutting edge
- Check for built-up edge
- Select a tougher grade



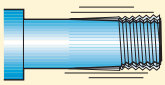
Plastic deformation

- Select a grade with better resistance to plastic deformation
- Reduce the cutting speed
- Increase the number of passes
- Increase the coolant supply
- Check that the workpiece diameter is correct prior to cutting the thread



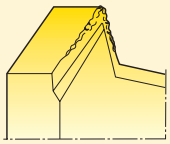
Vibrations

- Change the cutting speed
- Reduce the overhang and use the most stable toolholder
- Check the center height of the cutting edge
- Check that the workpiece diameter is correct



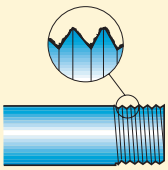
Build-up edge

- Increase the cutting speed
- Do not use coolant



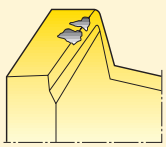
Poor finish

- Increase the cutting speed
- Check that the correct insert shim has been selected
- Use modified flank infeed or radial infeed



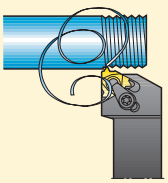
Edge chipping

- Check the workpiece mounting
- Check the cutting speed
- Use modified flank infeed
- Select a tougher grade



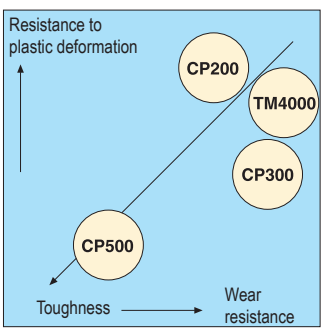
Poor chip control

- Reduce the number of passes
- Increase the cutting speed
- Use modified flank infeed
- Increase the coolant supply

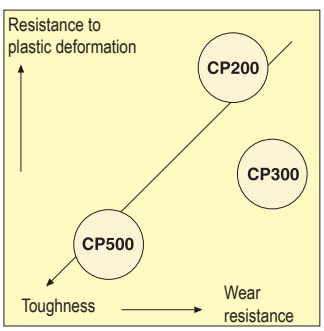


Optimization

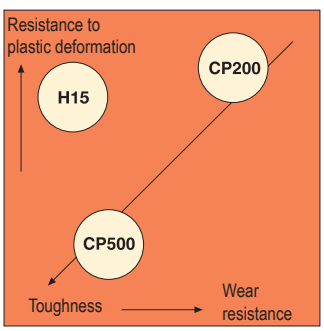
ISO-P (steel)



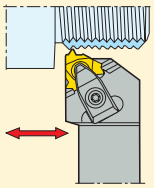
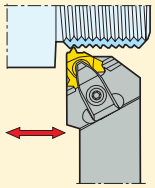
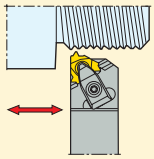
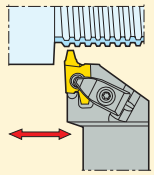
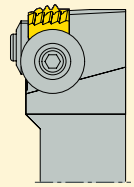
ISO-M (stainless steel)



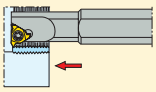
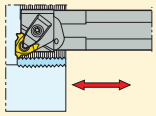
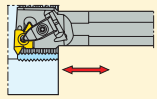
ISO-K (cast iron)



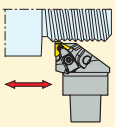
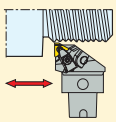
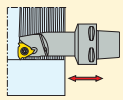
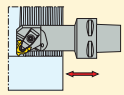
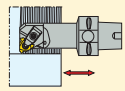
External toolholders

CER/L...Q-S CER/L...QHD	CER...CQHD	CER..Q-S Swiss style	CER/L...QHD (K-Style inserts)	CER-M
				
Pages 483-484	Page 485	Page 486	Page 487	Page 488

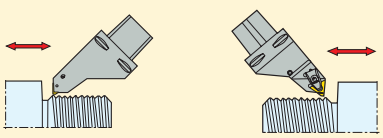
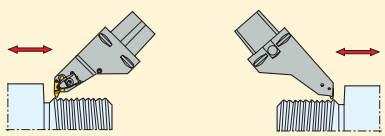
Internal toolholders

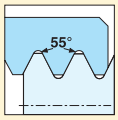
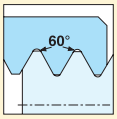
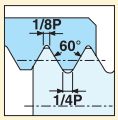
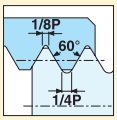
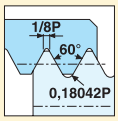
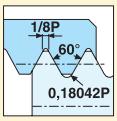
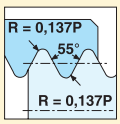
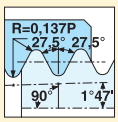
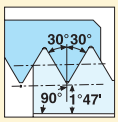
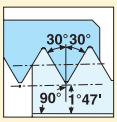
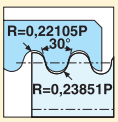
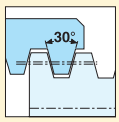
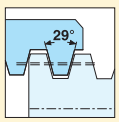
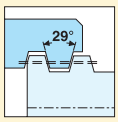
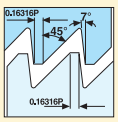
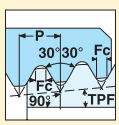
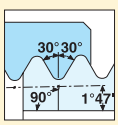
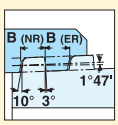
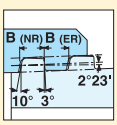
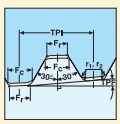
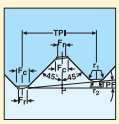
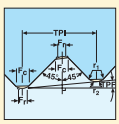
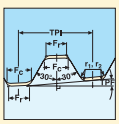
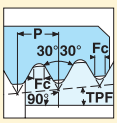
SNR/L SNR...A	CNR/L...AHD CNR/L...APIHD	CNR/L...AHD (K-Style inserts)	GL..-CNR/L Steadyline®	
				
Page 489	Pages 490-492	Page 493	Page 216	

Seco-Capto™

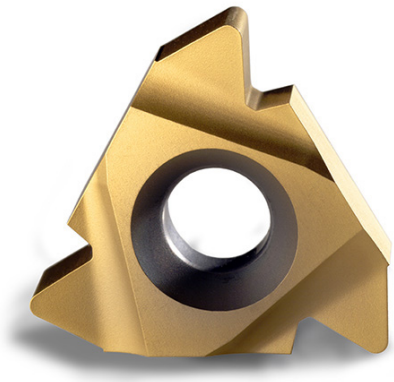
CER/L-..HD Ext.	CER/L-..CHD Ext.	SNR Int.	CNR/L-..HD Int.	CNR/L-..CHD Int.
				
Page 719	Page 720	Page 721	Page 721-722	Pages 723-724

Seco-Capto™ for MTM

CER-..HD (S style inserts)	CEL..HD (K style inserts)
	
Page 733	Page 734

Partial profile inserts	**55° V profile**  Pages 496-497	**60° V profile**  Pages 494-495			
Full profile inserts **Reusable threaded joints**	**ISO metric**  Pages 503-506	**UN**  Pages 498-501			
Full profile inserts **Reusable threaded joints for the aero-space industry**	**UNJ**  Page 502	**MJ**  Page 502	**UNJ and MJ, internal use** **Standard internal UN and ISO M threading inserts can be used for internal UNJ and MJ.** **The correct turned diameter must be reached before the threading operation.**		
Full profile inserts **Permanent threaded joints for pipe mountings and couplings**	**Whitworth, BSW**  Pages 514-515	**BSPT**  Page 519	**NPT**  Pages 507-508	**NPTF**  Page 509	**Round-DIN405**  Page 518
Partial profile (semi topping) inserts **Motion-transmitting threads**	**TR-DIN103**  Pages 516-517	**ACME**  Pages 510-511	**Stub-ACME**  Pages 512-513	**American Butress**  Page 524	
Full profile inserts **Threads for the oil and gas industry**	**API**  Page 520	**API RD**  Page 521	**VAM-API-Buttress 2.5**  Page 522	**API-Buttress 2.6**  Page 523	
Full profile inserts **Threads for the oil and gas industry**	**Hughes Flush**  Pages 525-526	**Hughes H90**  Pages 525-526	**Hughes Slimline H90**  Pages 525-526	**P.A.C**  Pages 525-526	**Chasers API/Gost**  Page 527

Seco Snap-Tap®



1. Metallurgical control of substrate
- Check of substrate regarding Hc, MM and porosity
- Measured according to SPM
- Values stored in a database

2. Dimensional check after sintering
- Measuring of IC and thickness
- Measured according to SPM
- Values stored in a database

3. Dimensional control after bottom grinding
- Thickness and cutting edge height
- Flatness
- Measured according to SPM

4. Dimensional control after grinding
- Profile and radius
- Measured according to SPM

5. Edge measuring
- Edge radius checked during honing
- Measured according to SPM
- Values stored in a database

6. Measuring of coating
- Coating, check of thickness and adhesion
- Measured according to SPM
- Values stored in a database

7. Final Inspection
- Visual Inspection
- Sampling in accordance to AQL

8. Production management system
- SGS (SPM1) - Control specifications
- LS - Production instructions
- Seco Act - System for preventive and corrective actions
- Approved to ISO 9001 and 14001 standard

9. Abbreviations
- LS - Local management Systems - contains local process descriptions, routines, procedures and instructions
- SGS - Seco Global Standards - consists of instructions common for all Seco companies
- SPM - Seco Production Manual - Part of SGS is a collection of instructions and documents with the purpose to guide and maintain the quality level of Seco products
- AQL - Accepted Quality Level (Mil-std)
- MM - Content of Tungsten in binder
- Hc - Coercivity, describing grainsize

Seco Chasers



1. Metallurgical control of substrate
- Check of substrate regarding Hc, MM and porosity
- Measured according to SPM
- Values stored in a database

2. Dimensional control after top and bottom grinding
- Thickness
- Roughness Ra
- Flatness
- Measured according to SPM

3. Measuring after periphery Grinding
- Optical measuring
- Data stored in a database

4. Dimensional control after grinding
- Profile and radius
- Measured according to SPM

5. Edge measuring
- Edge radius checked during honing
- Measured according to SPM
- Values stored in a database

6. Measuring of coating
- Coating (PVD), check of thickness and adhesion
- Measured according to SPM
- Values stored in a database

7. Height classification
- Optical measuring of height
- Graphic presentation of values
- Sorted and labelled with height classification

8. Final inspection
- Edge inspection 100%
- Profile check with tolerance drawing, sampling in accordance to AQL

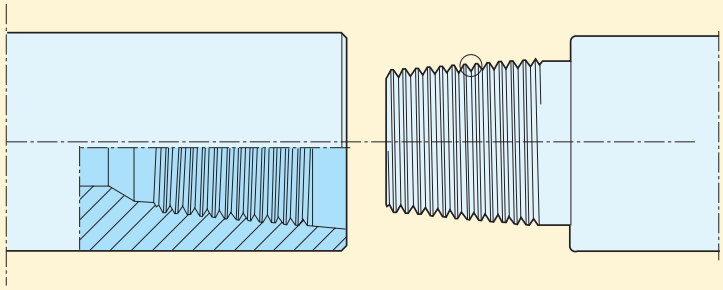
9. Traceability
- Finished products from each order saved for future reference
- Saved 5 years from production date
- Finished product has full traceability

10. Overlay drawings
- Printer for overlays is calibrated with glass scale monthly
- Scaled master printout is saved according to SPM

11. Production management System
- SGS (SPM1) - Control specifications
- LS - Production instructions
- Seco Act - System for preventive and corrective actions
- Approved to ISO 9001 and 14001 standard

12. Abbreviations
- LS - Local management Systems - contains local process descriptions, routines, procedures and instructions
- SGS - Seco Global Standards - consists of instructions common for all Seco companies
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- AQL - Accepted Quality Level (Mil-std)
- MM - Content of Tungsten in binder
- Hc - Coercivity, describing grainsize

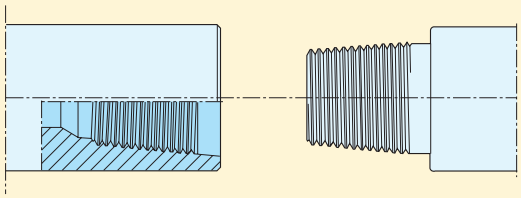
Rotary drilling connections



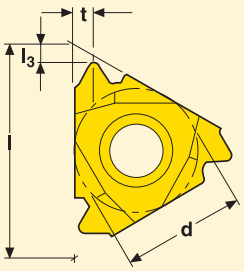
Connections	Pitch TPI	TPF	API code	Snap-Tap code
API Number				
NC10 - NC16	6.0	1.5	V055	6API558
NC23 - NC50	4.0	2.0	V038R	4API386
NC56 - NC77	4.0	3.0	V038R	4API384
API Regular				
1 - 1 1/2 REG	6.0	1.5	V055	6API558
2 3/8 REG - 4 1/2 REG	5.0	3.0	V040	5API404
5 1/2 REG - 7 5/8 REG, 8 5/8 REG	4.0	3.0	V050	4API504
6 5/8 REG	4.0	2.0	V050	4API506
Internal Flush				
2 3/8 IF - 6 5/8 IF	4.0	2.0	V038R	4API386
Full Hole				
3 1/2 FH, 4 1/2 FH	5.0	3.0	V040	5API404
4 FH	4.0	2.0	V038R	4API386
5 1/2 FH, 6 5/8 FH	4.0	2.0	V050	4API506
Hughes External Flush				
2 3/8, 2 7/8	6.0	2.0	–	6HEF
3 1/2, 4 1/2	4.0	2.0	V038R	4API386
Hughes Xtra Hole				
2 7/8 - 5	4.0	2.0	V038R	4API386
Hughes Slim Hole				
2 3/8 - 4 1/2	4.0	2.0	V038R	4API386
Hughes Double Streamline				
3 1/2 - 5 1/2	4.0	2.0	V038R	4API386
Hughes H90				
3 1/2 - 6 5/8	3.5	2.0	90V050	3.5H906
7 - 8 5/8	3.5	3.0	90V050	3.5H904
Hughes Slimline H90				
2 3/8 - 3 1/2	3.0	1.25	90V050	3H90
Hughes ACME Regular				
2 3/8 - 6 5/8	4.0	3.373	–	4HACME
Hughes ACME Streamline				
2 3/8 - 5 1/2	4.0	3.373	–	4HACME
P.A.C.				
2 3/8 PAC - 3 1/2 PAC	4.0	1.5	V076	4PAC
Macaroni				
MT, AMT, AMMT	6.0	1.5	V055	6API558

Rotary drilling connections

Connections

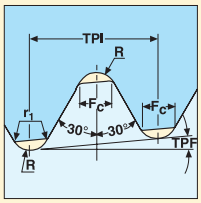
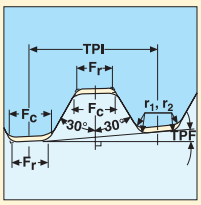
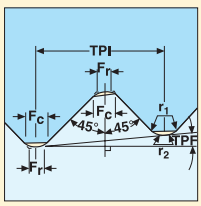
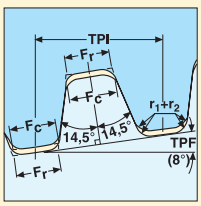


Insert dimensions



Connections				Dimensions in inch			
Snap-Tap code	API code	Pitch TPI	TPF	l	d (I.C.)	t	l_3
6API558	V055	6.0	1.5	0.866	0.500	0.098	0.079
5API404	V040	5.0	3.0	0.866	0.500	0.098	0.079
5API404	V040	5.0	3.0	1.083	0.625	0.126	0.087
4API386	V038R	4.0	2.0	0.866	0.500	0.098	0.075
4API386	V038R	4.0	2.0	1.083	0.625	0.126	0.087
4API384	V038R	4.0	3.0	1.083	0.625	0.126	0.087
4API506	V050	4.0	2.0	1.083	0.625	0.126	0.087
4API504	V050	4.0	3.0	1.083	0.625	0.126	0.087
6HEF	–	6.0	2.0	0.866	0.500	0.098	0.079
4PAC	V076	4.0	1.5	1.083	0.625	0.126	0.087
3,5H906	90V050	3.5	2.0	1.083	0.625	0.126	0.087
3,5H904	90V050	3.5	3.0	1.083	0.625	0.126	0.087
3H90	90V050	3.0	1.25	1.083	0.625	0.126	0.087
4HACME	–	4.0	3.373	1.083	0.625	0.126	0.087

Thread profile

Profile	TPI	TPF	Dimensions in inch				API code	Snap-Tap code
			R/F_r	F_c	r_1	r_2		
	5.0	3.0	0.020	0.040	0.015	–	V040	5API404
	4.0	2.0	0.038	0.065	0.015	–	V038R	4API386
	4.0	3.0	0.038	0.065	0.015	–	V038R	4API384
	4.0	2.0	0.025	0.050	0.015	–	V050	4API506
	4.0	3.0	0.025	0.050	0.015	–	V050	4API504
	6.0	1.5	0.047	0.055	0.015	0.015	V055	6API558
	6.0	2.0	0.022	0.032	0.015	0.015	–	6HEF
	4.0	1.5	0.067	0.076	0.015	0.015	V076	4PAC
	3.5	2.0	0.034	0.050	0.015	0.030	90V050	3,5H906
	3.5	3.0	0.034	0.050	0.015	0.030	90V050	3,5H904
	3.0	1.25	0.068	0.084	0.015	0.030	90V050	3H90
	4.0	3.373	0.089	0.094	0.031	0.031	–	4HACME

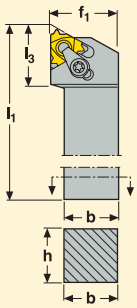
Toolholders for S-inserts

Snap-Tap®

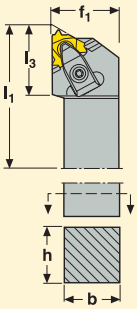


- For inserts, please see threading insert section beginning on page 494

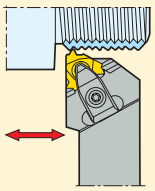
CER/L..Q



CER/L..QHD



Right-hand version shown

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	lbs	
	3/8	72538	CER 03753-16Q	0.375	0.375	0.375	3.0	0.90	0.44	16ER...
		72524	0504-16Q	0.500	0.500	0.625	4.0	0.90	0.44	16ER...
		72466	CEL 0504-16Q	0.500	0.500	0.625	4.0	0.90	0.44	16ER...
		72498	CER 06254-16Q	0.625	0.625	0.750	4.0	0.90	0.66	16ER...
		72544	CEL 06254-16Q	0.625	0.625	0.750	4.0	0.90	0.66	16EL...
		21684	CER 0755-16QHD	0.750	0.750	1.000	5.0	0.90	0.88	16ER...
		20657	1006-16QHD	1.000	1.000	1.250	6.0	1.10	1.98	16ER...
		20687	CEL 1006-16QHD	1.000	1.000	1.250	6.0	1.10	1.98	16EL...
		20659	CER 1256-16QHD	1.250	1.250	1.500	6.0	1.18	3.09	16ER...
		20688	CEL 1256-16QHD	1.250	1.250	1.500	6.0	1.10	3.09	16EL...
		20661	CER 1506-16QHD	1.500	1.500	1.750	6.0	1.10	3.97	16ER...

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Insert shim (S)	Insert shim (M)*	Shim screw/Key*		Cantilever clamp/ Locking key		Floating wedge clamp	Clamp screw	Spring	Locking key
										
...-16Q	GX16-1	MX16-1	CS3507-T09P	T09P-2	CSP16-T15P	T15P-2	–	–	–	–
...-16QHD	GX16-1	MX16-1	CS3507-T09P	T09P-2	–	–	CHD16	L85020-T15P	S6912	T15P-7

Please check availability in current price and stock-list

*To be ordered separately
Insert shim (M) for multi tooth insert

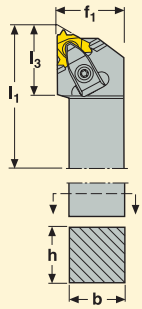
Toolholders for S-inserts

Snap-Tap®

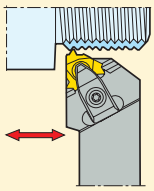


- For inserts, please see threading insert section beginning on page 494

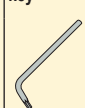
CER/L..QHD



Right-hand version shown

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	lbs	
	1/2	20662	CER 1005-22QHD	1.00	1.00	1.25	5.0	1.30	1.76	22ER...
		20663	1006-22QHD	1.00	1.00	1.25	6.0	1.30	2.20	22ER...
		20665	1256-22QHD	1.25	1.25	1.50	6.0	1.42	3.09	22ER...
		20667	1506-22QHD	1.50	1.50	1.75	6.0	1.30	4.19	22ER...
		20689	CEL 1005-22QHD	1.00	1.00	1.25	5.0	1.30	1.76	22EL...
		20691	1006-22QHD	1.00	1.00	1.25	6.0	1.30	2.20	22EL...
		20692	1256-22QHD	1.25	1.25	1.50	6.0	1.30	3.09	22EL...
	5/8	20671	CER 1006-27QHD	1.00	1.00	1.25	6.0	1.60	2.20	27ER...
		20673	1256-27QHD	1.25	1.25	1.50	6.0	1.73	3.09	27ER...
		20675	1506-27QHD	1.50	1.50	1.75	6.0	1.60	4.19	27ER...
		20693	CEL 1006-27QHD	1.00	1.00	1.25	6.0	2.00	2.20	27EL...
		20694	1256-27QHD	1.25	1.25	1.50	6.0	1.60	3.09	27EL...
		20695	1506-27QHD	1.50	1.50	1.75	6.0	1.60	4.19	27EL...

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Insert shim (S)	Insert shim (M)*	Shim screw/Key*		Floating wedge clamp	Clamp screw	Spring	Locking key
								
...-22QHD	NX22-1	MX22-1	CS4009-T15P	T15P-2	CHD22	L86025-T20P	S7616	T20P-7L
...-27QHD	VX27-1	MX27-1	CS5012-T15P	T15P-2	CHD22	L86025-T20P	S7616	T20P-7L

Please check availability in current price and stock-list

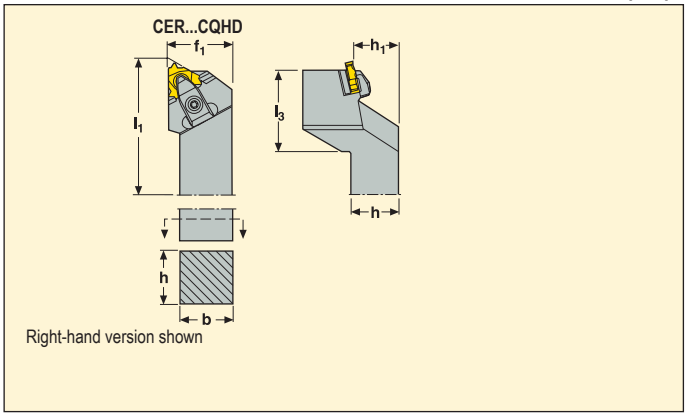
*To be ordered separately
Insert shim (M) for multi tooth insert

Toolholders for S-inserts

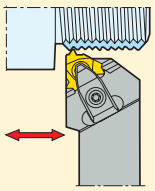
Snap-Tap®



- For inserts, please see threading insert section beginning on page 494



Right-hand version shown

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	l_1	h_1	f_1	l_3	lbs	
	3/8	21160	CER 1006-16CQHD	1.00	1.00	6.00	1.00	1.25	2.00	1.54	16ER..
		20696	CEL 1006-16CQHD	1.00	1.00	6.00	1.00	1.25	2.00	1.54	16EL..
		20676	CER 1256-16CQHD	1.25	1.25	6.00	1.25	1.25	2.50	3.09	16ER..
	1/2	20678	CER 1006-22CQHD	1.00	1.00	6.00	1.00	1.25	2.00	2.20	22ER..
	5/8	20682	CER 1006-27CQHD	1.00	1.00	6.00	1.00	1.25	2.00	2.20	27ER..

Spare Parts, Parts included in delivery

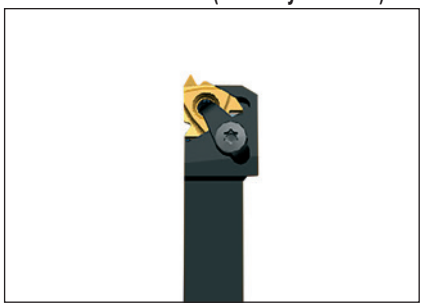
Toolholder/ Insert dimension	Insert shim (S)	Insert shim (M)*	Shim screw/Key*		Floating wedge clamp	Clamp screw	Spring	Locking key
..16CQHD	GX16-1	MX16-1	CS3507-T09P	T09P-2	CHD16	L85020-T15P	S6912	T15P-7
..22CQHD	NX22-1	MX22-1	CS4009-T15P	T15P-2	CHD22	L86025-T20P	S7616	T20P-7L
..27CQHD	VX27-1	MX27-1	C05012-T15P	T15P-2	CHD27	L86025-T20P	S7616	T20P-7L

Please check availability in current price and stock-list

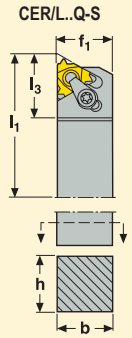
*To be ordered separately
Insert shim (M) for multi tooth insert

Toolholders for S-inserts (Swiss style holders)

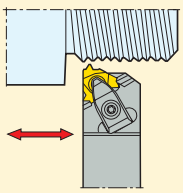
Snap-Tap®



- For inserts, please see threading insert section beginning on page 494



Right-hand version shown**

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	f_1	l_1	l_3	lbs	
	3/8	24244	CER 0505-16Q-S	0.500	0.500	0.630	5.0	0.84	0.44	16ER..
		24246	06255-16Q-S	0.625	0.625	0.750	5.0	0.84	0.88	16ER..

**Club head with f1 dimension greater than shank width (b) to the backside of shank.
**Club head with 0.12 steel under bottom of shank for l3 distance.

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Insert shim (S)	Insert shim (M)*	Shim screw/Key*		Cantilever clamp/Locking key	
...-16Q-S	GX16-1	MX16-1	CS3507-T09P	T09P-2	CSP16-T15P	T15P-2

Please check availability in current price and stock-list

*To be ordered separately
Insert shim (M) for multi tooth insert

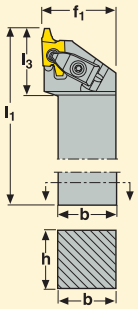
Toolholders for K-inserts

Snap-Tap®

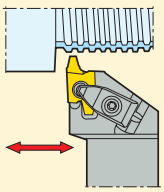


- For inserts, please see threading insert section beginning on page 494

CER/L..QHD



Right-hand version shown

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	lbs	
	1/2	12845	CER 1006-20QHD	1.00	1.00	6.0	1.25	1.30	1.98	20..
		13399	CEL 1006-20QHD	1.00	1.00	6.0	1.25	1.30	1.98	20..
		13443	CER 1256-20QHD	1.25	1.25	6.0	1.50	1.42	2.87	20..
		13473	CEL 1256-20QHD	1.25	1.25	6.0	1.50	1.30	2.87	20..
	5/8	13476	CER 1006-26QHD	1.00	1.00	6.0	1.25	1.80	2.20	26..
		13477	CEL 1006-26QHD	1.00	1.00	6.0	1.25	1.80	2.20	26..
		13478	CER 1256-26QHD	1.25	1.25	6.0	1.50	1.80	3.09	26..
		13480	CER 1506-26QHD	1.50	1.50	6.0	1.75	1.80	3.97	26..

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Insert shim (K)	Shim screw/Key*		Floating wedge clamp	Clamp screw	Spring	Locking key
...20QHD	KX20-2	CS4009-T15P	T15P-2	CHD22	L86025-T20P	S7616	T20P-7L
...26QHD	KX26-2	C05012-T15P	T15P-2	CHD27	L86025-T20P	S7616	T20P-7L

Please check availability in current price and stock-list

*To be ordered separately

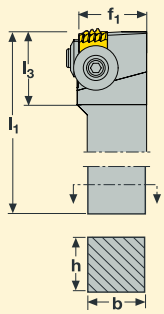
Toolholders for chasers

Snap-Tap®

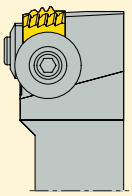


- For inserts program, see page 527
- For chipformers, see page 528

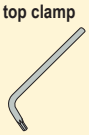
CER



Right-hand version shown

Application	EDP No.	Part No.	Dimensions in inch b	h	f_1	l_1	l_3	lbs	
	79094	CER 1256-1-M	1.25	1.25	1.467	6.701	1.872	3.09	15.875
	79095	1256-5-M	1.25	1.25	1.467	6.701	1.872	3.09	25.000

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Plug	Key, top clamp	Key, side clamp	Clamp kit top	Clamp kit side
					
CER	JET-P1/8-5MM	T25P-7	T20P-7	W240618-T25P	W200613-T20P

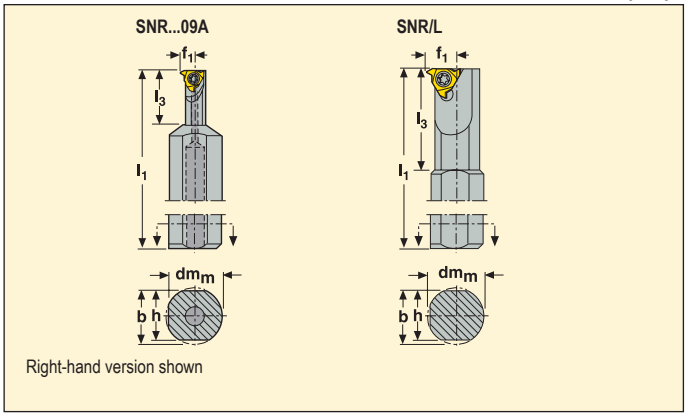
Please check availability in current price and stock-list

Toolholders for S-inserts

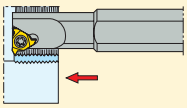
Snap-Tap®



- For inserts, please see threading insert section beginning on page 495



Right-hand version shown

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch dm_m	h	b	l_1	l_3	f_1	D_m min	D_m min*	lbs	
	7/32	86856	**SNR 00075055-09A**	0.750	0.69	0.71	5.5	0.75	0.201	0.40	0.40	0.66	09NR..
	1/4	72380	**SNR 00037540-11**	0.375	0.34	0.35	4.0	–	0.285	0.50	0.40	0.22	11NR..
		72403	**SNL 00037540-11**	0.375	0.34	0.35	4.0	–	0.285	0.50	0.45	0.22	11NL..
		72332	**SNR 0005055-11**	0.500	0.44	0.47	5.5	1.25	0.315	0.60	–	0.66	11NR..
		72405	**SNL 0005055-11**	0.500	0.44	0.47	5.5	1.25	0.315	0.60	0.50	0.66	11NL..
	3/8	72374	**SNR 00062560-16**	0.625	0.57	0.59	6.0	1.50	0.406	0.75	–	0.66	16NR..
		72407	**SNL 00062560-16**	0.625	0.57	0.59	6.0	1.50	0.406	0.75	0.62	0.66	16NL..
	1/2	72314	**SNR 0007570-22**	0.750	0.69	0.71	7.0	2.00	0.492	0.90	–	1.10	22NR..
		72411	**SNL 0007570-22**	0.750	0.69	0.71	7.0	2.00	0.492	0.90	0.85	1.10	22NL..
	1/4	72376	**SNR 00037560-11-H**	0.375	0.34	0.35	6.0	0.39	0.285	0.45	0.40	0.44	11NR..
	3/8	72330	**SNR 00062580-16-H**	0.625	0.57	0.59	8.0	1.50	0.406	0.75	–	1.54	16NR..
	1/2	72370	**SNR 00075010-22-H**	0.750	0.69	0.71	10.0	2.00	0.492	0.90	–	2.65	22NR..

*D_m min, can be modified to accomodate a smaller bore size. Please see page 474

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Locking screw/ Key  		Coolant adapter*
..-09A	C02205-T07P	T07P-2	SEAL20 (20mm)
..-11	C02506-T07P	T07P-2	–
..-16	C03508-T15P	T15P-2	–
..-22	C04011-T15P	T15P-2	–

Please check availability in current price and stock-list

*To be ordered separately

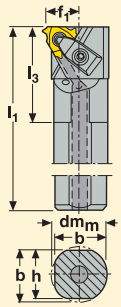
Toolholders for S-inserts

Snap-Tap®

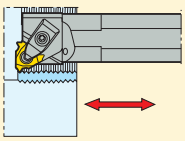


- For inserts, please see threading insert section beginning on page 495

CNR/L...AHD



Right-hand version shown

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch dm_m	h	b	l_1	l_3	f_1	D_m min	D_m min*	lbs	
	3/8	30821	CNR 000757-16AHD	0.75	0.65	0.71	6.7	1.18	0.52	0.95	0.80	0.9	16NR..
		30893	001008-16AHD	1.00	0.90	0.96	7.9	2.13	0.65	1.15	1.00	1.5	16NR..
		30897	0012510-16AHD	1.25	1.15	1.21	9.8	1.81	0.78	1.40	1.20	3.1	16NR..
		30899	0015012-16AHD	1.50	1.34	1.43	11.8	1.81	0.90	1.70	1.50	5.1	16NR..
		30904	0017514-16AHD	1.75	1.59	1.68	13.8	2.17	1.03	2.00	1.80	8.2	16NR..
		30906	0020014-16AHD	2.00	1.84	1.93	13.8	2.24	1.15	2.20	2.00	10.8	16NR..
		30907	CNL 000757-16AHD	0.75	0.65	0.71	6.7	1.18	0.52	0.95	0.80	0.9	16NL..
		30908	001008-16AHD	1.00	0.90	0.96	7.9	2.13	0.65	1.15	1.00	1.5	16NL..
		30909	0012510-16AHD	1.25	1.15	1.21	9.8	1.81	0.78	1.40	1.20	3.1	16NL..
		30910	0015012-16AHD	1.50	1.34	1.43	11.8	1.81	0.90	1.70	1.50	5.1	16NL..
		30913	0017514-16AHD	1.75	1.59	1.68	13.8	2.17	1.03	2.00	1.80	8.2	16NL..
		30917	0020014-16AHD	2.00	1.84	1.93	13.8	2.24	1.15	2.20	2.00	10.8	16NL..

*D_m min, can be modified to accomodate a smaller bore size. Please see page 474

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Insert shim (S)	Insert shim (M)*	Shim screw/Key*		Floating wedge clamp	Clamp screw	Spring	Locking key
								
00075/0100...16AHD	GX16-1	MX16-1	CS3507-T09P	T09P-2	CSP16HD-T15P	–	–	T15P-2
00125/00150..16AHD	GX16-1	MX16-1	CS3507-T09P	T09P-2	CHD16	L85020-T15P	S6912	T15P-2
00175/00200..16AHD	GX16-1	MX16-1	CS3507-T09P	T09P-2	CHD16	L85020-T15P	S6912	T15P-2

Please check availability in current price and stock-list

*To be ordered separately

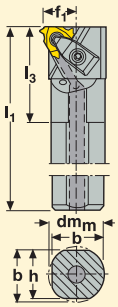
Toolholders for S-inserts

Snap-Tap®

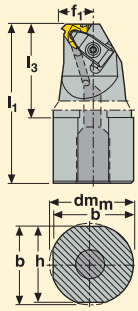


- For inserts, please see threading insert section beginning on page 495

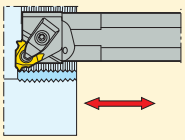
CNR/L...AHD



CNR...APIHD



Right-hand version shown

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch dm_m	h	b	l_1	l_3	f_1	D_m min	D_m min*	lbs	
	1/2	30919	CNR 001008-22AHD	1.00	0.90	0.96	7.9	–	0.71	1.20	–	2.9	22NR..
		30922	0012510-22AHD	1.25	1.15	1.21	9.8	2.13	0.84	1.50	1.20	3.1	22NR..
		30928	0015012-22AHD	1.50	1.34	1.43	11.8	2.13	0.97	1.80	1.80	5.1	22NR..
		30929	0017514-22AHD	1.75	1.59	1.68	13.8	2.13	1.09	2.10	1.80	8.2	22NR..
		30930	0020014-22AHD	2.00	1.84	1.93	13.8	2.32	1.21	2.30	2.00	11.0	22NR..
		30933	0025016-22AHD	2.50	2.34	2.43	15.7	2.40	1.46	2.80	2.50	20.3	22NR..
		30934	CNL 001008-22AHD	1.00	0.90	0.96	7.9	–	0.71	1.20	–	2.9	22NL..
		30936	0012510-22AHD	1.25	1.15	1.21	9.8	2.13	0.84	1.50	1.20	3.1	22NL..
		30937	0015012-22AHD	1.50	1.34	1.43	11.8	2.13	1.18	1.80	1.80	5.1	22NL..
		30938	0017514-22AHD	1.75	1.59	1.68	13.8	2.13	1.09	2.10	1.80	8.2	22NL..
		30941	0020014-22AHD	2.00	1.84	1.93	13.8	2.32	1.21	2.30	2.00	11.0	22NL..
		30945	0025016-22AHD	2.50	2.34	2.43	15.7	2.40	1.46	2.80	2.50	20.3	22NL..
		30953	CNR 00200T22APIHD	2.00	1.84	1.93	12.0	5.00	0.88	1.60	–	8.4	22NR..
		30956	00250T22APIHD	2.50	2.34	2.43	12.0	5.00	0.88	1.60	–	11.9	22NR..

*D_m min, can be modified to accomodate a smaller bore size. Please see page 474

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Insert shim (S)	Insert shim (M)*	Shim screw/Key*		Floating wedge clamp	Clamp screw	Spring	Locking key
								
00100..22AHD	NX 22-1	MX 22-1	CS4009-T15P	T15P-2	CSP22HD-T15P	–	–	T15P-2
00125/00150..22AHD	NX 22-1	MX 22-1	CS4009-T15P	T15P-2	CHD22	L86025-T20P	S7616	T20P-7L
00175/00200..22AHD	NX 22-1	MX 22-1	CS4009-T15P	T15P-2	CHD22	L86025-T20P	S7616	T20P-7L
00250..22AHD	NX 22-1	MX 22-1	CS4009-T15P	T15P-2	CHD22	L86025-T20P	S7616	T20P-7L
..22APIHD	NX 22-1	–	CS4009-T15P	T15P-2	CHD22	L86025-T20P	S7616	T20P-7L

Please check availability in current price and stock-list

*To be ordered separately

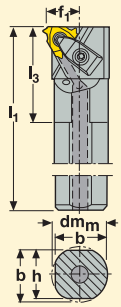
Toolholders for S-inserts

Snap-Tap®

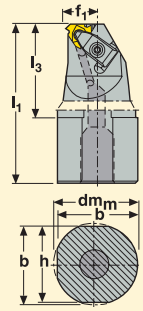


- For inserts, please see threading insert section beginning on page 4945

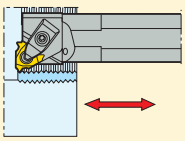
CNR/L...AHD



CNR...APIHD

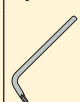


Right-hand version shown

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch dm_m	h	b	l_1	l_3	f_1	D_m min	D_m min*	lbs	
	5/8	30946	CNR 0015012-27AHD	1.50	1.34	1.43	11.8	2.44	1.02	1.90	1.50	5.3	27NR..
		30947	0017514-27AHD	1.75	1.59	1.68	13.8	2.40	1.15	2.20	1.80	8.4	27NR..
		30948	0025016-27AHD	2.50	2.34	2.43	15.7	2.76	1.52	2.90	2.50	20.3	27NR..
		30949	CNL 0015012-27AHD	1.50	1.34	1.43	11.8	2.44	1.02	1.90	1.50	5.3	27NL..
		30951	0017514-27AHD	1.75	1.59	1.68	13.8	2.40	1.15	2.20	1.80	8.4	27NL..
		30952	0025016-27AHD	2.50	2.34	2.43	15.7	2.76	1.52	2.90	2.50	20.3	27NL..
		30960	CNR 00200T27APIHD	2.00	1.84	1.93	12.0	5.00	0.90	1.60	1.60	8.4	27NR..
		30961	00250T27APIHD	2.50	2.34	2.43	12.0	5.00	0.90	1.60	1.60	12.1	27NR..

*D_m min, can be modified to accomodate a smaller bore size. Please see page 474

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Insert shim (S)	Insert shim (M)*	Shim screw/Key*		Floating wedge clamp	Clamp screw	Spring	Locking key
								
..27AHD	VX 27-1	MX 27-1	C05012-T15P	T15P-2	CHD27	L86025-T20P	S7616	T20P-7L
..27APIHD	VX27-1	–	C05012-T15P	T15P-2	CHD27	L86025-T20P	S7616	T20P-7L

Please check availability in current price and stock-list

*To be ordered separately

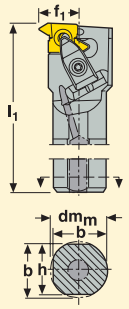
Toolholders for K-inserts

Snap-Tap®

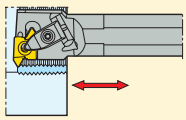


- For inserts, please see threading insert section beginning on page 495

CNR/L...AHD

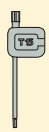


Right-hand version shown

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch dm$_m$	h	b	l$_1$	l$_3$	f$_1$	D$_m$ min	D$_m$ min*	lbs	
	1/2	30964	CNR 001008-20AHD	1.00	0.90	0.96	8.0	1.97	0.70	1.40	–	1.5	20..
		30965	0012510-20AHD	1.25	1.15	1.21	10.0	2.17	0.94	1.70	1.40	3.3	20..
		30967	0015012-20AHD	1.50	1.34	1.43	12.0	2.17	1.06	2.00	1.60	5.5	20..
		30968	CNL 001008-20AHD	1.00	0.90	0.96	8.0	1.97	0.70	1.40	–	1.5	20..
		30969	0012510-20AHD	1.25	1.15	1.21	10.0	2.17	0.94	1.70	1.40	3.3	20..
		30970	0015012-20AHD	1.50	1.34	1.43	12.0	2.17	1.06	2.00	1.60	5.5	20..
	5/8	30973	CNR 0012510-26AHD	1.25	1.15	1.21	10.0	2.32	1.06	2.00	1.60	3.1	26..
		30974	0015012-26AHD	1.50	1.34	1.43	12.0	2.32	1.18	2.10	2.10	5.5	26..
		30975	0017514-26AHD	1.75	1.59	1.68	14.0	2.28	1.31	2.30	1.80	8.8	26..
		30976	0020014-26AHD	2.00	1.84	1.93	14.0	2.28	1.43	2.50	2.00	11.5	26..
		30977	0025016-26AHD	2.50	2.34	2.43	16.0	2.28	1.68	3.00	2.50	20.7	26..
		30987	CNL 0012510-26AHD	1.25	1.15	1.21	10.0	2.32	1.06	2.00	1.60	3.1	26..
		30867	0015012-26AHD	1.50	1.34	1.43	12.0	2.32	1.18	2.10	2.10	5.5	26..
		30868	0017514-26AHD	1.75	1.59	1.68	14.0	2.28	1.31	2.30	1.80	8.8	26..
		30870	0025016-26AHD	2.50	2.34	2.43	16.0	2.28	1.68	3.00	2.50	20.7	26..

*D$_m$ min, can be modified to accomodate a smaller bore size. Please see page 474

Spare Parts, Parts included in delivery

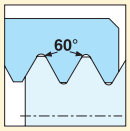
Toolholder/ Insert dimension	Insert shim (K)	Shim screw/Key*		Floating wedge clamp	Clamp screw	Spring	Locking key
							
..20AHD	KX 20-2	CS4009-T15P	T15P-2	CHD22	L86025-T20P	S7616	T20P-7L
..26AHD	KX 26-2	C05012-T15P	T15P-2	CHD27	L86025-T20P	S7616	T20P-7L

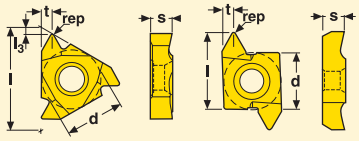
Please check availability in current price and stock-list

*To be ordered separately

Partial Profile 60° – External Threading

Snap-Tap®





For toolholders, see pages 483-487

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
22	1/2	0.866	0.185
26	5/8	1.024	0.310

16Ex/22Ex.. 16ER..A 16ER..A1 16ER..A2 26ER/26NR..





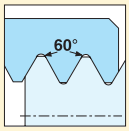


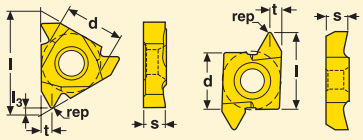

Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP200	CP500	TM4000	TP1030	Uncoated H15	Insert Part No. Left	Grades (EDP No.) Coated CP500	TM4000
48-16	0.50-1.50	0.031	0.024	0.003	16ER A60	76243	50079	34814	82973	27520	16EL A60	49297	35041
48-8	0.50-3.00	0.059	0.043	0.003	AG60	76245	50096	13518	82974	27519	AG60	49532	
14-8	1.75-3.00	0.059	0.043	0.007	G60	76247	50209	34824		27521	G60	49546	
7-5	3.50-5.00	0.098	0.071	0.016	22ER N60	76292	68403	34825		27706	22EL N60	64863	
48-16	0.50-1.50	0.031	0.024	0.003	16ER A60-A		17240						
48-8	0.50-3.00	0.059	0.043	0.003	AG60-A		17241						
14-8	1.75-3.00	0.059	0.047	0.007	G60-A		17242						
48-16	0.50-1.50	0.031	0.024	0.003	16ER A60-A1		50084						
48-8	0.50-3.00	0.059	0.043	0.003	AG60-A1		50098						
14-8	1.75-3.00	0.059	0.047	0.007	G60-A1		50226						
48-16	0.50-1.50	0.031	0.024	0.003	16ER A60-A2		77940						
48-8	0.50-3.00	0.059	0.043	0.003	AG60-A2		77941						
14-8	1.75-3.00	0.059	0.047	0.007	G60-A2		77945						
4.5-2.5	5.50-10.00	0.197	–	0.016	26ER K60		73129	22498			26NR K60	73164	22629
							73164	22629					

Please check availability in current price and stock-list.

Partial Profile 60° – Internal Threading

Snap-Tap®





For toolholders, see pages 489-493

Size	Dimensions in inch d (I.C.)	l	s
09	7/32	0.378	0.094
11	1/4	0.433	0.118
16	3/8	0.650	0.137
22	1/2	0.866	0.185
26	5/8	1.024	0.310

09NR/11Nx/16Nx/22Nx



11NR/16NR..A



11NR/16NR..A1



11NR/16NR..A2



26ER/26NR..



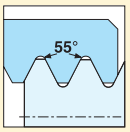


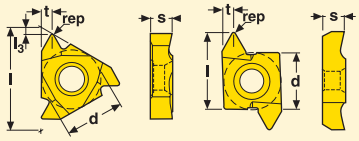
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP200	CP500	TM4000	TP1030	Uncoated H15	Insert Part No. Left	Grades (EDP No.) Coated CP500	TM4000
48-16	0.50-1.50	0.031	0.028	0.003	09NR A60		39473	35055					
48-16	0.50-1.50	0.031	0.028	0.003	11NR A60	76228	46164	35056	82952	27705	11NL A60	45736	
48-16	0.50-1.50	0.031	0.028	0.003	16NR A60		64777	35104		27529	16NL A60	50328	35867
48-8	0.50-3.00	0.059	0.043	0.003	AG60	76262	64785	13557	82953	27528	AG60	50333	
14-8	1.75-3.00	0.059	0.043	0.005	G60	76266	64794	35107		27530	G60	50336	
7-5	3.50-5.00	0.098	0.071	0.010	22NR N60	76331	73109	35132		27707	22NL N60	72723	
48-16	0.50-1.50	0.031	0.028	0.003	11NR A60-A		17245						
48-8	0.50-3.00	0.059	0.043	0.003	16NR AG60-A		17251						
14-8	1.75-3.00	0.059	0.047	0.005	G60-A		17252						
48-16	0.50-1.50	0.031	0.028	0.003	11NR A60-A1		46171						
48-8	0.50-3.00	0.059	0.043	0.003	16NR AG60-A1		64786						
14-8	1.75-3.00	0.059	0.047	0.005	G60-A1		64795						
48-16	0.50-1.50	0.031	0.028	0.003	11NR A60-A2		77959						
48-8	0.50-3.00	0.059	0.043	0.003	16NR AG60-A2		78016						
14-8	1.75-3.00	0.059	0.047	0.005	G60-A2		78017						
4.5-2.5	5.50-10.00	0.197	–	0.016	26NR K60		73164	22629			26ER K60	73129	22498

Please check availability in current price and stock-list.

Partial Profile 55° – External Threading

Snap-Tap®





For toolholders, see pages 483-487

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
22	1/2	0.866	0.185
26	5/8	1.024	0.310

16Ex/22Ex



16ER..A



16ER..A1



16ER..A2



26ER/26NR..



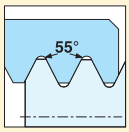


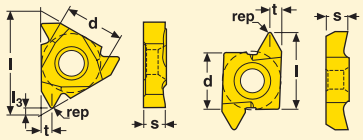
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP200	CP500	TM4000	Uncoated H15	Insert Part No. Left	Grades (EDP No.) Coated CP500
48-16	0.50-1.50	0.031	0.024	0.003	16ER A55		27543		27543	16EL A55	48347
48-8	0.50-3.00	0.059	0.043	0.003	AG55	76244	50091	34807	27544	AG55	49531
14-8	1.75-3.00	0.059	0.043	0.008	G55	76246	50202		27545	G55	49539
7-5	3.50-5.00	0.098	0.071	0.016	22ER N55		68208		27738	22EL N55	64862
48-8	0.50-3.00	0.059	0.043	0.003	16ER AG55-A		17236				
14-8	1.75-3.00	0.059	0.047	0.008	G55-A		17238				
48-8	0.50-3.00	0.059	0.043	0.003	16ER AG55-A1		50093				
14-8	1.75-3.00	0.059	0.047	0.008	G55-A1		50204				
48-8	0.50-3.00	0.059	0.043	0.003	16ER AG55-A2		77938				
14-8	1.75-3.00	0.059	0.047	0.008	G55-A2		77939				
4.5-2.5	5.50-10.00	0.197	–	0.028	26ER K55		73128			26NR K55	73146

Please check availability in current price and stock-list.

Partial Profile 55° – Internal Threading

Snap-Tap®





For toolholders, see pages 489-493

Size	Dimensions in inch d (l.C.)	l	s
09	7/32	0.378	0.094
11	1/4	0.433	0.118
16	3/8	0.650	0.137
22	1/2	0.866	0.185
26	5/8	1.024	0.310

09NR/11Nx/16Nx/22Nx..



16NR..A



16NR..A1



16NR..A2



26ER/26NR..



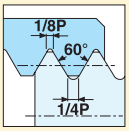


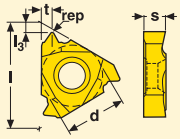
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP200	CP500	TM4000	Uncoated H15	Insert Part No. Left	Grades (EDP No.) Coated CP500
48-16	0.50-1.50	0.031	0.028	0.003	09NR A55		23822	35046			
48-16	0.50-1.50	0.031	0.024	0.003	11NR A55		46162	35051	27720	11NL A55	45723
48-16	0.50-1.50	0.031	0.024	0.003	16NR A55		64758		27549	16NL A55	50327
48-8	0.50-3.00	0.059	0.043	0.003	AG55	76261	64782	35054	27550	AG55	50329
14-8	1.75-3.00	0.059	0.043	0.008	G55	76263	64788		27551	G55	50334
7-5	3.50-5.00	0.098	0.071	0.016	22NR N55		73091		27752	22NL N55	72714
48-8	0.50-3.00	0.059	0.043	0.003	16NR AG55-A		17243				
14-8	1.75-3.00	0.059	0.043	0.008	G55-A		17244				
48-8	0.50-3.00	0.059	0.043	0.003	16NR AG55-A1		64783				
14-8	1.75-3.00	0.059	0.043	0.008	G55-A1		64789				
48-8	0.50-3.00	0.059	0.043	0.003	16NR AG55-A2		78013				
14-8	1.75-3.00	0.059	0.043	0.008	G55-A2		78015				
4.5-2.5	5.50-10.00	0.197	–	0.028	26NR K55		73146			26ER K55	73128

Please check availability in current price and stock-list.

UN – External Threading

Snap-Tap®





For toolholders, see pages 483-486

ANSI B1.1 - 1983
3A

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
22	1/2	0.866	0.185
27	5/8	1.063	0.242

16Ex/22Ex/27ER



16ER..A



16ER..A1



16ER..A2

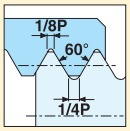


Pitch		Dimensions in inch			Insert Part No. Right	Grades (EDP No.) Coated				Uncoated	Insert Part No. Left	Grades (EDP No.) Coated
TPI	mm	t	l_3	rep		CP200	CP500	TM4000	TP1030	H15		CP500
40	–	0.020	0.047	0.003	16ER 40UN		77861					
32	–	0.031	0.031	0.004	32UN		49951	34908		27558	16EL 32UN	46763
28	–	0.031	0.031	0.004	28UN		49939	34910		27559	28UN	46744
24	–	0.031	0.031	0.005	24UN		49935	34932		27560	24UN	46743
20	–	0.031	0.031	0.006	20UN		49908	13520	82982	27561	20UN	46738
18	–	0.031	0.047	0.007	18UN		49864	34934	82983	27562	18UN	46702
16	–	0.031	0.047	0.009	16UN	76237	49845	34936	82984	27563	16UN	46335
14	–	0.059	0.047	0.009	14UN	76235	49833	34938	82985	27564	14UN	46332
13	–	0.059	0.047	0.009	13UN		49818					
12	–	0.059	0.047	0.010	12UN	76234	49803	13522	82986	27565	16EL 12UN	46324
11	–	0.059	0.047	0.011	11UN		49791			27566	11UN	46298
10	–	0.059	0.047	0.013	10UN		49762	34952	82987	27567	10UN	46265
9	–	0.059	0.047	0.013	9UN		50055			27568	9UN	47537
8	–	0.059	0.047	0.015	8UN	76242	49967	34954	82988	27569	8UN	46765
7	–	0.098	0.071	0.019	22ER 7UN		68204			27744	22EL 7UN	64859
6	–	0.098	0.079	0.020	6UN		68007			27745	6UN	64857
5	–	0.098	0.071	0.024	5UN		67911				5UN	64834
4	–	0.126	0.087	0.031	27ER 4UN		75018					
20	–	0.031	0.031	0.006	16ER 20UN-A		17301					
18	–	0.031	0.031	0.007	18UN-A		17303					
16	–	0.031	0.031	0.009	16UN-A		17305					
14	–	0.059	0.047	0.009	14UN-A		17308					
12	–	0.059	0.047	0.011	12UN-A		17381					
8	–	0.059	0.047	0.017	8UN-A		17386					
20	–	0.031	0.031	0.006	16ER 20UN-A1		49915					
18	–	0.031	0.031	0.007	18UN-A1		49867					
16	–	0.031	0.031	0.009	16UN-A1		49854					
14	–	0.059	0.047	0.009	14UN-A1		49834					
12	–	0.059	0.047	0.011	12UN-A1		49806					
8	–	0.059	0.047	0.017	8UN-A1		49968					
20	–	0.031	0.031	0.006	16ER 20UN-A2		77925					
18	–	0.031	0.031	0.007	18UN-A2		77922					
16	–	0.031	0.031	0.009	16UN-A2		77917					
14	–	0.059	0.047	0.009	14UN-A2		77915					
12	–	0.059	0.047	0.011	12UN-A2		77914					
8	–	0.059	0.047	0.017	8UN-A2		77791					

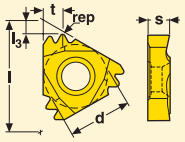
Please check availability in current price and stock-list.

UN – External Threading

Snap-Tap®



For toolholders,
see pages 483-486



ANSI B1.1 - 1983
3A

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
22	1/2	0.866	0.185

16ER..TT



22ER..M



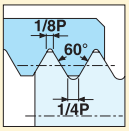
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500
16	–	0.075	0.055	0.008	16ER 16UN-TT	82621
12	–	0.102	0.067	0.011	12UN-TT	82594
16	–	0.157	0.098	0.008	22ER 16UN3M	77888
12	–	0.122	0.079	0.010	12UN2M	64943

Please check availability in current price and stock-list.

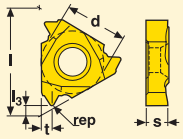
Note: TT, 2M & 3M represents multiple tooth insert.

UN – Internal Threading

Snap-Tap®



For toolholders, see pages 489-492



ANSI B1.1 - 1983 3B

Size	Dimensions in inch d (l.C.)	l	s
09	7/32	0.378	0.094
11	1/4	0.433	0.118
16	3/8	0.650	0.137
22	1/2	0.866	0.185
27	5/8	1.063	0.242

09NR/11Nx/16Nx/22Nx/27NR

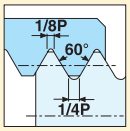


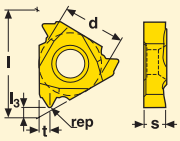
Pitch		Dimensions in inch				Grades (EDP No.)						Grades (EDP No.)
						Coated				Uncoated		Coated
TPI	mm	t	l_3	rep	Insert Part No. Right	CP200	CP500	TM4000	TP1030	H15	Insert Part No. Left	CP500
20	–	0.031	0.028	0.004	09NR 20UN		23503	35341				
18	–	0.031	0.028	0.004	18UN		20503					
13	–	0.035	0.028	0.006	13UN		15564					
32	–	0.031	0.031	0.002	11NR 32UN		46151			27729		
28	–	0.031	0.031	0.002	28UN		46139			27730		
24	–	0.031	0.031	0.003	24UN		46056			27731	11NL 24UN	45714
20	–	0.031	0.031	0.004	20UN		46044	35344		27732	20UN	45663
18	–	0.031	0.031	0.004	18UN		45933	35345		27733	18UN	45651
16	–	0.031	0.031	0.005	16UN		45894	35430		27734	16UN	45642
14	–	0.035	0.031	0.006	14UN		45834			27735	14UN	45631
40	–	0.020	0.047	0.002	16NR 40UN		77849					
32	–	0.031	0.031	0.002	32UN	05008	64733			27570	16NL 32UN	50318
28	–	0.031	0.031	0.002	28UN	05035	64726				28UN	50311
24	–	0.031	0.031	0.003	24UN	05040	64721			51720	24UN	77893
20	–	0.031	0.031	0.004	20UN	05045	64715	35436	82963	51721	20UN	50303
18	–	0.031	0.031	0.004	18UN	05067	64507	35649	82964	51723	18UN	50297
16	–	0.031	0.031	0.005	16UN	76255	64433	35674	82965	51724	16UN	50294
14	–	0.059	0.047	0.006	14UN	76253	64425		82966	51725	14UN	50289
13	–	0.059	0.047	0.006	13UN		64416					
12	–	0.059	0.047	0.006	12UN	76252	64406	35681	82967	27580	16NL 12UN	50278
11	–	0.059	0.047	0.006	11UN		64397			27583	11UN	50276
10	–	0.059	0.047	0.007	10UN	05068	50449	35682	82968	51726	10UN	50268
9	–	0.059	0.047	0.007	9UN		77882					
8	–	0.059	0.047	0.010	8UN	76260	64744	35683	82969	27586	16NL 8UN	50322
7	–	0.094	0.079	0.010	22NR 7UN		73085				22NL 7UN	72705
6	–	0.098	0.087	0.012	6UN		73076			27758	6UN	72681
5	–	0.098	0.071	0.014	5UN		72797			27759		
4	–	0.126	0.087	0.018	27NR 4UN		77869					

Please check availability in current price and stock-list.

UN – Internal Threading

Snap-Tap®





For toolholders,
see pages 489-492

ANSI B1.1 - 1983
3B

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
22	1/2	0.866	0.185

16NR..A



16NR..A1



16NR..A2



16NR..TT



16NR/22NR..M



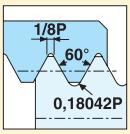
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500
20	–	0.031	0.031	0.004	16NR 20UN-A	17313
18	–	0.031	0.031	0.004	18UN-A	17318
16	–	0.031	0.031	0.005	16UN-A	17320
14	–	0.051	0.047	0.006	14UN-A	17322
12	–	0.059	0.047	0.006	12UN-A	17327
8	–	0.059	0.047	0.010	8UN-A	17336
20	–	0.031	0.031	0.004	16NR 20UN-A1	64716
18	–	0.031	0.031	0.004	18UN-A1	64512
16	–	0.031	0.031	0.005	16UN-A1	64434
14	–	0.051	0.047	0.006	14UN-A1	64426
12	–	0.059	0.047	0.006	12UN-A1	64408
8	–	0.059	0.047	0.010	8UN-A1	64745
20	–	0.031	0.031	0.004	16NR 20UN-A2	77989
18	–	0.031	0.031	0.004	18UN-A2	77985
16	–	0.031	0.031	0.005	16UN-A2	77983
14	–	0.051	0.047	0.006	14UN-A2	77981
12	–	0.059	0.059	0.006	12UN-A2	77979
8	–	0.059	0.047	0.010	8UN-A2	77977
16	–	0.075	0.055	0.005	16NR 16UN-TT	85906
12	–	0.096	0.065	0.006	12UN-TT	85896
16	–	0.091	0.059	0.005	16NR 16UN2M	77865
16	–	0.150	0.094	0.005	22NR 16UN3M	72748
12	–	0.118	0.079	0.006	12UN2M	72737
12	–	0.197	0.118	0.006	12UN3M	72738

Please check availability in current price and stock-list.

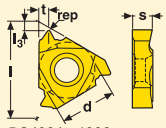
Note: TT, 2M & 3M represents multiple tooth insert.

UNJ – External threading (For internal threading see note*)

Snap-Tap®



For toolholders, see pages 483-486



BS4084 - 1996
MIL-SPECS - 8879A
3A

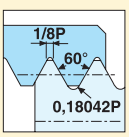
Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137

16ER..UNJ

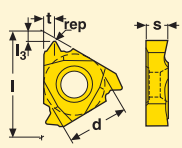


Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP200	CP500	TM4000	Uncoated H15	Insert Part No. Left	Grades (EDP No.) Coated CP200	CP500
32	–	0.031	0.031	0.004	16ER 32UNJ		49956					
28	–	0.031	0.031	0.006	28UNJ	04959	49941					
24	–	0.031	0.031	0.006	24UNJ	04966	49937					
20	–	0.031	0.031	0.008	20UNJ	04971	49917	34955	27596			
18	–	0.031	0.047	0.009	18UNJ	04972	49868	34959				
16	–	0.031	0.047	0.011	16UNJ	04978	49856	34963	27598			
14	–	0.059	0.047	0.012	14UNJ	04980	77857					
12	–	0.059	0.047	0.013	12UNJ		49808	34966	27601	16EL 12UNJ	04984	77863
8	–	0.059	0.047	0.018	8UNJ	04982	50005					

MJ – External Threading (For internal threading see note*)



For toolholders, see pages 483-486



ISO5855 - 1983
4h/6h

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137

16ER..MJ



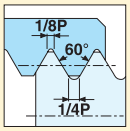
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP200	CP500	Uncoated H15	Insert Part No. Left	Grades (EDP No.) Coated CP200
–	1.0	0.031	0.031	0.006	16ER 1.0MJ	04990	49678	27587	16EL 1.0MJ	04999
–	1.5	0.031	0.031	0.010	1.5MJ	04997	49731	27588	1.5MJ	05004
–	2.0	0.059	0.047	0.013	2.0MJ	04998				

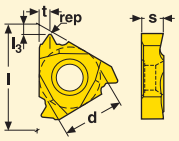
Please check availability in current price and stock-list.

*UNJ and MJ internal use. Standard internal UN and ISO M threading inserts can be used for internal UNJ and MJ. The correct diameter "d" must be reached before commencing the threading operation.

ISO Metric – External Threading

Snap-Tap®





For toolholders, see pages 483-486

ISO965/1 - 1980
3h/4h

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
22	1/2	0.866	0.185
27	5/8	1.063	0.242

16Ex/22Ex/27ER



16ER..A



16ER..A1



16ER..A2

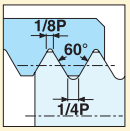


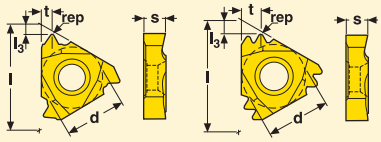
Pitch		Dimensions in inch				Grades (EDP No.)						Grades (EDP No.)	
						Coated				Uncoated		Coated	
TPI	mm	t	l_3	rep	Insert Part No. Right	CP200	CP500	TM4000	TP1030	H15	Insert Part No. Left	CP500	TM4000
–	0.50	0.031	0.031	0.002	16ER 0.5ISO		49547	34896		27552	16EL 0.5ISO	46176	
–	0.75	0.031	0.031	0.004	0.75ISO		49553	34898		27553	0.75ISO	46206	
–	0.80	0.024	0.031	0.004	0.8ISO		19761				0.8ISO	06845	
–	1.00	0.031	0.031	0.006	1.0ISO	76229	49554	13504	82975	27522	1.0ISO	46211	
–	1.25	0.031	0.031	0.007	1.25ISO	76230	49679	13507	82976	27537	1.25ISO	46214	
–	1.50	0.031	0.031	0.009	1.5ISO	76231	49692	13509	82992	27523	1.5ISO	46239	35042
–	1.75	0.059	0.047	0.010	1.75ISO	76232	49739	34902	82978	27538	1.75ISO	46261	
–	2.00	0.059	0.047	0.011	2.0ISO	76239	49891	13517	82979	27526	2.0ISO	46718	35043
–	2.50	0.059	0.047	0.013	2.5ISO	76240	49904	34903	82980	27539	2.5ISO	46733	
–	3.00	0.059	0.047	0.017	3.0ISO	76241	49946	13547	82981	27527	3.0ISO	46746	
–	3.50	0.098	0.071	0.019	22ER 3.5ISO	76271	65402			27739	22EL 3.5ISO	64826	
–	4.00	0.098	0.071	0.021	4.0ISO	76276	65403	34905		27741	4.0ISO	64827	
–	4.50	0.098	0.071	0.023	4.5ISO		67208			27742	4.5ISO	64829	
–	5.00	0.098	0.071	0.026	5.0ISO	76291	67302			27743	5.0ISO	64831	
–	5.50	0.126	0.087	0.028	27ER 5.5ISO		75903						
–	6.00	0.126	0.087	0.031	6.0ISO		77031	22534					
–	1.00	0.031	0.031	0.006	16ER 1.0ISO-A		17253						
–	1.25	0.031	0.031	0.007	1.25ISO-A		17254						
–	1.50	0.031	0.031	0.009	1.5ISO-A		17255						
–	1.75	0.059	0.047	0.010	1.75ISO-A		17256						
–	2.00	0.059	0.047	0.011	2.0ISO-A		17257						
–	2.50	0.059	0.047	0.013	2.5ISO-A		17258						
–	3.00	0.059	0.047	0.017	3.0ISO-A		17261						
–	1.00	0.031	0.031	0.006	16ER 1.0ISO-A1		49674						
–	1.25	0.031	0.031	0.007	1.25ISO-A1		49689						
–	1.50	0.031	0.031	0.009	1.5ISO-A1		49728						
–	1.75	0.059	0.047	0.010	1.75ISO-A1		49744						
–	2.00	0.059	0.047	0.011	2.0ISO-A1		49893						
–	2.50	0.059	0.047	0.013	2.5ISO-A1		49906						
–	3.00	0.059	0.047	0.017	3.0ISO-A1		49947						
–	1.00	0.031	0.031	0.006	16ER 1.0ISO-A2		77781						
–	1.25	0.031	0.031	0.007	1.25ISO-A2		77782						
–	1.50	0.031	0.031	0.009	1.5ISO-A2		77783						
–	1.75	0.059	0.047	0.010	1.75ISO-A2		77784						
–	2.00	0.059	0.047	0.011	2.0ISO-A2		77785						
–	2.50	0.059	0.047	0.013	2.5ISO-A2		77788						
–	3.00	0.059	0.047	0.017	3.0ISO-A2		77789						

Please check availability in current price and stock-list.

ISO Metric – External Threading

Snap-Tap®





For toolholders,
see pages 483-486

ISO965/1 - 1980
3h/4h

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
22	1/2	0.866	0.185
27	5/8	1.063	0.242

16ER..TT



16ER/22ER/27ER..M



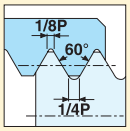
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500
–	1.00	0.051	0.051	0.006	16ER 1.0ISO-TT	78865
–	1.50	0.071	0.051	0.009	1.5ISO-TT	81104
–	2.00	0.094	0.063	0.011	2.0ISO-TT	81723
–	1.00	0.094	0.059	0.006	16ER 1.0ISO3M	49673
–	1.50	0.087	0.059	0.009	1.5ISO2M	49693
–	1.50	0.142	0.091	0.009	22ER 1.5ISO3M	64864
–	2.00	0.114	0.079	0.011	2.0ISO2M	65002
–	2.00	0.189	0.118	0.011	2.0ISO3M	65302
–	3.00	0.169	0.110	0.017	27ER 3.0ISO2M	73166

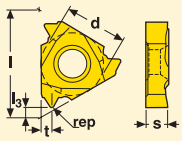
Please check availability in current price and stock-list.

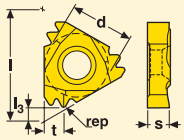
Note: TT, 2M & 3M represents multiple tooth insert.

ISO Metric – Internal Threading

Snap-Tap®







For toolholders, see pages 489-492

ISO965/1 - 1980
4h

Size	Dimensions in inch d (I.C.)	l	s
09	7/32	0.378	0.094
11	1/4	0.433	0.118
16	3/8	0.650	0.137
22	1/2	0.866	0.185
27	5/8	1.063	0.242

09NR/11Nx/16Nx/22Nx/27NR

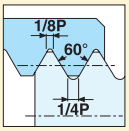


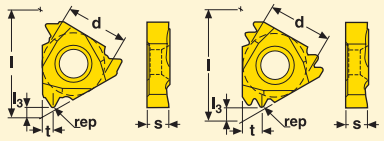
Pitch		Dimensions in inch				Grades (EDP No.)						Grades (EDP No.)		
						Coated				Uncoated		Coated		
TPI	mm	t	l_3	rep	Insert Part No. Right	CP200	CP500	TM4000	TP1030	H15	Insert Part No. Left	CP200	CP500	TM4000
–	0.50	0.024	0.028	0.002	**09NR 0.5ISO**		06842							
–	0.80	0.024	0.028	0.003	**0.8ISO**		06843							
–	1.00	0.031	0.028	0.003	**1.0ISO**		04107	35143						
–	1.25	0.031	0.028	0.004	**1.25ISO**		06844	35175						
–	1.50	0.031	0.028	0.005	**1.5ISO**		04118	35176						
–	1.75	0.031	0.028	0.005	**1.75ISO**		06987							
–	2.00	0.035	0.028	0.007	**2.0ISO**		20505							
–	0.50	0.031	0.031	0.001	**11NR 0.5ISO**		45739			27721	**11NL 0.5ISO**		40114	
–	0.75	0.031	0.031	0.002	**0.75ISO**		45756			27722	**0.75ISO**		40118	
–	1.00	0.031	0.031	0.003	**1.0ISO**	76223	45774	35188	82954	27723	**1.0ISO**		44546	
–	1.25	0.031	0.031	0.004	**1.25ISO**		45776			27724	**1.25ISO**		45186	
–	1.50	0.031	0.031	0.005	**1.5ISO**	76224	45794	35191	82955	27726	**1.5ISO**		45613	
–	1.75	0.031	0.031	0.005	**1.75ISO**		45823			27727				
–	2.00	0.035	0.031	0.007	**2.0ISO**	76227	45996	35192	82956	27728				
–	0.50	0.031	0.031	0.001	**16NR 0.5ISO**		50338			27554	**16NL 0.5ISO**		50239	
–	0.75	0.031	0.031	0.002	**0.75ISO**		50339			27555	**0.75ISO**		50253	
–	1.00	0.031	0.031	0.003	**1.0ISO**	76248	50342	13548	82957	27531	**1.0ISO**	05076	50254	
–	1.25	0.031	0.031	0.004	**1.25ISO**	05075	50359			27556	**1.25ISO**		50256	
–	1.50	0.031	0.031	0.005	**1.5ISO**	76249	50402	13550	82958	27532	**1.5ISO**	05077	50258	35875
–	1.75	0.059	0.047	0.005	**1.75ISO**		50435		82959	27557	**1.75ISO**		50266	
–	2.00	0.059	0.047	0.007	**2.0ISO**	76257	64704	13554	82960	27535	**2.0ISO**		50299	35876
–	2.50	0.059	0.047	0.007	**2.5ISO**	76258	26587	35207	82961	27540	**2.5ISO**		50302	
–	3.00	0.059	0.047	0.008	**3.0ISO**	76259	64728	13555	82962	27536	**3.0ISO**		50316	
–	3.50	0.091	0.075	0.010	**22NR 3.5ISO**	76315	72773			27753	**22NL 3.5ISO**		68404	
–	4.00	0.098	0.079	0.011	**4.0ISO**	76317	72774	35212		27754	**4.0ISO**		68407	
–	4.50	0.098	0.083	0.013	**4.5ISO**		72786			27755	**4.5ISO**		70208	
–	5.00	0.098	0.071	0.014	**5.0ISO**	76322	72789			27756	**5.0ISO**		71614	
–	5.50	0.126	0.087	0.015	**27NR 5.5ISO**		78291							
–	6.00	0.126	0.087	0.017	**6.0ISO**		78301	22844						

Please check availability in current price and stock-list.

ISO Metric – Internal Threading

Snap-Tap®





For toolholders, see pages 489-492

ISO965/1 - 1980
4h

Size	Dimensions in inch d (I.C.)	l	s
11	1/4	0.433	0.118
16	3/8	0.650	0.137
22	1/2	0.866	0.185
27	5/8	1.063	0.242

11NR/16NR..A



11NR/16NR..A1



11NR/16NR..A2



16NR..TT



16NR/22NR..M



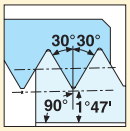
Pitch		Dimensions in inch				Grades (EDP No.)
						Coated
TPI	mm	t	l_3	rep	Insert Part No. Right	CP500
–	1.00	0.031	0.031	0.003	11NR 1.0ISO-A	17264
–	1.50	0.031	0.031	0.005	1.5ISO-A	17265
–	2.00	0.035	0.031	0.007	2.0ISO-A	17266
–	1.00	0.031	0.031	0.004	16NR 1.0ISO-A	17267
–	1.50	0.031	0.031	0.005	1.5ISO-A	17269
–	2.00	0.059	0.047	0.006	2.0ISO-A	17294
–	2.50	0.059	0.047	0.007	2.5ISO-A	17296
–	3.00	0.059	0.047	0.008	3.0ISO-A	17300
–	1.00	0.031	0.031	0.003	11NR 1.0ISO-A1	96767
–	1.50	0.031	0.031	0.005	1.5ISO-A1	45801
–	2.00	0.035	0.031	0.007	2.0ISO-A1	45997
–	1.00	0.031	0.031	0.004	16NR 1.0ISO-A1	50345
–	1.50	0.031	0.031	0.005	1.5ISO-A1	50404
–	2.00	0.059	0.047	0.006	2.0ISO-A1	64707
–	2.50	0.059	0.047	0.007	2.5ISO-A1	26588
–	3.00	0.059	0.047	0.008	3.0ISO-A1	64729
–	1.00	0.031	0.031	0.003	11NR 1.0ISO-A2	77946
–	1.50	0.031	0.031	0.005	1.5ISO-A2	77949
–	2.00	0.035	0.031	0.007	2.0ISO-A2	77951
–	1.00	0.031	0.031	0.004	16NR 1.0ISO-A2	77960
–	1.50	0.031	0.031	0.005	1.5ISO-A2	77963
–	2.00	0.059	0.047	0.006	2.0ISO-A2	77965
–	2.50	0.059	0.047	0.007	2.5ISO-A2	77966
–	3.00	0.059	0.047	0.008	3.0ISO-A2	77968
–	1.00	0.047	0.051	0.004	16NR 1.0ISO-TT	82867
–	1.50	0.071	0.051	0.005	1.5ISO-TT	83155
–	2.00	0.094	0.063	0.007	2.0ISO-TT	83938
–	1.00	0.094	0.059	0.003	16NR 1.0ISO3M	50343
–	1.50	0.083	0.055	0.005	1.5ISO2M	50403
–	1.50	0.142	0.091	0.005	22NR 1.5ISO3M	72726
–	2.00	0.114	0.079	0.007	2.0ISO2M	72758
–	2.00	0.189	0.118	0.007	2.0ISO3M	72763
–	3.00	0.169	0.110	0.008	27NR 3.0ISO2M	78177

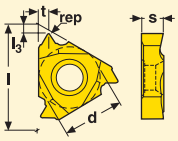
Please check availability in current price and stock-list.

Note: TT, 2M & 3M represents multiple tooth insert.

NPT– External Threading

Snap-Tap®





ANSI B1.20.1 - 1983

For toolholders, see pages 483-486

Size	Dimensions in inch d (l.C.)	l	s
16	3/8	0.650	0.137
22	1/2	0.866	0.185

16Ex..



16ER..A1



16ER..A2



22ER..M



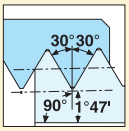
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500	TM4000	Uncoated H15	Insert Part No. Left	Grades (EDP No.) Coated CP500
27	–	0.031	0.028	0.002	16ER 27NPT	49938				
18	–	0.031	0.028	0.002	18NPT	49861	34974	27629	16EL 18NPT	46548
14	–	0.059	0.043	0.003	14NPT	49826	13541	27630	14NPT	46329
11.5	–	0.059	0.043	0.003	11.5NPT	49773	13546	27631	11.5NPT	46289
8	–	0.063	0.043	0.003	8NPT	49961	34975	51717	8NPT	46764
11.5	–	0.059	0.043	0.004	16ER 11.5NPT-A1	49776				
11.5	–	0.059	0.043	0.004	16ER 11.5NPT-A2	77790				
11.5	–	0.130	0.083	0.003	22ER 11.5NPT2M	64937				

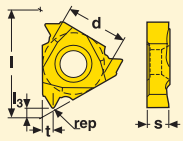
Please check availability in current price and stock-list.

Note: 2M represents multiple tooth insert.

NPT– Internal Threading

Snap-Tap®





ANSI B1.20.1 - 1983

For toolholders, see pages 489-492

Size	Dimensions in inch d (I.C.)	l	s
09	7/32	0.378	0.094
11	1/4	0.433	0.118
16	3/8	0.650	0.137
22	1/2	0.866	0.185

09NR/11NR/16Nx



16NR..A1



16NR..A2



22NR..M



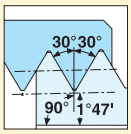
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500	Coated TM4000	Uncoated H15	Insert Part No. Left	Grades (EDP No.) Coated CP500
27	–	0.031	0.028	0.002	09NR 27NPT	85615				
18	–	0.031	0.028	0.002	18NPT	77860	35691			
18	–	0.031	0.028	0.002	11NR 18NPT	77859	35692			
14	–	0.039	0.028	0.003	14NPT	45833	35699			
14	–	0.059	0.043	0.003	16NR 14NPT	64422	13561	27638	16NL 14NPT	50287
11.5	–	0.059	0.043	0.004	11.5NPT	50693	35728	27639	11.5NPT	50271
8	–	0.063	0.043	0.004	8NPT	64738	35761	27640	8NPT	50321
11.5	–	0.059	0.043	0.004	16NR 11.5NPT-A1	50694				
14	–	0.059	0.043	0.003	16NR 14NPT-A2	77975				
11.5	–	0.059	0.043	0.004	11.5NPT-A2	77974				
8	–	0.063	0.043	0.005	8NPT-A2	77969				
11.5	–	0.130	0.083	0.002	22NR 11.5NPT2M	77843				

Please check availability in current price and stock-list.

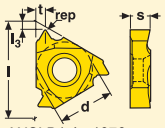
Note: 2M represents multiple tooth insert.

NPTF– External Threading

Snap-Tap®



For toolholders,
see pages 483-486



ANSI B1.4 - 1976
ANSI B1.20.3 - 1976

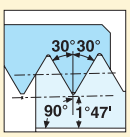
Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137

16ER..

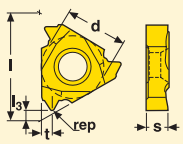


Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500
27	–	0.031	0.028	0.002	**16ER 27NPTF**	77885
18	–	0.031	0.028	0.002	**18NPTF**	77866
14	–	0.059	0.043	0.002	**14NPTF**	49827
11.5	–	0.059	0.043	0.002	**11.5NPTF**	49779

NPTF– Internal Threading



For toolholders,
see pages 489-492



ANSI B1.4 - 1976
ANSI B1.20.3 - 1976

Size	Dimensions in inch d (I.C.)	l	s
11	1/4	0.433	0.118
16	3/8	0.650	0.137

11NR/16Nx

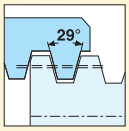


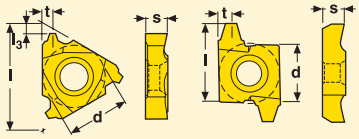
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500	Insert Part No. Left	Grades (EDP No.) Coated CP500
18	–	0.031	0.028	0.002	**11NR 18NPTF**	77883		
14	–	0.059	0.043	0.002	**16NR 14NPTF**	64423		
11.5	–	0.059	0.043	0.002	**11.5NPTF**	50698	**16NL 11.5NPTF**	50272

Please check availability in current price and stock-list.

ACME – External Threading

Snap-Tap®





For toolholders,
see pages 483-487

ANSI B1.5 - 1988
3G

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
20	1/2	0.787	0.248
22	1/2	0.866	0.185
26	5/8	1.024	0.310
27	5/8	1.063	0.242

16Ex/22Ex/27Ex



20ER/26ER



20ER/26ER

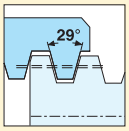


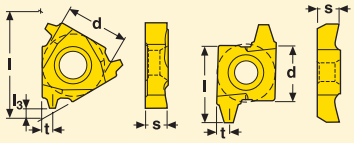
Pitch		Dimensions in inch				Grades (EDP No.)			Grades (EDP No.)
						Coated			Coated
TPI	mm	t	l_3	rep	Insert Part No. Right	CP500	TM4000	Insert Part No. Left	CP500
16	–	0.031	0.035	–	**16ER 16ACME**	77881			
14	–	0.059	0.051	–	**14ACME**	77851			
12	–	0.059	0.051	–	**12ACME**	49802			
10	–	0.059	0.055	–	**10ACME**	49747			
8	–	0.059	0.051	–	**8ACME**	49958	34986	**16EL 8ACME**	77880
6	–	0.098	0.079	–	**22ER 6ACME**	68002	34987	**22EL 6ACME**	64836
5	–	0.091	0.079	–	**5ACME**	67307		**5ACME**	64833
4	–	0.118	0.098	–	**27ER 4ACME**	73176	34992	**27EL 4ACME**	77850
3	–	0.126	–	–	**20ER 3ACME**	64797	34995		
3.5	–	0.126	–	–	**20ER 3.5ACME**	20784			
2	–	0.197	–	–	**26ER 2ACME**	73121	22477		

Please check availability in current price and stock-list.

ACME – Internal Threading

Snap-Tap®





For toolholders, see pages 489-493

ANSI B1.5 - 1988
3G

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
20	1/2	0.787	0.248
20		0.787	0.248
22	1/2	0.866	0.185
26	5/8	1.024	0.310
27	5/8	1.063	0.242

16NR/22Nx/27NR



20NR/26NR



20NR/26NR

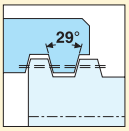


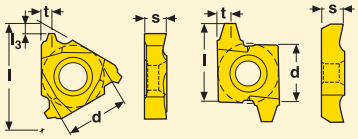
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500	TM4000	Insert Part No. Left	Grades (EDP No.) Coated CP500
16	–	0.031	0.035	–	**16NR 16ACME**	77842			
12	–	0.059	0.051	–	**12ACME**	77878			
10	–	0.059	0.051	–	**10ACME**	77875			
8	–	0.059	0.051	–	**8ACME**	64736			
6	–	0.098	0.079	–	**22NR 6ACME**	72805	35775		
5	–	0.091	0.079	–	**5ACME**	72792		**22NL 5ACME**	72252
4	–	0.118	0.098	–	**27NR 4ACME**	78178	35779		
3	–	0.126	–	–	**20NR 3ACME**	64802	35780		
3.5	–	0.126	–	–	**20NR 3.5ACME**	20785	22536		
2	–	0.197	–	–	**26NR 2ACME**		22549		

Please check availability in current price and stock-list.

Stub-ACME – External Threading

Snap-Tap®





For toolholders,
see pages 483-487

ANSI B1.8 - 1988
2G

Size	Dimensions in inch		
	d (I.C.)	l	s
16		0.650	0.137
16	3/8	0.650	0.137
20	1/2	0.787	0.248
22	1/2	0.866	0.185
26	5/8	1.024	0.310
27	5/8	1.063	0.242

16ER/22Ex/27ER



20ER/26ER

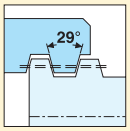


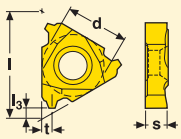
Pitch		Dimensions in inch				Grades (EDP No.)			Grades (EDP No.)
						Coated			Coated
TPI	mm	t	l_3	rep	Insert Part No. Right	CP500	TM4000	Insert Part No. Left	CP500
14	–	0.059	0.051	–	16ER 14STACME	77884			
12	–	0.059	0.059	–	12STACME	77871			
10	–	0.059	0.059	–	10STACME	77870	34998		
8	–	0.059	0.071	–	8STACME	19648	35008		
6	–	0.098	0.094	–	22ER 6STACME	68006		22EL 6STACME	64856
5	–	0.083	0.079	–	5STACME	77877			
4	–	0.110	0.102	–	27ER 4STACME	74904	22532		
3	–	0.126	–	–	20ER 3STACME	64798			
2	–	0.197	–	–	26ER 2STACME	73122			

Please check availability in current price and stock-list.

Stub-ACME – Internal Threading

Snap-Tap®





For toolholders, see pages 489-493

ANSI B1.8 - 1988
2G

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
22	1/2	0.866	0.185
27	5/8	1.063	0.242
20	1/2	0.787	0.248

16NR/22NR/27NR



20NR

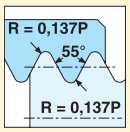


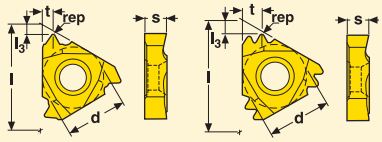
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500	TM4000
12	–	0.059	0.059	–	**16NR 12STACME**	77867	
10	–	0.059	0.059	–	**10STACME**	77874	35836
8	–	0.059	0.071	–	**8STACME**	64743	35838
6	–	0.098	0.094	–	**22NR 6STACME**	72944	
5	–	0.083	0.079	–	**5STACME**	77886	
4	–	0.110	0.102	–	**27NR 4STACME**	78289	22778
3	–	0.126		–	**20NR 3STACME**	21899	

Please check availability in current price and stock-list.

Whitworth, BSW – External Threading

Snap-Tap®





For toolholders,
see pages 483-486

BS84 -1956
ISO228 - 1982
BS2779 - 1973

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
22	1/2	0.866	0.185

16Ex/22Ex



16ER..A



16ER..A1



16ER..A2



16ER..TT



22ER..M



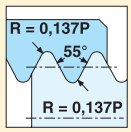
Pitch		Dimensions in inch				Grades (EDP No.)						Grades (EDP No.)
						Coated				Uncoated		Coated
TPI	mm	t	l_3	rep	Insert Part No. Right	CP200	CP500	TM4000	TP1030	H15	Insert Part No. Left	CP500
28	–	0.031	0.031	0.004	16ER 28W		49942	34968		27602	16EL 28W	46745
20	–	0.031	0.031	0.006	20W		49918	34969		27604	20W	46739
19	–	0.031	0.031	0.006	19W	76238	49871	34970	82989	27541	19W	46703
18	–	0.031	0.031	0.006	18W		49869					
16	–	0.031	0.031	0.008	16W		49857			27607	16EL 16W	46515
14	–	0.059	0.047	0.009	14W	76236	49841	13523	82990	27525	14W	46333
12	–	0.059	0.047	0.009	12W		49816			27608	12W	46325
11	–	0.059	0.047	0.012	11W	76233	49792	13524	82991	27524	11W	46313
10	–	0.059	0.047	0.011	10W		49764			27609	10W	46284
9	–	0.059	0.047	0.012	9W		50056				9W	47809
8	–	0.059	0.047	0.017	8W		50048			27612	8W	47211
7	–	0.098	0.071	0.017	22ER 7W		68206			27747	22EL 7W	64861
6	–	0.098	0.071	0.020	6W		68008			27748	6W	64858
5	–	0.098	0.067	0.025	5W		68001			27749	5W	64835
19	–	0.031	0.031	0.006	16ER 19W-A		17387					
14	–	0.059	0.047	0.009	14W-A		17390					
11	–	0.059	0.047	0.012	11W-A		17393					
19	–	0.031	0.031	0.006	16ER 19W-A1		49882					
14	–	0.059	0.047	0.009	14W-A1		49842					
11	–	0.059	0.047	0.012	11W-A1		49793					
19	–	0.031	0.031	0.006	16ER 19W-A2		77937					
14	–	0.059	0.047	0.009	14W-A2		77936					
11	–	0.059	0.047	0.012	11W-A2		77933					
14	–	0.087	0.059	0.009	16ER 14W-TT		82431					
11	–	0.110	0.071	0.012	11W-TT		82375					
11	–	0.138	0.091	0.012	22ER 11W2M		64938					

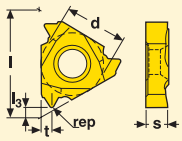
Please check availability in current price and stock-list.

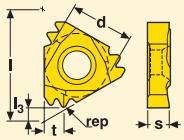
Note: TT & 2M represents multiple tooth insert.

Whitworth, BSW – Internal Threading

Snap-Tap®







For toolholders, see pages 489-492

BS84 -1956
ISO228 - 1982
BS2779 - 1973

Size	Dimensions in inch d (I.C.)	l	s
09	7/32	0.378	0.094
11	1/4	0.433	0.118
16	3/8	0.650	0.137
22	1/2	0.866	0.185

09NR/11Nx/16Nx/22Nx



11NR/16NR..A



11NR/16NR..A1



11NR/16NR..A2



16NR..TT



22NR..M

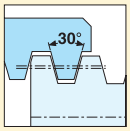


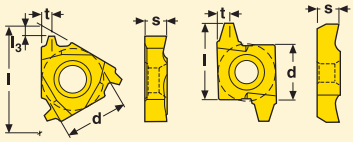
Pitch		Dimensions in inch			Insert Part No. Right	Grades (EDP No.) Coated				Uncoated	Insert Part No. Left	Grades (EDP No.) Coated
TPI	mm	t	l_3	rep		CP200	CP500	TM4000	TP1030	H15		CP500
14	–	0.035	0.028	0.009	09NR 14W		20502					
19	–	0.031	0.028	0.006	19W		17102					
19	–	0.031	0.031	0.006	11NR 19W	76226	45948	35684	82970	27736	11NL 19W	45652
14	–	0.035	0.028	0.009	14W	76225	45867		82971	27737	14W	45632
28	–	0.031	0.031	0.004	16NR 28W		64727				16NL 28W	50313
20	–	0.031	0.031	0.006	20W		64718			27615	20W	50308
19	–	0.031	0.031	0.006	19W	76256	64702			27616	19W	50298
16	–	0.031	0.031	0.008	16W		64502			27618	16W	50296
14	–	0.059	0.047	0.009	14W	76254	64428	13559		27534	14W	50291
12	–	0.059	0.047	0.009	12W		64413			27619	12W	50281
11	–	0.059	0.047	0.012	11W	76713	64398	13560	82972	27533	11W	50277
10	–	0.059	0.047	0.011	10W	76250	50657			27621	10W	50269
9	–	0.059	0.047	0.012	9W		64756			27622	9W	50324
8	–	0.059	0.047	0.017	8W		64748			27623	8W	50323
7	–	0.098	0.071	0.017	22NR 7W		73087				22NL 7W	72706
6	–	0.098	0.071	0.020	6W		73083			27761	6W	72687
5	–	0.098	0.067	0.025	5W		72798			27762	5W	72292
19	–	0.031	0.031	0.006	11NR 19W-A		17395					
14	–	0.035	0.028	0.009	14W-A		17402					
14	–	0.043	0.047	0.009	16NR 14W-A		17405					
11	–	0.059	0.047	0.012	11W-A		17406					
19	–	0.031	0.031	0.006	11NR 19W-A1		45963					
14	–	0.035	0.028	0.009	14W-A1		45888					
14	–	0.043	0.047	0.009	16NR 14W-A1		64429					
11	–	0.059	0.047	0.012	11W-A1		64399					
19	–	0.031	0.031	0.006	11NR 19W-A2		77957					
14	–	0.035	0.028	0.009	14W-A2		77953					
14	–	0.043	0.047	0.009	16NR 14W-A2		78005					
11	–	0.059	0.047	0.012	11W-A2		77990					
14	–	0.087	0.059	0.009	16NR 14W-TT		85851					
11	–	0.110	0.071	0.012	11W-TT		83945					
11	–	0.138	0.091	0.012	22NR 11W2M		72736					

Please check availability in current price and stock-list.

TR-DIN103 – External Threading

Snap-Tap®





For toolholders, see pages 483-487

DIN103 - 1977
ISO2901/3 - 1977
7e

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
20	1/2	0.787	0.248
22	1/2	0.866	0.185
26	5/8	1.024	0.310
27	5/8	1.063	0.242

16Ex/22Ex27ER



20ER/26ER

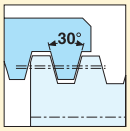


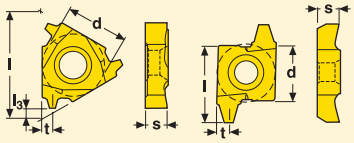
Pitch		Dimensions in inch			Insert Part No. Right	Grades (EDP No.) Coated		Uncoated	Insert Part No. Left	Grades (EDP No.) Coated
TPI	mm	t	l_3	rep		CP500	TM4000	H15		CP500
–	1.5	0.031	0.035	–	16ER 1.5TR	49734		27652	16EL 1.5TR	46258
–	2.0	0.059	0.051	–	2.0TR	49903		27653	2.0TR	46724
–	3.0	0.063	0.051	–	3.0TR	49949	34980		3.0TR	46762
–	4.0	0.098	0.079	–	22ER 4.0TR	65404	34982		22EL 4.0TR	64828
–	5.0	0.091	0.079	–	5.0TR	67304	34984		5.0TR	64832
–	6.0	0.126	0.098	–	27ER 6.0TR	77337				
–	7.0	0.126	–	–	20ER 7.0TR	64799				
–	8.0	0.126	–	–	8.0TR	64801				
–	9.0	0.197	–	–	26ER 9.0TR	73126				
–	10.0	0.197	–	–	10.0TR	73114	22442			
–	12.0	0.197	–	–	12.0TR	73118	22443			
–	14.0	0.201	–	–	14.0TR	73119	22444			

Please check availability in current price and stock-list.

TR-DIN103 – Internal Threading

Snap-Tap®





For toolholders, see pages 489-493

DIN103 - 1977
ISO2901/3 - 1977
7H

Size	Dimensions in inch d	l	s
16	3/8	0.650	0.137
20	1/2	0.787	0.248
22	1/2	0.866	0.185
26	5/8	1.024	0.310
27	5/8	1.063	0.242

16Nx/22Nx/27NR



20NR/26NR

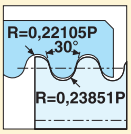


Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500	Coated TM4000	Uncoated H15	Insert Part No. Left	Grades (EDP No.) Coated CP500
–	1.5	0.031	0.035	–	**16NR 1.5TR**	50427		27654	**16NL 1.5TR**	50265
–	2.0	0.059	0.051	–	**2.0TR**	26586		27655	**2.0TR**	50301
–	3.0	0.063	0.051	–	**3.0TR**	64732	35767		**3.0TR**	50317
–	4.0	0.098	0.079	–	**22NR 4.0TR**	72782	35768		**22NL 4.0TR**	68408
–	5.0	0.091	0.079	–	**5.0TR**	72791	35773		**5.0TR**	71627
–	6.0	0.126	0.098	–	**27NR 6.0TR**	78742				
–	7.0	0.126	–	–	**20NR 7.0TR**	64823				
–	8.0	0.126	–	–	**8.0TR**	64825				
–	9.0	0.197	–	–	**26NR 9.0TR**	73138				
–	10.0	0.197	–	–	**10.0TR**	73132	22537			
–	12.0	0.197	–	–	**12.0TR**	73133	22538			
–	14.0	0.201	–	–	**14.0TR**	73137	22539			

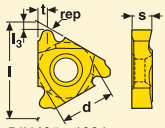
Please check availability in current price and stock-list.

Round-DIN405 – External Threading

Snap-Tap®



For toolholders, see pages 483-486



DIN405 - 1981
7h/6h

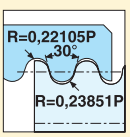
Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
22	1/2	0.866	0.185
27	5/8	1.063	0.242

16ER/22Ex/27ER

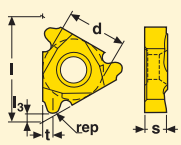


Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500	TM4000	Insert Part No. Left	Grades (EDP No.) Coated CP500
10	–	0.059	0.051	0.023	16ER 10RD	49761			
8	–	0.059	0.051	0.029	8RD	49966			
6	–	0.071	0.051	0.038	6RD	49957	34979		
6	–	0.098	0.079	0.038	22ER 6RD	68004		22EL 6RD	64837
4	–	0.126	0.087	0.057	27ER 4RD	74902			

Round-DIN405 – Internal Threading



For toolholders, see pages 489-492



DIN405 - 1981
7H/6H

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
22	1/2	0.866	0.185
27	5/8	1.063	0.242

16NR/22Nx/27NR

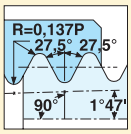


Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500	TM4000	Insert Part No. Left	Grades (EDP No.) Coated CP500
10	–	0.059	0.051	0.020	16NR 10RD	50447			
8	–	0.059	0.051	0.027	8RD	64742			
6	–	0.071	0.051	0.034	6RD	64735	35762		
6	–	0.098	0.079	0.034	22NR 6RD	72913		22NL 6RD	72666
4	–	0.126	0.087	0.052	27NR 4RD	78285			

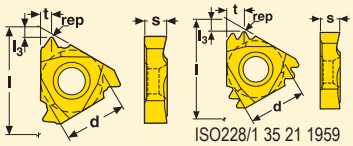
Please check availability in current price and stock-list.

BSPT – External Threading

Snap-Tap®



For toolholders, see pages 483-486



ISO228/1 35 21 1959
ISO7/1

Size	Dimensions in inch d (l.C.)	l	s
16	3/8	0.650	0.137

16Ex..

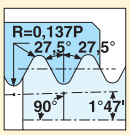


16ER..TT

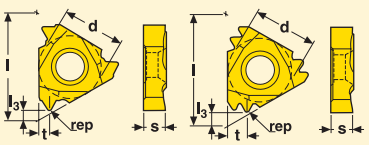


Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500	Coated TM4000	Uncoated H15	Insert Part No. Left	Grades (EDP No.) Coated CP500
14	–	0.059	0.047	0.009	16ER 14BSPT	49819		27624	16EL 14BSPT	46326
11	–	0.059	0.047	0.012	11BSPT	49782	34971	27625	11BSPT	46294
14	–	0.087	0.059	0.009	16ER 14BSPT-TT	82863				
11	–	0.110	0.071	0.012	11BSPT-TT	82623				

BSPT – Internal Threading



For toolholders, see pages 489-492



ISO228/1 35 21 1959
ISO7/1

Size	Dimensions in inch d (l.C.)	l	s
09	7/32	0.378	0.094
16	3/8	0.650	0.137

09NR/16Nx..



16NR..TT



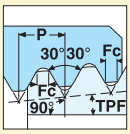
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500	Coated TM4000	Uncoated H15	Insert Part No. Left	Grades (EDP No.) Coated CP500
19	–	0.031	0.031	0.006	09NR 19BSPT	00057				
14	–	0.059	0.047	0.009	16NR 14BSPT	64417		27626	16NL 14BSPT	50282
11	–	0.059	0.047	0.012	11BSPT	50727	35685	27627	11BSPT	50275
14	–	0.087	0.059	0.009	16NR 14BSPT-TT	86105				
11	–	0.110	0.071	0.012	11BSPT-TT	85963				

Please check availability in current price and stock-list.

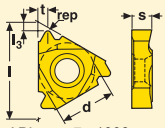
Note: TT represents multiple tooth insert.

API – External Threading

Snap-Tap®



For toolholders, see pages 483-486



API spec.7 - 1998

Size	Dimensions in inch d (I.C.)	l	s
22	1/2	0.866	0.185
27	5/8	1.063	0.242

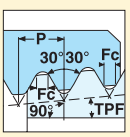
22ER/27ER



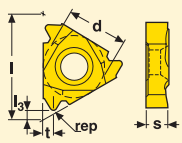
Pitch	Dimensions in inch							Grades (EDP No.)		
								Coated		
TPI	t	l_3	API Code	Taper TPF	rep	f_c	Part No.	CP200	CP500	TM4000
5	0.098	0.079	V040	3	0.020	0.040	22ER 5API404		67402	35015
4	0.100	0.077	V038R	2	0.038	0.065	4API386		67301	35023
5	0.126	0.087	V040	3	0.020	0.040	27ER 5API404		77872	22533
4	0.126	0.087	V038R	3	0.038	0.065	4API384	44723	74102	
4	0.126	0.087	V038R	2	0.038	0.065	4API386	44763	74203	35029
4	0.126	0.087	V050	3	0.025	0.050	4API504	44724	74702	22511
4	0.126	0.087	V050	2	0.025	0.050	4API506	44764	74901	35032

For oilfield connection part numbers see pages 480-482

API – Internal Threading



For toolholders, see pages 489-492



API spec.7 - 1998

Size	Dimensions in inch d (I.C.)	l	s
22	1/2	0.866	0.185
27	5/8	1.063	0.242

22NR/27NR



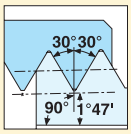
Pitch	Dimensions in inch							Grades			
								Coated			Uncoated
TPI	t	l_3	API Code	Taper TPF	rep	f_c	Part No.	CP200	CP500	TM4000	H15
5	0.098	0.079	V040	3	0.020	0.040	22NR 5API404		72793	35839	
4	0.098	0.075	V038R	2	0.038	0.065	4API386		72788	35854	27763
5	0.126	0.087	V040	3	0.020	0.040	27NR 5API404			22843	
4	0.126	0.087	V038R	3	0.038	0.065	4API384	44725	78179		
4	0.126	0.087	V038R	2	0.038	0.065	4API386	44765	78181	35855	
4	0.126	0.087	V050	3	0.025	0.050	4API504	44726	78187	22748	
4	0.126	0.087	V050	2	0.025	0.050	4API506	44766	78228	35860	

Please check availability in current price and stock-list.

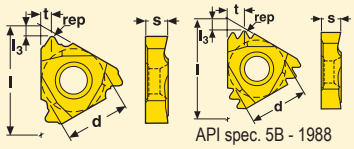
For oilfield connection part numbers see pages 480-482

API RD– External Threading

Snap-Tap®



For toolholders, see pages 483-486



API spec. 5B - 1988

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
22	1/2	0.866	0.185
27	5/8	1.063	0.242

16ER

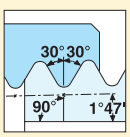


22ER/27ER

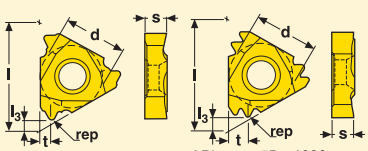


Pitch	Dimensions in inch				Grades (EDP No.) Coated	
TPI	t	l_3	rep	Part No.	CP500	TM4000
10	0.059	0.059	0.015	16ER 10APIRD	49748	
8	0.059	0.059	0.018	8APIRD	49959	35034
10	0.146	0.094	0.015	22ER 10APIRD2M	64902	
8	0.177	0.114	0.018	27ER 8APIRD2M		22535

API RD– Internal Threading



For toolholders, see pages 489-492



API spec. 5B - 1988

Size	Dimensions in inch d (I.C.)	l	s
16	3/8	0.650	0.137
27	5/8	1.063	0.242

16NR



27NR



Pitch		Dimensions in inch				Grades (EDP No.) Coated	
TPI	mm	t	l_3	rep	Insert Part No. Right	CP500	TM4000
10	–	0.059	0.059	0.015	16NR 10APIRD	50446	
8	–	0.059	0.059	0.018	8APIRD	64737	35861
8	–	0.177	0.114	0.018	27NR 8APIRD2M		22848

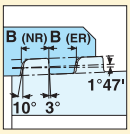
Please check availability in current price and stock-list.

Note: 2M represents multiple tooth insert.

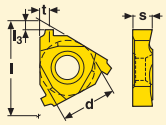
API-BUTTRESS 2.5 – External Threading

Snap-Tap®

Crest and root are parallel to taper



For toolholders, see pages 483-486



Vallourec ST-D453.02
API spec. 5B - 1988

Size	Dimensions in inch d (I.C.)	l	s
22	1/2	0.866	0.185

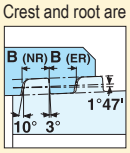
22ER



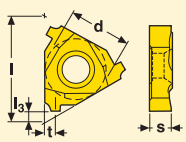
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500
6	–	0.098	0.087	–	22ER 6VAM	68203
5	–	0.098	0.087	–	5BUT2.5	67403

API-BUTTRESS 2.5 – Internal Threading

Crest and root are parallel to taper



For toolholders, see pages 489-492



Vallourec ST-D453.02
API spec. 5B - 1988

Size	Dimensions in inch d (I.C.)	l	s
22	1/2	0.866	0.185

22NR



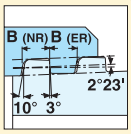
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500
5	–	0.083	0.079	–	22NR 5BUT2.5	72794
5	–	0.079	0.079	–	5VAM	72799
6	–	0.079	0.079	–	6VAM	73084

Please check availability in current price and stock-list.

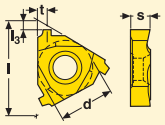
API-BUTTRESS 2.6 – External Threading

Snap-Tap®

Crest and root are parallel to axis



For toolholders, see pages 483-486



API spec. 5B - 1988

Size	Dimensions in inch d (I.C.)	l	s
22	1/2	0.866	0.185

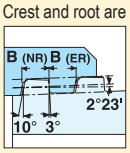
22ER



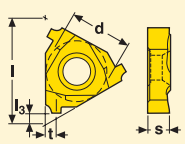
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500
5	–	0.098	0.087	–	22ER 5BUT2.6	67901

API-BUTTRESS 2.6 – Internal Threading

Crest and root are parallel to axis



For toolholders, see pages 489-492



API spec. 5B - 1988

Size	Dimensions in inch d (I.C.)	l	s
22	1/2	0.866	0.185

22NR



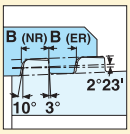
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500
5	–	0.083	0.079	–	22NR 5BUT2.6	77978

Please check availability in current price and stock-list.

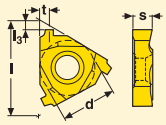
AMERICAN BUTTRESS – External Threading

Snap-Tap®

Crest and root are parallel to axis



For toolholders, see pages 483-486



API spec. 5B - 1988

Size	Dimensions in inch d (l.C.)	l	s
16	3/8	0.650	0.137

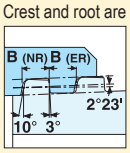
16ER



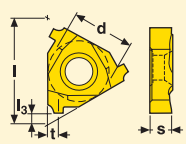
Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500
12	–	0.051	0.079	0.005	16ER 12ASB45/7	77862
16	–	0.051	0.079	0.003	16ASB45/7	77845

AMERICAN BUTTRESS – Internal Threading

Crest and root are parallel to axis



For toolholders, see pages 489-492



API spec. 5B - 1988

Size	Dimensions in inch d (l.C.)	l	s
16	3/8	0.650	0.137

16NR

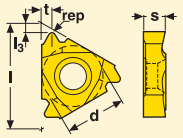


Pitch TPI	Pitch mm	Dimensions in inch t	l_3	rep	Insert Part No. Right	Grades (EDP No.) Coated CP500
12	–	0.051	0.079	0.005	16NR 12ASB45/7	77856

Please check availability in current price and stock-list.

Rotary drill connection - External threading

Snap-Tap®



For toolholders,
see pages 483-486

Size	Dimensions in inch d	l	s
22	0.500	0.866	0.185
27	0.625	1.063	0.242

HEF



904/906



H90



PAC



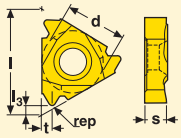
Pitch	Dimensions in inch		API Code	Taper TPF	Part No.	Grades (EDP No.) Coated CP300	CP500
TPI	l_3	t					
6	0.079	0.098		2	22ER 6HEF		67647
3.5	0.106	0.138	90V050	3	27ER 3.5H904	67650	67649
3.5	0.106	0.138	90V050	2	3.5H906	67652	67651
3	0.138	0.142	90V050	1.25	27ER 3H90	67658	67657
4	0.094	0.104	V076	1.5	22ER 4PAC		67661
4	0.108	0.126	V076	1.5	27ER 4PAC	67663	50583

■ Stock standard
Subject to change refer to current price- and stock-list

For oilfield connection part numbers see pages 480-482

Rotary drill connection - Internal threading

Snap-Tap®



For toolholders,
see pages 489-492

Size	Dimensions in inch d	l	s
22	0.500	0.866	0.185
27	0.625	1.063	0.242

HEF



904/906



H90



PAC



Pitch	Dimensions in inch					Grades (EDP No.)	
						Coated	
TPI	l_3	t	API Code	Taper TPF	Part No.	CP300	CP500
6	0.079	0.098		2	**22NR 6HEF**		67648
3,5	0.106	0.138	90V050	3	**27NR 3.5H904**	67654	67653
3,5	0.106	0.138	90V050	2	**3.5H906**	67656	67655
3	0.138	0.142	90V050	1.25	**27NR 3H90**	67660	67659
4	0.094	0.102	V076	1.5	**22NR 4PAC**		67662
4	0.108	0.126	V076	1.5	**27NR 4PAC**	67664	50584

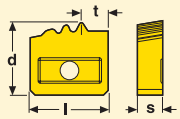
■ **Stock standard**

Subject to change refer to current price- and stock-list

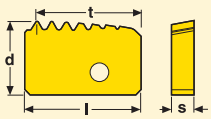
For oilfield connection part numbers see pages 480-482

Chasers

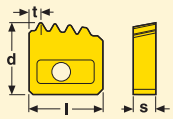
Type 1



Type 2



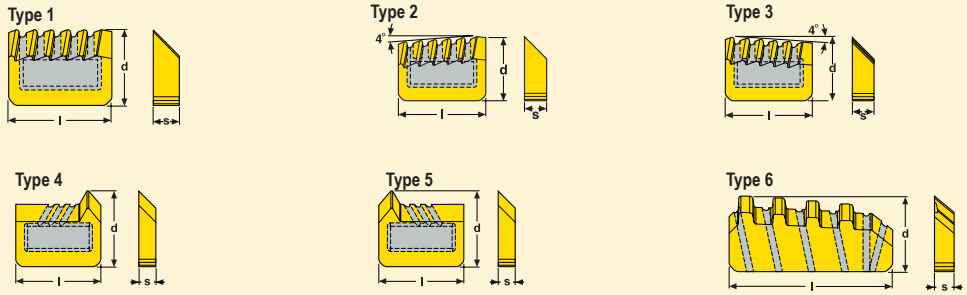
Type 3



For toolholders, see page 488

Pitch	Int./Ext.	Type	Dimensions in inch l	d	s	t	No. of teeth	Part No.	Thread Form Product	Grades CP250T
8	Internal	3	0.625	0.625	0.187	0.098	4	8- 1128	API_RD_8TPI_INT,	29931
8	External	1	0.625	0.625	0.187	0.220	3	1116	API_RD_CAS_8TPI_EXT,	29933
8	External	1	0.630	0.576	0.205	0.303	3	2115-1	API_RD_8TPI_CAS_3/4_TPF_1PMC	20000
8	External	1	0.630	0.585	0.205	0.261	3	2115-2	API_RD_8TPI_CAS_3/4_TPF_2PMC	20001
8	External	1	0.630	0.591	0.205	0.220	3	2115-3	API_RD_8TPI_CAS_3/4_TPF_3PMC	20002
8	External	1	0.787	0.625	0.187	0.401	3	4133-1	API_RD_8TPI_EXT_CASING_1	30879
8	External	1	0.787	0.625	0.187	0.339	3	4133-2	API_RD_8TPI_EXT_CASING_2	30880
8	External	1	0.630	0.576	0.205	0.303	3	8- 2118-1	API_RD_8TPI_TUB_3/4_TPF_1PMC	20003
8	External	1	0.630	0.585	0.205	0.261	3	2118-2	API_RD_8TPI_TUB_3/4_TPF_2PMC	20004
8	External	1	0.630	0.591	0.205	0.220	3	2118-3	API_RD_8TPI_TUB_3/4_TPF_3PMC	20005
8	External	1	0.625	0.625	0.187	0.220	3	1117	API_RD_TUBING_8TPI_EXT,	29936
8	External	1	0.625	0.612	0.187	0.236	3	1132-1	API_RD_8TPI_TUBING_EXT_1	30877
8	External	1	0.625	0.624	0.187	0.173	3	1132-2	API_RD_8TPI_TUBING_EXT_2	30878
8	Internal	3	0.984	0.625	0.197	0.098	7	5111	API_RD_8TPI_INT	19996
8	Internal	2	0.984	0.625	0.197	0.886	7	5114	API_RD_8TPI_INTPULLING	19999
10	External	1	0.625	0.596	0.187	0.223	3	10- 1133-1	API_RD_10TPI_TUB_EXT_1	30872
10	External	1	0.625	0.625	0.187	0.173	3	1133-2	API_RD_10TPI_TUB_EXT_2	30873
10	Internal	3	0.625	0.625	0.187	0.197	4	1120	API_RD_10TPI_TUB_INT	30871
5	External	1	0.625	0.625	0.187	0.083	3	5- 1102	API_BUTT_5TPI_1/16_EXT	19987
5	Internal	2	0.625	0.625	0.187	0.527	3	1134	API_BUTT_5TPI_CAS_1/16_INTPUL	42870
5	Internal	3	0.625	0.625	0.187	0.098	3	1113	API_BUTTRESS_5TPI_1/16_INT,	30691
5	External	1	0.669	0.574	0.187	0.219	3	3105-1	API_BUTTRESS_5TPI_1/16_EXT_1	19988
5	External	1	0.669	0.584	0.187	0.152	3	3105-2	API_BUTTRESS_5TPI_1/16_EXT_2	19989
5	External	1	0.669	0.590	0.187	0.085	3	3105-3	API_BUTTRESS_5TPI_1/16_EXT_3	19990
5	External	1	0.787	0.618	0.187	0.191	3	4131-1	API_BUTTRESS_1/16_5TPI_EXT_1	30874
5	External	1	0.787	0.625	0.187	0.091	4	4131-2	API_BUTTRESS_1/16_5TPI_EXT_2	30875
5	External	1	0.787	0.617	0.187	0.190	3	4135-1	API_BUTTRESS_5TPI_1/12_EXT_1	74010
5	External	1	0.787	0.625	0.187	0.090	4	4135-2	API_BUTTRESS_5TPI_1/12_EXT_2	74016
5	Internal	3	0.984	0.625	0.197	0.077	5	5112-C	API_BUTTRESS_5TPI_1/16_INT	71583
5	Internal	3	0.984	0.625	0.197	0.098	5	5108	API_BUTTRESS_5TPI_1/16_INT	19993
5	Internal	2	0.984	0.625	0.197	0.886	5	5110	API_BUTT_5TPI_1/16_INTPULLING	19995
5	External	1	0.984	0.625	0.197	0.079	5	5101	API_BUTTRESS_5TPI_1/16_EXT	19985
5	Internal	3	0.625	0.625	0.187	0.098	3	5- 1703	GOSTOTTM5TPIINT,	35884
5	Internal	2	0.625	0.625	0.187	0.527	3	1705	GOSTOTTM5TPIINT,PULLING	42900
5	External	1	0.625	0.625	0.187	0.083	3	1706	GOSTOTTM5TPIEXT,	63971
5	External	1	0.984	0.625	0.197	0.079	5	5704	GOSTOTTM5TPIEXT,	35887
5	External	1	0.787	0.618	0.187	0.191	3	4701-1	GOSTOTTM5TPIEXT,1	35885
5	External	1	0.787	0.625	0.187	0.091	4	4701-2	GOSTOTTM5TPIEXT,2	35886

Chipformers



Type	EDP No.	Part No.	Dimensions in inch		
			l	d	s
1	43328	C-1001	0.618	0.453	0.156
2	53122	C-1001-4	0.618	0.453	0.156
3	53121	C-1001-96	0.618	0.453	0.156
2	55257	C-1002-4	0.618	0.453	0.156
3	55258	C-1002-96	0.618	0.453	0.156
2	55255	C-1004-4	0.618	0.453	0.156
3	57791	C-1004-96	0.618	0.453	0.156
2	45497	C-1005-4	0.618	0.453	0.156
3	53115	C-1005-96	0.618	0.453	0.156
2	53128	C-1006-4	0.618	0.453	0.156
1	64020	C-1009	0.618	0.453	0.156
3	57860	C-1009-96	0.618	0.453	0.156
1	64023	C-1010	0.618	0.453	0.156
2	45500	C-1010-4	0.618	0.453	0.156
3	64022	C-1010-96	0.618	0.453	0.156
3	51067	C-1013-96	0.618	0.453	0.156
1	64021	C-1018	0.618	0.453	0.156
3	55254	C-1018-96	0.618	0.453	0.156
3	51068	C-1021-96	0.618	0.453	0.156
4	64016	C-1022	0.618	0.453	0.125
5	64017	C-1023	0.618	0.453	0.125
4	64018	C-1024	0.618	0.453	0.156
5	64019	C-1025	0.618	0.453	0.156
4	11200	C-1032	0.618	0.453	0.125
5	11202	C-1033	0.618	0.453	0.125
4	11218	C-1034	0.618	0.453	0.125
5	11219	C-1035	0.618	0.453	0.125
3	45505	C-1601-96	0.618	0.492	0.156
2	55256	C-1604-4	0.618	0.492	0.156
2	74142	C-4001-4	0.780	0.453	0.156
2	64024	C-4003-4	0.776	0.453	0.156
2	17582	C-5001-4	0.976	0.453	0.156
2	55435	C-5002-4	0.976	0.453	0.156
3	45504	C-5002-96	0.976	0.453	0.156
1	64014	C-5003	0.976	0.453	0.156
2	64025	C-5003-4	0.976	0.453	0.156
3	64015	C-5003-96	0.976	0.453	0.156
1	68225	C-5005	0.976	0.453	0.118
1	68226	C-5006	0.976	0.453	0.118
6	03514	C-5705-G	0.976	0.512	0.118
6	10999	C-5803-4	0.976	0.531	0.156
6	03516	C-5805-G	0.976	0.531	0.118
6	71464	C-5905-G	0.976	0.551	0.118

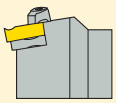
Toolholders



C	E	R		-	100	-	6	-	14	Q
1	2	3	4		5		6		7	8

1. Insert clamping

C



Clamp

2. External/Internal

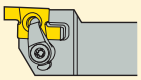
E = External

N = Internal

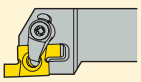
EA = External axial

3. Version

L

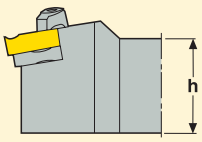


R



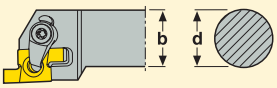
X = Special

4. Shank definition



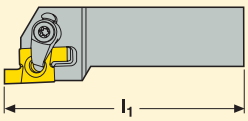
00 = Boring bars
= Square shank

5. Shank width/diameter



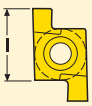
For boring bars diameter in inches.
For square shanks height in inches.
075 = 0.750”
100 = 1.000”
etc.

6. Tool length



3 = 3.0”
4 = 4.0”
5 = 5.0”
etc.

7. Cutting edge length



If the cutting edge length consists of only one digit, the designation should start with a 0.

Example:

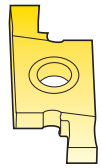
Cutting edge length = 9.525 mm (0.375”)
Symbol = 09

8. Internal designation

HD = Heavy Duty
Q = Qualified

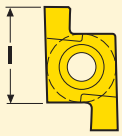
Inserts





14	E	R	.125	FG
1	2	3	4	5

1. Cutting edge length



If the cutting edge length consists of only one digit, the designation should start with a 0.

Example:

Cutting edge length = 9.525 mm (0.375")
Symbol = 09

2. External/Internal

E = External

N = Internal

EA = External axial

3. Version

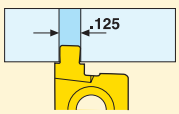
L



R



4. Groove width



Example:
.125 = .125 inch

5. Standard groove

Standard grooves =

FG = Radial groove (a_p x 1)

FD = Radial deep groove (a_p x 2)

D76 = Thread undercut

R = Round

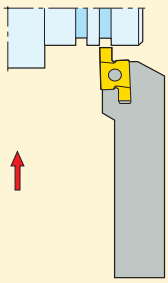
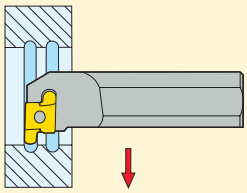
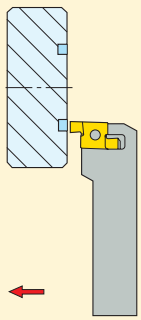
ST = O-ring, static

DY = O-ring, dynamic

AX = O-ring, axial

FA = Axial groove (a_p x 1)

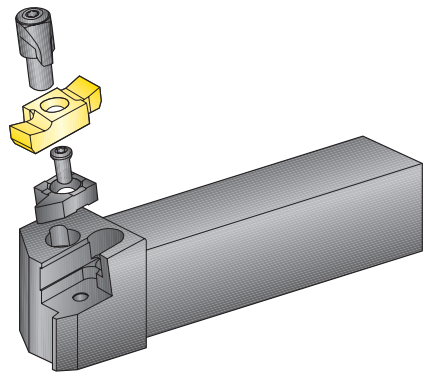
Grooving – Precision grooves, depth/width ratio 1:1 (2:1)

Radial external	Radial internal	Axial
		
Page 536	Pages 538-539	Page 537

Toolholders

The toolholder system is based on the Snap Tap threading system. The toolholders have replaceable shims designed to protect the insert seat.

The system is intended for radial external and internal grooving and for axial grooving. The system enables axial grooves from 16 mm outside diameter and internal radial grooves down to 13 mm diameter to be turned.

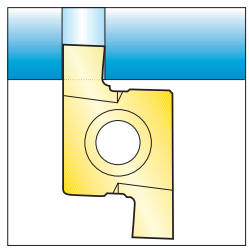


Inserts

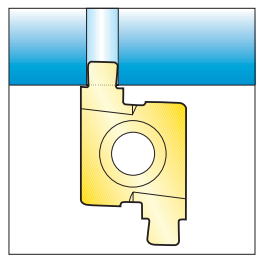
The range of grooving inserts includes inserts for most groove profiles, such as circlip profiles, O-ring profiles, thread undercut and radius grooves. The range of grooving inserts can be used for grooves with a depth/width ratio of up to 1:1.

Inserts with designation FD can be used for grooves with a depth/width ratio of up to 2:1.

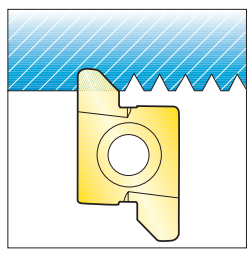
Lockring



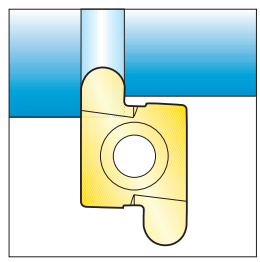
O-ring



Thread undercut



Radius

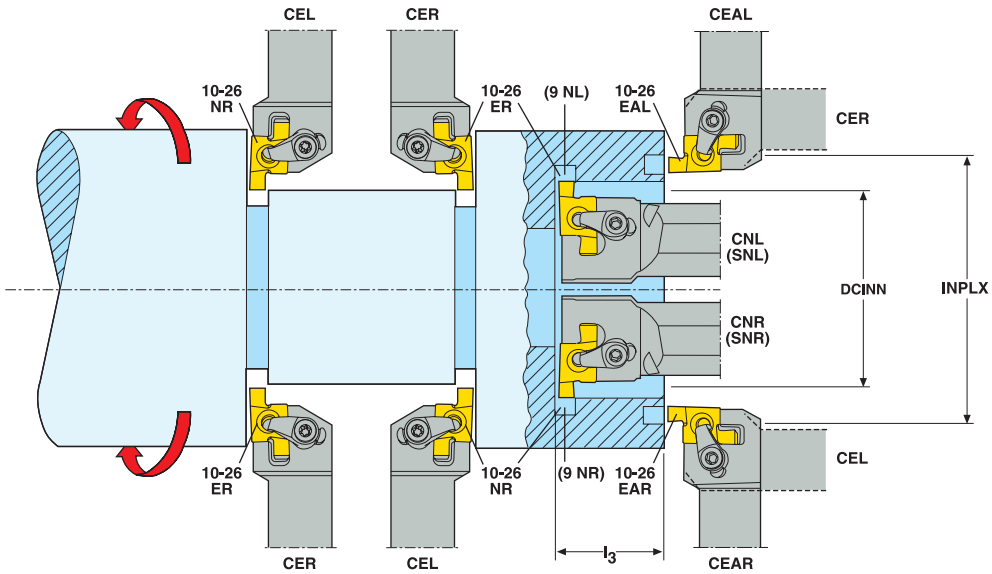


Grades

Grades	P						M					K					N				S				H			
	P01	P10	P20	P30	P40	P50	M01	M10	M20	M30	M40	K01	K10	K20	K30	K40	N01	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20	H30
CP500																												

CP500
Tough versatile PVD-coated micrograin grade intended for grooving in a variety of workpiece materials. Universal choice.

Ordering specification for custom made K-inserts



Internal grooving:

When considering operation NR and NL illustrated above (holder CNR and CNL), always state the diameter of the hole as well as the axial position of the groove = l_3. In the case of small hole diameters, however, use holder SNR and SNL with insert 9NR and 9NL respectively.

Axial grooving:

With operation type EAR and EAL (holder CEAR and CEAL) the outer dimension of the groove (INPLX) must be stated.

Set-up machining recommendations

Set-up

- The mounting should be stable.
- The tool should be securely clamped and the overhang should be as small as possible.
- The center height should never deviate by more than ±0.004 inch from the workpiece center.

Internal grooving

- Decisive factors for ensuring vibration-free machining are the relationship between the toolholder overhang and its diameter, and the width of the grooving insert.
- In unfavorable circumstances, the cutting speed and feed rate should be reduced below the recommended values.

Grooving of radius grooves and grooves with trapezoidal cross-section

- In this type of grooving, different forms of chip problems often occur. The feed rate should therefore be reduced to obtain thin chips and avoid chip build-up and insert fracture.

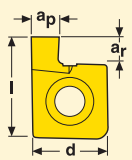
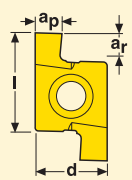
Formulae for cutting data calculation are found in page 94.

Special inserts for precision grooves

- Ground to specification using the insert blanks shown.
- Blanks available for grade CP30 and CP500.
- Please contact your local representative for price and delivery.

Tolerances for different groove profiles:

Tolerances (inch)				
a_r	a_p	rep	r	v°
±0.001	±0.001	±0.0012	±0.0012	±15’

Inserts	l (mm)	Dimensions in inch			Shim	Inserts
		d	a_p	a_r	Standard KX	
	9.0	0.250	0.106	0.102	–	9NR/NL
	9.0	0.250	0.106	0.102	KX10	10ER/NR 10EAR/EAL
	12.0	0.250	0.106	0.208	KX12	12ER/NR 12EAR/EAL
	14.0	0.375	0.165	0.173	KX14	14ER/NR 14EAR/EAL
	20.0	0.500	0.248	0.287	KX20	20ER/NR 20EAR/EAL
	26.0	0.625	0.394	0.398	KX26	26ER/NR 26EAR/EAL

Cutting speed, v_c (sf/min)

In this section a recommended cutting speed is indicated under specified conditions.

Use the tables beginning on page 770 to classify the workpiece material into a SMG

The cutting data tables provide a start value for feed rate (f) and cutting speed (v_c) for the selected cutting width (a_p).

The cutting data tables are based on grooving with full cutting width.

The recommended cutting speeds in the tables are calculated for 15 minutes tool life with use of external flood coolant.

In order to increase the accuracy towards the actual cutting conditions and requirements of the applications the recommendation is to use My Pages – Suggest on www.secotools.com

v_c = cutting speed (sf/min)

a_p = insert width (inch)

f = feed rate (in/rev)

SMG = Seco Material Group

CP30

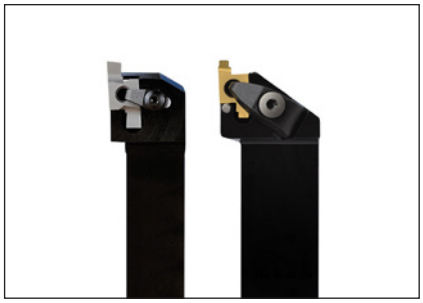
SMG		ap = 0.020-0.079		ap = 0.079-0.157		ap = 0.157-0.236		ap = 0.236-0.315		ap = 0.315-0.394	
		f	v_c	f	v_c	f	v_c	f	v_c	f	v_c
P1	CP30	0.0038	630	0.0060	540	0.0065	510	0.0080	480	0.0085	460
P2	CP30	0.0040	600	0.0065	510	0.0065	495	0.0080	465	0.0085	450
P3	CP30	0.0038	530	0.0060	450	0.0065	430	0.0075	410	0.0080	400
P4	CP30	0.0036	470	0.0055	405	0.0065	385	0.0075	360	0.0080	355
P5	CP30	0.0036	450	0.0055	385	0.0065	370	0.0070	350	0.0080	335
P6	CP30	0.0036	510	0.0055	435	0.0065	415	0.0070	395	0.0080	380
P7	CP30	0.0036	475	0.0055	410	0.0065	390	0.0070	375	0.0080	355
P8	CP30	0.0038	445	0.0060	375	0.0065	360	0.0075	345	0.0080	335
P11	CP30	0.0036	465	0.0055	400	0.0065	380	0.0070	360	0.0080	345
M1	CP30	0.0040	700	0.0065	520	0.0065	495	0.0080	425	0.0085	385
M2	CP30	0.0036	590	0.0055	465	0.0065	420	0.0070	380	0.0080	345
M3	CP30	0.0028	485	0.0044	410	0.0050	370	0.0060	335	0.0065	320
M4	CP30	0.0026	365	0.0040	325	0.0044	310	0.0050	280	0.0055	265
M5	CP30	0.0026	305	0.0040	270	0.0044	255	0.0050	235	0.0055	220

CP500

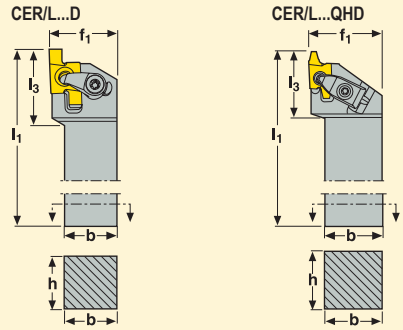
SMG		ap = 0.020-0.079		ap =0.079-0.157		0.157-0.236		0.236-0.315		0.315-0.394	
		f	v_c	f	v_c	f	v_c	f	v_c	f	v_c
P1	CP500	0.0038	480	0.0060	410	0.0065	390	0.0080	365	0.0085	350
P2	CP500	0.0040	460	0.0065	390	0.0065	380	0.0080	355	0.0085	345
P3	CP500	0.0038	405	0.0060	345	0.0065	330	0.0075	315	0.0080	305
P4	CP500	0.0036	360	0.0055	310	0.0065	295	0.0075	275	0.0080	270
P5	CP500	0.0036	345	0.0055	295	0.0065	280	0.0070	270	0.0080	260
P6	CP500	0.0036	385	0.0055	335	0.0065	315	0.0070	300	0.0080	290
P7	CP500	0.0036	365	0.0055	315	0.0065	300	0.0070	285	0.0080	275
P8	CP500	0.0038	340	0.0060	290	0.0065	275	0.0075	265	0.0080	260
P11	CP500	0.0036	355	0.0055	305	0.0065	290	0.0070	275	0.0080	265
M1	CP500	0.0040	540	0.0065	395	0.0065	380	0.0080	325	0.0085	295
M2	CP500	0.0036	455	0.0055	355	0.0065	320	0.0070	290	0.0080	265
M3	CP500	0.0028	370	0.0044	315	0.0050	285	0.0060	255	0.0065	245
M4	CP500	0.0026	280	0.0040	250	0.0044	235	0.0050	215	0.0055	205
M5	CP500	0.0026	235	0.0040	205	0.0044	195	0.0050	180	0.0055	170
K1	CP500	0.0040	420	0.0065	350	0.0065	345	0.0080	320	0.0085	310
K2	CP500	0.0036	370	0.0055	305	0.0065	285	0.0070	265	0.0080	250
K3	CP500	0.0036	315	0.0055	260	0.0065	240	0.0070	225	0.0080	215
K4	CP500	0.0036	300	0.0055	245	0.0065	230	0.0070	215	0.0080	205
K5	CP500	0.0032	190	0.0050	150	0.0055	145	0.0065	135	0.0070	130
K6	CP500	0.0036	270	0.0055	230	0.0065	215	0.0070	205	0.0080	200
K7	CP500	0.0032	240	0.0050	195	0.0055	185	0.0065	175	0.0070	165
N11	CP500	0.0050	280	0.0080	235	0.0085	225	0.010	210	0.011	205
S1	CP500	0.0026	60	0.0040	50	0.0044	50	0.0050	47	0.0055	46
S2	CP500	0.0026	50	0.0040	45	0.0044	44	0.0050	41	0.0055	40
S3	CP500	0.0024	45	0.0036	40	0.0040	39	0.0048	37	0.0050	36

Toolholders for Precision Grooves

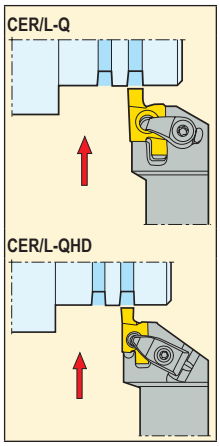
Snap-Tap



- For insert program, see pages 540-548



Right-hand version shown
Note: When using a size 12 insert in a size 10 holder the shim must be changed, see spare parts table and footnote.



I.C.	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	lbs	
1/4	72566	CER 0504-10Q	0.50	0.50	4.00	0.62	0.90	0.44	10../12..
	72564	0755-10Q	0.75	0.75	5.00	1.00	0.90	1.10	10../12..
	72600	1006-10Q	1.00	1.00	6.00	1.25	0.90	1.98	10../12..
	72559	CEL 0755-10Q	0.75	0.75	5.00	1.00	0.90	1.10	10../12..
	72596	1006-10Q	1.00	1.00	6.00	1.25	0.90	1.98	10../12..
3/8	72634	CER 1006-14Q	1.00	1.00	6.00	1.25	1.10	1.76	14..
	72628	CEL 1006-14Q	1.00	1.00	6.00	1.25	1.10	1.98	14..
1/2	12845	CER 1006-20QHD	1.00	1.00	6.00	1.25	1.30	1.98	20..
	13443	1256-20QHD	1.25	1.25	6.00	1.50	1.42	2.87	20..
	13399	CEL 1006-20QHD	1.00	1.00	6.00	1.25	1.30	1.98	20..
	13473	1256-20QHD	1.25	1.25	6.00	1.50	1.30	2.87	20..
5/8	13476	CER 1006-26QHD	1.00	1.00	6.00	1.25	1.80	2.20	26..
	13478	1256-26QHD	1.25	1.25	6.00	1.50	1.80	3.09	26..
	13480	1506-26QHD	1.50	1.50	6.00	1.75	1.80	3.97	26..
	13477	CEL 1006-26QHD	1.00	1.00	6.00	1.25	1.80	2.20	26..

Spare Parts, Parts included in delivery

Accessories*

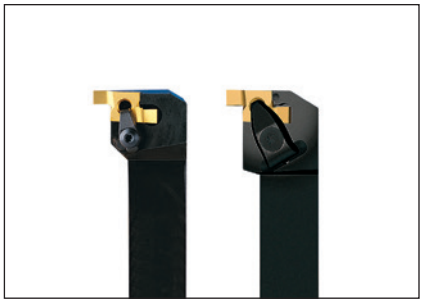
For holder	Shim for insert type (K)	Shim screw	Clamp set	Clamp	Clamp screw	Clamp key	Spring	Shim key
..-10QHD	KX10-2**	CS2507-T07P	CSP16-T15P	–	–	T15P-2	–	T07P-2
..-14QHD	KX14-2	CS3507-T09P	CSP16-T15P	–	–	T15P-2	–	T09P-2
..-20QHD	KX20-2	CS4009-T15P	–	CHD22	L86025-T20P	T20P-7	S7616	T15P-2
..-26QHD	KX26-2	C05012-T15P	–	CHD27	L86025-T20P	T20P-7	S7616	T15P-2

Please check availability in current price and stock-list

*To be ordered separately
**Shim KX12-2 for insert 12.., to be ordered separately

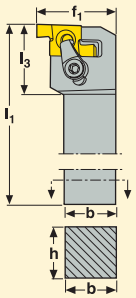
Toolholders for Precision Axial Grooves

Snap-Tap

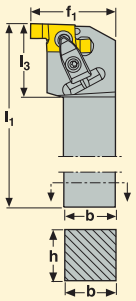


- For insert program, see pages 542, 547

CEAR/L...D



CEAR/L...HD/QHD

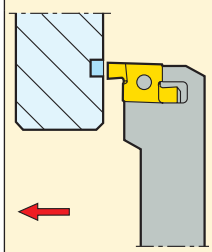


Right-hand version shown

f_1 (10../14..) = wf_2 (12..)

Note: When using a size 12 insert in a size 10 holder the shim must be changed, see spare parts table and footnote.

CEAR/L



I.C.	EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1 10../14..	wf_2 12..	l_3	INPLX* 10../14..	INPLX* 12..	lbs	
1/4	72625	CEAR 1006-10	1.00	1.00	6.0	1.39	1.51	1.11	0.63	0.71	2.20	10EA/12EA..
	72613	CEAL 1006-10	1.00	1.00	6.0	1.39	1.51	1.11	0.63	0.71	1.98	10EA/12EA..
3/8	72623	CEAR 1006-14	1.00	1.00	6.0	1.45	–	1.11	0.87	–	2.20	14EA..

*For INPLX, see page 533

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp kit	Insert shim	Insert shim (KL)	Insert shim (KR)	Shim key	Shim screw
CEAR..-10	T15P-2	CSP16-T15P	–	–	AKR-10	–	CS2507-T07P
CEAL..-10	T15P-2	CSP16-T15P	–	AKL-10	–	–	CS2507-T07P
CEAR..-14	T15P-2	CSP16-T15P	AKR-14	–	–	T09P-2	CS3507-T09P

Accessories*

Insert shim	Shim key
KX12-2	T07P-2
KX12-2	T07P-2
–	T09P-2

Please check availability in current price and stock-list

*To be ordered separately

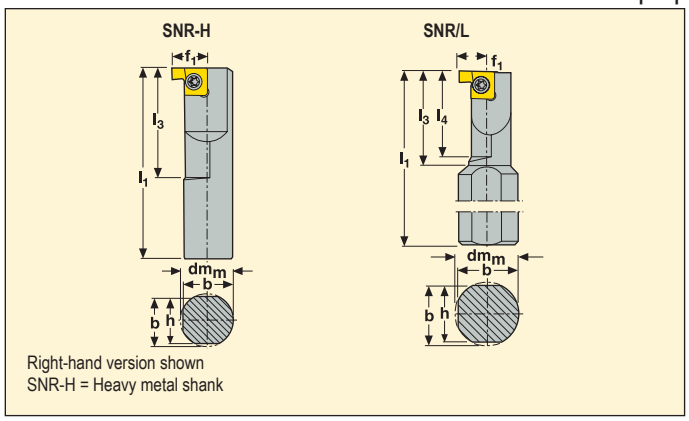
**Shim KX12-2 for insert 12.., to be ordered separately

Toolholders for Precision Grooves

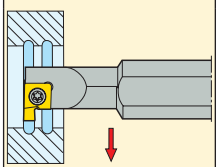
Snap-Tap



• For insert program, see page 540



Right-hand version shown
SNR-H = Heavy metal shank



I.C.	EDP No.	Part No.	Dimensions in inch dm_m	h	b	l_1	f_1	l_3	l_4	DCINN*	lbs	
7/32	72560	SNR 00037550-9	0.375	0.34	0.35	5.0	0.27	1.00	–	0.55	0.44	9..
	72586	0005055-9	0.625	0.60	0.60	5.5	0.32	1.26	0.91	0.70	0.66	9..
	72588	00062560-9	0.625	0.57	0.59	6.0	0.38	1.50	–	0.80	0.66	9..
	72552	SNL 00037540-9	0.375	0.34	0.35	4.0	0.30	–	–	0.55	0.22	9..
	72595	00037550-9	0.375	0.34	0.35	5.0	0.26	1.00	–	0.55	0.44	9..
7/32	72562	SNR 00037560-9-H	0.375	0.44	0.35	6.0	0.30	–	–	0.55	0.66	9..

*DCINN – minimum bore diameter, see page 533
Holder can be modified to accommodate smaller bore sizes, see page 474

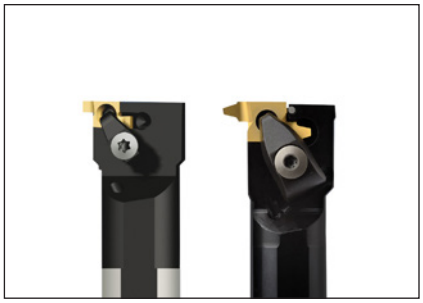
Spare Parts, Parts included in delivery

For holder	Insert key	Insert screw
..-9	T07P-2	C02506-T07P

Please check availability in current price and stock-list

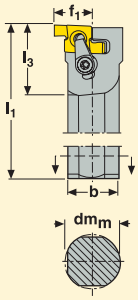
Toolholders for Precision Grooves

Snap-Tap

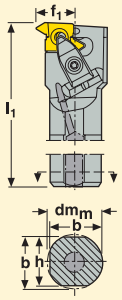


- For insert program, see pages 540-548
- When using a size 12 insert in a size 10 holder the shim must be changed, see spare parts table and footnote

CNR/L (No coolant)

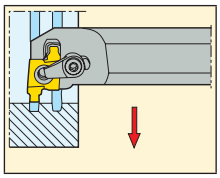


CNR/L...-AHD (With coolant)



Right-hand version shown
CNR..-10-H = Heavy metal shank

f_1 (10../14../20../26..) = wf_2 (12..)
DCINN (10../14../20../26..) = DCINN mod



I.C.	EDP No.	Part No.	Dimensions in inch									lbs	
			dm_m	h	b	l_1	f_1	wf_2 12..	l_3	DCINN*	DCINN* mod		
1/4	72573	CNR 000757-10	0.75	0.69	0.71	7.0	0.49	0.61	1.48	0.95	0.95	1.10	10../12..
	72569	001008-10	1.00	0.92	0.96	8.0	0.62	0.74	2.50	1.20	1.00	1.76	10../12..
	72563	0012510-10	1.25	1.15	1.21	10.0	0.75	0.87	1.77	1.50	1.25	3.31	10../12..
	72592	0015012-10	1.50	1.34	1.43	12.0	0.86	0.98	1.77	1.80	1.60	5.73	10../12..
	72624	CNL 000757-10	0.75	0.65	0.71	7.0	0.49	0.61	1.48	0.95	0.95	0.88	10../12..
	72610	001008-10	1.00	0.90	0.96	8.0	0.62	0.74	1.56	1.20	1.00	1.76	10../12..
	72583	CNR 00075010-10-H	0.75	0.69	0.73	10.0	0.49	–	1.48	0.95	0.95	2.65	10../12..
3/8	72571	000757-14	0.75	0.69	0.71	7.0	0.57	–	1.69	1.05	1.05	0.88	14..
	72567	001008-14	1.00	0.92	0.96	8.0	0.70	–	1.73	1.30	1.05	1.98	14..
	72582	CNL 001008-14	1.00	1.00	0.96	8.0	0.70	–	–	1.18	1.05	1.76	14..
1/2	30964	CNR 001008-20AHD	1.00	0.90	0.96	8.0	0.70	–	1.97	1.40	–	1.54	20..
	30965	0012510-20AHD	1.25	1.15	1.21	10.0	0.94	–	2.17	1.70	1.40	3.31	20..
	30967	0015012-20AHD	1.50	1.34	1.43	12.0	1.06	–	2.17	2.00	1.60	5.51	20..
	30968	CNL 001008-20AHD	1.00	0.90	0.96	8.0	0.70	–	1.97	1.40	–	1.54	20..
	30969	0012510-20AHD	1.25	1.15	1.21	10.0	0.94	–	2.17	1.70	1.40	3.31	20..
	30970	0015012-20AHD	1.50	1.34	1.43	12.0	1.06	–	2.17	2.00	1.60	5.51	20..
5/8	30973	CNR 0012510-26AHD	1.25	1.15	1.21	10.0	1.06	–	2.32	2.00	1.60	3.09	26..
	30974	0015012-26AHD	1.50	1.34	1.43	12.0	1.18	–	2.32	2.10	2.10	5.51	26..
	30975	0017514-26AHD	1.75	1.59	1.68	14.0	1.31	–	2.28	2.30	1.80	8.82	26..
	30976	0020014-26AHD	2.00	1.84	1.93	14.0	1.43	–	2.28	2.50	2.00	11.46	26..
	30977	0025016-26AHD	2.50	2.34	2.43	16.0	1.68	–	2.28	3.00	2.50	20.72	26..
	30987	CNL 0012510-26AHD	1.25	1.15	1.21	10.0	1.06	–	2.32	2.00	1.60	3.09	26..
	30867	0015012-26AHD	1.50	1.34	1.43	12.0	1.18	–	2.32	2.10	2.10	5.51	26..
	30868	0017514-26AHD	1.75	1.59	1.68	14.0	1.31	–	2.28	2.30	1.80	8.82	26..
	30870	0025016-26AHD	2.50	2.34	2.43	16.0	1.68	–	2.28	3.00	2.50	20.72	26..

*DCINN – minimum bore diameter, see page 533

*Holder can be modified to accommodate smaller bore sizes, see page 474

Spare Parts, Parts included in delivery

For holder	Cantilever clamp	Clamp key	Clamp kit	Clamp screw	Insert shim (K)	Shim screw	Spring
..-10	–	T15P-2	CSP16-T15P	–	KX10-2	CS2507-T07P	–
..-14	–	T15P-2	CSP16-T15P	–	KX14-2	CS3507-T09P	–
..-20	CHD22	T20P-7	–	L86025-T20P	KX20-2	CS4009-T15P	S7616
..-26	CHD27	T20P-7	–	L86025-T20P	KX26-2	C05012-T15P	S7616

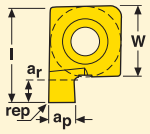
Accessories*

Insert shim	Shim key
KX12-2	T07P-2
–	T09P-2
–	T15P-2
–	T15P-2

Please check availability in current price and stock-list

*To be ordered separately
**Shim KX12-2 for insert 12.., ordered separately

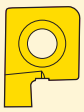
Inserts – Precision Grooves, Radial Grooves



Tolerances:
a_p = +0.002/0
Toolholder range, see page 538

Size	Dimensions in inch		
	W	l	rep
9	0.250	0.354	0.0

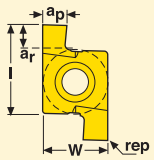
9



For lock-ring	Pitch TPI	a_p inch	a_r inch	Part No. Internal left	Grades (EDP No.) Coated CP500	Part No. Internal right	Grades (EDP No.) Coated CP500
–	–	0.030	0.030			9NR .030FG	77950
0.042	–	0.046	0.046			.046FG	77952
0.050	–	0.056	0.056	9NL .056FG	77943	.056FG	77954
0.062	–	0.068	0.068			.068FG	77956
0.078	6TPI	0.086	0.086	9NL .086FG	77947	.086FG	77958
0.093	–	0.103	0.103	.103FG	77948	.103FG	77961

Please check availability in current price and stock-list

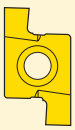
Inserts – Precision Grooves, Radial Grooves



Tolerances:
a_p = +0.002/0
Toolholder range, see pages 536, 539

Size	Dimensions in inch W	l	rep
10	0.250	0.354	0.0
14	0.375	0.551	0.0
20	0.500	0.787	0.0
26	0.625	1.024	0.0

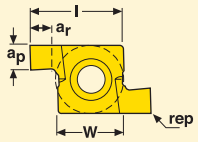
10/14
20/26



For circlip	Pitch TPI	a_p mm	a_r mm	Part No. External right Internal left	Grades (EDP No.) Coated CP500	Part No. Internal right External left	Grades (EDP No.) Coated CP500
–	–	0.030	0.030	**10ER .030FG**	77899	**10NR .030FG**	77905
–	–	0.046	0.046	**.046FG**	77900	**.046FG**	77906
0.050	–	0.056	0.056	**.056FG**	77901	**.056FG**	77907
0.062	–	0.068	0.068	**.068FG**	77902	**.068FG**	77908
0.078	6TPI	0.086	0.086	**.086FG**	77903	**.086FG**	77909
0.093	–	0.103	0.103	**.103FG**	77904	**.103FG**	77910
–	–	0.120	0.120	**14ER .12FG**		**14NR .12FG**	77919
–	–	0.125	0.125	**.125FG**	77912	**.125FG**	77916
0.125	–	0.139	0.139	**.139FG**	77913	**.139FG**	77927
0.156	3TPI	0.174	0.174	**20ER .174FG**	77929	**20NR .174FG**	77931
–	–	0.250	0.250	**.25FG**	77930	**.25FG**	77934
–	–	0.300	0.300	**26ER .3FG**	77970	**26NR .3FG**	77972

Please check availability in current price and stock-list

Inserts – Precision Grooves, Axial Grooves



Tolerances:
a_p = +0.002/0
Toolholder range and INPLM, see page 537

Size	Dimensions in inch				
	a_p	W	l	a_r	rep
10	0.098	0.250	0.354	0.098	–
12	0.098	0.250	0.472	0.197	0.008
14	0.157	0.375	0.551	0.157	–
20	0.236	0.500	0.787	0.236	–

10



12



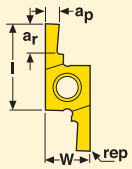
14/20



For width inch	INPLM	Part No. External right	Grades (EDP No.) Coated CP500	Part No. External left	Grades (EDP No.) Coated CP500
0.098	0.630	**10EAR 2.5FA**	26778	**10EAL 2.5FA**	26779
0.098	0.709	**12EAR 2.5FD**	00388	**12EAL 2.5FD**	00407
0.157	0.866	**14EAR 4.0FA**	26780	**14EAL 4.0FA**	26781
0.236	1.102	**20EAR 6.0FA**	26782	**20EAL 6.0FA**	26783

Please check availability in current price and stock-list

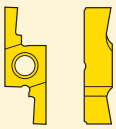
Inserts – Precision Grooves, Deep Radial Grooves



Tolerances:
a_p = ±0.001
a_r = +0.004/0
Toolholder range, see pages 536, 539

Size	Dimensions in inch	
	W	l
10	0.250	0.354
12	0.250	0.472

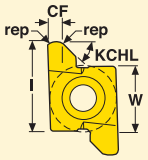
..FD



a_p inch	a_r inch	rep	Part No. External right Internal left	Grades (EDP No.) Coated CP500	Part No. Internal right External left	Grades (EDP No.) Coated CP500
0.020	0.039	–	10ER 0.50FD	00359	10NR 0.50FD	00389
0.031	0.063	–	0.80FD	00360	0.80FD	00390
0.039	0.079	–	1.00FD	00362	1.00FD	00391
0.041	0.082	–	12ER 1.04FD	00363	12NR 1.04FD	00392
0.047	0.094	0.004	1.20FD	00364	1.20FD	00393
0.055	0.110	0.004	1.40FD	00365	1.40FD	00394
0.058	0.116	0.004	1.47FD	19981	1.47FD	00395
0.059	0.118	0.004	1.50FD	00367	1.50FD	00396
0.062	0.124	0.006	1.57FD	00368	1.57FD	00398
0.067	0.134	0.006	1.70FD	00369	1.70FD	00399
0.077	0.154	0.006	1.96FD	00371	1.96FD	00400
0.079	0.157	0.008	2.00FD	00376	2.00FD	00401
0.088	0.176	0.008	2.24FD	00377	2.24FD	00402
0.091	0.181	0.008	2.30FD	00380	2.30FD	00403
0.094	0.188	0.008	2.39FD	00385	2.39FD	00405
0.104	0.209	0.008	2.65FD	00387	2.65FD	00406

Please check availability in current price and stock-list

Inserts – Precision Grooves, DIN76



Tolerances:
rep = ±0.002
Toolholder range, see pages 536-537, 539

Size	Dimensions in inch			
	CF	W	l	rep
10	0.079	0.250	0.354	0.020
14	0.122	0.375	0.551	0.030
20	0.177	0.500	0.787	0.039

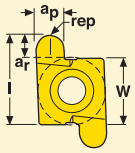
..D76



For max pitch	Part No. External right Internal left	KCHR°	KCHL°	Grades (EDP No.) Coated CP500	Part No. Internal right External left	KCHR°	KCHL°	Grades (EDP No.) Coated CP500
1,0	**10ER 1.0D76**	0	45	26785	**10NR 1.0D76**	45	0	26786
1,5	**14ER 1.5D76**	0	45	26787	**14NR 1.5D76**	45	0	26788
2,0	**20ER 2.0D76**	0	45	26789	**20NR 2.0D76**	45	0	26790

Please check availability in current price and stock-list

Inserts – Precision Grooves, Radius



Tolerances:
rep = ±0.002
Toolholder range, see pages 536-537, 539

Size	Dimensions in inch W	l	rep
10..1.0	0.250	0.354	0.039
10..1.2	0.250	0.354	0.047
14..1.5	0.375	0.551	0.059
14..2.0	0.375	0.551	0.079
20..3.0	0.500	0.787	0.118
26..4.0	0.625	1.024	0.157
26..5.0	0.625	1.024	0.197

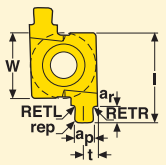
..R



For radius inch	a_p inch	a_r inch	Part No. External right Internal left	Grades (EDP No.) Coated CP500	Part No. Internal right External left	Grades (EDP No.) Coated CP500
0.039	0.079	0.094	**10ER 1.0R**	26791	**10NR 1.0R**	26793
0.047	0.094	0.094	**1.2R**	26792	**10NR 1.2R**	26794
0.059	0.118	0.169	**14ER 1.5R**	26796	**14NR 1.5R**	26798
0.079	0.157	0.169	**2.0R**	26797	**14NR 2.0R**	26799
0.118	0.236	0.272	**20ER 3.0R**	26800	**20NR 3.0R**	26801
0.157	0.315	0.386	**26ER 4.0R**	26802	**26NR 4.0R**	26804
0.197	0.394	0.386	**5.0R**	26803	**26NR 5.0R**	26806

Please check availability in current price and stock-list

Inserts – Precision Grooves, O-ring Static



Tolerances:
a_p = +0.003/-0.001
RETR/RETL = ±0.002
rep = ±0.001
a_r = ±0.001
Toolholder range, see pages 536-537, 539

Size	Dimensions in inch							
	a_p	t	W	l	RETR	RETL	rep	a_r
14..1.6	0.094	0.079	0.375	0.551	0.008	0.008	0.020	0.044
14..2.4	0.126	0.079	0.375	0.551	0.009	0.009	0.020	0.070
20..3.0	0.150	0.126	0.500	0.787	0.012	0.012	0.039	0.089
20..3.55	0.201	0.126	0.500	0.787	0.016	0.016	0.039	0.126
20..4.1	0.256	0.197	0.625	1.024	0.016	0.016	0.039	0.180
26..5.7	0.189	0.126	0.500	0.787	0.012	0.012	0.030	0.104

..ST



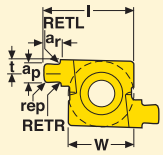
For O-ring				Grades (EDP No.)		Grades (EDP No.)
				Coated		Coated
mm	inch	Standard	Part No. External right Internal left	CP500	Part No. Internal right External left	CP500
1.60	–	*	**14ER 1.6ST**	26807	**14NR 1.6ST**	26809
2.40	–	*	**2.4ST**	26808		
3.00	–	*	**20ER 3.0ST**	26810	**20NR 3.0ST**	26813
4.10	–	*	**4.1ST**	26812		
5.70	–	*	**26ER 5.7ST**	26814	**26NR 5.7ST**	26815
3.55	0.140	**	**20ER 3.55ST**	26811		

Standard
* =
SMS 1588
BS 4518

** =
ISO 3601
DIN 3771
BS 1806

Please check availability in current price and stock-list

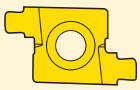
Inserts – Precision Grooves, O-ring Axial



Tolerances:
a_p = +0.003/-0.001
RETR/RETL = ±0.002
rep = ±0.001
a_r = ±0.001
Toolholder range, see page 537

Size	Dimensions in inch							
	a_p	t	W	l	RETR	RETL	rep	a_r
14..2.4	0.134	0.079	0.375	0.551	0.008	0.008	0.020	0.063
14..2.65	0.142	0.083	0.375	0.551	0.010	0.010	0.020	0.081
20..3.0	0.165	0.126	0.500	0.787	0.010	0.010	0.039	0.081
20..3.55	0.193	0.126	0.500	0.787	0.012	0.012	0.030	0.110

..AX



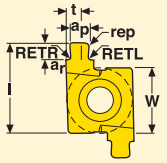
For O-ring				Grades (EDP No.)		Grades (EDP No.)
				Coated		Coated
mm	inch	Standard	Part No. External right	CP500	Part No. External left	CP500
2.40	0.094	*	**14EAR 2.4AX**	26816	**14EAL 2.4AX**	26818
3.00	0.118	*	**20EAR 3.0AX**	26819		
2.65	0.104	**	**14EAR 2.65AX**	26817		
3.55	0.140	**	**20EAR 3.55AX**	26820		

Standard
* =
SMS 1588
BS 4518

** =
ISO 3601
DIN 3771
BS 1806

Please check availability in current price and stock-list

Inserts – Precision Grooves, O-ring Dynamic



Tolerances:
a_p = +0.003/-0.001
RETR/RETL = ±0.002
rep = ±0.001
a_r = ±0.001
Toolholder range, see pages 536-537, 539

Size	Dimensions in inch							
	a_p	t	W	l	RETR	RETL	rep	a_r
14..1.8	0.094	0.079	0.375	0.551	0.008	0.008	0.020	0.057
14..2.4	0.130	0.079	0.375	0.551	0.010	0.010	0.020	0.074
14..2.65	0.142	0.083	0.375	0.551	0.012	0.012	0.020	0.085
20..3.0	0.161	0.126	0.500	0.787	0.010	0.010	0.039	0.093
20..3.55	0.189	0.126	0.500	0.787	0.012	0.012	0.026	0.117

..DY



For O-ring				Grades (EDP No.)		Grades (EDP No.)
				Coated		Coated
mm	inch	Standard	Part No. External right Internal left	CP500	Part No. Internal right External left	CP500
2.40	0.094	*	**14ER 2.4DY**	26822	**14NR 2.4DY**	26826
3.00	0.118	*	**20ER 3.0DY**	26827		
1.80	0.071	**	**14ER 1.8DY**	26821	**14NR 1.8DY**	26824
2.65	0.104	**	**2.65DY**	26823		
3.55	0.140	**	**20ER 3.55DY**	26828		

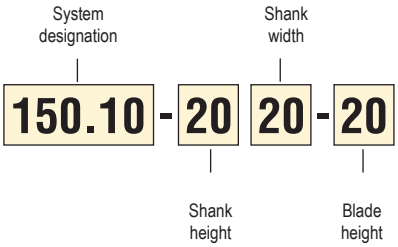
Standard
* =
SMS 1588
BS 4518

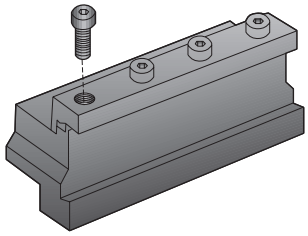
** =
ISO 3601
DIN 3771
BS 1806

Please check availability in current price and stock-list

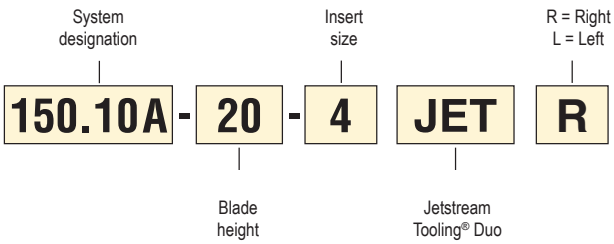
Cut-off

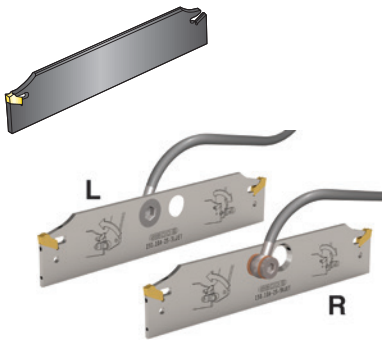
Toolholders



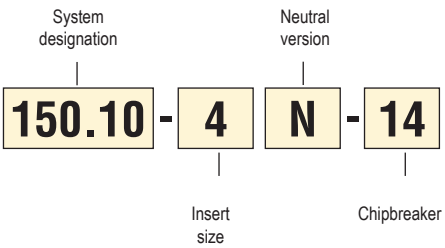


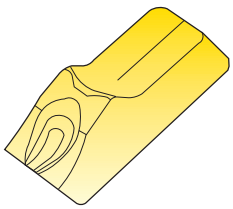
Blades





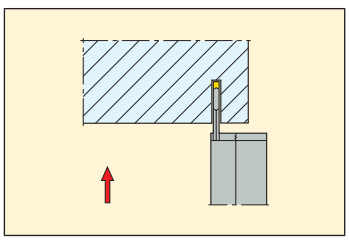
Inserts





For more information on Jetstream Tooling® and accessories, please see pages 86-89

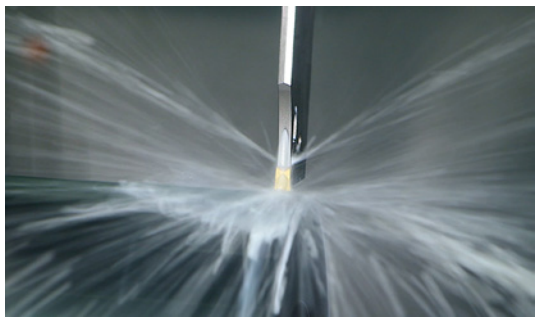
Cut-off, up to ∅5.6 inch



General

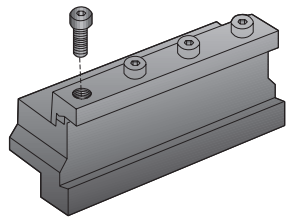
- Use the highest blade possible (size 25) for maximum stability.
- Use the shortest overhang possible for maximum stability and low risk of vibrations.
- Make sure that the tool is at 90° to the center-line of the component to ensure part quality and good tool life.
- Ideally, cut-off is run with a sub-spindle or part-catcher. In this case the cutting edge will be protected by having the second spindle or a fixture picking up the workpiece.
- Cut-off without sub-spindle requires the feed rate to be reduced as the tool approaches center (by up to 75% about 0.080 inch before the component center – depending on workpiece diameter). May also be applied on tubes to reduce burr.
- A well-aimed and sufficient flow of coolant, ideally through the blades 150.10JET, will give long tool life and good surface finish.
- Smaller inserts reduce the material waste and thus reduce material cost. On the other hand wider inserts allow higher feed rates, which increases productivity. The optimum depends on the customer preference and priority.

Seco Jetstream Tooling® Duo holders, yet another innovation introduced to market, feature both a rake face and flank face jet that can provide even better chip control and significantly longer tool life.



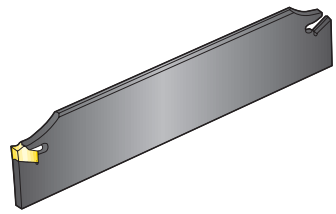
Toolholders

The Seco 150.10A Cut-off system consists of a high speed steel blade which holds the insert and a holder which retains the blade. This provides maximum stability, while the hot strength of the high speed steel ensures that the insert will be securely retained even when the blade is hot.



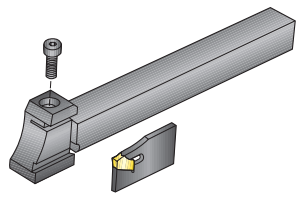
Type 150.10..-20/25 basic holder

Intended for long, reversible high speed steel blades with a depth of cut of up to 5.6 inch on diameter. The two-part toolholder facilitates clamping in machines with front clamping. The same holder is suitable for both right-hand and left-hand versions, since the blade can be positioned to the required length in either direction.



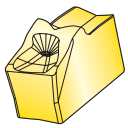
Type 150.10..-15 blade holder

Intended for short high speed steel blades for cutting depths up to 1.5 inch on diameter. The high speed steel blade ensures excellent stability and, due to the compact design, is suitable for machines with limited space, such as automatic lathes.

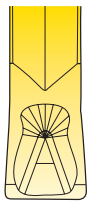


Inserts N-/ R- /L-

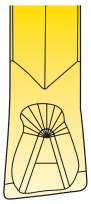
- Inserts in neutral version N are first choice since they normally achieve increased tool life, better chip control, high surface quality and allow higher cutting data compared to the handed (R-/L-) version.
- The R-/L-inserts have a setting angle of 6° in order to eliminate burrs and minimize the cut-off pip left on the workpiece. To reduce pip size with N-inserts, use the smallest width possible. The correct center height is another major factor to avoid pips (control to ±0.004 inch).
- When using R-/L-inserts, the feed rate should be reduced by approximately 30%.
- Convex or concave surfaces will be avoided, when using right or left hand inserts, by reducing the feed rate.



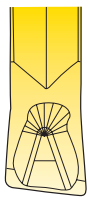
N



R



L



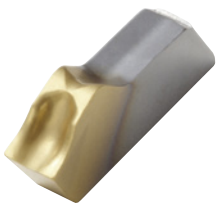
Chipbreakers

-12



- First choice for steel at low feed rates
- 24° positive cutting rake angle.
- Excellent chipbreaking

-14



- First choice for stainless steel.
- First choice for steel at medium-high feed rates
- 15° positive cutting rake angle with sharp edge

-16



- First choice for steel and cast iron in difficult conditions and/or high feed rates
- 20° positive cutting rake angle
- Strong protection chamfer

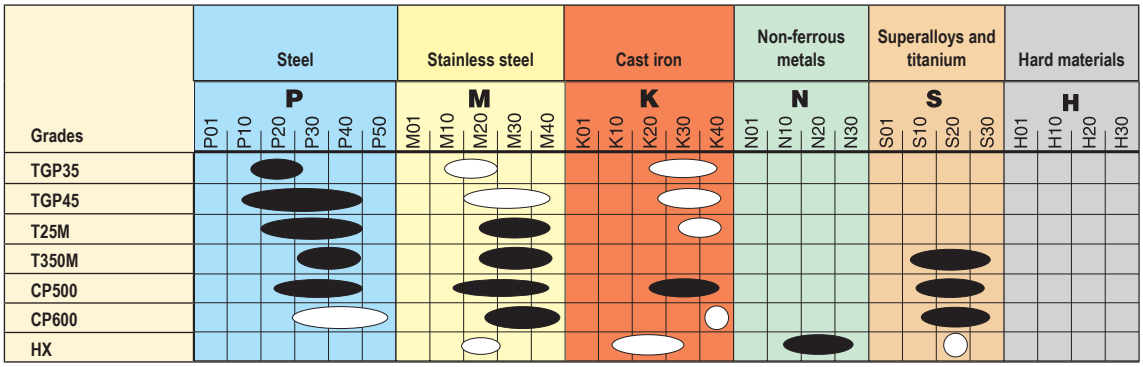
Recommended feed rates

Insert width a_p (mm)	Chip-breaker	Radial infeed, f (in/rev)					
		Type N insert			Type R/L insert		
		Recommended initial value	Recommended limit value		Recommended initial value	Recommended limit value	
			min –	max		min –	max
1.40							
	-12	–	–	–	–	–	–
	-14	0.0020	0.0016	0.0047	–	–	–
	-16	0.0024	0.0016	0.0047	–	–	–
2.0							
	-12	–	–	–	–	–	–
	-14	0.0028	0.0020	0.0055	–	–	–
	-16	0.0031	0.0020	0.0059	–	–	–
2.25							
	-12	–	–	–	–	–	–
	-14	0.0035	0.0020	0.0063	–	–	–
	-16	0.0039	0.0020	0.0079	–	–	–
2.5							
	-12	0.0035	0.0020	0.0071	0.0024	0.0016	0.0051
	-14	0.0039	0.0028	0.0079	0.0028	0.0020	0.0055
	-16	0.0051	0.0039	0.0094	0.0035	0.0028	0.0067
3.0							
	-12	0.0039	0.0020	0.0079	0.0028	0.0016	0.0055
	-14	0.0051	0.0031	0.0094	0.0035	0.0024	0.0067
	-16	0.0071	0.0047	0.0110	0.0051	0.0031	0.0079
4.0							
	-12	0.0051	0.0028	0.0087	0.0035	0.0020	0.0059
	-14	0.0059	0.0035	0.0102	0.0043	0.0024	0.0071
	-16	0.0079	0.0055	0.0126	0.0055	0.0039	0.0087
5.0							
	-12	0.0059	0.0031	0.0102	0.0043	0.0024	0.0071
	-14	0.0071	0.0039	0.0134	0.0051	0.0028	0.0094
	-16	0.0091	0.0063	0.0157	0.0063	0.0043	0.0110
6.0							
	-12	0.0067	0.0039	0.0118	0.0047	0.0028	0.0083
	-14	0.0079	0.0055	0.0150	0.0055	0.0039	0.0106
	-16	0.0098	0.0071	0.0165	0.0071	0.0051	0.0114

Grades

The chart belows shows application areas for grades available in the Cut-off system 150.10.
The black areas in the chart indicate a grade's main ISO application groups and the white areas indicate other supplementary application groups.

ISO classification of the grades



TGP35
Wear-resistant **Duratomic**® CVD-coated grade intended for cut-off of steel and cast iron at high cutting speeds.

TGP45
Wear-resistant **Duratomic**® CVD-coated grade intended for cut-off of steel and stainless steel at moderate to high cutting speeds.

T25M
Tough versatile CVD-coated grade intended for cut-off of steel, stainless steel and cast iron at moderate cutting speeds.

T350M
Tough versatile CVD-coated grade intended for cut-off in a variety of workpiece materials at moderate cutting speeds.

CP500
Tough, versatile PVD-coated micrograin grade intended for cut-off of steel, stainless steel, superalloys and titanium at low to moderate cutting speeds. First choice in stainless steel. Provides more wear resistance compared to CP600.

CP600
Very tough PVD-coated fine-grain grade intended for parting-off of steel, stainless steel, superalloys and titanium at low cutting speeds. Well-suited in interrupted cuts. Universal choice.

HX
Uncoated wear resistant hard grade intended for cut-off of hardened steels, superalloys, titanium alloys and non-ferrous materials.

Cut-off – Secolor

To center

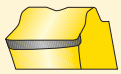
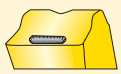
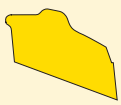
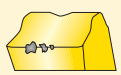
Easy conditions	Difficult conditions
12 CP500	16 CP600
14 CP500	16 CP600
12 TGP35	16 T25M
14 CP500	16 CP600
16 HX	14 CP600
16 HX	16 T350M

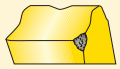
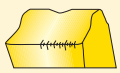
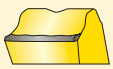
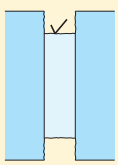
Easy conditions: pre-machined surface, small diameter, thin walls etc.
Difficult conditions: raw surface, large diameter, thick walls etc.

Tube

Easy conditions	Difficult conditions
16 TGP45	16 CP600
14 CP500	16 CP600
12 TGP35	16 TGP45
14 CP500	16 CP600
16 HX	16 CP600
16 HX	16 T350M

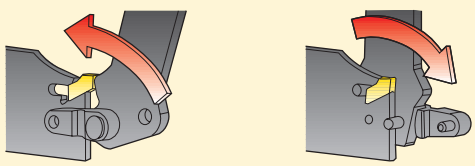
Troubleshooting

Flank wear 	• Reduce the cutting speed • Select a more wear resistant grade
Crater wear 	• Use a coolant • Select a more wear resistant grade • Reduce the cutting speed • Reduce the feed rate
Plastic deformation 	• Use a coolant • Select a more wear resistant grade • Reduce the cutting speed • Reduce the feed rate
Edge chipping 	• Select a tougher grade • Check the workpiece mounting • Check the cutting speed

Insert fracture 	• Reduce the feed rate • Select a tougher grade • Select a stronger chipbreaker
Comb cracks 	• Reduce the cutting speed • Reduce the feed rate • Ensure that the coolant flow is adequate and constant. If not, shut off the coolant
Built-up edge 	• Increase the cutting speed • Increase the feed rate • Do not use coolant
Poor finish 	• Reduce the feed rate • Increase the cutting speed • Use a coolant • Improve the stability • Check the alignment of the tool

Change of insert

Inserts are changed with the aid of key 150.10A-150.



Cutting speed, v_c (sf/min)

In this section a recommended cutting speed is indicated under specified conditions.

Use the tables beginning on page 770 to classify the workpiece material into a SMG.

The cutting data tables provide a recommendation of chipbreaker and a start value for feed rate (f) and cutting speed (v_c) for selected cutting width (a_p).

The recommended cutting speeds in the tables are calculated for 15 minutes tool life with use of external flood coolant.

In order to increase the accuracy towards the actual cutting conditions and requirements of the applications the recommendation is to use My Pages – Suggest on www.secotools.com

v_c = cutting speed (sf/min)

a_p = insert width (mm)

f = feed rate (in/rev)

SMG = Seco Material Group

TGP35

SMG		ap = 2.5		ap = 3		ap = 4		ap = 5-6	
		f	v_c	f	v_c	f	v_c	f	v_c
P1	-16 TGP35	0.0055	1025	0.0075	870	0.0085	780	0.011	620
P2	-16 TGP35	0.0055	1000	0.0080	820	0.0085	760	0.011	600
P3	-16 TGP35	0.0055	860	0.0075	730	0.0085	650	0.010	550
P4	-16 TGP35	0.0050	770	0.0070	660	0.0080	610	0.010	490
P5	-16 TGP35	0.0050	740	0.0070	630	0.0080	580	0.010	465
P6	-16 TGP35	0.0050	830	0.0070	710	0.0080	660	0.010	520
P7	-16 TGP35	0.0050	780	0.0070	670	0.0080	620	0.010	495
P8	-16 TGP35	0.0055	720	0.0075	610	0.0085	550	0.010	465
P11	-16 TGP35	0.0050	760	0.0070	650	0.0080	600	0.010	480
M1	-14 TGP35	0.0040	590	0.0050	520	0.0060	475	0.0075	395
M2	-14 TGP35	0.0036	490	0.0048	440	0.0050	420	0.0070	330
M3	-14 TGP35	0.0030	385	0.0038	365	0.0044	345	0.0055	300
M4	-14 TGP35	0.0026	295	0.0032	285	0.0038	275	0.0048	245
M5	-14 TGP35	0.0026	245	0.0032	240	0.0038	230	0.0048	205

TGP45

SMG		ap = 1.4		ap = 2.0-2.5		ap = 3		ap = 4		ap = 5-6	
		f	v_c	f	v_c	f	v_c	f	v_c	f	v_c
P1	-16 TGP45	0.0032	980	0.0048	950	0.0075	770	0.0085	690	0.011	550
P2	-16 TGP45	0.0032	960	0.0050	910	0.0080	720	0.0085	670	0.011	530
P3	-16 TGP45	0.0030	820	0.0048	800	0.0075	640	0.0085	580	0.010	490
P4	-16 TGP45	0.0030	720	0.0048	700	0.0070	580	0.0080	540	0.010	430
P5	-16 TGP45	0.0030	690	0.0044	680	0.0070	560	0.0080	520	0.010	415
P6	-16 TGP45	0.0028	760	0.0044	770	0.0070	630	0.0080	580	0.010	465
P7	-16 TGP45	0.0028	720	0.0044	720	0.0070	590	0.0080	550	0.010	435
P8	-16 TGP45	0.0030	690	0.0048	670	0.0075	540	0.0085	485	0.010	415
P11	-16 TGP45	0.0028	700	0.0044	700	0.0070	570	0.0080	530	0.010	425
M1	-14 TGP45	0.0030	560	0.0038	530	0.0050	465	0.0060	420	0.0075	350
M2	-14 TGP45	0.0026	455	0.0034	445	0.0048	390	0.0050	370	0.0070	295
M3	-14 TGP45	0.0022	340	0.0028	345	0.0038	325	0.0044	305	0.0055	265
M4	-14 TGP45	0.0018	245	0.0024	260	0.0032	255	0.0038	240	0.0048	220
M5	-14 TGP45	0.0018	205	0.0024	215	0.0032	210	0.0038	200	0.0048	180

SMG = Seco Material Group
v_c = sf/min
f = in/rev
a_p = mm
All cutting data are start values

T25M

SMG		ap = 2.25-2.5		ap = 3		ap = 4		ap = 5-6	
		f	v_c	f	v_c	f	v_c	f	v_c
P1	-16 T25M	0.0055	820	0.0075	690	0.0085	620	0.011	495
P2	-16 T25M	0.0055	800	0.0080	650	0.0085	600	0.011	480
P3	-16 T25M	0.0055	690	0.0075	580	0.0085	520	0.010	445
P4	-16 T25M	0.0050	620	0.0070	530	0.0080	490	0.010	390
P5	-16 T25M	0.0050	590	0.0070	500	0.0080	465	0.010	375
P6	-16 T25M	0.0050	660	0.0070	570	0.0080	520	0.010	420
P7	-16 T25M	0.0050	630	0.0070	530	0.0080	495	0.010	395
P8	-16 T25M	0.0055	580	0.0075	490	0.0085	435	0.010	375
P11	-16 T25M	0.0050	610	0.0070	520	0.0080	480	0.010	385
M1	-14 T25M	0.0040	475	0.0050	420	0.0060	380	0.0075	315
M2	-14 T25M	0.0036	395	0.0048	350	0.0050	335	0.0070	265
M3	-14 T25M	0.0030	310	0.0038	295	0.0044	275	0.0055	240
M4	-14 T25M	0.0026	235	0.0032	230	0.0038	220	0.0048	195
M5	-14 T25M	0.0026	195	0.0032	190	0.0038	180	0.0048	165

T350M

SMG		ap = 2.0-2.25		ap = 2.5		ap = 3		ap = 4	
		f	v_c	f	v_c	f	v_c	f	v_c
P1	-16 T350M	0.0048	800	0.0055	760	0.0075	640	0.0085	580
P2	-16 T350M	0.0050	760	0.0055	740	0.0080	610	0.0085	560
P3	-16 T350M	0.0048	670	0.0055	640	0.0075	540	0.0085	485
P4	-16 T350M	0.0048	590	0.0050	570	0.0070	490	0.0080	455
P5	-16 T350M	0.0044	570	0.0050	550	0.0070	470	0.0080	435
P6	-16 T350M	0.0044	640	0.0050	620	0.0070	530	0.0080	485
P7	-16 T350M	0.0044	610	0.0050	580	0.0070	495	0.0080	460
P8	-16 T350M	0.0048	560	0.0055	540	0.0075	455	0.0085	405
P11	-16 T350M	0.0044	590	0.0050	560	0.0070	480	0.0080	445
M1	-14 T350M	0.0038	450	0.0040	440	0.0050	390	0.0060	355
M2	-14 T350M	0.0034	370	0.0036	365	0.0048	325	0.0050	310
M3	-14 T350M	0.0028	290	0.0030	290	0.0038	270	0.0044	255
M4	-14 T350M	0.0024	215	0.0026	220	0.0032	215	0.0038	205
M5	-14 T350M	0.0024	180	0.0026	180	0.0032	175	0.0038	170

SMG = Seco Material Group
v_c = sf/min
f = in/rev
a_p = mm
All cutting data are start values

CP500

SMG		ap = 1.4		ap = 2.0-2.5		ap = 3		ap = 4		ap = 5-6	
		f	v_c	f	v_c	f	v_c	f	v_c	f	v_c
P1	-16 CP500	0.0032	670	0.0048	590	0.0075	495	0.0085	465	0.011	415
P2	-16 CP500	0.0032	660	0.0050	560	0.0080	470	0.0085	450	0.011	405
P3	-16 CP500	0.0030	570	0.0048	495	0.0075	415	0.0085	390	0.010	360
P4	-16 CP500	0.0030	510	0.0048	435	0.0070	370	0.0080	355	0.010	315
P5	-16 CP500	0.0030	485	0.0044	425	0.0070	355	0.0080	340	0.010	300
P6	-16 CP500	0.0028	550	0.0044	480	0.0070	400	0.0080	380	0.010	340
P7	-16 CP500	0.0028	520	0.0044	450	0.0070	375	0.0080	360	0.010	320
P8	-16 CP500	0.0030	485	0.0048	415	0.0075	350	0.0085	325	0.010	300
P11	-16 CP500	0.0028	510	0.0044	440	0.0070	365	0.0080	350	0.010	310
M1	-14 CP500	0.0030	780	0.0038	730	0.0050	630	0.0060	570	0.0075	470
M2	-14 CP500	0.0026	630	0.0034	610	0.0048	530	0.0050	510	0.0070	395
M3	-14 CP500	0.0022	475	0.0028	480	0.0038	445	0.0044	420	0.0055	365
M4	-14 CP500	0.0018	345	0.0024	360	0.0032	350	0.0038	335	0.0048	300
M5	-14 CP500	0.0018	290	0.0024	300	0.0032	290	0.0038	275	0.0048	250
K1	-16 CP500	0.0032	620	0.0050	530	0.0080	460	0.0085	445	0.011	405
K2	-16 CP500	0.0030	530	0.0044	465	0.0070	370	0.0080	350	0.010	300
K3	-16 CP500	0.0030	450	0.0044	395	0.0070	315	0.0080	295	0.010	255
K4	-16 CP500	0.0030	430	0.0044	375	0.0070	300	0.0080	285	0.010	245
K5	-16 CP500	0.0026	265	0.0040	230	0.0065	190	0.0070	175	0.0085	160
K6	-16 CP500	0.0030	390	0.0044	345	0.0070	295	0.0080	280	0.010	255
K7	-16 CP500	0.0026	340	0.0040	295	0.0065	240	0.0070	225	0.0085	205
N11	-14 CP500	0.0038	410	0.0048	380	0.0065	335	0.0075	315	0.0095	285
S1	-14 CP500	0.0018	85	0.0024	80	0.0032	70	0.0038	70	0.0048	65
S2	-14 CP500	0.0018	75	0.0024	70	0.0032	65	0.0038	60	0.0048	55
S3	-14 CP500	0.0017	65	0.0022	60	0.0030	55	0.0034	55	0.0048	47

CP600

SMG		ap = 1.4		ap = 2.0-2.5		ap = 3		ap = 4		ap = 5-6	
		f	v_c	f	v_c	f	v_c	f	v_c	f	v_c
M1	-14 CP600	0.0030	790	0.0038	730	0.0050	600	0.0065	500	0.0075	420
M2	-14 CP600	0.0026	650	0.0034	610	0.0048	510	0.0060	425	0.0070	360
M3	-14 CP600	0.0022	500	0.0028	490	0.0038	440	0.0048	385	0.0055	340
M4	-14 CP600	0.0018	370	0.0024	375	0.0034	345	0.0040	320	0.0048	285
M5	-14 CP600	0.0018	305	0.0024	310	0.0034	290	0.0040	265	0.0048	235

SMG = Seco Material Group
v_c = sf/min
f = in/rev
a_p = mm
All cutting data are start values

HX

SMG		ap = 1.4		ap = 2.0-2.5		ap = 3		ap = 4		ap = 5-6	
		f	v_c	f	v_c	f	v_c	f	v_c	f	v_c
M1	-14 HX	0.0030	455	0.0038	420	0.0050	375	0.0060	355	0.0075	320
M2	-14 HX	0.0026	380	0.0034	350	0.0048	310	0.0050	300	0.0070	265
M3	-14 HX	0.0022	300	0.0028	280	0.0038	255	0.0044	240	0.0055	220
M4	-14 HX	0.0018	235	0.0024	220	0.0032	200	0.0038	190	0.0048	175
M5	-14 HX	0.0018	195	0.0024	180	0.0032	165	0.0038	160	0.0048	145
K1	-16 HX	0.0032	450	0.0050	385	0.0080	325	0.0085	310	0.011	280
K2	-16 HX	0.0030	400	0.0044	350	0.0070	295	0.0080	280	0.010	250
K3	-16 HX	0.0030	335	0.0044	300	0.0070	250	0.0080	235	0.010	210
K4	-16 HX	0.0030	320	0.0044	285	0.0070	235	0.0080	225	0.010	200
K5	-16 HX	0.0026	200	0.0040	175	0.0065	145	0.0070	140	0.0085	130
K6	-16 HX	0.0030	285	0.0044	250	0.0070	210	0.0080	200	0.010	180
K7	-16 HX	0.0026	255	0.0040	225	0.0065	190	0.0070	180	0.0085	165
N1	-14 HX	0.0038	1350	0.0048	1250	0.0065	1100	0.0075	1025	0.0095	930
N2	-14 HX	0.0038	1100	0.0048	1000	0.0065	890	0.0075	840	0.0095	750
N3	-14 HX	0.0038	730	0.0048	670	0.0065	600	0.0075	560	0.0095	500
N11	-14 HX	0.0038	830	0.0048	760	0.0065	680	0.0075	640	0.0095	580
S1	-14 HX	0.0018	90	0.0024	85	0.0032	75	0.0038	70	0.0048	65
S2	-14 HX	0.0018	70	0.0024	65	0.0032	60	0.0038	60	0.0048	55
S3	-14 HX	0.0017	65	0.0022	60	0.0030	55	0.0034	50	0.0048	46
S11	-14 HX	0.0022	125	0.0028	115	0.0038	105	0.0044	100	0.0055	90
S12	-14 HX	0.0022	95	0.0028	90	0.0038	80	0.0044	75	0.0055	70
S13	-14 HX	0.0018	75	0.0024	70	0.0032	65	0.0038	60	0.0048	60
H5	-16 HX	0.0020	150	0.0032	130	0.0048	115	0.0055	105	0.0065	100

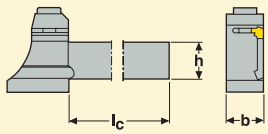
SMG = Seco Material Group
v_c = sf/min
f = in/rev
a_p = mm
All cutting data are start values

Toolblock R/L150.10-..15 and HSS-blade 150.10A-15 for Cut-off

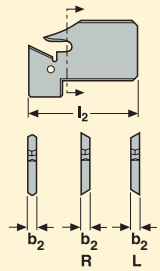


- For insert program, see pages 563-564

Toolblock R/L 150.10-...-15

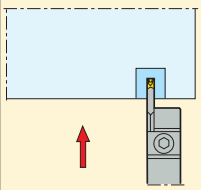


HSS-blade 150.10A-15



Right-hand version shown

R/L150.10



EDP No.	Part No.	Dimensions in inch h	b	l_c	l_2	b_2	D_m max	lbs	
47748	R150.10 -0375-15	0.375	0.375	3.228	–	–	–	0.44	–
47749	-0500-15	0.500	0.500	3.228	–	–	–	0.66	–
48456	-0625-15	0.625	0.625	3.228	–	–	–	0.88	–
48457	-0750-15	0.750	0.750	3.228	–	–	–	0.98	–
48458	-1000-15	1.000	1.000	4.724	–	–	–	1.54	–
48462	L150.10 -0625-15	0.625	0.625	3.228	–	–	–	0.88	–
48463	-0750-15	0.750	0.750	3.228	–	–	–	0.98	–
48464	-1000-15	1.000	1.000	4.724	–	–	–	1.54	–
33038	150.10A -15-1.4	–	–	–	1.299	0.047	1.50	0.22	150.10-1.4..
33039	-15-2	–	–	–	1.299	0.071	1.50	0.22	150.10-2..
33040	-15-2.5	–	–	–	1.299	0.079	1.50	0.22	150.10-2.5..
33041	-15-3	–	–	–	1.299	0.094	1.50	0.22	150.10-3..
33058	R150.10A-15-4	–	–	–	1.299	0.134	1.50	0.22	150.10-4..
33056	L150.10A -15-4	–	–	–	1.299	0.134	1.50	0.22	150.10-4..

Spare Parts, Parts included in delivery

For holder	Locking screw
R/L150.10-...-15	–
R/L150.10-...-15	UC6S1/4UNFX1SHCS
150.10A-...-15	–
R/L150.10A-...-15	–

Accessory*

Key
150.10A-150
–
–

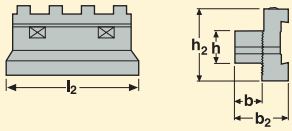
Please check availability in current price and stock-list

Toolblock R/L150.10-..20/25 and HSS-blade 150.10A-20/25 for Cut-off

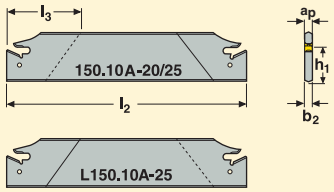


• For insert program, see pages 563-564

Toolblock R/L 150.10-...-20/25



HSS-blade



EDP No.	Part No.	Dimensions in inch h	b	h_1	h_2	l_2	b_2	D_m max	l_3	lbs	
71869	150.10 -10-20	0.625	0.625	–	1.62	3.50	1.41	–	–	1.54	–
71882	-12-20	0.750	0.750	–	1.62	3.50	1.53	–	–	1.76	–
78182	-16-20	1.000	1.000	–	1.62	3.50	1.78	–	–	2.87	–
71885	-16-25	1.000	1.000	–	1.62	4.50	1.78	–	–	3.09	–
71876	-20-25	1.250	1.250	–	1.62	4.50	2.03	–	–	3.97	–
33042	150.10A -20-1.4	–	–	0.84	–	4.72	0.05	1.38	0.94	0.22	150.10-1.4..
33043	-20-2	–	–	0.84	–	4.72	0.07	1.38	0.94	0.22	150.10-2..
33044	-20-2.5	–	–	0.84	–	4.72	0.08	1.38	0.94	0.22	150.10-2.5..
33045	-20-3	–	–	0.84	–	4.72	0.09	3.54	–	0.22	150.10-3..
33046	-20-4	–	–	0.84	–	4.72	0.13	3.94	–	0.22	150.10-4..
33047	-20-5	–	–	0.84	–	4.72	0.17	4.72	–	0.22	150.10-5..
33048	-20-6	–	–	0.84	–	4.72	0.22	4.72	–	0.44	150.10-6..
33049	150.10A -25-1.4	–	–	0.98	–	5.91	0.05	1.38	0.94	0.22	150.10-1.4..
33050	-25-2	–	–	0.98	–	5.91	0.07	1.38	0.94	0.22	150.10-2..
33051	-25-2.5	–	–	0.98	–	5.91	0.08	1.38	0.94	0.22	150.10-2.5..
33052	-25-3	–	–	0.98	–	5.91	0.09	4.72	–	0.22	150.10-3..
33053	-25-4	–	–	0.98	–	5.91	0.13	5.51	–	0.44	150.10-4..
33054	-25-5	–	–	0.98	–	5.91	0.17	6.30	–	0.44	150.10-5..
33055	-25-6	–	–	0.98	–	5.91	0.22	6.30	–	0.44	150.10-6..
33057	L150.10A -25-1.4	–	–	0.98	–	5.91	0.05	1.38	0.94	0.22	150.10-1.4..

Spare Parts, Parts included in delivery

For holder	Clamp	Locking screw	Spring
..-20	150.10-600	SC-460	150.10-620
..-25	150.10-601	SC-460	150.10-620

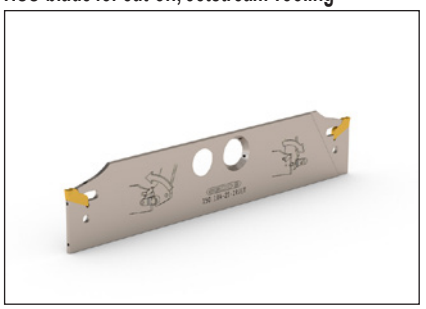
Accessories*

Key
150.10A-150
150.10A-150

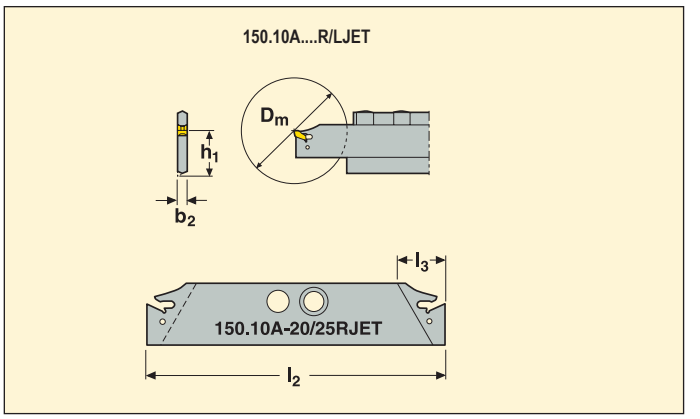
Please check availability in current price and stock-list

*Ordered separately

HSS-blade for cut-off, Jetstream Tooling®



- For insert program, see pages 563-564



EDP No.	Part No.	Dimensions in inch a_p	h_1	l_2	l_3	b_2	D_m	lbs	
85028	150.10A-20 -2RJET	0.079	0.843	4.724	0.945	0.071	1.378	0.22	150.10-2..
85035	-2LJET	0.079	0.843	4.724	0.945	0.071	1.378	0.22	150.10-2..
85032	-2.5RJET	0.098	0.843	4.724	0.945	0.079	1.378	0.22	150.10-2.5..
85132	-2.5LJET	0.098	0.843	4.724	0.945	0.079	1.378	0.22	150.10-2.5..
77209	-3RJET	0.118	0.843	4.724	–	0.094	3.287	0.22	150.10-3..
85019	-3LJET	0.118	0.843	4.724	–	0.094	3.287	0.22	150.10-3..
85029	-4RJET	0.157	0.843	4.724	–	0.134	3.287	0.22	150.10-4..
85041	-4LJET	0.157	0.843	4.724	–	0.134	3.287	0.22	150.10-4..
94548	150.10A-25 -3RJET	0.118	0.984	5.906	–	0.094	4.469	0.44	150.10-3..
85009	-3LJET	0.118	0.984	5.906	–	0.094	4.469	0.44	150.10-3..
77222	-4RJET	0.157	0.984	5.906	–	0.134	4.469	0.44	150.10-4..
85020	-4LJET	0.157	0.984	5.906	–	0.134	4.469	0.44	150.10-4..
85031	-5RJET	0.197	0.984	5.906	–	0.173	4.469	0.44	150.10-5..
85105	-5LJET	0.197	0.984	5.906	–	0.173	4.469	0.44	150.10-5..
85033	-6RJET	0.236	0.984	5.906	–	0.222	4.469	0.44	150.10-6..
85137	-6LJET	0.236	0.984	5.906	–	0.222	4.469	0.44	150.10-6..

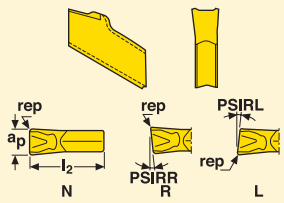
Accessories*

Toolholder/ Insert dimension	Key	Kit	Coolant adapter**	Locking screw**	Copper washer**	Copper washer**
-2, -2.5, -3	150.10A-150	150.10A-3-JET-KIT	JET-CFP0611	JET-CLS0608	JET-WM10	JET-CS1115
-4	150.10A-150	150.10A-4-JET-KIT	JET-CFP0613	JET-CLS0608	JET-WM10	–
-5	150.10A-150	150.10A-5-JET-KIT	JET-CFP0614	JET-CLS0608	JET-WM10	–
-6	150.10A-150	150.10A-6-JET-KIT	JET-CFP0615	JET-CLS0608	JET-WM10	–

Please check availability in current price and stock-list

*To be ordered separately
**Parts included in kit

Inserts – Cut-off, 150.10...-12 and 150.10...-14



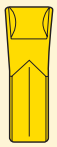
Tolerances:
a_p = ±0.002
a_p = ±0.003

Size:
1.4-2.5
3-6

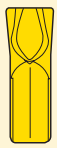
Toolholder range, see pages 560-562

Size	Dimensions in inch a_p	l_2	rep
1.4	0.055	0.354	0.006
2.0	0.079	0.354	0.006
2.25	0.089	0.354	0.006
2.5	0.098	0.354	0.007
3	0.122	0.354	0.007
4	0.161	0.354	0.009
5	0.201	0.354	0.010
6	0.250	0.354	0.012

150.10-12



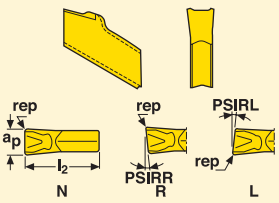
150.10-14



Inserts	Part No.	PSIRR°	PSIRL°	Grades (EDP No.) Coated T25M	T350M	CP500	CP600	TGP35	TGP45	Uncoated HX
150.10-12										
	150.10 -2.5N-12	–	–	01967	18157	65083	06809	57890	42434	
	-2.5R6-12	6	–	24840			06810			
	-2.5L6-12	–	6	05313			06811			
	150.10 -3N-12	–	–	01398	16957	65071	48838	57886	42482	
	-3R6-12	6	–	24843			06818			
	-3L6-12	–	6	24841			06819			
	150.10 -4N-12	–	–	05308	18160	65113	48839	57889	42533	
	-4R6-12	6	–	05307						
	-4L6-12	–	6	05305						
	150.10 -5N-12	–	–	05316				57897		
	150.10 -6N-12	–	–	33982				57898		
150.10-14										
	150.10 -1.4N-14	–	–			65081	07536			55446
	150.10 -2.0N-14	–	–		18175	65075	07532		42421	55447
	-2.25N-14	–	–		18177	65082	04334		42426	55448
	-2.5N-14	–	–	01968	18166	65077	48841		42439	55449
	-2.5R6-14	6	–	28775			06812		42461	
	-2.5L6-14	–	6	28774			06813			
	150.10 -3N-14	–	–	01216	16960	65111	48846	57893	42515	55450
	-3R6-14	6	–	05311		65080	06838		42530	
	-3L6-14	–	6	24842			06839		42467	
	150.10 -4N-14	–	–	05310	16967	65073	48847	57891	42546	55451
	-4R6-14	6	–	05314						
	-4L6-14	–	6	05315						
	150.10 -5N-14	–	–	05319		65086	48848			
	150.10 -6N-14	–	–	33983		65085	48851			

Subject to change refer to current price- and stock-list

Inserts – Cut-off, 150.10...-16



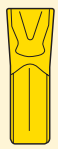
Tolerances:
a_p = ±0.002
a_p = ±0.003

Size:
1.4-2.5
3-6

Toolholder range, see pages 560-562

Size	Dimensions in inch		
	a_p	l_2	rep
1.4	0.055	0.354	0.006
2.0	0.079	0.354	0.006
2.25	0.089	0.354	0.006
2.5	0.098	0.354	0.007
3	0.122	0.354	0.007
4	0.161	0.354	0.009
5	0.201	0.354	0.010
6	0.250	0.354	0.012

150.10-16



Inserts	Part No.	PSIRR°	PSIRL°	Grades (EDP No.)						
				Coated						Uncoated
				T25M	T350M	CP500	CP600	TGP35	TGP45	HX
150.10-16										
	150.10 -1.4N-16	–	–			65112	32960		42420	
	150.10 -2.0N-16	–	–		18173	65079	29843		42422	
	-2.25N-16	–	–	00845	16953	65074	00850		42433	00849
	-2.5L6-16	–	6	16545			06816			
	-2.5N-16	–	–	16539	16955	65076	48853		42459	42922
	-2.5R6-16	6	–	16542			06814		42463	16543
	150.10 -3L6-16	–	6	16527			06841		42474	
	-3N-16	–	–	16599	16964	65070	48854	57565	42517	16514
	-3R6-16	6	–	16518			06840	57895	42532	
	150.10 -4L6-16	–	6	42904						
	-4N-16	–	–	16601	16968	65072	48855	57806	42560	16515
	-4R6-16	6	–	16521					45398	16522
	150.10 -5L6-16	–	6	16533						
	-5N-16	–	–	16603		65084	48856	57790	42568	16516
	-5R6-16	6	–	16524						
	150.10 -6N-16	–	–	16548		65087	48858	57896	42584	16549

Subject to change refer to current price- and stock-list

General information

The Seco X4 system (multi edge solution) comprises toolholders and inserts for external radial machining.



The system can be used for:

- Grooving
- Cut-off

Seco X4 comes in combination with the unique Jetstream Tooling® Duo. A high pressure cooling system which provides directed coolant supply to the cutting edge by two streams: the first to the rake surface and the second to the clearance surface.

The X4 system provides several features:



- Four cutting edges
- Ability to pass free along a shoulder down to the center
- Easy double access clamping system
- Easy indexing without total extraction of the screw
- Integrity safe in case of edge failure. The inserts can still be used with three broken passive edges.
- Good repeatability (±0.001 inch)

Jetstream Tooling® Duo – improves chip control and tool life of cutting edge

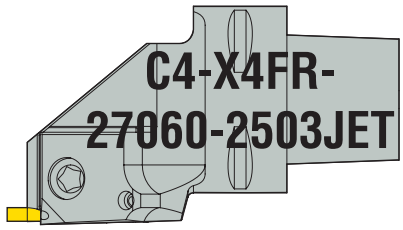
Set-up machining recommendations

The mounting should be stable.
The tool should be securely clamped and the overhang should be as small as possible.
The center height should never deviate by more than ±0.004 inch from the workpiece center.

Cut-off

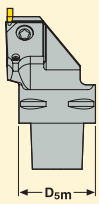
An insert with a neutral edge (N) normally results in a longer useful life of the insert.
The useful life of the insert can be increased by reducing the feed rate or stopping the feed entirely before breakthrough.

Formulae for cutting data calculation can be found in on page 94.



C4	-	X4	F	R	27	060	-	25	03	JET
1		2	3	4	5	6		7	8	9

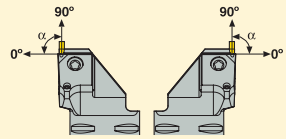
1. Seco-Capto size



2. Tool system

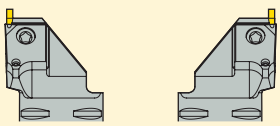
X4

3. Toolholder setting angle



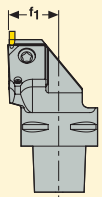
F = 90°
G = 0°

4. Version

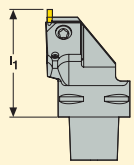


R = Right-hand version
L = Left-hand version

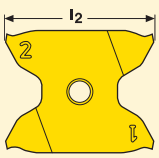
5. Dimension f_1



6. Dimension l_1



7. Insert length



25 = 25 mm

8.Seat size



03 = 3.1 mm

9. Cooling system

JET = Jetstream Tooling®

Inch holders

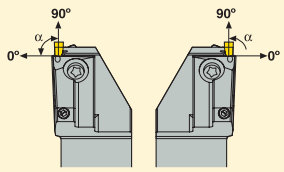


X4	F	R	100	25	03	D	JET
1	2	3	4	5	6	7	8

1. Tool system

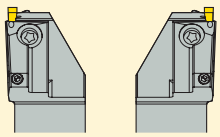
X4

2. Toolholder setting angle



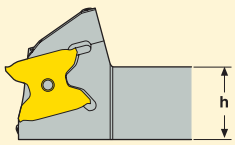
F = 90°
G = 0°

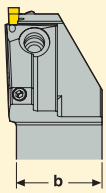
3. Version



R = Right-hand version
L = Left-hand version

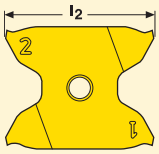
4. Shank height x width (inch)





063 = 0.625
075 = 0.750
100 = 1.000

5. Tool length



25 = 25 mm

6. Seat size



03 = 3.1 mm

7. Tool length

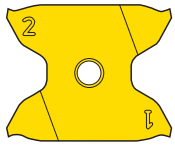


D = 6.0 inch

8. Cooling system

JET = Jetstream Tooling®

Inch inserts

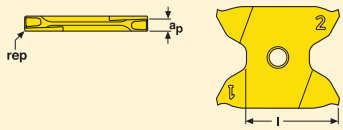


X4	G	K	25	03	009	A	0031	RN	-	MC
1	2	3	4	5	6	7	8	9		10

1. Tool system

X4

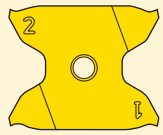
2. Tolerances



Tolerance ± inch

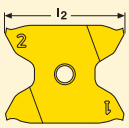
Tol. class	a_p	r_ε	l
G	0.001	0.001	0.001

3. Insert type



K = four edges with chipbreaker
H = four edges without chipbreaker

4. Insert length



25 = 25 mm

5. Seat size



03 = 3.1 mm

6. Corner radius

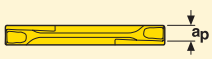


009 = 0.0035 inch
019 = 0.0075 inch

7. Inch size

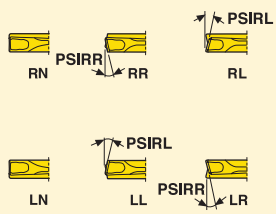
A = Inch size

8. Insert width



0031 = 0.031 inch
0047 = 0.047 inch
0062 = 0.062 inch
0072 = 0.072 inch
0094 = 0.094 inch

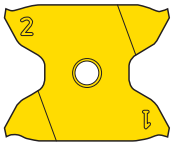
9. Version



10. Chipbreaker

MC = Chipbreaker for medium Cut-off and Grooving

Metric inserts

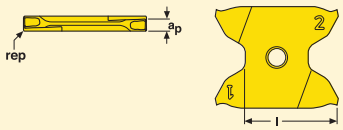


X4	G	K	25	03	010	-	0150	RR15	-	MC
1	2	3	4	5	6		7	8		9

1. Tool system

X4

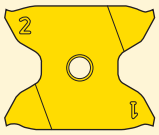
2. Tolerances



Tolerance ± mm

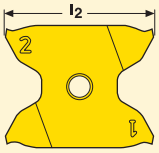
Tol. class	a_p	r_ε	l
G	0.025	0.03	0.025

3. Insert type



K = four edges with chipbreaker
H = four edges without chipbreaker

4. Insert length



25 = 25 mm

5. Seat size



03 = 3.1 mm

6. Corner radius



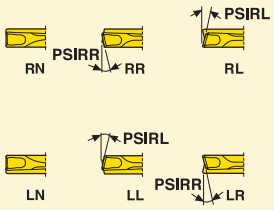
005 = 0.05 mm
010 = 0.10 mm
015 = 0.15 mm

7. Insert width



0050 = 0.5 mm
0300 = 3 mm

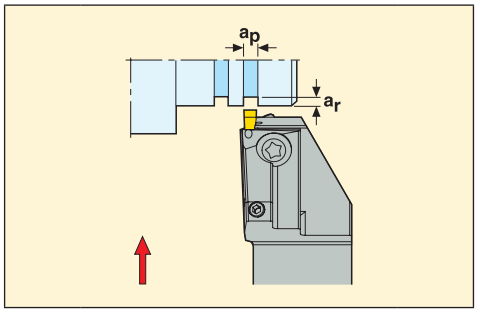
8. Version



9. Chipbreaker

MC = Chipbreaker for medium Cut-off and Grooving

Grooving

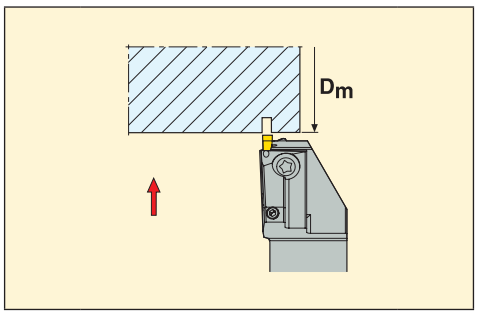


Maximum cutting depth a_r is limited relative to workpiece diameter to avoid contact between workpiece and toolholder.

Grooving – Cutting depth a_r

Cutting edge width a_p mm (inch)	Workpiece diameter, ∅ inch									
	0-5.12	5.12-5.51	5.51-6.30	6.30-7.09	7.09-7.87	7.87-9.84	9.84-11.81	11.81-15.75	15.75-19.68	19.68-39.37
0.5 (0.031)	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
1.0 (0.047)	0.169	0.169	0.169	0.169	0.169	0.169	0.169	0.169	0.169	0.157
1.5 (0.062)	0.256	0.252	0.240	0.232	0.217	0.197	0.197	0.177	0.177	0.157
2.0 (0.072)	0.256	0.252	0.240	0.232	0.217	0.197	0.197	0.177	0.177	0.157
2.5 (0.098)	0.256	0.252	0.240	0.232	0.217	0.197	0.197	0.177	0.177	0.157
3.0 (0.118)	0.256	0.252	0.240	0.232	0.217	0.197	0.197	0.177	0.177	0.157

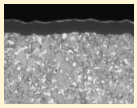
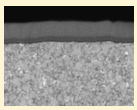
Cut-off



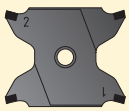
Cut-off – Maximum workpiece diameter, ∅

Cutting edge width a_p mm (inch)	Workpiece diameter, ∅ inch
0.5 (0.031)	0.205
1.0 (0.047)	0.339
1.5 (0.062)	0.512
2.0 (0.072)	0.512
2.5 (0.098)	0.512
3.0 (0.118)	0.512

Coated grades

	**CP500**	Tough PVD-coated micrograin grade intended for grooving, profiling and parting-off at moderate cutting speeds. Provides more wear resistance compared to CP600. (Ti,Al)N + TiN
	**CP600**	Very tough PVD-coated fine-grain grade, universal choice intended for grooving and parting-off at low to moderate cutting speeds. Well-suited in stainless steel and in interrupted cuts. Tougher alternative to CP500. (Ti,Al)N + TiN
	**TGH1050**	Very hard supermicrograin grade intended for partly hardened steel components as well as generally work-piece materials such as superalloys and cast-iron and due to remarkable edge toughness it also provides high performance in interrupted cuts and hard-surface removal. Ti-Al-Si-N nanolaminate coating

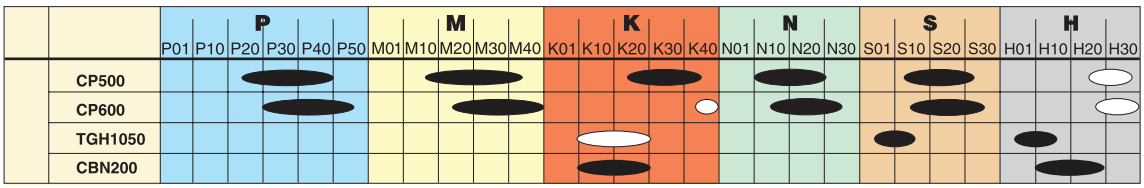
Grades, PCBN

CBN200 	Inserts with brazed tips, intended for hardened steels and pearlitic cast iron. Composition: 90% cBN content grade with an average grain size of 3-6 µm and a Al ceramic binder. Coating: No coating.

Grades

The application area for each grade is shown in the chart below.

The black areas in the chart indicate a grade's main ISO application groups and the white areas indicate other supplementary application groups.

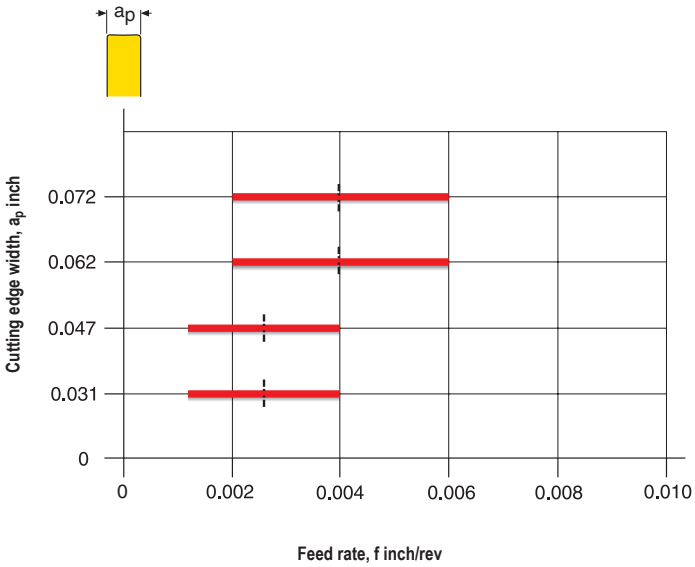


Feed rate recommendations for each cutting edge width

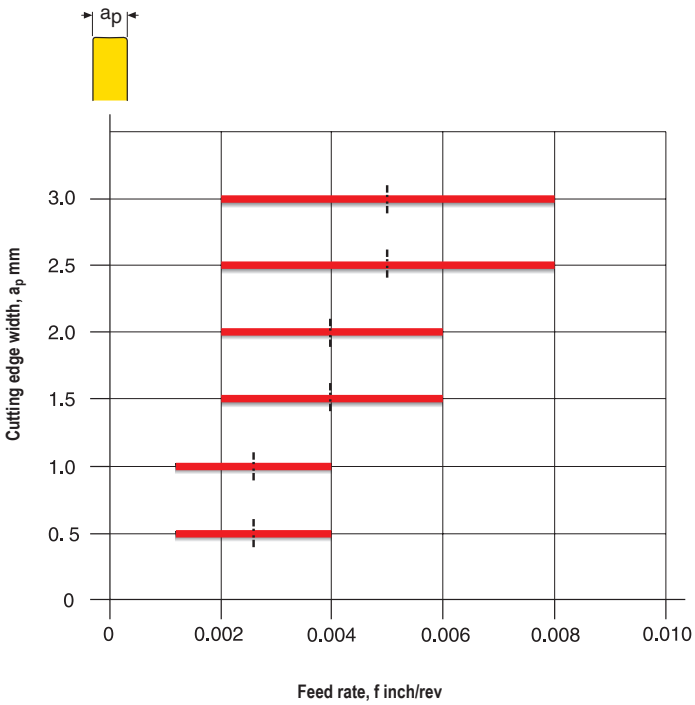
Dotted line indicates start value.

The feed rate recommendations in this diagram are valid for neutral inserts. For angled inserts, R/L, generally a reduction with 30% of the values are recommended.

Inch



Metric



Cutting speed, v_c (sf/min)

In this section a recommended cutting speed is indicated under specified conditions.

Use the tables beginning on page 770 to classify the workpiece material into a SMG.

The cutting data tables provide a recommendation of chipbreaker and a start value for feed rate (f) and cutting speed (v_c).

The cutting data tables are based on grooving with full cutting width (a_p).

The recommended cutting speeds in the tables are calculated for 15 minutes tool life with use of external flood coolant.

In order to increase the accuracy towards the actual cutting conditions and requirements of the applications the recommendation is to use My Pages – Suggest on www.secotools.com

v_c = cutting speed (sf/min)

a_p = insert width (mm)

f = feed rate (in/rev)

CP500

SMG		ap = 0.5-1.0		ap = 1.5-2.0		ap = 2.5-3.0	
		f	v_c	f	v_c	f	v_c
P1	-MC CP500	0.0030	600	0.0048	500	0.0060	460
P2	-MC CP500	0.0030	580	0.0048	490	0.0060	450
P3	-MC CP500	0.0030	500	0.0044	435	0.0055	395
P4	-MC CP500	0.0028	450	0.0044	380	0.0055	350
P5	-MC CP500	0.0028	430	0.0044	365	0.0055	330
P6	-MC CP500	0.0028	480	0.0044	410	0.0050	380
P7	-MC CP500	0.0028	455	0.0044	385	0.0050	360
P8	-MC CP500	0.0030	420	0.0044	365	0.0055	330
P11	-MC CP500	0.0028	440	0.0044	375	0.0050	350
M1	-MC CP500	0.0030	670	0.0048	570	0.0060	495
M2	-MC CP500	0.0028	540	0.0044	480	0.0055	415
M3	-MC CP500	0.0022	405	0.0034	400	0.0044	360
M4	-MC CP500	0.0020	300	0.0030	305	0.0038	285
M5	-MC CP500	0.0020	250	0.0030	255	0.0038	240
K1	-MC CP500	0.0030	560	0.0048	470	0.0060	430
K2	-MC CP500	0.0028	475	0.0044	395	0.0055	355
K3	-MC CP500	0.0028	400	0.0044	335	0.0055	300
K4	-MC CP500	0.0028	385	0.0044	320	0.0055	285
K5	-MC CP500	0.0026	235	0.0040	200	0.0048	180
K6	-MC CP500	0.0028	350	0.0044	295	0.0055	270
K7	-MC CP500	0.0026	300	0.0040	255	0.0048	235
N11	-MC CP500	0.0040	355	0.0060	300	0.0075	270
S1	-MC CP500	0.0020	70	0.0030	65	0.0038	60
S2	-MC CP500	0.0020	65	0.0030	55	0.0038	50
S3	-MC CP500	0.0018	55	0.0028	48	0.0036	45

CP600

SMG		ap = 0.5-1.0		ap = 1.5-2.0		ap = 2.5-3.0	
		f	v_c	f	v_c	f	v_c
P1	-MC CP600	0.0030	560	0.0048	475	0.0060	430
P2	-MC CP600	0.0030	550	0.0048	460	0.0060	420
P3	-MC CP600	0.0030	470	0.0044	405	0.0055	370
P4	-MC CP600	0.0028	420	0.0044	360	0.0055	325
P5	-MC CP600	0.0028	405	0.0044	340	0.0055	310
P6	-MC CP600	0.0028	450	0.0044	385	0.0050	360
P7	-MC CP600	0.0028	425	0.0044	365	0.0050	340
P8	-MC CP600	0.0030	395	0.0044	340	0.0055	310
P11	-MC CP600	0.0028	415	0.0044	350	0.0050	330
M1	-MC CP600	0.0030	630	0.0048	540	0.0060	465
M2	-MC CP600	0.0028	510	0.0044	450	0.0055	390
M3	-MC CP600	0.0022	380	0.0034	375	0.0044	340
M4	-MC CP600	0.0020	280	0.0030	285	0.0038	270
M5	-MC CP600	0.0020	235	0.0030	240	0.0038	225
K1	-MC CP600	0.0030	520	0.0048	440	0.0060	405
K2	-MC CP600	0.0028	445	0.0044	375	0.0055	335
K3	-MC CP600	0.0028	380	0.0044	315	0.0055	280
K4	-MC CP600	0.0028	360	0.0044	300	0.0055	270
K5	-MC CP600	0.0026	220	0.0040	185	0.0048	170
K6	-MC CP600	0.0028	325	0.0044	280	0.0055	255
K7	-MC CP600	0.0026	280	0.0040	235	0.0048	220
N11	-MC CP600	0.0040	335	0.0060	280	0.0075	255
S1	-MC CP600	0.0020	70	0.0030	60	0.0038	55
S2	-MC CP600	0.0020	60	0.0030	50	0.0038	48
S3	-MC CP600	0.0018	50	0.0028	45	0.0036	42

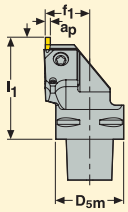
SMG = Seco Material Group
v_c = sf/min
f = in/rev
a_p = mm
All cutting data are start values

Toolholders for inserts X4GK



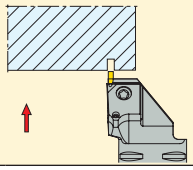
- For insert program, see pages 578-584

X4FR/L



Right-hand version shown

X4FR/L...JET



EDP No.	Part No.	Dimensions in inch			lbs	
		D_{5m}	l_1	f_1		
15547	C4-X4FR-27060-2503JET	1.575	2.362	1.063	1.06	X4GK25..R
15542	C4-X4FL-27060-2503JET	1.575	2.362	1.063	1.06	X4GK25..L
15551	C5-X4FR-35060-2503JET	1.969	2.362	1.378	1.52	X4GK25..R
15544	C5-X4FL-35060-2503JET	1.969	2.362	1.378	1.52	X4GK25..L
15552	C6-X4FR-45065-2503JET	2.480	2.559	1.772	2.69	X4GK25..R
15545	C6-X4FL-45065-2503JET	2.480	2.559	1.772	2.69	X4GK25..L

For a_p and a_r see pages 578-584

For size	Clamp key	Clamp screw
-2503	T15P-7	L85020-T15P

Please check availability in current price and stock-list

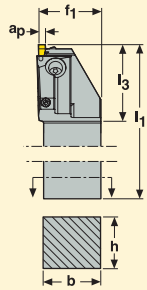
Toolholders for inserts X4GK

Inch holders

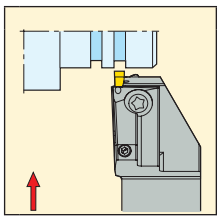


- For insert program, see pages 578-584

X4FR/L



Right-hand version shown



EDP No.	Part No.		Dimensions in inch h	b	l_1	f_1	l_3	lbs	
15523	X4FR	0632503DJET	0.625	0.625	6.0	0.750	1.441	0.73	X4GK25...R
15502		0752503DJET	0.750	0.750	6.0	0.866	1.441	1.01	X4GK25...R
15503		1002503DJET	1.000	1.000	6.0	1.102	1.441	1.59	X4GK25...R
15521	X4FL	0632503DJET	0.625	0.625	6.0	0.750	1.441	0.73	X4GK25...L
15498		0752503DJET	0.750	0.750	6.0	0.866	1.441	1.01	X4GK25...L
15499		1002503DJET	1.000	1.000	6.0	1.102	1.441	1.59	X4GK25...L

For a_p and a_r see pages 578-584

For size	Clamp key	Clamp screw	Plug
2503	T15P-7	L85020-T15P	JET-P1/8-5MM

Please check availability in current price and stock-list

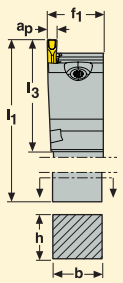
Toolholders for inserts X4GK

Swiss machine style



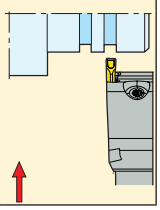
- For insert program, see pages 578-584

X4FR/L



Right-hand version shown
Right-hand holder must only be used with Right-hand insert (RN/RR/RL)
Left-hand holder must only be used with Left-hand insert (LN/LR/LL)

X4FR/L
90 °



EDP No.	Part No.	Dimensions in inch h	b	l_1	f_1	l_3	lbs	
10695	X4FR 050C2503	0.500	0.500	5.0	0.59	1.44	0.37	X4GK25..R
10699	063C2503	0.625	0.625	5.0	0.71	1.44	0.57	X4GK25..R
10697	X4FL 050C2503	0.500	0.500	5.0	0.59	1.44	0.37	X4GK25..L
10704	063C2503	0.625	0.625	5.0	0.71	1.44	0.57	X4GK25..L

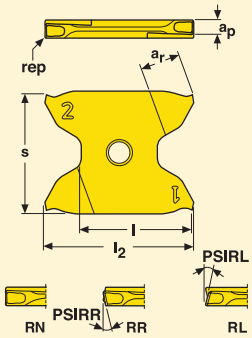
For a_p and a_r see pages 578-584

For holder	Clamp key	Clamp screw
-2503	T15P-7	L85020-T15P

Please check availability in current price and stock-list

X4GK...R-MC

Inch right handed inserts



Tolerances:
a_p = ±0.001
a_r = ±0.004
a_r = +0.012/-0
s = ±0.001
κ = ±0.25°
rep = ±0.001

a_p size:
0.020-0.047
0.059-0.118

RN-MC



Note: Right handed inserts fit into right handed holders only

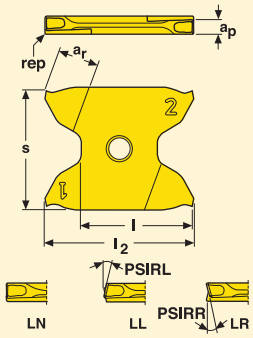
Inserts	Part No.	Dimensions in inch						Grades (EDP No.)
								Coated
		a_p	a_r*	l	l_2	s	rep	CP500
X4GK..RN-MC								
	X4GK 2503009-A0031RN-MC	0.031	0.169	0.748	1.002	0.803	0.0035	16264
	2503009-A0047RN-MC	0.047	0.169	0.748	1.002	0.803	0.0035	16016
	2503019-A0062RN-MC	0.062	0.256	0.748	1.001	0.803	0.0075	16265
	2503019-A0072RN-MC	0.072	0.256	0.748	1.001	0.803	0.0075	16031
	2503019-A0094RN-MC	0.094	0.256	0.748	1.001	0.803	0.0075	16232

Please check availability in current price and stock list

* Maximum cutting depth a_r is limited relative to workpiece diameter to avoid contact between workpiece and toolholder, see guide pages.

X4GK...L-MC

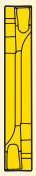
Inch left handed inserts



Tolerances:
a_p = ±0.001
a_r = ±0.004
a_r = +0.012/-0
s = ±0.001
κ = ±0.25°
rep = ±0.001

a_p size:
0.020-0.047
0.059-0.118

LN-MC



Note: Left handed inserts fit into left handed holders only

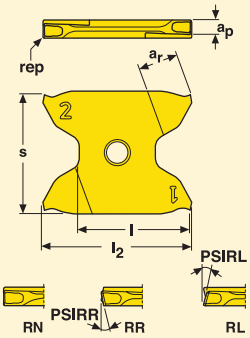
Inserts	Part No.	Dimensions in inch						Grades (EDP No.) Coated
		a_p	a_r*	l	l_2	s	rep	CP500
X4GK..LN-MC								
	X4GK 2503009-A0031LN-MC	0.031	0.169	0.748	1.002	0.803	0.0035	16339
	2503009-A0047LN-MC	0.047	0.169	0.748	1.002	0.803	0.0035	16063
	2503019-A0062LN-MC	0.062	0.256	0.748	1.001	0.803	0.0075	16340
	2503019-A0072LN-MC	0.072	0.256	0.748	1.001	0.803	0.0075	16066
	2503019-A0094LN-MC	0.094	0.256	0.748	1.001	0.803	0.0075	16278

Please check availability in current price and stock list

* Maximum cutting depth a_r is limited relative to workpiece diameter to avoid contact between workpiece and toolholder, see guide pages.

X4GK

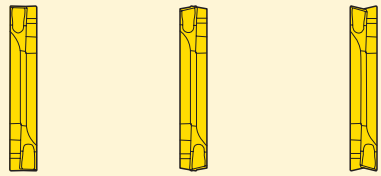
Metric right handed inserts



Tolerances:
a_p = ±0.0001
a_r = ±0.004
s = ±0.0001
rep = ±0.001

PSIRR/PSIRL = ±0.25°

RN-MC **RR-MC** **RL-MC**



Right-hand insert (RN/RR/RL) must only be used with Right-hand holder

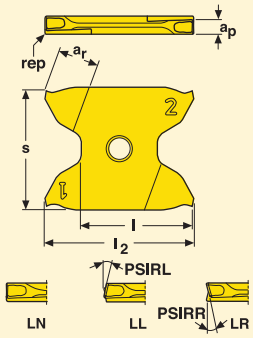
Inserts	Part No.	PSIRR°	PSIRL°	Dimensions in inch a_p	a_r*	l	l_2	s	rep	Grades (EDP No.) Coated CP500	CP600	TGH1050
X4GK..RN-MC												
	X4GK 2503005-0050RN-MC	0	0	0.020	0.102	0.748	1.002	0.803	0.002		16235	43140
	2503005-0100RN-MC	0	0	0.039	0.169	0.748	1.002	0.803	0.002		16236	43142
	2503010-0150RN-MC	0	0	0.059	0.256	0.748	1.002	0.803	0.004	16233	16240	43164
	2503010-0200RN-MC	0	0	0.079	0.256	0.748	1.002	0.803	0.004	16234	16244	43228
	2503015-0250RN-MC	0	0	0.098	0.256	0.748	1.001	0.803	0.006	16215	16219	43261
	2503015-0300RN-MC	0	0	0.118	0.256	0.748	1.001	0.803	0.006	08716	15959	43316
	2503020-0150RN-MC	0	0	0.059	0.256	0.748	1.002	0.803	0.008	42861		
	2503020-0200RN-MC	0	0	0.079	0.256	0.748	1.002	0.803	0.008	42884		
	2503030-0250RN-MC	0	0	0.098	0.256	0.748	1.001	0.803	0.012	43014		
	2503030-0300RN-MC	0	0	0.118	0.256	0.748	1.001	0.803	0.012	43017		
X4GK..RR-MC												
	X4GK 2503005-0100RR15-MC	15	0	0.039	0.169	0.748	1.000	0.802	0.002		16252	
	2503005-0150RR15-MC	15	0	0.059	0.256	0.748	0.999	0.801	0.002	46321		
	2503010-0150RR15-MC	15	0	0.059	0.256	0.748	0.999	0.801	0.004	16058	16048	
	2503010-0200RR15-MC	15	0	0.079	0.256	0.748	0.998	0.800	0.004		16255	
	2503015-0250RR15-MC	15	0	0.098	0.256	0.744	0.997	0.799	0.006		16226	
	2503015-0300RR06-MC	6	0	0.118	0.256	0.744	0.996	0.798	0.006		16229	
X4GK..RL-MC												
	X4GK 2503005-0100RL15-MC	0	15	0.039	0.169	0.748	1.002	0.803	0.002		16256	
	2503010-0150RL15-MC	0	15	0.059	0.256	0.748	1.001	0.803	0.004	16061	16056	
	2503010-0200RL15-MC	0	15	0.079	0.256	0.748	1.001	0.803	0.004		16262	
	2503015-0250RL15-MC	0	15	0.098	0.256	0.748	1.001	0.803	0.006		16230	
	2503015-0300RL06-MC	0	6	0.118	0.256	0.748	1.001	0.803	0.006		16231	

Please check availability in current price and stock list

* Maximum cutting depth a_r is limited relative to workpiece diameter to avoid contact between workpiece and toolholder, see guide pages.

X4GK

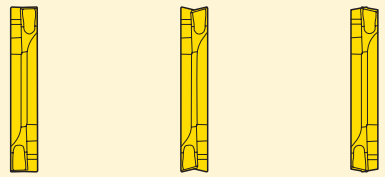
Metric left handed inserts



Tolerances:
a_p = ±0.0001
a_r = ±0.004
s = ±0.0001
rep = ±0.001

PSIRR/PSIRL = ±0.25°

LN-MC **LR-MC** **LL-MC**



Left-hand insert (LN/LR/LL) must only be used with Left-hand holder

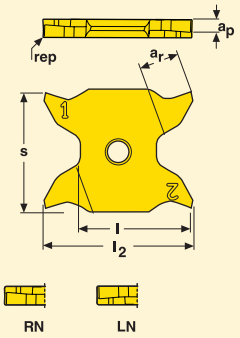
Inserts	Part No.	PSIRR°	PSIRL°	Dimensions in inch						Grades (EDP No.) Coated		
				a_p	a_r*	l	l_2	s	rep	CP500	CP600	TGH1050
X4GK..LN-MC												
	X4GK 2503005-0050LN-MC	0	0	0.020	0.102	0.748	1.002	0.803	0.002		16288	43141
	2503005-0100LN-MC	0	0	0.039	0.169	0.748	1.002	0.803	0.002		16293	43154
	2503010-0150LN-MC	0	0	0.059	0.256	0.748	1.002	0.803	0.004	16279	16302	43188
	2503010-0200LN-MC	0	0	0.079	0.256	0.748	1.002	0.803	0.004	16287	16306	43254
	2503015-0250LN-MC	0	0	0.098	0.256	0.748	1.001	0.803	0.006	16270	16271	43273
	2503015-0300LN-MC	0	0	0.118	0.256	0.748	1.001	0.803	0.006	15991	16002	43319
	2503020-0150LN-MC	0	0	0.059	0.256	0.748	1.002	0.803	0.008	42864		
	2503020-0200LN-MC	0	0	0.079	0.256	0.748	1.002	0.803	0.008	43012		
	2503030-0250LN-MC	0	0	0.098	0.256	0.748	1.001	0.803	0.012	43015		
	2503030-0300LN-MC	0	0	0.118	0.256	0.748	1.001	0.803	0.012	43069		
X4GK..LR-MC												
	X4GK 2503005-0100LR15-MC	15	0	0.039	0.169	0.748	1.002	0.803	0.002		16308	
	2503010-0150LR15-MC	15	0	0.059	0.256	0.748	1.001	0.803	0.004	16118	16070	
	2503010-0200LR15-MC	15	0	0.079	0.256	0.748	1.001	0.803	0.004		16309	
	2503015-0250LR15-MC	15	0	0.098	0.256	0.748	1.001	0.803	0.006		16273	
	2503015-0300LR06-MC	6	0	0.118	0.256	0.748	1.001	0.803	0.006		16274	
X4GK..LL-MC												
	X4GK 2503005-0100LL15-MC	0	15	0.039	0.169	0.748	1.000	0.802	0.002		16321	
	2503005-0150LL15-MC	0	15	0.059	0.256	0.748	0.999	0.801	0.002	43078		
	2503010-0150LL15-MC	0	15	0.059	0.256	0.748	0.999	0.801	0.004	16117	16084	
	2503010-0200LL15-MC	0	15	0.079	0.256	0.748	0.998	0.800	0.004		16325	
	2503015-0250LL15-MC	0	15	0.098	0.256	0.744	0.997	0.799	0.006		16275	
	2503015-0300LL06-MC	0	6	0.118	0.256	0.744	0.996	0.798	0.006		16276	

Please check availability in current price and stock list

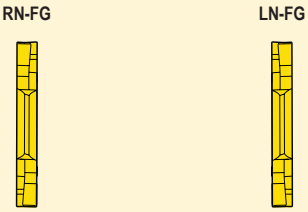
* Maximum cutting depth a_r is limited relative to workpiece diameter to avoid contact between workpiece and toolholder, see guide pages.

X4GK

Metric right and left handed inserts



Tolerances:
a_p = ±0.0001
a_r = ±0.004
s = ±0.0001
rep = ±0.001



Right-hand insert (RN/RR/RL) must only be used with Right-hand holder
Left-hand insert (LN/LR/LL) must only be used with Left-hand holder

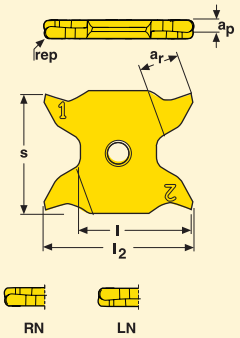
Inserts	Part No.	Dimensions in inch						Grades (EDP No.)	
								Coated	
		a_p	a_r*	l	l_2	s	rep	CP500	TGH1050
X4GK..RN-FG for circlip									
	X4GK 2503010-0115RN-FG	0.045	0.157	0.748	1.002	0.803	0.004	91783	
	2503010-0135RN-FG	0.053	0.157	0.748	1.002	0.803	0.004	91784	
	2503010-0165RN-FG	0.065	0.236	0.748	1.002	0.803	0.004	91791	
	2503010-0190RN-FG	0.075	0.236	0.748	1.002	0.803	0.004	91792	
	2503015-0215RN-FG	0.085	0.236	0.748	1.001	0.803	0.006	91793	
	2503015-0265RN-FG	0.104	0.236	0.748	1.001	0.803	0.006	91795	
X4GK..RN-FG									
	X4GK 2503005-0050RN-FG	0.020	0.102	0.748	1.002	0.803	0.002		43323
	2503005-0100RN-FG	0.039	0.169	0.748	1.002	0.803	0.002		43362
	2503010-0150RN-FG	0.059	0.256	0.748	1.002	0.803	0.004		43369
	2503010-0200RN-FG	0.079	0.256	0.748	1.002	0.803	0.004		43379
	2503015-0250RN-FG	0.098	0.256	0.748	1.002	0.803	0.006		43387
	2503015-0300RN-FG	0.118	0.256	0.748	1.002	0.803	0.006		43389
X4GK..LN-FG for circlip									
	X4GK 2503010-0115LN-FG	0.045	0.157	0.748	1.002	0.803	0.004	91796	
	2503010-0135LN-FG	0.053	0.236	0.748	1.002	0.803	0.004	91811	
	2503010-0165LN-FG	0.065	0.236	0.748	1.002	0.803	0.004	91819	
	2503010-0190LN-FG	0.075	0.236	0.748	1.002	0.803	0.004	91825	
	2503015-0215LN-FG	0.085	0.236	0.748	1.001	0.803	0.006	91830	
	2503015-0265LN-FG	0.104	0.236	0.748	1.001	0.803	0.006	91835	
X4GK..RN-FG									
	X4GK 2503005-0050LN-FG	0.020	0.102	0.748	1.002	0.803	0.002		43327
	2503005-0100LN-FG	0.039	0.169	0.748	1.002	0.803	0.002		43367
	2503010-0150LN-FG	0.059	0.256	0.748	1.002	0.803	0.004		43375
	2503010-0200LN-FG	0.079	0.256	0.748	1.002	0.803	0.004		43380
	2503015-0250LN-FG	0.098	0.256	0.748	1.002	0.803	0.006		43388
	2503015-0300LN-FG	0.118	0.256	0.748	1.002	0.803	0.006		43394

Please check availability in current price and stock list

* Maximum cutting depth a_r is limited relative to workpiece diameter to avoid contact between workpiece and toolholder, see guide pages.

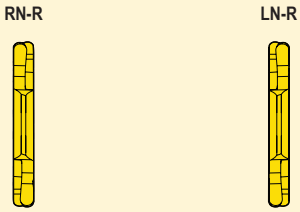
X4GK...R/L-R

Metric right and left handed inserts



Tolerances:
a_p = ±0.001
a_r = ±0.004
a_r = +0.012/-0
s = ±0.001
rep = ±0.001

a_p size:
0.020-0.047
0.059-0.118



Note: Right handed inserts fit into right handed holders only
Left handed inserts fit into left handed holders only

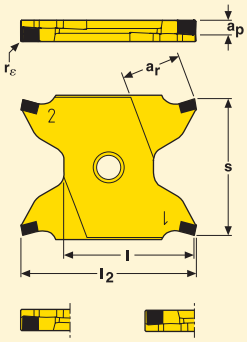
Inserts	Part No.	Dimensions in inch						Grades (EDP No.)
								Coated
		a_p	a_r*	l	l_2	s	rep	CP500
X4GK..RN-R								
	X4GK 2503M0-0100RN-R	0.039	0.157	0.748	0.994	0.802	0.020	91844
	2503M0-0120RN-R	0.047	0.157	0.748	0.996	0.802	0.024	91846
	2503M0-0150RN-R	0.059	0.236	0.748	0.998	0.802	0.030	91847
	2503M0-0200RN-R	0.079	0.236	0.748	1.000	0.801	0.039	91848
	2503M0-0300RN-R	0.118	0.236	0.748	0.999	0.801	0.059	91849
X4GK..LN-R								
	X4GK 2503M0-0100LN-R	0.039	0.157	0.748	0.994	0.802	0.020	91850
	2503M0-0120LN-R	0.047	0.157	0.748	0.996	0.802	0.024	91851
	2503M0-0150LN-R	0.059	0.256	0.748	0.998	0.802	0.030	91852
	2503M0-0200LN-R	0.079	0.236	0.748	1.000	0.801	0.039	91853
	2503M0-0300LN-R	0.118	0.236	0.748	0.999	0.801	0.059	91854

Please check availability in current price and stock list

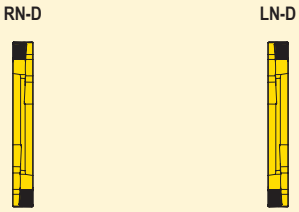
* Maximum cutting depth a_r is limited relative to workpiece diameter to avoid contact between workpiece and toolholder, see guide pages.

X4G

Metric right and left hand inserts



Tolerances:
a_p = ±0.0001
a_r = ±0.004
s = ±0.0001
rep = ±0.001



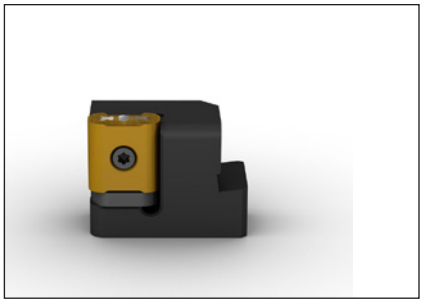
Right-hand insert (RN/RR/RL) must only be used with Right-hand holder
Left-hand insert (LN/LR/LL) must only be used with Left-hand holder

Inserts	Part No.	Dimensions in inch						Grades (EDP No.)
								Coated
		a_p	a_r*	l	l_2	s	rep	CBN200
X4G..RN-D								
	X4G 2503015S-0215RN-D	0.085	0.256	0.748	0.984	0.802	0.006	42739
X4G..LN-D								
	X4G 2503015S-0215LN-D	0.085	0.256	0.748	0.984	0.802	0.006	42740

Please check availability in current price and stock list

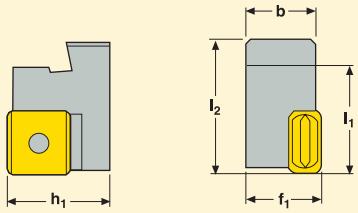
* Maximum cutting depth a_r is limited relative to workpiece diameter to avoid contact between workpiece and toolholder, see guide pages.

Toolholders for insert LNMX

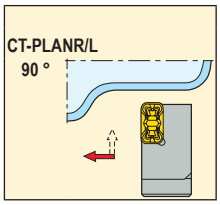


• For insert program, see page 588

CT-PLANR/L



Right-hand version shown



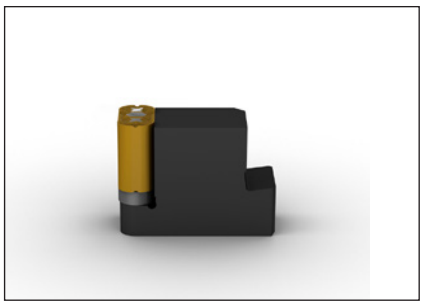
mm	EDP No.	Part No.	Dimensions in inch h_1	b	l_2	l_1	f_1	lbs	
19	75696	CT-PLANR 3223-19	1.260	0.890	1.661	1.378	0.906	0.44	LNMX191940
	75697	CT-PLANL 3223-19	1.260	0.890	1.661	1.378	0.906	0.44	LNMX191940

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Anvil	Anvil screw/Key		Pin	Torx driver for insert screw
CT-PLANR/L	LN190450	174.10-650.9-T07P	T07P-2	MN1515SL-T15P	T15P-2

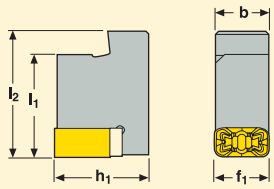
Please check availability in current price and stock-list

Toolholders for insert LNMX

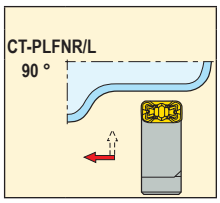


• For insert program, see page 588

CT-PLFNR/L



Right-hand version shown



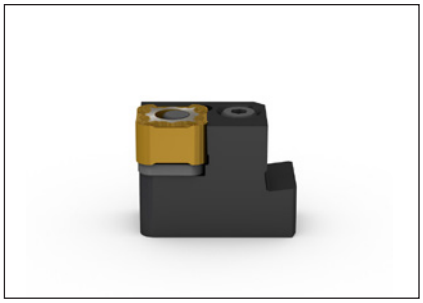
mm	EDP No.	Part No.	Dimensions in inch					lbs	
			h_1	b	l_2	l_1	f_1		
19	75692	CT-PLFNR 3219-19	1.260	0.719	1.693	1.378	0.748	0.44	LNMX191940
	75695	CT-PLFNL 3219-19	1.260	0.719	1.693	1.378	0.748	0.44	LNMX191940

Spare Parts, Parts included in delivery

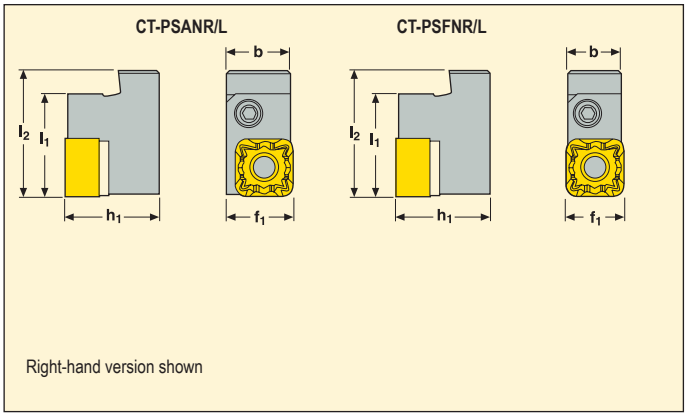
Toolholder/ Insert dimension	Anvil	Anvil screw/Key		Pin	Torx driver for insert screw
CT-PLANR/L	LN190450	174.10-650.9-T07P	T07P-2	MN1515SL-T15P	T15P-2

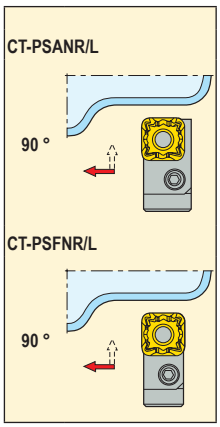
Please check availability in current price and stock-list

Toolholders for insert SNMX



- CT-PSANR shown above
- For insert program, see page 274





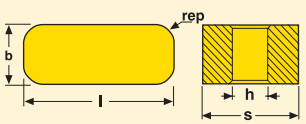
mm	EDP No.	Part No.	Dimensions in inch h_1	b	l_1	l_2	f_1	lbs	
19	75694	CT-PSANR 3223-1911	1.260	0.890	1.378	1.693	0.906	0.44	SNMX6710
	75693	CT-PSANL 3223-1911	1.260	0.890	1.378	1.693	0.906	0.44	SNMX6710
19	75698	CT-PSFNR 3219-1911	1.260	0.719	1.378	1.693	0.748	0.44	SNMX6710
	75699	CT-PSFNL 3219-1911	1.260	0.719	1.378	1.693	0.748	0.44	SNMX6710

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Anvil	Lever	Anvil pin	Screw	Key	Punch
CT-P....-1911	PSN19X340	PP6020	RP9811	LS1030	4 SMS795	MP1519

Please check availability in current price and stock-list

LNMX



Tolerances:
d = ±0.005
l = ±0.006
s = ±0.006
r_ε = ±0.004

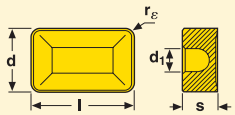
Size	Dimensions in inch				
	d (I.C.)	l	s	d_1	r_ε
1919	0.394	0.750	0.750	0.250	1/64
3019	0.472	1.181	0.750	0.250	1/64



Inserts	Part No.	Grades (EDP No.)				
		Coated				
		TP0501	TP1501	TP2501	TP200	TK2001
LNMX-MF						
	LNMX 191940-MF		18889	18828		69666
	LNMX 301940-MF		18850	18873		69668
LNMX-MR						
	LNMX 191940-MR		18829	18846		69667
	LNMX 301940-MR		18852	18854		
LNMX-R2						
	LNMX 191940-R2	18848	18872		75619	
	LNMX 301940-R2	18855	18856		75634	
LNMX-RR94						
	LNMX 191940-RR94	18849	18894		75622	03959
	LNMX 301940-RR94	18875	18857		75637	03972
LNMX-RR97						
	LNMX 301940-RR97	18859	18860		75625	

Please check availability in current price and stock-list.

LNMX



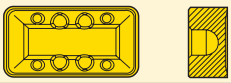
Tolerances:
d = ±0.005
l = ±0.006
s = ±0.006
r_ε = ±0.004

Size	Dimensions in inch				
	d (I.C.)	l	s	d_1	r_ε
4014	0.992	1.575	0.551	0.366	1/8
5014	1.000	2.000	0.551	0.366	1/8
5014..-1	1.000	2.000	0.551	0.250	1/8

LNMX-RR93



-RR96



-RR97



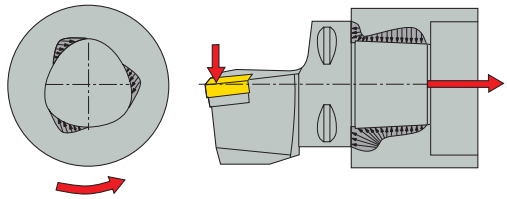
Inserts	Part No.	Grades				
		Coated				
		TP0501	TP1501	TP2501	TP200	TP40
LNMX-RR93						
	LNMX 401432-RR93	18882	18862		03484	
LNMX-RR96						
	LNMX 401432-RR96		18863	18864	75614	
	LNMX 501432-RR96		18866	18867	75631	
LNMX-RR97						
	LNMX 501432-1-RR97				75615	75616

Please check availability in current price and stock-list.



Introduction

Seco-Capto is a quick-change modular tooling system for quick set-up and replacement of the cutting edge.



Advantages

- Quick tool change, increases the available productive time.
- Flexible, same toolholder can be used in different machines which reduces the tool stock.
- Modular, building of tools with extension adapters reduces the tool stock
- Rigid, no reduction of cutting data.
- Accurate, tapered polygon coupling produces a strong, self centering joint with repeatability within ±0.00008 inch.

All toolholders have through holes for coolant.

Clamping units

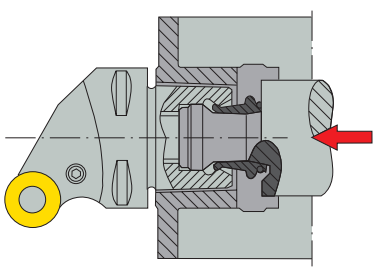
The manual clamping units are available in different versions;

- VDI shaft, straight or angled.
- Shank type to use with external toolholders.
- Cylindrical type to use with internal toolholders.
- Versions for special applications.

The unit is locked with a drawbar or screw from the back

Clamping units, please see pages 752-762.

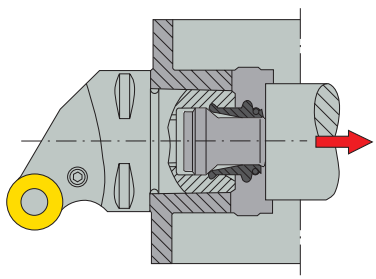
Unclamped position



Clamping segments

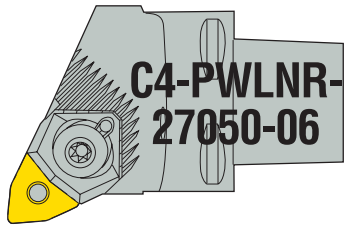
When the drawbar is pushed forward the diameter of the clamping segments decreases and the clamping segments are loosened from the cutting unit. The drawbar also pushes the cutting unit out from the joint.

Clamped position



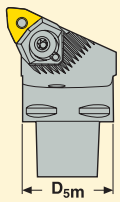
When the drawbar is pulled back, the diameter of the clamping segments expand and the cutting unit is pulled into position.

External toolholders



C4	-	P	W	L	N	R	-	27	050	-	06	-	
1		2	3	4	5	6		7	8		9		10

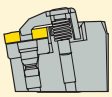
1. Seco-Capto™ size



C3 = 32 mm
C4 = 40 mm
C5 = 50 mm
C6 = 63 mm
C8 = 80 mm

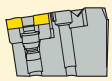
2. Insert clamping

D



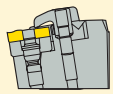
Clamp/inserts with center hole

P



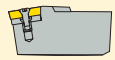
Pin/Wedge or Lever

M



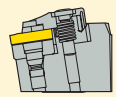
Pin/Clamp

S



Screw

C



Clamp

3. Insert shape

C



D



R



S



T



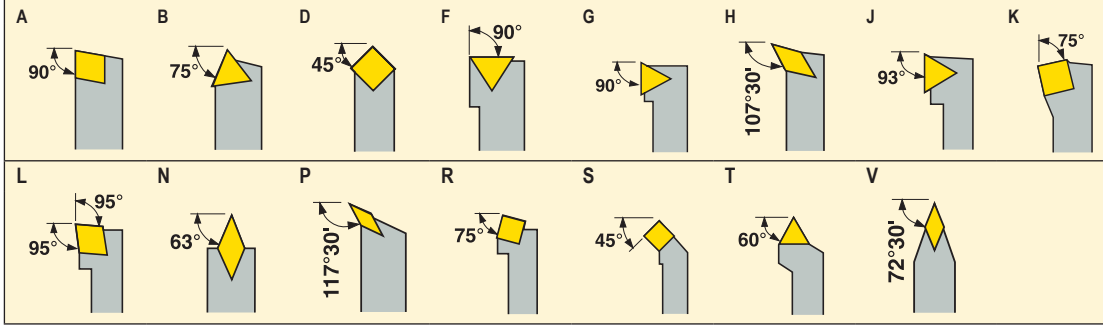
V



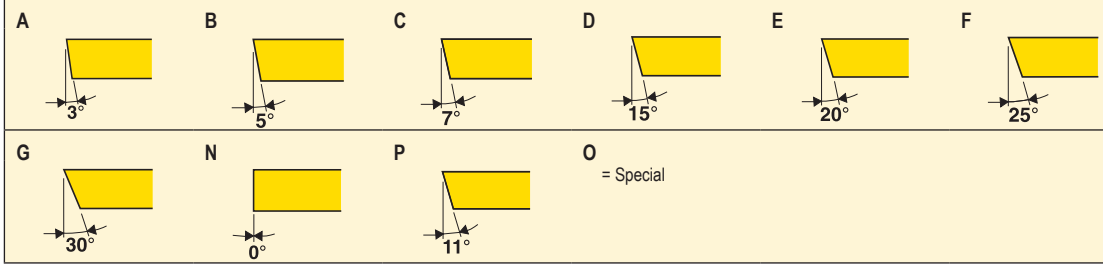
W



4. Tool type

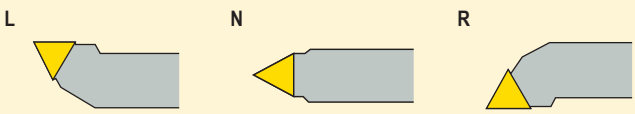


5. Insert side clearance angle

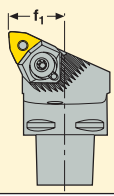


O = Special

6. Cutting direction

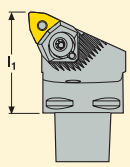


7. f_1- dimension



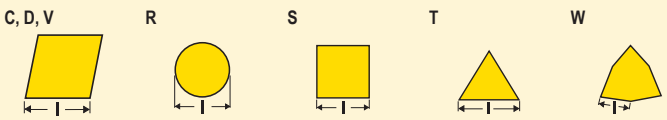
22 = 22 mm
27 = 27 mm
35 = 35 mm
45 = 45 mm
etc.

8. l_1- dimension



040 = 40 mm
042 = 42 mm
044 = 44 mm
050 = 50 mm
060 = 60 mm
etc.

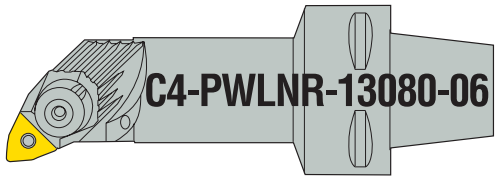
9. Cutting edge length



10. Internal designation

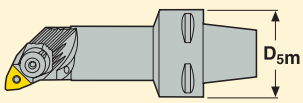
JET = Jetstream Tooling®
JETL = Jetstream Tooling® with P-lever clamp
JETB = Jetstream Tooling® with inlet on backend of shank
JETLB = Jetstream Tooling® with P-lever clamp and inlet on backend of shank

Internal toolholders and GL heads

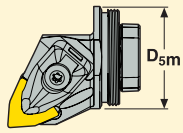


C4	-	P	W	L	N	R	-	13	080	-	06	-	
1		2	3	4	5	6		7	8		9		10

1. Seco-Capto size™



C3 = 32 mm
C4 = 40 mm
C5 = 50 mm
C6 = 63 mm
C8 = 80 mm

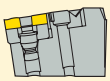


Steadyline®

GL32 = 32 mm
GL40 = 40 mm
GL50 = 50 mm

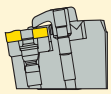
2. Insert clamping

P



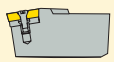
Pin/Wedge or Lever

M



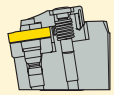
Pin/Clamp

S



Screw

C



Clamp

3. Insert shape

C



D



R



S



T



V

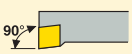


W

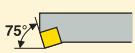


4. Tool type

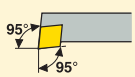
F



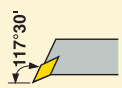
K



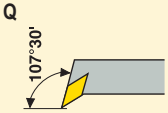
L



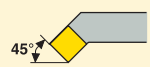
P



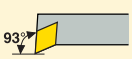
Q



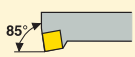
S



U

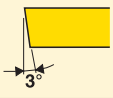


Y

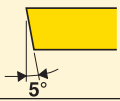


5. Insert side clearance angle

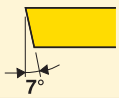
A



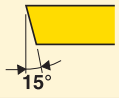
B



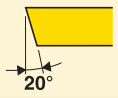
C



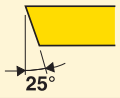
D



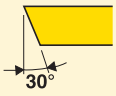
E



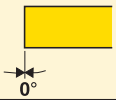
F



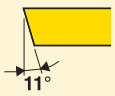
G



N



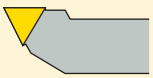
P



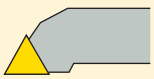
O
= Special

6. Cutting direction (hand of tool)

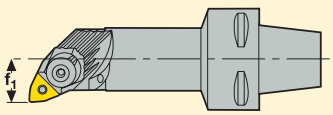
L



R

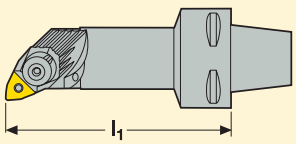


7. f_1 - dimension



11 = 11 mm
13 = 13 mm
17 = 17 mm
22 = 22 mm
etc

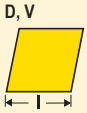
8. l_1 - dimension



064 = 64 mm
065 = 65 mm
070 = 70 mm
075 = 75 mm
etc

9. Cutting edge length

C, D, V



R



S



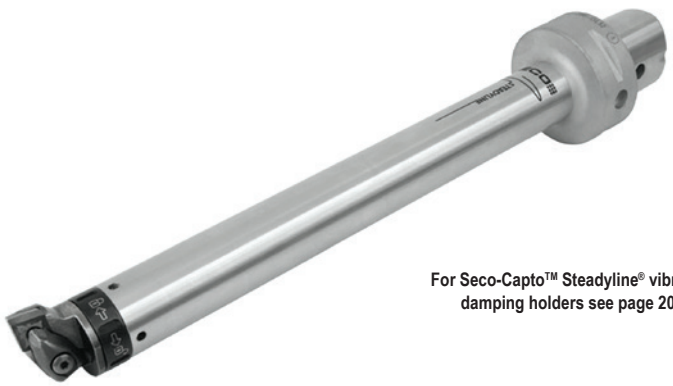
T



W

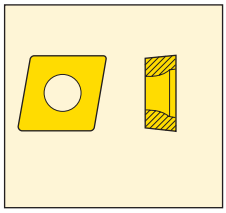


10. Internal designation

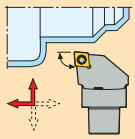


For Seco-Capto™ Steadyline® vibration damping holders see page 204

Inserts CC..

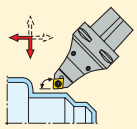


C.-SCLCR/L
95 °



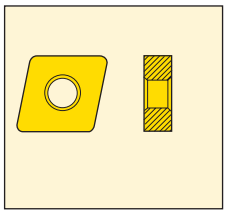
Page 639

C.-SCMCN
95 °

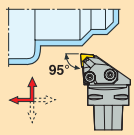


Page 725

Inserts CN..



C.-PCLNR/L...JETL
95 °



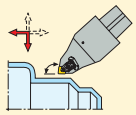
Page 603

C.-DCLNR/L, ..-M
95 °



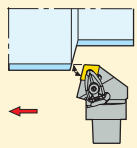
Pages 610-611

C.-DCMNN..-M
95 °



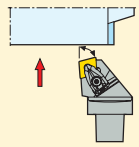
Page 726

C.-DCRNR/L, ..-M
75 °



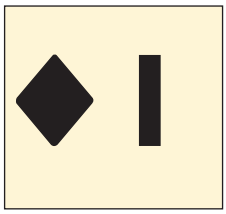
Pages 615-616

C.-DCKNR/L..-M
75 °

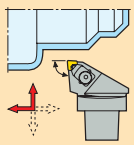


Pages 613-614

Inserts CN.N

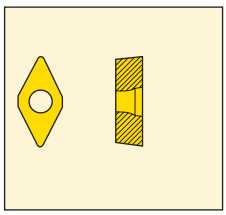


C.-CCLNR/L
95 °

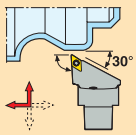


Page 653

Inserts DC..

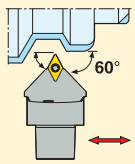


C.-SDJCR/L
93 °



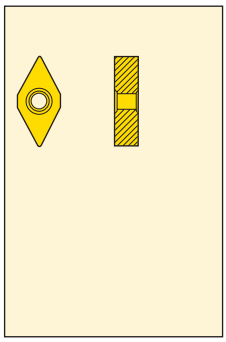
Page 640

C.-SDNCN
62.5 °

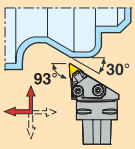


Page 641

Inserts DN..

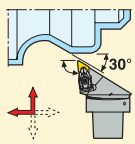


C.-PDJNR/L...JETL
93 °



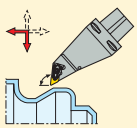
Page 604

C.-DDJNR/L, ..-M
93 °



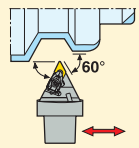
Page 618

C.-DDMNL..-M
93 °



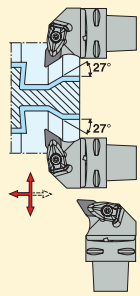
Page 727

C.-DDNNN..-M
63 °



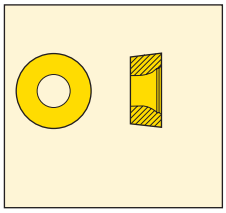
Page 619

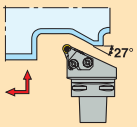
C.-DDUNR/L
93 °



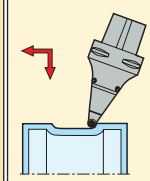
Page 620

Inserts RC..

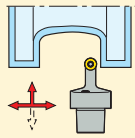




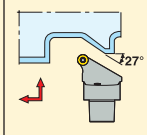
Page 609



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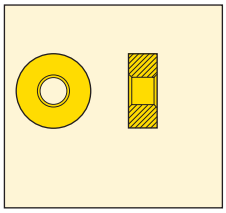


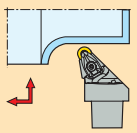
Pages 642-643



Pages 644-645

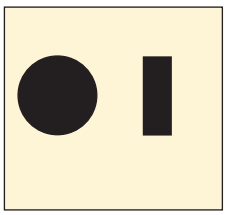
Inserts RN..

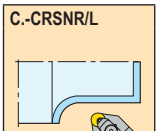




Page 621

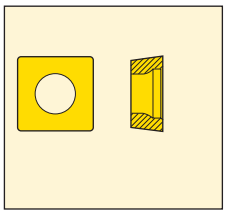
Inserts RN.N

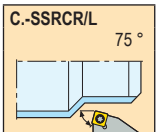




Page 654

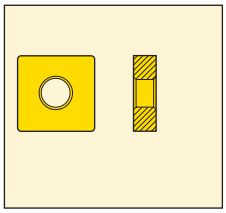
Inserts SC..

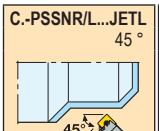




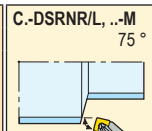
Page 646

Inserts SN..

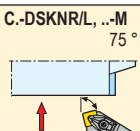




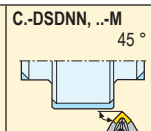
Page 605



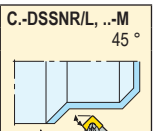
Pages 627-628



Pages 624-625

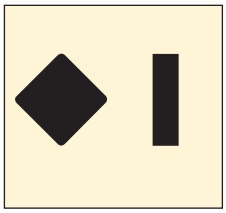


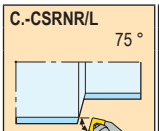
Page 622



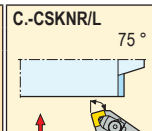
Pages 630-631

Inserts SN.N

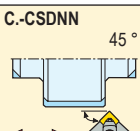




Page 657

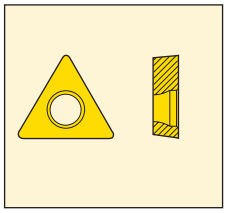


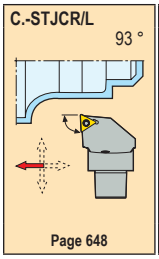
Page 656

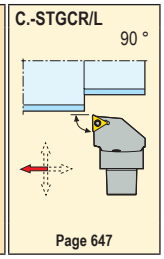


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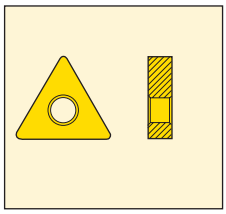
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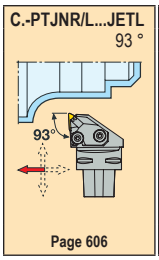


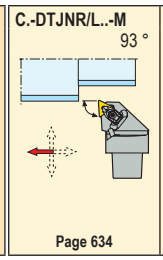




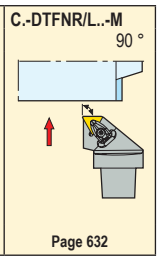
Inserts TN..



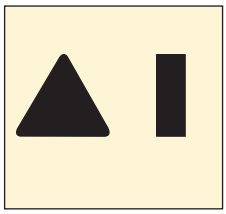


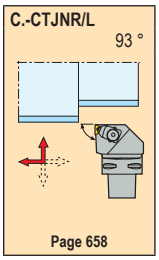




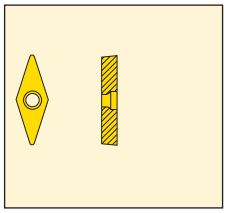


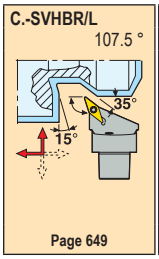
Inserts TN.N

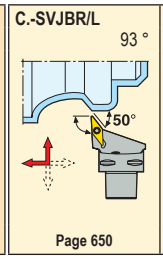


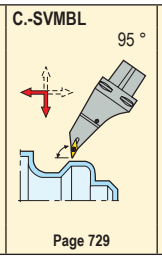


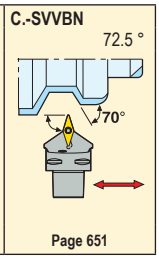
Inserts VB../VC..



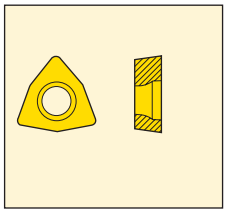


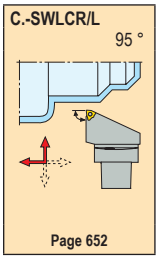




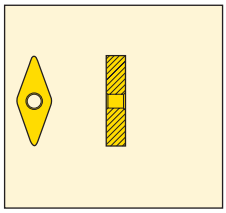


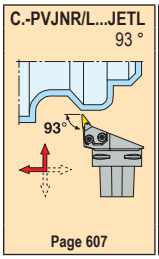
Inserts WC..

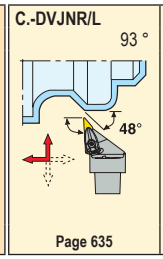


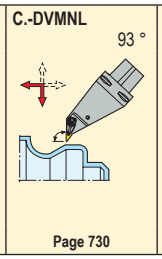


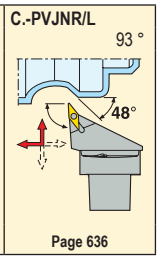
Inserts VN..



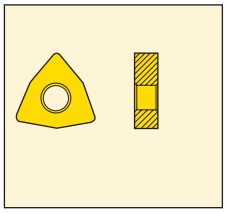


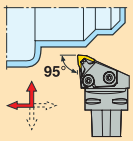
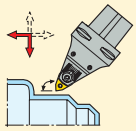
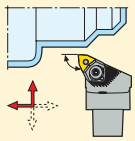




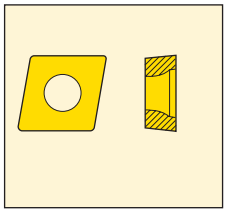


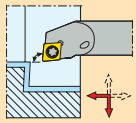
Inserts WN..



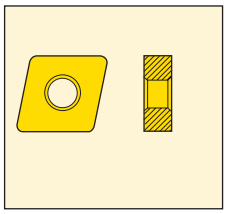
C.-PWLNR/L...JETL 95 °	C.-DWLNR/L 95 °	C.-PWLNN 95 °	C.-PWLNR/L 95 °
			
Page 608	Page 637	Page 731	Page 638

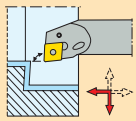
Inserts CC..



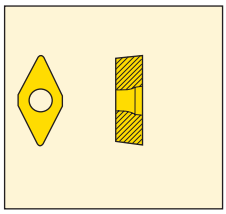
C.-SCLCR/L
95 °

Pages 667-669

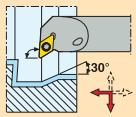
Inserts CN..

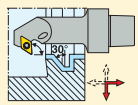


C.-PCLNR/L
95 °

Pages 659-660

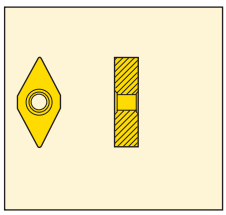
Inserts DC..

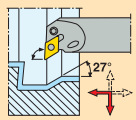


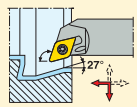
C.-SDUCR/L
93 °

Pages 670-671

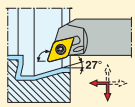
C.-SDUCR/L-...X
93 °

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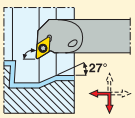
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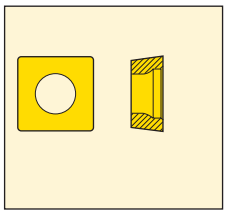
C.-PDUNR/L
93 °

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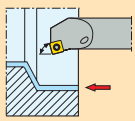
C.-PDQNR/L
107.5 °

Page 661

C.-SDQNR/L
107.5 °

Page 661

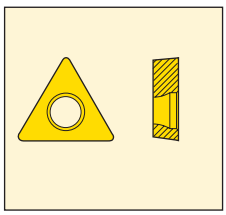
C.-SDUNR/L
93 °

Page 662

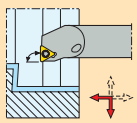
Inserts SC..



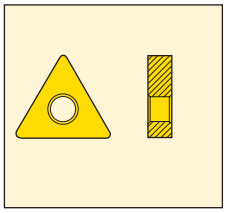
C.-SSKCR/L
75 °

Page 673

Inserts TC..

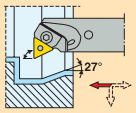


C.-STFCR/L
90 °

Pages 674-675

Inserts TN..

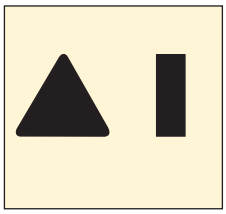


C.-PTFNR/L..-W
90 °

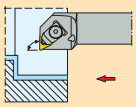


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Inserts TN.N

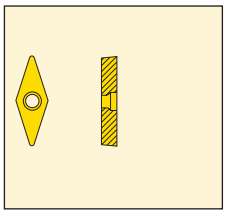


C.-CTUNR/L
93 °

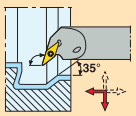


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Inserts VB../VC..

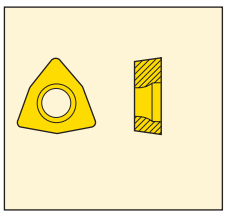


C.-SVQBR/L
107.5 °

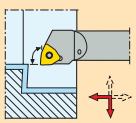


Pages 676-677

Inserts WC..

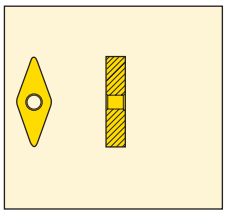


C.-SWLCR/L
95 °

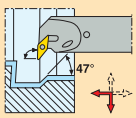


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Inserts VN..

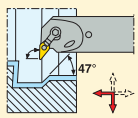


C.-PVUNR/L
93 °



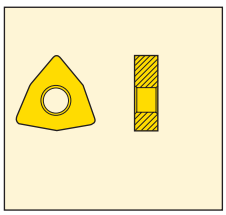
Page 664

C.-MVUNR/L
93 °

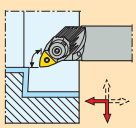


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Inserts WN..



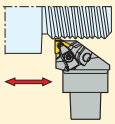
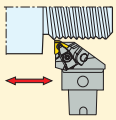
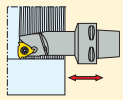
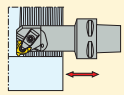
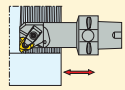
C.-PWLNR/L
95 °



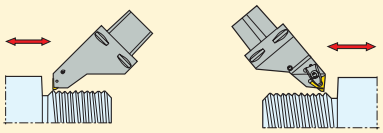
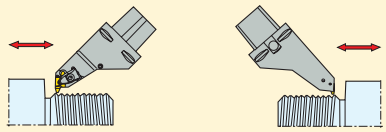
Pages 665-666

Seco-Capto™ – Application overview, Threading and Grooving

Seco-Capto™

CER/L-..HD Ext.	CER/L-..CHD Ext.	SNR Int.	CNR/L-..HD Int.	CNR/L-..CHD Int.
				
page 719	page 720	page 721	pages 721-722	pages 723-724

Seco-Capto™ for MTM

CER-..HD (S style inserts)	CEL..HD (K style inserts)
	
page 733	page 734



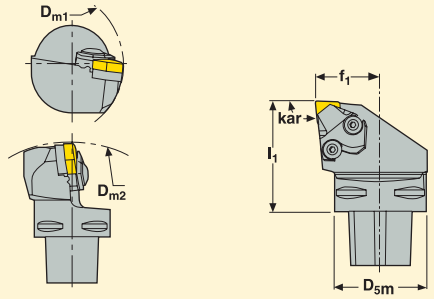
For Seco-Capto™ Steadyline® vibration damping holders see page 204

Toolholders for inserts CNGA, CNGP, CNMA, CNMG and CNMM



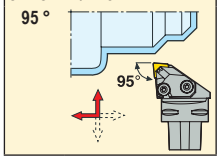
- For insert program, see pages 241-248, 301
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-PCLNR/L...JETL



Right-hand version shown
kar (κ_r) = 95°

C.-PCLNR/L...JETL



Capto size	I.C.	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	1/2	19008	C4-PCLNR -27050-12JETL	1.57	1.06	1.97	2.95	6.50	-6	-6	1.1	CN..43.
		19009	C4-PCLNL -27050-12JETL	1.57	1.06	1.97	2.95	6.50	-6	-6	1.1	CN..43.
C5												
	1/2	19015	C5-PCLNR -35060-12JETL	1.97	1.38	2.36	3.74	6.50	-6	-6	2.0	CN..43.
		19142	C5-PCLNL -35060-12JETL	1.97	1.38	2.36	3.74	6.50	-6	-6	2.0	CN..43.
C6												
	1/2	19016	C6-PCLNR -45065-12JETL	2.48	1.77	2.56	4.76	6.50	-6	-6	3.3	CN..43.
		19017	C6-PCLNL -45065-12JETL	2.48	1.77	2.56	4.76	6.50	-6	-6	3.3	CN..43.

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Anvil	Lever	Anvil pin	Punch	Screw	Key	Finishing inducer	Screw	O-ring
C.-PCLNR	PCN422	PP4713	RP6757	MP0912	LS0818	3SMS795	CILC12RA-F	117.26-655	ORING-8X1.5
C.-PCLNL	PCN422	PP4713	RP6757	MP0912	LS0818	3SMS795	CILC12LA-F	117.26-655	ORING-8X1.5

Accessories*

Roughing inducer
CILC12RA-R
CILC12LA-R

Please check availability in current price and stock-list

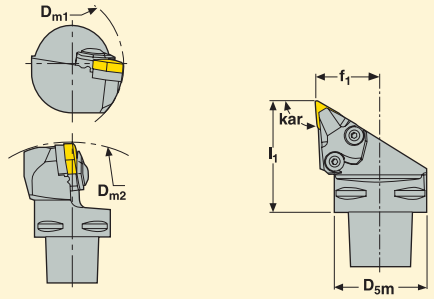
*To be ordered separately

Toolholders for inserts DNGA, DNGP, DNMA, DNMG, DNMM and DNMX



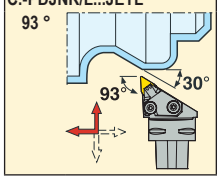
- For insert program, see pages 253-257, 259, 304-305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-PDJNR/L...JETL



Right-hand version shown
kar (κ_r) = 93°

C.-PDJNR/L...JETL



Capto size	I.C.	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	1/2	85792	C4-PDJNR -27055-15-04JETL	1.57	1.06	2.17	2.95	6.50	-6	-6	1.1	DN..43.
		85793	C4-PDJNL -27055-15-04JETL	1.57	1.06	2.17	2.95	6.50	-6	-6	1.1	DN..43.
C5												
	1/2	85795	C5-PDJNR -35060-15-04JETL	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	DN..43.
		85797	C5-PDJNL -35060-15-04JETL	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	DN..43.
C6												
	1/2	85794	C6-PDJNR -45065-15-04JETL	2.44	1.77	2.56	4.76	6.50	-6	-6	2.6	DN..43.
		85796	C6-PDJNL -45065-15-04JETL	2.44	1.77	2.56	4.76	6.50	-6	-6	2.6	DN..43.
C4												
	1/2	19018	C4-PDJNR -27055-15JETL	1.57	1.06	2.17	2.95	6.50	-6	-6	1.1	DN..44.
		19244	C4-PDJNL -27055-15JETL	1.57	1.06	2.17	2.95	6.50	-6	-6	1.1	DN..44.
C5												
	1/2	19014	C5-PDJNR -35060-15JETL	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	DN..44.
		19261	C5-PDJNL -35060-15JETL	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	DN..44.
C6												
	1/2	19262	C6-PDJNR -45065-15JETL	2.44	1.77	2.56	4.76	6.50	-6	-6	2.6	DN..44.
		19011	C6-PDJNL -45065-15JETL	2.44	1.77	2.56	4.76	6.50	-6	-6	2.6	DN..44.

Spare Parts, Parts included in delivery

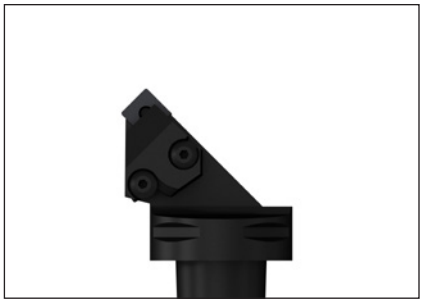
Accessories*

Toolholder/ Insert dimension	Anvil	Lever	Anvil pin	Punch	Screw	Key	Finishing inducer	Screw	O-ring	Roughing inducer
C.-PDJNR-15-04	PDN432	PP4716	RP6757	MP0912	LS0822	3SMS795	CILD15RA-F	117.26-655	ORING-8X1.5	CILD15RA-R
C.-PDJNL-15-04	PDN432	PP4716	RP6757	MP0912	LS0822	3SMS795	CILD15LA-F	117.26-655	ORING-8X1.5	CILD15LA-R
C.-PDJNR-15	PDN422	PP4716	RP6757	MP0912	LS0822	3SMS795	CILD15RA-F	117.26-655	ORING-8X1.5	CILD15RA-R
C.-PDJNL-15	PDN422	PP4716	RP6757	MP0912	LS0822	3SMS795	CILD15LA-F	117.26-655	ORING-8X1.5	CILD15LA-R

Please check availability in current price and stock-list

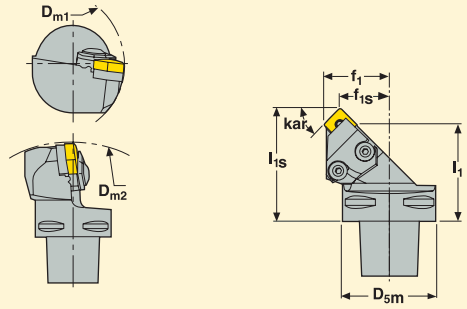
*To be ordered separately

Toolholders for inserts SNGA, SNMA, SNMG and SNMM



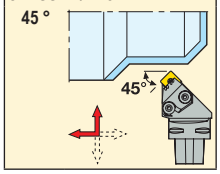
- For insert program, see pages 269-273, 311, 313
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-PSSNR/L...JETL



Right-hand version shown
kar (κ_r) = 45°

C.-PSSNR/L...JETL



Capto size	I.C.	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	f_{1s}	l_1	l_{1s}	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4														
	1/2	19285	C4-PSSNR -27048-12JETL	1.57	1.06	0.75	1.89	2.20	3.74	6.50	-8	0	1.1	SN..43.
		19282	C4-PSSNL -27048-12JETL	1.57	1.06	0.75	1.89	2.20	3.74	6.50	-8	0	1.1	SN..43.
C5														
	1/2	19274	C5-PSSNR -35052-12JETL	1.97	1.38	1.06	2.05	2.36	3.74	6.50	-8	0	1.5	SN..43.
		19300	C5-PSSNL -35052-12JETL	1.97	1.38	1.06	2.05	2.36	3.74	6.50	-8	0	1.5	SN..43.
C6														
	1/2	19354	C6-PSSNR -45056-12JETL	2.48	1.77	1.46	2.20	2.52	4.76	6.50	-8	0	2.4	SN..43.
		19399	C6-PSSNL -45056-12JETL	2.48	1.77	1.46	2.20	2.52	4.76	6.50	-8	0	2.4	SN..43.

Spare Parts, Parts included in delivery

Accessories*

Toolholder/ Insert dimension	Anvil	Lever	Anvil pin	Punch	Screw	Key	Finishing inducer	Screw	O-ring	Roughing inducer
C.-PSSNR	PSN423	PP4713	RP6757	MP0912	LS0818	3SMS795	CILS12RA-F	117.26-655	ORING-6.07X1.78	CILS12RA-R
C.-PSSNL	PSN423	PP4713	RP6757	MP0912	LS0818	3SMS795	CILS12LA-F	117.26-655	ORING-6.07X1.78	CILS12LA-R

Please check availability in current price and stock-list

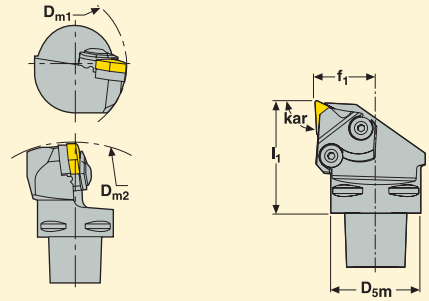
*To be ordered separately

Toolholders for inserts TNGA, TNMA, TNMG, TNMM and TNMX



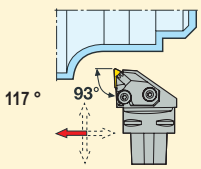
- For insert program, see pages 282-287, 317
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-PTJNR/L...JETL



Right-hand version shown
kar (κ_r) = 93°

C.-PTJNR/L...JETL
93 °



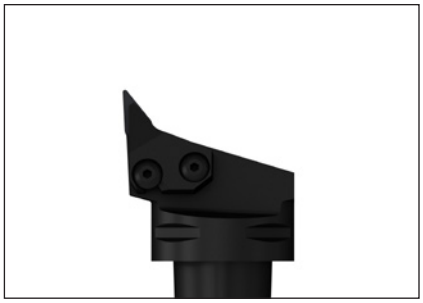
Capto size	I.C.	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	3/8	19269	C4-PTJNR -27050-16JETL	1.57	1.06	1.97	2.95	6.50	-6	-6	1.1	TN..33.
		19264	C4-PTJNL -27050-16JETL	1.57	1.06	1.97	2.95	6.50	-6	-6	1.1	TN..33.
C6												
	3/8	19288	C6-PTJNR -45065-16JETL	2.48	1.77	2.56	4.76	6.50	-6	-6	3.3	TN..33.
		19299	C6-PTJNL -45065-16JETL	2.48	1.77	2.56	4.76	6.50	-6	-6	3.3	TN..33.

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Anvil	Lever	Anvil pin	Punch	Screw	Key	Finishing inducer	Screw	Key	O-ring
C.-PTJNR	PTN31.52	PP3612	RP5152	MP0912	LS0616	2.5SMS795	CILT16RA-F	117.26-655	3SMS795	ORING-8X1.5
C.-PTJNL	PTN31.52	PP3612	RP5152	MP0912	LS0616	2.5SMS795	CILT16LA-F	117.26-655	3SMS795	ORING-8X1.5

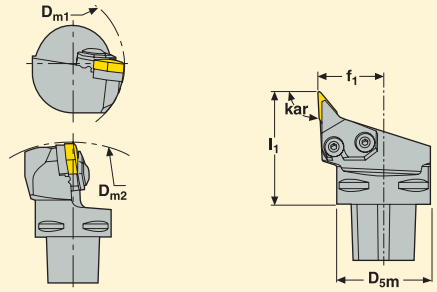
Please check availability in current price and stock-list

Toolholders for inserts VNGA, VNGP and VNMG



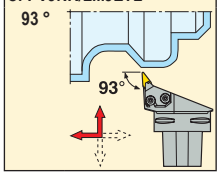
- For insert program, see pages 292-293, 324
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-PVJNR/L...JETL



Right-hand version shown
kar (κ_r) = 93°

C.-PVJNR/L...JETL



Capto size	I.C.	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	3/8	19263	C4-PVJNR -27060-16JETL	1.57	1.07	2.36	2.95	6.50	-5	-14	1.1	VN..33.
		19348	C4-PVJNL -27060-16JETL	1.57	1.07	2.36	2.95	6.50	-5	-14	1.1	VN..33.
C5												
	3/8	19393	C5-PVJNR -35060-16JETL	1.97	1.38	2.36	3.74	6.50	-5	-14	1.5	VN..33.
		19302	C5-PVJNL -35060-16JETL	1.97	1.38	2.36	3.74	6.50	-5	-14	1.5	VN..33.
C6												
	3/8	19400	C6-PVJNR -45065-16JETL	2.48	1.77	2.56	4.76	6.50	-5	-14	2.9	VN..33.
		19382	C6-PVJNL -45065-16JETL	2.48	1.77	2.56	4.76	6.50	-5	-14	2.9	VN..33.

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Anvil	Lever	Anvil pin	Punch	Screw	Key	Finishing inducer	Screw	Key	O-ring
C.-PVJNR	PVN321	PP3512	RP5153	MP0912	LS0616	2.5SMS795	CILV16RC-F	117.26-655	3SMS795	ORING-6.07X1.78
C.-PVJNL	PVN321	PP3512	RP5153	MP0912	LS0616	2.5SMS795	CILV16LC-F	117.26-655	3SMS795	ORING-6.07X1.78

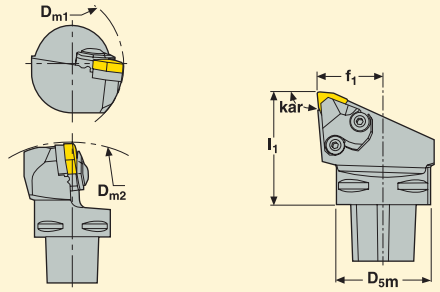
Please check availability in current price and stock-list

Toolholders for inserts WNGA, WNMA, WNMG and WNMM



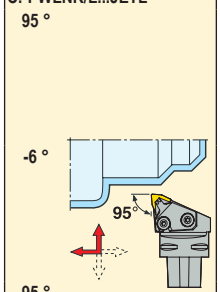
- For insert program, see pages 296-299, 326-327
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-PWLNR/L...JETL



Right-hand version shown
kar (κ_r) = 95°

C.-PWLNR/L...JETL



Capto size	I.C.	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	3/8	19025	C4-PWLNR -27050-06JETL	1.57	1.06	1.97	2.95	6.50	-6	-6	1.1	WN..33.
		19021	C4-PWLNL -27050-06JETL	1.57	1.06	1.97	2.95	6.50	-6	-6	1.1	WN..33.
	1/2	19007	C4-PWLNR -27050-08JETL	1.57	1.06	1.97	2.95	6.50	-6	-6	0.9	WN..43.
		19029	C4-PWLNL -27050-08JETL	1.57	1.06	1.97	2.95	6.50	-6	-6	0.9	WN..43.
C5												
	3/8	19019	C5-PWLNR -35060-06JETL	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	WN..33.
		19020	C5-PWLNL -35060-06JETL	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	WN..33.
	1/2	19096	C5-PWLNR -35060-08JETL	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	WN..43.
		19207	C5-PWLNL -35060-08JETL	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	WN..43.
C6												
	1/2	19240	C6-PWLNR -45065-08JETL	2.48	1.77	2.56	4.76	6.50	-6	-6	2.9	WN..43.
		19012	C6-PWLNL -45065-08JETL	2.48	1.77	2.56	4.76	6.50	-6	-6	2.9	WN..43.

Spare Parts, Parts included in delivery

Accessories*

Toolholder/ Insert dimension	Anvil	Lever	Anvil pin	Punch	Screw	Key	Finishing inducer	Screw	Key	O-ring	Roughing inducer
C.-PWLNR-06	PWN323	PP3612	RP5152	MP0912	LS0616	2.5SMS795	CILW08RA-F	117.26-655	3SMS795	ORING-8X1.5	CILW08RA-R
C.-PWLNL-06	PWN323	PP3612	RP5152	MP0912	LS0616	2.5SMS795	CILW08LA-F	117.26-655	3SMS795	ORING-8X1.5	CILW08LA-R
C.-PWLNR-08	PWN423	PP4713	RP6757	MP0912	LS0818	3SMS795	CILW08RA-F	117.26-655	3SMS795	ORING-8X1.5	CILW08RA-R
C.-PWLNL-08	PWN423	PP4713	RP6757	MP0912	LS0818	3SMS795	CILW08LA-F	117.26-655	3SMS795	ORING-8X1.5	CILW08LA-R

Please check availability in current price and stock-list

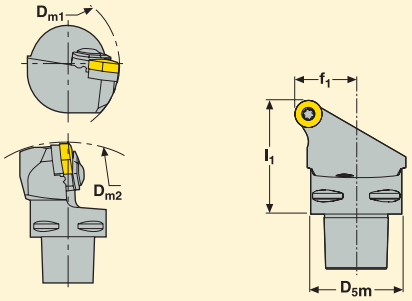
*To be ordered separately

Toolholders for inserts RCMT



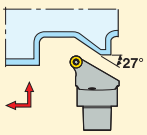
- For insert program, see page 264
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-SRSCR/L...JET



Right-hand version shown

C.-SRSCR/L...JET



Capto size	I.C.	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	.393	37108	C4-SRSCR -27050-10JET	1.57	1.06	1.97	2.95	6.50	0	0	0.9	RCMT10T3..
		37109	C4-SRSCL -27050-10JET	1.57	1.06	1.97	2.95	6.50	0	0	0.9	RCMT10T3..
	.472	37110	C4-SRSCR -27050-12JET	1.57	1.06	1.97	2.95	6.50	0	0	0.9	RCMT1204..
		37112	C4-SRSCL -27050-12JET	1.57	1.06	1.97	2.95	6.50	0	0	0.9	RCMT1204..
C5												
	.393	37117	C5-SRSCR -35060-10JET	1.97	1.38	2.36	3.74	6.50	0	0	1.8	RCMT10T3..
		37118	C5-SRSCL -35060-10JET	1.97	1.38	2.36	3.74	6.50	0	0	1.8	RCMT10T3..
	.472	37120	C5-SRSCR -35060-12JET	1.97	1.38	2.36	3.74	6.50	0	0	1.8	RCMT1204..
		37121	C5-SRSCL -35060-12JET	1.97	1.38	2.36	3.74	6.50	0	0	1.8	RCMT1204..
C6												
	.393	37123	C6-SRSCR -45065-10JET	2.48	1.77	2.56	4.76	6.50	0	0	2.6	RCMT10T3..
		37124	C6-SRSCL -45065-10JET	2.48	1.77	2.56	4.76	6.50	0	0	2.6	RCMT10T3..
	.472	37125	C6-SRSCR -45065-12JET	2.48	1.77	2.56	4.76	6.50	0	0	2.6	RCMT1204..
		37126	C6-SRSCL -45065-12JET	2.48	1.77	2.56	4.76	6.50	0	0	2.6	RCMT1204..

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Anvil	Anvil screw/ Key*	....SMS795	Locking screw/ Key		Inducer kit R	Inducer kit L	Screw**	Key	O-ring (pack of 20)
SRSCR...10	111.19-620	CA3510	9/64"	C03510-T15P	T15P-2	JET-CIKR00RB-KIT	–	117.26-655	3SMS795	ORING-6.07x1.78
SRSCL...10	111.19-620	CA3510	9/64"	C03510-T15P	T15P-2	–	JET-CIKR00LB-KIT	117.26-655	3SMS795	ORING-6.07x1.78
SRSCR...12	111.19-621	CA3510	9/64"	C03510-T15P	T15P-2	JET-CIKR00RB-KIT	–	117.26-655	3SMS795	ORING-6.07x1.78
SRSCL...12	111.19-621	CA3510	9/64"	C03510-T15P	T15P-2	–	JET-CIKR00LB-KIT	117.26-655	3SMS795	ORING-6.07x1.78

Please check availability in current price and stock-list

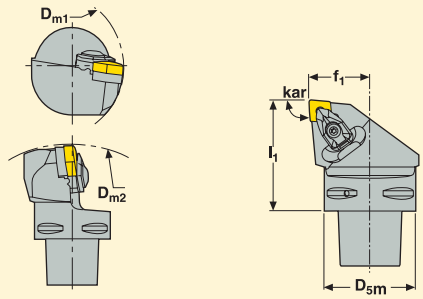
*To be ordered separately
**Included in "Inducer kit"

Toolholders for inserts CNGA, CNGP, CNMA, CNMG and CNMM



- For insert program, see pages 241-248, 301
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DCLNR/L..-M



Right-hand version shown
kar (κ_r) = 95°

C.-DCLNR/L..-M
95 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	3/8	33743	C4-DCLNR -27050-09-M	1.57	1.06	1.97	2.36	5.51	-6	-6	1.1	CN..32.
		33744	C4-DCLNL -27050-09-M	1.57	1.06	1.97	2.36	5.51	-6	-6	1.1	CN..32.
	1/2	33745	C4-DCLNR -27050-12-M	1.57	1.06	1.97	4.33	5.51	-6	-6	0.9	CN..43.
		33746	C4-DCLNL -27050-12-M	1.57	1.06	1.97	4.33	5.51	-6	-6	0.9	CN..43.
	5/8	33747	C4-DCLNR -27055-16-M	1.57	1.06	2.17	4.92	6.10	-6	-6	1.1	CN..54.
		33748	C4-DCLNL -27055-16-M	1.57	1.06	2.17	4.92	6.10	-6	-6	1.1	CN..54.
C5												
	1/2	33751	C5-DCLNR -35060-12-M	1.97	1.38	2.36	4.33	6.50	-6	-6	1.8	CN..43.
		33752	C5-DCLNL -35060-12-M	1.97	1.38	2.36	4.33	6.50	-6	-6	1.8	CN..43.
	5/8	33753	C5-DCLNR -35060-16-M	1.97	1.38	2.36	4.92	6.50	-6	-6	1.8	CN..54.
		33754	C5-DCLNL -35060-16-M	1.97	1.38	2.36	4.92	6.50	-6	-6	1.8	CN..54.
	3/4	33755	C5-DCLNR -35060-19-M	1.97	1.38	2.36	3.15	6.50	-6	-6	1.8	CN..64.
		33756	C5-DCLNL -35060-19-M	1.97	1.38	2.36	3.15	6.50	-6	-6	1.8	CN..64.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
-09	FP1508	L84017-T09P	CD09-S	DCN322.5	T09P-2	C03007-T09P	S5608
-12	FP2012	L85021-T15P	CD12-S	DCN444	T15P-2	C04008-T15P	S6912
-16	FP2012	L86026-T20P	CD16-S	DCN544	T20P-7L	C05010-T20P	S7010
-19	FP2012	L86026-T20P	CD19-S	DCN634	T20P-7L	C05010-T20P	S7010

Accessories*

Clamp kit
CD09-S09
CD12-S12
CD16-S16
CD19-S19

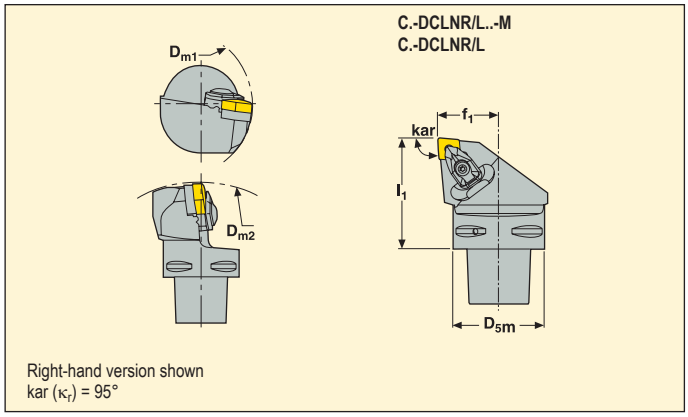
Please check availability in current price and stock-list

*To be ordered separately
Shim DCN434 for insert CN..44., to be ordered separately

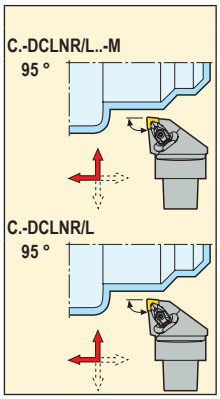
Toolholders for inserts CNGA, CNGP, CNMA, CNMG and CNMM



- For insert program, see pages 241-248, 301
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593



Right-hand version shown
kar (κ_r) = 95°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C6												
	1/2	33757	C6-DCLNR -45065-12-M	2.48	1.77	2.56	4.33	7.48	-6	-6	2.9	CN..43.
		33758	C6-DCLNL -45065-12-M	2.48	1.77	2.56	4.33	7.48	-6	-6	2.9	CN..43.
	5/8	33760	C6-DCLNR -45065-16-M	2.48	1.77	2.56	4.92	7.48	-6	-6	2.9	CN..54.
		33761	C6-DCLNL -45065-16-M	2.48	1.77	2.56	4.92	7.48	-6	-6	2.9	CN..54.
	3/4	33762	C6-DCLNR -45065-19-M	2.48	1.77	2.56	3.19	7.48	-6	-6	2.9	CN..64.
		33763	C6-DCLNL -45065-19-M	2.48	1.77	2.56	3.19	7.48	-6	-6	2.9	CN..64.
C8												
	5/8	26184	C8-DCLNR -55080-16	3.15	2.17	3.15	4.92	5.91	-6	-6	5.5	CN..54.
		26183	C8-DCLNL -55080-16	3.15	2.17	3.15	4.92	5.91	-6	-6	5.5	CN..54.
	3/4	43472	C8-DCLNR -55080-19	3.15	2.17	3.15	3.94	9.84	-6	-6	5.5	CN..64.
		43476	C8-DCLNL -55080-19	3.15	2.17	3.15	3.94	9.84	-6	-6	5.5	CN..64.
	1	43478	C8-DCLNR -55080-25	3.15	2.17	3.15	5.91	9.84	-6	-6	5.7	CN..86.
		39378	C8-DCLNL -55080-25	3.15	2.17	3.15	5.91	9.84	-6	-6	5.7	CN..86.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Clamp set	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
C6-12	FP2012	L85021-T15P	–	CD12-S	DCN444	T15P-2	C04008-T15P	S6912
C6-16	FP2012	L86026-T20P	–	CD16-S	DCN544	T20P-7L	C05010-T20P	S7010
C6-19	FP2012	L86026-T20P	–	CD19-S	DCN634	T20P-7L	C05010-T20P	S7010
C8-16	FP2012	L86026-T20P	–	CD16-S	DCN544	T20P-7L	C05010-T20P	S7010
C8-19	FP2012	L86026-T20P	–	CD19-S	DCN634	T20P-7L	C05010-T20P	S7010
C8-25	–	–	CD25-S25	–	DCN836	T25P-7	C06012-T25P	–

Accessories*

Clamp kit
CD12-S12
CD16-S16
CD19-S19
CD16-S16
CD19-S19
CD25-S25

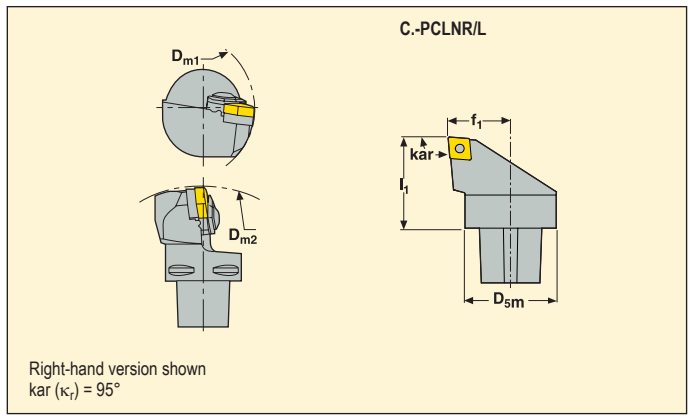
Please check availability in current price and stock-list

*To be ordered separately
Shim DCN434 for insert CN..44., to be ordered separately

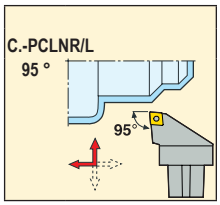
Toolholders for inserts CNGA, CNGP, CNMA, CNMG, CNMM and CNMP



- For insert program, see pages 241-248
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593



Right-hand version shown
kar (κ_r) = 95°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C5												
	5/8	91685	C5-PCLNR -35060-16	1.97	1.38	2.36	3.94	5.91	-6	-6	1.8	CN..54.
		91673	C5-PCLNL -35060-16	1.97	1.38	2.36	3.94	5.91	-6	-6	1.8	CN..54.
C6												
	5/8	91695	C6-PCLNR -45065-16	2.48	1.77	2.56	4.72	7.87	-6	-6	3.3	CN..54.
		91694	C6-PCLNL -45065-16	2.48	1.77	2.56	4.72	7.87	-6	-6	3.3	CN..54.
	3/4	91693	C6-PCLNR -45065-19	2.48	1.77	2.56	4.72	7.87	-6	-6	3.3	CN..64.
		91692	C6-PCLNL -45065-19	2.48	1.77	2.56	4.72	7.87	-6	-6	3.3	CN..64.
C8												
	3/4	35342	C8-PCLNR -55080-19	3.15	2.17	3.15	4.72	8.66	-6	-6	6.6	CN..64.
		35343	C8-PCLNL -55080-19	3.15	2.17	3.15	4.72	8.66	-6	-6	6.6	CN..64.
C10												
	1	91676	C10-PCLNR-68110-25	3.94	2.68	4.33	9.45	15.75	-6	-6	11.7	CN..86.
		91675	C10-PCLNL-68110-25	3.94	2.68	4.33	9.45	15.75	-6	-6	11.7	CN..86.

Spare Parts, Parts included in delivery

For holder	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
..-16	PP6017	PCN160412	3SMS795	LS0820	MP1519	RP8286
..-19	PP7521	PCN190416	4SMS795	LS1027	MP1519	RP9811
..-25	PP1325	PCN250620	5SMS795	LS1236	MP25	RP1312

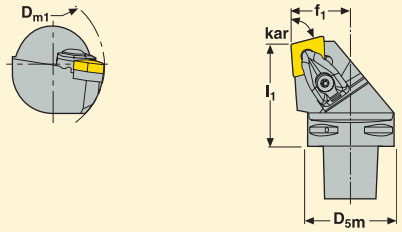
Please check availability in current price and stock-list

Toolholders for inserts CNGA, CNGP, CNMA, CNMG and CNMM



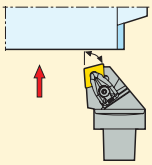
- For insert program, see pages 241-248
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DCKNR/L...-M



Right-hand version shown
kar (κ_r) = 75°

C.-DCKNR/L...-M
75 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_m	γ_o°	λ_s°	lbs	
C4											
	3/8	33784	C4-DCKNR -27050-09-M	1.57	1.06	1.97	2.95	-6	-6	1.1	CN..32.
		33785	C4-DCKNL -27050-09-M	1.57	1.06	1.97	2.95	-6	-6	1.1	CN..32.
	1/2	33786	C4-DCKNR -27050-12-M	1.57	1.06	1.97	4.33	-6	-6	1.1	CN..43.
		33787	C4-DCKNL -27050-12-M	1.57	1.06	1.97	4.33	-6	-6	1.1	CN..43.
	5/8	33788	C4-DCKNR -27050-16-M	1.57	1.06	1.97	4.92	-6	-6	1.1	CN..54.
		33789	C4-DCKNL -27050-16-M	1.57	1.06	1.97	4.92	-6	-6	1.1	CN..54.
C5											
	1/2	33792	C5-DCKNR -35060-12-M	1.97	1.38	2.36	4.33	-6	-6	2.0	CN..43.
		33793	C5-DCKNL -35060-12-M	1.97	1.38	2.36	4.33	-6	-6	2.0	CN..43.
	5/8	33794	C5-DCKNR -35060-16-M	1.97	1.38	2.36	4.92	-6	-6	2.0	CN..54.
		33795	C5-DCKNL -35060-16-M	1.97	1.38	2.36	4.92	-6	-6	2.0	CN..54.
	3/4	33796	C5-DCKNR -35060-19-M	1.97	1.38	2.36	3.74	-6	-6	1.8	CN..54.
		33797	C5-DCKNL -35060-19-M	1.97	1.38	2.36	3.74	-6	-6	1.8	CN..64.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
-09	FP1508	L84017-T09P	CD09-S	DCN 322.5	T09P-2	C03007-T09P	S5608
-12	FP2012	L85021-T15P	CD12-S	DCN 444**	T15P-2	C04008-T15P	S6912
-16	FP2012	L86026-T20P	CD16-S	DCN 544	T20P-7L	C05010-T20P	S7010
-19	FP2012	L86026-T20P	CD19-S	DCN 634	T20P-7L	C05010-T20P	S7010

Accessories*

Clamp kit
CD09-S09
CD12-S12
CD16-S16
CD19-S19

Please check availability in current price and stock-list

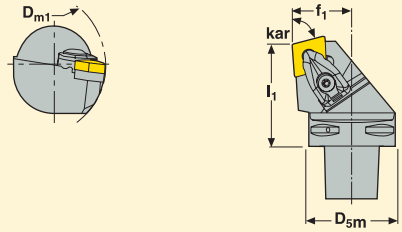
*To be ordered separately
**Shim DCN434 for insert CN..44., to be ordered separately

Toolholders for inserts CNGA, CNGP, CNMA, CNMG and CNMM



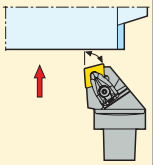
- For insert program, see pages 241-248
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DCKNR/L...-M



Right-hand version shown
kar (κ_r) = 75°

C.-DCKNR/L
75 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_m	γ_o°	λ_s°	lbs	
C6											
	1/2	33799	C6-DCKNR -45065-12-M	2.48	1.77	2.56	4.33	-6	-6	3.1	CN..43.
		33800	C6-DCKNL -45065-12-M	2.48	1.77	2.56	4.33	-6	-6	3.1	CN..43.
	5/8	33801	C6-DCKNR -45065-16-M	2.48	1.77	2.56	4.92	-6	-6	3.1	CN..54.
		33802	C6-DCKNL- 45065-16-M	2.48	1.77	2.56	4.92	-6	-6	3.1	CN..54.
	3/4	33803	C6-DCKNR -45065-19-M	2.48	1.77	2.56	3.19	-6	-6	3.1	CN..64.
		33804	C6-DCKNL -45065-19-M	2.48	1.77	2.56	3.19	-6	-6	3.1	CN..64.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
-12	FP2012	L85021-T15P	CD12-S	DCN 444**	T15P-2	C04008-T15P	S6912	CD12-S12
-16	FP2012	L86026-T20P	CD16-S	DCN 544	T20P-7L	C05010-T20P	S7010	CD16-S16
-19	FP2012	L86026-T20P	CD19-S	DCN 634	T20P-7L	C05010-T20P	S7010	CD19-S19

Please check availability in current price and stock-list

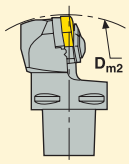
*To be ordered separately
**Shim DCN434 for insert CN..44., to be ordered separately

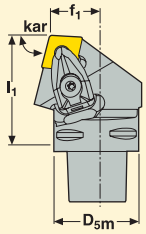
Toolholders for inserts CNGA, CNGP, CNMA, CNMG and CNMM



- For insert program, see pages 241-248
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

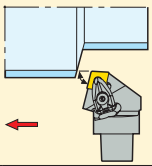
C.-DCRNR/L..-M





Right-hand version shown
kar (κ_r) = 75°

C.-DCRNR/L..-M
75 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m2}	γ_o°	λ_s°	lbs	
C4											
	1/2	33766	C4-DCRNR -22050-12-M	1.57	0.87	1.97	5.51	-6	-6	0.9	CN..43.
		33767	C4-DCRNL -22050-12-M	1.57	0.87	1.97	5.51	-6	-6	0.9	CN..43.
	5/8	33768	C4-DCRNR -22055-16-M	1.57	0.87	2.17	6.50	-6	-6	1.1	CN..54.
		33769	C4-DCRNL -22055-16-M	1.57	0.87	2.17	6.50	-6	-6	1.1	CN..54.
C5											
	1/2	33772	C5-DCRNR -27060-12-M	1.97	1.06	2.36	6.50	-6	-6	1.8	CN..43.
		33773	C5-DCRNL -27060-12-M	1.97	1.06	2.36	6.50	-6	-6	1.8	CN..43.
	5/8	33774	C5-DCRNR -27060-16-M	1.97	1.06	2.36	6.50	-6	-6	1.8	CN..54.
		33775	C5-DCRNL -27060-16-M	1.97	1.06	2.36	6.50	-6	-6	1.8	CN..54.
	3/4	33776	C5-DCRNR -27060-19-M	1.97	1.06	2.36	6.50	-6	-6	2.0	CN..64.
		33777	C5-DCRNL -27060-19-M	1.97	1.06	2.36	6.50	-6	-6	2.0	CN..64.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
-12	FP2012	L85021-T15P	CD12-S	DCN 444**	T15P-2	C04008-T15P	S6912	CD12-S12
-16	FP2012	L86026-T20P	CD16-S	DCN 544	T20P-7L	C05010-T20P	S7010	CD16-S16
-19	FP2012	L86026-T20P	CD19-S	DCN 634	T20P-7L	C05010-T20P	S7010	CD19-S19

Please check availability in current price and stock-list

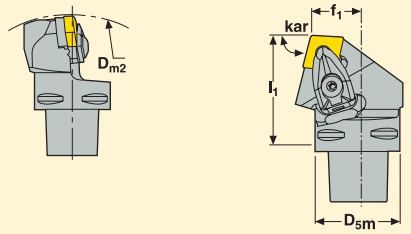
*To be ordered separately
**Shim DCN434 for insert CN..44., to be ordered separately

Toolholders for inserts CNGA, CNGP, CNMA, CNMG and CNMM



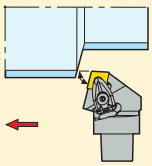
- For insert program, see pages 241-248
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DCRNR/L..-M
C.-DCRNR/L

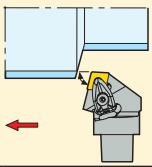


Right-hand version shown
kar (κ_r) = 75°

C.-DCRNR/L..-M
75 °



C.-DCRNR/L
75 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m2}	γ_o°	λ_s°	lbs	
C6											
	1/2	33778	C6-DCRNR -35065-12-M	2.48	1.38	2.56	7.48	-6	-6	2.6	CN..43.
		33779	C6-DCRNL -35065-12-M	2.48	1.38	2.56	7.48	-6	-6	2.6	CN..43.
	5/8	33780	C6-DCRNR -35065-16-M	2.48	1.38	2.56	7.48	-6	-6	2.9	CN..54.
		33781	C6-DCRNL -35065-16-M	2.48	1.38	2.56	7.48	-6	-6	2.9	CN..54.
	3/4	33782	C6-DCRNR -35065-19-M	2.48	1.38	2.56	7.48	-6	-6	2.9	CN..64.
		33783	C6-DCRNL -35065-19-M	2.48	1.38	2.56	7.48	-6	-6	2.9	CN..64.
C8											
	5/8	43485	C8-DCRNR -55080-16	3.15	2.17	3.15	9.84	-6	-6	5.7	CN..54.
		43486	C8-DCRNL -55080-16	3.15	2.17	3.15	9.84	-6	-6	5.7	CN..54.
	3/4	43487	C8-DCRNR -55080-19	3.15	2.17	3.15	9.84	-6	-6	5.7	CN..64.
		43488	C8-DCRNL -55080-19	3.15	2.17	3.15	9.84	-6	-6	5.7	CN..64.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
-12	FP2012	L85021-T15P	CD12-S	DCN 444**	T15P-2	C04008-T15P	S6912	CD12-S12
-16	FP2012	L86026-T20P	CD16-S	DCN 544	T20P-7L	C05010-T20P	S7010	CD16-S16
-19	FP2012	L86026-T20P	CD19-S	DCN 634	T20P-7L	C05010-T20P	S7010	CD19-S19

Please check availability in current price and stock-list

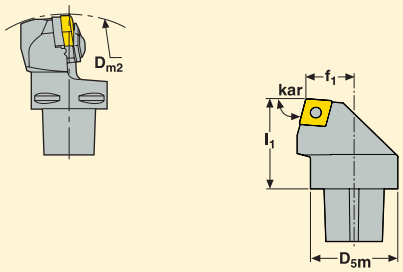
*To be ordered separately
**Shim DCN434 for insert CN..44., to be ordered separately

Toolholders for inserts CNGP, CNMA, CNMG, CNMM and CNMP



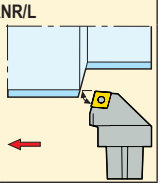
- For insert program, see pages 242-248
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

PCRNR/L



Right-hand version shown
kar (κ_r) = 75°

C.-PCRNR/L
75 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m2}	γ_o°	λ_s°	lbs	
C6											
	3/4	91687	**C6-PCRNR -35065-19**	2.48	1.38	2.56	5.91	-6	-6	3.3	CN..64.
		91688	**C6-PCRNL -35065-19**	2.48	1.38	2.56	5.91	-6	-6	3.3	CN..64.

Spare Parts, Parts included in delivery

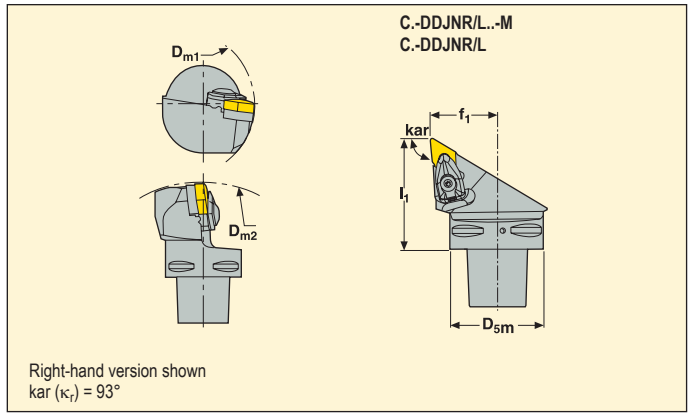
For holder	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
..-19	PP7521	PCN190416	4SMS795	LS1027	MP1519	RP9811

Please check availability in current price and stock-list

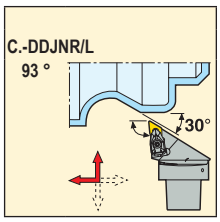
Toolholders for inserts DNGA, DNGM, DNGP, DNMA, DNMG, DNMM and DNMX



- For insert program, see pages 253-259, 304-305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593



Right-hand version shown
kar (κ_r) = 93°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	3/8	33805	C4-DDJNR -27050-11-M	1.57	1.06	1.97	2.36	5.51	-6	-7	0.9	DN..33.
		33806	C4-DDJNL -27050-11-M	1.57	1.06	1.97	2.36	5.51	-6	-7	0.9	DN..33.
	1/2	33811	C4-DDJNR -27055-15-M	1.57	1.06	2.17	4.33	5.71	-6	-7	0.9	DN..43.
		33812	C4-DDJNL -27055-15-M	1.57	1.06	2.17	4.33	5.71	-6	-7	0.9	DN..43.
C5												
	3/8	33807	C5-DDJNR -35060-11-M	1.97	1.38	2.36	2.56	6.50	-6	-7	1.5	DN..33.
		33808	C5-DDJNL -35060-11-M	1.97	1.38	2.36	2.56	6.50	-6	-7	1.5	DN..33.
	1/2	33813	C5-DDJNR -35060-15-M	1.97	1.38	2.36	4.33	6.50	-6	-7	1.5	DN..43.
		33814	C5-DDJNL -35060-15-M	1.97	1.38	2.36	4.33	6.50	-6	-7	1.5	DN..43.
C6												
	3/8	33809	C6-DDJNR -45065-11-M	2.48	1.77	2.56	3.19	7.48	-6	-7	2.4	DN..33.
		33810	C6-DDJNL -45065-11-M	2.48	1.77	2.56	3.19	7.48	-6	-7	2.4	DN..33.
	1/2	33815	C6-DDJNR -45065-15-M	2.48	1.77	2.56	4.33	7.48	-6	-7	2.4	DN..43.
		33816	C6-DDJNL -45065-15-M	2.48	1.77	2.56	4.33	7.48	-6	-7	2.4	DN..43.
C8												
	1/2	26275	C8-DDJNR -55080-15	3.15	2.17	3.15	4.33	9.84	-6	-7	4.9	DN..43.
		26276	C8-DDJNL -55080-15	3.15	2.17	3.15	4.33	9.84	-6	-7	4.9	DN..43.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
-11	FP1508	L84017-T09P	CD09-S	DSN 323	T09P-2	C03007-T09P	S5608
-15	FP2012	L85021-T15P	CD12-S	DDN 444**	T15P-2	C04008-T15P	S6912

Accessories*

Clamp kit
CD09-S09
CD12-S12

Please check availability in current price and stock-list

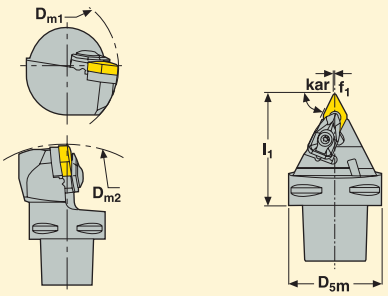
*To be ordered separately
**Shim DDN434 for insert DN..44., to be ordered separately

Toolholders for inserts DNGA, DNGM, DNGP, DNMA, DNMG and DNMM



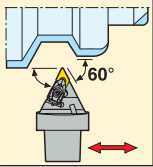
- For insert program, see pages 253-258, 304-305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DDNNN..-M



Neutral version shown
kar (κ_r) = 62.5°

C.-DDNNN..-M
62.5 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	3/8	33823	C4-DDNNN -00050-11-M	1.57	0.02	1.97	5.51	5.51	-5	-9	0.9	DN..33.
	1/2	33826	C4-DDNNN -00055-15-M	1.57	0.02	2.17	5.71	5.71	-5	-9	0.9	DN..43.
C5												
	3/8	33824	C5-DDNNN -00060-11-M	1.97	0.02	2.36	6.50	6.50	-5	-9	1.3	DN..33.
	1/2	33829	C5-DDNNN -00060-15-M	1.97	0.02	2.36	6.50	6.50	-5	-9	1.3	DN..43.
C6												
	3/8	33825	C6-DDNNN -00065-11-M	2.48	0.02	2.56	6.50	7.48	-5	-9	2.2	DN..33.
	1/2	33830	C6-DDNNN -00065-15-M	2.48	0.02	2.56	7.48	7.48	-5	-9	2.2	DN..43.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
-11	FP1508	L84017-T09P	CD09-S	DSN 323	T09P-2	C03007-T09P	S5608	CD09-S09
-15	FP2012	L85021-T15P	CD12-S	DDN 444**	T15P-2	C04008-T15P	S6912	CD12-S12

Please check availability in current price and stock-list

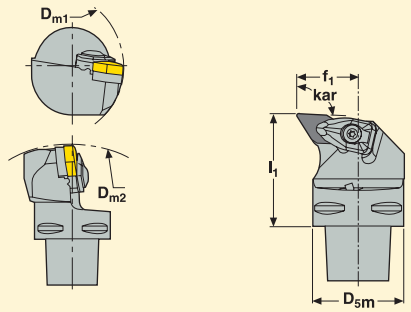
*To be ordered separately
**Shim DDN434 for insert DN..44., to be ordered separately

Toolholders for inserts DNGA, DNGM, DNGP, DNMA, DNMG, DNMM and DNMX



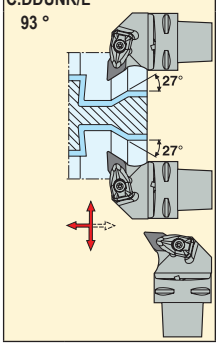
- For insert program, see pages 253-259, 304-305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DDUNR/L



Right-hand version shown
kar (κ_r) = 93°

C.DDUNR/L
93 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	1/2	43503	C4-DDUNR -27050-15	1.57	1.06	1.97	4.33	5.51	-6	-7	1.1	DN..43.
		41482	C4-DDUNL -27050-15	1.57	1.06	1.97	4.33	5.51	-6	-7	1.1	DN..43.
C5												
	1/2	43524	C5-DDUNR -35060-15	1.97	1.38	2.36	4.33	6.50	-6	-7	1.8	DN..43.
		43504	C5-DDUNL -35060-15	1.97	1.38	2.36	4.33	6.50	-6	-7	1.8	DN..43.
C6												
	1/2	43505	C6-DDUNR -45065-15	2.48	1.77	2.56	4.33	7.48	-6	-7	2.9	DN..43.
		43506	C6-DDUNL -45065-15	2.48	1.77	2.56	4.33	7.48	-6	-7	2.9	DN..43.
C8												
	1/2	43507	C8-DDUNR -55080-15	3.15	3.15	3.15	4.33	9.84	-6	-7	5.7	DN..43.
		43508	C8-DDUNL -55080-15	3.15	3.15	3.15	4.33	9.84	-6	-7	5.7	DN..43.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
-15	FP2012	L85021-T15P	CD12-S	DDN 444**	T15P-7	C04008-T15P	S6912	CD12-S12

Please check availability in current price and stock-list

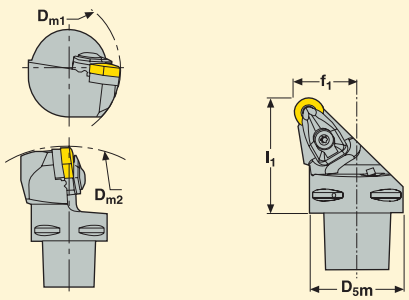
*To be ordered separately
**Shim DDN434 for insert DN..44., to be ordered separately

Toolholders for inserts RNMA and RNMG

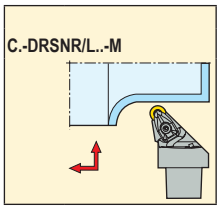


- For insert program, see pages 266
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DRSNR/L..-M



Right-hand version shown



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	1/2	33834	C4-DRSNR -27050-12-M	1.57	1.06	1.97	4.33	5.51	-6	-6	0.9	RNM.43
		33835	C4-DRSNL -27050-12-M	1.57	1.06	1.97	4.33	5.51	-6	-6	0.9	RNM.43
C5												
	1/2	33836	C5-DRSNR -35060-12-M	1.97	1.38	2.36	4.33	6.50	-6	-6	1.5	RNM.43
		33837	C5-DRSNL -35060-12-M	1.97	1.38	2.36	4.33	6.50	-6	-6	1.5	RNM.43
	3/4	33838	C5-DRSNR -35060-19-M	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	RNM.64
		33839	C5-DRSNL -35060-19-M	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	RNM.64
C6												
	1/2	33840	C6-DRSNR -45065-12-M	2.48	1.77	2.56	4.33	7.48	-6	-6	2.0	RNM.43
		33841	C6-DRSNL -45065-12-M	2.48	1.77	2.56	4.33	7.48	-6	-6	2.0	RNM.43
	3/4	33842	C6-DRSNR -45065-19-M	2.48	1.77	2.56	4.76	6.50	-6	-6	2.9	RNM.64
		33843	C6-DRSNL -45065-19-M	2.48	1.77	2.56	4.76	6.50	-6	-6	2.9	RNM.64

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
-12	FP2012	L85021-T15P	CD12-S	DRN44	T15P-2	C04008-T15P	S6912
-19	FP2012	L86026-T20P	CD19-S	DRN64	T20P-7L	C05010-T20P	S7010

Accessories*

Clamp kit
CD12-S12
CD19-S19

Please check availability in current price and stock-list

*To be ordered separately

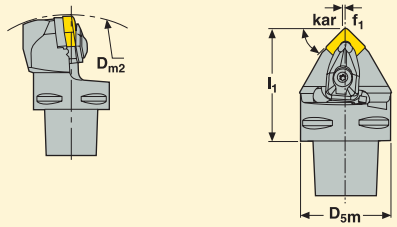
Seco-Capto™ – Toolholders, external

Toolholders for inserts SNGA, SNMA, SNMG, SNMM and SNMP



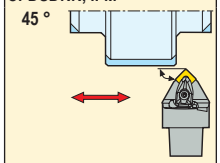
- For insert program, see pages 269-273, 311, 313
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DSDNN..-M
C.-DSDNN



Neutral version shown
kar (κ_r) = 45°

C.-DSDNN, ..-M
45 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m2}	γ_o°	λ_s°	lbs	
C4											
	3/8	33953	C4-DSDNN -00050-09-M	1.57	0.01	1.97	6.50	-6	-6	1.1	SN..32.
	1/2	33954	C4-DSDNN -00050-12-M	1.57	0.01	1.97	5.51	-6	-6	1.1	SN..43.
	5/8	33956	C4-DSDNN -00055-15-M	1.57	0.02	2.17	6.50	-6	-6	1.3	SN..54.
C5											
	1/2	33958	C5-DSDNN -00060-12-M	1.97	0.01	2.36	6.50	-6	-6	2.0	SN..43.
	5/8	33959	C5-DSDNN -00060-15-M	1.97	0.02	2.36	6.50	-6	-6	2.0	SN..54.
	3/4	33960	C5-DSDNN -00065-19-M	1.97	0.02	2.56	6.69	-6	-6	2.0	SN..64.
C6											
	1/2	33961	C6-DSDNN -00065-12-M	2.48	0.01	2.56	7.48	-6	-6	2.6	SN..43.
	5/8	33962	C6-DSDNN -00065-15-M	2.48	0.02	2.56	7.48	-6	-6	2.6	SN..54.
	3/4	33963	C6-DSDNN -00070-19-M	2.48	0.02	2.76	7.68	-6	-6	3.3	SN..64.
C8											
	1	43451	C8-DSDNN -00080-25-09	3.15	0.02	3.15	9.84	-5	-9	5.1	SN..86.

Spare Parts, Parts included in delivery

For size	Clamp kit	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-09	–	FP1508	L84017-T09P	CD09-S	DSN322.5	T09P-2	C03007-T09P	S5608
..-12	–	FP2012	L85021-T15P	CD12-S	DSN444	T15P-2	C04008-T15P	S6912
..-15	–	FP2012	L86026-T20P	CD16-S	DSN546	T20P-7L	C05010-T20P	S7010
..-19	–	FP2012	L86026-T20P	CD19-S	DSN646	T20P-7L	C05010-T20P	S7010
..-25-09	CD25-S25	–	–	–	DSN836	T25P-7	C06012-T25P	–

Accessories*

Clamp kit
CD09-S09
CD12-S12
CD16-S16
CD19-S19
–

Please check availability in current price and stock-list

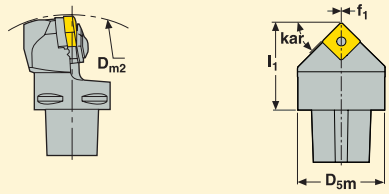
*To be ordered separately
Shim DSN434 for insert SN..44., to be ordered separately
Shim DSN846 for insert SN..85., to be ordered separately

Toolholders for inserts SNGA, SNMA, SNMG, SNMM and SNMP

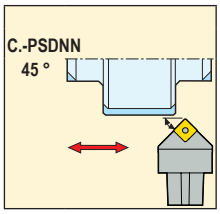


- For insert program, see pages 269-273, 311, 313
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-PSDNN



Neutral version shown
kar (κ_r) = 45°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m2}	γ_o°	λ_s°	lbs	
C5											
	3/4	91674	C5-PSDNN -00060-19	1.97	0.02	2.36	5.12	-6	-6	1.8	SN..64.
C6											
	3/4	91686	C6-PSDNN -00065-19	2.48	0.02	2.56	5.51	-6	-6	2.9	SN..64.
C8											
	1	35369	C8-PSDNN -00080-25	3.15	0.02	3.15	7.87	-6	-6	4.9	SN..85.
C10											
	1	91677	C10-PSDNN-00110-25	3.94	0.04	4.33	7.87	-6	-6	10.8	SN..85.

Spare Parts, Parts included in delivery

For holder	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
..-19	PP7521	PSN190412	4SMS795	LS1027	MP1519	RP9811
..-25	PP1325	PSN250624	5SMS795	LS1236	MP25	RP1312

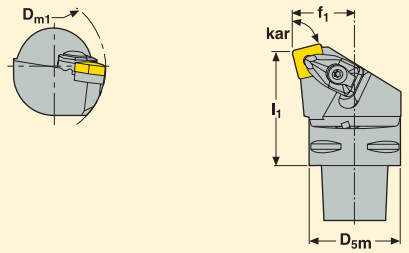
Please check availability in current price and stock-list

Toolholders for inserts SNGA, SNMA, SNMG, SNMM and SNMP

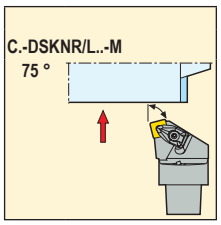


- For insert program, see pages 269-273, 311, 313
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DSKNR/L..-M



Right-hand version shown
kar (κ_r) = 75°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	γ_o°	λ_s°	lbs	
C4											
	3/8	33964	C4-DSKNR -27050-09-M	1.57	1.06	1.97	2.95	-6	-6	1.1	SN..32.
		33966	C4-DSKNL -27050-09-M	1.57	1.06	1.97	2.95	-6	-6	1.1	SN..32.
	1/2	33967	C4-DSKNR -27050-12-M	1.57	1.06	1.97	4.33	-6	-6	1.1	SN..43.
		33968	C4-DSKNL -27050-12-M	1.57	1.06	1.97	4.33	-6	-6	1.1	SN..43.
	5/8	33969	C4-DSKNR -27050-15-M	1.57	1.06	1.97	2.95	-6	-6	1.1	SN..54.
		33970	C4-DSKNL -27050-15-M	1.57	1.06	1.97	2.95	-6	-6	1.1	SN..54.
C5											
	1/2	33973	C5-DSKNR -35060-12-M	1.97	1.38	2.36	4.33	-6	-6	1.8	SN..43.
		33974	C5-DSKNL -35060-12-M	1.97	1.38	2.36	4.33	-6	-6	1.8	SN..43.
	5/8	33975	C5-DSKNR -35060-15-M	1.97	1.38	2.36	4.92	-6	-6	2.0	SN..54.
		33976	C5-DSKNL -35060-15-M	1.97	1.38	2.36	4.92	-6	-6	2.0	SN..54.
	3/4	33980	C5-DSKNR -35060-19-M	1.97	1.38	2.36	4.92	-6	-6	2.0	SN..64.
		33986	C5-DSKNL -35060-19-M	1.97	1.38	2.36	4.92	-6	-6	2.0	SN..64.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
-09	FP1508	L84017-T09P	CD09-S	DSN322.5	T09P-2	C03007-T09P	S5608	CD09-S09
-12	FP2012	L85021-T15P	CD12-S	DSN444**	T15P-2	C04008-T15P	S6912	CD12-S12
-15	FP2012	L86026-T20P	CD16-S	DSN546	T20P-7L	C05010-T20P	S7010	CD16-S16
-19	FP2012	L86026-T20P	CD19-S	DSN646	T20P-7L	C05010-T20P	S7010	CD19-S19

Please check availability in current price and stock-list

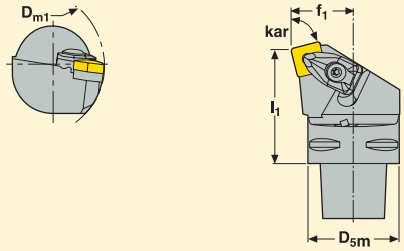
*To be ordered separately
**Shim DSN434 for insert SN..44., to be ordered separately

Toolholders for inserts SNGA, SNMA, SNMG, SNMM and SNMP

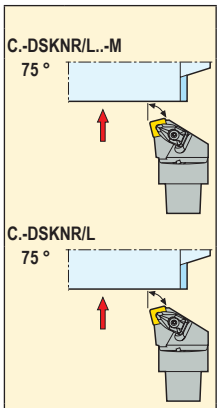


- For insert program, see pages 269-273, 311, 313
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DSKNR/L..-M
C.-DSKNR/L



Right-hand version shown
kar (κ_r) = 75°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	γ_o°	λ_s°	lbs	
C6											
	1/2	33987	C6-DSKNR -45065-12-M	2.48	1.77	2.56	4.33	-6	-6	3.3	SN..42.
		33988	C6-DSKNL -45065-12-M	2.48	1.77	2.56	4.33	-6	-6	3.3	SN..42.
	5/8	33989	C6-DSKNR -45065-15-M	2.48	1.77	2.56	4.92	-6	-6	3.3	SN..54.
		33991	C6-DSKNL -45065-15-M	2.48	1.77	2.56	4.92	-6	-6	3.3	SN..54.
	3/4	33998	C6-DSKNR -45065-19-M	2.48	1.77	2.56	4.92	-6	-6	3.3	SN..64
		34000	C6-DSKNL -45065-19-M	2.48	1.77	2.56	4.92	-6	-6	3.3	SN..64
C8											
	3/4	43510	C8-DSKNR -55080-19	3.15	2.17	3.15	4.92	-6	-6	5.7	SN..64
		43511	C8-DSKNL -55080-19	3.15	2.17	3.15	4.92	-6	-6	5.7	SN..64
	1	43456	C8-DSKNR -55080-25-09	3.15	2.17	3.15	4.92	-6	-6	6.2	SN..86.
		43460	C8-DSKNL -55080-25-09	3.15	2.17	3.15	4.92	-6	-6	6.2	SN..86.

Spare Parts, Parts included in delivery

For size	Clamp kit	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
-12	–	FP2012	L85021-T15P	CD12-S	DSN 444*	T15P-2	C04008-T15P	S6912
-15	–	FP2012	L86026-T20P	CD16-S	DSN 546	T20P-7L	C05010-T20P	S7010
-19	–	FP2012	L86026-T20P	CD19-S	DSN 646	T20P-7L	C05010-T20P	S7010
-25	CD25-S25	–	–	–	DSN 836***	T25P-7	C06012-T25P	–

Accessories*

Clamp kit
CD12-S12
CD16-S16
CD19-S19
–

Please check availability in current price and stock-list

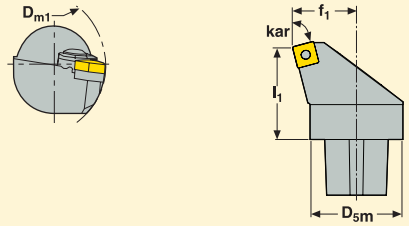
*To be ordered separately
**Shim DSN434 for insert SN..44., to be ordered separately
***Shim DSN846 for insert SN..85., to be ordered separately

Toolholders for inserts SNGA, SNMA, SNMG, SNMM and SNMP

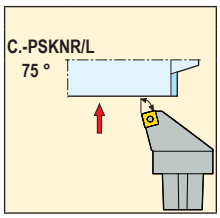


- For insert program, see pages 269-273, 311
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-PSKNR/L



Right-hand version shown
kar (κ_r) = 75°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	γ_o°	λ_s°	lbs	
C6											
	3/4	91681	C6-PSKNR -45065-19	2.48	1.77	2.56	3.94	-6	-6	3.1	SN..64.
		91680	C6-PSKNL -45065-19	2.48	1.77	2.56	3.94	-6	-6	3.1	SN..64.
C8											
	3/4	35364	C8-PSKNR -55080-19	3.15	2.17	3.15	4.72	-6	-6	7.5	SN..64.
		35366	C8-PSKNL -55080-19	3.15	2.17	3.15	4.72	-6	-6	7.5	SN..64.
	1	35367	C8-PSKNR -55080-25	3.15	2.17	3.15	7.09	-6	-6	7.3	SN..85.
		35368	C8-PSKNL -55080-25	3.15	2.17	3.15	7.09	-6	-6	7.3	SN..85.

Spare Parts, Parts included in delivery

For holder	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
..-19	PP7521	PSN190412	4SMS795	LS1027	MP1519	RP9811
..-25	PP1325	PSN250624	5SMS795	LS1236	MP25	RP1312

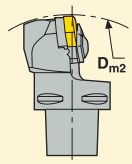
Please check availability in current price and stock-list

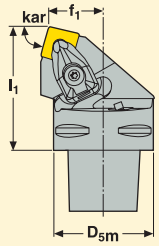
Toolholders for inserts SNGA, SNMA, SNMG, SNMM and SNMP



- For insert program, see pages 269-273, 311
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

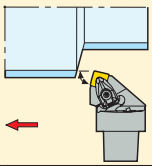
C.-DSRNR/L..-M





Right-hand version shown
kar (κ_r) = 75°

C.-DSRNR/L..-M
75 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m2}	γ_o°	λ_s°	lbs	
C4											
	3/8	33844	C4-DSRNR -22050-09-M	1.57	0.87	1.97	6.50	-6	-6	1.1	SN..32.
		33845	C4-DSRNL -22050-09-M	1.57	0.87	1.97	6.50	-6	-6	1.1	SN..32.
	1/2	33846	C4-DSRNR -22050-12-M	1.57	0.87	1.97	5.51	-6	-6	0.9	SN..43.
		33848	C4-DSRNL -22050-12-M	1.57	0.87	1.97	5.51	-6	-6	0.9	SN..43.
	5/8	33849	C4-DSRNR -22055-15-M	1.57	0.87	2.17	6.50	-6	-6	1.1	SN..54.
		33850	C4-DSRNL -22055-15-M	1.57	0.87	2.17	6.50	-6	-6	1.1	SN..54.
C5											
	1/2	33911	C5-DSRNR -27060-12-M	1.97	1.06	2.36	6.50	-6	-6	1.5	SN..43.
		33912	C5-DSRNL -27060-12-M	1.97	1.06	2.36	6.50	-6	-6	1.5	SN..43.
	5/8	33913	C5-DSRNR -27060-15-M	1.97	1.06	2.36	6.50	-6	-6	2.0	SN..54.
		33914	C5-DSRNL -27060-15-M	1.97	1.06	2.36	6.50	-6	-6	2.0	SN..54.
	3/4	33915	C5-DSRNR -27060-19-M	1.97	1.06	2.36	6.50	-6	-6	2.0	SN..64.
		33916	C5-DSRNL -27060-19-M	1.97	1.06	2.36	6.50	-6	-6	2.0	SN..64.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
-09	FP1508	L84017-T09P	CD09-S	DSN322.5	T09P-2	C03007-T09P	S5608	CD09-S09
-12	FP2012	L85021-T15P	CD12-S	DSN444**	T15P-2	C04008-T15P	S6912	CD12-S12
-15	FP2012	L86026-T20P	CD16-S	DSN546	T20P-7L	C05010-T20P	S7010	CD16-S16
-19	FP2012	L86026-T20P	CD19-S	DSN646	T20P-7L	C05010-T20P	S7010	CD19-S19

Please check availability in current price and stock-list

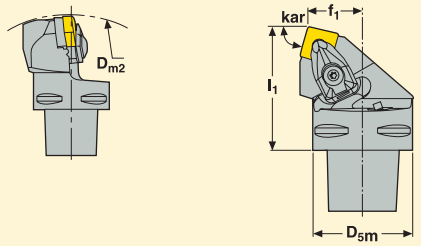
*To be ordered separately
**Shim DSN434 for insert SN..44., to be ordered separately

Toolholders for inserts SNGA, SNMA, SNMG, SNMM and SNMP



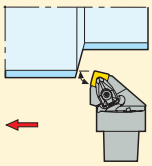
- For insert program, see pages 269-273, 311, 313
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DSRNR/L..-M
C.-DSRNR/L

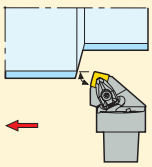


Right-hand version shown
kar (κ_r) = 75°

C.-DSRNR/L..-M
75 °



C.-DSRNR/L
75 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m2}	γ_o°	λ_s°	lbs	
C6											
	1/2	33917	C6-DSRNR -35065-12-M	2.48	1.38	2.56	7.48	-6	-6	2.6	SN..43.
		33918	C6-DSRNL -35065-12-M	2.48	1.38	2.56	7.48	-6	-6	2.6	SN..43.
	5/8	33919	C6-DSRNR -35065-15-M	2.48	1.38	2.56	7.48	-6	-6	2.6	SN..54.
		33920	C6-DSRNL -35065-15-M	2.48	1.38	2.56	7.48	-6	-6	2.6	SN..54.
	3/4	33921	C6-DSRNR -35065-19-M	2.48	1.38	2.56	7.48	-6	-6	2.6	SN..64.
		33922	C6-DSRNL -35065-19-M	2.48	1.38	2.56	7.48	-6	-6	2.6	SN..64.
C8	3/4	39384	C8-DSRNR -45080-19	3.15	1.77	3.15	9.84	-6	-6	5.3	SN..64.
		39385	C8-DSRNL -45080-19	3.15	1.77	3.15	9.84	-6	-6	5.3	SN..64.
	1	43447	C8-DSRNR -45080-25-09	3.15	1.77	3.15	9.84	-6	-6	5.5	SN..86.
		43448	C8-DSRNL -45080-25-09	3.15	1.77	3.15	9.84	-6	-6	5.5	SN..86.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-12	FP2012	L85021-T15P	CD12-S	DSN444**	T15P-2	C04008-T15P	S6912
..-15	FP2012	L86026-T20P	CD16-S	DSN546	T20P-7L	C05010-T20P	S7010
..-19	FP2012	L86026-T20P	CD19-S	DSN646	T20P-7L	C05010-T20P	S7010
C8-19	FP2012	L86026-T20P	CD19-S	DSN646	T20P-7	C05010-T20P	S7010
C8-25-09	–	–	–	DSN836***	T25P-7	C06012-T25P	–

Accessories*

Clamp kit
CD12-S12
CD16-S16
CD19-S19
CD19-S19
CD25-S25

Please check availability in current price and stock-list

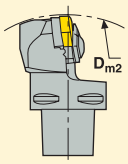
*To be ordered separately
**Shim DSN434 for insert SN..44., to be ordered separately
***Shim DSN846 for insert SN..85., to be ordered separately

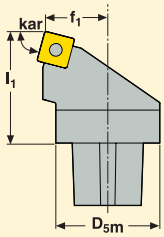
Toolholders for inserts SNGA, SNMA, SNMG, SNMM and SNMP



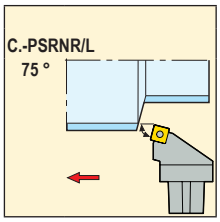
- For insert program, see pages 269-273, 311
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-PSRNR/L





Right-hand version shown
kar (κ_r) = 75°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m2}	γ_o°	λ_s°	lbs	
C5											
	3/4	29615	C5-PSRNR -27060-19	1.97	1.06	2.36	5.12	-6	-6	2.0	SN..64.
		29616	C5-PSRNL -27060-19	1.97	1.06	2.36	5.12	-6	-6	2.0	SN..64.
C6											
	3/4	91683	C6-PSRNR -35065-19	2.48	1.38	2.56	6.30	-6	-6	3.1	SN..64.
		91682	C6-PSRNL -35065-19	2.48	1.38	2.56	6.30	-6	-6	3.1	SN..64.
C8											
	3/4	35361	C8-PSRNR -45080-19	3.15	1.77	3.15	7.87	-6	-6	7.5	SN..64.
		35363	C8-PSRNL -45080-19	3.15	1.77	3.15	7.87	-6	-6	7.5	SN..64.
	1	91691	C8-PSRNR -45080-25	3.15	1.77	3.15	8.66	-6	-6	7.5	SN..85.
		91684	C8-PSRNL -45080-25	3.15	1.77	3.15	8.66	-6	-6	7.5	SN..85.
C10											
	1	91679	C10-PSRNR-58110-25	3.94	2.28	4.33	12.60	-6	-6	11.7	SN..85.
		91678	C10-PSRNL-58110-25	3.94	2.28	4.33	12.60	-6	-6	11.7	SN..85.

Spare Parts, Parts included in delivery

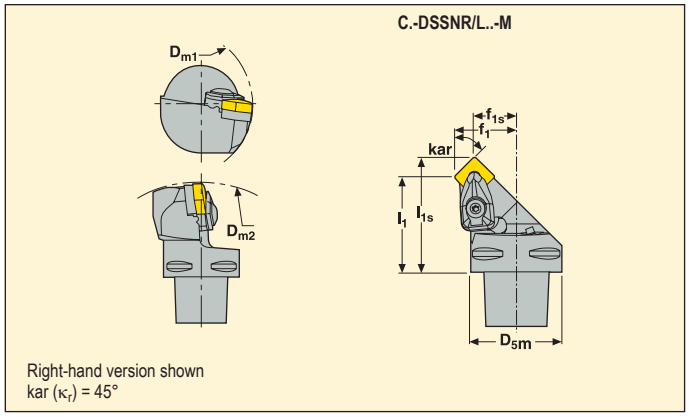
For holder	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
..-19	PP7521	PSN190412	4SMS795	LS1027	MP1519	RP9811
C8-..-25	PP1325	PSN250624	5SMS795	LS1236	MP25	RP1312
C10-..-25	PP1325	PSN250624	5SMS795	LS1236	MP25	RP1312

Please check availability in current price and stock-list

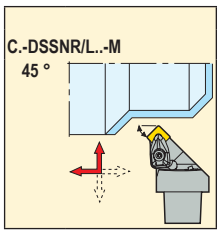
Toolholders for inserts SNGA, SNMA, SNMG, SNMM and SNP



- For insert program, see pages 269-273, 311, 313
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593



Right-hand version shown
kar (κ_r) = 45°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	f_{1s}	l_1	l_{1s}	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4														
	3/8	33923	C4-DSSNR -27044-09-M	1.57	1.06	0.82	1.73	1.97	2.95	6.50	-8	0	0.9	SN..32.
		33924	C4-DSSNL -27044-09-M	1.57	1.06	0.82	1.73	1.97	2.95	6.50	-8	0	0.9	SN..32.
	1/2	33926	C4-DSSNR -27042-12-M	1.57	1.06	0.74	1.65	1.98	4.33	5.51	-8	0	0.9	SN..43.
		33929	C4-DSSNL -27042-12-M	1.57	1.06	0.74	1.65	1.98	4.33	5.51	-8	0	0.9	SN..43.
	5/8	33930	C4-DSSNR -27045-15-M	1.57	1.06	0.66	1.77	2.17	4.92	5.71	-8	0	1.1	SN..54.
		33932	C4-DSSNL -27045-15-M	1.57	1.06	0.66	1.77	2.17	4.92	5.71	-8	0	1.1	SN..54.
C5														
	1/2	33940	C5-DSSNR -35052-12-M	1.97	1.38	1.05	2.05	2.37	4.33	6.50	-8	0	1.5	SN..43.
		33941	C5-DSSNL -35052-12-M	1.97	1.38	1.05	2.05	2.37	4.33	6.50	-8	0	1.5	SN..43.
	5/8	33942	C5-DSSNR -35050-15-M	1.97	1.38	0.98	1.97	2.37	4.92	6.50	-8	0	1.3	SN..54.
		33943	C5-DSSNL -35050-15-M	1.97	1.38	0.98	1.97	2.37	4.92	6.50	-8	0	1.3	SN..54.
	3/4	33944	C5-DSSNR -35048-19-M	1.97	1.38	0.89	1.89	2.38	4.92	6.50	-8	0	2.0	SN..64.
		33945	C5-DSSNL -35048-19-M	1.97	1.38	0.89	1.89	2.38	4.92	6.50	-8	0	2.0	SN..64.

Spare Parts, Parts included in delivery

Accessories*

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring	Clamp kit
-09	FP1508	L84017-T09P	CD09-S	DSN322.5	T09P-2	C03007-T09P	S5608	CD09-S09
-12	FP2012	L85021-T15P	CD12-S	DSN444**	T15P-2	C04008-T15P	S6912	CD12-S12
-15	FP2012	L86026-T20P	CD16-S	DSN546	T20P-7L	C05010-T20P	S7010	CD16-S16
-19	FP2012	L86026-T20P	CD19-S	DSN646	T20P-7L	C05010-T20P	S7010	CD19-S19

Please check availability in current price and stock-list

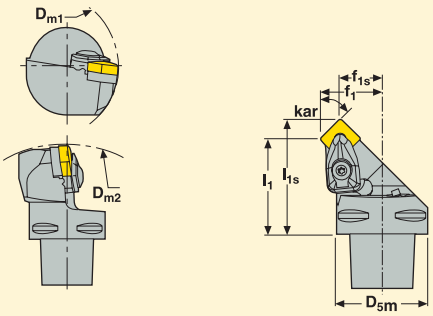
*To be ordered separately
**Shim DSN120416 for insert SN..1206.., to be ordered separately

Toolholders for inserts SNGA, SNMA, SNMG, SNMM and SNMP



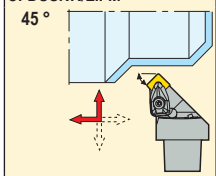
- For insert program, see pages 269-273, 311, 313
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DSSNR/L..-M



Right-hand version shown
kar (κ_r) = 45°

C.-DSSNR/L..-M
45 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	f_{1s}	l_1	l_{1s}	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C6														
	1/2	33946	C6-DSSNR -45056-12-M	2.48	1.77	1.44	2.20	2.53	4.33	7.48	-8	0	2.4	SN..43.
		33948	C6-DSSNL -45056-12-M	2.48	1.77	1.44	2.20	2.53	4.33	7.48	-8	0	2.4	SN..43.
	5/8	33949	C6-DSSNR -45054-15-M	2.48	1.77	1.37	2.13	2.53	4.92	7.48	-8	0	2.4	SN..54.
		33950	C6-DSSNL -45054-15-M	2.48	1.77	1.37	2.13	2.53	4.92	7.48	-8	0	2.4	SN..54.
	3/4	33951	C6-DSSNR -45052-19-M	2.48	1.77	1.28	2.05	2.54	4.92	7.48	-8	0	2.4	SN..64.
		33952	C6-DSSNL -45052-19-M	2.48	1.77	1.28	2.05	2.54	4.92	7.48	-8	0	2.4	SN..64.
C8	1	43449	C8-DSSNR -55070-25-09	3.15	2.17	1.52	2.76	3.41	5.91	10.08	-8	0	5.1	SN..86.
		43450	C8-DSSNL -55070-25-09	3.15	2.17	1.52	2.76	3.41	5.91	10.08	-8	0	5.1	SN..86.

Spare Parts, Parts included in delivery

For size	Clamp kit	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-12	–	FP2012	L85021-T15P	CD12-S	DSN444**	T15P-2	C04008-T15P	S6912
..-15	–	FP2012	L86026-T20P	CD16-S	DSN546	T20P-7L	C05010-T20P	S7010
..-19	–	FP2012	L86026-T20P	CD19-S	DSN646	T20P-7L	C05010-T20P	S7010
..-25-09	CD25-S25	–	–	–	DSN836***	T25P-7	C06012-T25P	–

Accessories*

Clamp kit
CD12-S12
CD16-S16
CD19-S19
CD25-S25

Please check availability in current price and stock-list

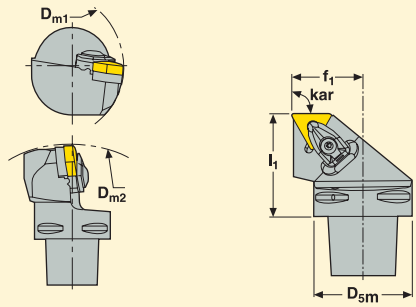
*To be ordered separately
**Shim DSN434 for insert SN..44., to be ordered separately
***Shim DSN846 for insert SN..85., to be ordered separately

Toolholders for inserts TNGA, TNMA, TNMG, TNMN and TNMP



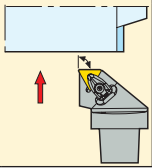
- For insert program, see pages 282-286, 317
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DTFNR/L..-M



Right-hand version shown
kar (κ_r) = 90°

C.-DTFNR..-M
90 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	3/8	34043	C4-DTFNR -27050-16-M	1.57	1.06	1.97	4.33	5.51	-6	-6	0.9	TN..33.
		34047	C4-DTFNL -27050-16-M	1.57	1.06	1.97	4.33	5.51	-6	-6	0.9	TN..33.
	1/2	34048	C4-DTFNR -27050-22-M	1.57	1.06	1.97	4.33	5.51	-6	-6	1.1	TN..43.
		34049	C4-DTFNL -27050-22-M	1.57	1.06	1.97	4.33	5.51	-6	-6	1.1	TN..43.
C5												
	3/8	34050	C5-DTFNR -35060-16-M	1.97	1.38	2.36	4.33	6.50	-6	-6	1.8	TN..33.
		34051	C5-DTFNL -35060-16-M	1.97	1.38	2.36	4.33	6.50	-6	-6	1.8	TN..33.
	1/2	34052	C5-DTFNR -35060-22-M	1.97	1.38	2.36	4.33	6.50	-6	-6	2.0	TN..43.
		34053	C5-DTFNL -35060-22-M	1.97	1.38	2.36	4.33	6.50	-6	-6	2.0	TN..43.
C6												
	3/8	34054	C6-DTFNR -45065-16-M	2.48	1.77	2.56	4.33	7.48	-6	-6	3.3	TN..33.
		34055	C6-DTFNL -45065-16-M	2.48	1.77	2.56	4.33	7.48	-6	-6	3.3	TN..33.
	1/2	34056	C6-DTFNR -45065-22-M	2.48	1.77	2.56	4.33	7.48	-6	-6	2.9	TN..43.
		34057	C6-DTFNL -45065-22-M	2.48	1.77	2.56	4.33	7.48	-6	-6	2.9	TN..43.
	5/8	34058	C6-DTFNR -45065-27-M	2.48	1.77	2.56	4.76	6.50	-6	-6	3.1	TN..54.
		34060	C6-DTFNL -45065-27-M	2.48	1.77	2.56	4.76	6.50	-6	-6	3.1	TN..54.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
-16	FP1508	L84017-T09P	CD09-S	DTN 322.5	T09P-2	C03007-T09P	S5608
-22	FP2012	L85021-T15P	CD12-S	DTN 444	T15P-2	C04008-T15P	S6912
-27	FP2012	L86026-T20P	CD16-S	DTN 534	T20P-7L	C05010-T20P	S7010

Accessories*

Clamp kit
CD09-S09
CD12-S12
CD16-S16

Please check availability in current price and stock-list

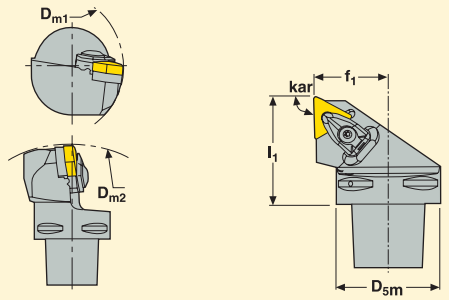
*To be ordered separately

Toolholders for inserts TNGA, TNMA, TNMG, TNMN and TNMP



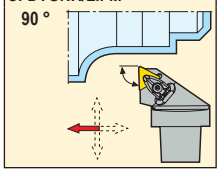
- For insert program, see pages 282-286, 317
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DTGNR/L..-M



Right-hand version shown
kar (κ_r) = 90°

C.-DTGNR/L..-M
90 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	1/2	34020	C4-DTGNR -27050-22-M	1.57	1.06	1.97	4.33	5.51	-6	-6	1.1	TN..43.
		34021	C4-DTGNL -27050-22-M	1.57	1.06	1.97	4.33	5.51	-6	-6	1.1	TN..43.
C5												
	1/2	34024	C5-DTGNR -35060-22-M	1.97	1.38	2.36	4.33	6.50	-6	-6	1.8	TN..43.
		34034	C5-DTGNL -35060-22-M	1.97	1.38	2.36	4.33	6.50	-6	-6	1.8	TN..43.
C6												
	3/8	34036	C6-DTGNR -45065-16-M	2.48	1.77	2.56	4.33	7.48	-6	-6	2.9	TN..33.
		34037	C6-DTGNL -45065-16-M	2.48	1.77	2.56	4.33	7.48	-6	-6	2.9	TN..33.
	5/8	34040	C6-DTGNR -45065-27-M	2.48	1.77	2.56	4.76	6.50	-6	-6	2.9	TN..54.
		34041	C6-DTGNL -45065-27-M	2.48	1.77	2.56	4.76	6.50	-6	-6	2.9	TN..54.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
-16	FP1508	L84017-T09P	CD09-S	DTN 322.5	T09P-2	C03007-T09P	S5608
-22	FP2012	L85021-T15P	CD12-S	DTN 444	T15P-2	C04008-T15P	S6912
-27	FP2012	L86026-T20P	CD16-S	DTN 534	T20P-7L	C05010-T20P	S7010

Accessories*

Clamp kit
CD09-S09
CD12-S12
CD16-S16

Please check availability in current price and stock-list

*To be ordered separately

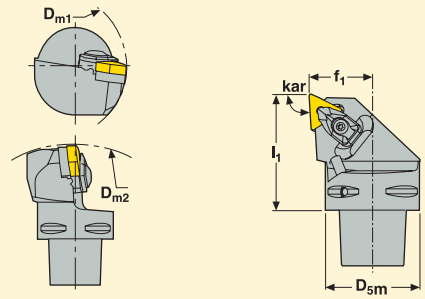
Seco-Capto™ – Toolholders, external

Toolholders for inserts TNGA, TNMA, TNMG, TNMN, TNMP and TNMX



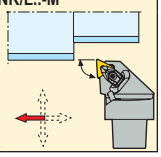
- For insert program, see pages 282-287, 317
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DTJNR/L..-M



Right-hand version shown
kar (κ_r) = 93°

C.-DTJNR/L..-M
93 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	3/8	34003	C4-DTJNR -27050-16-M	1.57	1.06	1.97	4.33	5.51	-6	-6	0.9	TN..33.
		34004	C4-DTJNL -27050-16-M	1.57	1.06	1.97	4.33	5.51	-6	-6	0.9	TN..33.
	1/2	34005	C4-DTJNR -27050-22-M	1.57	1.06	1.97	4.33	5.51	-6	-6	1.1	TN..43.
		34006	C4-DTJNL -27050-22-M	1.57	1.06	1.97	4.33	5.51	-6	-6	1.1	TN..43.
C5												
	3/8	34007	C5-DTJNR -35060-16-M	1.97	1.38	2.36	4.33	6.50	-6	-6	1.8	TN..33.
		34010	C5-DTJNL -35060-16-M	1.97	1.38	2.36	4.33	6.50	-6	-6	1.8	TN..33.
	1/2	34011	C5-DTJNR -35060-22-M	1.97	1.38	2.36	4.33	6.50	-6	-6	1.8	TN..43.
		34012	C5-DTJNL -35060-22-M	1.97	1.38	2.36	4.33	6.50	-6	-6	1.8	TN..43.
C6												
	3/8	34013	C6-DTJNR -45065-16-M	2.48	1.77	2.56	4.33	7.48	-6	-6	2.9	TN..33.
		34014	C6-DTJNL -45065-16-M	2.48	1.77	2.56	4.33	7.48	-6	-6	2.9	TN..33.
	1/2	34015	C6-DTJNR -45065-22-M	2.48	1.77	2.56	4.33	7.48	-6	-6	2.9	TN..43.
		34016	C6-DTJNL -45065-22-M	2.48	1.77	2.56	4.33	7.48	-6	-6	2.9	TN..43.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
-16	FP1508	L84017-T09P	CD09-S	DTN 322.5	T09P-2	C03007-T09P	S5608
-22	FP2012	L85021-T15P	CD12-S	DTN 444	T15P-2	C04008-T15P	S6912

Accessories*

Clamp kit
CD09-S09
CD12-S12

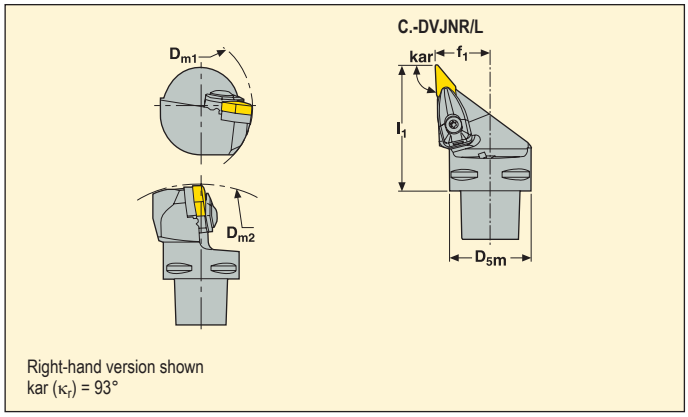
Please check availability in current price and stock-list

*To be ordered separately

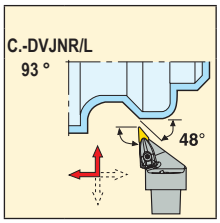
Toolholders for inserts VNGA, VNGP, VNGM, VNMA, VNMP and VNMG



- For insert program, see pages 292-294, 324-325
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593



Right-hand version shown
kar (κ_r) = 93°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	5/16	34061	C4-DVJNR -27055-13	1.57	1.06	2.17	2.36	5.98	-4	-13	1.1	VN..2.53.
		34062	C4-DVJNL -27055-13	1.57	1.06	2.17	2.36	5.98	-4	-13	1.1	VN..2.53.
	3/8	34065	C4-DVJNR -27062-16	1.57	1.06	2.44	2.56	5.98	-4	-13	0.9	VN..33.
		34066	C4-DVJNL -27062-16	1.57	1.06	2.44	2.56	5.98	-4	-13	0.9	VN..33.
C5												
	5/16	34063	C5-DVJNR -35060-13	1.97	1.38	2.36	2.56	6.69	-4	-13	2.0	VN..2.53.
		34064	C5-DVJNL -35060-13	1.97	1.38	2.36	2.56	6.69	-4	-13	2.0	VN..2.53.
	3/8	34067	C5-DVJNR -35065-16	1.97	1.38	2.56	2.56	6.69	-4	-13	1.5	VN..33.
		34068	C5-DVJNL -35065-16	1.97	1.38	2.56	2.56	6.69	-4	-13	1.5	VN..33.
C6												
	3/8	34069	C6-DVJNR -45065-16	2.48	1.77	2.56	3.19	7.48	-4	-13	2.4	VN..33.
		34070	C6-DVJNL -45065-16	2.48	1.77	2.56	3.19	7.48	-4	-13	2.4	VN..33.

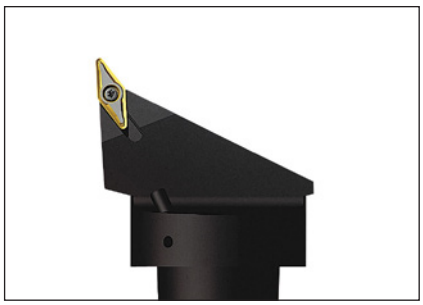
Spare Parts

For	Anvil	Anvil screw	Clamp set	Clamp**	Clamp screw**	Pin**	Spring**	Key
-13	PVN 2.522	CS5008-T09P	CD08-V13	CD08-S	L84017-T09P	FP1508	S5608	T09P-2
-16	DVN 322.5	C03508-T15P	CD19-V16	CD19-S-V16	L85021-T15P	FP2012	S6912	T15P-2

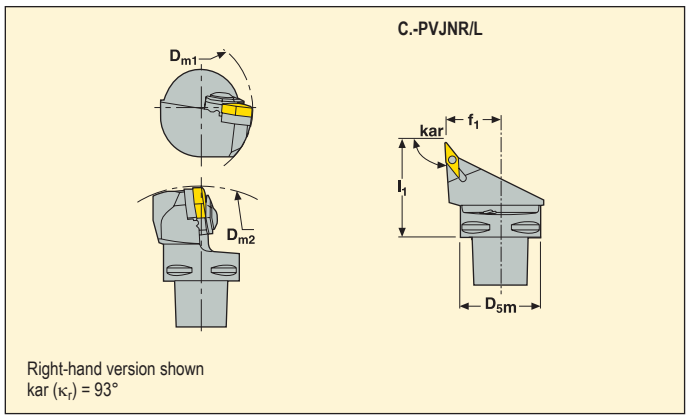
Please check availability in current price and stock-list

**Part of Clamp set

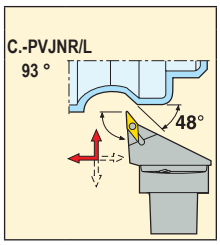
Toolholders for inserts VNMU



- For insert program, see page 294
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593



Right-hand version shown
kar (κ_r) = 93°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	5/16	92033	C4-PVJNR -27050-13	1.57	1.06	1.97	2.95	6.50	-4.5	-13.5	0.9	VNMU2.53.
		92032	C4-PVJNL -27050-13	1.57	1.06	1.97	2.95	6.50	-4.5	-13.5	0.9	VNMU2.53.
C5												
	5/16	92035	C5-PVJNR -35060-13	1.97	1.38	2.36	3.74	6.50	-4.5	-13.5	1.5	VNMU2.53.
		92034	C5-PVJNL -35060-13	1.97	1.38	2.36	3.74	6.50	-4.5	-13.5	1.5	VNMU2.53.

Spare Parts, Parts included in delivery

For size	Insert key	Insert pin	Insert shim
-13	T09P-2	PL1403-T09P	PVN2.522

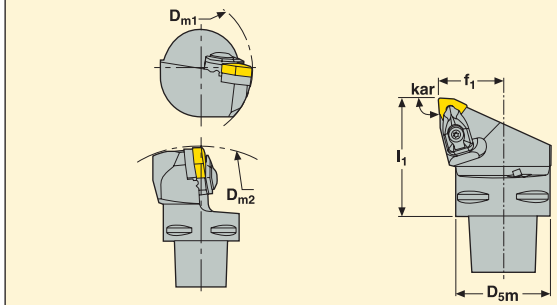
Please check availability in current price and stock-list

Toolholders for inserts WNGP, WNMA, WNMG, WNMP and WNMM



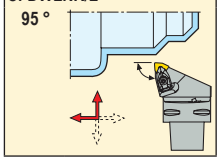
- For insert program, see pages 295-299, 326-327
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-DWLNR/L



Right-hand version shown
kar (κ_r) = 95°

C.-DWLNR/L
95 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	3/8	34071	C4-DWLNR -27050-06	1.57	1.06	1.97	2.36	5.51	-6	-6	0.9	WN..33.
		34072	C4-DWLNL -27050-06	1.57	1.06	1.97	2.36	5.51	-6	-6	0.9	WN..33.
	1/2	34079	C4-DWLNR -27050-08	1.57	1.06	1.97	4.33	5.51	-6	-6	0.9	WN..43.
		34080	C4-DWLNL -27050-08	1.57	1.06	1.97	4.33	5.51	-6	-6	0.9	WN..43.
C5												
	3/8	34082	C5-DWLNR -35060-06	1.97	1.38	2.36	2.56	6.50	-6	-6	1.1	WN..33.
		34084	C5-DWLNL -35060-06	1.97	1.38	2.36	2.56	6.50	-6	-6	1.1	WN..33.
	1/2	34086	C5-DWLNR -35060-08	1.97	1.38	2.36	4.33	6.50	-6	-6	1.5	WN..43.
		34087	C5-DWLNL -35060-08	1.97	1.38	2.36	4.33	6.50	-6	-6	1.5	WN..43.
C6												
	3/8	34088	C6-DWLNR -45065-06	2.48	1.77	2.56	3.19	7.48	-6	-6	2.9	WN..33.
		34089	C6-DWLNL -45065-06	2.48	1.77	2.56	3.19	7.48	-6	-6	2.9	WN..33.
	1/2	34090	C6-DWLNR -45065-08	2.48	1.77	2.56	4.33	7.48	-6	-6	2.9	WN..43.
		34091	C6-DWLNL -45065-08	2.48	1.77	2.56	4.33	7.48	-6	-6	2.9	WN..43.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
..-06	FP1508	L84017-T09P	CD09-S	DWN322.5	T09P-2	C03007-T09P	S5608
..-08	FP2012	L85021-T15P	CD12-S	DWN434	T15P-2	C04008-T15P	S6912

Accessories*

Clamp kit	Insert shim
CD09-S09	–
CD12-S12	DWN424

Please check availability in current price and stock-list

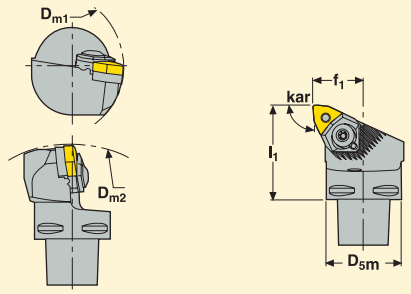
*Ordered separately
Insert shim WAI423 for insert WN..44. ordered separately

Toolholders for inserts WNGA, WNGP, WNMA, WNMG, WNMP and WNMM



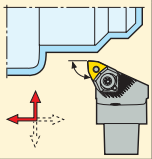
- For insert program, see pages 295-299, 326-327
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-PWLNR/L



Right-hand version shown
kar (κ_r) = 95°

C.-PWLNR/L
95 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	3/8	57218	C4-PWLNR -27050-06	1.57	1.06	1.97	2.95	6.50	-6	-6	0.9	WN..33.
		92036	C4-PWLNL -27050-06	1.57	1.06	1.97	2.95	6.50	-6	-6	0.9	WN..33.
	1/2	69455	C4-PWLNL -27050-08	1.57	1.06	1.97	2.95	6.50	-6	-6	0.9	WN..43.
		92037	C4-PWLNR -27050-08	1.57	1.06	1.97	2.95	6.50	-6	-6	0.9	WN..43.
C5												
	3/8	92039	C5-PWLNR -35060-06	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	WN..33.
		89504	C5-PWLNL -35060-06	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	WN..33.
	1/2	75111	C5-PWLNR -35060-08	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	WN..43.
		75112	C5-PWLNL -35060-08	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	WN..43.
C6												
	1/2	12511	C6-PWLNR -45065-08	2.48	1.77	2.56	4.76	6.50	-6	-6	2.9	WN..43.
		12512	C6-PWLNL -45065-08	2.48	1.77	2.56	4.76	6.50	-6	-6	2.9	WN..43.

Spare Parts, Parts included in delivery

Accessories*

For size	Insert shim	Setting screw	Shim pin	Wedge clamp	Wedge key	Wedge screw	Shim key
..-06	WAE323**	L82511-T07P	PP2109-T09P	WNW06HD	T20P-7	WS1920-T20P	T09P-2
..-08	WAE433***	L82511-T07P	PP2015-1-T15P	WNW08HD	T25P-7	WS2325-T25P	T15P-2

Please check availability in current price and stock-list

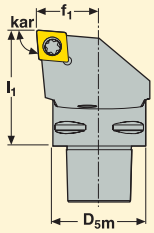
*Ordered separately
**Shim WAI423 for insert WN..44. ordered separately
***Wdege WNW08 for insert WNMM43. ordered separately

Toolholders for inserts CCGT, CCGW, CCMT and CCMW



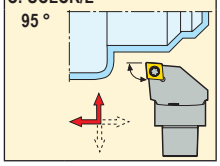
- For insert program, see pages 236, 238-240, 300, 328
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-SCLCR/L



Right-hand version shown
kar (κ_r) = 95°

C.-SCLCR/L 95 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C3										
	3/8	94076	C3-SCLCR -22040-09	1.26	0.87	1.57	0	0	0.7	CC..32.5.
		94065	C3-SCLCL -22040-09	1.26	0.87	1.57	0	0	0.7	CC..32.5.
	1/2	94077	C3-SCLCR -22040-12	1.26	0.87	1.57	0	0	0.7	CC..43.
		94067	C3-SCLCL -22040-12	1.26	0.87	1.57	0	0	0.7	CC..43.
C4										
	3/8	83466	C4-SCLCR -27050-09	1.57	1.06	1.97	0	0	1.1	CC..32.5.
		69013	C4-SCLCL -27050-09	1.57	1.06	1.97	0	0	1.1	CC..32.5.
	1/2	94168	C4-SCLCR -27050-12	1.57	1.06	1.97	0	0	1.1	CC..43.
		94163	C4-SCLCL -27050-12	1.57	1.06	1.97	0	0	1.1	CC..43.
C5										
	3/8	94277	C5-SCLCR -35060-09	1.97	1.38	2.36	0	0	1.8	CC..32.5.
		94261	C5-SCLCL -35060-09	1.97	1.38	2.36	0	0	1.8	CC..32.5.
	1/2	94278	C5-SCLCR -35060-12	1.97	1.38	2.36	0	0	1.5	CC..43.
		94265	C5-SCLCL -35060-12	1.97	1.38	2.36	0	0	1.5	CC..43.
C6										
	3/8	94312	C6-SCLCR -45065-09	2.48	1.77	2.56	0	0	3.1	CC..32.5.
		94310	C6-SCLCL -45065-09	2.48	1.77	2.56	0	0	3.1	CC..32.5.
	1/2	94313	C6-SCLCR -45065-12	2.48	1.77	2.56	0	0	3.1	CC..43.
		94311	C6-SCLCL -45065-12	2.48	1.77	2.56	0	0	3.1	CC..43.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-09	T15P-2	C03512-T15P	SCN322	CA3507
-12	T15P-2	C04014-T15P	SCN42.52	CA4010

Accessories*

Shim key
9/64SMS875
4SMS795

Please check availability in current price and stock-list

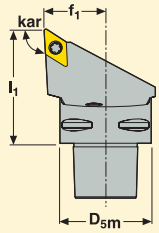
*Ordered separately

Toolholders for inserts DCGT, DCMT, DCMW and DCMX

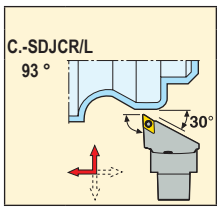


- For insert program, see pages 250-253, 303, 329
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-SDJCR/L



Right-hand version shown
kar (κ_r) = 93°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C3										
	3/8	91724	C3-SDJCR -22040-11	1.26	0.87	1.57	0	0	0.7	DC..32.5.
		91725	C3-SDJCL -22040-11	1.26	0.87	1.57	0	0	0.7	DC..32.5.
C4										
	1/4	94172	C4-SDJCR -27050-07	1.57	1.06	1.97	0	0	1.1	DC..21.5.
		94171	C4-SDJCL -27050-07	1.57	1.06	1.97	0	0	1.1	DC..21.5.
	3/8	80768	C4-SDJCR -27050-11	1.57	1.06	1.97	0	0	0.9	DC..32.5.
		84487	C4-SDJCL -27050-11	1.57	1.06	1.97	0	0	0.9	DC..32.5.
C5										
	3/8	94282	C5-SDJCR -35060-11	1.97	1.38	2.36	0	0	1.5	DC..32.5.
		94281	C5-SDJCL -35060-11	1.97	1.38	2.36	0	0	1.5	DC..32.5.
C6										
	3/8	23659	C6-SDJCR -45065-11	2.48	1.77	2.56	0	0	2.4	DC..32.5.
		23658	C6-SDJCL -45065-11	2.48	1.77	2.56	0	0	2.4	DC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
..-07	T07P-2	C02506-T07P	–	–
..-11	T15P-2	C03512-T15P	126.19-620	CA3507

Accessories*

Shim key
–
9/64SMS875

Please check availability in current price and stock-list

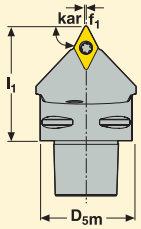
*Ordered separately

Toolholders for inserts DCGT, DCMT, DCGW and DCMW

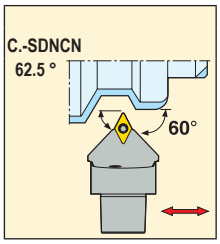


- For insert program, see pages 250-252, 303, 329
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-SDNCN



Neutral version shown
kar (κ_r) = 62.5°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C3										
	3/8	94083	C3-SDNCN -00040-11	1.26	0.02	1.57	0	0	0.44	DC..32.5.
C4										
	3/8	83467	C4-SDNCN -00050-11	1.57	0.02	1.97	0	0	0.88	DC..32.5.
C5										
	3/8	94283	C5-SDNCN -00060-11	1.97	0.02	2.36	0	0	1.32	DC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-11	T15P-2	C03512-T15P	126.19-620	CA3507

Accessories*

Shim key
9/64SMS875

Please check availability in current price and stock-list

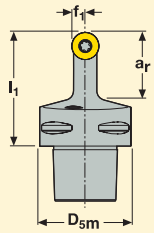
*Ordered separately

Toolholders for inserts RCMT



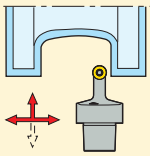
- For insert program, see pages 264
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-SRDCN-..A



Neutral version shown

C.-SRDCN-..A



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	a_r	γ_o°	λ_s°	lbs	
C4											
	0.236	94189	C4-SRDCN -00050-06A	1.57	0.12	1.97	0.47	0	0	0.9	RCMT0602..
	0.315	94190	C4-SRDCN -00050-08A	1.57	0.16	1.97	0.63	0	0	0.9	RCMT0803..
	0.393	94191	C4-SRDCN -00050-10A	1.57	0.20	1.97	0.98	0	0	0.8	RCMT10T3..
	0.472	94192	C4-SRDCN -00050-12A	1.57	0.24	1.97	1.10	0	0	0.9	RCMT1204..

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-06	T07P-2	C02506-T07P	–	–
-08	T09P-2	C03007-T09P	–	–
-10	T15P-2	C03510-T15P	111.19-620	CA3507
-12	T15P-2	C03512-T15P	111.19-621	CA3507

Accessories*

Shim key
–
–
9/64SMS875
9/64SMS875

Please check availability in current price and stock-list

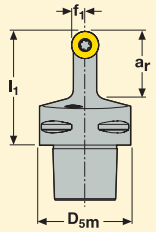
*Ordered separately

Toolholders for inserts RCMT



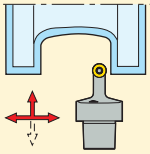
- For insert program, see pages 264
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-SRDCN-..A



Neutral version shown

C.-SRDCN-..A



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	a_r	γ_o°	λ_s°	lbs	
C5											
	0.236	94341	C5-SRDCN -00060-06A	1.97	0.12	2.36	0.47	0	0	1.5	RCMT0602..
	0.315	94342	C5-SRDCN -00060-08A	1.97	0.16	2.36	0.63	0	0	1.5	RCMT0803..
	0.393	94229	C5-SRDCN -00060-10A	1.97	0.20	2.36	0.98	0	0	1.8	RCMT10T3..
	0.472	94344	C5-SRDCN -00060-12A	1.97	0.24	2.36	1.10	0	0	1.3	RCMT1204..
	0.630	94345	C5-SRDCN -00060-16A	1.97	0.31	2.36	1.38	0	0	1.3	RCMT1606..
C6											
	0.393	94314	C6-SRDCN -00065-10A	2.48	0.20	2.56	0.98	0	0	2.4	RCMT10T3..
	0.472	94315	C6-SRDCN -00065-12A	2.48	0.24	2.56	1.10	0	0	2.2	RCMT1204..
	0.630	59781	C6-SRDCN -00065-16A	2.48	0.31	2.56	1.38	0	0	3.0	RCMT1606..

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-06	T07P-2	C02506-T07P	–	–
-08	T09P-2	C03007-T09P	–	–
-10	T15P-2	C03510-T15P	111.19-620	CA3507
-12	T15P-2	C03512-T15P	111.19-621	CA3507
-16	T20P-7	C05013-T20P	SRN53	CA5010

Accessories*

Shim key
–
–
9/64SMS875
9/64SMS875
5SMS795

Please check availability in current price and stock-list

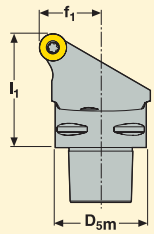
*Ordered separately

Toolholders for inserts RCMT



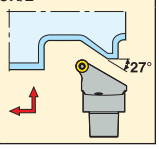
- For insert program, see pages 264
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-SRSCR/L



Right-hand version shown

C.-SRSCR/L



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C4										
	0.236	94199	C4-SRSCR -27050-06	1.57	1.06	1.97	0	0	0.9	RCMT0602..
		94194	C4-SRSCL -27050-06	1.57	1.06	1.97	0	0	0.9	RCMT0602..
	0.315	94200	C4-SRSCR -27050-08	1.57	1.06	1.97	0	0	1.1	RCMT0803..
		94195	C4-SRSCL -27050-08	1.57	1.06	1.97	0	0	1.1	RCMT0803..
	0.393	94201	C4-SRSCR -27050-10	1.57	1.06	1.97	0	0	0.9	RCMT10T3..
		94197	C4-SRSCL -27050-10	1.57	1.06	1.97	0	0	0.9	RCMT10T3..
	0.472	94202	C4-SRSCR -27050-12	1.57	1.06	1.97	0	0	0.9	RCMT1204..
		94198	C4-SRSCL -27050-12	1.57	1.06	1.97	0	0	0.9	RCMT1204..

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-06	T07P-2	C02506-T07P	–	–
-08	T09P-2	C03007-T09P	–	–
-10	T15P-2	C03510-T15P	111.19-620	CA3507
-12	T15P-2	C03512-T15P	111.19-621	CA3507

***Accessories**

Shim key
–
–
9/64SMS875
9/64SMS875

Please check availability in current price and stock-list

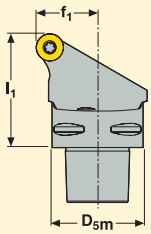
*Ordered separately

Toolholders for inserts RCMT



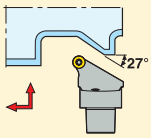
- For insert program, see pages 264
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-SRSCR/L



Right-hand version shown

C.-SRSCR/L



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C5										
	0.236	94353	C5-SRSCR -35060-06	1.97	1.38	2.36	0	0	1.5	RCMT0602..
		94347	C5-SRSCL -35060-06	1.97	1.38	2.36	0	0	1.5	RCMT0602..
	0.315	94354	C5-SRSCR -35060-08	1.97	1.38	2.36	0	0	1.5	RCMT0803..
		94348	C5-SRSCL -35060-08	1.97	1.38	2.36	0	0	1.5	RCMT0803..
	0.393	94355	C5-SRSCR -35060-10	1.97	1.38	2.36	0	0	1.5	RCMT10T3..
		94349	C5-SRSCL -35060-10	1.97	1.38	2.36	0	0	1.5	RCMT10T3..
	0.472	94356	C5-SRSCR -35060-12	1.97	1.38	2.36	0	0	1.8	RCMT1204..
		94350	C5-SRSCL -35060-12	1.97	1.38	2.36	0	0	1.8	RCMT1204..
	0.630	94351	C5-SRSCL -35060-16	1.97	1.38	2.36	0	0	1.8	RCMT1606..
		94357	C5-SRSCR -35060-16	1.97	1.38	2.36	0	0	1.8	RCMT1606..
C6										
	0.393	94323	C6-SRSCR -45065-10	2.48	1.77	2.56	0	0	2.6	RCMT10T3..
		59783	C6-SRSCL -45065-10	2.48	1.77	2.56	0	0	2.6	RCMT10T3..
	0.472	94324	C6-SRSCR -45065-12	2.48	1.77	2.56	0	0	2.6	RCMT1204..
		94320	C6-SRSCL -45065-12	2.48	1.77	2.56	0	0	2.6	RCMT1204..
	0.630	94325	C6-SRSCR -45065-16	2.48	1.77	2.56	0	0	2.6	RCMT1606..
		59784	C6-SRSCL -45065-16	2.48	1.77	2.56	0	0	2.6	RCMT1606..

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-06	T07P-2	C02506-T07P	–	–
-08	T09P-2	C03007-T09P	–	–
-10	T15P-2	C03510-T15P	111.19-620	CA3507
-12	T15P-2	C03512-T15P	111.19-621	CA3507
-16	T20P-7	C05013-T20P	SRN53	CA5010

Accessories*

Shim key
–
–
9/64SMS875
9/64SMS875
5SMS795

Please check availability in current price and stock-list

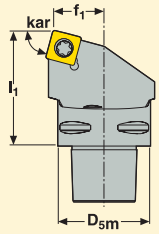
*Ordered separately

Toolholders for inserts SCGW and SCMT



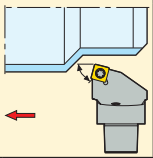
- For insert program, see pages 267, 310
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-SSRCR/L



Right-hand version shown
kar (κ_r) = 75°

C.-SSRCR/L
75 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C4										
	1/2	94212	C4-SSRCR -22050-12	1.57	0.87	1.97	0	0	0.9	SC..43.
		94211	C4-SSRCL -22050-12	1.57	0.87	1.97	0	0	0.9	SC..43.
C5										
	1/2	94368	C5-SSRCR -27060-12	1.97	1.06	2.36	0	0	2.0	SC..43.
		94367	C5-SSRCL -27060-12	1.97	1.06	2.36	0	0	2.0	SC..43.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-12	T15P-2	SSN42.52	SSN12T308	CA4010

Accessories*

Shim key
4SMS795

Please check availability in current price and stock-list

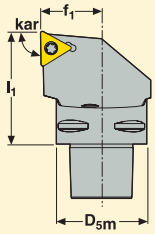
*Ordered separately

Toolholders for inserts TCGT, TCMT and TCMW



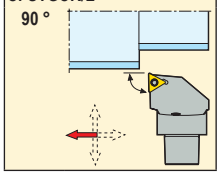
- For insert program, see pages 279, 330
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-STGCR/L



Right-hand version shown
kar (κ_r) = 90°

C.-STGCR/L
90 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C4										
	3/8	83468	C4-STGCR -27050-16	1.57	1.06	1.97	0	0	1.1	TC..32.5.
		94218	C4-STGCL -27050-16	1.57	1.06	1.97	0	0	1.1	TC..32.5.
C5										
	3/8	94380	C5-STGCR -35060-16	1.97	1.38	2.36	0	0	2.0	TC..32.5.
		94378	C5-STGCL -35060-16	1.97	1.38	2.36	0	0	2.0	TC..32.5.
C6										
	3/8	94328	C6-STGCR -45065-16	2.48	1.77	2.56	0	0	2.6	TC..32.5.
		94327	C6-STGCL -45065-16	2.48	1.77	2.56	0	0	2.6	TC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-16	T15P-2	C03509-T15P	STN323	CA3510

Accessories*

Shim key
9/64SMS875

Please check availability in current price and stock-list

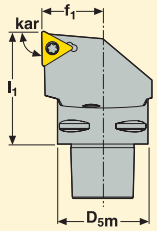
*Ordered separately

Toolholders for inserts TCGT, TCGW, TCMT, TCMW and TCMX



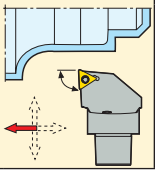
- For insert program, see pages 279-280, 330
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-STJCR/L



Right-hand version shown
kar (κ_r) = 93°

C.-STJCR/L
93 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C4										
	3/8	94223	**C4-STJCR -27050-16**	1.57	1.06	1.97	0	0	1.1	TC..32.5.
		94221	**C4-STJCL -27050-16**	1.57	1.06	1.97	0	0	1.1	TC..32.5.
C5										
	3/8	94382	**C5-STJCR -35060-16**	1.97	1.38	2.36	0	0	2.0	TC..32.5.
		94381	**C5-STJCL -35060-16**	1.97	1.38	2.36	0	0	2.0	TC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
..-16	T15P-2	C03509-T15P	STN323	CA3510

Accessories*

Shim key
9/64SMS875

Please check availability in current price and stock-list

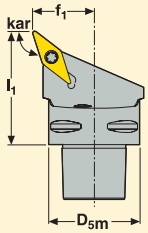
*Ordered separately

Toolholders for inserts VBGT, VBGW, VBMT and VCGT



- For insert program, see pages 289-291, 323
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-SVHBR/L



Right-hand version shown
kar (κ_r) = 107.5°

C.-SVHBR/L
107.50 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C3										
	1/4	94143	C3-SVHBR -22040-11	1.26	0.87	1.57	0	0	0.44	VB..21.5.
		94142	C3-SVHBL -22040-11	1.26	0.87	1.57	0	0	0.44	VB..21.5.
C4										
	1/4	94226	C4-SVHBR -27050-11	1.57	1.06	1.97	0	0	0.88	VB..21.5.
		94224	C4-SVHBL -27050-11	1.57	1.06	1.97	0	0	0.88	VB..21.5.
	3/8	65644	C4-SVHBR -27050-16	1.57	1.06	1.97	0	0	0.88	VB../VC..33.
		94225	C4-SVHBL -27050-16	1.57	1.06	1.97	0	0	0.88	VB../VC..33.
C5										
	1/4	94385	C5-SVHBR -35060-11	1.97	1.38	2.36	0	0	1.54	VB..21.5.
		94383	C5-SVHBL -35060-11	1.97	1.38	2.36	0	0	1.54	VB..21.5.
	3/8	94386	C5-SVHBR -35060-16	1.97	1.38	2.36	0	0	1.54	VB../VC..33.
		94384	C5-SVHBL -35060-16	1.97	1.38	2.36	0	0	1.54	VB../VC..33.
C6										
	3/8	94330	C6-SVHBR -45065-16	2.48	1.77	2.56	0	0	2.65	VB../VC..33.
		94329	C6-SVHBL -45065-16	2.48	1.77	2.56	0	0	2.65	VB../VC..33.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-11	T07P-2	C02506-T07P	–	–
-16	T15P-2	C03512-T15P	171.19-620	CA3507

Accessories*

Shim key
–
9/64SMS875

Please check availability in current price and stock-list

*Ordered separately

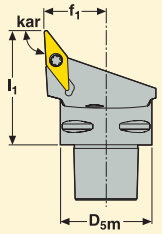
Seco-Capto™ – Toolholders, external

Toolholders for inserts VBGT, VBGW, VBMT and VCGT



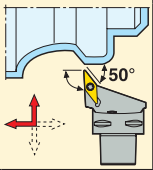
- For insert program, see pages 289-291, 323
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-SVJBR/L



Right-hand version shown
kar (κ_r) = 93°

C.-SVJBR/L
93 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C3										
	1/4	94146	C3-SVJBR -22040-11	1.26	0.87	1.57	0	0	0.44	VB..21.5.
		94145	C3-SVJBL -22040-11	1.26	0.87	1.57	0	0	0.44	VB..21.5.
C4										
	1/4	94230	C4-SVJBR -27050-11	1.57	1.06	1.97	0	0	0.88	VB..21.5.
		94227	C4-SVJBL -27050-11	1.57	1.06	1.97	0	0	0.88	VB..21.5.
	3/8	69318	C4-SVJBR -27050-16	1.57	1.06	1.97	0	0	0.88	VB../VC..33.
		68368	C4-SVJBL -27050-16	1.57	1.06	1.97	0	0	0.88	VB../VC..33.
C5										
	1/4	94389	C5-SVJBR -35060-11	1.97	1.38	2.36	0	0	1.54	VB..21.5.
		94387	C5-SVJBL -35060-11	1.97	1.38	2.36	0	0	1.54	VB..21.5.
	3/8	29329	C5-SVJBR -35060-16	1.97	1.38	2.36	0	0	1.54	VB../VC..33.
		94388	C5-SVJBL -35060-16	1.97	1.38	2.36	0	0	1.54	VB../VC..33.
C6										
	3/8	94332	C6-SVJBR -45065-16	2.48	1.77	2.56	0	0	2.43	VB../VC..33.
		94331	C6-SVJBL -45065-16	2.48	1.77	2.56	0	0	2.43	VB../VC..33.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-11	T07P-2	C02506-T07P	–	–
-16	T15P-2	C03512-T15P	171.19-620	CA3507

Accessories*

Shim key
–
9/64SMS875

Please check availability in current price and stock-list

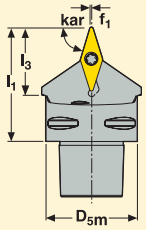
*Ordered separately

Toolholders for inserts VBGT, VBGW, VBMT and VCGT

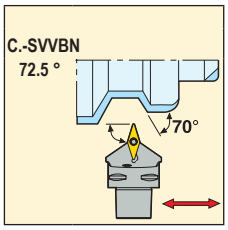


- For insert program, see pages 289-291, 323
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-SVVBN



Right-hand version shown
kar (κ_r) = 72.5°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C3										
	1/4	94159	C3-SVVBN -00040-11	1.26	0.01	1.57	0	0	0.44	VB..21.5.
C4										
	1/4	94248	C4-SVVBN -00050-11	1.57	0.01	1.97	0	0	0.88	VB..21.5.
	3/8	69505	C4-SVVBN -00050-16	1.57	0.02	1.97	0	0	0.88	VB../VC..33.
C5										
	3/8	94309	C5-SVVBN -00060-16	1.97	0.02	2.36	0	0	1.54	VB../VC..33.
C6										
	3/8	94339	C6-SVVBN -00065-16	2.48	0.02	2.56	0	0	2.43	VB../VC..33.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-11	T07P-2	C02506-T07P	–	–
-16	T15P-2	C03512-T15P	171.19-620	CA3507

Accessories*

Shim key
–
9/64SMS875

Please check availability in current price and stock-list

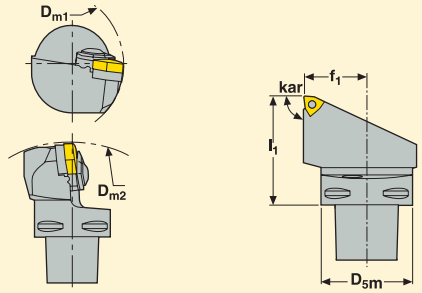
*Ordered separately

Toolholders for inserts WCMT



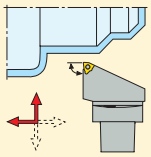
- For insert program, see pages 295
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-SWLCR/L



Right-hand version shown
kar (κ_r) = 95°

C.-SWLCR/L
95 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	3/8	72072	C4-SWLCR -27050-06	1.57	1.06	1.97	0.10	6.50	0	0	0.9	WCMT32.5.
		72071	C4-SWLCL -27050-06	1.57	1.06	1.97	0.10	6.50	0	0	0.9	WCMT32.5.
C5												
	3/8	42895	C5-SWLCR -35060-06	1.97	1.38	2.36	0.15	6.50	0	0	2.0	WCMT32.5.
		42896	C5-SWLCL -35060-06	1.97	1.38	2.36	0.15	6.50	0	0	2.0	WCMT32.5.
C6												
	3/8	42897	C6-SWLCR -45065-06	2.48	1.77	2.56	0.19	6.50	0	0	2.9	WCMT32.5.
		42899	C6-SWLCL -45065-06	2.48	1.77	2.56	0.19	6.50	0	0	2.9	WCMT32.5.

Spare Parts, Parts included in delivery

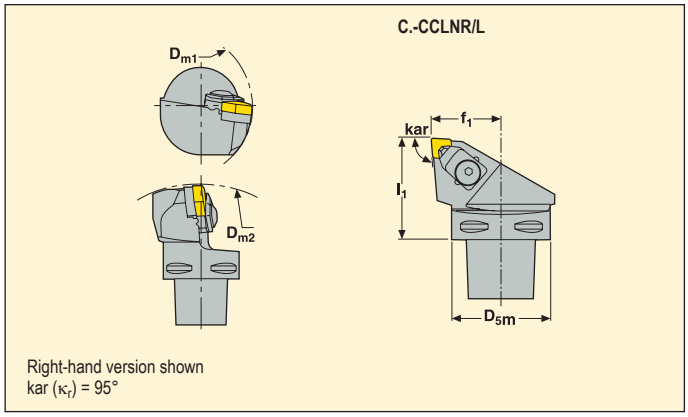
For size	Insert key	Insert screw
-06	T15P-2	C03510-T15P

Please check availability in current price and stock-list

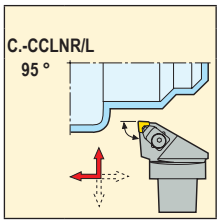
Toolholders for PCBN inserts CNGN and CNMN



- For insert program, see pages 302, 332
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593



Right-hand version shown
kar (κ_r) = 95°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	3/8	42706	C4-CCLNR -27050-09	1.57	1.06	1.97	2.95	6.50	-6	-6	1.1	CN.N32.
		42704	C4-CCLNL -27050-09	1.57	1.06	1.97	2.95	6.50	-6	-6	1.1	CN.N32.
	1/2	42743	C4-CCLNR -27050-12	1.57	1.06	1.97	2.95	6.50	-6	-6	1.1	CN.N43.
		42707	C4-CCLNL -27050-12	1.57	1.06	1.97	2.95	6.50	-6	-6	1.1	CN.N43.
C5												
	3/8	42745	C5-CCLNR -35060-09	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	CN.N32.
		42744	C5-CCLNL -35060-09	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	CN.N32.
	1/2	42747	C5-CCLNR -35060-12	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	CN.N43.
		42746	C5-CCLNL -35060-12	1.97	1.38	2.36	3.74	6.50	-6	-6	1.8	CN.N43.
C6												
	1/2	42752	C6-CCLNR -45065-12	2.48	1.77	2.56	4.76	6.50	-6	-6	2.9	CN.N43.
		42750	C6-CCLNL -45065-12	2.48	1.77	2.56	4.76	6.50	-6	-6	2.9	CN.N43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp key	Insert shim	Pressure plate	Shim screw
-09	CC17P-09	4SMS795	CCN090412	P1311-09	174.10-652-T07P
-12	CC17P	4SMS795	CCN120312	P1311	F94009-T09P

Accessories*

Shim key
T07P-2
T09P-2

Please check availability in current price and stock-list

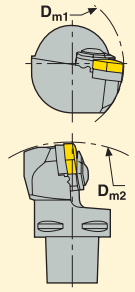
*Ordered separately

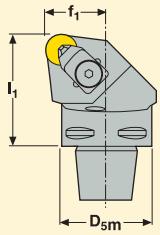
Toolholders for PCBN inserts RNGN and RNMN



- For insert program, see pages 307, 309, 330, 333
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

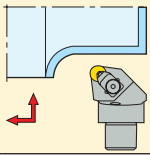
C.-CRSNR/L





Right-hand version shown

C.-CRSNR/L



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	D_{m2}	γ_o°	λ_s°	lbs	
C4												
	3/8	42755	C4-CRSNR -27050-09	1.57	1.06	1.97	2.95	6.50	0	-8	1.1	RN.N32.
		42754	C4-CRSNL -27050-09	1.57	1.06	1.97	2.95	6.50	0	-8	1.1	RN.N32.
	1/2	42758	C4-CRSNR -27050-12	1.57	1.06	1.97	2.95	6.50	0	-8	1.1	RN.N43.
		42757	C4-CRSNL -27050-12	1.57	1.06	1.97	2.95	6.50	0	-8	1.1	RN.N43.
C5												
	3/8	42762	C5-CRSNR -35060-09	1.97	1.38	2.36	3.74	6.50	0	-8	1.8	RN.N32.
		42761	C5-CRSNL -35060-09	1.97	1.38	2.36	3.74	6.50	0	-8	1.8	RN.N32.
	1/2	42764	C5-CRSNR -35060-12	1.97	1.38	2.36	3.74	6.50	0	-8	1.8	RN.N43.
		42763	C5-CRSNL -35060-12	1.97	1.38	2.36	3.74	6.50	0	-8	1.8	RN.N43.
C6												
	3/8	42766	C6-CRSNR -45065-09	2.48	1.77	2.56	4.76	6.50	0	-8	2.9	RN.N32.
		42765	C6-CRSNL -45065-09	2.48	1.77	2.56	4.76	6.50	0	-8	2.9	RN.N32.
	1/2	42768	C6-CRSNR -45065-12	2.48	1.77	2.56	4.76	6.50	0	-8	2.9	RN.N43.
		42767	C6-CRSNL -45065-12	2.48	1.77	2.56	4.76	6.50	0	-8	2.9	RN.N43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp key	Insert shim	Pressure plate	Shim screw
-09	CC17P-09	4SMS795	117.10-620	P1311-09	174.10-652-T07P
-12	CC17P	4SMS795	117.10-622	P1311	F94009-T09P

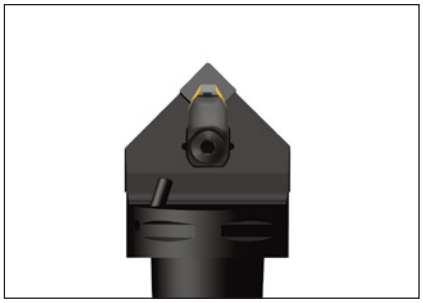
Accessories*

Shim key
T07P-2
T09P-2

Please check availability in current price and stock-list

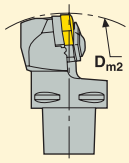
*Ordered separately
Shim 117.10-621 for insert RN.43., ordered separately

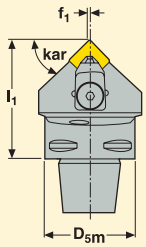
Toolholders for PCBN inserts SNGA, SNGF, SNGN and SNMN



- For insert program, see pages 311-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

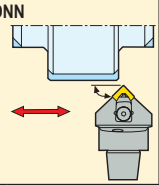
C.-CSDNN





Neutral version shown
kar (κ_r) = 45°

C.-CSDNN
45 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m2}	γ_o°	λ_s°	lbs	
C4											
	3/8	42769	C4-CSDNN -00050-09	1.57	0.01	1.97	6.50	-6	-6	0.9	SN..32.
	1/2	42771	C4-CSDNN -00050-12	1.57	0.01	1.97	6.50	-6	-6	0.9	SN..43.
C5											
	3/8	42772	C5-CSDNN -00060-09	1.97	0.01	2.36	6.50	-6	-6	1.5	SN..32.
	1/2	42773	C5-CSDNN -00060-12	1.97	0.01	2.36	6.50	-6	-6	1.5	SN..43.
C6											
	1/2	42774	C6-CSDNN -00065-12	2.48	0.01	2.56	6.50	-6	-6	2.6	SN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp key	Insert shim	Pressure plate	Shim screw
-09	CC17P-09	4SMS795	CSN090412	P1311-09	174.10-652-T07P
-12	CC20P	4SMS795	174.10-621	P1311	F94009-T09P

Accessories*

Shim key
T07P-2
T09P-2

Please check availability in current price and stock-list

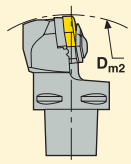
*Ordered separately
Shim 174.10-622 for insert SN.N42., ordered separately

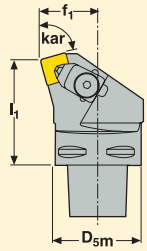
Toolholders for PCBN inserts SNGF, SNGN and SNMN



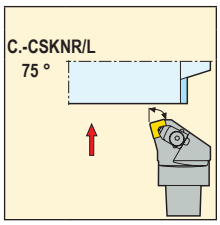
- For insert program, see pages 311-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-CSKNR/L





Right-hand version shown
kar (κ_r) = 75°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m2}	γ_o°	λ_s°	lbs	
C4											
	3/8	42776	**C4-CSKNR -27050-09**	1.57	1.06	1.97	2.95	-6	-6	1.1	SN..32.
		42775	**C4-CSKNL -27050-09**	1.57	1.06	1.97	2.95	-6	-6	1.1	SN..32.
	1/2	42778	**C4-CSKNR -27050-12**	1.57	1.06	1.97	2.95	-6	-6	1.1	SN..43.
		42777	**C4-CSKNL -27050-12**	1.57	1.06	1.97	2.95	-6	-6	1.1	SN..43.
C5											
	3/8	42781	**C5-CSKNR -35060-09**	1.97	1.38	2.36	3.74	-6	-6	1.8	SN..32.
		42780	**C5-CSKNL -35060-09**	1.97	1.38	2.36	3.74	-6	-6	1.8	SN..32.
	1/2	42783	**C5-CSKNR -35060-12**	1.97	1.38	2.36	3.74	-6	-6	2.0	SN..43.
		42782	**C5-CSKNL -35060-12**	1.97	1.38	2.36	3.74	-6	-6	2.0	SN..43.
C6											
	1/2	42786	**C6-CSKNR -45065-12**	2.48	1.77	2.56	4.76	-6	-6	3.3	SN..43.
		42785	**C6-CSKNL -45065-12**	2.48	1.77	2.56	4.76	-6	-6	3.3	SN..43.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp key	Insert shim	Pressure plate	Shim screw
-09	CC17P-09	4SMS795	CSN090412	P1311-09	174.10-652-T07P
-12	CC20P	4SMS795	174.10-621	P1311	F94009-T09P

Accessories*

Shim key
T07P-2
T09P-2

Please check availability in current price and stock-list

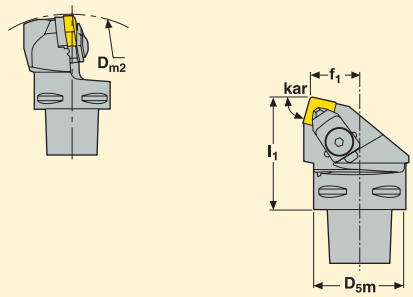
*Ordered separately
Shim 174.10-622 for insert SN.N42., ordered separately

Toolholders for PCBN inserts SNGF, SNGN and SNMN



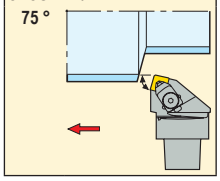
- For insert program, see pages 311-314
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

C.-CSRNR/L



Right-hand version shown
kar (κ_r) = 75°

C.-CSRNR/L
75 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m2}	γ_o°	λ_s°	lbs	
C4											
	3/8	42788	C4-CSRNR -22050-09	1.57	0.87	1.97	6.50	-6	-6	0.9	SN..32.
		42787	C4-CSRNL -22050-09	1.57	0.87	1.97	6.50	-6	-6	0.9	SN..32.
	1/2	42790	C4-CSRNR -22050-12	1.57	0.87	1.97	6.50	-6	-6	1.1	SN..43.
		42789	C4-CSRNL -22050-12	1.57	0.87	1.97	6.50	-6	-6	1.1	SN..43.
C5											
	3/8	42792	C5-CSRNR -27060-09	1.97	1.06	2.36	6.50	-6	-6	1.8	SN..32.
		51528	C5-CSRNL -27060-09	1.97	1.06	2.36	6.50	-6	-6	1.8	SN..32.
	1/2	42794	C5-CSRNR -27060-12	1.97	1.06	2.36	6.50	-6	-6	1.8	SN..43.
		42793	C5-CSRNL -27060-12	1.97	1.06	2.36	6.50	-6	-6	1.8	SN..43.
C6											
	1/2	42796	C6-CSRNR -35065-12	2.48	1.38	2.56	6.50	-6	-6	3.1	SN..43.
		42795	C6-CSRNL -35065-12	2.48	1.38	2.56	6.50	-6	-6	3.1	SN..43.

Spare Parts, Parts included in delivery

Accessories*

For size	Cantilever clamp	Clamp key	Insert shim	Pressure plate	Shim screw	Shim key
-09	CC17P-09	4SMS795	CSN090412	P1311-09	174.10-652-T07P	T07P-2
-12	CC20P	4SMS795	174.10-621	P1311	F94009-T09P	T09P-2

Please check availability in current price and stock-list

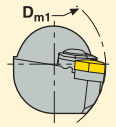
*Ordered separately
Shim 174.10 for insert SN.N42., ordered separately

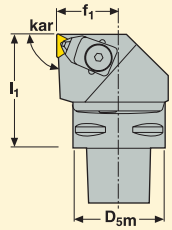
Toolholders for PCBN inserts TNGN, TNGX, TNMN and TNMX



- For insert program, see pages 318-319, 321
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 592-593

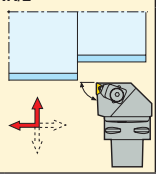
C.-CTJNR/L





Right-hand version shown
kar (κ_r) = 93°

C.-CTJNR/L
93 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	D_{m1}	γ_o°	λ_s°	lbs	
C4											
	1/4	36180	C4-CTJNR -27050-11	1.57	1.06	1.97	2.95	-6	-6	1.1	TN..22.
		41451	C4-CTJNL -27050-11	1.57	1.06	1.97	2.95	-6	-6	1.1	TN..22.
C5											
	1/4	36179	C5-CTJNR -35060-11	1.97	1.38	2.36	3.74	-6	-6	2.2	TN..22.
		35784	C5-CTJNL -35060-11	1.97	1.38	2.36	3.74	-6	-6	2.2	TN..22.
C6											
	1/4	35765	C6-CTJNR -45065-11	2.48	1.77	2.56	4.76	-6	-6	3.5	TN..22.
		35766	C6-CTJNL -45065-11	2.48	1.77	2.56	4.76	-6	-6	3.5	TN..22.

Spare Parts, Parts included in delivery

Accessories*

For size	Cantilever clamp	Clamp key	Insert shim	Pressure plate	Shim screw	Shim key
-11	CC17P-06	4SMS795	CTN110308	P1311-06	CS2507-T07P	T07P-2

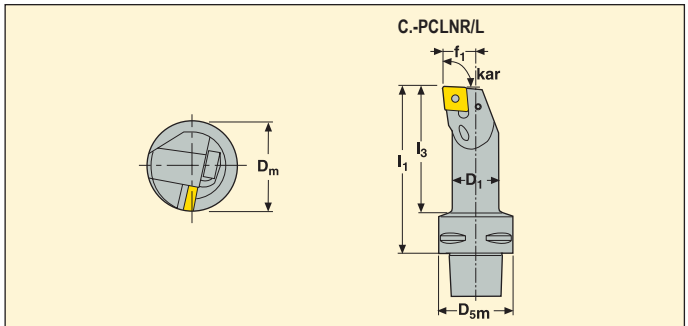
Please check availability in current price and stock-list

*Ordered separately

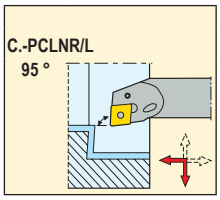
Toolholders for inserts CNGP, CNMA, CNMG and CNMM



- For insert program, see pages 241-248, 301
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595



Right-hand version shown
kar (κ_r) = 95°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	D_m min	γ_o°	λ_s°	lbs	
C4													
	1/2	42921	C4-PCLNR -17090-12	0.98	1.57	0.67	3.54	2.72	1.26	-6	-11	1.1	CN..43.
		37256	-22110-12	1.26	1.57	0.87	4.33	3.50	1.57	-6	-11	1.8	CN..43.
		42959	-27080-12	1.57	1.57	1.06	3.15	2.36	1.97	-6	-10	1.5	CN..43.
		42926	-27120-12	1.57	1.57	1.06	4.72	3.94	1.97	-6	-11	2.4	CN..43.
		34524	C4-PCLNL -17090-12	0.98	1.57	0.67	3.54	2.72	1.26	-6	-11	1.1	CN..43.
		37255	-22110-12	1.26	1.57	0.87	4.33	3.50	1.57	-6	-11	1.8	CN..43.
		34665	-27080-12	1.57	1.57	1.06	3.15	2.36	1.97	-6	-10	1.5	CN..43.
		42925	-27120-12	1.57	1.57	1.06	4.72	3.94	1.97	-6	-11	2.4	CN..43.
C5													
	1/2	39221	C5-PCLNR -17090-12	0.98	1.97	0.67	3.54	2.64	1.26	-6	-11	1.5	CN..43.
		42927	-22110-12	1.26	1.97	0.87	4.33	3.46	1.57	-6	-11	2.2	CN..43.
		42932	-35100-12	1.97	1.97	1.38	3.94	3.19	1.97	-6	-7	3.1	CN..43.
		42930	-27140-12	1.57	1.97	1.06	5.51	4.69	1.97	-6	-10	3.3	CN..43.
		42938	C5-PCLNL -17090-12	0.98	1.97	0.67	3.54	2.64	1.26	-6	-11	1.5	CN..43.
		42950	-22110-12	1.26	1.97	0.87	4.33	3.46	1.57	-6	-11	2.2	CN..43.
		42952	-27140-12	1.57	1.97	1.06	5.51	4.69	1.97	-6	-10	3.1	CN..43.
		42956	-35100-12	1.97	1.97	1.38	3.94	3.19	1.97	-6	-7	3.3	CN..43.
	5/8	42957	C5-PCLNR -35150-16	1.97	1.97	1.38	5.91	5.16	2.48	-6	-11	4.6	CN..54.
		42958	C5-PCLNL -35150-16	1.97	1.97	1.38	5.91	5.16	2.48	-6	-11	4.6	CN..54.

Spare Parts, Parts included in delivery

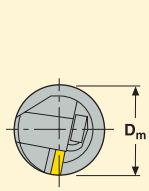
For size	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
17090-12	PP4613	–	2.5SMS795	LS0613	–	–
-12	PP4713	PCN120308	3SMS795	LS0818	MP0912	RP6757
-16	PP7818	PCN160408	3SMS795	LS0820	MP0912	RP8286

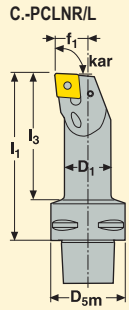
Please check availability in current price and stock-list

Toolholders for inserts CNGP, CNMA, CNMG and CNMM

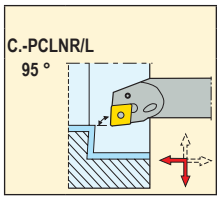


- For insert program, see pages 241-248, 301
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595





Right-hand version shown
kar (κ_r) = 95°



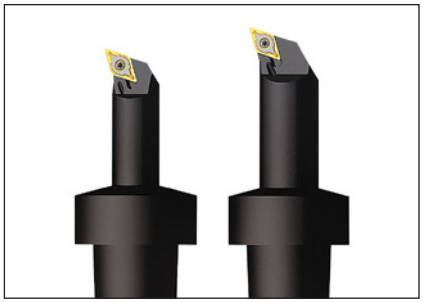
Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	D_m min	γ_o°	λ_s°	lbs	
C6													
	1/2	42960	C6-PCLNR -17100-12	0.98	2.48	0.67	3.94	2.91	1.26	-6	-11	2.4	CN..43.
		42962	C6-PCLNR -22110-12	1.26	2.48	0.87	4.33	3.31	1.57	-6	-11	2.9	CN..43.
		42971	C6-PCLNL -17100-12	0.98	2.48	0.67	3.94	2.91	1.26	-6	-11	2.4	CN..43.
		42972	C6-PCLNL -22110-12	1.26	2.48	0.87	4.33	3.31	1.57	-6	-11	2.9	CN..43.
	5/8	30110	C6-PCLNR -27140-16	1.57	2.48	1.06	5.51	4.53	1.97	-6	-11	4.0	CN..54.
		30111	C6-PCLNR -35175-16	1.97	2.48	1.38	6.89	5.98	2.48	-6	-11	6.2	CN..54.
		42982	C6-PCLNL -27140-16	1.57	2.48	1.06	5.51	4.53	1.97	-6	-11	4.0	CN..54.
		42993	C6-PCLNL -35175-16	1.97	2.48	1.38	6.89	5.98	2.48	-6	-11	6.2	CN..54.

Spare Parts, Parts included in delivery

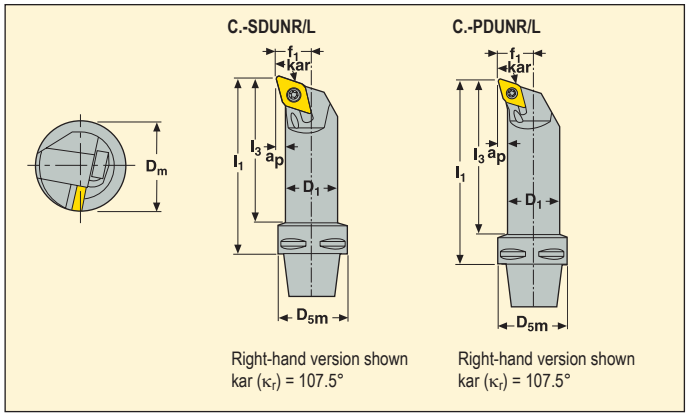
For size	Insert lever	Insert shim	Lever key	Lever screw	Punch	Shim pin
-17100-12	PP4613	–	2.5SMS795	LS0613	–	–
-22110-12	PP4713	PCN120308	3SMS795	LS0818	MP0912	RP6757
-16	PP7818	PCN160408	3SMS795	LS0820	MP0912	RP8286

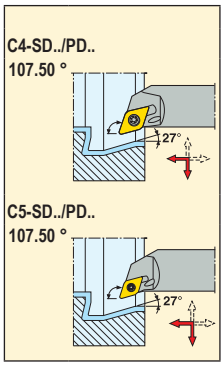
Please check availability in current price and stock-list

Toolholders for inserts DNMA, DNMU and DNMX



- For insert program, see pages 258-259, 305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595





Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	a_p	D_m min	γ_o°	λ_s°	lbs	
C4														
	3/8	72404	C4-SDQNR -11065-11	0.63	1.57	0.43	2.56	1.61	0.10	0.79	-5	-17	0.9	DNMU33.
		72447	-13080-11	0.79	1.57	0.51	3.15	2.20	0.10	0.98	-5	-17	0.9	DNMU33.
		72441	C4-SDQNL -11065-11	0.63	1.57	0.43	2.56	1.61	0.10	0.79	-5	-17	0.9	DNMU33.
		72454	-13080-11	0.79	1.57	0.51	3.15	2.20	0.10	0.98	-5	-17	0.9	DNMU33.
	3/8	72502	C4-PDQNR -17090-11	0.98	1.57	0.67	3.54	2.68	0.16	1.26	-5	-16	1.1	DN..33.
		72510	-22110-11	1.26	1.57	0.87	4.33	3.50	0.20	1.57	-5	-14	1.5	DN..33.
		72506	C4-PDQNL -17090-11	0.98	1.57	0.67	3.54	2.68	0.16	1.26	-5	-16	1.1	DN..33.
		72512	-22110-11	1.26	1.57	0.87	4.33	3.50	0.20	1.57	-5	-14	1.5	DN..33.
C5														
	3/8	72455	C5-SDQNR -13080-11	0.79	1.97	0.51	3.15	2.20	0.10	0.98	-5	-18	1.3	DNMU33.
		72462	C5-SDQNL -13080-11	0.79	1.97	0.51	3.15	2.20	0.10	0.98	-5	-18	1.3	DNMU33.
	3/8	72526	C5-PDQNR -17090-11	0.98	1.97	0.67	3.54	2.64	0.16	1.26	-5	-16	1.5	DN..33.
		72546	-22110-11	1.26	1.97	0.87	4.33	3.50	0.20	1.57	-5	-14	2.0	DN..33.
		72530	C5-PDQNL -17090-11	0.98	1.97	0.67	3.54	2.64	0.16	1.26	-5	-16	1.5	DN..33.
		72557	-22110-11	1.26	1.97	0.87	4.33	3.50	0.20	1.57	-5	-14	2.0	DN..33.

Spare Parts, Parts included in delivery

Accessories*

For size	Insert key	Insert pin	Insert screw	Insert shim	Shim screw	Shim key
-11...-11	T09P-2	–	C03511-T09P	–	–	–
-13...-11	T09P-2	–	C03511-T09P	DAI313	CA3507	9/64SMS875
-17/22...-11	T09P-2	PL1403-T09P	–	DSN323	–	–

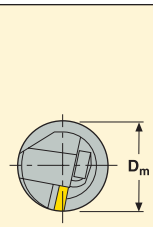
Please check availability in current price and stock-list

*Ordered separately

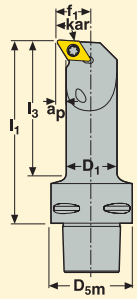
Toolholders for inserts DNMA, DNMU and DNMX



- For insert program, see pages 258-259, 305
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595

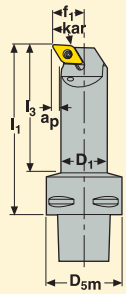


C.-SDUNR/L



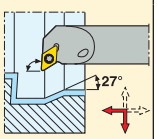
Right-hand version shown
kar (κ_r) = 93°

C.-PDUNR/L

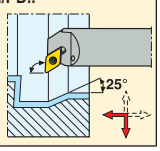


Right-hand version shown
kar (κ_r) = 93°

C4-SD../PD..
93 °



C5-SD../PD..
93 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	a_p	D_m min	γ_o°	λ_s°	lbs	
C4														
	3/8	72369	C4-SDUNR -11065-11	0.63	1.57	0.43	2.56	1.61	0.10	0.79	-5	-17	0.7	DNMU/DNMX33.
		92041	-13080-11	0.79	1.57	0.51	3.15	2.20	0.10	0.98	-5	-14	0.9	DNMU/DNMX33.
		72396	C4-SDUNL -11065-11	0.63	1.57	0.43	2.56	1.61	0.10	0.79	-5	-17	0.7	DNMU/DNMX33.
		92040	-13080-11	0.79	1.57	0.51	3.15	2.20	0.10	0.98	-5	-14	0.9	DNMU/DNMX33.
	3/8	92043	C4-PDUNR -17090-11	0.98	1.57	0.67	3.54	2.68	0.16	1.26	-5	-13	1.1	DN..33.
		92045	-22110-11	1.26	1.57	0.87	4.33	3.50	0.20	1.57	-5	-11	1.5	DN..33.
		92042	C4-PDUNL -17090-11	0.98	1.57	0.67	3.54	2.68	0.16	1.26	-5	-13	1.1	DN..33.
		92044	-22110-11	1.26	1.57	0.87	4.33	3.50	0.20	1.57	-5	-11	1.5	DN..33.
C5														
	3/8	92047	C5-SDUNR -13080-11	0.79	1.97	0.51	3.15	2.20	0.10	0.98	-5	-14	1.3	DNMU/DNMX33.
		92046	C5-SDUNL -13080-11	0.79	1.97	0.51	3.15	2.20	0.10	0.98	-5	-14	1.3	DNMU/DNMX33.
	3/8	92049	C5-PDUNR -17090-11	0.98	1.97	0.67	3.54	2.64	0.16	1.26	-5	-13	1.5	DN..33.
		92051	-22110-11	1.26	1.97	0.87	4.33	3.50	0.20	1.57	-5	-11	2.0	DN..33.
		92048	C5-PDUNL -17090-11	0.98	1.97	0.67	3.54	2.64	0.16	1.26	-5	-13	1.5	DN..33.
		92050	-22110-11	1.26	1.97	0.87	4.33	3.50	0.20	1.57	-5	-11	2.0	DN..33.

Spare Parts, Parts included in delivery

Accessories*

For size	Insert key	Insert pin	Insert screw	Insert shim	Shim screw	Shim key
-11...-11	T09P-2	–	C03511-T09P	–	–	–
-13...-11	T09P-2	–	C03511-T09P	DAI313	CA3507	9/64SMS875
-17/22...-11	T09P-2	PL1403-T09P	–	DSN323	–	–

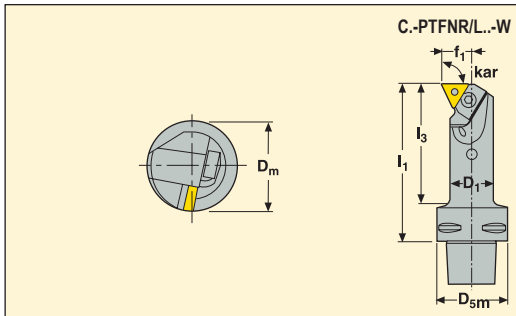
Please check availability in current price and stock-list

*Ordered separately

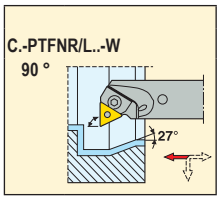
Toolholders for inserts TNGA, TNMA, TNMG, TNMM, TNMN and TNMP



- For insert program, see pages 282-286, 317
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595



Right-hand version shown
kar (κ_r) = 90°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	D_m min	γ_o°	λ_s°	lbs	
C4													
	3/8	34673	C4-PTFNR -17090-16-W	0.98	1.57	0.67	3.54	2.72	1.26	-6	-13	1.1	TN..33.
		34675	-27120-16-W	1.57	1.57	1.06	4.72	3.94	1.97	-6	-11	2.4	TN..33.
		34670	C4-PTFNL -17090-16-W	0.98	1.57	0.67	3.54	2.72	1.26	-6	-13	1.1	TN..33.
		34672	-27120-16-W	1.57	1.57	1.06	4.72	3.94	1.97	-6	-11	2.4	TN..33.
C5													
	3/8	34694	C5-PTFNR -22110-16-W	1.26	1.57	0.87	4.33	3.46	1.57	-6	-12	2.0	TN..33.
		34695	-27140-16-W	1.57	1.57	1.06	5.51	4.69	1.97	-6	-11	3.3	TN..33.
		34698	C5-PTFNL -22110-16-W	1.26	1.57	0.87	4.33	3.46	1.57	-6	-12	2.0	TN..33.
		34699	-27140-16-W	1.57	1.57	1.06	5.51	4.69	1.97	-6	-11	3.3	TN..33.
C6													
	3/8	34712	C6-PTFNR -22110-16-W	1.26	2.48	0.87	4.33	3.31	1.57	-6	-12	2.9	TN..33.
		34713	-27140-16-W	1.57	2.48	1.06	5.51	4.53	1.97	-6	-11	4.0	TN..33.
		34716	C6-PTFNL -22110-16-W	1.26	2.48	0.87	4.33	3.31	1.57	-6	-12	2.9	TN..33.
		34717	-27140-16-W	1.57	2.48	1.06	5.51	4.53	1.97	-6	-11	4.0	TN..33.
	1/2	26014	C6-PTFNR -35175-22-W	1.97	2.48	1.38	6.89	5.98	2.48	-6	-10	6.2	TN..43.
		34718	C6-PTFNL -27140-22-W	1.57	2.48	1.06	5.51	4.53	1.97	-6	-11	4.0	TN..43.
		34719	-35175-22-W	1.97	2.48	1.38	6.89	5.98	2.48	-6	-10	6.2	TN..43.

Spare Parts, Parts included in delivery

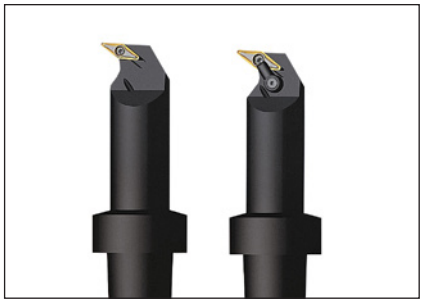
Accessories*

For size	Insert shim	Setting screw	Shim pin	Wedge clamp	Wedge key	Shim key
-17...-16	–	F83060-T09P	PL1003	CP16-H31	3SMS795	T09P-2
-22/27...-16	PTN160308	F83060-T09P	PL1203	CP16-H3	3SMS795	T09P-2
-22	PTN220410	F84060-T15P	PL1405	CP22-H4	4SMS795	T09P-2

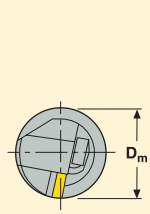
Please check availability in current price and stock-list

*Ordered separately

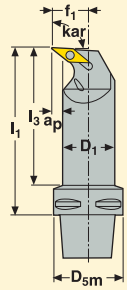
Toolholders for inserts VNGA, VNGM, VNGP, VNMA, VNMG, VNMP and VNMU



- For insert program, see pages 292-294, 324-325
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595

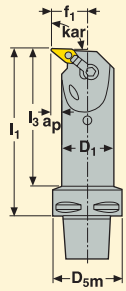


C.-PVUNR/L



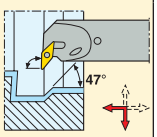
Right-hand version shown
kar (κ_r) = 93°

C.-MVUNR/L

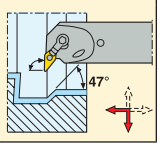


Right-hand version shown
kar (κ_r) = 93°

C.-PVUNR/L
93 °



C.-MVUNR/L
93 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch							γ_o°	λ_s°	lbs	
				D_1	D_{5m}	f_1	l_1	l_3	a_p	D_m min				
C4														
	5/16	71983	C4-PVUNR -17090-13	0.98	1.57	0.67	3.54	2.68	0.16	1.26	-5	-14	1.1	VN..21.53.
		72605	-22110-13	1.26	1.57	0.87	4.33	3.54	0.20	1.57	-5	-12	1.5	VN..21.53.
		71980	C4-PVUNL -17090-13	0.98	1.57	0.67	3.54	2.68	0.16	1.26	-5	-14	1.1	VN..21.53.
		92068	-22110-13	1.26	1.57	0.87	4.33	3.54	0.20	1.57	-5	-12	1.5	VN..21.53.
	3/8	72631	C4-MVUNR -22110-16	1.26	1.57	0.87	4.33	3.54	0.20	1.57	-5	-12	1.5	VN..33.
		71985	-27120-16	1.57	1.57	1.06	4.72	3.94	0.24	1.97	-5	-10	2.4	VN..33.
		72638	C4-MVUNL -22110-16	1.26	1.57	0.87	4.33	3.54	0.20	1.57	-5	-12	1.5	VN..33.
		71981	-27120-16	1.57	1.57	1.06	4.72	3.94	0.24	1.97	-5	-10	2.4	VN..33.
	5/16	92071	C5-PVUNR -22110-13	1.26	1.97	0.87	4.33	3.50	0.20	1.57	-5	-12	2.0	VN..21.53.
		92070	C5-PVUNL -22110-13	1.26	1.97	0.87	4.33	3.50	0.20	1.57	-5	-12	2.0	VN..21.53.
	3/8	71991	C5-MVUNR -22110-16	1.26	1.97	0.87	4.33	3.50	0.20	1.57	-5	-12	2.0	VN..33.
		72664	-27140-16	1.57	1.97	1.06	5.51	4.69	0.24	1.97	-5	-10	3.1	VN..33.
		71989	C5-MVUNL -22110-16	1.26	1.97	0.87	4.33	3.50	0.20	1.57	-5	-12	2.0	VN..33.
		72679	-27140-16	1.57	1.97	1.06	5.51	4.69	0.24	1.97	-5	-10	3.1	VN..33.
C6														
	3/8	72035	C6-MVUNR -22120-16	1.26	2.48	0.87	4.72	3.46	0.20	1.57	-5	-12	2.9	VN..33.
		72036	-27145-16	1.57	2.48	1.06	5.71	4.72	0.24	1.97	-5	-10	4.0	VN..33.
		72033	C6-MVUNL -22120-16	1.26	2.48	0.87	4.72	3.46	0.20	1.57	-5	-12	2.9	VN..33.
		72034	-27145-16	1.57	2.48	1.06	5.71	4.72	0.24	1.97	-5	-10	4.0	VN..33.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp screw	Insert key	Insert pin	Insert shim	Shim/clamp key	Shim pin
-13	–	–	T09P-2	PL1403-T09P	PVN2.522	–	–
-16	MC20	LD6021-T09P	–	–	VSN324	T09P-2	MN0909L-T09P

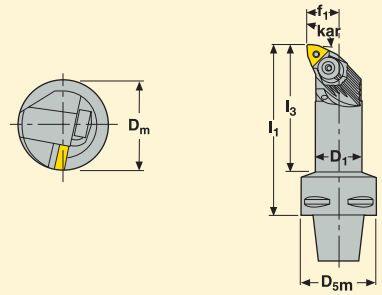
Please check availability in current price and stock-list

Toolholders for inserts WNGA, WNGP, WNMA, WNMG, WNMM and WNMP



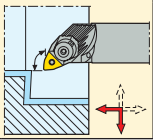
- For insert program, see pages 295-299, 327
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595

C.-PWLNR/L



Right-hand version shown
kar (κ_r) = 95°

C.-PWLNR/L
95 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	D_m min	γ_o°	λ_s°	lbs	
C4													
	3/8	12937	C4-PWLNR -13080-06	0.79	1.57	0.51	3.15	2.24	0.98	-5	-11	0.9	WN..33.
		92073	-17090-06	0.98	1.57	0.67	3.54	2.68	1.26	-5	-12	1.1	WN..33.
		92075	-22110-06	1.26	1.57	0.87	4.33	3.50	1.57	-5	-12	1.5	WN..33.
		12922	C4-PWLNL -13080-06	0.79	1.57	0.51	3.15	2.24	0.98	-5	-11	0.9	WN..33.
		92072	-17090-06	0.98	1.57	0.67	3.54	2.68	1.26	-5	-12	1.1	WN..33.
		92074	-22110-06	1.26	1.57	0.87	4.33	3.50	1.57	-5	-12	1.5	WN..33.
	1/2	92077	C4-PWLNR -22110-08	1.26	1.57	0.87	4.33	3.50	1.57	-5	-11	1.5	WN..43.
		71982	-27120-08	1.57	1.57	1.06	4.72	3.94	1.97	-5	-8	2.2	WN..43.
		92076	C4-PWLNL -22110-08	1.26	1.57	0.87	4.33	3.50	1.57	-5	-11	1.5	WN..43.
		71979	-27120-08	1.57	1.57	1.06	4.72	3.94	1.97	-5	-8	2.2	WN..43.

Spare Parts, Parts included in delivery

For size	Insert shim	Setting screw	Shim pin	Wedge clamp	Wedge key	Wedge screw
-13/17...-06	WAI313	L82511-T07P	PP1209-T09P	WNW06HD	T20P-7	WS1920-T20P
-22...-06	WAE323	L82511-T07P	PP1409-T09P	WNW06HD	T20P-7	WS1920-T20P
-08	WAI423	L82511-T07P	PP1415-T15P	WNW08HD	T25P-7	WS2325-T25P

Accessories*

Shim key
T09P-2
T09P-2
T15P-2

Please check availability in current price and stock-list

*Ordered separately

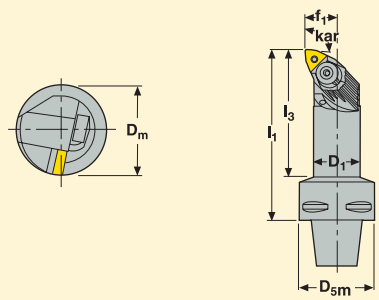
Seco-Capto™ – Toolholders, internal

Toolholders for inserts WNGA, WNGP, WNMA, WNMG, WNMM and WNMP



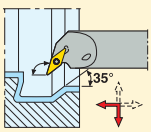
- For insert program, see pages 295-299, 327
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595

C.-PWLNR/L



Right-hand version shown
kar (κ_r) = 95°

C.-PWLNR/L
95 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	D_m min	γ_o°	λ_s°	lbs	
C5													
	3/8	71986	C5-PWLNL -13080-06	0.79	1.97	0.51	3.15	2.20	0.98	-5	-11	1.3	WN..33.
		92078	-17090-06	0.98	1.97	0.67	3.54	2.64	1.26	-5	-12	1.5	WN..33.
		94584	-22110-06	1.26	1.97	0.87	4.33	3.46	1.57	-5	-12	2.0	WN..33.
	1/2	92080	C5-PWLNL -22110-08	1.26	1.97	0.87	4.33	3.46	1.57	-5	-11	2.0	WN..43.
		94495	-27140-08	1.57	1.97	1.06	5.51	4.69	1.97	-5	-11	3.1	WN..43.
	3/8	72015	C5-PWLNR -13080-06	0.79	1.97	0.51	3.15	2.20	0.98	-5	-11	1.3	WN..33.
		92079	-17090-06	0.98	1.97	0.67	3.54	2.64	1.26	-5	-12	1.5	WN..33.
		94583	-22110-06	1.26	1.97	0.87	4.33	3.46	1.57	-5	-12	2.0	WN..33.
	1/2	92081	C5-PWLNR -22110-08	1.26	1.97	0.87	4.33	3.46	1.57	-5	-11	2.0	WN..43.
		94494	-27140-08	1.57	1.97	1.06	5.51	4.69	1.97	-5	-11	3.1	WN..43.
C6													
	1/2	45763	C6-PWLNL -27140-08	1.57	2.48	1.06	5.51	4.53	1.97	-5	-8	3.7	WN..43.
		72038	-35175-08	1.97	2.48	1.38	6.89	5.98	2.48	-5	10	5.7	WN..43.
		72040	C6-PWLNR -27140-08	1.57	2.48	1.06	5.51	4.53	1.97	-5	-8	3.7	WN..43.
		72047	-35175-08	1.97	2.48	1.38	6.89	5.98	2.48	-5	-10	5.7	WN..43.

Spare Parts, Parts included in delivery

For size	Insert shim	Setting screw	Shim pin	Wedge clamp	Wedge key	Wedge screw
-1...-06	WAI313	L82511-T07P	PP1209-T09P	WNW06HD	T20P-7	WS1920-T20P
-2...-06	WAE323	L82511-T07P	PP1409-T09P	WNW06HD	T20P-7	WS1920-T20P
-08	WAI423	L82511-T07P	PP1415-T15P	WNW08HD	T25P-7	WS2325-T25P

Accessories*

Shim key
T09P-2
T09P-2
T15P-2

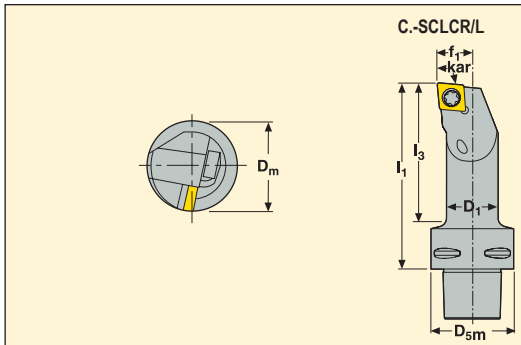
Please check availability in current price and stock-list

*Ordered separately

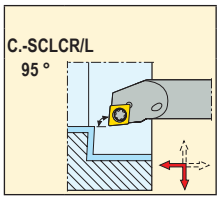
Toolholders for inserts CCGT, CCGW, CCMT and CCMW



- For insert program, see pages 236, 238-240, 300, 328
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595



Right-hand version shown
kar (κ_r) = 95°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	D_m min	γ_o°	λ_s°	lbs	
C3													
	3/8	94071	C3-SCLCR -11065-09	0.63	1.26	0.43	2.56	1.89	0.79	0	-12	0.44	CC..32.5.
		94072	-13075-09	0.79	1.26	0.51	2.95	2.32	0.98	0	-8	0.66	CC..32.5.
		94061	C3-SCLCL -11065-09	0.63	1.26	0.43	2.56	1.89	0.79	0	-12	0.44	CC..32.5.
		94062	-13075-09	0.79	1.26	0.51	2.95	2.32	0.98	0	-8	0.66	CC..32.5.

Spare Parts, Parts included in delivery

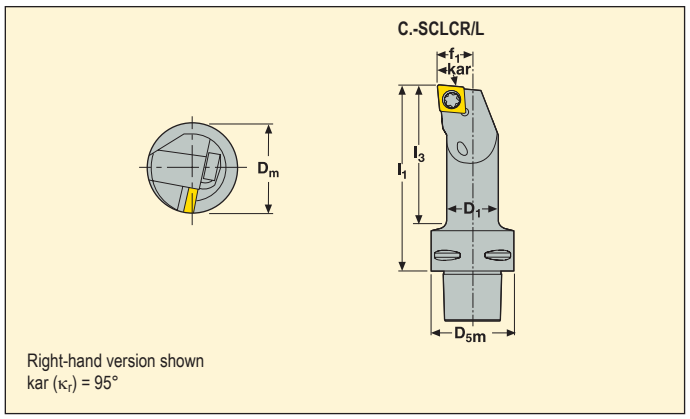
For size	Insert key	Insert screw
11065-09	T15P-2	C03508-T15P
13075-09	T15P-2	C03508-T15P

Please check availability in current price and stock-list

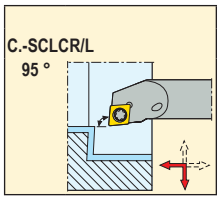
Toolholders for inserts CCGT, CCGW, CCMT and CCMW



- For insert program, see pages 236, 238-240, 300, 328
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595



Right-hand version shown
kar (κ_r) = 95°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	D_m min	γ_o°	λ_s°	lbs	
C4													
	3/8	84494	C4-SCLCR -11070-09	0.63	1.57	0.43	2.76	1.85	0.79	0	-12	0.9	CC..32.5.
		84495	-13080-09	0.79	1.57	0.51	3.15	2.24	0.98	0	-8	0.9	CC..32.5.
		69012	-17090-09	0.98	1.57	0.67	3.54	2.68	1.26	0	-6	1.1	CC..32.5.
		94169	-27080-09	1.57	1.57	1.06	3.15	2.36	1.97	0	-6	1.8	CC..32.5.
		65645	C4-SCLCL -11070-09	0.63	1.57	0.43	2.76	1.85	0.79	0	-12	0.9	CC..32.5.
		84496	-13080-09	0.79	1.57	0.51	3.15	2.24	0.98	0	-8	0.9	CC..32.5.
		94160	-17090-09	0.98	1.57	0.67	3.54	2.68	1.26	0	-6	1.1	CC..32.5.
		94164	-27080-09	1.57	1.57	1.06	3.15	2.36	1.97	0	-6	1.8	CC..32.5.
	1/2	94166	C4-SCLCR -17090-12	0.98	1.57	0.67	3.54	2.68	1.26	0	-6	1.1	CC..43.
		94167	-22110-12	1.26	1.57	0.87	4.33	3.50	1.57	0	-10	1.8	CC..43.
		94170	-27080-12	1.57	1.57	1.06	3.15	2.36	1.97	0	-8	1.5	CC..43.
		94161	C4-SCLCL -17090-12	0.98	1.57	0.67	3.54	2.68	1.26	0	-6	1.1	CC..43.
		94162	-22110-12	1.26	1.57	0.87	4.33	3.50	1.57	0	-10	1.8	CC..43.
		94165	-27080-12	1.57	1.57	1.06	3.15	2.36	1.97	0	-8	1.5	CC..43.

Spare Parts, Parts included in delivery

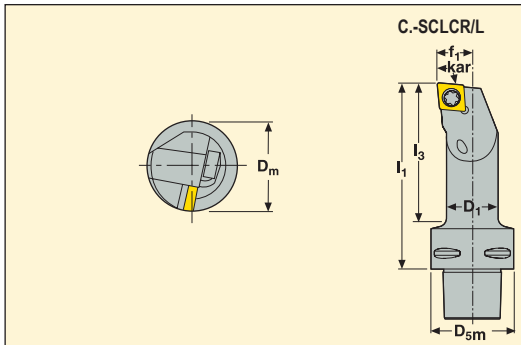
For size	Insert key	Insert screw	Insert shim	Shim screw
11070-09	T15P-2	C03508-T15P	–	–
13080-09	T15P-2	C03508-T15P	–	–
17090-09	T15P-2	C03510-T15P	–	–
17090-12	T15P-2	C04010-T15P	–	–
22110-12	T15P-2	C04014-T15P	SCN42.52	CA4010
27080-09	T15P-2	C03512-T15P	SCN322	CA3507
27080-12	T15P-2	C04014-T15P	SCN42.52	CA4010

Please check availability in current price and stock-list

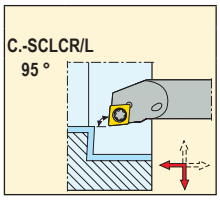
Toolholders for inserts CCGT, CCGW, CCMT and CCMW



- For insert program, see pages 236, 238-240, 300, 328
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595



Right-hand version shown
kar (κ_r) = 95°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	D_m min	γ_o°	λ_s°	lbs	
C5													
	3/8	94268	C5-SCLCR -11070-09	0.63	1.97	0.43	2.76	1.81	0.79	0	-12	1.1	CC..32.5.
		94270	-13080-09	0.79	1.97	0.51	3.15	2.20	0.98	0	-8	1.3	CC..32.5.
		94271	-17090-09	0.98	1.97	0.67	3.54	2.64	1.26	0	-6	1.5	CC..32.5.
		94279	-35100-09	1.97	1.97	1.38	3.94	3.15	1.97	0	-4	3.1	CC..32.5.
		94249	C5-SCLCL -11070-09	0.63	1.97	0.43	2.76	1.81	0.79	0	-12	1.1	CC..32.5.
		94253	-13080-09	0.79	1.97	0.51	3.15	2.20	0.98	0	-8	1.3	CC..32.5.
		94255	-17090-09	0.98	1.97	0.67	3.54	2.64	1.26	0	-6	1.5	CC..32.5.
		94266	-35100-09	1.97	1.97	1.38	3.94	3.15	1.97	0	-4	3.1	CC..32.5.
	1/2	94273	C5-SCLCR -17090-12	0.98	1.97	0.67	3.54	2.64	1.26	0	-6	1.5	CC..43.
		94274	-22110-12	1.26	1.97	0.87	4.33	3.46	1.57	0	-10	2.0	CC..43.
		94275	-27140-12	1.57	1.97	1.06	5.51	4.69	1.97	0	-8	3.3	CC..43.
		94280	-35100-12	1.97	1.97	1.38	3.94	3.15	1.97	0	-6	3.1	CC..43.
		94256	C5-SCLCL -17090-12	0.98	1.97	0.67	3.54	2.64	1.26	0	-6	1.5	CC..43.
		94257	-22110-12	1.26	1.97	0.87	4.33	3.46	1.57	0	-10	2.0	CC..43.
		94259	-27140-12	1.57	1.97	1.06	5.51	4.69	1.97	0	-8	3.3	CC..43.

Spare Parts, Parts included in delivery

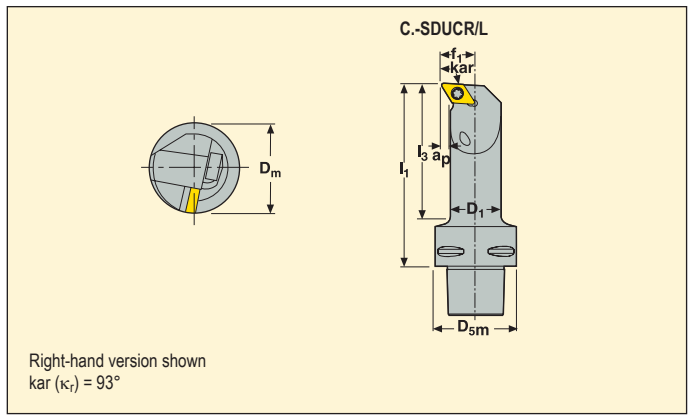
For size	Insert key	Insert screw	Insert shim	Shim screw
11070-09	T15P-2	C03508-T15P	–	–
13080-09	T15P-2	C03508-T15P	–	–
17090-09	T15P-2	C03510-T15P	–	–
17090-12	T15P-2	C04014-T15P	SCN42.52	CA4010
22110-12	T15P-2	C04014-T15P	SCN42.52	CA4010
27140-12	T15P-2	C04014-T15P	SCN42.52	CA4010
35100-09	T15P-2	C03512-T15P	SCN322	CA3507
35100-12	T15P-2	C04014-T15P	SCN42.52	CA4010

Please check availability in current price and stock-list

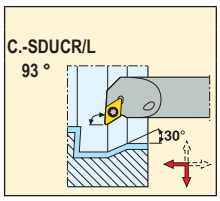
Toolholders for inserts DCGT, DCGW, DCMT, DCMW and DCMX



- For insert program, see pages 250-253, 303, 329
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595



Right-hand version shown
kar (κ_r) = 93°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	a_p	D_m min	γ_o°	λ_s°	lbs	
C3														
	1/4	94092	C3-SDUCR -11065-07	0.63	1.26	0.43	2.56	1.89	0.10	0.79	0	-8	0.44	DC..21.5.
		94084	C3-SDUCL -11065-07	0.63	1.26	0.43	2.56	1.89	0.10	0.79	0	-8	0.44	DC..21.5.
	3/8	94095	C3-SDUCR -13075-11	0.79	1.26	0.51	2.95	2.32	0.10	0.98	0	-8	0.66	DC..32.5.
		94099	-17090-11	0.98	1.26	0.67	3.54	2.91	0.16	1.26	0	-6	0.88	DC..32.5.
		94101	-22096-11	1.26	1.26	0.87	3.78	3.23	0.20	1.57	0	-6	1.32	DC..32.5.
		94086	C3-SDUCL -13075-11	0.79	1.26	0.51	2.95	2.32	0.10	0.98	0	-8	0.66	DC..32.5.
		94088	-17090-11	0.98	1.26	0.67	3.54	2.91	0.16	1.26	0	-6	0.88	DC..32.5.
		94091	-22096-11	1.26	1.26	0.87	3.78	3.23	0.20	1.57	0	-6	1.32	DC..32.5.
C4														
	1/4	94180	C4-SDUCR -11070-07	0.63	1.57	0.43	2.76	1.85	0.10	0.79	0	-8	0.88	DC..21.5.
		94173	C4-SDUCL -11070-07	0.63	1.57	0.43	2.76	1.85	0.10	0.79	0	-8	0.88	DC..21.5.
	3/8	65648	C4-SDUCR -13080-11	0.79	1.57	0.51	3.15	2.24	0.10	0.98	0	-8	0.88	DC..32.5.
		94182	-17090-11	0.98	1.57	0.67	3.54	2.68	0.16	1.26	0	-6	1.10	DC..32.5.
		94184	-22110-11	1.26	1.57	0.87	4.33	3.50	0.20	1.57	0	-6	1.76	DC..32.5.
		94185	-27080-11	1.57	1.57	1.06	3.15	2.36	0.24	1.97	0	-6	1.54	DC..32.5.
		68289	C4-SDUCL -13080-11	0.79	1.57	0.51	3.15	2.24	0.10	0.98	0	-8	0.88	DC..32.5.
		94176	-17090-11	0.98	1.57	0.67	3.54	2.68	0.16	1.26	0	-6	1.10	DC..32.5.
		94178	-22110-11	1.26	1.57	0.87	4.33	3.50	0.20	1.57	0	-6	1.76	DC..32.5.
		94179	-27080-11	1.57	1.57	1.06	3.15	2.36	0.24	1.97	0	-6	1.54	DC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-07	T07P-2	C02506-T07P	–	–
-13...-11	T15P-2	C03508-T15P	–	–
-17...-11	T15P-2	C03510-T15P	–	–
-2...-11	T15P-2	C03512-T15P	126.19-620	CA3507

Accessories*

Shim key
–
–
–
9/64SMS875

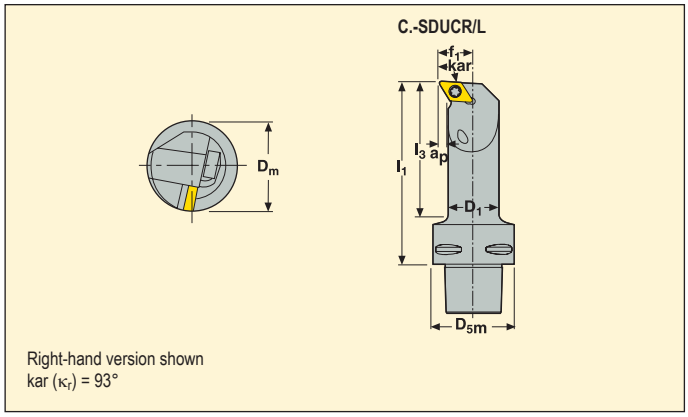
Please check availability in current price and stock-list

*Ordered separately

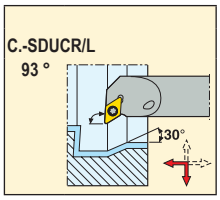
Toolholders for inserts DCGT, DCGW, DCMT, DCMW and DCMX



- For insert program, see pages 250-253, 303, 329
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595



Right-hand version shown
kar (κ_r) = 93°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	a_p	D_m min	γ_o°	λ_s°	lbs	
C5														
	1/4	94291	C5-SDUCR -11070-07	0.63	1.97	0.43	2.76	1.81	0.10	0.79	0	-8	1.1	DC..21.5.
		94284	C5-SDUCL -11070-07	0.63	1.97	0.43	2.76	1.81	0.10	0.79	0	-8	1.1	DC..21.5.
	3/8	94293	C5-SDUCR -13080-11	0.79	1.97	0.51	3.15	2.20	0.10	0.98	0	-8	1.3	DC..32.5.
		94295	-17090-11	0.98	1.97	0.67	3.54	2.64	0.16	1.26	0	-6	1.5	DC..32.5.
		94297	-22110-11	1.26	1.97	0.87	4.33	3.46	0.20	1.57	0	-6	2.0	DC..32.5.
		94298	-35100-11	1.97	1.97	1.38	3.94	3.15	0.24	2.48	0	-4	3.1	DC..32.5.
		94285	C5-SDUCL -13080-11	0.79	1.97	0.51	3.15	2.20	0.10	0.98	0	-8	1.3	DC..32.5.
		94287	-17090-11	0.98	1.97	0.67	3.54	2.64	0.16	1.26	0	-6	1.5	DC..32.5.
		94290	-35100-11	1.97	1.97	1.38	3.94	3.15	0.24	2.48	0	-4	3.1	DC..32.5.

Spare Parts, Parts included in delivery

For size	Insert screw	Insert shim	Shim screw	Insert key
-07	C02506-T07P	–	–	T07P-2
-13...-11	C03508-T15P	–	–	T15P-2
-17...-11	C03510-T15P	–	–	T15P-2
-22/35...-11	C03512-T15P	126.19-620	CA3507	T15P-2

Accessories*

Shim key
–
–
–
9/64SMS875

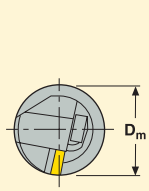
Please check availability in current price and stock-list

*Ordered separately

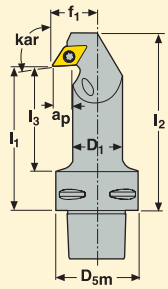
Toolholders for inserts DCGT, DCGW, DCMT and DCMW



- For insert program, see pages 250-252, 303, 329
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595

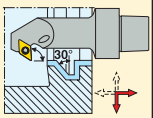


C.-SDUCR/L-..X



Right-hand version shown
kar (κ_r) = 93°

C.-SDUCR/L-..X
93 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	l_2	a_p	D_m min	γ_o°	λ_s°	lbs	
C4															
	1/4	89627	C4-SDUCR -13070-07X	0.63	1.57	0.51	2.76	1.85	3.19	0.16	0.87	0	-6	0.9	DC..21.5.
		94181	-15080-07X	0.79	1.57	0.59	3.15	2.24	3.62	0.16	1.06	0	-3	0.9	DC..21.5.
		94183	-18090-07X	0.98	1.57	0.71	3.54	2.68	4.02	0.18	1.26	0	-3	1.1	DC..21.5.
		94174	C4-SDUCL -13070-07X	0.63	1.57	0.51	2.76	1.85	3.19	0.16	0.87	0	-6	0.9	DC..21.5.
		94175	-15080-07X	0.79	1.57	0.59	3.15	2.24	3.62	0.16	1.06	0	-3	0.9	DC..21.5.
		94177	-18090-07X	0.98	1.57	0.71	3.54	2.68	4.02	0.18	1.26	0	-3	1.1	DC..21.5.
C5															
	1/4	94294	C5-SDUCR -15080-07X	0.79	1.97	0.59	3.15	2.20	3.62	0.16	1.06	0	-3	1.3	DC..21.5.
		94296	-18090-07X	0.98	1.97	0.71	3.54	2.64	4.02	0.18	1.26	0	-3	1.5	DC..21.5.
		94286	C5-SDUCL -15080-07X	0.79	1.97	0.59	3.15	2.20	3.62	0.16	1.06	0	-3	1.3	DC..21.5.
		94288	-18090-07X	0.98	1.97	0.71	3.54	2.64	4.02	0.18	1.26	0	-3	1.5	DC..21.5.

Spare Parts, Parts included in delivery

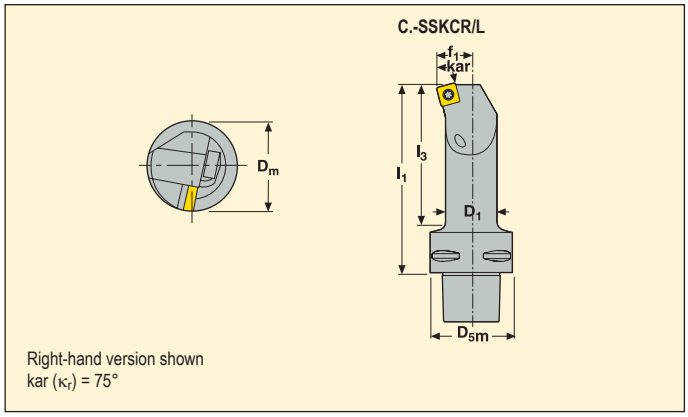
For size	Insert key	Insert screw
-07X	T07P-2	C02506-T07P

Please check availability in current price and stock-list

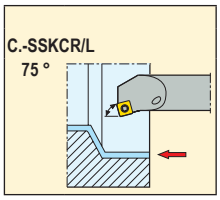
Toolholders for inserts SCGW and SCMT



- For insert program, see pages 267, 310
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595



Right-hand version shown
kar (κ_r) = 75°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	D_m min	γ_o°	λ_s°	lbs	
C5													
	3/8	94363	C5-SSKCR -13080-09	0.79	1.97	0.51	3.15	2.20	0.98	0	-6	1.3	SC..32.5.
		94359	C5-SSKCL -13080-09	0.79	1.97	0.51	3.15	2.20	0.98	0	-6	1.3	SC..32.5.

Spare Parts, Parts included in delivery

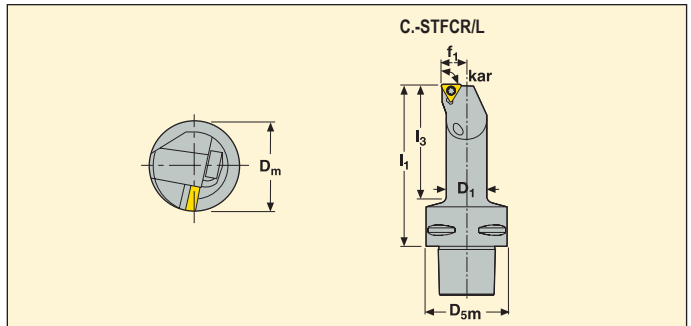
For size	Insert key	Insert screw
-09	T15P-2	C03508-T15P

Please check availability in current price and stock-list

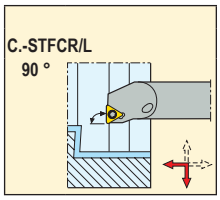
Toolholders for inserts TCGT, TCGW, TCMT and TCMW



- For insert program, see pages 277, 279, 316, 330
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595



Right-hand version shown
kar (κ_r) = 90°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	D_m min	γ_o°	λ_s°	lbs	
C3													
	1/4	94129	**C3-STFCR -11065-11**	0.63	1.26	0.43	2.56	1.89	0.79	0	-4	0.44	TC..21.5.
		94127	**C3-STFCL -11065-11**	0.63	1.26	0.43	2.56	1.89	0.79	0	-4	0.44	TC..21.5.
C4													
	1/4	84501	**C4-STFCR -11070-11**	0.63	1.57	0.43	2.76	1.85	0.79	0	-4	0.88	TC..21.5.
		84503	**-13080-11**	0.79	1.57	0.51	3.15	2.24	0.98	0	-3	0.88	TC..21.5.
		84502	**C4-STFCL -11070-11**	0.63	1.57	0.43	2.76	1.85	0.79	0	-4	0.88	TC..21.5.
	3/8	94215	**C4-STFCR -17090-16**	0.98	1.57	0.67	3.54	2.68	1.26	0	-6	1.10	TC..32.5.
		94216	**-22110-16**	1.26	1.57	0.87	4.33	3.50	1.57	0	-10	1.76	TC..32.5.
		94213	**C4-STFCL -17090-16**	0.98	1.57	0.67	3.54	2.68	1.26	0	-6	1.10	TC..32.5.
		94214	**-22110-16**	1.26	1.57	0.87	4.33	3.50	1.57	0	-10	1.76	TC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-11	T07P-2	C02506-T07P	–	–
-17...-16	T15P-2	C03509-T15P	–	–
-22...-16	T15P-2	C03509-T15P	STN323	CA3510

Accessories*

Shim key
–
–
9/64SMS875

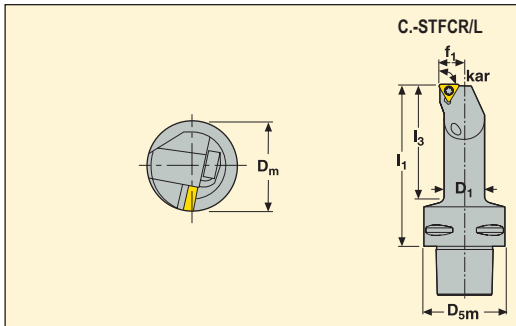
Please check availability in current price and stock-list

*Ordered separately

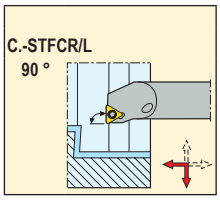
Toolholders for inserts TCGT, TCGW, TCMT and TCMW



- For insert program, see pages 277, 279, 316, 330
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595



Right-hand version shown
kar (κ_r) = 90°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	D_m min	γ_o°	λ_s°	lbs	
C5													
	1/4	94373	C5-STFCR -11070-11	0.63	1.97	0.43	2.76	1.81	1.57	0	-4	1.3	TC..21.5.
		94374	-13080-11	0.79	1.97	0.51	3.15	2.20	0.98	0	-3	1.3	TC..21.5.
		94369	C5-STFCL -11070-11	0.63	1.97	0.43	2.76	1.81	0.79	0	-4	1.3	TC..21.5.
		94370	-13080-11	0.79	1.97	0.51	3.15	2.20	0.98	0	-3	1.3	TC..21.5.
	3/8	94375	C5-STFCR -17090-16	0.98	1.97	0.67	3.54	2.64	1.26	0	-6	1.5	TC..32.5.
		94371	C5-STFCL -17090-16	0.98	1.97	0.67	3.54	2.64	1.26	0	-6	1.5	TC..32.5.
		94372	-22110-16	1.26	1.97	0.87	4.33	3.46	1.57	0	-10	2.2	TC..32.5.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-11	T07P-2	C02506-T07P	–	–
-17090-16	T15P-2	C03509-T15P	–	–
-22110-16	T15P-2	C03509-T15P	STN323	CA3510

Accessories*

Shim key
–
–
9/64SMS875

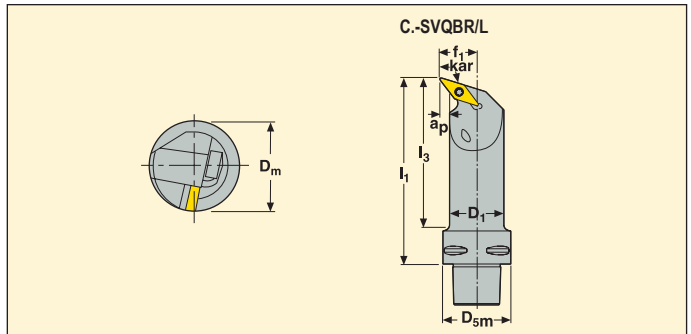
Please check availability in current price and stock-list

*Ordered separately

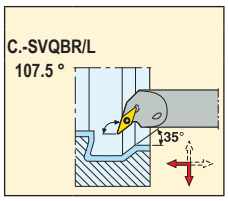
Toolholders for inserts VBGT, VBGW, VBMT, VBMW and VCGT



- For insert program, see pages 289-291, 323, 331
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595



Right-hand version shown
kar (κ_r) = 107.5°



Capto size	Insert l.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	a_p	D_m min	γ_o°	λ_s°	lbs	
C3														
	1/4	94153	C3-SVQBR -13070-11	0.63	1.26	0.51	2.76	2.09	0.16	0.87	0	-7	0.44	VB..21.5.
		94154	-15080-11	0.79	1.26	0.59	3.15	2.52	0.16	1.06	0	-5	0.66	VB..21.5.
		94147	C3-SVQBL -13070-11	0.63	1.26	0.51	2.76	2.09	0.16	0.87	0	-7	0.44	VB..21.5.
		94149	-15080-11	0.79	1.26	0.59	3.15	2.52	0.16	1.06	0	-5	0.66	VB..21.5.
C4														
	1/4	94239	C4-SVQBR -13070-11	0.63	1.57	0.51	2.76	1.85	0.16	0.98	0	-7	0.66	VB..21.5.
		94241	-15080-11	0.79	1.57	0.59	3.15	2.28	0.16	1.06	0	-5	0.88	VB..21.5.
		94231	C4-SVQBL -13070-11	0.63	1.57	0.51	2.76	1.85	0.16	0.98	0	-7	0.66	VB..21.5.
		94232	-15080-11	0.79	1.57	0.59	3.15	2.28	0.16	1.06	0	-5	0.88	VB..21.5.
	3/8	94245	C4-SVQBR -22110-16	1.26	1.57	0.87	4.33	3.50	0.20	1.57	0	-8	1.54	VB../VC..33.
		94246	-27080-16	1.57	1.57	1.06	3.15	2.36	0.20	1.97	0	-8	1.54	VB../VC..33.
		94247	-27120-16	1.57	1.57	1.06	4.72	3.94	0.24	1.97	0	-8	2.43	VB../VC..33.
		94233	C4-SVQBL -18090-16	0.98	1.57	0.71	3.54	2.68	0.18	1.30	0	-6	1.10	VB../VC..33.
		94235	-22110-16	1.26	1.57	0.87	4.33	3.50	0.20	1.57	0	-8	1.54	VB../VC..33.
		94237	-27080-16	1.57	1.57	1.06	3.15	2.36	0.20	1.97	0	-8	1.54	VB../VC..33.
		94238	-27120-16	1.57	1.57	1.06	4.72	3.94	0.24	1.97	0	-8	2.43	VB../VC..33.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-11	T07P-2	C02506-T07P	–	–
-18...-16	T15P-2	C03510-T15P	–	–
-22/27...-16	T15P-2	C03512-T15P	171.19-620	CA3507

Accessories*

Shim key
–
–
9/64SMS875

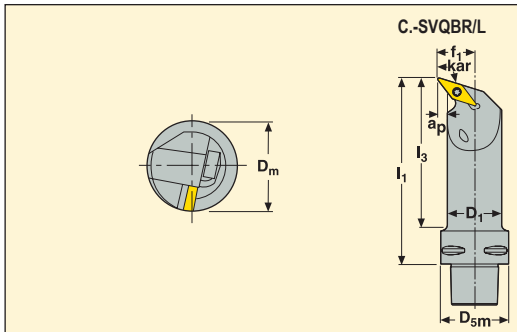
Please check availability in current price and stock-list

*Ordered separately

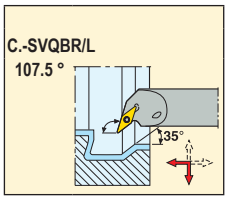
Toolholders for inserts VBGT, VBGW, VBMT, VBMW and VCGT



- For insert program, see pages 289-291, 323, 331
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595



Right-hand version shown
kar (κ_r) = 107.5°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	a_p	D_m min	γ_o°	λ_s°	lbs	
C5														
	1/4	94301	C5-SVQBR -15080-11	0.79	1.97	0.59	3.15	2.24	0.16	1.06	0	-5	1.1	VB..21.5.
		94390	C5-SVQBL -15080-11	0.79	1.97	0.59	3.15	2.24	0.16	1.06	0	-5	1.1	VB..21.5.
	3/8	94302	C5-SVQBR -18090-16	0.98	1.97	0.71	3.54	2.64	0.18	1.30	0	-6	1.5	VB../VC..33.
		94303	-22110-16	1.26	1.97	0.87	4.33	3.46	0.20	1.57	0	-8	2.0	VB../VC..33.
		94305	-27140-16	1.57	1.97	1.06	5.51	4.69	0.24	1.97	0	-8	3.1	VB../VC..33.
		94307	-35100-16	1.97	1.97	1.38	3.94	3.15	0.35	2.48	0	-7	2.9	VB../VC..33.
		94308	-35150-16	1.97	1.97	1.38	5.91	5.12	0.35	2.48	0	-7	4.2	VB../VC..33.
		94671	C5-SVQBL -18090-16	0.98	1.97	0.71	3.54	2.64	0.18	1.30	0	-6	1.5	VB../VC..33.
		94672	-22110-16	1.26	1.97	0.87	4.33	3.46	0.20	1.57	0	-8	2.0	VB../VC..33.
		94674	-35100-16	1.97	1.97	1.38	3.94	3.15	0.35	2.48	0	-7	2.9	VB../VC..33.
		94299	-35150-16	1.97	1.97	1.38	5.91	5.12	0.35	2.48	0	-7	4.2	VB../VC..33.
C6														
	3/8	94336	C6-SVQBR -22120-16	1.26	2.48	0.87	4.72	3.70	0.20	1.57	0	-8	2.9	VB../VC..33.
		94337	-27145-16	1.57	2.48	1.06	5.71	4.72	0.24	1.97	0	-8	4.2	VB../VC..33.
		94338	-35175-16	1.97	2.48	1.38	6.89	5.98	0.35	2.48	0	-8	6.0	VB../VC..33.
		94333	C6-SVQBL -22120-16	1.26	2.48	0.87	4.72	3.70	0.20	1.57	0	-8	2.9	VB../VC..33.
		94334	-27145-16	1.57	2.48	1.06	5.71	4.72	0.24	1.97	0	-8	4.2	VB../VC..33.
		94335	-35175-16	1.97	2.48	1.38	6.89	5.98	0.35	2.48	0	-8	6.0	VB../VC..33.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
-1...-16	T15P-2	C03510-T15P	–	–
-11	T07P-2	C02506-T07P	–	–
-2/3...-16	T15P-2	C03512-T15P	171.19-620	CA3507

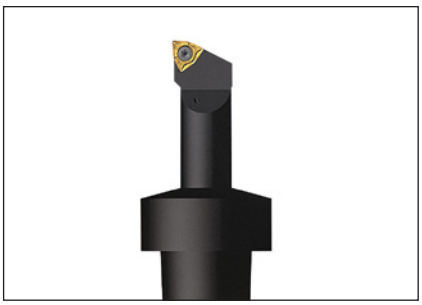
Accessories*

Shim key
–
–
9/64SMS875

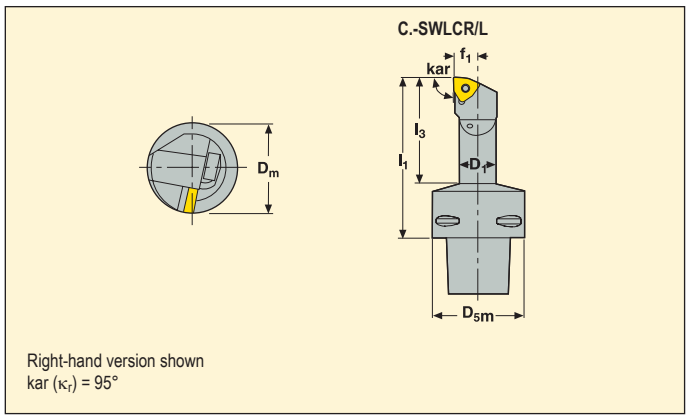
Please check availability in current price and stock-list

*Ordered separately

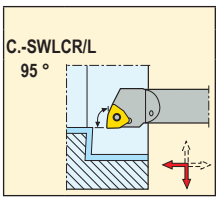
Toolholders for inserts WCMT



- For insert program, see pages 295
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595



Right-hand version shown
kar (κ_r) = 95°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	D_m min	γ_o°	λ_s°	lbs	
C4													
	3/8	42901	**C4-SWLCR -11070-06**	0.63	1.57	0.43	2.76	1.85	0.79	0	-5	0.9	WCMT32.5.
		42916	**-13080-06**	0.79	1.57	0.51	3.15	2.24	0.98	0	-5	1.1	WCMT32.5.
		42902	**C4-SWLCL -11070-06**	0.63	1.57	0.43	2.76	1.85	0.79	0	-5	0.9	WCMT32.5.
		42917	**-13080-06**	0.79	1.57	0.51	3.15	2.24	0.98	0	-5	1.1	WCMT32.5.
C5													
	3/8	42903	**C5-SWLCR -11070-06**	0.63	1.97	0.43	2.76	1.81	0.79	0	-5	1.1	WCMT32.5.
		42918	**-13080-06**	0.79	1.97	0.51	3.15	2.20	0.98	0	-5	2.0	WCMT32.5.
		42905	**C5-SWLCL -11070-06**	0.63	1.97	0.43	2.76	1.81	0.79	0	-5	1.1	WCMT32.5.
		42919	**-13080-06**	0.79	1.97	0.51	3.15	2.20	0.98	0	-5	2.0	WCMT32.5.

Spare Parts, Parts included in delivery

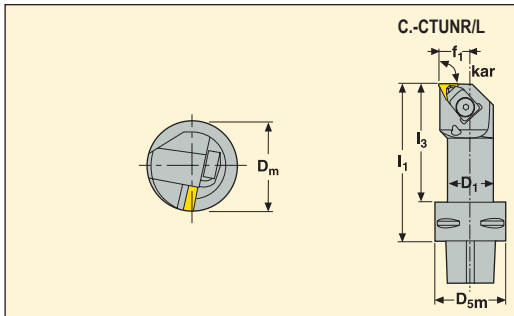
For size	Insert key	Insert screw
C4-	T15P-2	C03510-T15P
C5-	T15P-2	C03508-T15P

Please check availability in current price and stock-list

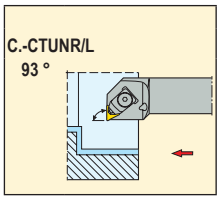
Toolholders for PCBN inserts TNGN, TNGX and TNMN



- For insert program, see pages 318-321
- γ_o° = Rake angle, λ_s° = Inclination angle
- For holder code key, see pages 594-595



Right-hand version shown
kar (κ_r) = 93°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	l_1	l_3	D_m min	γ_o°	λ_s°	lbs	
C4													
	1/4	35769	C4-CTUNR -17090-11	0.98	1.57	0.67	3.54	2.68	1.26	-6	-12	1.3	TN..22.
		35770	-22110-11	1.26	1.57	0.87	4.33	3.46	1.57	-6	-12	1.8	TN..22.
		35771	C4-CTUNL -17090-11	0.98	1.57	0.67	3.54	2.68	1.26	-6	-12	1.3	TN..22.
		35772	-22110-11	1.26	1.57	0.87	4.33	3.46	1.57	-6	-12	1.8	TN..22.
C5													
	1/4	35835	C5-CTUNR -17090-11	0.98	1.97	0.67	3.54	2.64	1.26	-6	-12	2.2	TN..22.
		35774	-22110-11	1.26	1.97	0.87	4.33	3.50	1.57	-6	-12	2.2	TN..22.
		37557	C5-CTUNL -17090-11	0.98	1.97	0.67	3.54	2.64	1.26	-6	-12	2.2	TN..22.
		35777	-22110-11	1.26	1.97	0.87	4.33	3.50	1.57	-6	-12	2.2	TN..22.
C6													
	1/4	35781	C6-CTUNR -22110-11	1.26	2.48	0.87	4.33	3.50	1.57	-6	-12	2.9	TN..22.
		35783	C6-CTUNL -22110-11	1.26	2.48	0.87	4.33	3.50	1.57	-6	-12	2.9	TN..22.

Spare Parts, Parts included in delivery

For size	Cantilever clamp	Clamp key	Insert shim	Shim screw
-11	CC14	4SMS795	CTN110308	CS2507-T07P

Accessories*

Shim key
T07P-2

Please check availability in current price and stock-list

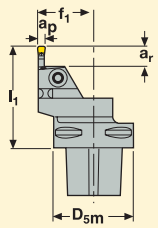
*Ordered separately

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



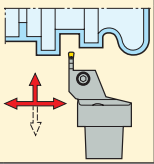
- For insert program, see pages 425-438, 440-441

C.-CFIR/L...JET



Right-hand version shown
$a_r = 3 \times a_p$

C.-CFIR/L
90 °



Capto size	a_p	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	a_r**	DCINN3*	lbs	Seat size	
C4											
	3	37995	C4-CFIR-27060-03JET	1.57	1.06	2.36	0.35	7.68	0.94	3	LC..1603..
		37992	C4-CFIL-27060-03JET	1.57	1.06	2.36	0.35	7.68	0.94	3	LC..1603..
	4	37996	C4-CFIR-27060-04JET	1.57	1.06	2.36	0.47	7.68	0.91	4	LC..1604..
		37993	C4-CFIL-27060-04JET	1.57	1.06	2.36	0.47	7.68	0.91	4	LC..1604..
	5	37997	C4-CFIR-27065-05JET	1.57	1.06	2.56	0.59	7.68	0.95	5	LC..1605..
		37994	C4-CFIL-27065-05JET	1.57	1.06	2.56	0.59	7.68	0.95	5	LC..1605..
C5											
	3	38002	C5-CFIR-35060-03JET	1.97	1.38	2.36	0.35	7.68	1.46	3	LC..1603..
		37998	C5-CFIL-35060-03JET	1.97	1.38	2.36	0.35	7.68	1.46	3	LC..1603..
	4	38003	C5-CFIR-35065-04JET	1.97	1.38	2.56	0.47	7.68	1.48	4	LC..1604..
		37999	C5-CFIL-35065-04JET	1.97	1.38	2.56	0.47	7.68	1.48	4	LC..1604..
	5	38004	C5-CFIR-35065-05JET	1.97	1.38	2.56	0.59	7.68	1.39	5	LC..1605..
		38000	C5-CFIL-35065-05JET	1.97	1.38	2.56	0.59	7.68	1.39	5	LC..1605..
	6	38005	C5-CFIR-35075-06JET	1.97	1.38	2.95	0.71	7.68	1.75	6	LC..1606..
		38001	C5-CFIL-35075-06JET	1.97	1.38	2.95	0.71	7.68	1.75	6	LC..1606..

*DCINN3 – minimum bore diameter for internal application, see page 364.

**Max depth of cut for LCGF/LCMF16 = 0.551 inch

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFIR/L..-03	4SMS795	TCEI0513	53
CFIR/L..-04	5SMS795	TCEI0613	71
CFIR/L..-05	5SMS795	TCEI0613	71
CFIR/L..-06	6SMS795	TCEI0815	88

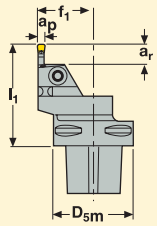
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



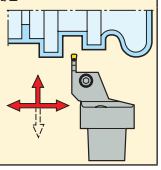
- For insert program, see pages 425-438, 440-441

C.-CFIR/L...JET



Right-hand version shown
$a_r = 3 \times a_p$

C.-CFIR/L
90 °



Capto size	ap	EDP No.	Part No.	Dimensions in inch D5m	f1	l1	ar**	DCINN3*	lbs	Seat size	
C6											
	3	38016	C6-CFIR-45065-03JET	2.48	1.77	2.56	0.35	7.68	2.43	3	LC..1603..
		38011	C6-CFIL-45065-03JET	2.48	1.77	2.56	0.35	7.68	2.43	3	LC..1603..
	4	38017	C6-CFIR-45065-04JET	2.48	1.77	2.56	0.47	7.68	2.26	4	LC..1604..
		38012	C6-CFIL-45065-04JET	2.48	1.77	2.56	0.47	7.68	2.26	4	LC..1604..
	5	38018	C6-CFIR-45070-05JET	2.48	1.77	2.76	0.59	7.68	2.41	5	LC..1605..
		38013	C6-CFIL-45070-05JET	2.48	1.77	2.76	0.59	7.68	2.41	5	LC..1605..
	6	38019	C6-CFIR-45075-06JET	2.48	1.77	2.95	0.71	7.68	2.51	6	LC..1606..
		38014	C6-CFIL-45075-06JET	2.48	1.77	2.95	0.71	7.68	2.51	6	LC..1606..
	8	38020	C6-CFIR-45085-08JET	2.48	1.77	3.35	0.94	7.68	2.87	8	LC..3008..
		38015	C6-CFIL-45085-08JET	2.48	1.77	3.35	0.94	7.68	2.87	8	LC..3008..

*DCINN3 – minimum bore diameter for internal application, see page 364.

**Max depth of cut for LCGF/LCMF16 = 0.551 inch

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFIR/L..-03	4SMS795	TCEI0513	53
CFIR/L..-04	5SMS795	TCEI0613	71
CFIR/L..-05	5SMS795	TCEI0613	71
CFIR/L..-06	6SMS795	TCEI0815	88
CFIR/L..-08	6SMS795	TCEI1020	133

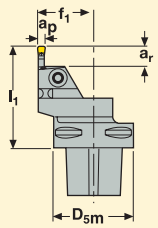
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



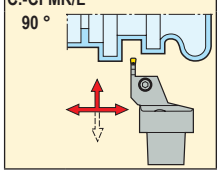
- For insert program, see pages 425-438, 440-441

C.-CFMR/L...JET



Right-hand version shown
$a_r = 5 \times a_p$

C.-CFMR/L
90 °



Capto size	a_p	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	a_r**	DCINN3*	lbs	Seat size	
C4											
	3	56655	C4-CFMR-27070-03JET	1.57	1.06	2.76	0.59	7.68	1.04	3	LC..1603..
		56802	C4-CFML-27070-03JET	1.57	1.06	2.76	0.59	7.68	1.04	3	LC..1603..
	4	56672	C4-CFMR-27070-04JET	1.57	1.06	2.76	0.79	7.68	0.97	4	LC..1604..
		56803	C4-CFML-27070-04JET	1.57	1.06	2.76	0.79	7.68	0.97	4	LC..1604..
C5											
	3	56701	C5-CFMR-35070-03JET	1.97	1.38	2.76	0.59	7.68	1.53	3	LC..1603..
		56804	C5-CFML-35070-03JET	1.97	1.38	2.76	0.59	7.68	1.53	3	LC..1603..
	4	56702	C5-CFMR-35075-04JET	1.97	1.38	2.95	0.79	7.68	1.52	4	LC..1604..
		56805	C5-CFML-35075-04JET	1.97	1.38	2.95	0.79	7.68	1.52	4	LC..1604..
	5	56703	C5-CFMR-35075-05JET	1.97	1.38	2.95	0.98	7.68	1.45	5	LC..1605..
		56806	C5-CFML-35075-05JET	1.97	1.38	2.95	0.98	7.68	1.45	5	LC..1605..
	6	56704	C5-CFMR-35085-06JET	1.97	1.38	3.35	1.18	7.68	1.73	6	LC..1606..
		56904	C5-CFML-35085-06JET	1.97	1.38	3.35	1.18	7.68	1.73	6	LC..1606..

*DCINN3 – minimum bore diameter for internal application, see page 364.

**Max depth of cut for LCGF/LCMF16 = 0.551 inch

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFMR/L..-03	4SMS795	TCEI0513	53
CFMR/L..-04	5SMS795	TCEI0613	71
CFMR/L..-05	5SMS795	TCEI0613	71
CFMR/L..-06	6SMS795	TCEI0815	88

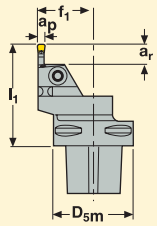
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



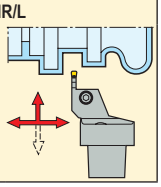
- For insert program, see pages 425-438, 440-441

C.-CFMR/L...JET



Right-hand version shown
$a_r = 5 \times a_p$

C.-CFMR/L
90 °



Capto size	ap	EDP No.	Part No.	Dimensions in inch D5m	f1	l1	ar**	DCINN3*	lbs	Seat size	
C6											
	3	56708	C6-CFMR-45080-03JET	2.48	1.77	3.15	0.59	7.68	4.39	3	LC..1603..
		56809	C6-CFML-45080-03JET	2.48	1.77	3.15	0.59	7.68	4.39	3	LC..1603..
	4	56728	C6-CFMR-45080-04JET	2.48	1.77	3.15	0.79	7.68	2.51	4	LC..1604..
		56877	C6-CFML-45080-04JET	2.48	1.77	3.15	0.79	7.68	2.51	4	LC..1604..
	5	56730	C6-CFMR-45080-05JET	2.48	1.77	3.15	0.98	7.68	2.40	5	LC..1605..
		56895	C6-CFML-45080-05JET	2.48	1.77	3.15	0.98	7.68	2.40	5	LC..1605..
	6	56801	C6-CFMR-45085-06JET	2.48	1.77	3.35	1.18	7.68	2.51	6	LC..1606..
		56898	C6-CFML-45085-06JET	2.48	1.77	3.35	1.18	7.68	2.51	6	LC..1606..

*DCINN3 – minimum bore diameter for internal application, see page 364.

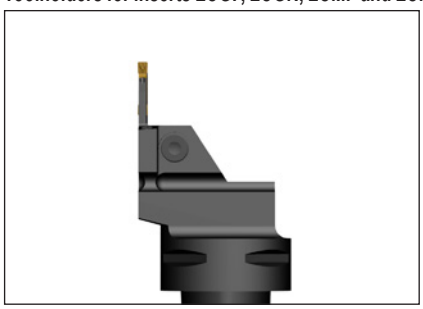
**Max depth of cut for LCGF/LCMF16 = 0.551 inch

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFMR/L..-03	4SMS795	TCEI0513	53
CFMR/L..-04	5SMS795	TCEI0613	71
CFMR/L..-05	5SMS795	TCEI0613	71
CFMR/L..-06	6SMS795	TCEI0815	88

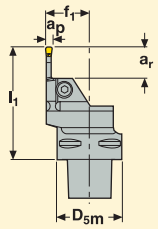
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



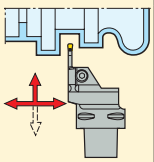
- For insert program, see pages 425-438, 440-441

C.-CFOR/L...JET



Right-hand version shown
$a_r = 6 \times a_p$

C.-CFOR/L
90 °



Capto size	ap	EDP No.	Part No.	Dimensions in inch D5m	f1	l1	ar**	DCINN3*	lbs	Seat size	
C4											
	3	59334	C4-CFOR-27070-03-JET	1.57	1.06	2.76	0.71	7.68	0.97	3	LC..1603..
		59199	C4-CFOL-27070-03-JET	1.57	1.06	2.76	0.71	7.68	0.97	3	LC..1603..
	4	59335	C4-CFOR-27080-04-JET	1.57	1.06	3.15	0.94	7.68	1.08	4	LC..1604..
		59332	C4-CFOL-27080-04-JET	1.57	1.06	3.15	0.94	7.68	1.08	4	LC..1604..
	5	59336	C4-CFOR-27085-05-JET	1.57	1.06	3.35	1.18	7.68	1.06	5	LC..1605..
		59333	C4-CFOL-27085-05-JET	1.57	1.06	3.35	1.18	7.68	1.06	5	LC..1605..
C5											
	3	59341	C5-CFOR-35070-03-JET	1.97	1.38	2.76	0.71	7.68	1.54	6	LC..1603..
		59337	C5-CFOL-35070-03-JET	1.97	1.38	2.76	0.71	7.68	1.54	6	LC..1603..
	4	59342	C5-CFOR-35080-04-JET	1.97	1.38	3.15	0.94	7.68	1.57	4	LC..1604..
		59338	C5-CFOL-35080-04-JET	1.97	1.38	3.15	0.94	7.68	1.57	4	LC..1604..
	5	59343	C5-CFOR-35085-05-JET	1.97	1.38	3.35	1.18	7.68	1.57	5	LC..1605..
		59339	C5-CFOL-35085-05-JET	1.97	1.38	3.35	1.18	7.68	1.57	5	LC..1605..
	6	59344	C5-CFOR-35100-06-JET	1.97	1.38	3.94	1.42	7.68	2.04	6	LC..1606..
		59340	C5-CFOL-35100-06-JET	1.97	1.38	3.94	1.42	7.68	2.04	6	LC..1606..

*DCINN3 – minimum bore diameter for internal application, see page 364.

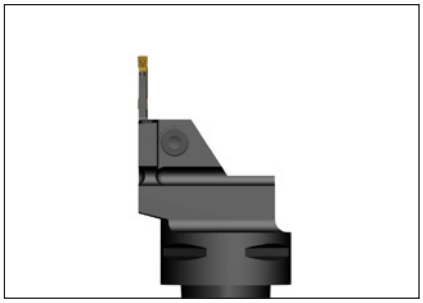
**Max depth of cut for LCGF/LCMF16 = 0.551 inch

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-03	4SMS795	TCEI0513	53
CFOR/L..-04	5SMS795	TCEI0613	71
CFOR/L..-05	5SMS795	TCEI0613	71
CFOR/L..-06	6SMS795	TCEI0815	88

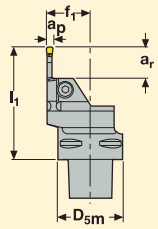
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



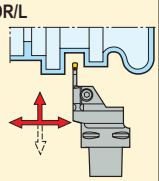
- For insert program, see pages 425-438, 440-441

C.-CFOR/L...JET



Right-hand version shown
$a_r = 6 \times a_p$

C.-CFOR/L
90 °



Capto size	ap	EDP No.	Part No.	Dimensions in inch D5m	f1	l1	ar**	DCINN3*	lbs	Seat size	
C6											
	3	59350	C6-CFOR-45075-03-JET	2.48	1.77	2.95	0.71	7.68	2.47	3	LC..1603..
		59345	C6-CFOL-45075-03-JET	2.48	1.77	2.95	0.71	7.68	2.47	3	LC..1603..
	4	59351	C6-CFOR-45080-04-JET	2.48	1.77	3.15	0.94	7.68	2.47	4	LC..1604..
		59346	C6-CFOL-45080-04-JET	2.48	1.77	3.15	0.94	7.68	2.47	4	LC..1604..
	5	59352	C6-CFOR-45090-05-JET	2.48	1.77	3.54	1.18	7.68	2.59	5	LC..1605..
		59347	C6-CFOL-45090-05-JET	2.48	1.77	3.54	1.18	7.68	2.59	5	LC..1605..
	6	59353	C6-CFOR-45100-06-JET	2.48	1.77	3.94	1.42	7.68	2.77	6	LC..1606..
		59348	C6-CFOL-45100-06-JET	2.48	1.77	3.94	1.42	7.68	2.77	6	LC..1606..
	8	59354	C6-CFOR-45115-08-JET	2.48	1.77	4.53	1.89	7.68	3.02	8	LC..3008..
		59349	C6-CFOL-45115-08-JET	2.48	1.77	4.53	1.89	7.68	3.02	8	LC..3008..

*DCINN3 – minimum bore diameter for internal application, see page 364.

**Max depth of cut for LCGF/LCMF16 = 0.551 inch, LCGF/LCMF30.. = 1.102 inch

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-03	4SMS795	TCEI0513	53
CFOR/L..-04	5SMS795	TCEI0613	71
CFOR/L..-05	5SMS795	TCEI0613	71
CFOR/L..-06	6SMS795	TCEI0815	88
CFOR/L..-08	6SMS795	TCEI1020	133

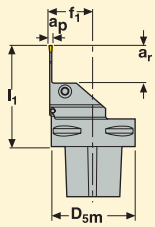
Please check availability in current price and stock-list

Toolholders for inserts LCMF

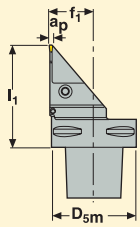


- For insert program, see pages 420

C.-CZFR/L...JET

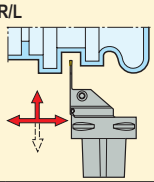


C.-CZFR/L...RBJET



Right-hand version shown
ar = 12.5 x a_p

C.-CFZR/L
90 °



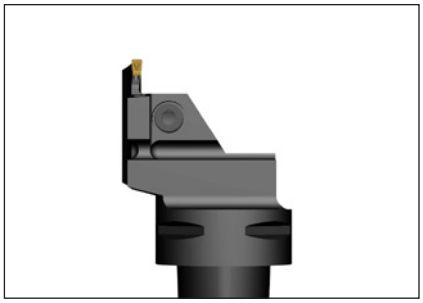
Capto size	ap	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	a_r	D_m*	lbs	Seat size	
C4											
	2	65731	C4-CFZR-22075-2802JET	1.575	0.866	2.953	1.024	–	1.10	2	LC..2802..
		65737	C4-CFZL-22075-2802JET	1.575	0.866	2.953	1.024	–	1.10	2	LC..2802..
C5											
	2	65732	C5-CFZR-27075-2802JET	1.969	1.063	2.953	1.024	–	1.54	2	LC..2802..
		65738	C5-CFZL-27075-2802JET	1.969	1.063	2.953	1.024	–	1.54	2	LC..2802..
C6											
	2	65733	C6-CFZR-33075-2802JET	2.480	1.299	2.953	1.024	–	2.20	2	LC..2802..
		65739	C6-CFZL-33075-2802JET	2.480	1.299	2.953	1.024	–	2.20	2	LC..2802..
C4											
	2	65734	C4-CFZR-22075-2802RBJET	1.575	0.866	2.953	–	2.047	1.32	2	LC..2802..
		65740	C4-CFZL-22075-2802RBJET	1.575	0.866	2.953	–	2.047	1.32	2	LC..2802..
C5											
	2	65735	C5-CFZR-27075-2802RBJET	1.969	1.063	2.953	–	2.047	1.54	2	LC..2802..
		65741	C5-CFZL-27075-2802RBJET	1.969	1.063	2.953	–	2.047	1.54	2	LC..2802..
C6											
	2	65736	C6-CFZR-33075-2802RBJET	2.480	1.299	2.953	–	2.047	2.43	2	LC..2802..
		65742	C6-CFZL-33075-2802RBJET	2.480	1.299	2.953	–	2.047	2.43	2	LC..2802..

*Due to the design, grooving depth is limited, see page 364.

Spare Parts, Parts included in delivery

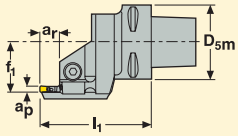
For holder	Clamp key	Clamp screw	Torque value in/lbs
CFZR/L..-02	4SMS795	TCEI0513	53

Please check availability in current price and stock-list

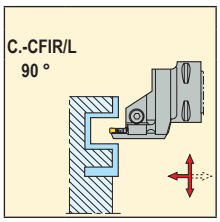


- For insert program, see pages 425-438, 440-441
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFIR...L...JET, CFIL...R...JET



Right-hand version with left-hand blade shown
$a_r = 3 \times a_p$



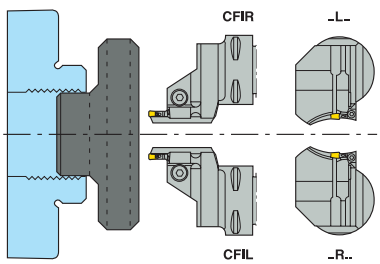
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C4												
	3	59368	C4-CFIR -27060-03L080055-JET	2.17	3.15	1.57	1.06	2.36	0.35	1.1	3	LC..1603..
		59369	-27060-03L100070-JET	2.76	3.94	1.57	1.06	2.36	0.35	1.1	3	LC..1603..
		59370	-27060-03L130090-JET	3.54	5.12	1.57	1.06	2.36	0.35	1.1	3	LC..1603..
		59371	-27060-03L170110-JET	4.33	6.69	1.57	1.06	2.36	0.35	0.9	3	LC..1603..
		59209	C4-CFIL -27060-03R080055-JET	2.17	3.15	1.57	1.06	2.36	0.35	1.1	3	LC..1603..
		59355	-27060-03R100070-JET	2.76	3.94	1.57	1.06	2.36	0.35	1.1	3	LC..1603..
		59356	-27060-03R130090-JET	3.54	5.12	1.57	1.06	2.36	0.35	1.1	3	LC..1603..
		59357	-27060-03R170110-JET	4.33	6.69	1.57	1.06	2.36	0.35	0.9	3	LC..1603..
	4	59372	C4-CFIR -27065-04L080055-JET	2.17	3.15	1.57	1.06	2.56	0.47	1.1	4	LC..1604..
		59373	-27065-04L100070-JET	2.76	3.94	1.57	1.06	2.56	0.47	0.9	4	LC..1604..
		59374	-27065-04L130090-JET	3.54	5.12	1.57	1.06	2.56	0.47	0.9	4	LC..1604..
		59375	-27065-04L170110-JET	4.33	6.69	1.57	1.06	2.56	0.47	0.9	4	LC..1604..
		59376	-27065-04L230140-JET	5.51	9.06	1.57	1.06	2.56	0.47	1.1	4	LC..1604..
		59358	C4-CFIL -27065-04R080055-JET	2.17	3.15	1.57	1.06	2.56	0.47	1.1	4	LC..1604..
		59359	-27065-04R100070-JET	2.76	3.94	1.57	1.06	2.56	0.47	0.9	4	LC..1604..
		59360	-27065-04R130090-JET	3.54	5.12	1.57	1.06	2.56	0.47	0.9	4	LC..1604..
		59361	-27065-04R170110-JET	4.33	6.69	1.57	1.06	2.56	0.47	0.9	4	LC..1604..
		59362	-27065-04R230140-JET	5.51	9.06	1.57	1.06	2.56	0.47	1.1	4	LC..1604..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

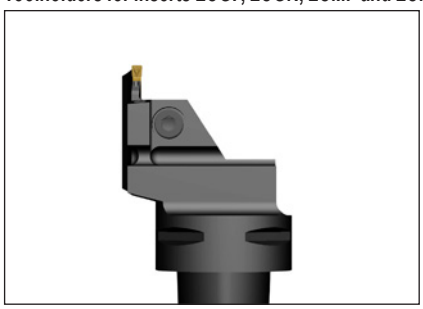
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFIR/L..-03	4SMS795	TCEI0513	53
CFIR/L..-04	5SMS795	TCEI0613	71



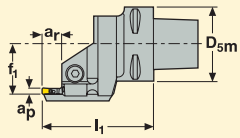
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

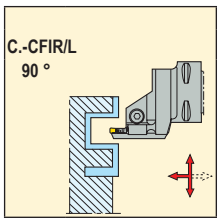


- For insert program, see pages 425-434, 436, 440-441
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFIR...L...JET, CFIL...R...JET



Right-hand version with left-hand blade shown
$a_r = 3 \times a_p$



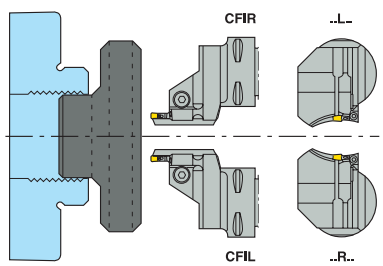
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C4												
	5	59377	C4-CFIR -27065-05L080055-JET	2.17	3.15	1.57	1.06	2.56	0.59	1.1	5	LC..1605..
		59378	-27065-05L100070-JET	2.76	3.94	1.57	1.06	2.56	0.59	1.1	5	LC..1605..
		59379	-27065-05L130090-JET	3.54	5.12	1.57	1.06	2.56	0.59	1.1	5	LC..1605..
		59380	-27065-05L170110-JET	4.33	6.69	1.57	1.06	2.56	0.59	0.9	5	LC..1605..
		59381	-27065-05L230140-JET	5.51	9.06	1.57	1.06	2.56	0.59	0.9	5	LC..1605..
		59363	C4-CFIL -27065-05R080055-JET	2.17	3.15	1.57	1.06	2.56	0.59	1.1	5	LC..1605..
		59364	-27065-05R100070-JET	2.76	3.94	1.57	1.06	2.56	0.59	1.1	5	LC..1605..
		59365	-27065-05R130090-JET	3.54	5.12	1.57	1.06	2.56	0.59	1.1	5	LC..1605..
		59366	-27065-05R170110-JET	4.33	6.69	1.57	1.06	2.56	0.59	0.9	5	LC..1605..
		59367	-27065-05R230140-JET	5.51	9.06	1.57	1.06	2.56	0.59	0.9	5	LC..1605..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

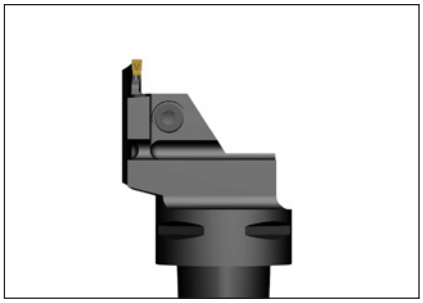
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFIR/L..-05	5SMS795	TCEI0613	71



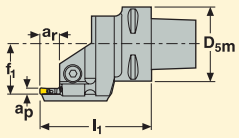
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

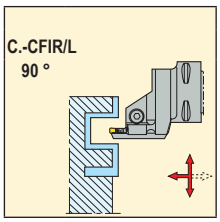


- For insert program, see pages 425-438, 440-441
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CFIR...L...JET, CFIL...R...JET



Right-hand version with left-hand blade shown
$a_r = 3 \times a_p$



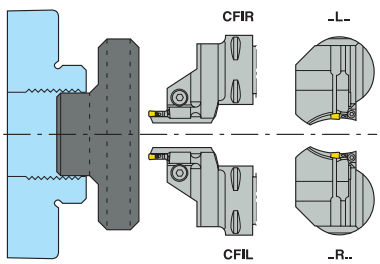
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C5												
	3	59723	C5-CFIR -35060-03L080055-JET	2.17	3.15	1.97	1.38	2.36	0.35	1.5	3	LC..1603..
		59724	-35060-03L100070-JET	2.76	3.94	1.97	1.38	2.36	0.35	1.3	3	LC..1603..
		59725	-35060-03L130090-JET	3.54	5.12	1.97	1.38	2.36	0.35	1.5	3	LC..1603..
		59726	-35060-03L170110-JET	4.33	6.69	1.97	1.38	2.36	0.35	1.3	3	LC..1603..
		59382	C5-CFIL -35060-03R080055-JET	2.17	3.15	1.97	1.38	2.36	0.35	1.5	3	LC..1603..
		59383	-35060-03R100070-JET	2.76	3.94	1.97	1.38	2.36	0.35	1.3	3	LC..1603..
		59384	-35060-03R130090-JET	3.54	5.12	1.97	1.38	2.36	0.35	1.5	3	LC..1603..
		59385	-35060-03R170110-JET	4.33	6.69	1.97	1.38	2.36	0.35	1.3	3	LC..1603..
	4	59727	C5-CFIR -35065-04L080055-JET	2.17	3.15	1.97	1.38	2.56	0.47	1.5	4	LC..1604..
		59728	-35065-04L100070-JET	2.76	3.94	1.97	1.38	2.56	0.47	1.3	4	LC..1604..
		59729	-35065-04L130090-JET	3.54	5.12	1.97	1.38	2.56	0.47	1.5	4	LC..1604..
		59734	-35065-04L170110-JET	4.33	6.69	1.97	1.38	2.56	0.47	1.5	4	LC..1604..
		59735	-35065-04L230140-JET	5.51	9.06	1.97	1.38	2.56	0.47	1.5	4	LC..1604..
		59386	C5-CFIL -35065-04R080055-JET	2.17	3.15	1.97	1.38	2.56	0.47	1.5	4	LC..1604..
		59387	-35065-04R100070-JET	2.76	3.94	1.97	1.38	2.56	0.47	1.3	4	LC..1604..
		59388	-35065-04R130090-JET	3.54	5.12	1.97	1.38	2.56	0.47	1.5	4	LC..1604..
		59389	-35065-04R170110-JET	4.33	6.69	1.97	1.38	2.56	0.47	1.5	4	LC..1604..
		59390	-35065-04R230140-JET	5.51	9.06	1.97	1.38	2.56	0.47	1.5	4	LC..1604..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.

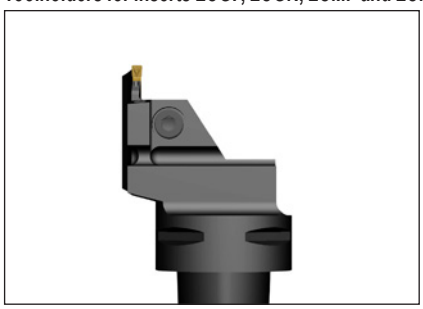
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFIR/L..-03	4SMS795	TCEI0513	53
CFIR/L..-04	5SMS795	TCEI0613	71



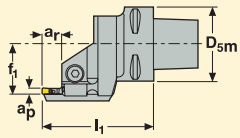
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



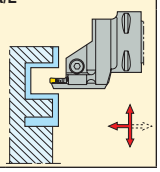
- For insert program, see pages 425-436, 440-441
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CFIR...L...JET, CFIL...R...JET



Right-hand version with left-hand blade shown
$a_r = 3 \times a_p$

C.-CFIR/L 90 °



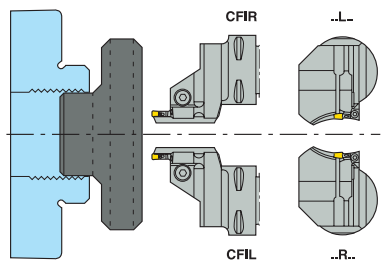
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C5												
	5	59736	C5-CFIR -35065-05L080055-JET	2.17	3.15	1.97	1.38	2.56	0.59	1.5	5	LC..1605..
		59737	-35065-05L100070-JET	2.76	3.94	1.97	1.38	2.56	0.59	1.5	5	LC..1605..
		59738	-35065-05L130090-JET	3.54	5.12	1.97	1.38	2.56	0.59	1.3	5	LC..1605..
		59739	-35065-05L170110-JET	4.33	6.69	1.97	1.38	2.56	0.59	1.3	5	LC..1605..
		59740	-35065-05L230140-JET	5.51	9.06	1.97	1.38	2.56	0.59	1.5	5	LC..1605..
		59391	C5-CFIL -35065-05R080055-JET	2.17	3.15	1.97	1.38	2.56	0.59	1.5	5	LC..1605..
		59392	-35065-05R100070-JET	2.76	3.94	1.97	1.38	2.56	0.59	1.5	5	LC..1605..
		59709	-35065-05R130090-JET	3.54	5.12	1.97	1.38	2.56	0.59	1.3	5	LC..1605..
		59710	-35065-05R170110-JET	4.33	6.69	1.97	1.38	2.56	0.59	1.3	5	LC..1605..
		59717	-35065-05R230140-JET	5.51	9.06	1.97	1.38	2.56	0.59	1.5	5	LC..1605..
	6	59741	C5-CFIR -35075-06L080055-JET	2.17	3.15	1.97	1.38	2.95	0.71	1.8	6	LC..1606..
		59742	-35075-06L100070-JET	2.76	3.94	1.97	1.38	2.95	0.71	1.3	6	LC..1606..
		59743	-35075-06L130090-JET	3.54	5.12	1.97	1.38	2.95	0.71	1.8	6	LC..1606..
		59744	-35075-06L170110-JET	4.33	6.69	1.97	1.38	2.95	0.71	1.3	6	LC..1606..
		59745	-35075-06L230140-JET	5.51	9.06	1.97	1.38	2.95	0.71	1.8	6	LC..1606..
		59718	C5-CFIL -35075-06R080055-JET	2.17	3.15	1.97	1.38	2.95	0.71	1.8	6	LC..1606..
		59719	-35075-06R100070-JET	2.76	3.94	1.97	1.38	2.95	0.71	1.3	6	LC..1606..
		59720	-35075-06R130090-JET	3.54	5.12	1.97	1.38	2.95	0.71	1.8	6	LC..1606..
		59721	-35075-06R170110-JET	4.33	6.69	1.97	1.38	2.95	0.71	1.3	6	LC..1606..
		59722	-35075-06R230140-JET	5.51	9.06	1.97	1.38	2.95	0.71	1.8	6	LC..1606..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

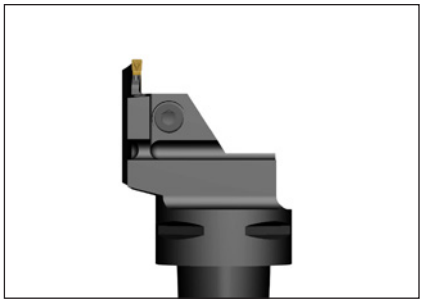
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFIR/L..-05	5SMS795	TCEI0613	71
CFIR/L..-06	6SMS795	TCEI0815	88



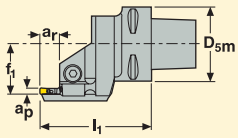
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



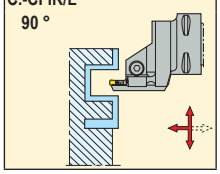
- For insert program, see pages 425-438, 440-441
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CFIR...L...JET, CFIL...R...JET



Right-hand version with left-hand blade shown
$a_r = 3 \times a_p$

C.-CFIR/L 90 °



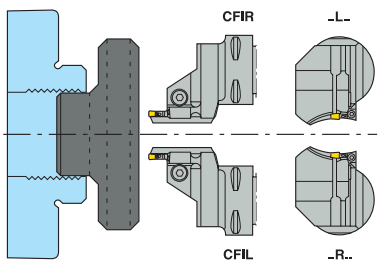
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C6												
	3	60107	C6-CFIR -45065-03L080055-JET	2.17	3.15	2.48	1.77	2.56	0.35	2.4	3	LC..1603..
		60108	-45065-03L100070-JET	2.76	3.94	2.48	1.77	2.56	0.35	2.4	3	LC..1603..
		60109	-45065-03L130090-JET	3.54	5.12	2.48	1.77	2.56	0.35	2.4	3	LC..1603..
		60115	-45065-03L170110-JET	4.33	6.69	2.48	1.77	2.56	0.35	2.4	3	LC..1603..
		59747	C6-CFIL -45065-03R080055-JET	2.17	3.15	2.48	1.77	2.56	0.35	2.4	3	LC..1603..
		59748	-45065-03R100070-JET	2.76	3.94	2.48	1.77	2.56	0.35	2.4	3	LC..1603..
		59819	-45065-03R130090-JET	3.54	5.12	2.48	1.77	2.56	0.35	2.4	3	LC..1603..
		59840	-45065-03R170110-JET	4.33	6.69	2.48	1.77	2.56	0.35	2.4	3	LC..1603..
	4	60125	C6-CFIR -45065-04L080055-JET	2.17	3.15	2.48	1.77	2.56	0.47	2.4	4	LC..1604..
		60130	-45065-04L100070-JET	2.76	3.94	2.48	1.77	2.56	0.47	2.4	4	LC..1604..
		60134	-45065-04L130090-JET	3.54	1.18	2.48	1.77	2.56	0.47	2.4	4	LC..1604..
		60136	-45065-04L170110-JET	4.33	6.69	2.48	1.77	2.56	0.47	2.4	4	LC..1604..
		60138	-45065-04L230140-JET	5.51	9.06	2.48	1.77	2.56	0.47	2.4	4	LC..1604..
		59958	C6-CFIL -45065-04R080055-JET	2.17	3.15	2.48	1.77	2.56	0.47	2.4	4	LC..1604..
		60001	-45065-04R100070-JET	2.76	3.94	2.48	1.77	2.56	0.47	2.4	4	LC..1604..
		60002	-45065-04R130090-JET	3.54	5.12	2.48	1.77	2.56	0.47	2.4	4	LC..1604..
		60003	-45065-04R170110-JET	4.33	6.69	2.48	1.77	2.56	0.47	2.4	4	LC..1604..
		60004	-45065-04R230140-JET	5.51	9.06	2.48	1.77	2.56	0.47	2.4	4	LC..1604..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

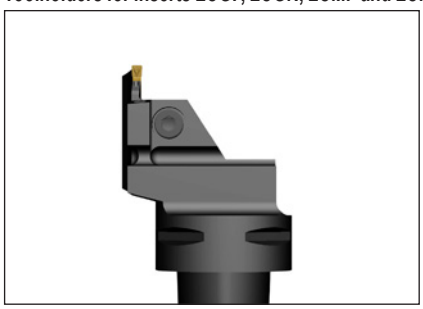
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFIR/L..-03	4SMS795	TCEI0513	53
CFIR/L..-04	5SMS795	TCEI0613	71



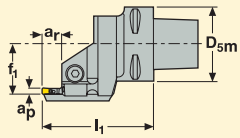
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



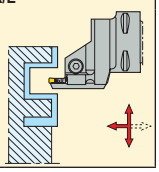
- For insert program, see pages 425-436, 440-441
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CFIR...L...JET, CFIL...R...JET



Right-hand version with left-hand blade shown
$a_r = 3 \times a_p$

C.-CFIR/L 90 °



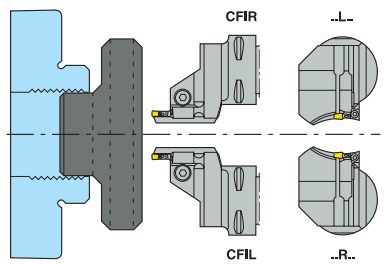
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C6												
	5	60140	C6-CFIR -45070-05L080055-JET	2.17	3.15	2.48	1.77	2.76	0.59	2.4	5	LC..1605..
		60144	-45070-05L100070-JET	2.76	3.94	2.48	1.77	2.76	0.59	2.4	5	LC..1605..
		60146	-45070-05L130090-JET	3.54	5.12	2.48	1.77	2.76	0.59	2.4	5	LC..1605..
		60152	-45070-05L170110-JET	4.33	6.69	2.48	1.77	2.76	0.59	2.4	5	LC..1605..
		60156	-45070-05L230140-JET	5.51	9.06	2.48	1.77	2.76	0.59	2.4	5	LC..1605..
		60005	C6-CFIL -45070-05R080055-JET	2.17	3.15	2.48	1.77	2.76	0.59	2.4	5	LC..1605..
		60006	-45070-05R100070-JET	2.76	3.94	2.48	1.77	2.76	0.59	2.4	5	LC..1605..
		60007	-45070-05R130090-JET	3.54	5.12	2.48	1.77	2.76	0.59	2.4	5	LC..1605..
		60008	-45070-05R170110-JET	4.33	6.69	2.48	1.77	2.76	0.59	2.4	5	LC..1605..
		60031	-45070-05R230140-JET	5.51	9.06	2.48	1.77	2.76	0.59	2.4	5	LC..1605..
	6	60170	C6-CFIR -45075-06L080055-JET	2.17	3.15	2.48	1.77	2.95	0.71	2.4	6	LC..1606..
		60188	-45075-06L100070-JET	2.76	3.94	2.48	1.77	2.95	0.71	2.4	6	LC..1606..
		60189	-45075-06L130090-JET	3.54	5.12	2.48	1.77	2.95	0.71	2.4	6	LC..1606..
		60190	-45075-06L170110-JET	4.33	6.69	2.48	1.77	2.95	0.71	2.4	6	LC..1606..
		60191	-45075-06L230140-JET	5.51	9.06	2.48	1.77	2.95	0.71	2.4	6	LC..1606..
		60079	C6-CFIL -45075-06R080055-JET	2.17	3.15	2.48	1.77	2.95	0.71	2.4	6	LC..1606..
		60080	-45075-06R100070-JET	2.76	3.94	2.48	1.77	2.95	0.71	2.4	6	LC..1606..
		60081	-45075-06R130090-JET	3.54	5.12	2.48	1.77	2.95	0.71	2.4	6	LC..1606..
		60082	-45075-06R170110-JET	4.33	6.69	2.48	1.77	2.95	0.71	2.4	6	LC..1606..
		60101	-45075-06R230140-JET	5.51	9.06	2.48	1.77	2.95	0.71	2.4	6	LC..1606..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

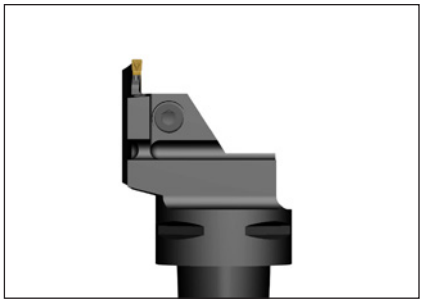
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFIR/L..-05	5SMS795	TCEI0613	71
CFIR/L..-06	6SMS795	TCEI0815	88



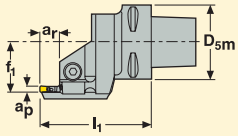
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

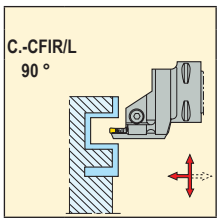


- For insert program, see pages 425, 428-432
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFIR...L...JET, CFIL...R...JET



Right-hand version with left-hand blade shown
$a_r = 3 \times a_p$



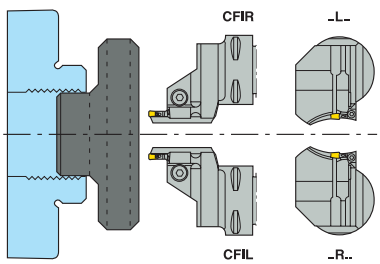
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C6												
	8	60195	C6-CFIR -45085-08L130090-JET	3.54	5.12	2.48	1.77	3.35	0.94	2.6	8	LC..3008..
		60215	-45085-08L170110-JET	4.33	6.69	2.48	1.77	3.35	0.94	2.6	8	LC..3008..
		60217	-45085-08L230140-JET	5.51	9.06	2.48	1.77	3.35	0.94	2.6	8	LC..3008..
		60220	-45085-08L500200-JET	7.87	19.69	2.48	1.77	3.35	0.94	2.6	8	LC..3008..
		60102	C6-CFIL -45085-08R130090-JET	3.54	5.12	2.48	1.77	3.35	0.94	2.6	8	LC..3008..
		60103	-45085-08R170110-JET	4.33	6.69	2.48	1.77	3.35	0.94	2.6	8	LC..3008..
		60104	-45085-08R230140-JET	5.51	9.06	2.48	1.77	3.35	0.94	2.6	8	LC..3008..
		60106	-45085-08R500200-JET	7.87	19.69	2.48	1.77	3.35	0.94	2.6	8	LC..3008..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF30.. = 1.102 inch

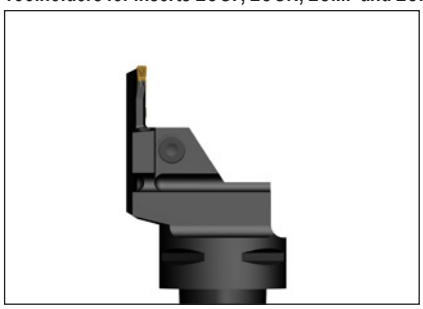
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFIR/L..-08	6SMS795	TCEI1020	133



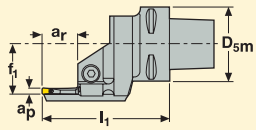
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



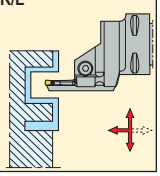
- For insert program, see pages 425-438, 440-441
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFOR...L...JET, CFOL...R...JET



Right-hand version with left-hand blade shown
$a_r = 6 \times a_p$

C.-CFOR/L 90 °



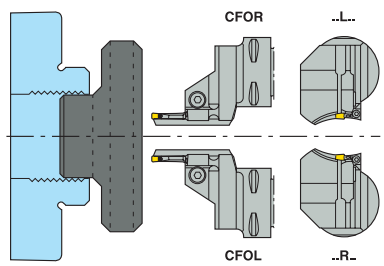
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C4												
	3	60280	C4-CFOR -27070-03L080055-JET	2.17	3.15	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60285	-27070-03L100070-JET	2.76	3.94	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60288	-27070-03L130090-JET	3.54	5.12	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60290	-27070-03L170110-JET	4.33	6.69	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60293	-27070-03L230140-JET	5.51	9.06	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60301	-27070-03L500200-JET	7.87	19.69	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60224	C4-CFOL -27070-03R080055-JET	2.17	3.15	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60226	-27070-03R100070-JET	2.76	3.94	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60228	-27070-03R130090-JET	3.54	5.12	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60236	-27070-03R170110-JET	4.33	6.69	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60251	-27070-03R230140-JET	5.51	9.06	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60252	-27070-03R500200-JET	7.87	19.69	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
	4	60302	C4-CFOR -27080-04L080055-JET	2.17	3.15	1.57	1.06	3.15	0.94	1.1	4	LC..1604..
		60312	-27080-04L100070-JET	2.76	3.94	1.57	1.06	3.15	0.94	1.1	4	LC..1604..
		60315	-27080-04L130090-JET	3.54	5.12	1.57	1.06	3.15	0.94	1.1	4	LC..1604..
		60316	-27080-04L170110-JET	4.33	6.69	1.57	1.06	3.15	0.94	1.1	4	LC..1604..
		60317	-27080-04L230140-JET	5.51	9.06	1.57	1.06	3.15	0.94	1.1	4	LC..1604..
		60347	-27080-04L500200-JET	7.87	19.69	1.57	1.06	3.15	0.94	1.1	4	LC..1604..
		59119	C4-CFOL -27080-04R080055-JET	2.17	3.15	1.57	1.06	3.15	0.94	1.1	4	LC..1604..
		59120	-27080-04R100070-JET	2.76	3.94	1.57	1.06	3.15	0.94	1.1	4	LC..1604..
		59121	-27080-04R130090-JET	3.54	5.12	1.57	1.06	3.15	0.94	1.1	4	LC..1604..
		59122	-27080-04R170110-JET	4.33	6.69	1.57	1.06	3.15	0.94	1.1	4	LC..1604..
		59123	-27080-04R230140-JET	5.51	9.06	1.57	1.06	3.15	0.94	1.1	4	LC..1604..
		59124	-27080-04R500200-JET	7.87	19.69	1.57	1.06	3.15	0.94	1.1	4	LC..1604..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

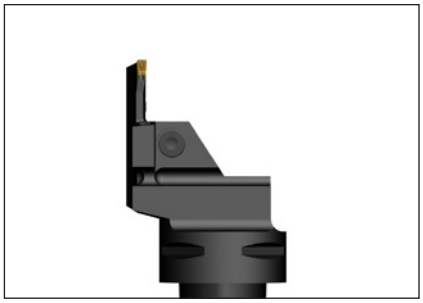
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-03	4SMS795	TCEI0513	53
CFOR/L..-04	5SMS795	TCEI0613	71



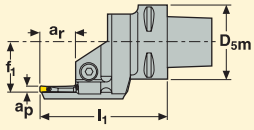
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

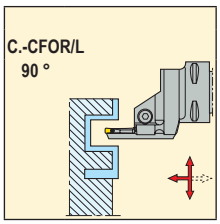


- For insert program, see pages 425-434, 436, 440-441
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFOR...L...JET, CFOL...R...JET



Right-hand version with left-hand blade shown
$a_r = 6 \times a_p$



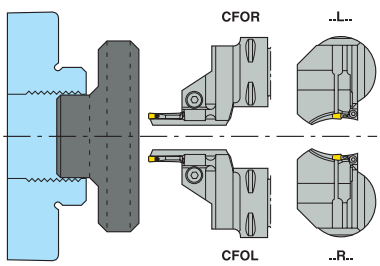
Capto size	ap	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D5m	f1	l1	ar*	lbs	Seat size	
C4												
	5	60353	C4-CFOR -27085-05L080055-JET	2.17	3.15	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60354	-27085-05L100070-JET	2.76	3.94	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60355	-27085-05L130090-JET	3.54	5.12	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60385	-27085-05L170110-JET	4.33	6.69	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60433	-27085-05L230140-JET	5.51	9.06	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60434	-27085-05L500200-JET	7.87	19.69	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60253	C4-CFOL -27085-05R080055-JET	2.17	3.15	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60254	-27085-05R100070-JET	2.76	3.94	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60255	-27085-05R130090-JET	3.54	5.12	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60257	-27085-05R170110-JET	4.33	6.69	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60260	-27085-05R230140-JET	5.51	9.06	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60261	-27085-05R500200-JET	7.87	19.69	1.57	1.06	3.35	1.18	1.1	5	LC..1605..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

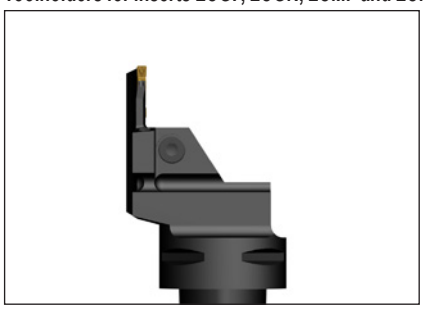
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-05	5SMS795	TCEI0613	71



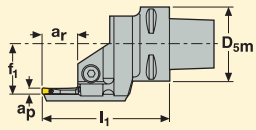
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

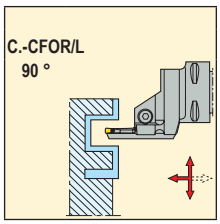


- For insert program, see pages 425-438, 440-441
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFOR...L...JET, CFOL...R...JET



Right-hand version with left-hand blade shown
$a_r = 6 \times a_p$



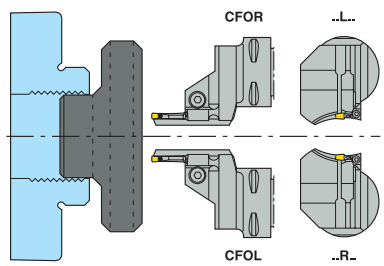
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C5												
	3	60575	C5-CFOR -35070-03L080055-JET	2.17	3.15	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60577	-35070-03L100070-JET	2.76	3.94	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60579	-35070-03L130090-JET	3.54	5.12	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60581	-35070-03L170110-JET	4.33	6.69	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60586	-35070-03L230140-JET	5.51	9.06	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60588	-35070-03L500200-JET	7.87	19.69	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60436	C5-CFOL -35070-03R080055-JET	2.17	3.15	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60440	-35070-03R100070-JET	2.76	3.94	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60450	-35070-03R130090-JET	3.54	5.12	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60458	-35070-03R170110-JET	4.33	6.69	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60461	-35070-03R230140-JET	5.51	9.06	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60464	-35070-03R500200-JET	7.87	19.69	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
	4	60590	C5-CFOR -35080-04L080055-JET	2.17	3.15	1.97	1.38	3.15	0.94	1.8	4	LC..1604..
		60648	-35080-04L100070-JET	2.76	3.94	1.97	1.38	3.15	0.94	1.8	4	LC..1604..
		60655	-35080-04L130090-JET	3.54	5.12	1.97	1.38	3.15	0.94	1.8	4	LC..1604..
		60657	-35080-04L170110-JET	4.33	6.69	1.97	1.38	3.15	0.94	1.8	4	LC..1604..
		60659	-35080-04L230140-JET	5.51	9.06	1.97	1.38	3.15	0.94	1.8	4	LC..1604..
		60661	-35080-04L500200-JET	7.87	19.69	1.97	1.38	3.15	0.94	1.8	4	LC..1604..
		60502	C5-CFOL -35080-04R080055-JET	2.17	3.15	1.97	1.38	3.15	0.94	1.8	4	LC..1604..
		60510	-35080-04R100070-JET	2.76	3.94	1.97	1.38	3.15	0.94	1.8	4	LC..1604..
		60524	-35080-04R130090-JET	3.54	5.12	1.97	1.38	3.15	0.94	1.8	4	LC..1604..
		60526	-35080-04R170110-JET	4.33	6.69	1.97	1.38	3.15	0.94	1.8	4	LC..1604..
		60528	-35080-04R230140-JET	5.51	9.06	1.97	1.38	3.15	0.94	1.8	4	LC..1604..
		60538	-35080-04R500200-JET	7.87	19.69	1.97	1.38	3.15	0.94	1.8	4	LC..1604..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

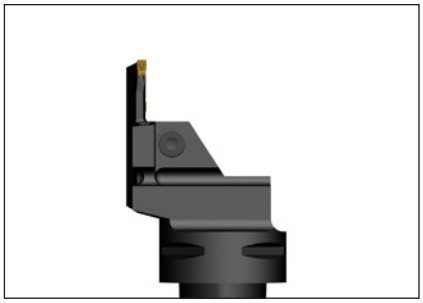
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-03	4SMS795	TCEI0513	53
CFOR/L..-04	5SMS795	TCEI0613	71



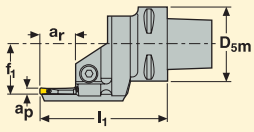
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

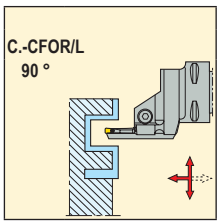


- For insert program, see pages 425-436, 440-441
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFOR...L...JET, CFOL...R...JET



Right-hand version with left-hand blade shown
$a_r = 6 \times a_p$



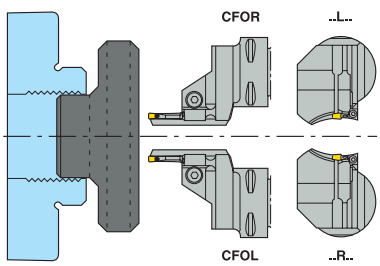
Capto size	ap	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D5m	f1	l1	ar*	lbs	Seat size	
C5												
	5	60669	C5-CFOR -35085-05L080055-JET	2.17	3.15	1.97	1.38	3.35	1.18	1.8	5	LC..1605..
		60671	-35085-05L100070-JET	2.76	3.94	1.97	1.38	3.35	1.18	1.8	5	LC..1605..
		60673	-35085-05L130090-JET	3.54	5.12	1.97	1.38	3.35	1.18	1.8	5	LC..1605..
		60675	-35085-05L170110-JET	4.33	6.69	1.97	1.38	3.35	1.18	1.8	5	LC..1605..
		60691	-35085-05L230140-JET	5.51	9.06	1.97	1.38	3.35	1.18	1.8	5	LC..1605..
		60705	-35085-05L500200-JET	7.87	19.69	1.97	1.38	3.35	1.18	1.8	5	LC..1605..
		60550	C5-CFOL -35085-05R080055-JET	2.17	3.15	1.97	1.38	3.35	1.18	1.8	5	LC..1605..
		60551	-35085-05R100070-JET	2.76	3.94	1.97	1.38	3.35	1.18	1.8	5	LC..1605..
		60561	-35085-05R130090-JET	3.54	5.12	1.97	1.38	3.35	1.18	1.8	5	LC..1605..
		60563	-35085-05R170110-JET	4.33	6.69	1.97	1.38	3.35	1.18	1.8	5	LC..1605..
		60565	-35085-05R230140-JET	5.51	9.06	1.97	1.38	3.35	1.18	1.8	5	LC..1605..
		60567	-35085-05R500200-JET	7.87	19.69	1.97	1.38	3.35	1.18	1.8	5	LC..1605..
	6	60707	C5-CFOR -35100-06L080055-JET	2.17	3.15	1.97	1.38	3.94	1.42	2.2	6	LC..1606..
		60721	-35100-06L100070-JET	2.76	3.94	1.97	1.38	3.94	1.42	2.2	6	LC..1606..
		60723	-35100-06L130090-JET	3.54	5.12	1.97	1.38	3.94	1.42	2.2	6	LC..1606..
		60724	-35100-06L170110-JET	4.33	6.69	1.97	1.38	3.94	1.42	2.2	6	LC..1606..
		60726	-35100-06L230140-JET	5.51	9.06	1.97	1.38	3.94	1.42	2.2	6	LC..1606..
		60728	-35100-06L500200-JET	7.87	19.69	1.97	1.38	3.94	1.42	2.2	6	LC..1606..
		60568	C5-CFOL -35100-06R080055-JET	2.17	3.15	1.97	1.38	3.94	1.42	2.2	6	LC..1606..
		60569	-35100-06R100070-JET	2.76	3.94	1.97	1.38	3.94	1.42	2.2	6	LC..1606..
		60570	-35100-06R130090-JET	3.54	5.12	1.97	1.38	3.94	1.42	2.2	6	LC..1606..
		60571	-35100-06R170110-JET	4.33	6.69	1.97	1.38	3.94	1.42	2.2	6	LC..1606..
		60572	-35100-06R230140-JET	5.51	9.06	1.97	1.38	3.94	1.42	2.2	6	LC..1606..
		60573	-35100-06R500200-JET	7.87	19.69	1.97	1.38	3.94	1.42	2.2	6	LC..1606..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

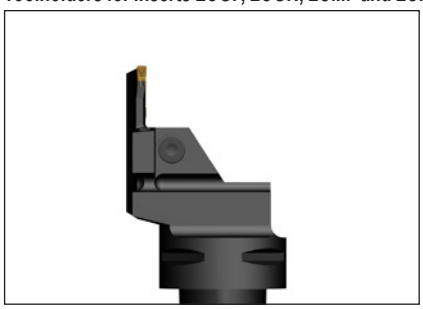
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-05	5SMS795	TCEI0613	71
CFOR/L..-06	6SMS795	TCEI0815	88



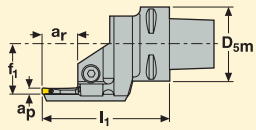
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



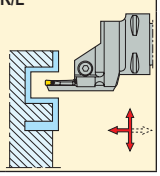
- For insert program, see pages 425-438, 440-441
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFOR...L...JET, CFOL...R...JET



Right-hand version with left-hand blade shown
$a_r = 6 \times a_p$

C.-CFOR/L 90 °



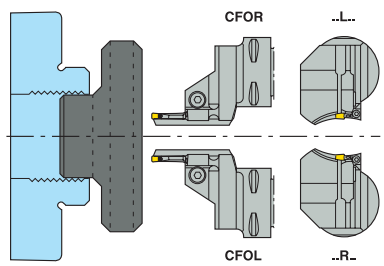
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C6												
	3	60787	C6-CFOR -45075-03L080055-JET	2.17	3.15	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		60788	-45075-03L100070-JET	2.76	3.94	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		60789	-45075-03L130090-JET	3.54	5.12	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		60790	-45075-03L170110-JET	4.33	6.69	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		60791	-45075-03L230140-JET	5.51	9.06	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		60792	-45075-03L500200-JET	7.87	19.69	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		60730	C6-CFOL -45075-03R080055-JET	2.17	3.15	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		60732	-45075-03R100070-JET	2.76	3.94	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		60733	-45075-03R130090-JET	3.54	5.12	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		60734	-45075-03R170110-JET	4.33	6.69	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		60738	-45075-03R230140-JET	5.51	9.06	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		60739	-45075-03R500200-JET	7.87	19.69	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
	4	60793	C6-CFOR -45080-04L080055-JET	2.17	3.15	2.48	1.77	3.15	0.94	2.6	4	LC..1604..
		60797	-45080-04L100070-JET	2.76	3.94	2.48	1.77	3.15	0.94	2.6	4	LC..1604..
		60799	-45080-04L130090-JET	3.54	5.12	2.48	1.77	3.15	0.94	2.6	4	LC..1604..
		60801	-45080-04L170110-JET	4.33	6.69	2.48	1.77	3.15	0.94	2.6	4	LC..1604..
		60802	-45080-04L230140-JET	5.51	9.06	2.48	1.77	3.15	0.94	2.6	4	LC..1604..
		60803	-45080-04L500200-JET	7.87	19.69	2.48	1.77	3.15	0.94	2.6	4	LC..1604..
		60743	C6-CFOL -45080-04R080055-JET	2.17	3.15	2.48	1.77	3.15	0.94	2.6	4	LC..1604..
		60750	-45080-04R100070-JET	2.76	3.94	2.48	1.77	3.15	0.94	2.6	4	LC..1604..
		60751	-45080-04R130090-JET	3.54	5.12	2.48	1.77	3.15	0.94	2.6	4	LC..1604..
		60752	-45080-04R170110-JET	4.33	6.69	2.48	1.77	3.15	0.94	2.6	4	LC..1604..
		60754	-45080-04R230140-JET	5.51	9.06	2.48	1.77	3.15	0.94	2.6	4	LC..1604..
		60755	-45080-04R500200-JET	7.87	19.69	2.48	1.77	3.15	0.94	2.6	4	LC..1604..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

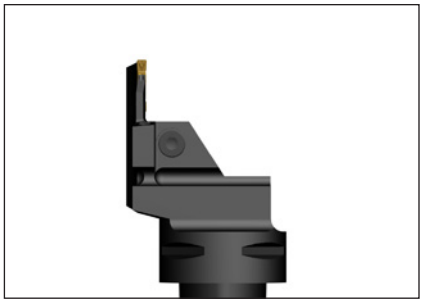
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-03	4SMS795	TCEI0513	53
CFOR/L..-04	5SMS795	TCEI0613	71



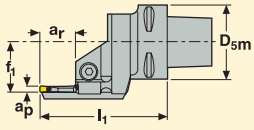
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



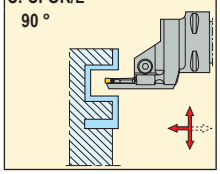
- For insert program, see pages 425-436, 440-441
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFOR...L...JET, CFOL...R...JET



Right-hand version with left-hand blade shown
$a_r = 6 \times a_p$

C.-CFOR/L 90 °



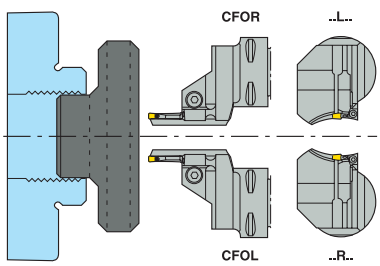
Capto size	ap	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D5m	f1	l1	ar*	lbs	Seat size	
C6												
	5	60804	C6-CFOR -45090-05L080055-JET	2.17	3.15	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		60805	-45090-05L100070-JET	2.76	3.94	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		60806	-45090-05L130090-JET	3.54	5.12	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		60810	-45090-05L170110-JET	4.33	6.69	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		60817	-45090-05L230140-JET	5.51	9.06	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		60823	-45090-05L500200-JET	7.87	19.69	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		60756	C6-CFOL -45090-05R080055-JET	2.17	3.15	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		60758	-45090-05R100070-JET	2.76	3.94	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		60760	-45090-05R130090-JET	3.54	5.12	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		60762	-45090-05R170110-JET	4.33	6.69	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		60767	-45090-05R230140-JET	5.51	9.06	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		60769	-45090-05R500200-JET	7.87	19.69	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
	6	60824	C6-CFOR -45100-06L080055-JET	2.17	3.15	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		60825	-45100-06L100070-JET	2.76	3.94	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		60826	-45100-06L130090-JET	3.54	5.12	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		60827	-45100-06L170110-JET	4.33	6.69	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		60828	-45100-06L230140-JET	5.51	9.06	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		60829	-45100-06L500200-JET	7.87	19.69	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		60770	C6-CFOL -45100-06R080055-JET	2.17	3.15	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		60771	-45100-06R100070-JET	2.76	3.94	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		60773	-45100-06R130090-JET	3.54	5.12	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		60774	-45100-06R170110-JET	4.33	6.69	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		60775	-45100-06R230140-JET	5.51	9.06	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		60777	-45100-06R500200-JET	7.87	19.69	2.48	1.77	3.94	1.42	3.1	6	LC..1606..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

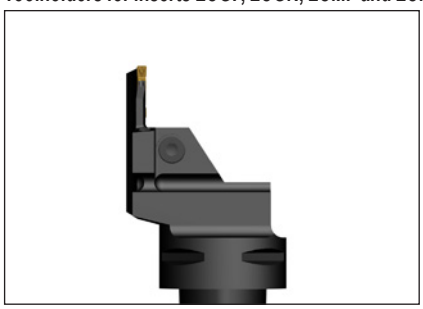
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-05	5SMS795	TCEI0613	71
CFOR/L..-06	6SMS795	TCEI0815	88



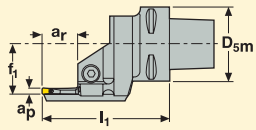
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



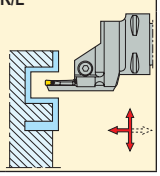
- For insert program, see pages 425, 428-432
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFOR...L...JET, CFOL...R...JET



Right-hand version with left-hand blade shown
$a_r = 6 \times a_p$

C.-CFOR/L 90 °



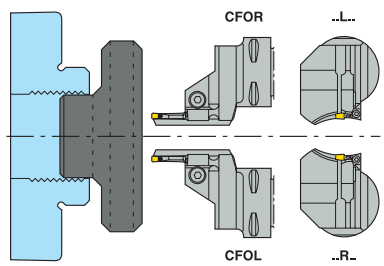
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C6												
	8	60830	C6-CFOR -45115-08L130090-JET	3.54	5.12	2.48	1.77	4.53	1.89	3.3	8	LC..3008..
		60833	-45115-08L170110-JET	4.33	6.69	2.48	1.77	4.53	1.89	3.3	8	LC..3008..
		60839	-45115-08L230140-JET	5.51	9.06	2.48	1.77	4.53	1.89	3.3	8	LC..3008..
		60841	-45115-08L500200-JET	7.87	19.69	2.48	1.77	4.53	1.89	3.3	8	LC..3008..
		60779	C6-CFOL -45115-08R130090-JET	3.54	5.12	2.48	1.77	4.53	1.89	3.3	8	LC..3008..
		60782	-45115-08R170110-JET	4.33	6.69	2.48	1.77	4.53	1.89	3.3	8	LC..3008..
		60783	-45115-08R230140-JET	5.51	9.06	2.48	1.77	4.53	1.89	3.3	8	LC..3008..
		60785	-45115-08R500200-JET	7.87	19.69	2.48	1.77	4.53	1.89	3.3	8	LC..3008..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF30.. = 1.102 inch

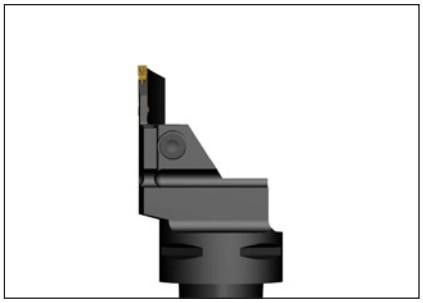
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-08	6SMS795	TCEI1020	133



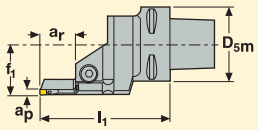
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



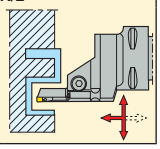
- For insert program, see pages 425-438, 440-441
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFOR...R...JET, CFOL...L...JET



Right-hand version with right-hand blade shown
$a_r = 6 \times a_p$

C.-CFOR/L 90 °



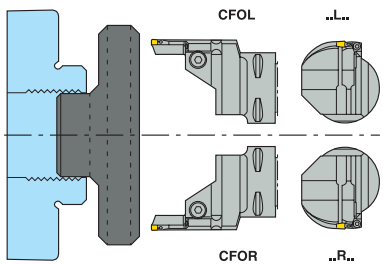
Capto size	ap	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C4												
	3	60872	C4-CFOR -27070-03R080055-JET	2.17	3.15	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60874	-27070-03R100070-JET	2.76	3.94	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60875	-27070-03R130090-JET	3.54	5.12	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60876	-27070-03R170110-JET	4.33	6.69	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60877	-27070-03R230140-JET	5.51	9.06	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60879	-27070-03R500200-JET	7.87	19.69	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60844	C4-CFOL -27070-03L080055-JET	2.17	3.15	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60845	-27070-03L100070-JET	2.76	3.94	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60849	-27070-03L130090-JET	3.54	5.12	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60850	-27070-03L170110-JET	4.33	6.69	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60853	-27070-03L230140-JET	5.51	9.06	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
		60855	-27070-03L500200-JET	7.87	19.69	1.57	1.06	2.76	0.71	1.1	3	LC..1603..
	4	60880	C4-CFOR -27080-04R080055-JET	2.17	3.15	1.57	1.06	3.15	0.94	1.8	4	LC..1604..
		60888	-27080-04R100070-JET	2.76	3.94	1.57	1.06	3.15	0.94	1.8	4	LC..1604..
		60890	-27080-04R130090-JET	3.54	5.12	1.57	1.06	3.15	0.94	1.8	4	LC..1604..
		60891	-27080-04R170110-JET	4.33	6.69	1.57	1.06	3.15	0.94	1.8	4	LC..1604..
		60892	-27080-04R230140-JET	5.51	9.06	1.57	1.06	3.15	0.94	1.8	4	LC..1604..
		60893	-27080-04R500200-JET	7.87	19.69	1.57	1.06	3.15	0.94	1.8	4	LC..1604..
		60856	C4-CFOL -27080-04L080055-JET	2.17	3.15	1.57	1.06	3.15	0.94	1.8	4	LC..1604..
		60857	-27080-04L100070-JET	2.76	3.94	1.57	1.06	3.15	0.94	1.8	4	LC..1604..
		60858	-27080-04L130090-JET	3.54	5.12	1.57	1.06	3.15	0.94	1.8	4	LC..1604..
		60859	-27080-04L170110-JET	4.33	6.69	1.57	1.06	3.15	0.94	1.8	4	LC..1604..
		60860	-27080-04L230140-JET	5.51	9.06	1.57	1.06	3.15	0.94	1.8	4	LC..1604..
		60861	-27080-04L500200-JET	7.87	19.69	1.57	1.06	3.15	0.94	1.8	4	LC..1604..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

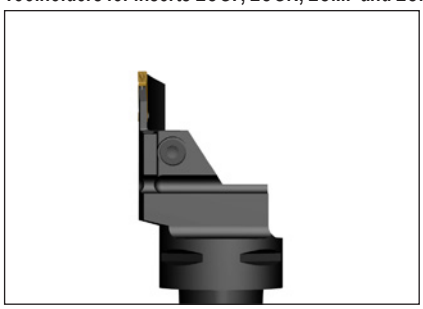
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-03	4SMS795	TCEI0513	53
CFOR/L..-04	5SMS795	TCEI0613	71



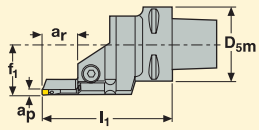
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



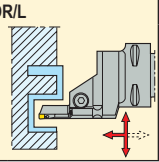
- For insert program, see pages 425-434, 436, 440-441
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFOR...R...JET, CFOL...L...JET



Right-hand version with right-hand blade shown
$a_r = 6 \times a_p$

C.-CFOR/L 90 °



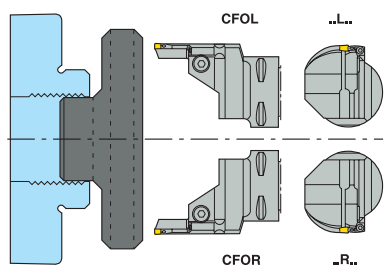
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C4												
	5	60896	C4-CFOR -27085-05R080055-JET	2.17	3.15	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60899	-27085-05R100070-JET	2.76	3.94	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60900	-27085-05R130090-JET	3.54	5.12	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60902	-27085-05R170110-JET	4.33	6.69	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60904	-27085-05R230140-JET	5.51	9.06	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60905	-27085-05R500200-JET	7.87	19.69	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60864	C4-CFOL -27085-05L080055-JET	2.17	3.15	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60865	-27085-05L100070-JET	2.76	3.94	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60866	-27085-05L130090-JET	3.54	5.12	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60867	-27085-05L170110-JET	4.33	6.69	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60870	-27085-05L230140-JET	5.51	9.06	1.57	1.06	3.35	1.18	1.1	5	LC..1605..
		60871	-27085-05L500200-JET	7.87	19.69	1.57	1.06	3.35	1.18	1.1	5	LC..1605..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

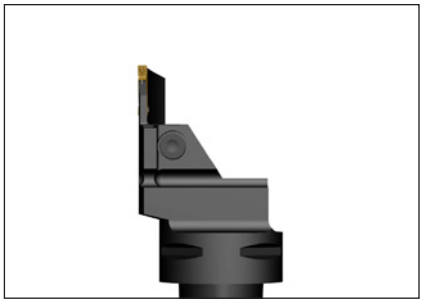
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-05	5SMS795	TCEI0613	71



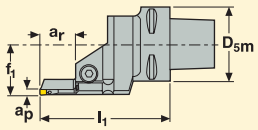
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



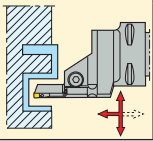
- For insert program, see pages 425-438, 440-441
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFOR...R...JET, CFOL...L...JET



Right-hand version with right-hand blade shown
$a_r = 6 \times a_p$

C.-CFOR/L 90 °



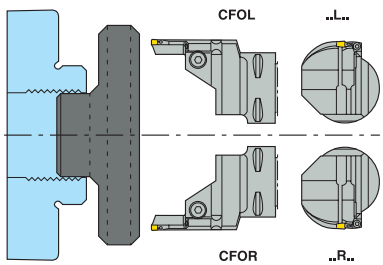
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C5												
	3	61080	C5-CFOR -35070-03R080055-JET	2.17	3.15	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		61103	-35070-03R100070-JET	2.76	3.94	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		61106	-35070-03R130090-JET	3.54	5.12	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		61113	-35070-03R170110-JET	4.33	6.69	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		61126	-35070-03R230140-JET	5.51	9.06	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		61127	-35070-03R500200-JET	7.87	19.69	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60908	C5-CFOL -35070-03L080055-JET	2.17	3.15	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60912	-35070-03L100070-JET	2.76	3.94	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60913	-35070-03L130090-JET	3.54	5.12	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60914	-35070-03L170110-JET	4.33	6.69	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60915	-35070-03L230140-JET	5.51	9.06	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
		60929	-35070-03L500200-JET	7.87	19.69	1.97	1.38	2.76	0.71	1.5	3	LC..1603..
	4	61129	C5-CFOR -35080-04R080055-JET	2.17	3.15	1.97	1.38	3.15	0.94	1.5	4	LC..1604..
		61131	-35080-04R100070-JET	2.76	3.94	1.97	1.38	3.15	0.94	1.5	4	LC..1604..
		61137	-35080-04R130090-JET	3.54	5.12	1.97	1.38	3.15	0.94	1.5	4	LC..1604..
		61151	-35080-04R170110-JET	4.33	6.69	1.97	1.38	3.15	0.94	1.5	4	LC..1604..
		61160	-35080-04R230140-JET	5.51	9.06	1.97	1.38	3.15	0.94	1.5	4	LC..1604..
		61162	-35080-04R500200-JET	7.87	19.69	1.97	1.38	3.15	0.94	1.5	4	LC..1604..
		60930	C5-CFOL -35080-04L080055-JET	2.17	3.15	1.97	1.38	3.15	0.94	1.5	4	LC..1604..
		60932	-35080-04L100070-JET	2.76	3.94	1.97	1.38	3.15	0.94	1.5	4	LC..1604..
		61000	-35080-04L130090-JET	3.54	5.12	1.97	1.38	3.15	0.94	1.5	4	LC..1604..
		61001	-35080-04L170110-JET	4.33	6.69	1.97	1.38	3.15	0.94	1.5	4	LC..1604..
		61002	-35080-04L230140-JET	5.51	9.06	1.97	1.38	3.15	0.94	1.5	4	LC..1604..
		61003	-35080-04L500200-JET	7.87	19.69	1.97	1.38	3.15	0.94	1.5	4	LC..1604..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551

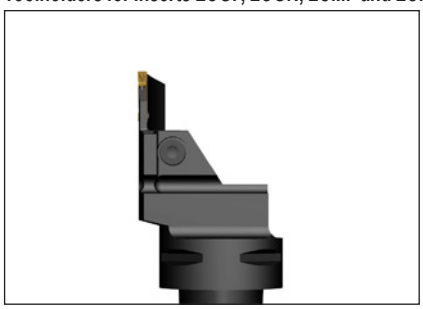
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-03	4SMS795	TCEI0513	53
CFOR/L..-04	5SMS795	TCEI0613	71



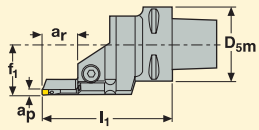
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



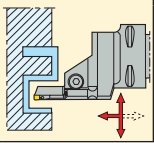
- For insert program, see pages 425-436, 440-441
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFOR...R...JET, CFOL...L...JET



Right-hand version with right-hand blade shown
$a_r = 6 \times a_p$

C.-CFOR/L 90 °



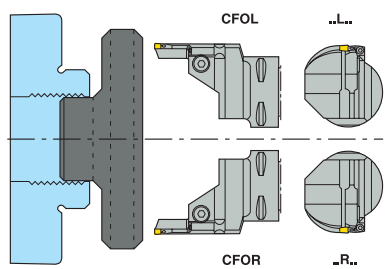
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C5												
	5	61163	C5-CFOR -35085-05R080055-JET	2.17	3.15	1.97	1.38	3.35	1.18	1.5	5	LC..1605..
		61164	-35085-05R100070-JET	2.76	3.94	1.97	1.38	3.35	1.18	1.5	5	LC..1605..
		61165	-35085-05R130090-JET	3.54	5.12	1.97	1.38	3.35	1.18	1.5	5	LC..1605..
		61167	-35085-05R170110-JET	4.33	6.69	1.97	1.38	3.35	1.18	1.5	5	LC..1605..
		61169	-35085-05R230140-JET	5.51	9.06	1.97	1.38	3.35	1.18	1.5	5	LC..1605..
		61171	-35085-05R500200-JET	7.87	19.69	1.97	1.38	3.35	1.18	1.5	5	LC..1605..
		61007	C5-CFOL -35085-05L080055-JET	2.17	3.15	1.97	1.38	3.35	1.18	1.5	5	LC..1605..
		61009	-35085-05L100070-JET	2.76	3.94	1.97	1.38	3.35	1.18	1.5	5	LC..1605..
		61015	-35085-05L130090-JET	3.54	5.12	1.97	1.38	3.35	1.18	1.5	5	LC..1605..
		61029	-35085-05L170110-JET	4.33	6.69	1.97	1.38	3.35	1.18	1.5	5	LC..1605..
		61044	-35085-05L230140-JET	5.51	9.06	1.97	1.38	3.35	1.18	1.5	5	LC..1605..
		61050	-35085-05L500200-JET	7.87	19.69	1.97	1.38	3.35	1.18	1.5	5	LC..1605..
	6	61173	C5-CFOR -35100-06R080055-JET	2.17	3.15	1.97	1.38	3.94	1.42	2.0	6	LC..1606..
		61174	-35100-06R100070-JET	2.76	3.94	1.97	1.38	3.94	1.42	2.0	6	LC..1606..
		61175	-35100-06R130090-JET	3.54	5.12	1.97	1.38	3.94	1.42	2.0	6	LC..1606..
		61177	-35100-06R170110-JET	4.33	6.69	1.97	1.38	3.94	1.42	2.0	6	LC..1606..
		61179	-35100-06R230140-JET	5.51	9.06	1.97	1.38	3.94	1.42	2.0	6	LC..1606..
		61181	-35100-06R500200-JET	7.87	19.69	1.97	1.38	3.94	1.42	2.0	6	LC..1606..
		61052	C5-CFOL -35100-06L080055-JET	1.97	3.15	1.97	1.38	3.94	1.42	2.0	6	LC..1606..
		61054	-35100-06L100070-JET	2.76	3.94	1.97	1.38	3.94	1.42	2.0	6	LC..1606..
		61056	-35100-06L130090-JET	3.54	5.12	1.97	1.38	3.94	1.42	2.0	6	LC..1606..
		61070	-35100-06L170110-JET	4.33	6.69	1.97	1.38	3.94	1.42	2.0	6	LC..1606..
		61072	-35100-06L230140-JET	5.51	9.06	1.97	1.38	3.94	1.42	2.0	6	LC..1606..
		61074	-35100-06L500200-JET	7.87	19.69	1.97	1.38	3.94	1.42	2.0	6	LC..1606..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

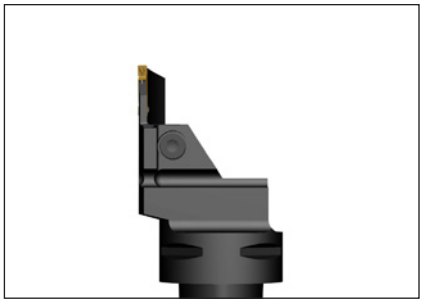
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-05	5SMS795	TCEI0613	71
CFOR/L..-06	6SMS795	TCEI0815	88



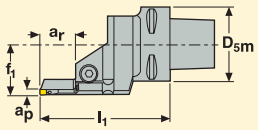
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



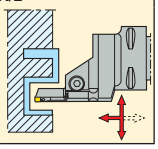
- For insert program, see pages 425-438, 440-441
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFOR...R...JET, CFOL...L...JET



Right-hand version with right-hand blade shown
$a_r = 6 \times a_p$

C.-CFOR/L 90 °



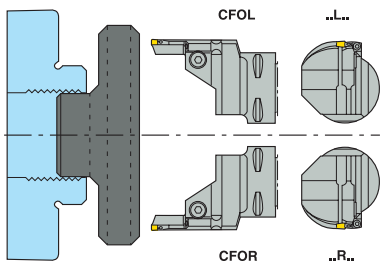
Capto size	ap	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D5m	f1	l1	ar*	lbs	Seat size	
C6												
	3	61448	C6-CFOR -45075-03R080055-JET	2.17	3.15	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		61466	-45075-03R100070-JET	2.76	3.94	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		61480	-45075-03R130090-JET	3.54	5.12	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		61486	-45075-03R170110-JET	4.33	6.69	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		61492	-45075-03R230140-JET	5.51	9.06	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		61516	-45075-03R500200-JET	7.87	19.69	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		61182	C6-CFOL -45075-03L080055-JET	2.17	3.15	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		61185	-45075-03L100070-JET	2.76	3.94	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		61186	-45075-03L130090-JET	3.54	5.12	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		61189	-45075-03L170110-JET	4.33	6.69	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		61191	-45075-03L230140-JET	5.51	9.06	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
		61195	-45075-03L500200-JET	7.87	19.69	2.48	1.77	2.95	0.71	2.4	3	LC..1603..
	4	61528	C6-CFOR -45080-04R080055-JET	2.17	3.15	2.48	1.77	3.15	0.94	2.4	4	LC..1604..
		61571	-45080-04R100070-JET	2.76	3.94	2.48	1.77	3.15	0.94	2.4	4	LC..1604..
		61582	-45080-04R130090-JET	3.54	5.12	2.48	1.77	3.15	0.94	2.4	4	LC..1604..
		61736	-45080-04R170110-JET	4.33	6.69	2.48	1.77	3.15	0.94	2.4	4	LC..1604..
		61737	-45080-04R230140-JET	5.51	9.06	2.48	1.77	3.15	0.94	2.4	4	LC..1604..
		61738	-45080-04R500200-JET	7.87	19.69	2.48	1.77	3.15	0.94	2.4	4	LC..1604..
		61196	C6-CFOL -45080-04L080055-JET	2.17	3.15	2.48	1.77	3.15	0.94	2.4	4	LC..1604..
		61197	-45080-04L100070-JET	2.76	3.94	2.48	1.77	3.15	0.94	2.4	4	LC..1604..
		61209	-45080-04L130090-JET	3.54	5.12	2.48	1.77	3.15	0.94	2.4	4	LC..1604..
		61213	-45080-04L170110-JET	4.33	6.69	2.48	1.77	3.15	0.94	2.4	4	LC..1604..
		61215	-45080-04L230140-JET	5.51	9.06	2.48	1.77	3.15	0.94	2.4	4	LC..1604..
		61217	-45080-04L500200-JET	7.87	19.69	2.48	1.77	3.15	0.94	2.4	4	LC..1604..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

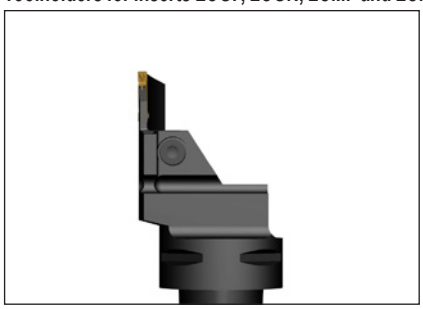
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-03	4SMS795	TCEI0513	53
CFOR/L..-04	5SMS795	TCEI0613	71



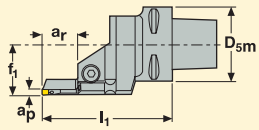
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



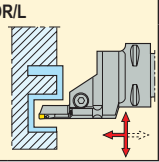
- For insert program, see pages 426-436, 440-441
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFOR...R...JET, CFOL...L...JET



Right-hand version with right-hand blade shown
$a_r = 6 \times a_p$

C.-CFOR/L 90 °



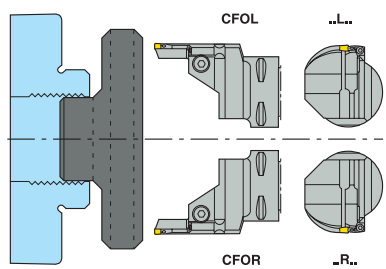
Capto size	a_p	EDP No.	Part No.	INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
				Dimensions in inch								
C6												
	5	61739	C6-CFOR -45090-05R080055-JET	2.17	3.15	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		61741	-45090-05R100070-JET	2.76	3.94	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		61742	-45090-05R130090-JET	3.54	5.12	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		61880	-45090-05R170110-JET	4.33	6.69	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		61888	-45090-05R230140-JET	5.51	9.06	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		61889	-45090-05R500200-JET	7.87	19.69	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		61220	C6-CFOL -45090-05L080055-JET	2.17	3.15	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		61222	-45090-05L100070-JET	2.76	3.94	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		61255	-45090-05L130090-JET	3.54	5.12	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		61263	-45090-05L170110-JET	4.33	6.69	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		61327	-45090-05L230140-JET	5.51	9.06	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
		61329	-45090-05L500200-JET	7.87	19.69	2.48	1.77	3.54	1.18	2.6	5	LC..1605..
	6	61891	C6-CFOR -45100-06R080055-JET	2.17	3.15	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		61892	-45100-06R100070-JET	2.76	3.94	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		61893	-45100-06R130090-JET	3.54	5.12	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		61895	-45100-06R170110-JET	4.33	6.69	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		61897	-45100-06R230140-JET	5.51	9.06	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		61899	-45100-06R500200-JET	7.87	19.69	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		61331	C6-CFOL -45100-06L080055-JET	2.17	3.15	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		61349	-45100-06L100070-JET	2.76	3.94	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		61353	-45100-06L130090-JET	3.54	5.12	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		61371	-45100-06L170110-JET	4.33	6.69	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		61373	-45100-06L230140-JET	5.51	9.06	2.48	1.77	3.94	1.42	3.1	6	LC..1606..
		61408	-45100-06L500200-JET	7.87	19.69	2.48	1.77	3.94	1.42	3.1	6	LC..1606..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF16.. = 0.551 inch

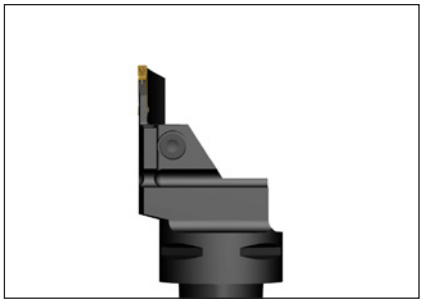
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-05	5SMS795	TCEI0613	71
CFOR/L..-06	6SMS795	TCEI0815	88



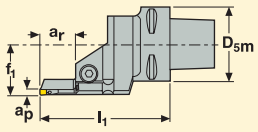
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

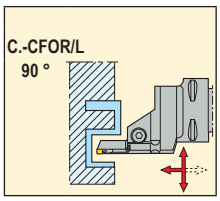


- For insert program, see pages 425, 428-432
- MDT axial grooving selection calculator guides you in finding the suitable tool for your axial grooving application. The application is free and available at **http://www.secotools.com/customerzoneus**

CFOR...R...JET, CFOL...L...JET



Right-hand version with right-hand blade shown
$a_r = 6 \times a_p$



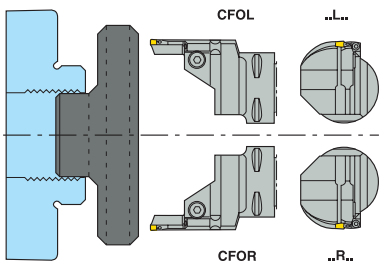
Capto size	a_p	EDP No.	Part No.	Dimensions in inch INPLM	INPLX	D_{5m}	f_1	l_1	a_r*	lbs	Seat size	
C6												
	8	61900	C6-CFOR -45115-08R130090-JET	3.54	5.12	2.48	1.77	4.53	1.89	3.09	8	LC..3008..
		61901	-45115-08R170110-JET	4.33	6.69	2.48	1.77	4.53	1.89	3.09	8	LC..3008..
		61902	-45115-08R230140-JET	5.51	9.06	2.48	1.77	4.53	1.89	3.09	8	LC..3008..
		61904	-45115-08R500200-JET	7.87	19.69	2.48	1.77	4.53	1.89	3.09	8	LC..3008..
		61414	C6-CFOL -45115-08L130090-JET	3.54	5.12	2.48	1.77	4.53	1.89	3.09	8	LC..3008..
		61436	-45115-08L170110-JET	4.33	6.69	2.48	1.77	4.53	1.89	3.09	8	LC..3008..
		61440	-45115-08L230140-JET	5.51	9.06	2.48	1.77	4.53	1.89	3.09	8	LC..3008..
		61446	-45115-08L500200-JET	7.87	19.69	2.48	1.77	4.53	1.89	3.09	8	LC..3008..

Initial plunge (INPLM/INPLX) relates to face groove diameter, see page 364.

*Max depth of cut for LCGF/LCMF30.. = 1.102 inch

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFOR/L..-08	6SMS795	TCEI1020	133



Please check availability in current price and stock-list

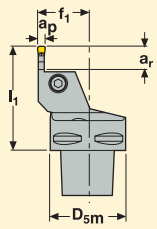
Seco-Capto™ – MDT Toolholders, external

Toolholders for inserts LCGN, LCMF and LCMR



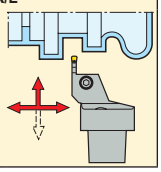
- For insert program, see pages 425-430, 433-438, 440-441

C.-CFIR/L



Right-hand version shown
$a_r = 3 \times a_p$

C.-CFIR/L
90 °



Capto size	a_p	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	a_r**	DCINN3*	lbs	Seat size	
C4											
	3	91707	C4-CFIR-27055-03	1.57	1.06	2.17	0.35	7.68	0.9	3	LC..1603..
		91706	C4-CFIL-27055-03	1.57	1.06	2.17	0.35	7.68	0.9	3	LC..1603..
	4	91709	C4-CFIR-27055-04	1.57	1.06	2.17	0.47	7.68	0.9	4	LC..1604..
		91708	C4-CFIL-27055-04	1.57	1.06	2.17	0.47	7.68	0.9	4	LC..1604..
	5	91711	C4-CFIR-27055-05	1.57	1.06	2.17	0.59	7.68	0.9	5	LC..1605..
		91710	C4-CFIL-27055-05	1.57	1.06	2.17	0.59	7.68	0.9	5	LC..1605..
C5											
	3	91713	C5-CFIR-35060-03	1.97	1.38	2.36	0.35	7.68	1.3	3	LC..1603..
		91712	C5-CFIL-35060-03	1.97	1.38	2.36	0.35	7.68	1.3	3	LC..1603..
	4	91715	C5-CFIR-35060-04	1.97	1.38	2.36	0.47	7.68	1.3	4	LC..1604..
		91714	C5-CFIL-35060-04	1.97	1.38	2.36	0.47	7.68	1.3	4	LC..1604..
	5	92112	C5-CFIR-35060-05	1.97	1.38	2.36	0.59	7.68	1.3	5	LC..1605..
		92111	C5-CFIL-35060-05	1.97	1.38	2.36	0.59	7.68	1.3	5	LC..1605..
	6	07137	C5-CFIR-35065-06	1.97	1.38	2.56	0.71	7.68	1.5	6	LC..1606..
		00836	C5-CFIL-35065-06	1.97	1.38	2.56	0.71	7.68	1.5	6	LC..1606..

*DCINN3 – minimum bore diameter for internal application, see page 364.

**Max depth of cut for LCMF16 = 0.55 inch

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFIR/L..-03	3SMS795	MC6S4X18	31.0
CFIR/L..-04	4SMS795	MC6S5X18	44.2
CFIR/L..-05	4SMS795	MC6S5X18	44.2
CFIR/L..-06	6SMS795	TCEI0815	88.5

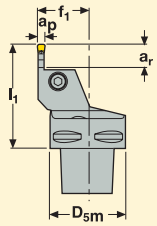
Please check availability in current price and stock-list

Toolholders for inserts LCGN, LCMF and LCMR



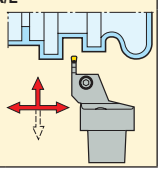
- For insert program, see pages 425-430, 433-438, 440-441

C.-CFIR/L



Right-hand version shown
$a_r = 3 \times a_p$

C.-CFIR/L
90 °



Capto size	ap	EDP No.	Part No.	Dimensions in inch D5m	f1	l1	ar**	DCINN3*	lbs	Seat size	
C6											
	3	94475	C6-CFIR-45065-03	2.48	1.77	2.56	0.35	7.68	2.2	3	LC..1603..
		38098	C6-CFIL-45065-03	2.48	1.77	2.56	0.35	7.68	2.2	3	LC..1603..
	4	94476	C6-CFIR-45065-04	2.48	1.77	2.56	0.47	7.68	2.2	4	LC..1604..
		38100	C6-CFIL-45065-04	2.48	1.77	2.56	0.47	7.68	2.2	4	LC..1604..
	5	94477	C6-CFIR-45065-05	2.48	1.77	2.56	0.59	7.68	2.2	5	LC..1605..
		12730	C6-CFIL-45065-05	2.48	1.77	2.56	0.59	7.68	2.2	5	LC..1605..
	6	12338	C6-CFIR-45065-06	2.48	1.77	2.56	0.71	7.68	2.2	6	LC..1606..
		12340	C6-CFIL-45065-06	2.48	1.77	2.56	0.71	7.68	2.2	6	LC..1606..
	8	38107	C6-CFIR-45075-08	2.48	1.77	2.95	0.94	7.68	2.6	8	LC..3008..
		38106	C6-CFIL-45075-08	2.48	1.77	2.95	0.94	7.68	2.6	8	LC..3008..

*DCINN3 – minimum bore diameter for internal application, see page 364.

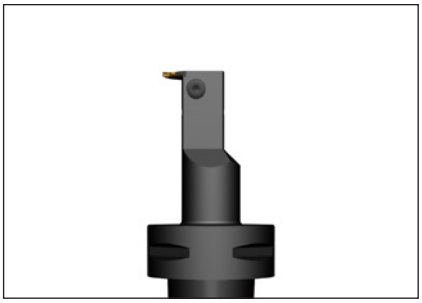
**Max depth of cut for LCMF16 = 0.55 inch and LCMF30 = 1.10 inch

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CFIR/L..-03	3SMS795	MC6S4X18	31.0
CFIR/L..-04	4SMS795	MC6S5X18	44.2
CFIR/L..-05	4SMS795	MC6S5X18	44.2
CFIR/L..-06	6SMS795	TCEI0815	88.5
CFIR/L..-08	6SMS795	TCEI0825	133.0

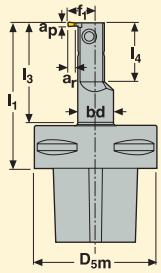
Please check availability in current price and stock-list

Toolholders for inserts LCMF



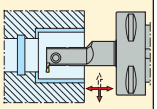
- For insert program, see pages 420

CG.R/L



Right-hand version shown

C.-CG.R/L
90 °



Capto size	a_p	EDP No.	Part No.	Dimensions in inch bd	D_{5m}	f_1	l_1	l_3	l_4	a_r	DCINN*	lbs	Seat size	
C4														
	2	65770	C4-CGHR -15075-1902	0.71	1.57	0.57	2.95	2.09	1.20	0.22	0.79	0.9	2	LC..1902..
		65785	C4-CGHL -15075-1902	0.71	1.57	0.57	2.95	2.09	1.20	0.22	0.79	0.9	2	LC..1902..
C5														
	2	65772	C5-CGHR -15075-1902	0.71	1.97	0.57	2.95	2.09	1.20	0.22	0.79	1.1	2	LC..1902..
		65786	C5-CGHL -15075-1902	0.71	1.97	0.57	2.95	2.09	1.20	0.22	0.79	1.1	2	LC..1902..
C6														
	2	65773	C6-CGHR -15075-1902	0.71	2.36	0.57	2.95	2.01	1.20	0.22	0.79	2.0	2	LC..1902..
		65787	C6-CGHL -15075-1902	0.71	2.36	0.57	2.95	2.01	1.20	0.22	0.79	2.0	2	LC..1902..
C4														
	2	65774	C4-CGJR -19080-1902	0.91	1.57	0.75	3.15	2.28	1.20	0.30	0.98	0.9	2	LC..1902..
		65788	C4-CGJL -19080-1902	0.91	1.57	0.75	3.15	2.28	1.20	0.30	0.98	0.9	2	LC..1902..
C5														
	2	65778	C5-CGJR -19080-1902	0.91	1.97	0.75	3.15	2.28	1.20	0.30	0.98	1.3	2	LC..1902..
		65789	C5-CGJL -19080-1902	0.91	1.97	0.75	3.15	2.28	1.20	0.30	0.98	1.3	2	LC..1902..
C6														
	2	65784	C6-CGJR -19080-1902	0.91	2.36	0.75	3.15	2.20	1.20	0.30	0.98	2.0	2	LC..1902..
		65790	C6-CGJL -19080-1902	0.91	2.36	0.75	3.15	2.20	1.20	0.30	0.98	2.0	2	LC..1902..

*DCINN – minimum bore diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CG.R/L..-1902	T15P-7	L85011-T15P	44.2

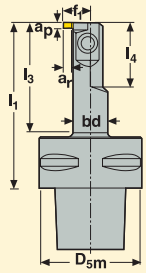
Please check availability in current price and stock-list

Toolholders for inserts LCGA, LCGF, LCGN, LCMF and LCMR



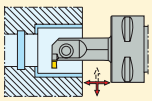
- For insert program, see pages 421-424, 439

CG.R/L



Right-hand version shown

C.-CG.R/L
90 °



Capto size	a_p	EDP No.	Part No.	Dimensions in inch bd	D_{5m}	f_1	l_1	l_3	l_4	a_r	DCINN*	lbs	Seat size	
C4														
	3	14998	C4-CGER -11065-1303	0.55	1.57	0.40	2.56	1.69	1.00	0.12	0.63	0.7	3	LC..1303..
		14996	C4-CGEL -11065-1303	0.55	1.57	0.40	2.56	1.69	1.00	0.12	0.63	0.7	3	LC..1303..
		14999	C4-CGFR -15075-1303	0.71	1.57	0.57	2.95	2.09	1.20	0.22	0.79	0.9	3	LC..1303..
		14997	C4-CGFL -15075-1303	0.71	1.57	0.57	2.95	2.09	1.20	0.22	0.79	0.9	3	LC..1303..
	4	15003	C4-CGFR -15075-1304	0.71	1.57	0.57	2.95	2.09	1.20	0.22	0.79	0.9	4	LC..1304..
		15002	C4-CGFL -15075-1304	0.71	1.57	0.57	2.95	2.09	1.20	0.22	0.79	0.9	4	LC..1304..
C5														
	3	15005	C5-CGER -11065-1303	0.55	1.97	0.40	2.56	1.69	1.00	0.12	0.63	1.1	3	LC..1303..
		15004	C5-CGEL -11065-1303	0.55	1.97	0.40	2.56	1.69	1.00	0.12	0.63	1.1	3	LC..1303..
		15007	C5-CGFR -15075-1303	0.71	1.97	0.57	2.95	2.09	1.20	0.22	0.79	1.1	3	LC..1303..
		15006	C5-CGFL -15075-1303	0.71	1.97	0.57	2.95	2.09	1.20	0.22	0.79	1.1	3	LC..1303..
		59198	C5-CGHL -19080-1303	0.91	1.97	0.75	3.15	2.28	1.59	0.30	0.98	2.0	3	LC..1303..
		59296	C5-CGHR -19080-1303	0.91	1.97	0.75	3.15	2.28	1.59	0.30	0.98	2.0	3	LC..1303..
		59299	C5-CGJR -26110-1303	1.18	1.97	1.00	4.33	3.46	1.99	0.41	1.26	2.0	3	LC..1303..
		59298	C5-CGJL -26110-1303	1.18	1.97	1.00	4.33	3.46	1.99	0.41	1.26	2.0	3	LC..1303..
	4	15012	C5-CGFR -15075-1304	0.71	1.97	0.57	2.95	2.09	1.20	0.22	0.79	1.1	4	LC..1304..
		15015	-19080-1304	0.91	1.97	0.75	3.15	2.28	1.59	0.30	0.98	1.3	4	LC..1304..
		15011	C5-CGFL -15075-1304	0.71	1.97	0.57	2.95	2.09	1.20	0.22	0.79	1.1	4	LC..1304..
		15013	-19080-1304	0.91	1.97	0.75	3.15	2.28	1.59	0.30	0.98	1.3	4	LC..1304..
		59297	C5-CGHR -26110-1304	1.18	1.97	1.00	4.33	3.46	1.99	0.41	1.26	2.0	4	LC..1304..
		59295	C5-CGHL -26110-1304	1.18	1.97	1.00	4.33	3.46	1.99	0.41	1.26	2.0	4	LC..1304..

*DCINN – minimum bore diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CG.R/L..-1303	T15P-7	L85011-T15P	44.2
CG.R/L..-1304	T15P-7	L85011-T15P	44.2

Please check availability in current price and stock-list

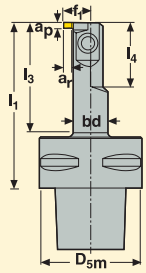
Seco-Capto™ – MDT Toolholders, internal

Toolholders for inserts LCGA, LCGF, LCGN, LCMF and LCMR



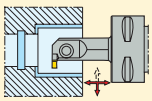
- For insert program, see pages 421-424, 439

CG.R/L



Right-hand version shown

C.-CG.R/L
90 °



Capto size	ap	EDP No.	Part No.	Dimensions in inch bd	D_{5m}	f_1	l_1	l_3	l_4	a_r	DCINN*	lbs	Seat size	
C6														
	3	15018	C6-CGER -11065-1303	0.55	2.48	0.40	2.56	1.69	1.00	0.12	0.63	1.8	3	LC..1303..
		15017	C6-CGEL -11065-1303	0.55	2.48	0.40	2.56	1.69	1.00	0.12	0.63	1.8	3	LC..1303..
		15020	C6-CGFR -15075-1303	0.71	2.48	0.57	2.95	2.09	1.20	0.22	0.79	2.0	3	LC..1303..
		15019	C6-CGFL -15075-1303	0.71	2.48	0.57	2.95	2.09	1.20	0.22	0.79	2.0	3	LC..1303..
		59302	C6-CGHR -19080-1303	0.91	2.48	0.75	3.15	2.20	1.59	0.30	0.98	1.3	3	LC..1303..
		59300	C6-CGHL -19080-1303	0.91	2.48	0.75	3.15	2.28	1.57	0.30	0.98	1.3	3	LC..1303..
		59305	C6-CGJR -26110-1303	1.18	2.48	1.00	4.33	3.39	1.97	0.41	1.26	2.4	3	LC..1303..
	4	15026	C6-CGFR -15075-1304	0.71	2.48	0.57	2.95	2.09	1.20	0.22	0.79	2.0	4	LC..1304..
		10400	-19080-1304	0.91	2.48	0.75	3.15	2.28	1.59	0.30	0.98	2.0	4	LC..1304..
		15024	C6-CGFL -15075-1304	0.71	2.48	0.57	2.95	2.09	1.20	0.22	0.79	2.0	4	LC..1304..
		15027	-19080-1304	0.91	2.48	0.75	3.15	2.28	1.59	0.30	0.98	2.0	4	LC..1304..
		59303	C6-CGHR -26110-1304	1.18	2.48	1.00	4.33	3.39	1.99	0.41	1.26	2.4	4	LC..1304..
		59301	C6-CGHL -26110-1304	1.18	2.48	1.00	4.33	3.46	1.97	0.41	1.26	2.4	4	LC..1304..

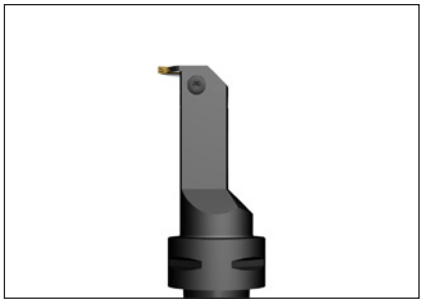
*DCINN – minimum bore diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CG.R/L..-1303	T15P-7	L85011-T15P	44.2
CG.R/L..-1304	T15P-7	L85011-T15P	44.2

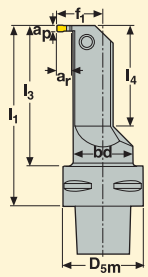
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



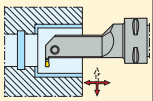
- For insert program, see pages 425-438, 440-441

CG.R/L



Right-hand version shown

C.-CG.R/L
90 °



Capto size	ap	EDP No.	Part No.	Dimensions in inch bd	D_{5m}	f_1	l_1	l_3	l_4	a_r	DCINN*	lbs	Seat size	
C4														
	3	59313	C4-CGIR -24090-1603	1.18	1.57	0.94	3.54	2.68	1.98	0.35	1.26	1.1	3	LC..1603..
		59310	C4-CGIL -24090-1603	1.18	1.57	0.94	3.54	2.68	1.98	0.35	1.26	1.1	3	LC..1603..
	4	59319	C4-CGGR -24090-1604	1.18	1.57	0.94	3.54	2.68	1.98	0.35	1.26	1.1	4	LC..1604..
		59316	C4-CGGL -24090-1604	1.18	1.57	0.94	3.54	2.68	1.98	0.35	1.26	1.1	4	LC..1604..
	5	59325	C4-CGFR -24090-1605	1.18	1.57	0.94	3.54	2.68	1.98	0.35	1.26	1.1	5	LC..1605..
		59322	C4-CGFL -24090-1605	1.18	1.57	0.94	3.54	2.68	1.99	0.35	1.26	1.1	5	LC..1605..
C5														
	3	59314	C5-CGIR -24090-1603	1.18	1.97	0.94	3.54	2.68	1.98	0.35	1.26	2.0	3	LC..1603..
		59311	C5-CGIL -24090-1603	1.18	1.97	0.94	3.54	2.68	1.98	0.35	1.26	2.0	3	LC..1603..
	4	59320	C5-CGGR -24090-1604	1.18	1.97	0.94	3.54	2.68	1.96	0.35	1.26	2.0	4	LC..1604..
		59317	C5-CGGL -24090-1604	1.18	1.97	0.94	3.54	2.68	1.96	0.35	1.26	2.0	4	LC..1604..
	5	59326	C5-CGFR -24090-1605	1.18	1.97	0.94	3.54	2.68	1.96	0.35	1.26	2.0	5	LC..1605..
		59323	C5-CGFL -24090-1605	1.18	1.97	0.94	3.54	2.68	1.96	0.35	1.26	2.0	5	LC..1605..
	6	59330	C5-CGFR -24090-1606	1.18	1.97	0.94	3.54	2.68	1.96	0.35	1.26	2.0	6	LC..1606..
		59328	C5-CGFL -24090-1606	1.18	1.97	0.94	3.54	2.68	1.96	0.35	1.26	2.0	6	LC..1606..

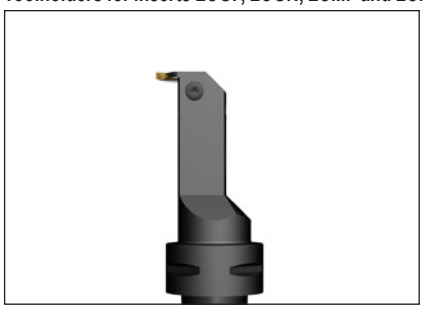
*DCINN – minimum bore diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CG.R/L..-1603	T15P-7	L85011-T15P	44.2
CG.R/L..-1604	T15P-7	L85011-T15P	44.2
CG.R/L..-1605	T20P-7	L86015-T20P	53.1
CG.R/L..-1606	T20P-7	L86015-T20P	53.1

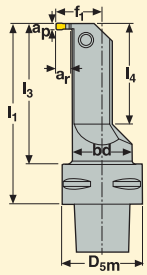
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



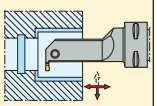
- For insert program, see pages 425-438, 440-441

CG.R/L



Right-hand version shown

C.-CG.R/L
90 °



Capto size	ap	EDP No.	Part No.	Dimensions in inch bd	D_{5m}	f_1	l_1	l_3	l_4	a_r	DCINN*	lbs	Seat size	
C6														
	3	59315	C6-CGIR -24095-1603	1.18	2.48	0.94	3.74	2.87	1.98	0.35	1.26	3.3	3	LC..1603..
		59312	C6-CGIL -24095-1603	1.18	2.48	0.94	3.74	2.87	1.98	0.35	1.26	3.3	3	LC..1603..
	4	59321	C6-CGGR -24095-1604	1.18	2.48	0.94	3.74	2.87	1.98	0.35	1.26	3.3	4	LC..1604..
		59318	C6-CGGL -24095-1604	1.18	2.48	0.94	3.74	2.87	1.98	0.35	1.26	3.3	4	LC..1604..
	5	59327	C6-CGFR -24095-1605	1.18	2.48	0.94	3.74	2.87	1.98	0.35	1.26	3.3	5	LC..1605..
		59324	C6-CGFL -24095-1605	1.18	2.48	0.94	3.74	2.87	1.98	0.35	1.26	3.3	5	LC..1605..
	6	59331	C6-CGFR -24095-1606	1.18	2.48	0.94	3.74	2.87	1.98	0.35	1.26	3.3	6	LC..1606..
		59329	C6-CGFL -24095-1606	1.18	2.48	0.94	3.74	2.87	1.98	0.35	1.26	3.3	6	LC..1606..

*DCINN – minimum bore diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CG.R/L..-1603	T15P-7	L85011-T15P	44.2
CG.R/L..-1604	T15P-7	L85011-T15P	44.2
CG.R/L..-1605	T20P-7	L86015-T20P	53.1
CG.R/L..-1606	T20P-7	L86015-T20P	53.1

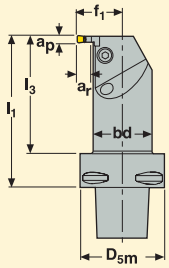
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



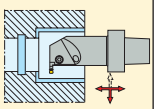
- For insert program, see pages 425-438, 440-441

CGGR/L



Right-hand version shown

C.-CGGR/L
90 °



Capto size	ap	EDP No.	Part No.	Dimensions in inch bd	D_{5m}	f_1	l_1	l_3	a_r	DCINN*	lbs	Seat size	
C4													
	3	38031	C4-CGGR -25090-03	1.38	1.57	0.98	3.54	2.76	0.24	1.77	1.5	3	LC..1603..
		38030	C4-CGGL -25090-03	1.38	1.57	0.98	3.54	2.76	0.24	1.77	1.5	3	LC..1603..
	4	38037	C4-CGGR -27090-04	1.38	1.57	1.06	3.54	2.76	0.31	1.77	1.5	4	LC..1604..
		38036	C4-CGGL -27090-04	1.38	1.57	1.06	3.54	2.76	0.31	1.77	1.5	4	LC..1604..
	5	59307	C4-CGGR -28090-05	1.28	1.57	1.09	3.54	2.48	0.39	1.77	1.1	5	LC..1605..
		59306	C4-CGGL -28090-05	1.28	1.57	1.09	3.54	2.48	0.39	1.77	1.1	5	LC..1605..
C5													
	3	38033	C5-CGGR -25090-03	1.38	1.97	0.98	3.54	2.76	0.24	1.77	2.0	3	LC..1603..
		38032	C5-CGGL -25090-03	1.38	1.97	0.98	3.54	2.76	0.24	1.77	2.0	3	LC..1603..
	4	38039	C5-CGGR -27090-04	1.38	1.97	1.06	3.54	2.76	0.31	1.77	2.0	4	LC..1604..
		38038	C5-CGGL -27090-04	1.38	1.97	1.06	3.54	2.76	0.31	1.77	2.0	4	LC..1604..
	5	59309	C5-CGGR -28090-05	1.28	1.97	1.09	3.54	2.48	0.39	1.77	2.0	5	LC..1605..
		59308	C5-CGGL -28090-05	1.28	1.97	1.09	3.54	2.48	0.39	1.77	2.0	5	LC..1605..
	6	62112	C5-CGGR -29090-06	1.20	1.97	1.13	3.54	2.44	0.47	1.77	2.0	6	LC..1606..
		62111	C5-CGGL -29090-06	1.20	1.97	1.13	3.54	2.44	0.47	1.77	2.0	6	LC..1606..

*DCINN – minimum bore diameter, see page 364.

Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CG.R/L..-03	3SMS795	MC6S4X14	44.2
CG.R/L..-04	4SMS795	MC6S5X14	44.2
CG.R/L..-05	4SMS795	MC6S5X14	53.1
CG.R/L..-06	5SMS795	TCEI0614	53.1

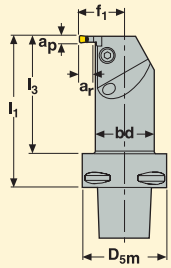
Please check availability in current price and stock-list

Toolholders for inserts LCGF, LCGN, LCMF and LCMR



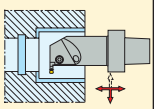
- For insert program, see pages 425-438, 440-441

CGGR/L



Right-hand version shown

C.-CGGR/L
90 °



Capto size	ap	EDP No.	Part No.	Dimensions in inch bd	D5m	f1	l1	l3	ar	DCINN*	lbs	Seat size	
C6													
	3	38035	C6-CGGR -25095-03	1.38	2.48	0.98	3.74	2.87	0.24	1.77	2.6	3	LC..1603..
		38034	C6-CGGL -25095-03	1.38	2.48	0.98	3.74	2.87	0.24	1.77	2.6	3	LC..1603..
	4	38041	C6-CGGR -27095-04	1.38	2.48	1.06	3.74	2.87	0.31	1.77	2.6	4	LC..1604..
		38040	C6-CGGL -27095-04	1.38	2.48	1.06	3.74	2.87	0.31	1.77	2.6	4	LC..1604..
	5	62193	C6-CGGR -28095-05	1.28	2.48	1.09	3.74	2.68	0.39	1.77	2.9	5	LC..1605..
		62190	C6-CGGL -28095-05	1.28	2.48	1.09	3.74	2.68	0.39	1.77	2.9	5	LC..1605..
	6	62196	C6-CGGR -29095-06	1.20	2.48	1.13	3.74	2.64	0.47	1.77	3.1	6	LC..1606..
		62194	C6-CGGL -29095-06	1.20	2.48	1.13	3.74	2.64	0.47	1.77	3.1	6	LC..1606..

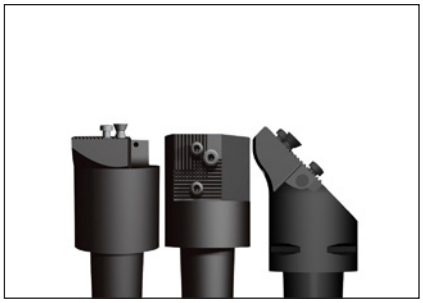
*DCINN – minimum bore diameter, see page 364.

Spare Parts, Parts included in delivery

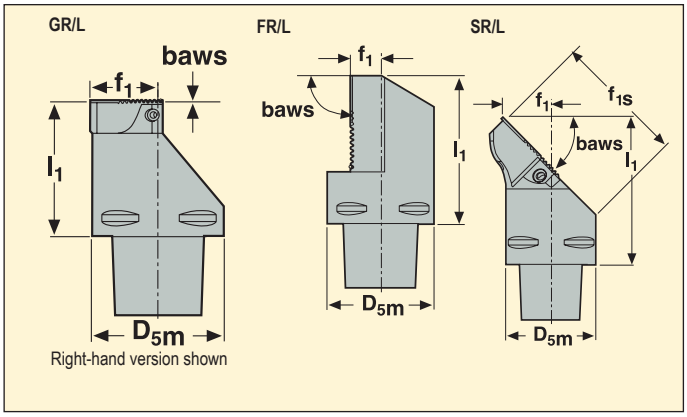
For holder	Clamp key	Clamp screw	Torque value in/lbs
CG.R/L..-03	3SMS795	MC6S4X14	44.2
CG.R/L..-04	4SMS795	MC6S5X14	44.2
CG.R/L..-05	4SMS795	MC6S5X14	53.1
CG.R/L..-06	5SMS795	TCEI0614	53.1

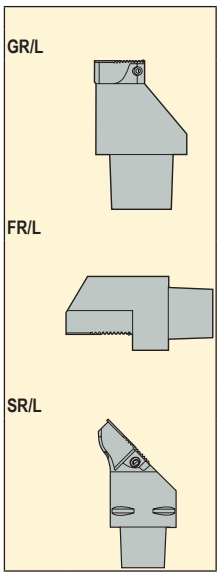
Please check availability in current price and stock-list

External toolholders



- How to assemble, see pages 361-363
- For modular blades, see pagess 413-417





Capto size	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	f_{1s}	l_1	baws°	lbs
C4								
	26919	C4-GR-21050-V21	1.57	0.83	–	1.97	0	1.1
	26920	C4-GL-21050-V21	1.57	0.83	–	1.97	0	1.1
C5								
	26921	C5-GR-29060-V21	1.97	1.02	–	2.36	0	2.0
	26922	C5-GL-29060-V21	1.97	1.02	–	2.36	0	2.0
C6								
	26923	C6-GR-39065-V21	2.48	1.54	–	2.56	0	3.1
	26924	C6-GL-39065-V21	2.48	1.54	–	2.56	0	3.1
C4								
	26912	C4-FR-11055-V21	1.57	0.44	–	2.17	90	1.1
	26913	C4-FL-11055-V21	1.57	0.44	–	2.17	90	1.1
C5								
	26914	C5-FR-16060-V21	1.97	0.63	–	2.36	90	2.0
	26916	C5-FL-16060-V21	1.97	0.63	–	2.36	90	2.0
C6								
	26917	C6-FR-23065-V21	2.48	0.89	–	2.56	90	3.5
	26918	C6-FL-23065-V21	2.48	0.89	–	2.56	90	3.5
C4								
	62409	C4-SR-21065-V21	1.57	0.83	2.33	2.56	45	1.1
	62407	C4-SL-21065-V21	1.57	0.83	2.33	2.56	45	1.1
C5								
	62410	C5-SR-26075-V21	1.97	1.02	2.89	2.95	45	2.0
	62406	C5-SL-26075-V21	1.97	1.02	2.89	2.95	45	2.0
C6								
	62411	C6-SR-33085-V21	2.48	1.30	3.64	3.35	45	3.3
	62408	C6-SL-33085-V21	2.48	1.30	3.64	3.35	45	3.3

Spare Parts, Parts included in delivery

For holder	Key	Mounitng screw	Insert locking screw	Insert locking screw torque value in/lbs
..-V21	T20P-7L	F85015-T20P	C46017-T20P	53.1

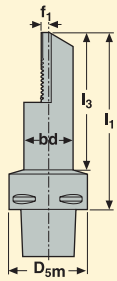
Please check availability in current price and stock-list

Internal toolholders



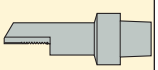
- How to assemble, see pages 361-362
- For modular blades, see pagess 414-417

FR/L



Right-hand version shown

C.-FR/L



Capto size	EDP No.	Part No.	Dimensions in inch bd	D_{5m}	f_1	l_1	l_3	lbs
C4								
	26925	C4-FR-04090-V21	0.98	1.57	0.14	3.54	2.76	1.1
	26926	C4-FL-04090-V21	0.98	1.57	0.14	3.54	2.76	1.1
	26927	C4-FR-07110-V21	1.26	1.57	0.28	4.33	3.54	1.5
	26928	C4-FL-07110-V21	1.26	1.57	0.28	4.33	3.54	1.5
	26929	C4-FR-11140-V21	1.57	1.57	0.43	5.51	4.72	2.9
	26930	C4-FL-11140-V21	1.57	1.57	0.43	5.51	4.72	2.9
C5								
	26931	C5-FR-04090-V21	0.98	1.97	0.14	3.54	2.76	1.5
	26932	C5-FL-04090-V21	0.98	1.97	0.14	3.54	2.76	1.5
	26933	C5-FR-07110-V21	1.26	1.97	0.28	4.33	3.54	2.0
	26934	C5-FL-07110-V21	1.26	1.97	0.28	4.33	3.54	2.0
	26935	C5-FR-11140-V21	1.57	1.97	0.43	5.51	4.72	3.5
	26936	C5-FL-11140-V21	1.57	1.97	0.43	5.51	4.72	3.5
C6								
	26937	C6-FR-04090-V21	0.98	2.48	0.14	3.54	2.68	2.0
	26938	C6-FL-04090-V21	0.98	2.48	0.14	3.54	2.68	2.0
	26939	C6-FR-07110-V21	1.26	2.48	0.28	4.33	3.46	3.1
	26940	C6-FL-07110-V21	1.26	2.48	0.28	4.33	3.46	3.1
	26941	C6-FR-11140-V21	1.57	2.48	0.43	5.51	4.65	4.0
	26942	C6-FL-11140-V21	1.57	2.48	0.43	5.51	4.65	4.0

Spare Parts, Parts included in delivery

For holder	Key	Mounitng screw	Insert locking screw	Insert locking screw torque value in/lbs
..-V21	T20P-7L	F85015-T20P	C46017-T20P	53.1

Please check availability in current price and stock-list

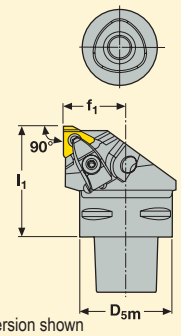
Toolholders for S-inserts

Snap-Tap®

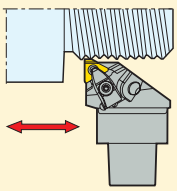


- For inserts, please see threading insert section beginning on page 494

CER/L-..HD



Right-hand version shown

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	l_1	f_1	lbs	
	3/8	21726	C4-CER -27050-16HD	1.57	1.97	1.06	1.1	16..
		21737	C4-CEL -27050-16HD	1.57	1.97	1.06	1.1	16..
	1/2	21732	C4-CER -27050-22HD	1.57	1.97	1.06	1.1	22..
		21738	C4-CEL -27050-22HD	1.57	1.97	1.06	1.1	22..
	3/8	21733	C5-CER -35060-16HD	1.97	2.36	1.38	1.8	16..
		21739	C5-CEL -35060-16HD	1.97	2.36	1.38	1.8	16..
	1/2	21734	C5-CER -35060-22HD	1.97	2.36	1.38	1.8	22..
		21740	C5-CEL -35060-22HD	1.97	2.36	1.38	1.8	22..
	5/8	76701	C5-CER -35060-27HD	1.97	2.36	1.38	1.8	27..
		76704	C5-CEL -35060-27HD	1.97	2.36	1.38	1.8	27..
	3/8	21735	C6-CER -45065-16HD	2.48	2.56	1.77	2.9	16..
		21741	C6-CEL -45065-16HD	2.48	2.56	1.77	2.9	16..
	1/2	21736	C6-CER -45065-22HD	2.48	2.56	1.77	2.9	22..
		21742	C6-CEL -45065-22HD	2.48	2.56	1.77	2.9	22..
	5/8	21762	C6-CER -45065-27HD	2.48	2.56	1.77	2.9	27..
		21764	C6-CEL -45065-27HD	2.48	2.56	1.77	2.9	27..

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Anvil for insert type S	Anvil for insert type M*	Anvil screw/ Key*		Clamp	Clamp screw	Spring	Key
								
-16	GX16-1	MX16-1	CS3507-T09P	T09P-2	CHD16	L85020-T15P	S6912	T15P-2
-22	NX22-1	MX22-1	CS4009-T15P	T15P-2	CHD22	L86025-T20P	S7616	T20P-7
-27	VX27-1	MX27-1	CO5012-T15P	T15P-2	CHD27	L86025-T20P	S7616	T20P-7

Please check availability in current price and stock-list

*To be ordered separately

Seco-Capto™ – Threading toolholders, external

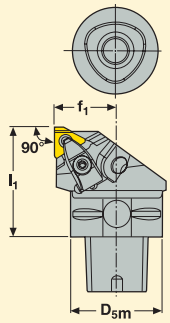
Toolholders for S-inserts

Snap-Tap®

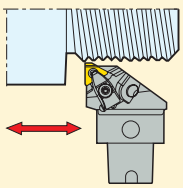


- For inserts, please see threading insert section beginning on page 494

CER/L-..CHD (reversed polygon orientation)



Right-hand version shown

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	l_1	f_1	lbs	
								
	3/8	21743	C4-CER -27050-16CHD	1.57	1.97	1.06	1.1	16..
		21754	C4-CEL -27050-16CHD	1.57	1.97	1.06	1.1	16..
	1/2	21749	C4-CER -27050-22CHD	1.57	1.97	1.06	1.1	22..
		21755	C4-CEL -27050-22CHD	1.57	1.97	1.06	1.1	22..
	3/8	21750	C5-CER -35060-16CHD	1.97	2.36	1.38	1.8	16..
		21756	C5-CEL -35060-16CHD	1.97	2.36	1.38	1.8	16..
	1/2	21751	C5-CER -35060-22CHD	1.97	2.36	1.38	1.8	22..
		21757	C5-CEL -35060-22CHD	1.97	2.36	1.38	1.8	22..
	3/8	21752	C6-CER -45065-16CHD	2.48	2.56	1.77	2.9	16..
		21759	C6-CEL -45065-16CHD	2.48	2.56	1.77	2.9	16..
	1/2	21753	C6-CER -45065-22CHD	2.48	2.56	1.77	2.9	22..
		21761	C6-CEL -45065-22CHD	2.48	2.56	1.77	2.9	22..
	5/8	21763	C6-CER -45065-27CHD	2.48	2.56	1.77	2.9	27..
		21765	C6-CEL -45065-27CHD	2.48	2.56	1.77	2.9	27..

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Insert shim (S)	Insert shim (M)*	Shim screw/Key*		Floating wedge clamp	Clamp screw	Spring	Locking key
								
-16	GX16-1	MX16-1	CS3507-T09P	T09P-2	CHD16	L85020-T15P	S6912	T15P-2
-22	NX22-1	MX22-1	CS4009-T15P	T15P-2	CHD22	L86025-T20P	S7616	T20P-7
-27	VX27-1	MX27-1	CO5012-T15P	T15P-2	CHD27	L86025-T20P	S7616	T20P-7

Please check availability in current price and stock-list

*To be ordered separately

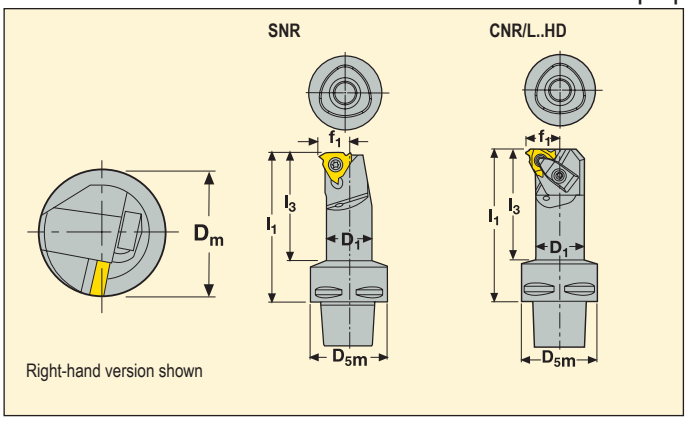
Seco-Capto™ – Threading toolholders, internal

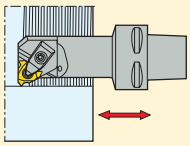
Toolholders for S-inserts

Snap-Tap



- For inserts, please see threading insert section beginning on page 495



Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	D_m min	l_1	l_3	lbs	
											
	3/8	08610	C4-SNR -10060-16	0.63	1.57	0.39	0.75	2.36	1.46	0.7	16..
		30403	C4-CNR -14060-16HD	0.79	1.57	0.54	0.94	2.36	1.42	0.9	16..
		30405	-17070-16HD	0.98	1.57	0.64	1.14	2.76	1.89	1.1	16..
		30406	-20090-16HD	1.26	1.57	0.78	1.42	3.54	2.72	1.5	16..
		30410	C4-CNL -14060-16HD	0.79	1.57	0.54	0.94	2.36	1.42	0.9	16..
		30409	-17070-16HD	0.98	1.57	0.64	1.14	2.76	1.89	1.1	16..
		30411	-20090-16HD	1.26	1.57	0.78	1.42	3.54	2.72	1.5	16..
	1/2	30428	C4-CNR -22090-22HD	1.26	1.57	0.84	1.50	3.54	2.72	1.3	22..
		30430	C4-CNL -22090-22HD	1.26	1.57	0.84	1.50	3.54	2.72	1.3	22..
	3/8	30429	C5-CNR -14060-16HD	0.79	1.97	0.54	0.94	2.36	1.42	1.3	16..
		30431	-17070-16HD	0.98	1.97	0.64	1.14	2.76	1.85	1.3	16..
		30432	-20090-16HD	1.26	1.97	0.78	1.42	3.54	2.68	1.8	16..
		30441	C5-CNL -14060-16HD	0.79	1.97	0.54	0.94	2.36	1.42	1.3	16..
		30442	-17070-16HD	0.98	1.97	0.64	1.14	2.76	1.85	1.3	16..
		30443	-20090-16HD	1.26	1.97	0.78	1.42	3.54	2.68	1.8	16..
	1/2	30444	C5-CNR -18070-22HD	0.98	1.97	0.70	1.18	2.76	1.85	1.3	22..
		30446	-22090-22HD	1.26	1.97	0.84	1.50	3.54	2.68	1.8	22..
		30447	C5-CNL -18070-22HD	0.98	1.97	0.70	1.18	2.76	1.85	1.3	22..
		30449	-22090-22HD	1.26	1.97	0.84	1.50	3.54	2.68	1.8	22..
	5/8	17651	C5-CNR -26105-27HD	1.57	1.97	0.98	1.81	4.13	3.27	2.6	27..
		17660	C5-CNL -26105-27HD	1.57	1.97	0.98	1.81	4.13	3.27	2.6	27..

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Anvil for insert type S	Anvil for insert type M*	Anvil screw/ Key*		Clamp	Spring	Screw	Clamp screw/ Key/ Screw		
-16	–	–	–	–	–	–	–	–	T15P-2	T15P-2
-14..-16HD	GX16-1	MX16-1	CS3507-T09P	T09P-2	–	–	–	CSP16HD-T15P	T15P-2	–
-17..-16HD	GX16-1	MX16-1	CS3507-T09P	T09P-2	–	–	–	CSP16HD-T15P	T15P-2	–
-20..-16HD	GX16-1	MX16-1	CS3507-T09P	T09P-2	CHD16	S6912	L85020-T15P	–	T15P-2	–
..-22HD	NX22-1	MX22-1	CS4009-T15P	T15P-2	–	–	–	CSP22HD-T15P	T15P-2	–
..-27HD	VX27-1	MX27-1	C05012-T15P	T15P-2	CHD27	S7616	L86025-T20P	–	T20P-7L	–

Please check availability in current price and stock-list

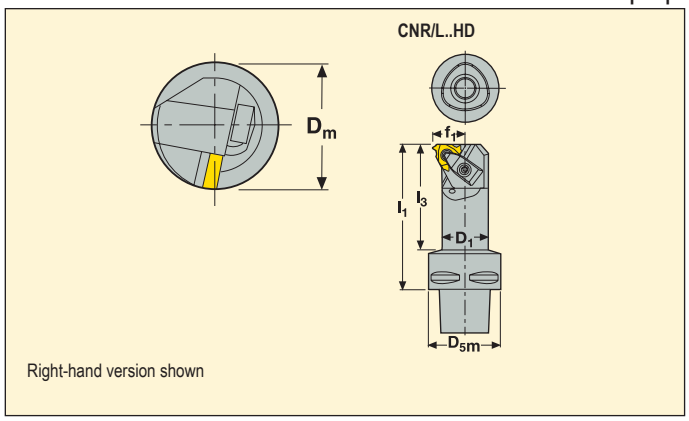
*To be ordered separately

Toolholders for S-inserts

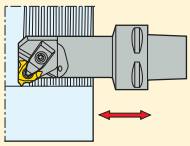
Snap-Tap®



- For inserts, please see threading insert section beginning on page 495



Right-hand version shown

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	D_m min	l_1	l_3	lbs	
											
	3/8	30453	C6-CNR -17075-16HD	0.98	2.48	0.64	1.14	2.95	2.09	2.0	16
		30454	-20090-16HD	1.26	2.48	0.78	1.42	3.54	2.68	2.4	16
		30457	-24105-16HD	1.57	2.48	0.94	1.73	4.13	3.15	3.3	16
		30458	C6-CNL -17075-16HD	0.98	2.48	0.64	1.14	2.95	2.09	2.0	16
		30459	-20090-16HD	1.26	2.48	0.78	1.42	3.54	2.68	2.4	16
		30460	-24105-16HD	1.57	2.48	0.94	1.73	4.13	3.15	3.3	16
	1/2	30461	C6-CNR -18075-22HD	0.98	2.48	0.70	1.18	2.95	2.09	2.0	22
		30463	-22090-22HD	1.26	2.48	0.84	1.50	3.54	2.68	2.4	22
		30465	-26105-22HD	1.57	2.48	1.00	1.81	4.13	3.15	3.3	22
		30466	C6-CNL -18075-22HD	0.98	2.48	0.70	1.18	2.95	2.09	2.0	22
		30468	-22090-22HD	1.26	2.48	0.84	1.50	3.54	2.68	2.4	22
		30469	-26105-22HD	1.57	2.48	1.00	1.81	4.13	3.15	3.3	22
	5/8	43889	C6-CNR -26105-27HD	1.57	2.48	1.00	1.81	4.13	3.03	3.5	27
		43904	-36182-27HD	2.48	2.48	1.42	2.76	7.17	–	9.0	27
		43891	C6-CNL -26105-27HD	1.57	2.48	1.00	1.81	4.13	3.03	3.5	27
		43896	-36182-27HD	2.48	2.48	1.42	2.76	7.17	–	9.0	27
		43898	C8-CNR -36190-27HD	2.48	3.15	1.42	2.76	7.48	6.30	10.8	27
		43899	C8-CNL -36190-27HD	2.48	3.15	1.42	2.76	7.48	6.30	10.8	27

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Insert shim (S)	Insert shim (M)*	Shim screw/Key*		Floating wedge clamp	Spring	Clamp screw	Cantilever clamp/Locking key	
									
CNR/L-17..-16	GX16-1	MX16-1	CS3507-T09P	T09P-2	–	–	–	CSP16HD-T15P	T15P-2
CNR/L-20..-16	GX16-1	MX16-1	CS3507-T09P	T09P-2	CHD16	S6912	L85020-T15P	–	T15P-2
CNR/L-24..-16	GX16-1	MX16-1	CS3507-T09P	T09P-2	CHD16	S6912	L85020-T15P	–	T15P-2
CNR/L-18..-22	NX22-1	MX22-1	CS4009-T15P	T15P-2	–	–	–	CSP22HD-T15P	T15P-2
CNR/L-22..-22	NX22-1	MX22-1	CS4009-T15P	T15P-2	–	–	–	CSP22HD-T15P	T15P-2
CNR/L-26..-22	NX22-1	MX22-1	CS4009-T15P	T15P-2	CHD22	S7616	L86025-T20P	–	T20P-7
CNR/L..-27	VX27-1	MX27-1	C05012-T15P	T15P-2	CHD27	S7616	L86025-T20P	–	T20P-7

Please check availability in current price and stock-list

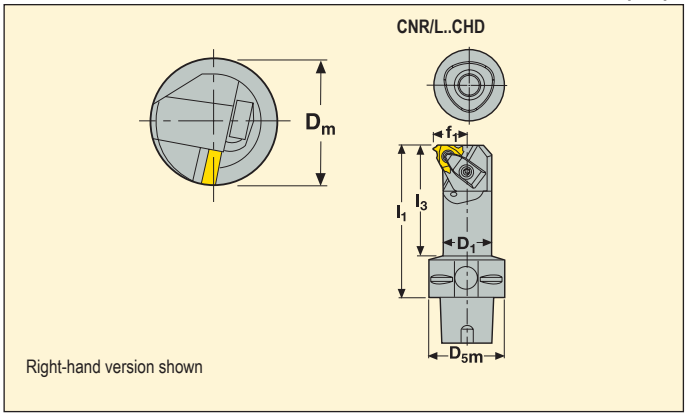
*To be ordered separately

Toolholders for S-inserts

Snap-Tap®

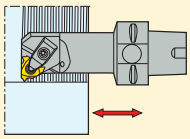


- For inserts, please see threading insert section beginning on page 495



Right-hand version shown

Application



Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	D_m min	l_1	l_3	lbs	
3/8	30470	C4-CNR -14060-16CHD	0.79	1.57	0.54	0.94	2.36	1.42	0.9	16
	30471	C4-CNL -14060-16CHD	0.79	1.57	0.54	0.94	2.36	1.42	0.9	16
	30472	C5-CNR -17070-16CHD	0.98	1.97	0.64	1.14	2.76	1.85	1.3	16
	30473	-20090-16CHD	1.26	1.97	0.78	1.42	3.54	2.68	1.8	16
	30476	C5-CNL -17070-16CHD	0.98	1.97	0.64	1.14	2.76	1.85	1.3	16
	30477	-20090-16CHD	1.26	1.97	0.78	1.42	3.54	2.68	1.8	16
1/2	30479	C5-CNR -18070-22CHD	0.98	1.97	0.70	1.18	2.76	1.85	1.3	22
	30480	C5-CNL -18070-22CHD	0.98	1.97	0.70	1.18	2.76	1.85	1.3	22
3/8	30481	C6-CNR -20090-16CHD	1.26	2.48	0.78	1.42	3.54	2.68	2.4	16
	30482	-24105-16CHD	1.57	2.48	0.94	1.73	4.13	3.15	3.3	16
	30483	C6-CNL -20090-16CHD	1.26	2.48	0.78	1.42	3.54	2.68	2.4	16
	30484	-24105-16CHD	1.57	2.48	0.94	1.73	4.13	3.15	3.3	16
1/2	30488	C6-CNR -22090-22CHD	1.26	2.48	0.84	1.50	3.54	2.68	2.4	22
	30489	-26105-22CHD	1.57	2.48	1.00	1.81	4.13	3.15	3.3	22
	30491	C6-CNL -22090-22CHD	1.26	2.48	0.84	1.50	3.54	2.68	2.4	22
	30493	-26105-22CHD	1.57	2.48	1.00	1.81	4.13	3.15	3.3	22

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Insert shim (S)	Insert shim (M)*	Shim screw/Key*		Floating wedge clamp	Spring	Clamp screw	Cantilever clamp/Locking key	
CNR/L-14..-16	GX16-1	MX16-1	CS3507-T09P	T09P-2	–	–	–	CSP16HD-T15P	T15P-2
CNR/L-17..-16	GX16-1	MX16-1	CS3507-T09P	T09P-2	–	–	–	CSP16HD-T15P	T15P-2
CNR/L-20..-16	GX16-1	MX16-1	CS3507-T09P	T09P-2	CHD16	S6912	L85020-T15P	–	T15P-2
CNR/L-24..-16	GX16-1	MX16-1	CS3507-T09P	T09P-2	CHD16	S6912	L85020-T15P	–	T15P-2
CNR/L-18..-22	NX22-1	MX22-1	CS4009-T15P	T15P-2	–	–	–	CSP22HD-T15P	T15P-2
CNR/L-22..-22	NX22-1	MX22-1	CS4009-T15P	T15P-2	–	–	–	CSP22HD-T15P	T15P-2
CNR/L-26..-22	NX22-1	MX22-1	CS4009-T15P	T15P-2	CHD22	S7616	L86025-T20P	–	T20P-7

Please check availability in current price and stock-list

*To be ordered separately

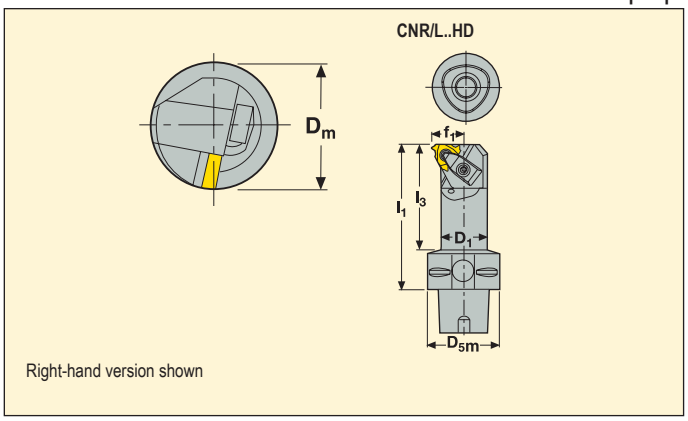
Seco-Capto™ – Threading toolholders, internal

Toolholders for S-inserts

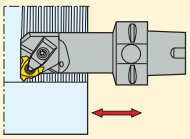
Snap-Tap®



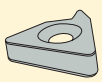
- For inserts, please see threading insert section beginning on page 495



Right-hand version shown

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_1	D_{5m}	f_1	D_m min	l_1	l_3	lbs	
											
	5/8	43893	C6-CNR -26105-27CHD	1.57	2.48	1.00	1.81	4.13	3.15	3.3	27
		43900	C6-CNR -36182-27CHD	2.48	2.48	1.42	2.76	7.17	–	9.0	27
		43895	C6-CNL -26105-27CHD	1.57	2.48	1.00	1.81	4.13	3.15	3.3	27
		43901	C6-CNL -36182-27CHD	2.48	2.48	1.42	2.76	7.17	–	9.0	27
		43903	C8-CNL -36190-27CHD	2.48	3.15	1.42	2.76	7.48	6.30	11.0	27
		43902	C8-CNR -36190-27CHD	2.48	3.15	1.42	2.76	7.48	6.30	11.0	27

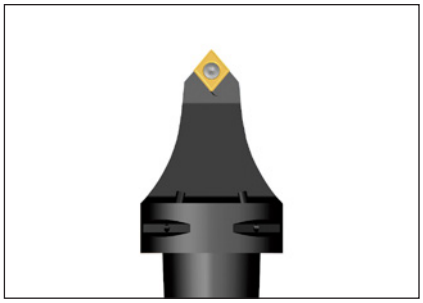
Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Insert shim (S)	Insert shim (M)*	Shim screw/Key*		Floating wedge clamp	Spring	Cantilever clamp/Locking key	
								
-27	VX27-1	MX27-1	C05012-T15P	T15P-2	CHD27	S7616	L86025-T20P	T20P-7

Please check availability in current price and stock-list

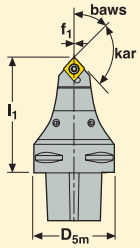
*To be ordered separately

Toolholders for inserts CCGT, CCGW and CCMT

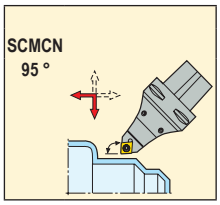


- For insert program, see pages 236, 238-240, 300
- γ_o° = Rake angle, λ_s° = Inclination angle

SCMCN



Neutral version shown
kar (κ_r) = 95°
baws = 45°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C6										
	1/2	26451	C6-SCMCN-00090-12	2.48	0	3.54	0	0	2.6	CC..43.

Spare Parts, Parts included in delivery

For size	Insert key	Insert screw	Insert shim	Shim screw
...-12	T15P-2	C05012-T15P	123.19-621	CA5008

Accessories, to be ordered separately

Shim key
5SMS795

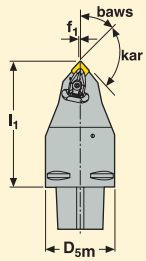
Please check availability in current price and stock-list

Toolholders for inserts CNGA, CNGP, CNMA, CNMG and CNMP



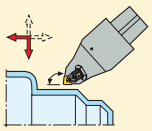
- For insert program, see pages 241-246, 301
- γ_o° = Rake angle, λ_s° = Inclination angle

DCMNN..-M



Neutral version shown
kar (κ_r) = 95°
baws = 45°

DCMNN 95 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C6										
	1/2	34092	C6-DCMNN-00090-12-M	2.48	0	3.54	-5.49	-6.47	2.9	CN..43.
		34093	C6-DCMNN-00115-12-M	2.48	0	4.53	-5.49	-6.47	4.6	CN..43.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
...-12	FP2012	L85021-T15P	CD12-S	DCN120616	T15P-2	C04008-T15P	S6912

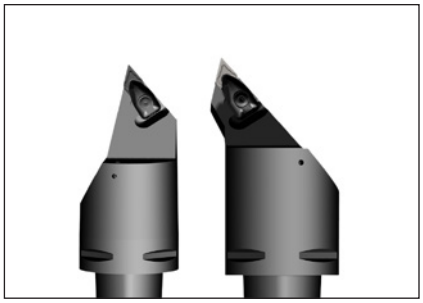
Accessories*

Clamp kit
CD12-S12

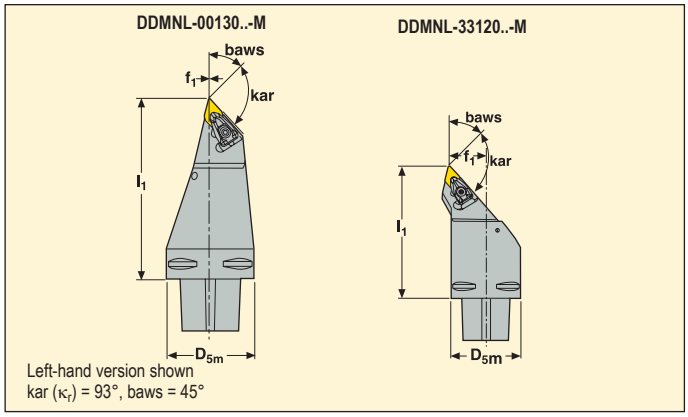
Please check availability in current price and stock-list

*To be ordered separately

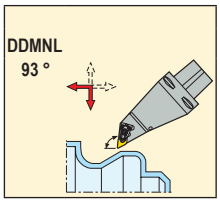
Toolholders for inserts DNGA, DNGP, DNGM, DNMA, DNMG, DNMM and DNMX



- For insert program, see pages 253-257, 259, 304-305
- γ_o° = Rake angle, λ_s° = Inclination angle



Left-hand version shown
kar (κ_r) = 93°, baws = 45°



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C6										
	1/2	34094	C6-DDMNL-00130-15-M	2.48	–	5.12	-6	-6	3.3	DN..44.
		44119	C6-DDMNL-33120-15-M	2.48	1.3	4.72	-6	-6	4.9	DN..44.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
...-15	FP2012	L85021-T15P	CD12-S	DDN150416	T15P-2	C04008-T15P	S6912

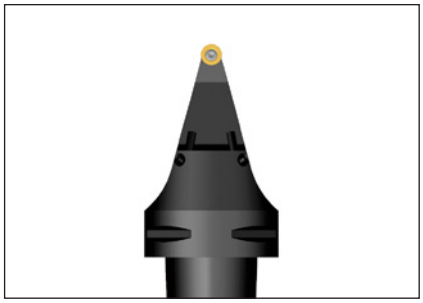
Accessories*

Clamp kit
CD12-S12

Please check availability in current price and stock-list

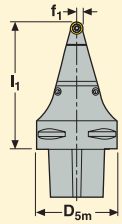
*To be ordered separately
Shim DDN444 for insert DN..43., to be ordered separately

Toolholders for inserts RCMT



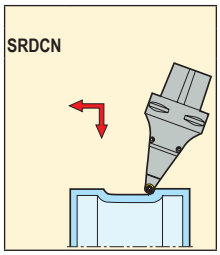
- For insert program, see page 264
- γ_o° = Rake angle, λ_s° = Inclination angle

SRDCN



Neutral version shown

SRDCN



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C6										
	10 mm	24322	C6-SRDCN-00100-10	2.48	0.20	3.94	0	0	3.3	RCMT10T3..
	16 mm	24323	C6-SRDCN-00100-16	2.48	0.31	3.94	0	0	3.3	RCMT1606..

Spare Parts, Parts included in delivery

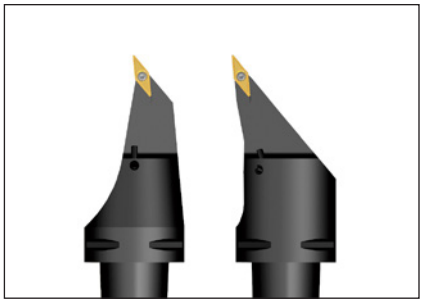
For size	Insert key	Insert screw	Insert shim	Shim screw
...-10	T15P-2	C03510-T15P	111.19-620	CA3510
...-16	T20P-7L	C05018-T20P	SRN16T3M0	CA5015

Accessories, to be ordered separately

Shim key
9/64SMS875
5SMS795

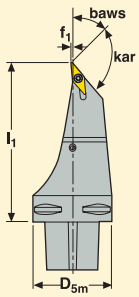
Please check availability in current price and stock-list

Toolholders for inserts VBGT, VBGW, VBMT and VCGT

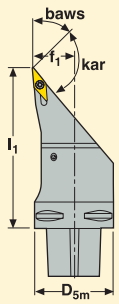


- For insert program, see pages 289-291, 323
- γ_o° = Rake angle, λ_s° = Inclination angle

SVMBL-00130

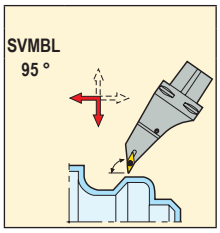


SVMBL-33130



Left-hand version shown
kar (κ_r) = 95°, baws = 45°

SVMBL 95 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C6										
	3/8	24324	C6-SVMBL-00130-16	2.48	–	5.12	0	0	4.0	VB../VC..33.
		26452	C6-SVMBL-33130-16	2.48	1.30	5.12	0	0	4.6	VB../VC..33.

Spare Parts, Parts included in delivery

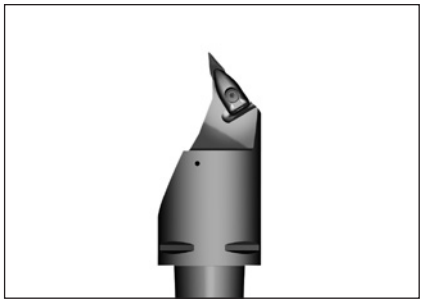
For size	Insert key	Insert screw	Insert shim	Shim screw
...-16	T15P-2	C03512-T15P	171.19-620	CA3510

Accessories, to be ordered separately

Shim key
9/64SMS875

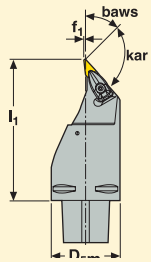
Please check availability in current price and stock-list

Toolholders for inserts VNGA, VNGP, VNGM, VNMA, VNMP and VNMG



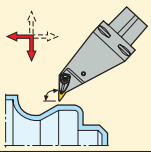
- For insert program, see pages 292-294, 324-325
- γ_o° = Rake angle, λ_s° = Inclination angle

DVMNL..-M



Left-hand version shown
kar (κ_r) = 93°
baws = 45°

DVMNL
93 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C6										
	3/8	34095	C6-DVMNL-00130-16-M	2.48	–	5.12	-4.5	-13.5	4.6	VN..33.

Spare Parts, Parts included in delivery

For size	Clamp pin	Clamp screw	Floating wedge clamp	Insert shim	Shim/clamp key	Shim screw	Spring
...-16	FP2012	L85021-T15P	CD19-S-V16	DVN160310	T15P-2	C03508-T15P	S6912

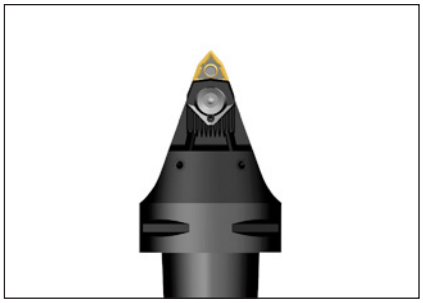
Accessories*

Clamp kit
CD19-V16

Please check availability in current price and stock-list

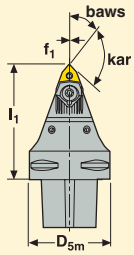
*To be ordered separately

Toolholders for inserts WNGA, WNGP, WNMA, WNMG, WNMP and WNMM



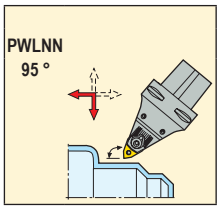
- For insert program, see pages 295-299, 326-327
- γ_o° = Rake angle, λ_s° = Inclination angle

PWLNN



Neutral version shown
kar (κ_r) = 95°
baws = 45°

PWLNN 95 °



Capto size	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	γ_o°	λ_s°	lbs	
C6										
	1/2	24321	C6-PWLNN-00090-08	2.48	0	3.54	-5.5	-6.5	3.1	WN..33.

Spare Parts, Parts included in delivery

For size	Insert shim	Setting screw	Shim pin	Wedge clamp	Wedge key	Wedge screw
...-08	WAE080412	L82511-T07P	PP2015-1-T15P	WNW08HD	T25P-7	WS2325-T25P

Accessories*

Shim key
T15P-2

Please check availability in current price and stock-list

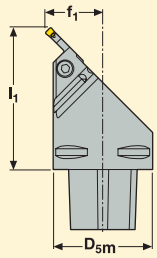
*To be ordered separately
Shim WAE423 for insert WNM.44., to be ordered separately
Wedge WNW08 for insert WNMM44., to be ordered separately

Toolholders for inserts LCGF, LCGN, LCMF and LCMR

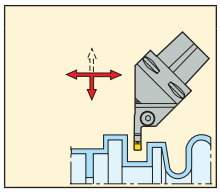


- For insert program, see pages 425-438, 440-441

CDIR/L



Right-hand version shown
$a_r = 3 \times a_p$



a_p	EDP No.	Part No.	Dimensions in inch D_{5m}	f_1	l_1	a_r	lbs	Seat size	
3	13276	C6-CDIR-33090-03JET	2.48	1.30	3.54	0.35	3.7	3	LC..1603..
	38006	C6-CDIL-33090-03JET	2.48	1.30	3.54	0.35	3.7	3	LC..1603..
4	13279	C6-CDIR-33090-04JET	2.48	1.30	3.54	0.47	3.7	4	LC..1604..
	38007	C6-CDIL-33090-04JET	2.48	1.30	3.54	0.47	3.7	4	LC..1604..
5	13281	C6-CDIR-33090-05JET	2.48	1.30	3.54	0.59	3.7	5	LC..1605..
	38008	C6-CDIL-33090-05JET	2.48	1.30	3.54	0.59	3.7	5	LC..1605..
6	13282	C6-CDIR-33090-06JET	2.48	1.30	3.54	0.71	3.7	6	LC..1606..
	38009	C6-CDIL-33090-06JET	2.48	1.30	3.54	0.71	3.7	6	LC..1606..
8	13283	C6-CDIR-33090-08JET	2.48	1.30	3.54	0.94	3.7	8	LC..3008..
	38010	C6-CDIL-33090-08JET	2.48	1.30	3.54	0.94	3.7	8	LC..3008..

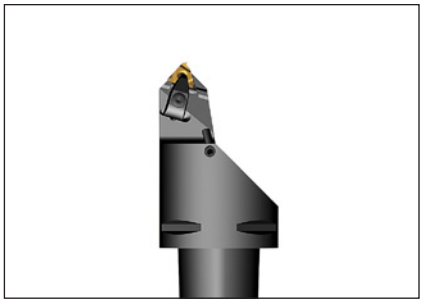
Spare Parts, Parts included in delivery

For holder	Clamp key	Clamp screw	Torque value in/lbs
CDIR/L..-03	4SMS795	TCEI0513	53.1
CDIR/L..-04	5SMS795	TCEI0613	70.8
CDIR/L..-05	5SMS795	TCEI0613	70.8
CDIR/L..-06	6SMS795	TCEI0815	88.5
CDIR/L..-08	6SMS795	TCEI1020	132.8

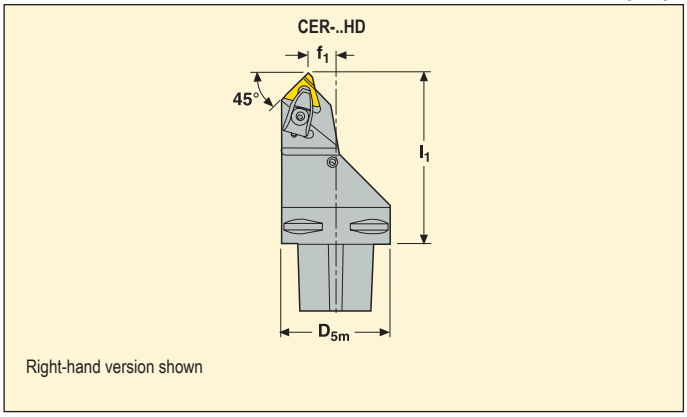
Please check availability in current price and stock-list

Toolholders for S-inserts

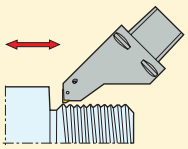
Snap-Tap®



- For inserts, please see threading insert section beginning on page 494



Right-hand version shown

Application	Insert I.C. inch	EDP No.	Part No.	Dimensions in inch D_{5m}	l_1	f_1	lbs	
								
	3/8	24331	C6-CER -18100-16HD	2.48	3.94	0.71	3.5	16
	1/2	24332	C6-CER -16100-22HD	2.48	3.94	0.63	3.5	22
	5/8	24333	C6-CER -12100-27HD	2.48	3.94	0.47	3.5	27

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Insert shim (S)	Insert shim (M)*	Shim screw/Key*		Floating wedge clamp	Clamp screw	Spring	Locking key
								
-16	GX16-1	MX16-1	CS3507-T09P	T09P-2	CHD16	L85020-T15P	S6912	T15P-7
-22	NX22-1	MX22-1	CS4009-T15P	T15P-2	CHD22	L86025-T20P	S7616	T20P-7
-27	VX27-1	MX27-1	C05012-T15P	T15P-2	CHD27	L86025-T20P	S7616	T20P-7

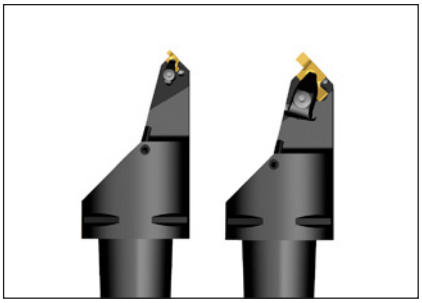
Please check availability in current price and stock-list

*To be ordered separately

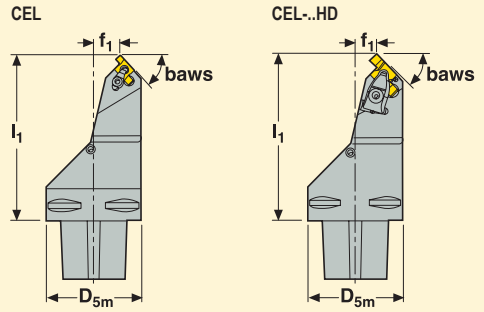
Seco-Capto™ – MTM toolholders, grooving

Toolholders for K-inserts

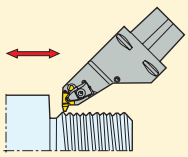
Snap-Tap®



- For inserts, please see threading insert section beginning on page 495



Right-hand version shown

Application	EDP No.	Part No.	Dimensions in inch D_{5m}	l_1	f_1	lbs	
	24334	C6-CEL -20110-10	2.48	4.33	0.79	3.5	10../ 12..
	24335	C6-CEL -18110-14	2.48	4.33	0.71	3.7	14..
	24336	C6-CEL -14110-20HD	2.48	4.33	0.55	3.7	20..
	24337	C6-CEL -07110-26HD	2.48	4.33	0.28	3.7	26..

Spare Parts, Parts included in delivery

Toolholder/ Insert dimension	Insert shim (S)	Shim screw/Key*		Cantilever clamp/Locking key		Floating wedge clamp	Clamp screw	Spring	Locking key
-10	KX10-2**	CS2507-T07P	T07P-2	CSP16-T15P	T15P-2	–	–	–	–
-14	KX14-2	CS3507-T15P	T09P-2	CSP16-T15P	T15P-2	–	–	–	–
-20HD	KX20-2	CS4009-T15P	T15P-2	–	–	CHD22	L86025-T20P	S7616	T20P-7
-26HD	KX26-2	C05012-T15P	T15P-2	–	–	CHD27	L86025-T20P	S7616	T20P-7

Please check availability in current price and stock-list

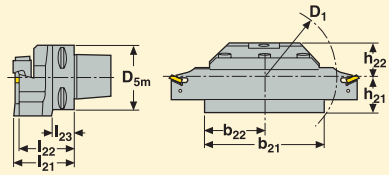
*To be ordered separately

Toolblock 150.10-..20/25 for Cut-off



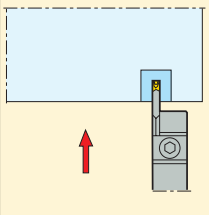
- For Cut-off blades, see pages 561-562
- For insert program, see pages 563-564

C.-150.10-



Neutral version shown

C.-150.10



Capto size	EDP No.	Part No.	Dimensions in inch									lbs
			D_1	D_{5m}	b_{21}	b_{22}	h_{21}	h_{22}	l_{21}	l_{22}	l_{23}	
C5	43793	**C5-150.10-40058-20**	3.94	1.97	3.15	1.57	1.18	0.99	2.28	2.09	0.79	2.9
C6	43794	**C6-150.10-60060-25**	5.55	2.48	4.72	2.36	1.46	1.26	2.36	2.17	0.87	5.1
C8	43796	**C8-150.10-60068-25**	5.71	3.15	4.72	2.36	1.59	1.57	2.68	2.48	1.18	7.9

Spare Parts, Parts included in delivery

For holder	Clamp	Clamp screw	Plug
-20	150.10-647	MC6S8X20	PL1308-H06
-25	150.10-648	MC6S8X25	PL1308-H06

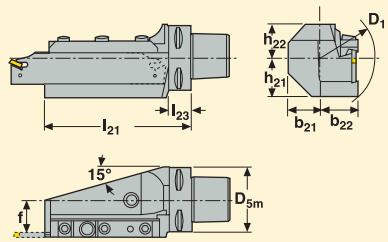
Please check availability in current price and stock-list

Toolblock R/L150.10-..20/25 for Cut-off



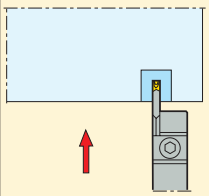
- For Cut-off blades, see pages 561-562
- For insert program, see pages 563-564

C.-R/L150.10-



Right-hand version shown

C.-R/L150.10



Capto size	EDP No.	Part No.	Dimensions in inch									lbs
			D_1	D_{5m}	b_{21}	b_{22}	f	h_{21}	h_{22}	l_{21}	l_{23}	
C5												
	43798	C5-R150.10-31095-20	3.43	1.97	1.00	1.22	1.02	1.18	1.02	3.74	0.79	3.3
	43799	C5-L150.10-31095-20	3.43	1.97	1.00	1.22	1.02	1.18	1.02	3.74	0.79	3.3
C6												
	43801	C6-R150.10-37147-25	4.17	2.48	1.26	1.46	1.26	1.50	1.26	5.79	0.87	7.3
	43802	C6-L150.10-37147-25	4.17	2.48	1.26	1.46	1.26	1.50	1.26	5.79	0.87	7.3
C8												
	43803	C8-R150.10-46155-25	4.80	3.15	1.57	1.79	1.59	1.59	1.59	6.10	1.18	11.0
	43804	C8-L150.10-46155-25	4.80	3.15	1.57	1.79	1.59	1.59	1.59	6.10	1.18	11.0

Spare Parts, Parts included in delivery

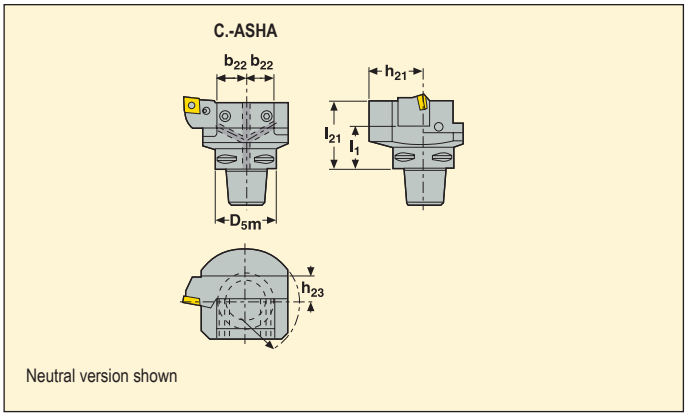
For holder	Clamp	Clamp screw	Plug
-20	150.10-647	MC6S8X20	PL1308-H06
-25	150.10-648	MC6S8X25	PL1308-H06

Please check availability in current price and stock-list

Seco-Capto™ – Adapters for shank tools

For inch shank tools





Neutral version shown

Capto size	EDP No.	Part No.	Dimensions in inch							lbs
			D_{5m}	D_1	b_{22}	h_{21}	h_{23}	l_1	l_{21}	
C5										
	32343	C5-ASHA -38057-12-AM	1.97	3.54	0.91	1.50	0.79	1.50	2.24	2.9
C6										
	20429	C6-ASHA -38059-12-A	2.48	3.54	0.91	1.50	0.79	1.57	2.32	4.0
C8										
	35285	C8-ASHA -55085-20-A	3.15	5.59	1.57	2.17	1.26	2.05	3.35	10.4

Spare Parts, Parts included in delivery

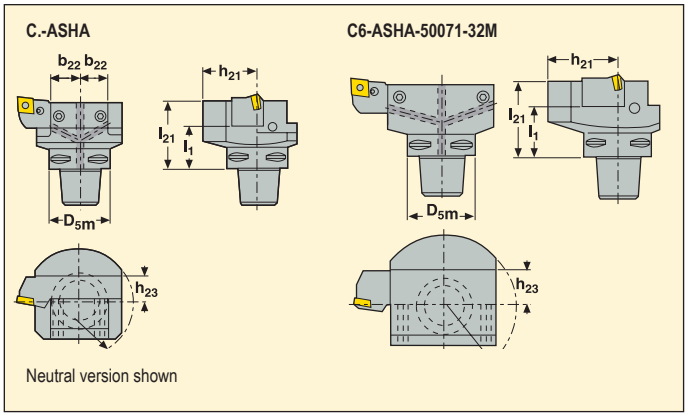
For size	Nozzle	Screw
		
C5	CN9	T6SS10X25
C6	CN9	T6SS8X25
C8	CN9	T6SS12X30

Please check availability in current price and stock-list

Seco-Capto™ – Adapters for shank tools

For metric shank tools





Capto size	EDP No.	Part No.	Dimensions in mm							lbs
			D_{5m}	D_1	b_{22}	h_{21}	h_{23}	l_1	l_{21}	
C5										
	53157	C5-ASHA -38058-20M	50	90	23	38	20	38	58	3.3
C6										
	53159	C6-ASHA -38060-20M	63	90	23	38	20	40	60	4.0
	53160	-45071-25M	63	110	30	45	25	45	71	5.1
	53167	-50071-32M	63	130	–	50	32	45	71	7.5
C8										
	53168	C8-ASHA -55085-32M	80	142	40	55	32	63	85	11.0

Spare Parts, Parts included in delivery

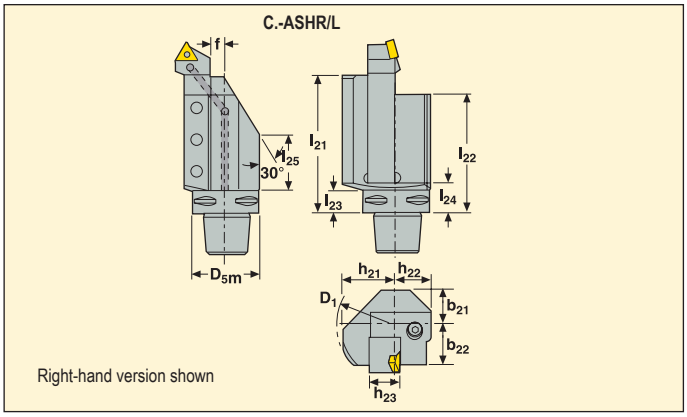
For size	Bolt	Circlip	Nozzle	O-ring	Screw
C5-	VB23	SGH1510	CN9	ORING-9X2	T6SS10X25
C6..-20	VB23	SGH1510	CN9	ORING-9X2	T6SS8X25
C6..-25, ..-32	VB23	SGH1510	CN9	ORING-9X2	T6SS12X30
C8	VB23	SGH1510	CN9	ORING-9X2	T6SS12X30

Please check availability in current price and stock-list

Seco-Capto™ – Adapters for shank tools

For inch shank tools





Capto size	EDP No.	Part No.	Dimensions in inch												lbs
			D_{5m}	D_1	b_{21}	b_{22}	f	h_{21}	h_{22}	h_{23}	l_{21}	l_{22}	l_{23}	l_{24}	
C5															
	38458	**C5-ASHR -30098-12-A**	1.969	3.543	1.142	1.181	0.433	1.614	1.299	0.748	3.858	3.465	0.787	0.906	2.0
	35287	**C5-ASHL -30098-12-A**	1.969	3.543	1.142	1.181	0.433	1.614	1.299	0.748	3.858	3.465	0.787	0.906	2.0
C6															
	35288	**C6-ASHR -30100-12-A**	2.480	3.543	1.142	1.181	0.433	1.614	1.299	0.748	3.937	3.543	0.866	0.984	3.3
	26005	**C6-ASHR -38130-16-A**	2.480	4.331	1.260	1.496	0.512	1.969	1.299	0.984	5.118	4.409	0.866	1.102	7.5
	35289	**C6-ASHL -30100-12-A**	2.480	3.543	1.142	1.181	0.433	1.614	1.299	0.748	3.937	3.543	0.866	0.984	3.3
	20742	**C6-ASHL -38130-16-A**	2.480	4.331	1.260	1.496	0.512	1.969	1.299	0.984	5.118	4.409	0.866	1.102	7.5

Spare Parts, Parts included in delivery

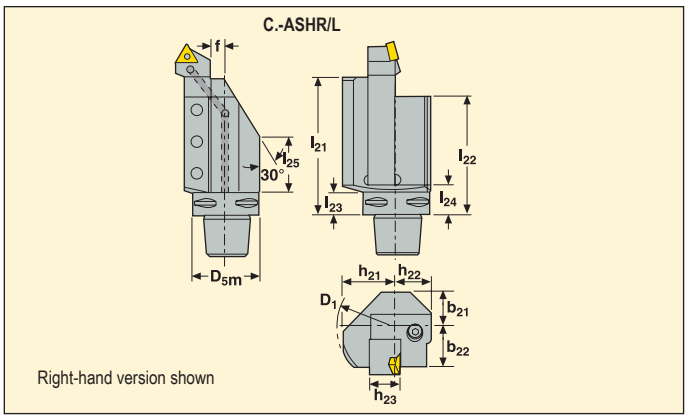
For size	Nozzle	Screw
C5..12	CN10	T6SS10X25
C6..12	CN10	T6SS10X25
C6..16	CN10	T6SS12X30

Please check availability in current price and stock-list

Seco-Capto™ – Adapters for shank tools

For metric shank tools





Capto size	EDP No.	Part No.	Dimensions in mm												lbs
			D_{5m}	D_1	b_{21}	b_{22}	f	h_{21}	h_{22}	h_{23}	l_{21}	l_{22}	l_{23}	l_{24}	
C5															
	35414	C5-ASHR -30098-20	50	90	29	30	10	41	33	20	98	88	20	23	4.9
	35415	C5-ASHL -30098-20	50	90	29	30	10	41	33	20	98	88	20	23	4.9
C6															
	35428	C6-ASHR -30100-20	63	90	29	30	10	41	33	20	100	90	22	25	5.5
	43943	C6-ASHR -38130-25	63	110	32	38	13	50	33	25	130	112	22	28	7.7
	35429	C6-ASHL -30100-20	63	90	29	30	10	41	33	20	100	90	22	25	5.5
	43944	C6-ASHL -38130-25	63	110	32	38	13	50	33	25	130	112	22	28	7.7
C8															
	43946	C8-ASHR -40140-32	80	110	40	40	8	55	30	32	140	130	30	35	11.5
	43947	C8-ASHL -40140-32	80	110	40	40	8	55	30	32	140	130	30	35	12.1

Spare Parts, Parts included in delivery

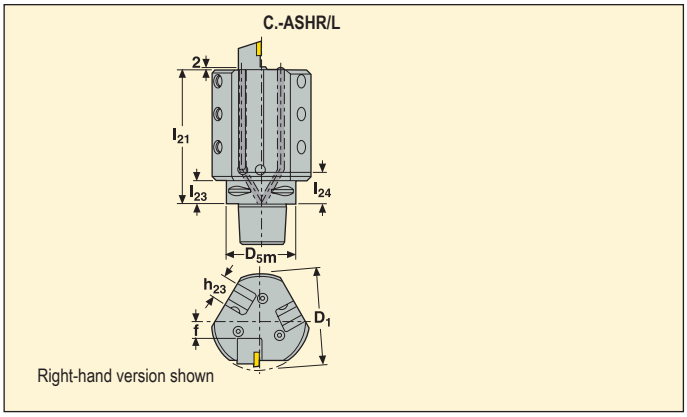
For size	Nozzle	Screw
C5	CN10	T6SS10X25
C6..-20	CN10	T6SS8X25
C6..-25	CN10	T6SS12X30
C8	CN10	T6SS12X30

Please check availability in current price and stock-list

Seco-Capto™ – Mini-turret for shank tools

For inch shank tools





Right-hand version shown

Capto size	EDP No.	Part No.	Dimensions in inch							lbs
			D_{5m}	D_1	f	h_{23}	l_{21}	l_{23}	l_{24}	
C5										
	35297	C5-ASHR3-36123-12-A	1.969	3.543	0.630	0.748	4.843	0.787	1.024	2.0
	35298	C5-ASHL3-36123-12-A	1.969	3.543	0.630	0.748	4.843	0.787	1.024	2.0
C6										
	35321	C6-ASHR3-36125-12-A	2.480	3.543	0.630	0.748	4.921	0.866	1.102	3.3
	35322	C6-ASHL3-36125-12-A	2.480	3.543	0.630	0.748	4.921	0.866	1.102	3.3
C8										
	35323	C8-ASHR3-46150-20-A	3.150	4.724	0.787	1.260	5.906	1.181	1.417	4.6
	35324	C8-ASHL3-46150-20-A	3.150	4.724	0.787	1.260	5.906	1.181	1.417	4.6

Spare Parts, Parts included in delivery

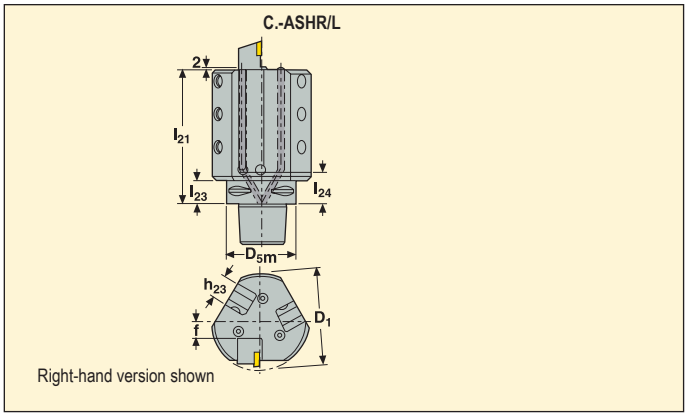
For size	Nozzle	Screw
		
C5	CN9	T6SS12X30
C6	CN9	T6SS12X30
C8	CN10	T6SS12X30

Please check availability in current price and stock-list

Seco-Capto™ – Mini-turret for shank tools

For metric shank tools





Capto size	EDP No.	Part No.	Dimensions in mm							lbs
			D_{5m}	D_1	f	h_{23}	l_{21}	l_{23}	l_{24}	
C5										
	34687	C5-ASHR3-36123-20	50	90	16	20	123	20	26	8.2
	34688	C5-ASHL3-36123-20	50	90	16	20	123	20	26	8.2
C6										
	43950	C6-ASHR3-36125-20	63	90	16	20	125	22	28	8.4
	43951	C6-ASHL3-36125-20	63	90	16	20	125	22	28	8.4
C8										
	34689	C8-ASHR3-45150-32	80	120	20	32	150	30	36	16.1
	34690	C8-ASHL3-45150-32	80	120	20	32	150	30	36	16.1

Spare Parts, Parts included in delivery

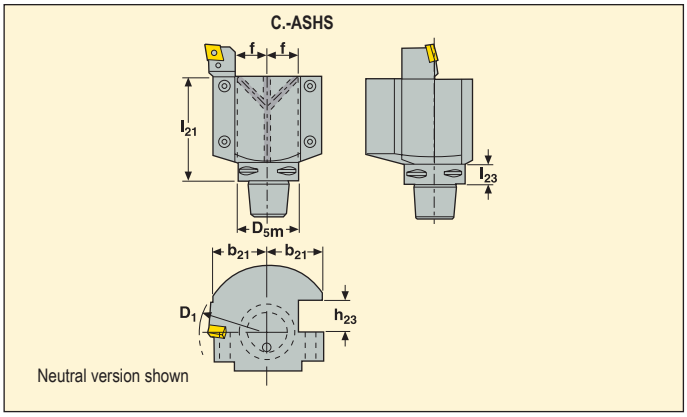
For size	Nozzle	Screw
C5	CN2	T6SS12X30
C6	CN2	T6SS12X30
C8	CN10	T6SS12X30

Please check availability in current price and stock-list

Seco-Capto™ – Adapters for shank tools

For inch shank tools





Capto size	EDP No.	Part No.	Dimensions in inch							lbs
			D_{5m}	D_1	b_{21}	f	h_{23}	l_{21}	l_{23}	
C6										
	35325	**C6-ASHS-54090-12U**	2.480	4.213	2.106	–	0.750	3.543	–	3.3

Spare Parts, Parts included in delivery

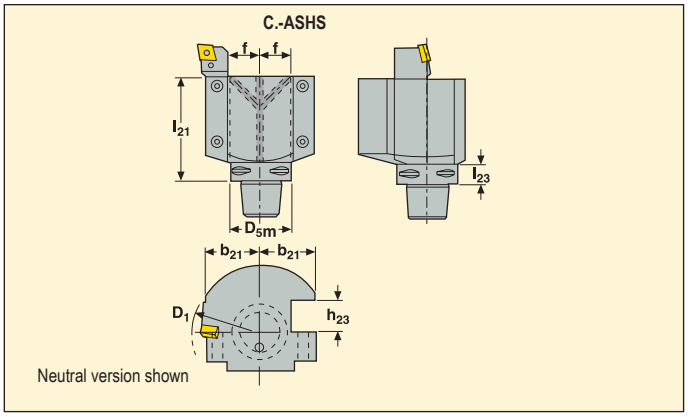
For size	Screw
C6	P6SS8X12

Please check availability in current price and stock-list

Seco-Capto™ – Adapters for shank tools

For metric shank tools





Capto size	EDP No.	Part No.	Dimensions in mm							lbs
			D_{5m}	D_1	b_{21}	f	h_{23}	l_{21}	l_{23}	
C6										
	43952	C6-ASHS-58115-32	63	140	58	33	32	115	22	16.3

Spare Parts, Parts included in delivery

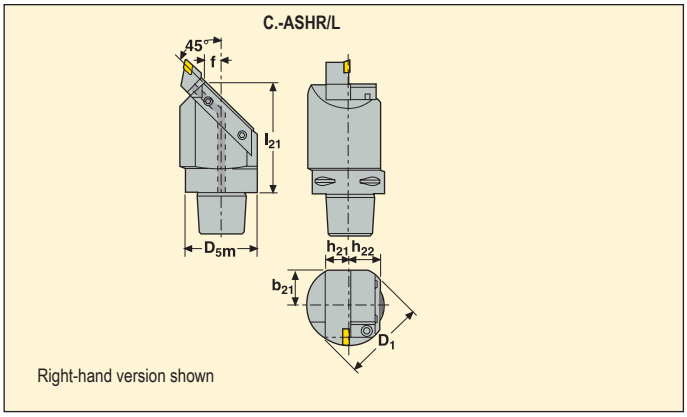
For size	Nozzle	Screw
C6	CN9	T6SS12X30

Please check availability in current price and stock-list

Seco-Capto™ – Adapters for shank tools

For inch shank tools





Right-hand version shown

Capto size	EDP No.	Part No.	Dimensions in inch							lbs
			D_{5m}	D_1	b_{21}	f	h_{21}	h_{22}	l_{21}	
C5										
	35326	C5-ASHR45-36097-12-A	1.969	2.835	1.205	0.591	0.787	1.024	3.819	2.0
	35327	C5-ASHL45-36097-12-A	1.969	2.835	1.205	0.591	0.787	1.024	3.819	2.0
C6										
	35328	C6-ASHR45-36099-12-A	2.480	2.835	1.240	0.591	0.787	1.102	3.898	4.9
	35329	C6-ASHL45-36099-12-A	2.480	2.835	1.240	0.591	0.787	1.102	3.898	4.9

Spare Parts, Parts included in delivery

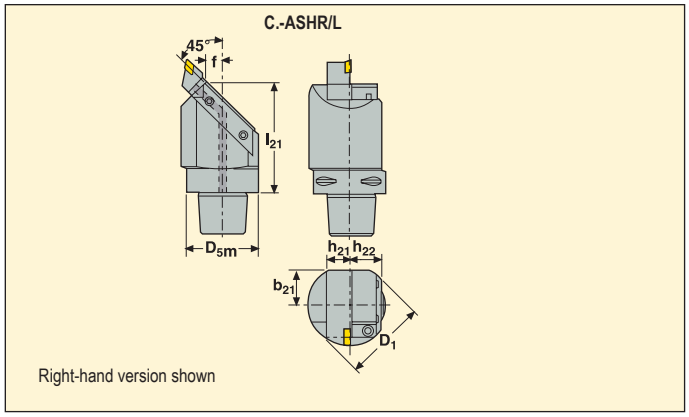
For size	Nozzle	Screw
C5	CN9	T6SS10X25
C6	CN9	T6SS8X25

Please check availability in current price and stock-list

Seco-Capto™ – Adapters for shank tools

For metric shank tools





Capto size	EDP No.	Part No.	Dimensions in mm							lbs
			D_{5m}	D_1	b_{21}	f	h_{21}	h_{22}	l_{21}	
C5										
	34692	C5-ASHR45-36097-20	50	72	30.6	15	20	26	97	4.0
	34676	C5-ASHL45-36097-20	50	72	30.6	15	20	26	97	4.0
C6										
	43953	C6-ASHR45-36099-20	63	72	31.5	15	20	28	99	4.9
	43954	C6-ASHL45-36099-20	63	72	31.5	15	20	28	99	4.9
C8										
	43955	C8-ASHR45-50135-32	80	140	45.0	17	32	40	135	14.6
	34701	C8-ASHL45-50135-32	80	140	45.0	17	32	40	135	14.6

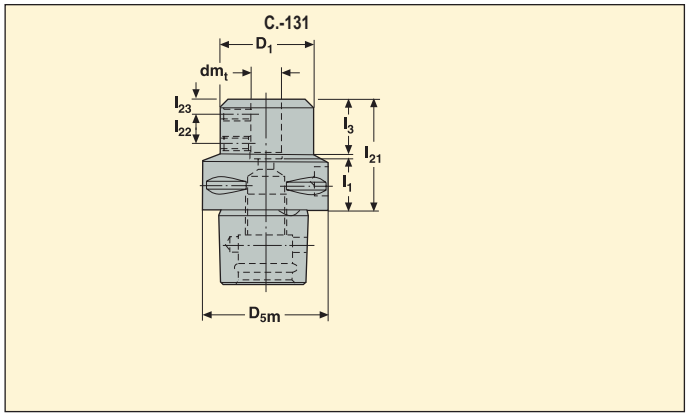
Spare Parts, Parts included in delivery

For size	Nozzle	Screw
C5	CN9	T6SS10X25
C6	CN9	T6SS8X25
C8	CN9	T6SS12X30

Please check availability in current price and stock-list

Inch





Capto size	EDP No.	Part No.	Dimensions in inch								lbs
			D_{5m}	dm_t	D_1	l_1	l_3	l_{21}	l_{22}	l_{23}	
C4											
	61730	C4-131 -00050-250	1.57	0.250	1.42	1.97	1.07	1.97	0.197	0.630	0.7
	77762	-00050-375	1.57	0.375	1.42	1.18	1.13	1.97	0.197	0.354	1.1
	77765	-00050-500	1.57	0.500	1.42	0.95	1.13	1.97	0.236	0.472	1.0
	77771	-00050-625	1.57	0.625	1.42	0.71	1.13	1.97	0.315	0.591	1.0
	77772	-00060-750	1.57	0.750	1.42	0.83	1.42	2.36	0.315	0.630	1.1
	04958	-00091-1000	1.57	1.000	2.48	3.58	2.81	3.58	0.630	0.708	1.5
C5											
	77773	C5-131 -00060-500	1.97	0.500	1.42	1.34	1.57	2.36	0.236	0.472	1.6
	77774	-00060-625	1.97	0.625	1.42	1.10	1.57	2.36	0.315	0.630	1.6
	77775	-00060-750	1.97	0.750	1.42	0.83	1.57	2.36	0.315	0.630	1.5
C6											
	77778	C6-131 -00065-750	2.48	0.750	1.42	1.27	1.54	2.66	0.417	0.630	2.2
	77779	-00075-1000	2.48	1.000	2.13	0.95	2.04	2.95	0.472	0.984	3.3

Spare Parts, Parts included in delivery

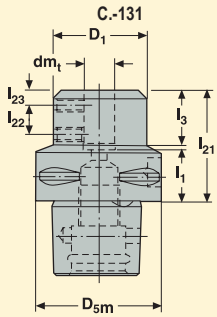
For size	Screw
C.-131	1/2-20UNFX.5SSS

Please check availability in current price and stock-list

Seco-Capto™ – Adapters for solid boring bars

Metric





Capto size	EDP No.	Part No.	Dimensions in mm								lbs
			D_{5m}	dm_t	D_1	l_1	l_3	l_{21}	l_{22}	l_{23}	
C3											
	94677	C3-131 -00035-10	32	10	36	20	20.0	35	10	5	0.6
	94678	C3-131 -00040-12	32	12	36	24	24.0	40	12	6	0.7
C4											
	72826	C4-131 -00040-10	40	10	36	20	19.0	40	10	5	0.9
	94679	C4-131 -00045-12	40	12	36	24	24.0	45	12	6	1.0
	94680	C4-131 -00050-16	40	16	36	32	29.0	50	16	8	1.1
C5											
	94681	C5-131 -00045-10	50	10	36	20	21.0	45	10	5	1.4
	94682	C5-131 -00045-12	50	12	36	24	22.5	45	12	6	1.5
	94683	C5-131 -00055-16	50	16	36	32	31.0	55	16	8	1.6

Spare Parts, Parts included in delivery

For size	Key	Screw
...-10	3SMS795	951C0610
...-12	3SMS795	951C0610
...-16	4SMS795	951C0810

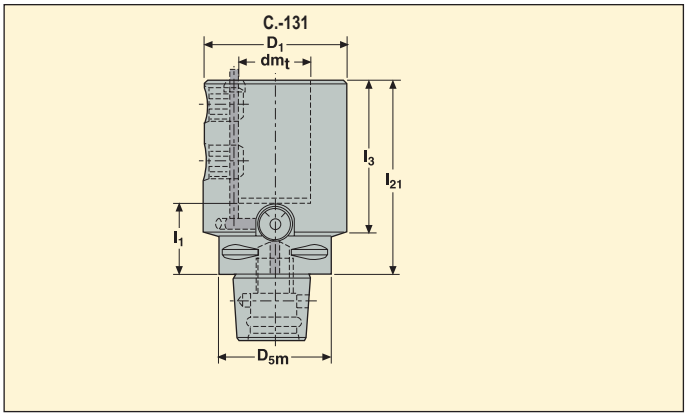
Please check availability in current price and stock-list

Seco-Capto™ – Adapters for solid boring bars

Metric



- Sleeves, see page 750



Capto size	EDP No.	Part No.	Dimensions in mm D_{5m}	dm_t	D_1	l_1	l_3	l_{21}	lbs
C5									
	51378	C5-131 -00100-25	50	25	63	43	80	100	4.6
C6									
	51377	C6-131 -00098-25	63	25	63	41	–	98	4.9
	41452	-00112-40	63	40	80	41	90	112	7.7
C8									
	34677	C8-131 -00098-25	80	25	63	41	50	98	7.7
	34679	-00112-40	80	40	80	41	–	112	9.3

Spare Parts, Parts included in delivery

For size	Bolt	Circlip	Coolant nozzle	Locking key	Locking screw	O-ring	Screw	Spring	Screw
C5...-25	VB40	SGH2012	CN9	8SMS795	P6SS16X20	16.1 x 1.6	P6SS 6x6	SP0518	P6SS 8x8
C6...-25	VB50	SGH2012	CN9	8SMS795	P6SS16X20	16.1 x 1.6	P6SS 6x6	SP0518	P6SS 8x8
C6...-40	VB50	SGH2012	CN10	8SMS795	P6SS16X20	16.1 x 1.6	P6SS 6x6	SP0518	P6SS 8x8
C8...-25	VB58	SGH2012	CN9	8SMS795	P6SS16X20	16.1 x 1.6	P6SS 6x6	SP0518	P6SS 8x8
C8...-40	VB58	SGH2012	CN10	10SMS795	P6SS20X20	16.1 x 1.6	P6SS 6x6	SP0518	P6SS 8x8

Please check availability in current price and stock-list

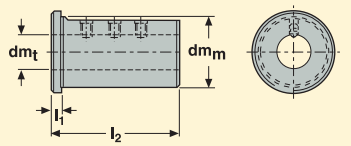
Seco-Capto™ – Adapters for solid boring bars

Metric



- Holders, see page 749

132N

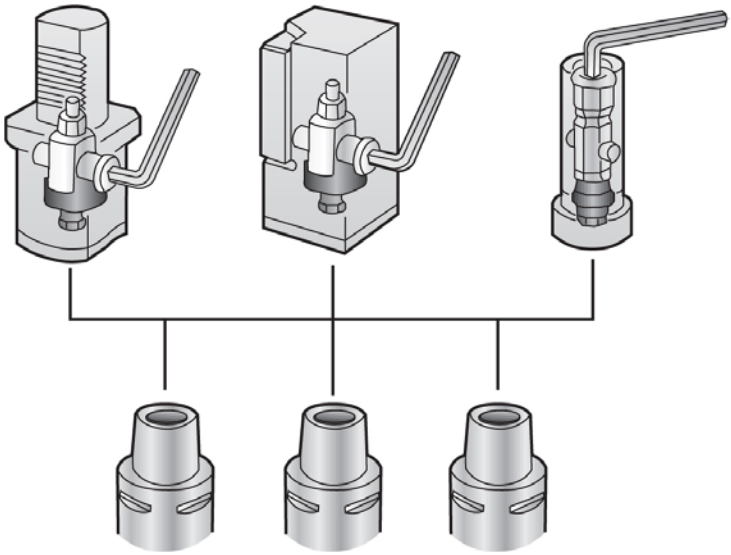


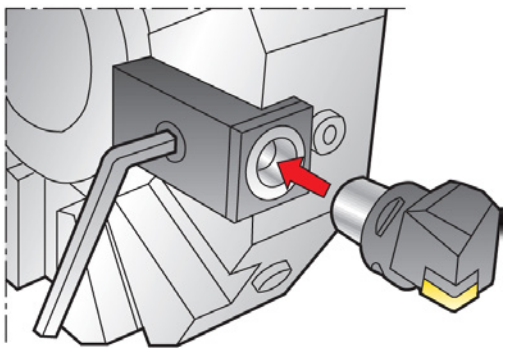
EDP No.	Part No.	Dimensions in mm				lbs
		dm_m	dm_t	l_2	l_1	
51365	132N -2506	25	6	61	5	0.66
51366	-2508	25	8	61	5	0.66
51381	-2510	25	10	61	5	0.66
51382	-2512	25	12	61	5	0.66
51383	-2516	25	16	61	5	0.66
51384	-2520	25	20	61	5	0.66
51385	132N -4020	40	20	75	5	1.10
51401	-4025	40	25	75	5	1.10
51402	-4032	40	32	75	5	1.10

Spare Parts, Parts included in delivery

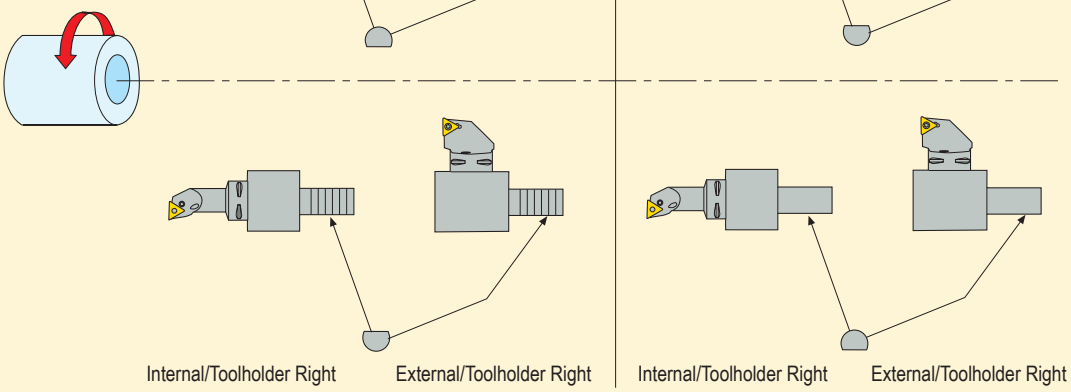
For size	Key	Screw
-2506	3SMS795	P6SS6X8
-2508	4SMS795	P6SS8X8
-2510	4SMS795	P6SS8X6
-2512	4SMS795	P6SS8X6
-4020	5SMS795	P6SS8X10
-4025	5SMS795	P6SS10X8
-2516/-2520/4032	–	–

Please check availability in current price and stock-list



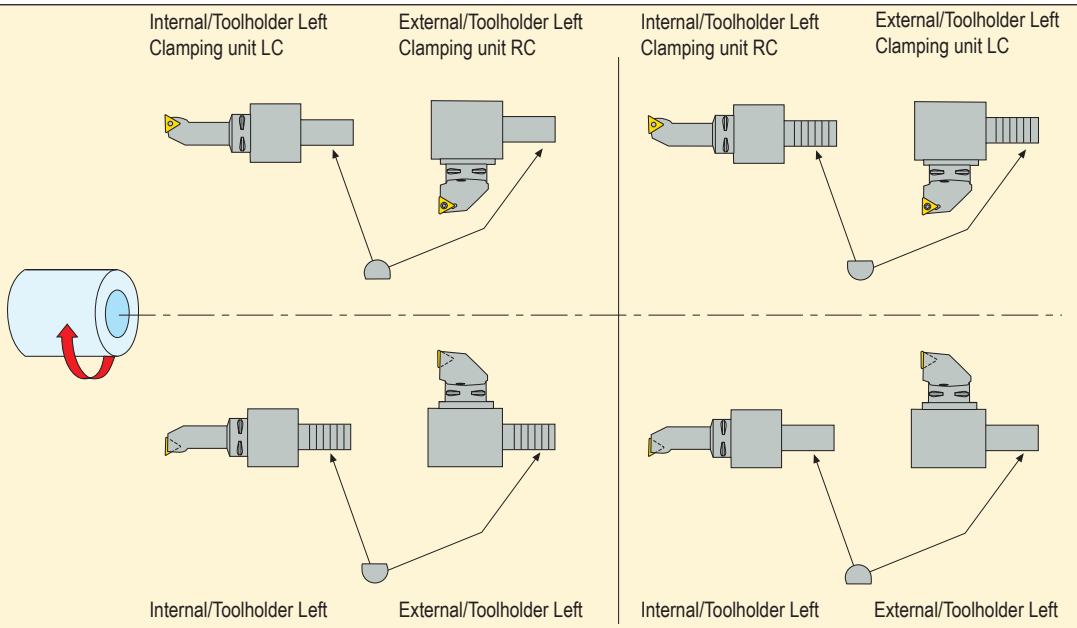


Selection of VDI clamping unit



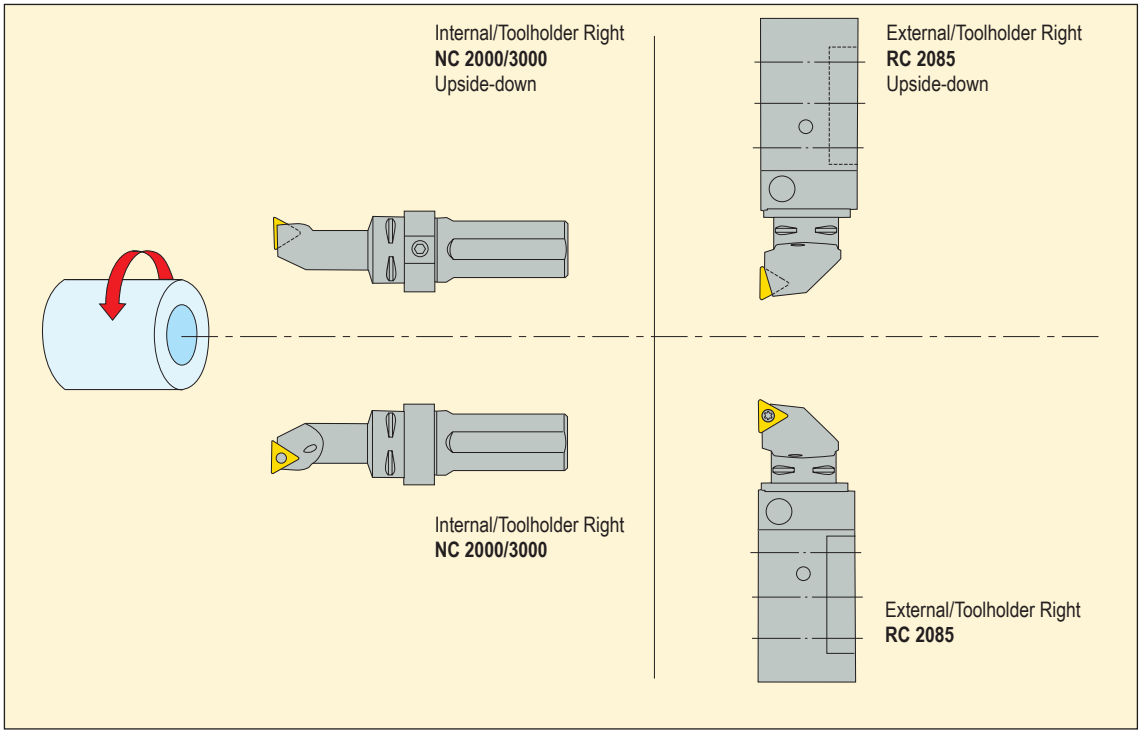
Note: The polygon socket has to be rotated 180°

Selection of VDI clamping unit

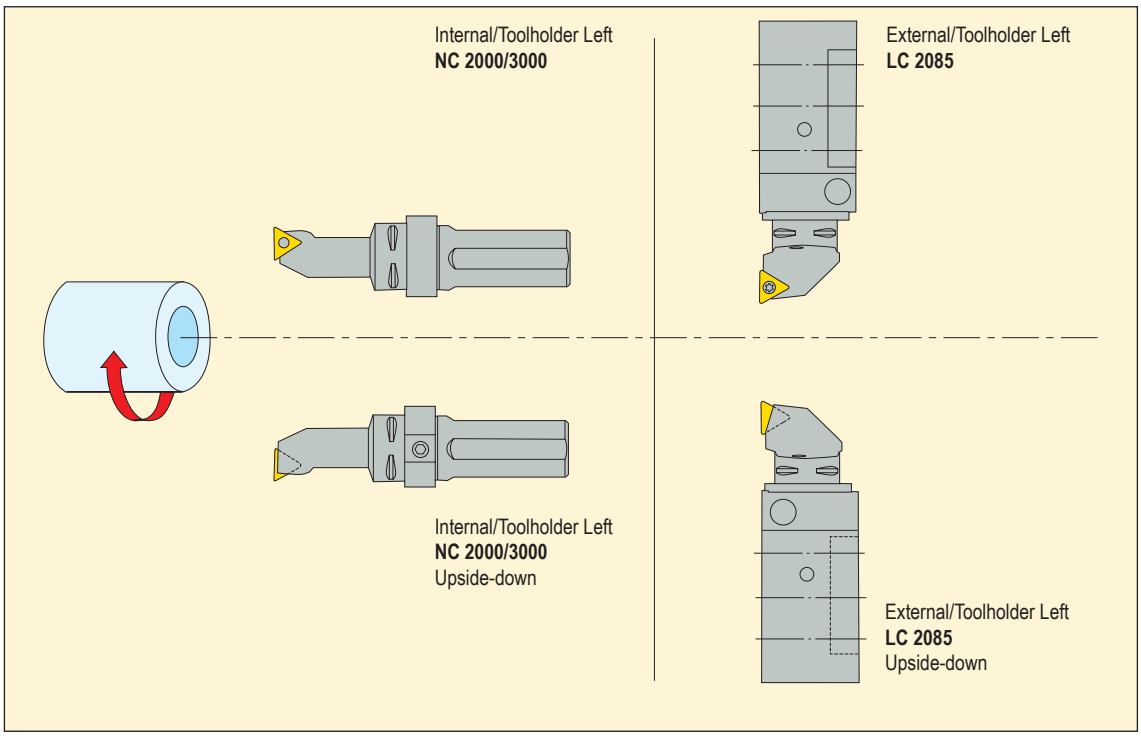


Note: The polygon socket has to be rotated 180°

Selection of clamping unit 2000/3000/2085

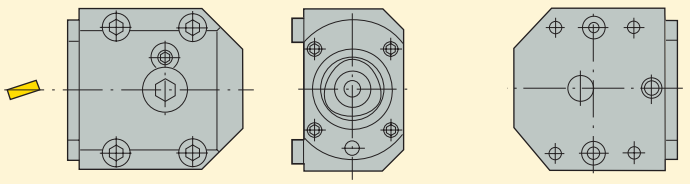


Selection of clamping unit 2000/3000/2085

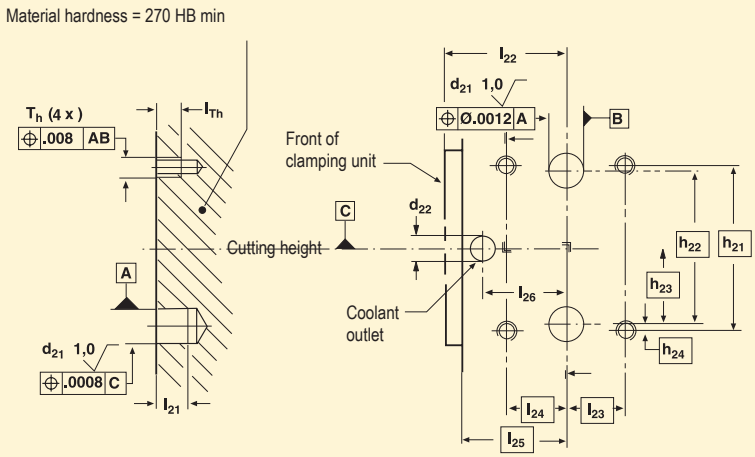


2000 = cylindrical type with drawbar, 3000 = cylindrical type with screw, 2085 = shank type.

Clamping unit 2090 for special applications



Design instruction for application of clamping unit RC/LC 2090



Seco-Capto™ size	Part No.	Dimensions in inch													
		d_{21} H7	d_{22}	h_{21}	h_{22}	h_{23}	h_{24}	l_{21} min	l_{22}	l_{23}	l_{24}	l_{25}	l_{26}	l_{Th} min	T_h
C3	C3-R/LC2090-19039M	0.472	0.197	1.654	1.535	0.768	0.059	0.335	1.535	0.748	0.748	1.319	1.102	0.295	M6
C4	C4-R/LC2090-24043A	0.630	0.276	2.362	0.197	1.083	0.098	0.433	1.693	0.748	0.748	1.437	1.181	0.433	M8
C5	C5-R/LC2090-32048A	0.787	0.276	2.756	2.441	1.220	0.157	0.472	1.890	0.827	0.827	1.555	1.299	0.512	M10
C6	C6-R/LC2090-42060	0.984	0.394	3.228	2.795	1.398	0.217	0.787	2.362	0.965	0.965	1.969	1.614	0.472	M10
C8	C8-R/LC2090-50088	1.260	0.433	4.331	3.622	1.811	0.354	0.787	3.465	1.693	1.693	2.992	2.480	0.571	M12

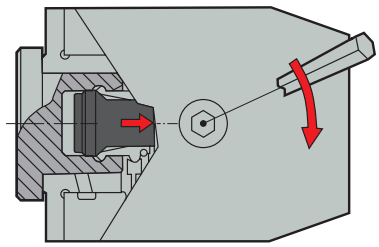
Toolholders

A large range of Seco-Capto toolholders are available:
For external and internal turning with negative inserts.
For external and internal turning with positive inserts.
For external and internal turning with MDT inserts.
For external and internal threading.

For selection of toolholder use the guidelines for conventional tools.

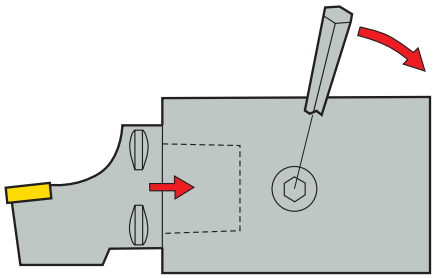
Cover plug

A cover plug should always be used to protect the ground surfaces of the connecting sleeve from dirt or damage on the clamping units when they do not have a cutting unit coupled or when they are held in stock.



Clamping force

In order to obtain the necessary clamping force (F) the clamping unit should be tightened to the torque value (Mv) as recommended in the table below.



Torque Mv		
Size	**Nm**	**Lbft**
C3	35	26
C4	50	37
C5	70	52
C6	90	67
C8	130	96

Turning the cutting tool 180°

If the entire clamping unit has to be rotated 180°, the polygon socket should be rotated 180°.

1. Loosen the screws (2).
2. Dismantle the polygon socket. Use the special tool shown on page 763 (ordered separately).
3. Move the guiding pin to the opposite side of the clamping unit.
4. Rotate the polygon socket 180° and reassemble. Tap carefully with a plastic mallet.

Lubrication

All manual clamping units are lubricated with BP Energrease ACS-2 prior to delivery (Alternative MOBIL Temp Shc 32 or STATOIL Beacon 325). The lubrication should be checked every six months. New grease can be applied via the cam.

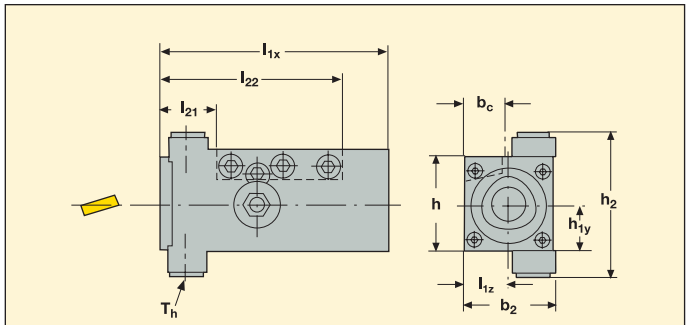
1. Remove the screw (1).
2. Assemble grease nipple 5692 012-01.
3. Pump in grease with grease gun until it begins to seep out around the key handle at the cam.
4. Remove grease nipple.
5. Replace screw (1) into the cam.

Note: Clamping unit must be clamped during lubrication.

Straight shank type (Inch)



- How to select Clamping unit, see page 753
- Spare Parts, see page 764



Right-hand version shown

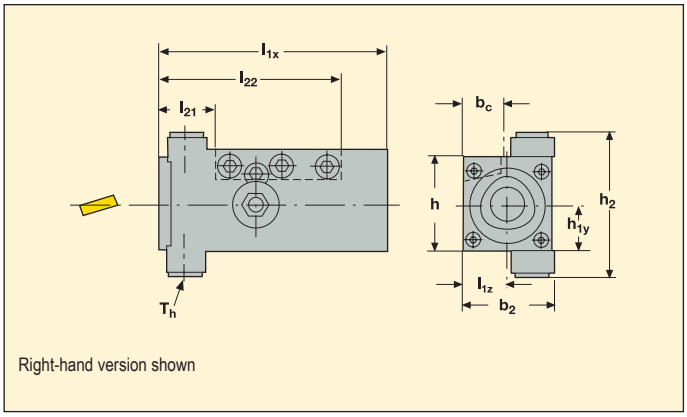
Capto size	Stopka	h inch	EDP No.	Part No.	Dimensions in inch									lbs
					h_{1y}	l_{1x}	lf_1	lf_2	b_2	l_{1z}	b_c	h_2	T_h	
C4														
	1.00 x 1.00	2.00	77704	C4-RC2085-24102-16M	1.00	5.04	3.98	1.20	1.89	1.00	1.00	2.32	G1/8	2.2
	1.00 x 1.00	2.00	77726	C4-LC2085-24102-16M	1.00	5.04	3.98	1.20	1.89	1.00	1.00	2.32	G1/8	2.2
C5														
	1.25 x 1.25	2.52	77720	C5-RC2085-32130-20M	1.25	5.14	4.65	1.46	2.52	1.25	1.25	2.65	G1/8	4.4

Please check availability in current price and stock-list

Straight shank type (Metric)



- How to select Clamping unit, see page 753
- Spare Parts, see page 764



Right-hand version shown

Capto size	Stopka	h mm	EDP No.	Part No.	Dimensions in mm									lbs
					h_{1y}	l_{1x}	lf_1	lf_2	b_2	l_{1z}	b_c	h_2	T_h	
C3														
	2020	40	93954	C3-LC2085-4038M	20	95	78.5	25.0	38	19	20	62	G1/8	2.3
	2020	40	93966	C3-RC2085-4038M	20	95	78.5	25.0	38	19	20	62	G1/8	2.3
C4														
	2525	50	93977	C4-LC2085-5048	25	125	101.0	30.5	48	24	25	54	G1/8	4.6
	2525	50	79661	C4-RC2085-5048	25	125	101.0	30.5	48	24	25	54	G1/8	4.6
C5														
	3232	64	93997	C5-LC2085-6464	32	145	118.0	36.0	64	32	32	68	G1/8	9.0
	3232	64	69018	C5-RC2085-6464	32	145	118.0	36.0	64	32	32	68	G1/8	9.0

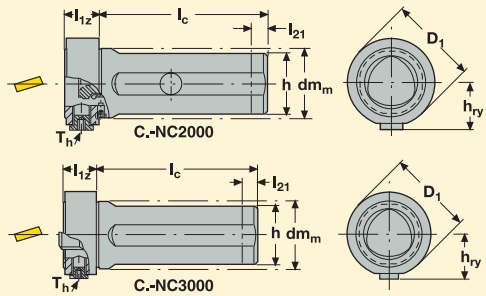
Please check availability in current price and stock-list

Seco-Capto™ – Clamping units, Type 2000/3000

Cylindrical type (Inch)



- How to select Clamping unit, see page 753
- Spare Parts, see page 765



Type 2000 locking with drawbar and segment
Type 3000 locking with center bolt

Neutral version shown

Capto size	dm_m (inch)	EDP No.	Part No.	Dimensions in inch							lbs
				D_1	l_c	l_{1z}	l_{21}*	h_{ry}	h	T_h	
C4											
	1.50	77739	C4-NC2000-10020-A24	2.03	3.94	0.79	0.32	1.02	1.46	G1/8	2.1
	2.00	77741	C4-NC2000-12020-A32	2.03	4.72	0.79	1.10	1.02	1.46	G1/8	3.6
C5											
	2.00	77743	C5-NC2000-12024-A32	2.42	4.72	0.94	–	1.22	1.85	G1/8	4.6
C4											
	1.50	77745	C4-NC3000-10020-A24	2.03	3.94	0.79	0.39	1.02	1.46	G1/8	2.2
	2.00	77749	C4-NC3000-12020-A32	2.03	4.72	0.79	1.18	1.02	1.46	G1/8	4.2
C5											
	2.00	77757	C5-NC3000-12024-A32	2.42	4.72	0.94	–	1.22	1.85	G1/8	4.7

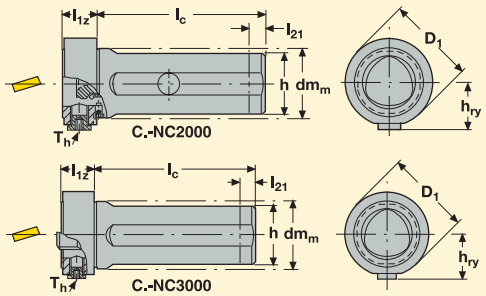
Please check availability in current price and stock-list

*Maximum length possible to cut-off

Cylindrical type (Metirc)



- How to select Clamping unit, see page 753
- Spare Parts, see page 765



Type 2000 locking with drawbar and segment
Type 3000 locking with center bolt

Neutral version shown

Capto size	dm_m	EDP No.	Part No.	Dimensions in mm							lbs
				D_1	l_c	l_{1z}	l_{21}*	h_{ry}	h	T_h	
C3	32	94035	C3-NC2000-08018-32	45.5	80	18	–	26	30	G1/8	1.4
C4	40	94039	C4-NC2000-10020-40	51.5	100	20	8	28	37	G1/8	2.4
C5	50	94045	C5-NC2000-12024-50	61.5	120	24	–	33	47	G1/8	4.4
C3	32	94037	C3-NC3000-08018-32	45.5	80	18	–	26	30	G1/8	1.4
	40	93956	C3-NC3000-10018-40	45.5	100	18	20	26	37	G1/8	2.4
C4	40	94041	C4-NC3000-10020-40	51.5	100	20	10	28	37	G1/8	2.4
C5	50	90845	C5-NC3000-12024-50	61.5	120	24	20	33	47	G1/8	4.1

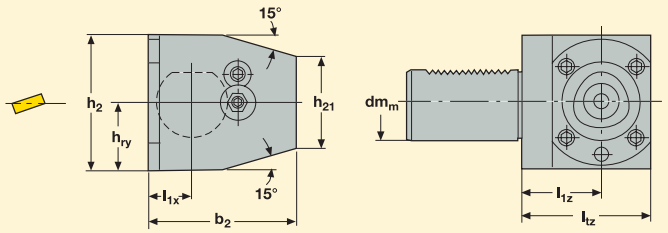
Please check availability in current price and stock-list

*Maximum length possible to cut-off

VDI type angled DIN69880



- How to select Clamping unit, see page 752
- Spare Parts, see page 766



Right-hand version shown

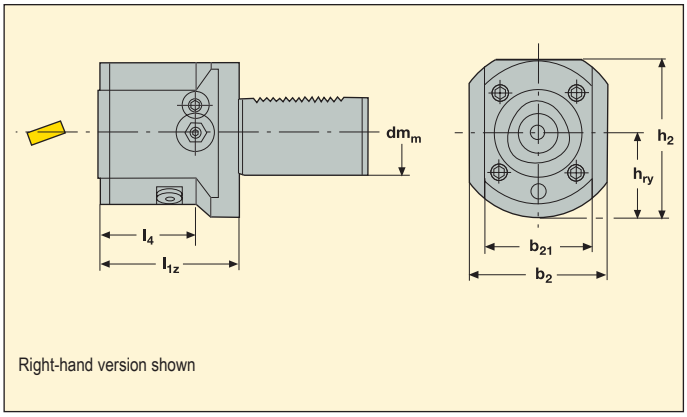
Capto size	VDI dm_m	EDP No.	Part No.	Dimensions in inch							lbs
				l_{1z}	l_{tz}	l_{1x}	b_2	h_2	h_{ry}	h_f	
C3											
	30	93958	**C3-RC2030-41020M**	1.61	2.36	0.79	2.91	2.24	1.18	1.50	4.2
	30	93946	**C3-LC2030-41020M**	1.61	2.36	0.79	2.91	2.24	1.18	1.50	4.2
	30	93959	**C3-RC2030-41030M**	1.61	2.36	1.18	2.87	2.24	1.18	1.61	4.4
	30	93947	**C3-LC2030-41030M**	1.61	2.36	1.18	2.87	2.24	1.18	1.61	4.4
C4											
	40	65642	**C4-RC2040-51030M**	2.01	2.95	1.18	3.39	2.95	1.50	2.13	8.4
	40	93969	**C4-LC2040-51030M**	2.01	2.95	1.18	3.39	2.95	1.50	2.13	8.4
	40	93982	**C4-RC2040-51040M**	2.01	2.95	1.57	3.39	2.95	1.50	2.36	8.8
	40	93970	**C4-LC2040-51040M**	2.01	2.95	1.57	3.39	2.95	1.50	2.36	8.8
C5											
	40	94003	**C5-RC2040-53030M**	2.09	3.35	1.18	3.90	3.23	1.61	1.85	10.8
	40	93986	**C5-LC2040-53030M**	2.09	3.35	1.18	3.90	3.23	1.61	1.85	10.8
	40	90846	**C5-RC2040-53040M**	2.09	3.35	1.57	3.90	3.23	1.61	2.09	11.0
	40	93987	**C5-LC2040-53040M**	2.09	3.35	1.57	3.90	3.23	1.61	2.09	11.0
	50	94005	**C5-RC2050-53030M**	2.09	3.35	1.18	3.90	3.39	1.69	2.32	12.8
	50	93989	**C5-LC2050-53030M**	2.09	3.35	1.18	3.90	3.39	1.69	2.32	12.8
	50	92175	**C5-RC2050-53040M**	2.09	3.35	1.57	3.90	3.39	1.69	2.56	13.2
	50	93990	**C5-LC2050-53040M**	2.09	3.35	1.57	3.90	3.39	1.69	2.09	13.2
	60	94011	**C5-RC2060-43040M**	1.69	2.95	1.57	3.90	3.70	2.09	2.99	15.0
	60	93993	**C5-LC2060-43040M**	1.69	2.95	1.57	3.90	3.70	2.09	2.99	15.0
C6											
	60	94025	**C6-RC2060-53040**	2.09	3.74	1.57	4.80	4.13	2.09	2.76	21.2
	60	94018	**C6-LC2060-53040**	2.09	3.74	1.57	4.80	4.13	2.09	2.76	21.2

Please check availability in current price and stock-list

VDI type straight DIN69880



- How to select Clamping unit, see page 752
- Spare Parts, see page 767



Right-hand version shown

Capto size	VDI dm_m	EDP No.	Part No.	Dimensions in inch						lbs
				l_{1z}	h_f	b_2	l_{tz}	h_2	h_{ry}	
C3										
	30	93957	C3-RC2030-00060M	2.36	1.73	1.97	1.50	2.40	1.34	2.4
	30	93945	C3-LC2030-00060M	2.36	1.73	1.97	1.50	2.40	1.34	2.4
C4										
	40	69447	C4-RC2040-00075M	2.95	2.09	2.95	1.89	2.95	1.61	4.9
	40	65641	C4-LC2040-00075M	2.95	2.09	2.95	1.89	2.95	1.61	4.9
C5										
	40	94001	C5-RC2040-00085M	3.35	2.83	3.27	2.52	3.23	1.61	7.3
	40	79704	C5-LC2040-00085M	3.35	2.83	3.27	2.52	3.23	1.61	7.3
C4										
	50	68269	C4-RC2050-00065M	2.56	1.54	2.76	2.76	3.27	1.93	5.7
	50	93972	C4-LC2050-00065M	2.56	1.54	2.76	2.76	3.27	1.93	5.7
C5										
	60	94007	C5-RC2060-00075M	2.95	0.63	3.15	2.95	3.94	2.28	11.5
	60	93992	C5-LC2060-00075M	2.95	0.63	3.15	2.95	3.94	2.28	11.5
	50	91790	C5-RC2050-00085M	3.35	2.40	3.27	3.35	3.58	1.93	8.8
	50	93988	C5-LC2050-00085M	3.35	2.40	3.27	3.35	3.58	1.93	8.8
C6										
	60	94024	C6-RC2060-00095	3.74	1.97	3.31	3.74	4.37	2.28	15.2
	60	94017	C6-LC2060-00095	3.74	1.97	3.31	3.74	4.37	2.28	15.2

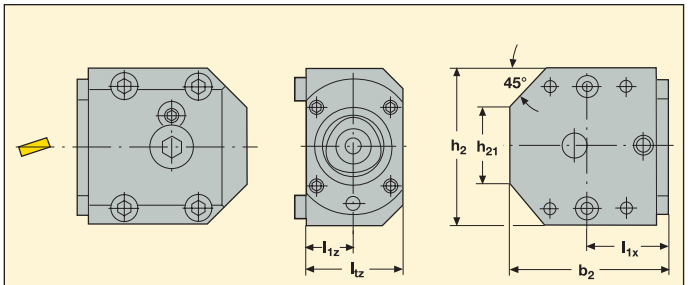
Please check availability in current price and stock-list

Seco-Capto™ – Clamping units, Type 2090

For special applications (CHECK FOR N PRODUCTS)



- Design instruction, see page 754
- Spare Parts, see page 768

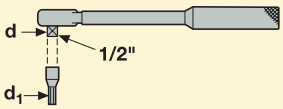


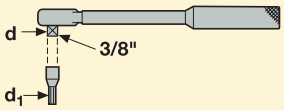
Right-hand version shown

Capto size	EDP No.	Part No.	Dimensions in inch						lbs
			l_{tz}	l_{1z}	h_2	h_f	b_2	l_{1x}	
C3									
	93967	C3-RC2090-19039M	1.50	0.748	2.13	1.18	2.87	1.535	2.01
	93955	C3-LC2090-19039M	1.50	0.748	2.13	1.18	2.87	1.535	2.01
C4									
	93984	C4-RC2090-24043A	1.89	0.945	3.03	1.50	3.39	1.693	4.15
	93978	C4-LC2090-24043A	1.89	0.945	3.03	1.50	3.39	1.693	4.15
C5									
	94015	C5-RC2090-32048A	2.52	1.260	3.62	1.73	3.94	1.890	7.80
	93998	C5-LC2090-32048A	2.52	1.260	3.62	1.73	3.94	1.890	7.80
C6									
	94029	C6-RC2090-42060	3.31	1.654	4.13	1.46	4.80	2.362	14.37
	94021	C6-LC2090-42060	3.31	1.654	4.13	1.46	4.80	2.362	14.37
C8									
	94034	C8-RC2090-50088	3.94	1.969	5.24	5.24	5.75	3.465	27.28
	94032	C8-LC2090-50088	3.94	1.969	5.24	5.24	5.75	3.465	27.28

Please check availability in current price and stock-list

Torque wrench

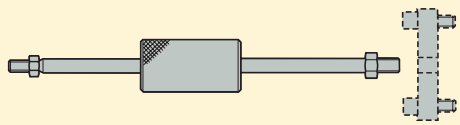




Size	ft/lbs	Nm	Part No.	Spare Parts		
				Adapter*	d	d_1
C3	26	35	BT-TK-02	5680 035-05	3/8"	8
C4	37	50	C-TK-01	5680 035-06	1/2"	10
C5	52	70	C-TK-01	5680 035-07	1/2"	12
C6	66	90	C-TK-01	5680 035-07	1/2"	12
C8	96	130	C-TK-02	5680 035-07	1/2"	12

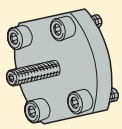
*To be ordered separately

Sliding hammer for dismounting the polygon socket



Size	Part No.
C3	CC-ET-01
C4	CC-ET-01
C5	CC-ET-02
C6	CC-ET-02
C8	CC-ET-02

Tool for dismantling the polygon socket on manual clamping unit



Size	Part No.	Spare Parts	
		Center	Peripheral
C3	C3-WDT-01M	3214 030-463	5512 040-03
C4	C4-WDT-01M	3214 030-464	5512 040-04
C5	C5-WDT-01M	3214 030-516	5512 040-05
C6	C6-WDT-01M	3214 030-516	5512 040-06
C8	C8-WDT-01	3214 030-516	5512 072-01

Grease nipple



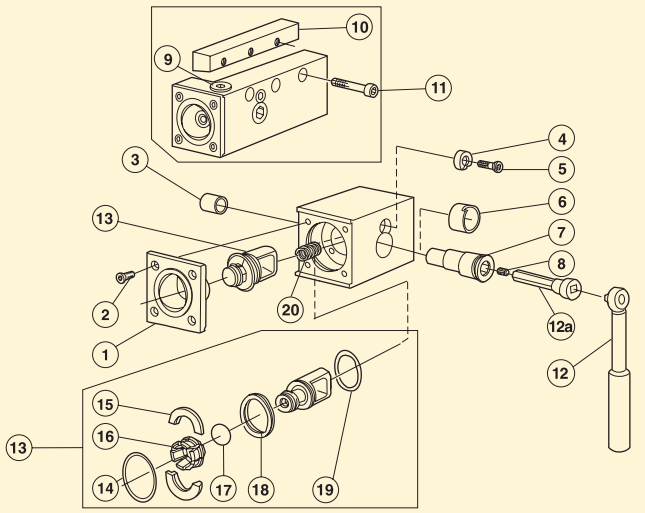
Size	Part No.
C3	5692 012-01
C4	5692 012-01
C5	5692 012-01
C6	5692 012-01
C8	5692 012-01

Cover plug



Size	Part No.	
	Type 3000	Other types
C3	C3-CP-11	C3-CP-01
C4	C4-CP-11	C4-CP-01
C5	C5-CP-11	C5-CP-01
C6	–	C6-CP-01
C8	–	C8-CP-01

Manually operated clamping unit – Type 2085



Size	1 Sleeve	2 Screw (4x)	3 Bushing	4 Locking washer	5 Screw
C3	5252 015-01	416.1-834	3823 010-101	5541 030-01	416.1-834
C4	5252 015-02	5513 020-26	3823 010-122	5541 030-02	416.1-834
C5	5252 015-03	5513 020-14	3823 010-162	5541 030-03	5513 020-14

Size	6 Bushing	7 Cam shaft	8 Screw	9 Plug	10 Metric wedge
C3	5638 022-01	5333 025-01	3214 010-355	3611 005-180	5431 115-01
C4	5638 022-02	5333 025-02	3214 010-355	3611 005-180	5431 115-02
C5	5638 022-03	5333 025-03	3214 010-355	3611 005-180	5431 115-03

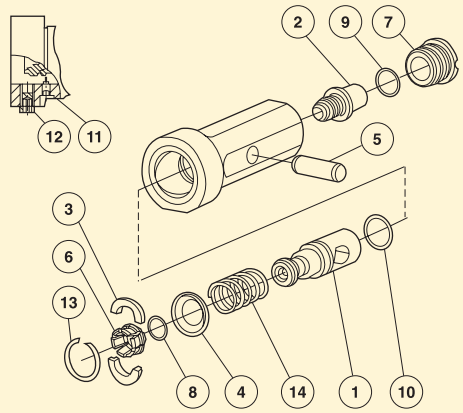
Size	11 Screw	12 Torque wrench	12a Adapter	20 Compression spring	
C3	3212 010-362	BT-TK-02	5680 035-05	5561 001-71	
C4	3212 010-364	C-TK-01	5680 035-06	5561 001-41	
C5	3212 010-416	C-TK-01	5680 035-07	5561 001-41	

Draw bar set

Parts included in draw bar set

Size	13 Draw bar set	14 Spiral retaining ring	15 Holder ring (set of 2)	16 Segment (set of 6)	17 O-ring	18 Flat wire spring	19 O-ring
C3	5461 100-101	5545 039-01	5546 001-16	5549 120-08	5641 005-01	5561 015-02	5641 005-15
C4	5461 100-111	5545 039-03	5546 001-20	5549 120-06	5641 005-05	5561 015-03	5641 005-19
C5	5461 100-121	5545 039-02	5546 001-17	5549 120-07	5641 005-06	5561 015-04	5641 005-16

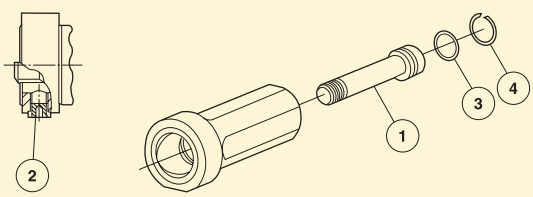
Manually operated clamping unit – Type 2000



Size	1 Drawbar	2 Clamping screw	3 Holder ring (set of 2)	4 Ring	5 Support pin	6 Segment (set of 6)	7 Thread ring	8 O-ring
C3	5461 105-01	5519 105-01	5546 002-01	5541 028-01	5552 032-01	5549 120-08	5512 091-03	5641 005-01
C4	5461 105-02	5519 105-02	5546 002-02	5541 028-02	5552 032-02	5549 120-06	5512 091-01	5641 005-05
C5	5461 105-03	5519 105-03	5546 002-03	5541 028-03	5552 032-03	5549 120-07	5512 091-02	5641 005-06

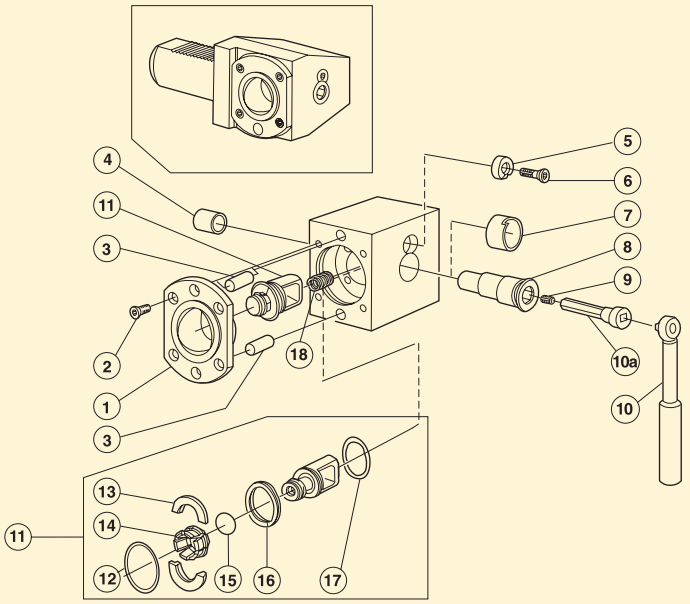
Size	9 Drawbar	10 Clamping screw	11 Holder ring (set of 2)	12 Ring	13 Support pin	14 Segment (set of 6)	Key (size, mm)
C3	3671 010-118	3671 010-124	3214 020-204	3611 005-180	5545 042-01	5561 001-52	3021 013-080 (8.0)
C4	3671 010-120	3671 010-126	3214 020-255	3611 005-180	3421 105-026	5561 001-53	5680 010-03 (10.0)
C5	3671 010-124	3671 010-128	3214 020-255	3611 005-180	3421 105-032	5561 001-54	5680 010-04 (12.0)

Manually operated clamping unit – Type 3000



Size	1 Clamping screw	2 Blind plug	3 O-ring	4 Retaining ring	Key (size, mm)
C3	5512 096-01	3611 005-180	3671 010-020	5545 040-03	3021 013-080 (8.0)
C4	5512 096-02	3611 005-180	3671 010-022	5545 040-05	5680 010-03 (10.0)
C5	5512 096-03	3611 005-180	3671 010-024	5545 040-06	5680 010-04 (12.0)

Manually operated clamping unit – VDI angled design, DIN 69880



Size	1 Sleeve	2 Screw (4x)	3 Pin	4 Bushing	5 Locking washer	6 Screw
C3	5252 010-01	416.1-834	3111 050-558	3823 010-101	5541 030-01	416.1-834
C4	5252 010-02	5513 020-26	3111 050-610	3823 010-122	5541 030-02	416.1-834
C5	5252 010-03	5513 020-14	3111 050-661	3823 010-162	5541 030-03	5513 020-14
C6	5252 010-04	3213 010-410	3111 050-715	3823 010-183	5541 030-04	5513 020-14

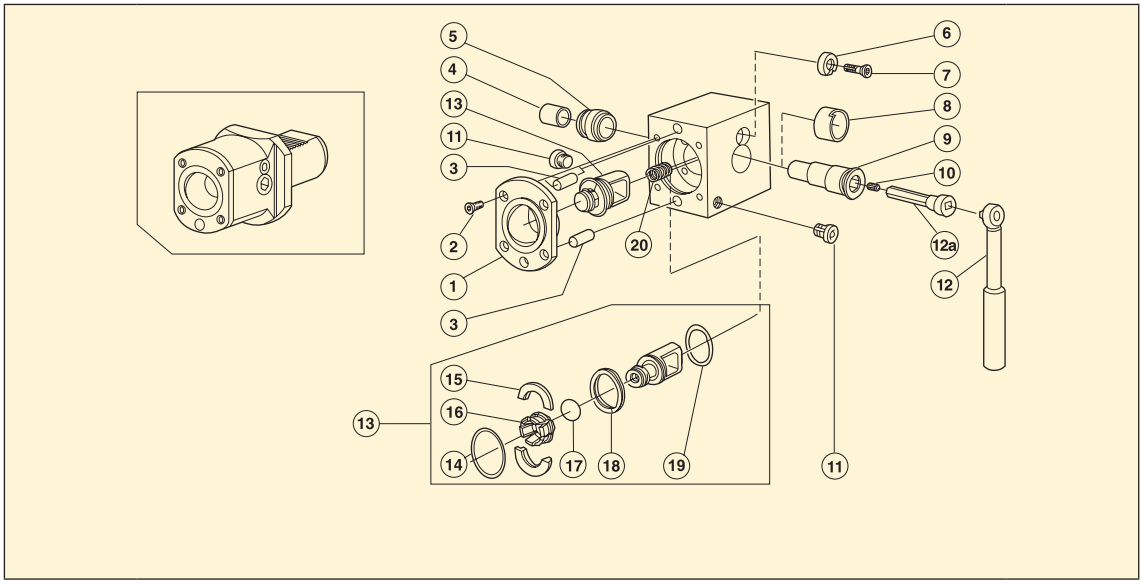
Size	7 Bushing	8 Cam shaft	9 Screw	10 Torque wrench	10a Adapter	18 Compression spring
C3	5638 022-01	5333 025-01	3214 010-355	BT-TK-02	5680 035-05	5561 001-71
C4	5638 022-02	5333 025-02	3214 010-355	C-TK-01	5680 035-06	5561 001-41
C5	5638 022-03	5333 025-03	3214 010-355	C-TK-01	5680 035-07	5561 001-41
C6	5638 022-04	5333 025-04	3214 010-355	C-TK-01	5680 035-07	5561 001-41

Draw bar set

Parts included in draw bar set

Size	11 Draw bar set	12 Spiral retaining ring	13 Holder ring (set of 2)	14 Segment (set of 6)	15 O-ring	16 Flat wire spring	17 O-ring
C3	5461 100-101	5545 039-01	5546 001-16	5549 120-08	5641 005-01	5561 015-02	5641 005-15
C4	5461 100-111	5545 039-03	5546 001-20	5549 120-06	5641 005-05	5561 015-03	5641 005-19
C5	5461 100-121	5545 039-02	5546 001-17	5549 120-07	5641 005-06	5561 015-04	5641 005-16
C6	5461 100-131	5545 039-04	5546 001-18	5549 120-04	5641 005-04	5561 015-05	5641 005-17

Manually operated clamping unit – VDI straight design, DIN 69880



Size	1 Sleeve	2 Screw (4x)	3 Pin	4 Bushing	5 Sleeve
C3	5252 010-01	416.1-834	3111 050-558	3823 010-101	5638 024-01
C4	5252 010-02	5513 020-26	3111 050-610	3823 010-122	5638 024-02
C5	5252 010-03	5513 020-14	3111 050-661	3823 010-162	5638 024-03
C6	5252 010-04	3213 010-410	3111 050-715	3823 010-183	5638 024-04

Size	6 Locking washer	7 Screw	8 Bushing	9 Cam shaft	10 Screw
C3	5541 030-01	416.1-834	5638 022-01	5333 025-01	3214 010-355
C4	5541 030-02	416.1-834	5638 022-02	5333 025-02	3214 010-355
C5	5541 030-03	5513 020-14	5638 022-03	5333 025-03	3214 010-355
C6	5541 030-04	5513 020-14	5638 022-04	5333 025-04	3214 010-355

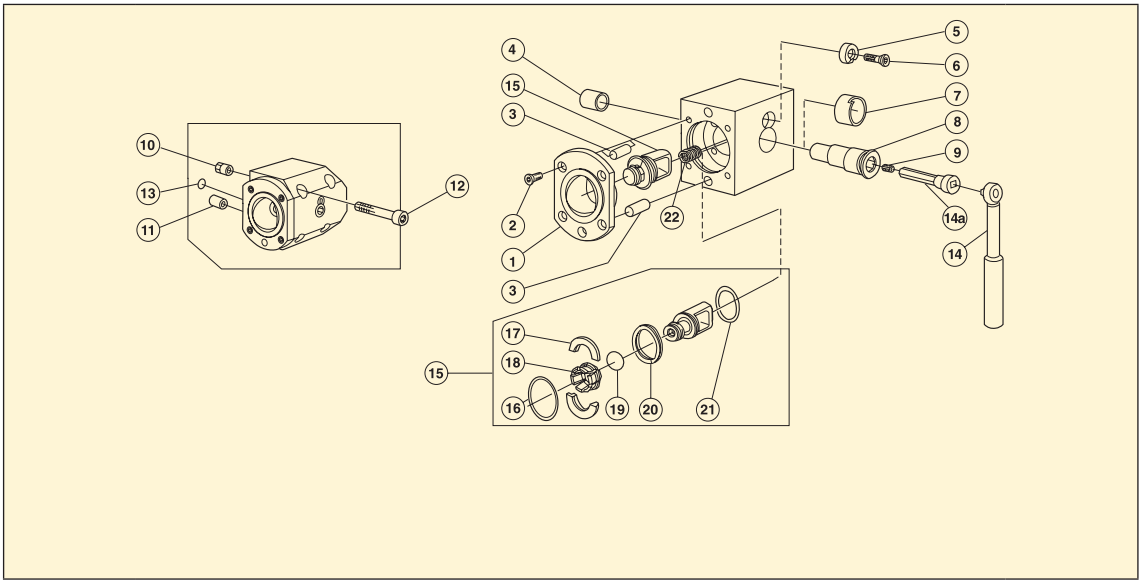
Size	11 Plug	12 Torque wrench	12a Adapter	20 Compression spring	
C3	3611 005-180	BT-TK-02	5680 035-05	5561 001-71	
C4	3611 005-180	C-TK-01	5680 035-06	5561 001-41	
C5	3611 005-180	C-TK-01	5680 035-07	5561 001-41	
C6	3611 005-140	C-TK-01	5680 035-07	5561 001-41	

Draw bar set

Parts included in draw bar set

Size	13 Draw bar set	14 Spiral retaining ring	15 Holder ring (set of 2)	16 Segment (set of 6)	17 O-ring	18 Flat wire spring	19 O-ring
C3	5461 100-101	5545 039-01	5546 001-16	5549 120-08	5641 005-01	5561 015-02	5641 005-15
C4	5461 100-111	5545 039-03	5546 001-20	5549 120-06	5641 005-05	5561 015-03	5641 005-19
C5	5461 100-121	5545 039-02	5546 001-17	5549 120-07	5641 005-06	5561 015-04	5641 005-16
C6	5461 100-131	5545 039-04	5546 001-18	5549 120-04	5641 005-04	5561 015-05	5641 005-17

Manually operated clamping unit – Type 2090



Size	1 Sleeve	2 Screw (4x)	3 Pin	4 Bushing	5 Locking washer	6 Screw
C3	5252 010-01	416.1-834	3111 050-558	3823 010-101	5541 030-01	416.1-834
C4	5252 010-02	5513 020-26	3111 050-610	3823 010-122	5541 030-02	416.1-834
C5	5252 010-03	5513 020-14	3111 050-661	3823 010-162	5541 030-03	5513 020-14
C6	5252 010-04	3213 010-410	3111 050-715	3823 010-183	5541 030-04	5513 020-14
C8	5252 010-05	3213 010-462	3111 050-769	3823 010-225	5541 030-05	5513 020-14

Size	7 Bushing	8 Cam shaft	9 Screw	10 Locating pin	11 Dowel pin	12 Screw
C3	5638 022-01	5333 025-01	3214 010-355	5552 063-05	5552 061-07	3212 010-363
C4	5638 022-02	5333 025-02	3214 010-355	5552 063-07	5552 061-09	3212 010-414
C5	5638 022-03	5333 025-03	3214 010-355	5552 063-06	5552 061-08	3212 010-466
C6	5638 022-04	5333 025-04	3214 010-355	5552 063-03	5552 061-05	3212 010-469
C8	5638 022-05	5333 025-05	3214 010-355	5552 063-04	5552 061-06	3212 010-521

Size	13 O-ring	14 Torque wrench	14a Adapter	22 Compression spring		
C3	5641 001-22	BT-TK-02	5680 035-05	5561 001-71		
C4	3671 010-114	C-TK-01	5680 035-06	5561 001-41		
C5	3671 010-114	C-TK-01	5680 035-07	5561 001-41		
C6	3671 010-119	C-TK-01	5680 035-07	5561 001-41		
C8	3671 010-119	C-TK-02	5680 035-07	5561 001-41		

Draw bar set

Parts included in draw bar set

Size	15 Draw bar set	16 Spiral retaining ring	17 Holder ring (set of 2)	18 Segment (set of 6)	19 O-ring	20 Flat wire spring	21 O-ring
C3	5461 100-101	5545 039-01	5546 001-16	5549 120-08	5641 005-01	5561 015-02	5641 005-15
C4	5461 100-111	5545 039-03	5546 001-20	5549 120-06	5641 005-05	5561 015-03	5641 005-19
C5	5461 100-121	5545 039-02	5546 001-17	5549 120-07	5641 005-06	5561 015-04	5641 005-16
C6	5461 100-131	5545 039-04	5546 001-18	5549 120-04	5641 005-04	5561 015-05	5641 005-17
C8	5461 100-141	5545 039-05	5546 001-19	5549 120-05	5641 005-07	5561 015-06	5641 005-18

SMG version 2 – Introduction

Seco Material Groups version 2 (SMG v2) is the foundation for a new and accurate way of organizing work materials and choosing the correct speed, feed rate and depth of cut for any work material and any Seco tool. In addition to using a greater number of work material groups compared to our previous system, SMG v2 also incorporates a reference material or standard for each group. The machinability of all other materials within that group can be compared to the standard, allowing for adjustments to the cutting data, accounting for the unique characteristics of each material.

The use of SMG v2 is illustrated below.

As shown below in Table I, the reference material for work material group P4 is 1045, for P5 it is 4140 steel and for H5 it is 4140 hardened to 50 HRC. 4140 steel is available in a wide variety of hardness and tensile strengths. As to be expected the machinability will vary with these properties.

SMG	Description	Properties	Reference
P4	Low alloy general structural steels, 0.25% < C < 0.67%wt Low alloy Quench & Temper steels	75 < UTS < 175	1045 UTS = 95 ksi
P5	Structural steels, 0.25% < C < 0.67%wt Quench & Temper steels	80 < UTS < 175	4140 UTS = 100 ksi

SMG	Description	Properties	Reference
H5	Quenched & Tempered steels	38 < HRC < 56	4140 50 HRC

Table II below gives some examples of 4140 in different conditions.

SMG	EN	W.-Nr	AFNOR	BS	UNI	JIS	AISI / ASTM	GOST	Condition	UTS (ksi)	HRC $_{nom}$
P5	42 CrMo 4	1.1201	42 CD 4	708 M 40	42 CrMo 4	SCM 440 (H)	4142, 4140	38HM	Annealed	100	
	42 CrMo 4	1.1201	42 CD 4	708 M 40	42 CrMo 4	SCM 440 (H)	4142, 4140	38HM	Quenched & Tempered	145	
H5	42 CrMo 4	1.1201	42 CD 4	708 M 40	42 CrMo 4	SCM 440 (H)	4142, 4140	38HM	Quenched & Tempered		45
	42 CrMo 4	1.1201	42 CD 4	708 M 40	42 CrMo 4	SCM 440 (H)	4142, 4140	38HM	Quenched & Tempered		50

The graphs indicate how the speed recommendation for a specific material can be adjusted to account for the different properties of the steel. As an example, consider 4140 with a tensile strength (UTS) of 145 ksi. The standard material for SMG P5 is 4140 steel with a tensile strength of 100 ksi. Since the material of interest is 45% stronger, the cutting speed will have to be reduced. Following the black arrows in Figure 1, it can be seen that a speed 75% of that recommended for 4140 at 100 ksi should be used. So if a cutting speed of 900 sf/min is suggested for a tool of interest when machining 4140 at 100 ksi, a speed of 675 sf/min (900 X 0.75) should be used if the 4140 has a tensile strength of 145 ksi.

Figure 1

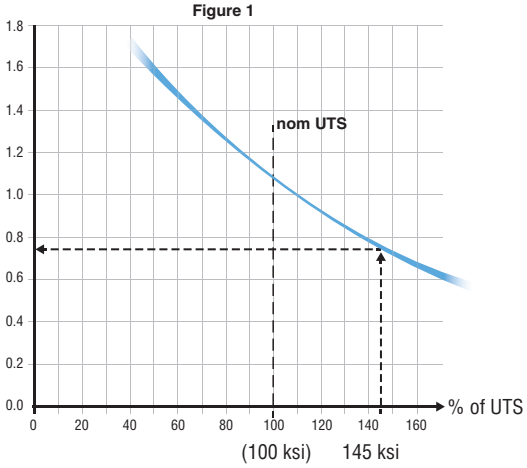
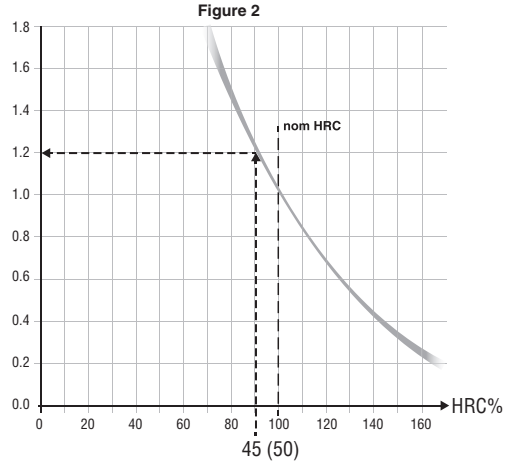


Figure 2



If the 4140 is quenched and tempered to a hardness of 45 HRC, an accurate cutting speed can be obtained by using Figure 2. The standard material for SMG H5 is 4140 heat treated to a hardness of 50 HRC. Logically, a softer material, in this case 45 HRC, can be machined at a higher speed. Since the hardness, 45 HRC, is 90% that of the standard material, the graph shows a speed 120% that of the standard could be used. If a speed of 200 sfpm is recommended when machining 4140 at 50 HRC, a speed of 240 sf/min (200 X 1.2) could be used if the 4140 is only 45 HRC.

Note that when using PCBN tools use utting data recommendations beginning on page 71.

For further workpiece material details please see page 770 and suggested cutting data on applicable pages.

For more convenient cutting data handling we recommend applicable tools in My Pages – Suggest on www.secotools.com

SMG version 2 – Introduction

The foundation for SMG v2 is a classification of workpiece materials based on their type rather than their relative machinability and consequently it contains workpiece materials like composites. It is comprehensive enough, but still easy to identify which SMG a particular material belongs.

Each SMG has a specific material standard in a specific condition assigned as reference to allow easy adjustment of cutting data for any actual material compared to any Seco reference material see pages 32, 769.

As example the reference materials EN C45E for SMG P4 and EN 42 CrMo 4 for both SMG P5 and SMG H5 see further details in the following tables.

Steels, ferritic and martensitic stainless steels

SMG	Description	Properties	Reference
P1	Free-cutting steels	50 < UTS < 125	1213 UTS = 55 ksi
P2	Low alloy ferritic steels, C < 0.25%wt Low alloy weldable general structural steels	45 < UTS < 85	A284 GRC UTS = 60 ksi
P3	Ferritic & ferritic/pearlitic steels, C < 0.25%wt Weldable general structural steels Case hardening steels	60 < UTS < 90	5115 UTS = 80 ksi
P4	Low alloy general structural steels, 0.25% < C < 0.67%wt Low alloy Quench & Temper steels	75 < UTS < 175	1045 UTS = 95 ksi
P5	Structural steels, 0.25% < C < 0.67%wt Quench & Temper steels	80 < UTS < 175	4140 UTS = 100ksi
P6	Low alloy through hardening steels, C > 0.67%wt Low alloy spring and bearing steels	75 < UTS < 175	1095 UTS = 85 ksi
P7	Through hardening steels, C > 0.67%wt Spring and bearing steels	85 < UTS < 175	52100 UTS = 95 ksi
P8	Tool steels High Speed Steels (HSS)	85 < UTS < 175	H13 UTS = 100 ksi
P11	Ferritic & martensitic stainless steels	60 < UTS < 175	420 UTS = 95 ksi

Free-cutting, austenitic and duplex stainless steels

SMG	Description	Properties	Reference
M1	Free-cutting austenitic stainless steels		303
M2	Low alloy austenitic stainless steels		304
M3	Medium alloy austenitic stainless steels		316 L
M4	High alloy austenitic and duplex stainless steels		2205 Duplex
M5	Difficult high alloy austenitic and duplex stainless steels		2507 Super duplex

Workpiece materials – Classifications, SMG (ver.2)

Cast irons

SMG	Description	Properties	Reference
K1	Grey cast irons (GCI)		A48 35 B
K2	Compacted graphite irons (CGI)		Grade 400-15
K3	Malleable cast irons (MCI)		A220 60004
K4	Nodular cast irons (SGI)		80-55-06
K5	Austempered ductile irons (ADI)		1050/700/7
K6	Austenitic lamellar cast irons		A436 Type 1 (Ni-Resist 1)
K7	Austenitic nodular cast irons		A439 Type D-2M (Ni-Resist D-2M)

Non-ferrous metals

SMG	Description	Properties	Reference
N1	Aluminum alloys, Si < 9%		7075-T6
N2	Aluminum alloys, 9% < Si < 16%		413.2 Si = 12%
N3	Aluminum alloys, Si >16%		AlSi17Cu5
N11	Copper alloys		UNS C38500

Superalloys and titanium

SMG	Description	Properties	Reference
S1	Iron based superalloys		Discalloy
S2	Cobalt based superalloys		Stellite 21
S3	Nickel based superalloys		Inconel 718
S11	Titanium, low alloyed, (α)		Ti
S12	Titanium, medium alloyed, (α+β)		TiAl6V4
S13	Titanium, high alloyed, (near β and β)		Ti10V2Fe3Al

Hard materials

SMG	Description	Properties	Reference
H3	Case hardened steels	58 < HRC < 62	5115 60 HRC
H5	Quenched & Tempered steels	38 < HRC < 56	4140 50 HRC
H7	Quenched & Tempered steels Bearing steels	56 < HRC < 64	52100 60 HRC
H8	Tool steels High Speed Steels	38 < HRC < 64	H13 50 HRC
H11	Martensitic stainless steels	38 < HRC < 50	420 45 HRC
H12	Precipitation hardened stainless steels	33 < HRC < 50	17-4PH 35 HRC
H21	Manganese steels	23 < HRC < 64	Hadfield, High manganese steel 50 HRC
H31	White cast irons	50 < HRC < 64	A532 ID, White cast iron 55 HRC

Other difficult materials

SMG	Description	Properties	Reference
PM1	Low alloy PM materials		F-0008 Fe-0.7C
PM2	Medium alloy PM materials		FLC-4608 Fe2Cu1.8Ni0.5Mo0.2Mn0.8C
PM3	High alloy PM materials Exhaust valve seat materials		
HF1	Hard facing alloys Welded or plasma deposited iron based alloys		
HF2	Hard facing alloys Welded or plasma deposited cubalt and nickel based alloys		
CC1	Sintered tungsten carbide		G50

Plastics and Composites

SMG	Description	Properties	Reference
TS1	Thermosetting polymers		Urea formaldehyde (UF)
TS2	Thermosetting Carbon fiber composites		T300 T700 T800 HTA-S IMA - Epoxy (M21)...
TS3	Thermosetting Glass fiber composites		Epoxy - HX..(42..)/E glass (7781...)...
TS4	Thermosetting Aramide fiber composites		Kevlar 49
TP1	Thermoplastic polymers		Polycarbonate (PC)
TP2	Thermoplastic Carbon fiber composites		PPS/PEEK - T300..
TP3	Thermoplastic Glass fiber composites		PPS/PEEK - E glass or A glass...
TP4	Thermoplastic Aramide fiber composites		

Graphite

SMG	Description	Properties	Reference
GR1	Graphite		R 8500

SMG

SMG	AISI / ASTM	EN	EN-Nr	W.-Nr	DIN	AFNOR	BS	UNI	JIS	SS
	1213	11 SMn30	1.0715	1.0715	9 SMn 28	S 250	230 M 07	CF 9 SMn 28	SUM 22	1912
	12 L 13	11 SMnPb30	1.0718	1.0718	9 SMnPb 28	S 250 Pb		CF 9 SMnPb 28	SUM 22 L	1914
	1108	10 S 20	1.0721	1.0721	10 S 20	10 F 1	210 M 15	CF 10 S 20		
	11 L 08			1.0722	10 SPb 20	10 PbF 2		CF 10 SPb 20		
P1		15 SMn13	1.0725	1.0723	15 S 20		210 A 15		SUM 32	1922
	1140	35 S20	1.0726	1.0726	35 S 20	35 MF 4	212 M 36			1957
	1146	46 S20	1.0727	1.0727	46 S 20	45 MF 4	212 M 44			1973
	1215	11 SMn37	1.0736	1.0736	9 SMn 36	S 300	240 M 07	CF 9 SMn 36		
	12 L 14	11 SMnPb 37	1.0737	1.0737	9 SMnPb 36	S 300 Pb		CF 9 SMnPb 36		1926
		S235JR	1.0037	1.0037	St 37-2	E 24-2		Fe 360 B	STKM 12 C	1311
	A 573 Gr. 58	S235JRG2	1.0038	1.0116	St 37-3	E 24-3, E 24-4	4360-40 C	Fe 360 D FF		1312, 1313
	A 573 Gr. 70	S275J2G3	1.0144	1.0144	St 44-3 N	E 28-3, E 28-4	4360-43 C	Fe 430 D FF	SM 41 C	1412, 1414
	1010	C 10	1.0301	1.0301	C 10	AF 34 C 10, XC 10	045 M 10	C 10	S 10 C	
P2	1015			1.0401	C 15	AF3 7 C 12, XC 18	080 M 15	C 15, C 16		1350
	1023	C22+N	1.0402	1.0402	C 22	C 20	050 A 20	C 20, C 21		1450
		S355JR	1.0570	1.0570	St 52-3	E 36-3, E 36-4	4360-50 C	Fe 510 B	SM 50 YA	2172, 2132
	1015	C 15R	1.1141	1.1141	Ck 15	XC 15, XC 18	080 M 15	C 15, C 16	S 15 C, S 15 CK	1370
	1025			1.1158	Ck 25	XC 25	060 A 25	C 25	S 25 C	
				1.2162	21 MnCr 5	20 NC 5			SCR 420 H	
	A 204 Gr. A	16 Mo 3	1.5415	1.5415	15 Mo 3	15 D 3	1501-240	16 Mo 3		2912
	4520			1.5423	16 Mo 5		1503-245-420	16 Mo 5	SB 450 M	
	3310, 9314	14 NiCr 14	1.5752	1.5752	14 NiCr 14	12 NC 15	655 M 13		SNC 815 (H)	
	4320			1.5919	15 CrNi 6	16 NC 6	S 107	16 CrNi 4		
		18 NiCrMo 7 6	1.6587	1.6587	18 CrNiMo 7 6	18 NCD 6	820 A 16	18 NiCrMo 7		
P3	5115	16 MnCr 5	1.7131	1.7131	16 MnCr 5	16 MC 5	527 M 17	16 MnCr 5	SCR 415	2511
		16 MnCrS 5	1.7139	1.7139	16 MnCrS 5					
	5120	20 MnCr 5	1.7147	1.7147	20 MnCr 5	20 MC 5		20 MnCr 5	SMnC 420 (H)	
	5120 H	20 MnCrS 5	1.7149	1.7149	20 MnCrS 5	20 MnCrS 5			SMnC 21 H	
	A 182-F11, F12	13 CrMo 4 5	1.7335	1.7335	13 CrMo 4 4	15 CD 3.5	1501-620 Gr. 27	14 CrMo 4 5		2216
	A 387 Gr. 12 Cl. 2			1.7337	16 CrMo 4 4	15 CD 4.5	1501-620 Gr. 27	14 CrMo 4 5		2216
	A 182-F22	10 CrMo 9 10	1.7380	1.7380	10 CrMo 9 10	10 CD 9.10	1501-622 Gr. 31	12 CrMo 9 10		2218
	1035	C35+N		1.0501	C 35	AF 55 C 35	060 A 35	C 35		1550
	1045	E 335	1.0503	1.0503	C 45	AF 65 C 45	80 M 46	C 45	S 45 C	1650
	1040	C40+N		1.0511	C 40	AF 60 C 40	080 M 40	C 40	S 40 C	
	1055	E 360	1.0070	1.0535	St 70-2	A 70-2		Fe 690		1655
	1060	C60+N	1.0601	1.0601	C 60	CC 55	080 A 62	C 60		
P4	1039			1.1157	40 Mn 4	35 M 5	150 M 36			
	1330	G 28 Mn6	1.1165	1.1165	30 Mn 5		120 M 36		SMn 1 H, SCMn 2	
	1335	G 28 Mn6+QT	1.1165	1.1167	36 Mn 5	40 M 5	150 M 36		SMn 438 (H), SCMn 3	2120
	1035	C 35E	1.1181	1.1181	Ck 35	XC 38 H1	080 M 36	C 35	S 35 C	1572
	1045	C 45E	1.1191	1.1191	Ck 45	XC 42	080 M 46	C 45	S 45 C	1672
	1064	C 60E	1.1221	1.1221	Ck 60	XC 60	080 A 62	C 60	S 58 C	1665, 1678
	1060			1.1740	C 60 W	Y3 55			SK 7	
	9255	55 SiCr7	1.7100	1.0904	55 Si 7	55 S 7	250 A 53	55 Si 8		2085, 2090
	4142, 4140	42 CrMo 4	1.7225	1.1201	42 CrMo 4	42 CD 4	708 M 40	42 CrMo 4	SCM 440 (H)	2244
	4142, 4140	42 CrMo 4	1.7225	1.1201	42 CrMo 4	42 CD 4	708 M 40	42 CrMo 4	SCM 440 (H)	2244
	4135			1.2330	35 CrMo 4	34 CD 4	708 A 37	35 CrMo 4		2234
	S1			1.2542	45 WCrV 7		BS 1	45 WCrV 8 KU		2710
	L6		1.2714	1.2714	56 NiCrMoV 7		BH 224-5	56 NiCrMoV7-KU	SKT 4	
	5045			1.5121	46 MnSi 4					
	3135			1.5710	36 NiCr 6	35 NC 6	640 A 35		SNC 236	
P5	3435			1.5736	36 NiCr 10	35 NC 11		35 NiCr 9	SNC 631 (H)	
	9840	36CrNiMo4+TA		1.6511	36 CrNiMo 4	40 NCD 3	816 M 40	38 NiCrMo 4 (KB)		
	4340	34 CrNiMo 6	1.6582	1.6582	34 CrNiMo 6	35 NCD 6	817 M 40	35 NiCrMo 6 (KW)	SNCM 447	2541
	5132	34 Cr 4	1.7033	1.7033	34 Cr 4	32 C 4	530 A 32	34 Cr 4 (KB)	SCr 430 (H)	
	5140	41 Cr 4	1.7035	1.7035	41 Cr 4	42 C 4	530 M 40	41 Cr 4	SCr 440 (H)	
	4130	25 CrMo 4	1.7218	1.7218	25 CrMo 4	25 CD 4 S	708 M 25	25 CrMo 4 (KB)	SCM 425	2225
				1.7361	32 CrMo 12	30 CD 12	722 M 24	32 CrMo 12		2240
	6150	50 CrV 4	1.8159	1.8159	50 CrV 4	50 CV 4	735 A 50	51 CrV 4	SUP 10	2230
	A 355 Cl. A	41 CrAlMo 7 10	1.8509	1.8509	41 CrAlMo 7	40 CAD 6.12	905 M 39	41 CrAlMo 7	SACM 645	2940
	1070	C 67S	1.1231	1.1231	Ck 67	XC 68	060 A 67	C 70		1770
	1095	C 100S	1.1274	1.1274	Ck 101		060 A 96		SUP 4	1870
P6	W1	C 105U	1.1545	1.1545	C 105 W1	Y1 105		C 100 KU		1880
				1.1645	C 105 W2	Y1 105		C 100 KU	SK 3	
	W1			1.1663	C 125 W	Y2 120		C 120 KU	SK 2	

SMG

UNS	U.N.E./ I.H.A.	GOST	Misc. Brands	Condition	Structure
G12130				Annealed	
G12134				Annealed	
				Annealed	
				Annealed	
				Annealed	
G11400		40		Annealed	
G11460				Annealed	
G12150				Annealed	
G12144				Annealed	
		16D		Annealed	
		18kp		Annealed	
		St14kP		Annealed	
G10100		10		Annealed	
G10170	F.1110	15		Annealed	
G10200		20		Annealed	
		17G1S		Annealed	
G10170	F.1511	15		Annealed	
G10250	F.1120	25		Annealed	
				Annealed	
				Annealed	
G45200				Annealed	
G33106		20X2H4A		Annealed	
				Annealed	
				Annealed	
G51170	F.1516	12KHN2		Annealed	
		18HG		Annealed	
G51200		20KH		Annealed	
		20KH		Annealed	
		12KHM		Annealed	
				Annealed	
J21890	F.155	12KH8		Annealed	
G10350	F.1130	35		Annealed	
G10430	F.5110	45		Annealed	
		40		Annealed	
	F.1150	55		Annealed	
G10600		60		Annealed	
G10390		40G		Annealed	
G13300		30G2		Annealed	
G13350	F.411	35G2		Annealed	
G10340	F.1135	35		Annealed	
G10420	F.1140	45		Annealed	
G10640	F.1150	60		Annealed	
		60		Annealed	
	F.144	55S2		Annealed	
G41400	F.1252	38HM		Annealed	
G41400	F.1252	38HM		Quenched & Tempered	
T51620	F.1250	35KHM		Annealed	
T41901	F.5241	5KHV2S		Annealed	
T61206		5KHNV		Annealed	
				Annealed	
				Quenched & Tempered	
				Annealed	
G98400				Quenched & Tempered	
	F.1280	38H2N2MA		Annealed	
G51320		35KH		Quenched & Tempered	
G51400		40H		Quenched & Tempered	
G41300	F.1251	20KHM		Quenched & Tempered	
				Quenched & Tempered	
H61500	F.143	50KHFA		Quenched & Tempered	
K24065	F.1740			Annealed	
G10700	F.5103	70		Annealed	
G10950	F.5117			Annealed	
	F.5118	U10A		Annealed	
		U10		Annealed	
		U13		Annealed	

SMG

SMG	AISI / ASTM	EN	EN-Nr	W.-Nr	DIN	AFNOR	BS	UNI	JIS	SS	UNS
P7	L2	107 CrV 3	1.2210	1.2210	115 CrV 3	100 C 3		107 CrV 3 KU			T61202
	O1			1.2510	100 MnCrW 4	90 MWCV 5	BO 1	95 MnWCr 5 KU	SKS 3	2140	T31501
	O2	90 MnCrV 8	1.2842	1.2842	90 MnCrV 8	90 MV 8	BO 2	90 MnVCr 8 KU			T31502
	52100	100 Cr 6	1.3505	1.3505	100 Cr 6	100 C 6	534 A 99	100 Cr 6	SUJ 2	2258	G51986
P8	D3	X 210 Cr 12	1.2080	1.2080	X 210 Cr 12	Z 200 C 12	BD 3	X 210 Cr 13 KU	SKD 1		T30403
	H11			1.2343	X 38 CrMoV 5 1	Z 38 CDV 5	BH 11	X 37 CrMoV 5 1 KU	SKD 6		T20811
	H13	X 40 CrMoV 5 1	1.2344	1.2344	X 40 CrMoV 5 1	Z 40 CDV 5	BH 13	X 40 CrMo 5 1 1 KU	SKD 61	2242	T20813
	A2	X 100 CrMoV 5	1.2363	1.2363	X 100 CrMoV 5 1	Z 100 CDV 5	BA 2	X 100 CrMoV 5 1 KU	SKD 12	2260	T30102
	H10			1.2365	X 32 CrMoV 3 3	32 DCV 28	BH 10	30 CrMoV 12 27 KU	SKD 7		T20810
				1.2436	X 210 CrW 12			X 215 CrW 12 1 KU	SKD 2	2312	
				1.2601	X 165 CrMoV 12			X 165 CrMoW 12 KU		2310	
	L6			1.2713	55 NiCrMoV 6	55 NCDV 7			SKT 4		T61206
	M35	HS 6-5-2-5	1.3243	1.3243	S 6-5-2-5	Z 85 WDKCV 06-05-05-04-02		HS 6-5-2-5	SKH 55	2723	
	M42	HS 2-10-1-8	1.3247	1.3247	S 2-10-1-8	Z 110 DKCWV 09-08-04	BM 42	HS 2-9-1-8	SKH 51		T11342
	T4	HS 18-1-2-5	1.3255	1.3255	S 18-1-2-5	Z 80 WKCV 18-05-04-01	BT 4	HS 18-1-1-5	SKH 3		T12004
	M2	HS 6-5-2	1.3343	1.3343	S 6-5-2	Z 85 WDCV 06-05-04-02	BM 2	HS 6-5-2	SKH 9, SKH 51	2722	T11302
	M7	HS 2-9-2	1.3348	1.3348	S 2-9-2	Z 100 DCWV 09-04-02-02		HS 2-9-2	SKH 58	2782	T11307
	T1	HS 18-0-1	1.3355	1.3355	S 18-0-1	Z 80 WCV 18-04-01	BT 1	HS 18-0-1	SKH 2		T12001
P11	403	X 6 Cr 13	1.4000	1.4000	X 6 Cr 13	Z 6 C 12	403 S 17	X 6 Cr 13	SUS 403	2301	S41008
	410, CA-15	X 12 Cr 13	1.4006	1.4006	X 10 Cr 13	Z 10 C 13	410 S 21	X 12 Cr 13	SUS 410	2302	S41000
	430	X 6 Cr 17	1.4016	1.4016	X 6 Cr 17	Z 8 C 17	430 S 15	X 8 Cr 17	SUS 430	2320	S43000
	420	X 20 Cr 13	1.4021	1.4021	X 20 Cr 13	Z 20 C 13	420 S 37	X 20 Cr 13	SUS 420 J 1	2303	S42000
	420	X 39 Cr 13	1.4031	1.4031	X 40 Cr 13	Z 40 C 14	420 S 45	X 40 Cr 14	SUS 420	2304	S40280
	440 A	X 70 CrMo 15	1.4109	1.4109	X 65 CrMo 14	Z 70 D 14			SUS 440 A		S44002
	440 B	X 90 CrMoV 18	1.4112	1.4112	X 90 CrMoV 18	Z 2 CND 18 05	409 S 19	X CrTi 12	SUS 440 B	2327	S44003
	440 C	X 105 CrMo 17	1.4125	1.4125	X 105 CrMo 17	Z 100 CD 17		X 105 CrMo 17	SUS 440 C		S44004
		X 3 CrNiMo 13 3	1.4313	1.4313	X 5 CrNi 13 4	Z 5 CN 13.4	425 C 11	X 6 CrNi 13 04	SCS 5	2385	J91540
	446	X 18 CrN 28	1.4749	1.4749	X 18 CrN 28	Z 18 C 25				2322	S44600
M1	303	X 10 CrNiS 18 9	1.4305	1.4305	X 10 CrNiS 18 9	Z 10 CNF 18.09	303 S 31	X 10 CrNi 18 09	SUS 303	2346	S30300
M2	302	X 12 CrNi 18 8	1.4300	1.4300	X 12 CrNi 18 8	Z 12 CN 18	302 S 25		SUS 302	2331	S30200
	304, 304 H	X 5 CrNi 18 9	1.4301	1.4301	X 6 CrNi 18 10	Z 6 CN 18.09	304 S 31	X 5 CrNi 18 11	SUS 304	2333	S30400
	304 L	X 2 CrNi 19 11	1.4306	1.4306	X 2 CrNi 19 11	Z 2 CN 18.10	304 S 12	X 3 Cr Ni 18 11	SUS 304 L	2352	S30403
	301	X 9 CrNi 18 8	1.4310	1.4310	X 12 CrNi 17 7	Z 12 CN 17.07	301 S 21	X 12 CrNi 17 07	SUS 301	(2331)	S30100
	316	X 5 CrNiMo 17 12 2	1.4401	1.4401	X 5 CrNiMo 17 12 2	Z 3 CND 17.11.1	316 S 31	X 5 CrNiMo 17 12	SUS 316	2347	S31600
	347	X 6 CrNiNb 18 10	1.4550	1.4550	X 6 CrNiNb 18 10	Z 6 CNNb 18.10	347 S 31	X 6 CrNiNb 18 11	SUS 347	2338	S34700
M3	304 LN	X 2 CrNiN 18 10	1.4311	1.4311	X 2 CrNiN 19 11	Z 2 CN 18 .10 Az	304 S 62	X 2 CrNiN 18 11	SUS 304 LN	2371	S30453
	310 S	X 12 CrNi 25 21	1.4335	1.4335	X 12 CrNi 25 21	Z 12 CN 25.20	310 S 24	X 6 CrNi 26 20	SUH 310, SUS 310 S	2361	S31008
	316 LN	X 2 CrNiMoN 17 13 3	1.4429	1.4429	X 2 CrNiMoN 17 13 3	Z 2 CND 17.13 Az	316 S 62	X 2 CrNiMoN 17 13 3	SUS 316 LN	2375	S31653
	316 L	X 2 CrNiMo 18 14 3	1.4435	1.4435	X 2 CrNiMo 18 14 3	Z 2 CND 17.13	316 S 12	X 2 CrNiMo 17 13 2	SCS 16, SUS 316 L	2353	S31603
	317	X 3 CrNiMo 18 12 3	1.4466	1.4466	X 5 CrNi 18 15		317 S 16	X 5 CrNi 18 15	SUS 317	2366	S31700
		X 9 CrNiSiNCe 21 11 2	1.4835	1.4893	X 9 CrNiSiNCe 21 11 2		310 S 31			2368	S30815
M4		X 2 CrNiMoSi 19 5	1.4424	1.4417	X 2 CrNiMoSi 19 5	Z 2 CND 18.05.03				2376	S31500
	329	X 3 CrNiMo 27 5 2	1.4460	1.4460	X 4 CrNiMo 27 5 2	Z 3 CND 25.7 Az		X 3 CrNiMo 27 5 2	SUS 329 J 1	2324	S32900
	329 LN	X 2 CrNiMoN 22 5 3	1.4462	1.4462	X 2 CrNiMoN 22 5	Z 2 CND 22.05 Az	332 S 15	X 2 CrNiMoN 22 5		2377	S31803
	904L	X 2 NiCrMoCu 25 20 5	1.4539	1.4539	X 2 NiCrMoCu 25 20 5	Z 2 NCDU 25 20	904 S 13			2562	N08904
M5	F 53	X 2 CrNiMoN 25 7 4	1.4410	1.4410	X 2 CrNiMoN 25 7 4	Z 3 CND 25.07 Az		X 2 CrNiMoN 25 7 4		2328	S32750
		X 1 CrNiMoN 20 18 7	1.4547	1.4529	X 1 CrNiMoN 20 18 7	Z 1 CNDU 20.18.05 Az		X 1 CrNiMoN 20 18 7		2778	S31254
	XM-13	X 6 NiCrTiMoV 25 15	1.4534	1.4534	X 3 CrNiMoAl 13 8 2						S13800
	XM-12		1.4540	1.4540	X 4 CrNiCuNb 16 4	Z 4 CNUNb 16.4 M					S15500
	AMS 5528	X 3 CrNiMoAl 13 8 2	1.4568	1.4568	X 7 CrNiAl 17 7	Z 9 CAN 17.7	301 S 81	X 7 CrNiAl 17 7	SUS 631	2388	S17700
		X 1 CrNiMoN 25 22 8	1.4652	1.4652	X 2 CrNiMoN 25 22 7						S32654
		X 10 NiCrAlTi 32 20	1.4876	1.4876	X 10 NiCrAlTi 32 20	Z 10 NC 32.21			NCF 800		N08800
	660	X 5 CrNiCuNb 16 4	1.4980	1.4943	X 4 NiCrTi 25 15	Z 6 NCTDV 25.15	HR 51		SUH 660	2570	S66286

SMG

UNS	U.N.E./ I.H.A.	GOST	Misc. Brands	Condition	Structure
T61202	F.520L	11KHF		Annealed	
T31501	F.5220	9KHVG		Annealed	
T31502		9G2F		Annealed	
G51986	F.5230	SHKH15		Annealed	
T30403	F.5212	KH12		Annealed	
T20811		4KH5MFS		Annealed	
T20813	F.5318	4KH5MF1S		Annealed	
T30102	F.5227	9KH5VF		Annealed	
T20810		3KH3M3F		Annealed	
	F.5213	KH12		Annealed	
		KH12MF		Annealed	
T61206	F.520.S	5KHNM		Annealed	
	F.5613	R6M5K5		Annealed	
T11342		R2AM9K5		Annealed	
T12004		R18K5F2		Annealed	
T11302	F.5603	R6M5		Annealed	
T11307				Annealed	
T12001		R18		Annealed	
S41008		08KH13		Annealed	Ferrite
S41000	F.3401	12KH13, 08KH13		Annealed	Martensite
S43000	F.3113	12KH17		Annealed	Ferrite
S42000	F.5261	20KH13		Annealed	Martensite
S40280	F.3404	40KH13		Annealed	Martensite
S44002				Annealed	Martensite
S44003		95KH18		Annealed	Martensite
S44004		95KH18		Annealed	Martensite
J91540			F6NM	Annealed	Martensite
S44600		15KH28		Annealed	Ferrite
S30300	F.3508	12KH19N9		Annealed	Austenite
S30200		12KH18N9		Annealed	Austenite
S30400	F.3504	08KH18N10		Annealed	Austenite
S30403	F.3504	03KH18N11		Annealed	Austenite
S30100	F.3517	07KH16N6		Annealed	Austenite
S31600	F.3534	08KH17H13M2T		Annealed	Austenite
S34700	F.3524	08KH18N12B		Annealed	Austenite
S30453	F.3541	03KH18N11		Annealed	Austenite
S31008		12KH25N20		Annealed	Austenite
S31653		03KH16N15M3		Annealed	Austenite
S31603	F.3533	03KH17N14M3		Annealed	Austenite
S31700		08KH17H15M3T		Annealed	Austenite
S30815			253 MA	Annealed	Austenite
S31500			3RE60	Annealed	Duplex
S32900				Annealed	Duplex
S31803			SAF 2205	Annealed	Duplex
N08904				Annealed	Super austenite
S32750			SAF 2507	Annealed	Super duplex
S31254			254 SMO	Annealed	Super austenite
S13800			PH13-8Mo	Solution treated	Austenite
S15500			15-5-PH	Solution treated	Martensite
S17700		09KH17N7YU1	17-7-PH	Solution treated	Austenite/ferrite
S32654			654 SMO	Annealed	Super austenite
N08800			Alloy 800	Annealed	Austenite
S66286			A286	Solution treated	Austenite

SMG

SMG	AISI / ASTM	EN	EN-Nr	W.-Nr	DIN	AFNOR	BS	UNI	JIS	SS
K1	A48 25 B	EN-GJL-150	0.6150	0.6150	GG-15	Ft 15 D	Grade 150	G15	FC 150	01 15-00
	A48 30 B	EN-GJL-200	0.6200	0.6200	GG-20	Ft 20 D	Grade 220	G20	FC 200	01 20-00
	G 3500	EN-GJL-215			GG-220 HB					02 19
	A48 35 B	EN-GJL-250	0.6250	0.6250	GG-25	Ft 25 D	Grade 260	G25	FC 250	01 25-00
	A48 45 B	EN-GJL-300	0.6300	0.6300	GG-30	Ft 30 D	Grade 300	G30	FC 300	01 30-00
	A48 50 B	EN-GJL-350	0.6350	0.6350	GG-35	Ft 35 D	Grade 350	G35	FC 350	01 35-00
K2	Grade 350	EN-GJV-300			GJV-300					
	Grade 400	EN-GJV-350			GJV-350					
	Grade 400-15	EN-GJV-400			GJV-400					
	Grade 450	EN-GJV-450			GJV-450					
	Grade 500	EN-GJV-500			GJV-500					
K3	A220 60004	EN-GJMB-550-4	0.8155		GTS-55-04	P 540/5	P 540/5	P 55-04	PCMP55-04	08 54-00
K4		EN-GJS-350-22	0.7033	0.7033	GGG-35.3	FGS 370-17	Grade 350/22		FCD 350-22L	07 17-15
	60-40-18	EN-GJS-400-15	0.7040	0.7040	GGG-40	FGS 400-12	Grade 420/12	GS 400-12	FCD 400-18L	07 17-02
	60-40-18	EN-GJS-400-18	0.7043	0.7043	GGG-40.3	FGS-370-17	Grade 370/17	GSO 42/17		07 17-12
	A536 80-55-6	EN-GJS-500-7	0.7050	0.7050	GGG-50	FGS 500-7	Grade 500/7	GS 500-7	FCD 500-7	07 27-02
	A476 80-60-03	EN-GJS-600-3	0.7060	0.7060	GGG-60	FGS 600-3	Grade 600/3	GS 600-3	FCD 600-3	07 32-03
	A536 100-70-03	EN-GJS-700-2	0.7070	0.7070	GGG-70	FGS 700-2	Grade 700/2	GS 700-2	FCD 700-2	07 37-01
K5	1600/1300/-	-								
	1050/700/7	EN-GJS-1000-5			GJS-1000-5					
	1200/850/4	EN-GJS-1200-2			GJS-1200-2					
	1400/1100/1	EN-GJS-1400-1			GJS-1400-1					
	850/550/10	EN-GJS-800-8			GJS-800-8					
K6	A436 Type 2	EN-GJLA-XNiCr 20-2	0.6660	0.6660	GGL-NiCr 20 2	FGL Ni20 Cr2	Grade F2			05 23-00
	A436 Type 3	EN-GJLA-XNiCr 30-3	0.6676	0.6676	GGL-NiCr 30 3	FGL Ni30 Cr3	Grade F3			
	A436 Type 1	EN-GJLA-XNiCuCr15-6-2	0.6655	0.6655	GGL-NiCuCr 15 6 2	FGL Ni15 Cu6 Cr2	Grade F1			
K7	A439 Type D-5	EN-GJSA-XNi35	0.7683	0.7683	GGG-Ni 35	FGS Ni35				
	A436 Type D-2	EN-GJSA-XNiCr20-2	0.7660	0.7660	GGG-NiCr 20 2	FGS Ni20 Cr2	Grade S2			
	A436 Type D-3	EN-GJSA-XNiCr30-3	0.7676	0.7676	GGG-NiCr 30 3	FGS Ni30 Cr3	Grade S3			
	-	EN-GJSA-XNiMn13-7	0.7652	0.7652	GGG-NiMn 13 7	FGS Ni13 Mn7	Grade S6			07 72-00
	A439 Type D-2M	EN-GJSA-XNiMn23-4	0.7673	0.7673	GGG-NiMn 23 4	FGS Ni23 Mn4	Grade S2M			
N1		AW-1050A	Al99.5	3.0255	Al99.5	A-5/1050A	1B		(A1050)	4007
		AW-3103	AlMn1	3.0515	AlMn1		N3			4054
		AW-3003	AlMn1Cu	3.0517	AlMn1Cu	A-M1/3003			A3003	
		AW-2014	AlCuSiMn	3.1255	AlCuSiMn	A-U4SG/2014	H15			4338
		AW-2011	AlCuBiPb	3.1655	AlCuBiPb	A-U5PbBi/2011	FC1		A2011	4355
	A380	AC-46200	AlSi8Cu3(Si)	3.2161	G-AlSi8Cu3					4251
	B26	AC-42000		3.2341	G-AlSi5Mg	A-S7G	LM25	3599	AC 4C	4244
		AW-6060	AlMgSi0.5	3.3206	AlMgSi0.5	A-GS/6060	(H9)			4103
		AW-6063	AlMgSi0.7	3.3210	AlMgSi0.7	A-GSUC/6061	(H10)		(A6063)	4104,4107
		AW-5005	AlMg1	3.3315	AlMg1	A-G0.6	N41			4106
		AW-7020	AlZn4.5Mg1	3.4335	AlZn4.5Mg1	A-Z5G/7020	H17			4425
		AW-7075		3.4365	AlZnMgCu1.5	A-Z5GU/7075	2L95/2L96		A7075	
	AMS 4442	MN65120	MgSe3Zn2Zr1	3.5103	G-MgSe3Zn2Zr1	ZRE1	MAG6-TE			
	AZ61A	MG-P-63	MgAl6Zn	3.5612	G-MgAl6Zn	G-A6-Z1	MAG-E-121			
	AZ80A	MG-P-61	MgAl8Zn	3.5812	G-MgAl8Zn	(G-A7-Z1)				
N2		AW-6082	AlMgSi1	3.2315	AlMgSi1	A-SGM0.7/6082	H30			4212
	B85	AC-43400	AlSi10Mg(Fe)	3.2381	G-AlSi10Mg	A-S10G	LM9			4253
	A413.2	AC-44200	AlSi12	3.2382	GD-AlSi12					
N3	B390.0		AlSi17Cu5						ADC14	
N11	CA952	CC331G		2.0940.01	CuAl10Fe	CuAl10Fe	AB1			5710
	CA955	CC333G		2.0975.01	CuAl10Ni	CuAl10Ni5Fe5	AB2			5716
			CuNi10Fe1Mn	2.0872	CuNi10Fe1Mn	CuNi10Fe1Mn	CN102			5667
					CuNi10Zn45					
			CW408J	2.0790	CuNi18Zn19Pb	CuNi18Zn19Pb1				
	CA937	CW352H		2.1176	CuPb10Sn	CuSn10Pb10	LB2			5640
		CC480K		2.1050.01	CuSn10	CuSn10	CT1			5443
				2.1087	CuSn10Zn					5458
		CW452K	CuSn6	2.1020	CuSn6	CuSn6	PB103		C5191	5428
		CW502L	CuZn15	2.0240	CuZn15	CuZn15	CZ102		C2300	5112
		CW706R	CuZn28Sn1	2.0470	CuZn28Sn1	CuZn29Sn1				5220
		CW508L	CuZn37	2.0321	CuZn37	CuZn37	CZ108			5150
		CW717R	CuZn38Sn1	2.0530	CuZn38Sn1					
		CW614N	CuZn39Pb3	2.0401	CuZn39Pb3	CuZn39Pb3	CZ121			5170
		CW612N	CuZn40Pb2	2.0402	CuZn40Pb2	CuZn39Pb2	CZ120			5168
		CW622N	CuZn44Pb2	2.0410	CuZn44Pb2		CZ104			5272

SMG

UNS	U.N.E./ I.H.A.	GOST	Misc. Brands	Condition	Structure
F11601		Sc 15			Grey cast iron (GCI)
F12101		Sc 20			Grey cast iron (GCI)
					Grey cast iron (GCI)
F12401		Sc 25			Grey cast iron (GCI)
F13101		Sc 30			Grey cast iron (GCI)
F13502		Sc 35			Grey cast iron (GCI)
					Compacted graphite irons (CGI)
					Compacted graphite irons (CGI)
					Compacted graphite irons (CGI)
					Compacted graphite irons (CGI)
					Compacted graphite irons (CGI)
F24130				Tempered	Malleable cast irons (MCI)
					Nodular cast irons (SGI)
F32800	FGE 38-17	Vc 42-12			Nodular cast irons (SGI)
F32800		Vc 42-12			Nodular cast irons (SGI)
F33800	FGE 50-7	Vc 50-2			Nodular cast irons (SGI)
F34100	FGE 60-2	Vc 60-2			Nodular cast irons (SGI)
F34800	FGE 70-2	Vc 70-2			Nodular cast irons (SGI)
ADI grade 5					Austempered cast irons (ADI)
ADI grade 2					Austempered cast irons (ADI)
ADI grade 3					Austempered cast irons (ADI)
ADI grade 4					Austempered cast irons (ADI)
ADI grade 1					Austempered cast irons (ADI)
F41002			Ni-Resist 2		Austenitic lamellar cast irons
F41004			Ni-Resist 3		Austenitic lamellar cast irons
F41000			Ni-Resist 1		Austenitic lamellar cast irons
F43006			Ni-Resist D-5		Austenitic nodular cast irons
F43000			Ni-Resist D-2		Austenitic nodular cast irons
F43003			Ni-Resist D-3		Austenitic nodular cast irons
-			Nodumag		Austenitic nodular cast irons
F43010			Ni-Resist D-2M		Austenitic nodular cast irons
AA1050A					
AA3103					
AA3003					
AA2014					
AA2011					
A13800					
AA6060					
AA6005					
AA5005					
AA7020					
AA7075					
M12330					
M11600					
AA6082					
A13600					
C95200		BrA9ZH3L			
C95500		BrA10ZH4N4L			
C70600					
C76300					
C93700					
C90700					
C90500					
C51900		BrOF6.5-0.15			
C23000		L90			
C44300		LOMsh70-1-0.05			
C27200					
C46400		LO60-1			
C38500					
C37800					
C68700		LAMsh77-2-0.05			

SMG

SMG	AISI / ASTM	EN	EN-Nr	W.-Nr	DIN	AFNOR	BS	UNI	JIS	SS
S1										
S2										
S3		NiMo30		2.4810						
		NiMo16Cr15W		2.4819						
		NiCr19Fe19Nb5Mo3		2.4668						
				2.4669						
		NiCr20TiAl		2.4631						
		NiCr19Co18Mo4Ti3Al3								
		NiCr20Co13Mo4Ti3Al		2.4654						
S11				3.7024						
	AMS 4919									
S12	AMS 4943									
	AMS 4920, Grd 5	TiAl6V4		3.7164						
S13	AMS 4986				TiV10Fe2Al3					
H3	5115	16 MnCr 5	1.7131	1.7131	16 MnCr 5	16 MC 5	527 M 17	16 MnCr 5	SCR 415	2511
H5	4142, 4140	42 CrMo 4	1.7225	1.1201	42 CrMo 4	42 CD 4	708 M40	42 CrMo 4	SCM 440 (H)	2244
	1070	C 67S	1.1231	1.1231	Ck 67	XC 68	060 A 67	C 70		1770
	1078, 1080	C 75S	1.1248	1.1248	Ck 75	XC 75	060 A 78	C 75		1774, 1778
	1095	C 100S	1.1274	1.1274	Ck 101		060 A 96		SUP 4	1870
	W 1	C 105U	1.1545	1.1545	C 105 W1	Y1 105		C 100 KU		1880
	S1			1.2550	60 WCrV 7	55 WC 20		55 WCrV 8 KU		
	5155	55 Cr 3	1.7176	1.7176	55 Cr 3	55 C 3	527 A 60	55 Cr 3	SUP 9 (A)	2253
H7	L2	107 CrV 3	1.2210	1.2210	115 CrV 3	100 C 3		107 CrV 3 KU		
	O1			1.2510	100 MnCrW 4	90 MWCV 5	BO 1	95 MnWCr 5 KU	SKS 3	2140
	O2	90 MnCrV 8	1.2842	1.2842	90 MnCrV 8	90 MV 8	BO 2	90 MnVCr 8 KU		
	52100	100 Cr 6	1.3505	1.3505	100 Cr 6	100 C 6	534 A 99	100 Cr 6	SUJ 2	2258
H8	H13	X 40 CrMoV 5 1	1.2344	1.2344	X 40 CrMoV 5 1	Z 40 CDV 5	BH 13	X 40 CrMo 5 1 1 KU	SKD 61	2242
	A2	X 100 CrMoV 5	1.2363	1.2363	X 100 CrMoV 5 1	Z 100 CDV 5	BA 2	X 100 CrMoV 5 1 KU	SKD 12	2260
	D2	X 155 CrVMo 12 1		1.2379	X 155 CrVMo 12 1	Z 160 CDV 12	BD 2	X 155 CrVMo 12 1 KU	SKD 11	
				1.2436	X 210 CrW 12			X 215 CrW 12 1 KU	SKD 2	2312
				1.2601	X 165 CrMoV 12			X 165 CrMoW 12 KU		2310
	L6			1.2713	55 NiCrMoV 6	55 NCDV 7			SKT 4	
	M35	HS 6-5-2-5	1.3243	1.3243	S 6-5-2-5	Z 85 WDKCV 06-05-05-04-02		HS 6-5-2-5	SKH 55	2723
	M42	HS 2-10-1-8	1.3247	1.3247	S 2-10-1-8	Z 110 DKCWV 09-08-04	BM 42	HS 2-9-1-8	SKH 51	
	M2	HS 6-5-2	1.3343	1.3343	S 6-5-2	Z 85 WDCV 06-05-04-0	BM 2	HS 6-5-2	SKH 9, SKH 51	2722
	T1	HS 18-0-1	1.3355	1.3355	S 18-0-1	Z 80 WCV 18-04-01	BT 1	HS 18-0-1	SKH 2	
H11	420	X 20 Cr 13	1.4021	1.4021	X 20 Cr 13	Z 20 C 13	420 S 37	X 20 Cr 13	SUS 420 J 1	2303
	440 A	X 70 CrMo 15	1.4109	1.4109	X 65 CrMo 14	Z 70 D 14			SUS 440 A	
	440 B	X 90 CrMoV 18	1.4112	1.4112	X 90 CrMoV 18	Z 2 CND 18 05	409 S 19	X CrTi 12	SUS 440 B	2327
	440 C	X 105 CrMo 17	1.4125	1.4125	X 105 CrMo 17	Z 100 CD 17		X 105 CrMo 17	SUS 440 C	
H12	XM-13	X 3 CrNiMoAl 13 8 2	1.4534	1.4534	X 3 CrNiMoAl 13 8 2					
	630	X 5 CrNiCuNb 16 4	1.4548	1.4542	X 5 CrNiCuNb 17 4	Z 6 CNU 17.4			SCS 24, SUS 630	
	AMS 5528	X 7 CrNiAl 17 7	1.4568	1.4568	X 7 CrNiAl 17 7	Z 9 CAN 17.7	301 S 81	X 7 CrNiAl 17 7	SUS 631	2388
	660	X 6 NiCrTiMoV 25 15	1.4980	1.4943	X 4 NiCrTi 25 15	Z 6 NCTDV 25.15	HR 51		SUH 660	2570
H21	A128 Grade A	X 120 Mn 12	1.3401	1.3401	X 120 Mn 12	Z 120 M 12	BW 10		SC MnH 1	2183
H31	A532 IB (NiCr-LC	EN-GJN-HV520	0.9620	G-X330 NiCr 4 2	FB Ni4 Cr2 BC	Grade 2 A	Grade 2 A			05 12-00
	A532 IA (NiCr-HC)	EN-GJN-HV550	0.9625	G-X260 NiCr 4 2	FB Ni4 Cr2 HC	Grade 2 B	Grade 2 B			05 13-00
	A532 ID (Ni-HiCr)	EN-GJN-HV600(XCr11)	0.9630	G-X300 CrNiSi 9 5 2	FB Cr9 Ni5	Grade 2 C, D, E	Grade 2 C, D, E			04 57-00

SMG

UNS	U.N.E./ I.H.A.	GOST	Misc. Brands	Condition	Structure
			Discalloy	Precipitation hardened	
			Haynes 25		
			Stellite 21		
			Stellite 31		
N10002			Hastelloy C		
N10276		KHN65MV	Hastelloy C-276		
			IN 100		
N07718			Inconel 718		
N07750			Inconel X-750	Solution treated	
N07080			Nimonic 80A		
			René 41		
N07500			Udimet 500		
N07001			Waspalloy		
			Ti	Commercially pure	Ti (α)
R54620			Ti 6-2-4-2	Annealed	Ti (α)
R56320			Ti 3Al-2.5V (grd 9)	Annealed	Ti (α+β)
R56400		VT6	Ti 6Al-4V	Annealed	Ti (α+β)
			Ti 10V-2Fe-3Al	Annealed	Ti (β)
G51170	F.1516	12KHN2		Case hardened	
G41400	F.1252	38HM		Quenched & Tempered	
G10700	F.5103	70		Quenched & Tempered	
G10780	F.5107	75		Quenched & Tempered	
G10950	F.5117			Quenched & Tempered	
	F.5118	U10A		Quenched & Tempered	
		5KHV2SF		Quenched & Tempered	
G51550				Quenched & Tempered	
T61202	F.520L	11KHF		Quenched & Tempered	
T31501	F.5220	9KHVG		Quenched & Tempered	
T31502		9G2F		Quenched & Tempered	
G51986	F.5230	SHKH15		Quenched & Tempered	
T20813	F.5318	4KH5MF1S		Quenched & Tempered	
T30102	F.5227	9KH5VF		Quenched & Tempered	
T30402	F.5211	KH12MF		Quenched & Tempered	
	F.5213	KH12		Quenched & Tempered	
		KH12MF		Quenched & Tempered	
T61206	F.520.S	5KHNM		Quenched & Tempered	
	F.5613	R6M5K5		Quenched & Tempered	
T11342		R2AM9K5		Quenched & Tempered	
T11302	F.5603	R6M5		Quenched & Tempered	
T12001		R18		Quenched & Tempered	
S42000	F.5261	20KH13		Quenched & Tempered	Martensite
S44002				Quenched & Tempered	Martensite
S44003		95KH18		Quenched & Tempered	Martensite
S44004		95KH18		Quenched & Tempered	Martensite
S13800			PH13-8Mo	Precipitation hardened	Martensite
S17400			17-4-PH	Precipitation hardened	Martensite
S17700		09KH17N7YU1	17-7-PH	Precipitation hardened	Austenite/ferrite
S66286			A286	Precipitation hardened	Austenite
F45001			Ni-Hard 2		White cast iron
F45000			Ni-Hard 1		White cast iron
F45003			Ni-Hard 4		White cast iron

Declaration of Conformity

Cemented carbide inserts and insert carriers

Cemented carbide inserts and cemented carbide insert carriers from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.
These products meet all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.
Products do not contain mercury, lead, hexavalent chromium, cadmium, CFC, HCFC, flame retardants or solvents in concentrations that exceed specifications in the regulations.

Regrinding:
Wet or dry grinding can produce potentially hazardous dusts or mists that can irritate skin, eyes, nose, throat and result in lung damage or disease. To avoid injury use proper safety precautions and protective equipment.

Disposal:
Seco Tools will buy back used inserts and solid carbide tools for recycling. Inserts and solid carbide tools should be separated from other metal waste (steel, aluminum, copper etc).
All packing material is fully recyclable.

CBN and PCD inserts

Inserts from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.
This product meets all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.
Products do not contain mercury, lead, hexavalent chromium, cadmium, CFC, HCFC, flame retardants or solvents in concentrations that exceed specifications in the regulations.

Regrinding:
Wet or dry grinding can produce potentially hazardous dusts or mists that can irritate skin, eyes, nose, throat and result in lung damage or disease. To avoid injury use proper safety precautions and protective equipment.

Disposal:
Seco Tools will buy back used CBN- or PCD-tipped inserts for recycling. Inserts should be separated from other metal waste (steel, aluminum, copper etc). Solid CBN-inserts may be discarded as landfill waste.
All packing material is fully recyclable.

Black oxide insert carriers

Insert carriers from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.
This product meets all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.
Products do not contain mercury, lead, hexavalent chromium, cadmium, CFC, HCFC, flame retardants or solvents in concentrations that exceed specifications in the regulations.

Disposal:
Used insert carriers may be sent for recycling together with ordinary steel waste (swarf and discarded steel scrap) for recycling.
All packing material is fully recyclable.

Declaration of Conformity

Cermet inserts

Inserts from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.
This product meets all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.
Cermet grade C15M inserts do contain nickel and will leach nickel when in contact with the skin. Amount of leaching is higher than specified in norm SS-EN 1811 Reference test method for release of nickel from products intended to come into direct and prolonged contact with the skin.
These norms are intended for products that are in direct and prolonged contact with the skin and are therefore not directly applicable for cermet inserts. Persons with known allergic reactions to nickel are advised to wear protective gloves when handling cermet inserts.

Regrinding:
Wet or dry grinding can produce potentially hazardous dusts or mists that can irritate skin, eyes, nose, throat and result in lung damage or disease. To avoid injury use proper safety precautions and protective equipment.

Disposal:
Used inserts may be recycled. Inserts should be separated from other metal waste (steel, aluminum, copper, etc) including cemented carbide inserts.
All packing material is fully recyclable.

Nickel coated insert carriers

Insert carriers from Seco Tools are not included in the product range intended for the following requirements. Nevertheless Seco Tools can make the following declaration.
This product meets all requirements in RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), WEEE (Waste Electrical & Electronic Equipment) and ELV (End of Life Vehicles) requirements.
Products do not contain mercury, lead, hexavalent chromium, cadmium, CFC, HCFC, flame retardants or solvents in concentrations that exceed specifications in the regulations.
Insert carriers do contain nickel and will leach nickel when in contact with the skin. Amount of leaching is not higher then norm SS-EN 1811 Reference test method for release of nickel from products intended to come into direct and prolonged contact with the skin.
These norms are intended for products that are in direct and prolonged contact with the skin and are therefore not directly applicable for insert carriers. Persons with known allergic reactions to nickel are advised to wear protective gloves when handling nickel coated insert carriers.

Disposal:
Used tools maybe sent for recycling together with ordinary steel waste (swarf and discarded steel scrap) for recycling.
All packing material is fully recyclable.

Intentionally added alloying elements

Grade	Cemented carbide										Coating						
	W	Ti	Ta	Nb	Co	Cr	Ni	Mo	C	N	Ti	Al	C	N	O	Si	Nb
CP20	■				■				■		■			■			
CP200	■				■	■			■		■	■		■			
CP300	■	■	■	■	■				■		■	■		■			
CP500	■				■	■			■		■	■		■			
CP600	■				■	■			■		■	■		■			
C15M	■	■	■	■	■		■	■	■	■							
CF	■		■		■		■	■	■								
CM	■		■		■		■	■	■								
DP2000	■		■	■	■				■		■	■	■	■	■		
DP3000	■	■	■	■	■				■	■	■	■	■	■	■		
F15M	■				■	■			■		■	■		■			
F25M	■	■	■	■	■				■		■	■		■			
F30M	■				■	■			■		■	■		■			
F40M	■				■	■			■		■	■		■			
HX	■		■		■				■								
H02	■		■		■	■			■								
H15	■				■	■			■								
H25	■				■	■			■								
KX	■				■	■			■								
MH1000	■				■	■			■		■	■		■			
MK1500	■		■		■				■		■	■	■	■	■		
MK2050	■		■		■	■			■		■	■		■		■	
MM4500	■				■	■			■		■	■	■	■	■		
MP1020	■	■	■	■	■				■								
MP1500	■		■	■	■				■		■	■	■	■	■		
MP2500	■		■	■	■				■		■	■	■	■	■		
MP3000	■				■	■			■		■	■		■			
MS2500	■		■	■	■				■		■	■	■	■	■		
MS2050	■				■	■			■		■	■		■			■
RX1500	■		■		■		■	■	■		■	■		■			
RX2000	■		■		■	■			■		■	■		■			
T350M	■		■	■	■				■		■	■	■	■	■		
T25M	■		■	■	■				■		■		■	■			
TGK1500	■		■		■				■		■	■	■	■	■		
TGP25	■	■	■	■	■				■		■	■	■	■	■		
TGP35	■		■	■	■				■		■	■	■	■	■		
TGP45	■		■	■	■				■		■	■	■	■	■		
TH1000	■				■	■			■		■	■		■		■	
TH1500	■				■	■			■		■	■	■	■	■		
TK1001	■				■	■			■		■	■	■	■	■		
TK2001	■		■		■	■			■		■	■	■	■	■		
TM2000	■	■	■	■	■				■	■	■	■	■	■	■		
TM4000	■	■	■	■	■				■	■	■	■	■	■	■		
TP0500	■	■	■	■	■				■		■	■	■	■	■		
TP0501	■	■	■	■	■	■			■		■	■	■	■	■		
TP1020	■	■	■	■	■				■	■							
TP1030	■	■	■	■	■				■	■	■	■		■		■	
TP1500	■	■	■	■	■				■	■	■	■	■	■	■		
TP1501	■	■	■	■	■				■	■	■	■	■	■	■		
TP200	■	■	■	■	■				■	■	■	■	■	■	■		
TP2500	■	■	■	■	■				■	■	■	■	■	■	■		
TP2501	■	■	■	■	■	■			■	■	■	■	■	■	■		
TP40	■		■	■	■				■		■		■	■			
TS2000	■				■	■			■		■	■		■			
TS2500	■		■		■				■		■	■		■			
T250D	■				■	■			■		■	■		■			
T400D	■				■	■			■		■	■		■			
T100R	■		■		■	■			■		■	■		■			
T60M	■	■	■	■	■				■		■	■		■			
883	■		■		■				■								
890	■				■	■			■								

ANSI – ISO Insert Conversion

ANSI	ISO
CCGT 21.50	CCGT060201
CCGT 21.50.0	CCGT0602005
CCGT 21.50.5	CCGT060202
CCGT 21.51	CCGT060204
CCGT 32.50	CCGT09T301
CCGT 32.50.5	CCGT09T302
CCGT 32.51	CCGT09T304
CCGT 32.52	CCGT09T308
CCGT 431	CCGT120404
CCGT 432	CCGT120408
CCGW 21.50.5-00420	CCGW060202-01020
CCGW 21.51-00420	CCGW060204-01020
CCGW 21.52-00420	CCGW060208-01020
CCGW 32.50.5-00420	CCGW09T302-01020
CCGW 32.51	CCGW09T304
CCGW 32.51-00420	CCGW09T304-01020
CCGW 32.52	CCGW09T308
CCGW 32.52-00420	CCGW09T308-01020
CCGW 431	CCGW120404
CCGW 432	CCGW120408
CCMT 21.50.5	CCMT060202
CCMT 21.51	CCMT060204
CCMT 21.52	CCMT060208
CCMT 32.50.5	CCMT09T302
CCMT 32.51	CCMT09T304
CCMT 32.52	CCMT09T308
CCMT 32.53	CCMT09T312
CCMT 321	CCMT090304
CCMT 431	CCMT120404
CCMT 432	CCMT120408
CCMT 433	CCMT120412
CCMT 53.52	CCMT160508
CCMT 53.53	CCMT160512
CCMT 866	CCMT250924
CCMW 21.50.5	CCMW060202
CCMW 21.51	CCMW060204
CCMW 21.52	CCMW060208
CCMW 32.50.5	CCMW09T302
CCMW 32.51	CCMW09T304
CCMW 32.52	CCMW09T308
CCMW 32.53	CCMW09T312
CCMW 431	CCMW120404
CCMW 432	CCMW120408
CDCB 1.21.20	CDCB04T000
CDCB 1.21.20.5	CDCB04T002
CDCB 1.21.21	CDCB04T004
CNGA 431	CNGA120404
CNGA 432	CNGA120408
CNGA 432-00625	CNGA120408-01525
CNGA 433	CNGA120412
CNGA 433-00625	CNGA120412-01525
CNGN 321	CNGN090304
CNGN 322	CNGN090308
CNGN 323	CNGN090312
CNGP 430	CNGG120401
CNGP 430.5	CNGG120402
CNGP 431	CNGG120404
CNGP 432	CNGG120408
CNMA 431	CNMA120404

ANSI	ISO
CNMA 432	CNMA120408
CNMA 433	CNMA120412
CNMA 434	CNMA120416
CNMA 542	CNMA160608
CNMA 543	CNMA160612
CNMA 544	CNMA160616
CNMA 642	CNMA190608
CNMA 643	CNMA190612
CNMA 644	CNMA190616
CNMG 321	CNMG090304
CNMG 322	CNMG090308
CNMG 431	CNMG120404
CNMG 432	CNMG120408
CNMG 433	CNMG120412
CNMG 434	CNMG120416
CNMG 542	CNMG160608
CNMG 543	CNMG160612
CNMG 544	CNMG160616
CNMG 546	CNMG160624
CNMG 642	CNMG190608
CNMG 643	CNMG190612
CNMG 644	CNMG190616
CNMG 646	CNMG190624
CNMG 866	CNMG250924
CNMM 432	CNMM120408
CNMM 433	CNMM120412
CNMM 434	CNMM120416
CNMM 543	CNMM160612
CNMM 544	CNMM160616
CNMM 546	CNMM160624
CNMM 643	CNMM190612
CNMM 644	CNMM190616
CNMM 646	CNMM190624
CNMN 322	CNMN090308
CNMN 323	CNMN090312
CNMN 324	CNMN090316
CNMN 432	CNMN120408
CNMN 433	CNMN120412
CNMN 434	CNMN120416
CNMN 434-01515	CNMN120416-04015
CNMP 431	CNMG120404
CNMP 432	CNMG120408
CNMP 433	CNMG120412
CNMP 542	CNMG160608
CNMP 543	CNMG160612
CNMP 642	CNMG190608
CNMP 643	CNMG190612
CPG 420	CPGN120302
CPG 421	CPGN120304
CPG 422	CPGN120308
CPGN 421	CPGN120304
CPGN 422	CPGN120308
CPGN 422	CPGN120308
CPGW 1.81.51	CPGW050204
CPGW 21.50.5	CPGW060202
CPGW 21.51	CPGW060204
CPGW 21.52	CPGW060208
CPGW 32.51	CPGW09T304
CPGW 431	CPGW120404

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ANSI	ISO
CPGW 432	CPGW120408
CPMT 21.50	CPMT060201
CPMT 21.50.5	CPMT060202
CPMT 21.51	CPMT060204
CPMT 21.52	CPMT060208
CPMT 32.50	CPMT09T301
CPMT 32.50.5	CPMT09T302
CPMT 32.51	CPMT09T304
CPMT 32.52	CPMT09T308
DCGT 21.50	DCGT070201
DCGT 21.50.0	DCGT0702005
DCGT 21.50.5	DCGT070202
DCGT 21.51	DCGT070204
DCGT 32.50	DCGT11T301
DCGT 32.50.5	DCGT11T302
DCGT 32.51	DCGT11T304
DCGT 32.52	DCGT11T308
DCGW 21.50.5-00420	DCGW070202-01020
DCGW 21.51-00420	DCGW070204-01020
DCGW 21.52-00420	DCGW070208-01020
DCMT 21.50.5	DCMT070202
DCMT 21.51	DCMT070204
DCMT 21.52	DCMT070208
DCMT 32.50.5	DCMT11T302
DCMT 32.51	DCMT11T304
DCMT 32.52	DCMT11T308
DCMT 32.53	DCMT11T312
DCMT 431	DCMT150404
DCMT 432	DCMT150408
DCMT 433	DCMT150412
DCMW 21.50.5	DCMW070202
DCMW 21.51	DCMW070204
DCMW 21.52	DCMW070208
DCMW 32.50.5	DCMW11T302
DCMW 32.51	DCMW11T304
DCMW 32.52	DCMW11T308
DCMX 32.51	DCMX11T304
DCMX 32.52	DCMX11T308
DNGA 431	DNGA150404
DNGA 432	DNGA150408
DNGA 433	DNGA150412
DNGA 441	DNGA150604
DNGA 442	DNGA150608
DNGA 443	DNGA150612
DNGM 431	DNGM150404
DNGM 432	DNGM150408
DNGM 442	DNGM150608
DNGN 321	DNGN110304
DNGN 322	DNGN110308
DNGN 323	DNGN110312
DNGP 430.5	DNGG150402
DNGP 431	DNGG150404
DNGP 432	DNGG150408
DNMA 332	DNMA110408
DNMA 333	DNMA110412
DNMA 334	DNMA110416
DNMA 432	DNMA150408
DNMA 433	DNMA150412
DNMA 434	DNMA150416

ANSI	ISO
DNMA 442	DNMA150608
DNMA 443	DNMA150612
DNMA 444	DNMA150616
DNMG 330.5	DNMG110402
DNMG 331	DNMG110404
DNMG 332	DNMG110408
DNMG 333	DNMG110412
DNMG 431	DNMG150404
DNMG 432	DNMG150408
DNMG 433	DNMG150412
DNMG 441	DNMG150604
DNMG 442	DNMG150608
DNMG 443	DNMG150612
DNMG 444	DNMG150616
DNMG 542	DNMG190608
DNMM 441	DNMM150604
DNMM 442	DNMM150608
DNMM 443	DNMM150612
DNMM 444	DNMM150616
DNMN 322	DNMN110308
DNMN 323	DNMN110312
DNMN 324	DNMN110316
DNMP 331	DNMG110404
DNMP 332	DNMG110408
DNMP 431	DNMG150404
DNMP 432	DNMG150408
DNMP 441	DNMG150604
DNMP 442	DNMG150608
DNMP 543	DNMG190612
DNMX 331	DNMX110404
DNMX 332	DNMX110408
DNMX 432	DNMX150408
DNMX 433	DNMX150412
DNMX 442	DNMX150608
DNMX 443	DNMX150612
DPGW 21.51	DPGW070204
DPGW 21.52	DPGW070208
DPGW 32.51	DPGW11T304
DPMT 32.52	DPMT11T308
LNUX 191940	LNUX191940
LNUX 301940	LNUX301940
RCGN 0803M0	RCGN0803M0
RCGN 32	RCGN090300
RCGS 1.5	RCGS4.76
RCGS 2	RCGS6.35
RCGS 3	RCGS9.525
RCGS 4	RCGS12.7
RCMM 43	RCMM120400
RCMM 54	RCMM150600
RCMM 64	RCMM190600
RCMM 84	RCMM250600
RCMT 0602M0	RCMT0602M0
RCMT 0803M0	RCMT0803M0
RCMT 10T3M0	RCMT10T3M0
RCMT 1204M0	RCMT1204M0
RCMT 1606M0	RCMT1606M0
RCMT 22	RCMT060300
RCMT 32.5	RCMT09T300
RCMT 43	RCMT120400

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ANSI	ISO
RCMX 100300	RCMX100300
RCMX 120400	RCMX120400
RCMX 160600	RCMX160600
RCMX 200600	RCMX200600
RCMX 250700	RCMX250700
RCMX 320900	RCMX320900
RD 6PF	RCGA090300
RD 8PF	RCGA120300
RNGN 22	RNGN060300
RNGN 32	RNGN090300
RNGN 42	RNGN120300
RNGN 43	RNGN120400
RNMA 43	RNMA120400
RNMA 54	RNMA150600
RNMA 64	RNMA190600
RNMG 32	RNMG090300
RNMG 43	RNMG120400
RNMG 64	RNMG190600
RNMG 86	RNMG250900
RNMN 22	RNMN060300
RNMN 32	RNMN090300
RNMN 42	RNMN120300
RNMN 43	RNMN120400
RNMN 83S-06020	RNMN250400S-15020
RNMN 84S-06020	RNMN250600S-15020
SCGW 21.50.5-00420	SCGW060202-01020
SCGW 21.51-00420	SCGW060204-01020
SCGW 21.52-00420	SCGW060208-01020
SCGW 32.51-00420	SCGW09T304-01020
SCGW 32.52-00420	SCGW09T308-01020
SCMN 332	SCMN090408
SCMT 060204	SCMT060204
SCMT 070308	SCMT070308
SCMT 09T308	SCMT09T308
SCMT 21.51	SCMT060204
SCMT 222	SCMT070308
SCMT 32.51	SCMT09T304
SCMT 32.52	SCMT09T308
SCMT 32.53	SCMT09T312
SCMT 432	SCMT120408
SCMT 433	SCMT120412
SCMT 53.53	SCMT150512
SCMT 866	SCMT250924
SCMW 32.51	SCMW09T304
SNG 322	SNGN090308
SNG 633	SNGN190412
SNG 634	SNGN190416
SNGA 432	SNGA120408
SNGF 322	SNGF090308
SNGN 222	SNGN060308
SNGN 321	SNGN090304
SNGN 322	SNGN090308
SNGN 323	SNGN090312
SNGN 432	SNGN120408
SNGN 433	SNGN120412
SNGN 434	SNGN120416
SNMA 322	SNMA090308
SNMA 432	SNMA120408
SNMA 433	SNMA120412

ANSI	ISO
SNMA 434	SNMA120416
SNMA 543	SNMA150612
SNMA 643	SNMA190612
SNMA 644	SNMA190616
SNMG 321	SNMG090304
SNMG 322	SNMG090308
SNMG 431	SNMG120404
SNMG 432	SNMG120408
SNMG 433	SNMG120412
SNMG 434	SNMG120416
SNMG 542	SNMG150608
SNMG 543	SNMG150612
SNMG 544	SNMG150616
SNMG 643	SNMG190612
SNMG 644	SNMG190616
SNMG 646	SNMG190624
SNMG 866	SNMG250924
SNMM 432	SNMM120408
SNMM 433	SNMM120412
SNMM 543	SNMM150612
SNMM 544	SNMM150616
SNMM 546	SNMM150624
SNMM 643	SNMM190612
SNMM 644	SNMM190616
SNMM 646	SNMM190624
SNMM 856	SNMM250724
SNMM 866	SNMM250924
SNMN 222	SNMN060308
SNMN 322	SNMN090308
SNMN 323	SNMN090312
SNMN 324	SNMN090316
SNMN 423	SNMN120312
SNMN 424	SNMN120316
SNMN 432	SNMN120408
SNMN 433	SNMN120412
SNMN 434	SNMN120416
SNMP 432	SNMG120408
SNMP 433	SNMG120412
SNMP 543	SNMG150612
SNMP 644	SNMG190616
SNU 432	SNUN120408
SNU 433	SNUN120412
SNU 434	SNUN120416
SNU 633	SNUN190412
SPG 321	SPGN090304
SPG 323	SPGN0903012
SPG 421	SPGN120304
SPG 422	SPGN120308
SPG 423	SPGN120312
SPG 424	SPGN120316
SPG 433	SPGN120412
SPG 633	SPGN190412
SPG 634	SPGN190416
SPG 638	SPGN190432
SPGW 1.820.5-00420	SPGW050302-01020
SPGW 2.521	SPGW070304
SPGW 2.522	SPGW070308
SPGW 220.5-00420	SPGW060302-01020
SPGW 221-00420	SPGW060304-01020

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ANSI	ISO
SPGW 32.51	SPGW09T304
SPGW 32.52	SPGW09T308
SPMM 322	SPMM090308
SPMM 432	SPMM120408
SPMM 433	SPMM120412
SPMM 543	SPMM150612
SPMM 642	SPMM190608
SPMM 644	SPMM190616
SPMR 321	SPMR090304
SPMR 322	SPMR090308
SPMR 421	SPMR120304
SPMR 422	SPMR120308
SPMR 423	SPMR120312
SPMT 32.52	SPMT09T308
SPU 321	SPUN090304
SPU 322	SPUN090308
SPU 421	SPUN120304
SPU 422	SPUN120308
SPU 423	SPUN120312
SPU 533	SPUN150412
SPU 632	SPUN190408
SPU 633	SPUN190412
SPU 634	SPUN190416
TCGN 1.211	TCGN060104
TCGT 1.81.50.5	TCGT090202
TCGT 1.81.51	TCGT090204
TCGT 21.50	TCGT110201
TCGT 21.50.5	TCGT110202
TCGT 21.51	TCGT110204
TCGT 21.52	TCGT110208
TCGT 32.51	TCGT16T304
TCGT 32.52	TCGT16T308
TCGW 1.81.50.5-00420	TCGW090202-01020
TCGW 1.81.51-00420	TCGW090204-01020
TCGW 1.81.52-00420	TCGW090208-01020
TCGW 21.50.5-00420	TCGW110202-01020
TCGW 21.51-00420	TCGW110204-01020
TCGW 21.52-00420	TCGW110208-01020
TCMT 21.50.5	TCMT110202
TCMT 21.51	TCMT110204
TCMT 21.52	TCMT110208
TCMT 32.50.5	TCMT16T302
TCMT 32.51	TCMT16T304
TCMT 32.52	TCMT16T308
TCMT 32.53	TCMT16T312
TCMT 431	TCMT220404
TCMT 432	TCMT220408
TCMW 1.81.50.5	TCMW090202
TCMW 1.81.51	TCMW090204
TCMW 21.50.5	TCMW110202
TCMW 21.51	TCMW110204
TCMW 21.52	TCMW110208
TCMW 32.51	TCMW16T304
TCMX 32.51	TCMX16T304
TCMX 32.52	TCMX16T308
TDAB 1.21.50	TDAB06T000
TDAB 1.21.50.5	TDAB06T002
TDAB 1.21.51	TDAB06T004
TDCH 1.21.50.5	TDCH06T002

ANSI	ISO
TDCH 1.21.51	TDCH06T004
TNG 322	TNGN160308
TNGA 222	TNGA110308
TNGA 223	TNGA110312
TNGA 322	TNGA160308
TNGA 331	TNGA160404
TNGA 332	TNGA160408
TNGA 432	TNGA220408
TNGN 221	TNGN110304
TNGN 222	TNGN110308
TNGN 223	TNGN110312
TNGN 321	TNGN160304
TNGN 333	TNGN160412
TNGX 221	TNGX110304
TNGX 222	TNGX110308
TNMA 222	TNMA110308
TNMA 321	TNMA160304
TNMA 322	TNMA160308
TNMA 323	TNMA160312
TNMA 331	TNMA160404
TNMA 332	TNMA160408
TNMA 333	TNMA160412
TNMA 334	TNMA160416
TNMA 431	TNMA220404
TNMA 432	TNMA220408
TNMA 433	TNMA220412
TNMA 434	TNMA220416
TNMA 438	TNMA220432
TNMA 543	TNMA270612
TNMA 544	TNMA270616
TNMG 220.5	TNMG110302
TNMG 221	TNMG110304
TNMG 222	TNMG110308
TNMG 321	TNMG160304
TNMG 322	TNMG160308
TNMG 323	TNMG160312
TNMG 324	TNMG160316
TNMG 326	TNMG160324
TNMG 331	TNMG160404
TNMG 332	TNMG160408
TNMG 333	TNMG160412
TNMG 334	TNMG160416
TNMG 431	TNMG220404
TNMG 432	TNMG220408
TNMG 433	TNMG220412
TNMG 434	TNMG220416
TNMG 436	TNMG220424
TNMG 438	TNMG220432
TNMG 542	TNMG270608
TNMG 543	TNMG270612
TNMG 544	TNMG270616
TNMG 548	TNMG270632
TNMG 666	TNMG330924
TNMM 331	TNMM160404
TNMM 332	TNMM160408
TNMM 333	TNMM160412
TNMM 432	TNMM220408
TNMM 433	TNMM220412
TNMM 434	TNMM220416

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ANSI	ISO
TNMN 221	TNMN110304
TNMN 222	TNMN110308
TNMN 223	TNMN110312
TNMN 333	TNMN160412
TNMN 334	TNMN160416
TNMP 321	TNMG160304
TNMP 322	TNMG160308
TNMP 332	TNMG160408
TNMP 431	TNMG220404
TNMP 432	TNMG220408
TNMP 433	TNMG220412
TNMP 434	TNMG220416
TNMP 544	TNMG270616
TNMP 666	TNMG330924
TNMX 222	TNMX110308
TNMX 332	TNMX160408
TNMX 333	TNMX160412
TNU 332	TNUN160408
TNU 333	TNUN160412
TNU 334	TNUN160416
TPG 211	TPGN110204
TPG 221	TPGN110304
TPG 222	TPGN110308
TPG 320	TPGN160302
TPG 321	TPGN160304
TPG 322	TPGN160308
TPG 323	TPGN160312
TPG 324	TPGN160316
TPG 430	TPGN220402
TPG 431	TPGN220404
TPG 432	TPGN220408
TPG 433	TPGN220412
TPG 434	TPGN220416
TPGA 211	TPGA110204
TPGA 322	TPGA160308
TPGN 220.5	TPGN110302
TPGN 221	TPGN110304
TPGN 222	TPGN110308
TPGN 32.05	TPGN160302
TPGN 321	TPGN160304
TPGN 322	TPGN160308
TPGN 323	TPGN160312
TPGN 431	TPGN220404
TPGN 432	TPGN220408
TPGN 433	TPGN220412
TPGW 21.51	TPGW110204
TPGW 21.52	TPGW110208
TPGW 32.51	TPGW16T304
TPGW 32.52	TPGW16T308
TPMM 2.521	TPMM130304
TPMM 2.522	TPMM130308
TPMM 321	TPMM160304
TPMM 322	TPMM160308
TPMM 323	TPMM160312
TPMM 324	TPMM160316
TPMM 431	TPMM220404
TPMM 432	TPMM220408
TPMM 433	TPMM220412
TPMM 434	TPMM220416

ANSI	ISO
TPMR 221	TPMR110304
TPMR 222	TPMR110308
TPMR 321	TPMR160304
TPMR 322	TPMR160308
TPMR 323	TPMR160312
TPMR 432	TPMR220408
TPMR 433	TPMR220412
TPMT 21.51	TPMT110204
TPMT 21.52	TPMT110208
TPMT 32.51	TPMT16T304
TPMT 32.52	TPMT16T308
TPU 212	TPUN110208
TPU 221	TPUN110304
TPU 222	TPUN110308
TPU 321	TPUN160304
TPU 322	TPUN160308
TPU 323	TPUN160312
TPU 431	TPUN220404
TPU 432	TPUN220408
VBGT 21.50	VBGT110201
VBGT 330	VBGT160401
VBGW 330.5	VBGW160402
VBGW 331	VBGW160404
VBGW 332	VBGW160408
VBMT 21.50.5	VBMT110202
VBMT 21.51	VBMT110204
VBMT 21.52	VBMT110208
VBMT 330.5	VBMT160402
VBMT 331	VBMT160404
VBMT 332	VBMT160408
VBMT 333	VBMT160412
VBMW 330.5	VBMW160402
VBMW 331	VBMW160404
VCGR 331	VCGR160404
VCGR 332	VCGR160408
VCGT 221	VCGT110304
VCGT 330.5	VCGT160402
VCGT 331	VCGT160404
VCGT 332	VCGT160408
VCGT 333	VCGT160412
VNGA 331	VNGA160404
VNGA 332	VNGA160408
VNGM 331	VNGM160404
VNGM 332	VNGM160408
VNGP 330.5	VNGG160402
VNGP 331	VNGG160404
VNGP 332	VNGG160408
VNGP 432	VNGG220408
VNMA 2.532	VNMA130408
VNMA 2.534	VNMA130416
VNMA 332	VNMA160408
VNMA 333	VNMA160412
VNMA 334	VNMA160416
VNMG 2.53.5	VNMG130402
VNMG 2.531	VNMG130404
VNMG 2.532	VNMG130408
VNMG 331	VNMG160404
VNMG 332	VNMG160408
VNMG 333	VNMG160412

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ANSI	ISO
VNMG 431	VNMG220404
VNMG 432	VNMG220408
VNMG 433	VNMG220412
VNMG 434	VNMG220416
VNMP 331	VNMG160404
VNMP 332	VNMG160408
WCMT 32.50.5	WCMT06T302
WCMT 32.51	WCMT06T304
WCMT 32.52	WCMT06T308
WNGA 331	WNGA060404
WNGA 332	WNGA060408
WNGA 333	WNGA060412
WNGA 431	WNGA080404
WNGA 432	WNGA080408
WNGP 330.5	WNGG060402
WNMA 332	WNMA060408
WNMA 333	WNMA060412
WNMA 334	WNMA060416
WNMA 432	WNMA080408
WNMA 433	WNMA080412
WNMA 434	WNMA080416
WNMA 442	WNMA080608
WNMA 443	WNMA080612
WNMA 444	WNMA080616
WNMG 330.5	WNMG060402
WNMG 331	WNMG060404
WNMG 332	WNMG060408
WNMG 333	WNMG060412
WNMG 431	WNMG080404
WNMG 432	WNMG080408
WNMG 433	WNMG080412
WNMG 434	WNMG080416
WNMG 442	WNMG080608
WNMG 443	WNMG080612
WNMG 444	WNMG080616
WNMM 432	WNMM080408
WNMM 433	WNMM080412
WNMM 443	WNMM080612
WNMM 444	WNMM080616
WNMP 331	WNMG060404
WNMP 332	WNMG060408
WNMP 333	WNMG060412
WNMP 431	WNMG080404
WNMP 432	WNMG080408
WNMP 433	WNMG080412
XPC 63AL	XPC 63AL
XPC 63AR	XPC 63AR

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72645	03HL03
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73577	03M03C
77806	1.5SMS795
11063	10SMS795
16092	110.19-621
79287	110.19-629
16102	111.19-620
16103	111.19-621
79286	112.19-624
86959	117.10-620
11868	117.10-622
04462	117.26-655
16085	123.19-621
42909	126.19-620
40661	12SMS795
78184	150.10-600
78185	150.10-601
78183	150.10-620
45730	150.10-647
45731	150.10-648
33059	150.10A-150
86574	150.10A-3-JET-KIT
86565	150.10A-4-JET-KIT
86570	150.10A-5-JET-KIT
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42908	171.19-620
09391	174.10-621
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21594	174.10-650.9-T07P
21593	174.10-652-T07P
43067	174.18-634
43066	174.18-635
43052	174.18-638
10700	179.17-680
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97475	179.17-686
10702	179.17-687
21657	179.17-690-T15P
11891	179.17-693
21658	179.17-696-T25P
21659	179.17-697-T25P
21660	179.17-698-T09P
55839	19TB0305
72639	19TB04075
42998	2.5SMS795
00261	2SMS795
83414	3.5SMS795
95818	3111050-558
09883	3111050-610
09884	3111050-661
09885	3111050-715
95820	3111050-769
95821	3212010-362
40559	3212010-363
95822	3212010-364
95960	3212010-414
95823	3212010-415
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95825	3212010-469
95826	3212010-521
83361	3213010-410
95827	3213010-462
40443	3214010-355
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95830	3214020-255
95831	3421105-026
95832	3421105-032
95833	3611005-140
95834	3611005-180
95842	3671010-020
95843	3671010-022
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95838	3671010-120
95839	3671010-124
40454	3671010-126
68313	3671010-128
40425	3823010-101
83365	3823010-122
95845	3823010-162
95846	3823010-183
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97116	3SMS795/T15P
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00262	4SMS795
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95850	5252010-03
83358	5252010-04
95958	5252015-02
95959	5252015-03
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22860	5461100-121
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40387	5512091-02
40385	5512091-03
95887	5512096-01
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95902	5541030-03
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47412	950DC0412
47410	950DC0616
82524	950L0406
55887	950L0608
86760	951C0610
86762	951C0810
26161	AKL-10
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47405	AU6102003
92250	AU6103003
92253	AU6104003
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16711	C02506-T07P
07369	C02506-T08P
00060	C03007-T09P
00902	C03508-T15P
00813	C03509-T10P
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16715	C03510-T15P
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76576	CILC12LA-R
76582	CILC12RA-F
76575	CILC12RA-R
76588	CILD15LA-F
76580	CILD15LA-R
76587	CILD15RA-F
76579	CILD15RA-R
76586	CILS12LA-F
76578	CILS12LA-R
76584	CILS12RA-F
76577	CILS12RA-R
81425	CILT16LA-F
81424	CILT16RA-F
11321	CILW06LA-F
11323	CILW06LA-R
11322	CILW06RA-F
11324	CILW06RA-R
84548	CILW08LA-F
76554	CILW08LA-R
76581	CILW08RA-F
76542	CILW08RA-R
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76592	CILV16LC-F
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57656	CS115
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33706	DCN544
33707	DCN634
41539	DCN836
86564	DCO120310
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32372	DDN434
07447	DDN444
33713	DRN44
39108	DRN64
33716	DSN322.5
37153	DSN-323
48118	DSN-423
41189	DSN-433
33718	DSN444
33719	DSN546
33720	DSN646
43563	DSN836
37562	DTN322.5
33721	DTN344
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45726	DWD060210
45727	DWD080316
33728	DVN322.5
33729	DWN322.5
43398	DWN424
32373	DWN434
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91719	MC6S5X14
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10391	MP0912
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45884	NX22-98.5
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10683	PCN190416
79204	PCN250620
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248-528-5220

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