

DORMER PRAMET

NEW PRODUCTS

2020



 PRAMET

2 ■ TURNING

- 4 • GL
Reliable deeper parting-off & grooving
of steels and stainless steels
- 15 • PSC
Quick change turning tools with high
connection accuracy
- 44 • Threading inserts
- 47 • New items list



48 ■ MILLING

- 50 • ISSN11 / SNGX11
High feed milling with eight indexes
up to 0.067" depth
- 56 • TNGX 10



TURNING





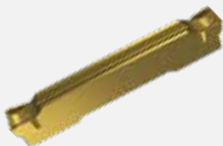
RELIABLE DEEPER PARTING-OFF & GROOVING OF STEELS AND STAINLESS STEELS

Our offer of parting-off and grooving systems has been expanded with a new range of double-edged inserts in various widths and an assortment of tools for general and small part machining. This is supported by a new designation that will allow you to easily select the appropriate insert and tool.

FEATURES & BENEFITS

- .984 in long double edged inserts
- Broader range of widths from 0.079" to 0.236"
- Versatile G8330 PVD grade
- PR geometry – first choice for parting-off bars and grooving of interrupted cuts
- PM geometry – first choice for austenitic stainless steels and soft steels
- External tools from 0.625"x0.625" in to 1"x1" with new advanced design
- Universal tool-blades 1.024" and 1.261" with special clamping key
- **Deep parting-off & grooving** – up to 60% deeper grooving capacity thanks to the inserts length
- **Improved operation reliability** on steels and stainless steels through a unique combination of new grade, insert and tool design
- **High quality surface finish** due to enhanced vibration resistance
- **Setup time savings** – when machining small parts due to accessible clamping screw [30° angled] and easy one-hand insert replacement
- **Prolonged tool life** with increased build up edge resistance [PM] / increased cutting edge strength [PR]

INSERT GEOMETRIES

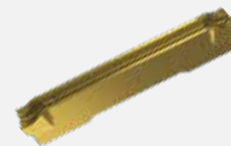


NEW

PR

GEOMETRY PR

- First choice for parting-off bars and interrupted cuts
- Universal choice for a wide range of machining conditions



NEW

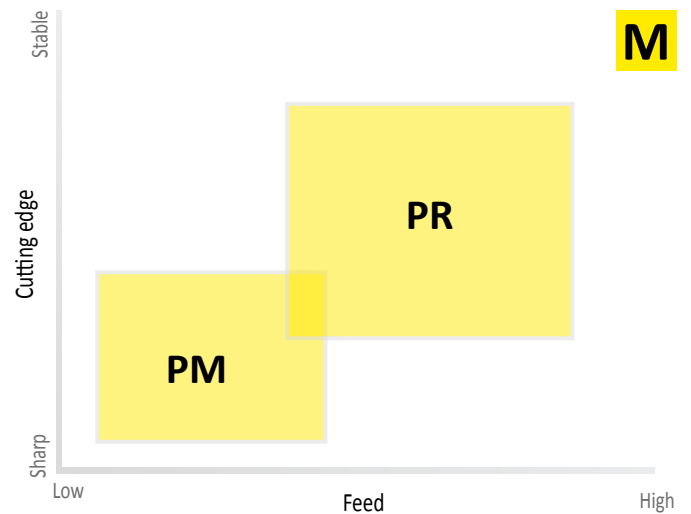
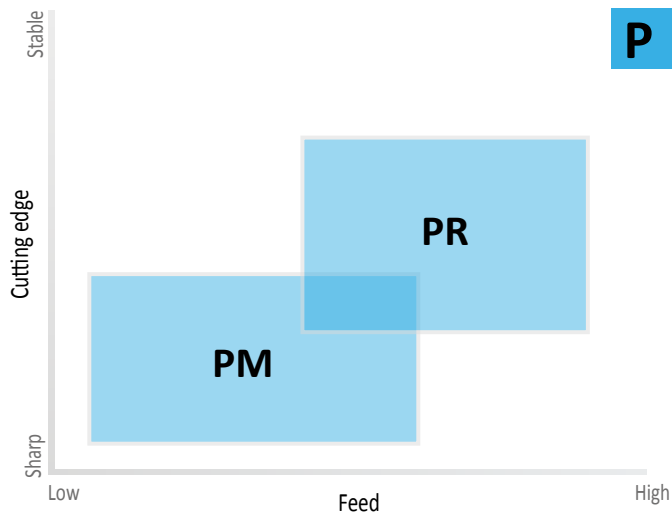
PM

GEOMETRY PM

- First choice for austenitic stainless steels and parting-off tubes



AREA OF APPLICATION



MACHINING EXAMPLE

Operation: Parting-off
 Material: C45
 Material group: P
 Insert: GL3-D300M02-PR, GL3-D300M02-PM
 Holder: GL3-S12MFL-.79-3.15
 Coolant: Yes

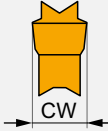
Insert geometry			PR	PM
Workpiece:			⬡ Bar	⬢ Tube
Cutting speed	v_c	SFM	460	460
Feed	f	inch/rev	0.0055	0.004
Depth of cut	a_p	inch	0.787	0.393

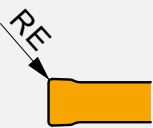
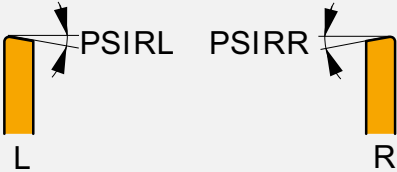


CODE DESIGNATION – PARTING OFF AND GROOVING INSERTS

1 2 - 3 4 5 6 7 8
GL 3 - D 300 G 02 L06 - PM



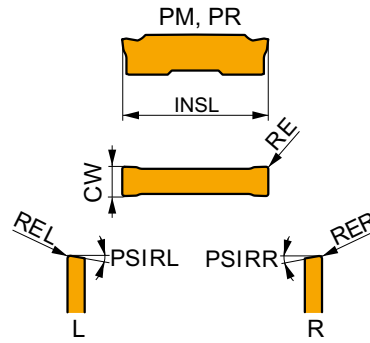
1	2	3	4																		
Tool group	Pocket size	Number of edges	Cutting width - CW																		
GL	1, 2, 3, 4, 5, 6	<table border="1"> <tr> <td>S</td> <td>One edge</td> </tr> <tr> <td>D</td> <td>Two edges</td> </tr> </table>	S	One edge	D	Two edges	 <table border="1"> <thead> <tr> <th></th> <th>CW</th> </tr> </thead> <tbody> <tr> <td>200</td> <td>.079</td> </tr> <tr> <td>250</td> <td>.098</td> </tr> <tr> <td>300</td> <td>.118</td> </tr> <tr> <td>400</td> <td>.157</td> </tr> <tr> <td>500</td> <td>.197</td> </tr> <tr> <td>600</td> <td>.236</td> </tr> </tbody> </table>		CW	200	.079	250	.098	300	.118	400	.157	500	.197	600	.236
	S		One edge																		
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5	6	7	8																		
Edge design	Nose radius	Primary cutting edge angle	Chipbreaker designation																		
<table border="1"> <tr> <td>G</td> <td>Ground</td> </tr> <tr> <td>M</td> <td>Direct pressed</td> </tr> </table>	G	Ground	M	Direct pressed	 <table border="1"> <thead> <tr> <th></th> <th>RE [in]</th> </tr> </thead> <tbody> <tr> <td>02</td> <td>.008</td> </tr> <tr> <td>03</td> <td>.012</td> </tr> <tr> <td>04</td> <td>.016</td> </tr> </tbody> </table>		RE [in]	02	.008	03	.012	04	.016	 <table border="1"> <thead> <tr> <th></th> <th>[°]</th> </tr> </thead> <tbody> <tr> <td>06</td> <td>6</td> </tr> <tr> <td>12</td> <td>12</td> </tr> </tbody> </table>		[°]	06	6	12	12	PM PR
G	Ground																				
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GL. D



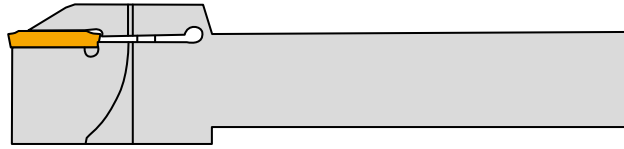
	CW	CWTOLL	CWTOLU	INSL
200	.079	.002	.002	.984
250	.098	.002	.002	.984
300	.118	.002	.002	.984
400	.157	.002	.002	.984
500	.197	.002	.002	.984
600	.236	.002	.002	.984



i	ANSI	P	M	K	N	S	H	?	RE	FN	FX	PSIRL	PSIRR	
														RE
E	GL2-D200M02-PM	G8330	■	■	▣			●	+++	.008	.002	.005	-	-
	GL2-D200M02-PM	T7325	▣	■	■			●	+++	.008	.002	.005	-	-
	GL3-D250G02-PM	G8330	■	■	▣			●	+++	.008	.002	.006	-	-
	GL3-D300M02-PM	G8330	■	■	▣			●	+++	.008	.002	.006	-	-
	GL4-D400M02-PM	G8330	■	■	▣			●	+++	.008	.003	.007	-	-
	GL4-D400M02-PM	T7325	▣	■	■			●	+++	.008	.003	.007	-	-
	GL5-D500M03-PM	G8330	■	■	▣			●	+++	.012	.004	.008	-	-
	GL6-D600M03-PM	G8330	■	■	▣			●	+++	.012	.004	.009	-	-
	GL2-D200G02R06-PM	G8330	■	■	▣			●	+++	.008	.002	.005	-	6°
	GL2-D200G02R06-PM	T7325	▣	■	■			●	+++	.008	.002	.005	-	6°
E	GL2-D200G02R12-PM	G8330	■	■	▣			●	+++	.008	.002	.006	-	12°
	GL3-D300G02R06-PM	G8330	■	■	▣			●	+++	.008	.002	.006	-	6°
	GL3-D300G02R06-PM	T7325	▣	■	■			●	+++	.008	.002	.006	-	6°
	GL3-D300G02R12-PM	G8330	■	■	▣			●	+++	.008	.002	.006	-	12°
	GL3-D300G02R12-PM	T7325	▣	■	■			●	+++	.008	.002	.006	-	12°
	GL4-D400G02R06-PM	G8330	■	■	▣			●	+++	.008	.003	.007	-	6°
	GL4-D400G02R06-PM	T7325	▣	■	■			●	+++	.008	.003	.007	-	6°
	GL4-D400G02R12-PM	G8330	■	■	▣			●	+++	.008	.003	.007	-	12°
	GL4-D400G02R12-PM	T7325	▣	■	■			●	+++	.008	.003	.007	-	12°
	GL2-D200G02L06-PM	G8330	■	■	▣			●	+++	.008	.002	.005	6°	-
E	GL2-D200G02L06-PM	T7325	▣	■	■			●	+++	.008	.002	.005	6°	-
	GL2-D200G02L12-PM	G8330	■	■	▣			●	+++	.008	.002	.006	12°	-
	GL3-D300G02L06-PM	G8330	■	■	▣			●	+++	.008	.002	.006	6°	-
	GL3-D300G02L06-PM	T7325	▣	■	■			●	+++	.008	.002	.006	6°	-
	GL3-D300G02L12-PM	G8330	■	■	▣			●	+++	.008	.002	.006	12°	-
	GL3-D300G02L12-PM	T7325	▣	■	■			●	+++	.008	.002	.006	12°	-
	GL4-D400G02L06-PM	G8330	■	■	▣			●	+++	.008	.003	.007	6°	-
	GL4-D400G02L06-PM	T7325	▣	■	■			●	+++	.008	.003	.007	6°	-
	GL4-D400G02L12-PM	G8330	■	■	▣			●	+++	.008	.003	.007	12°	-
	GL4-D400G02L12-PM	T7325	▣	■	■			●	+++	.008	.003	.007	12°	-
S	GL2-D200M02-PR	G8330	■	▣	▣			●	+++	.008	.002	.006	-	-
	GL2-D200M02-PR	T7325	▣	▣	▣			●	+++	.008	.002	.006	-	-
	GL3-D300M02-PR	G8330	■	▣	▣			●	+++	.008	.002	.008	-	-
	GL3-D300M02-PR	T7325	▣	▣	▣			●	+++	.008	.002	.008	-	-
	GL4-D400M02-PR	G8330	■	▣	▣			●	+++	.008	.003	.010	-	-
	GL4-D400M02-PR	T7325	▣	▣	▣			●	+++	.008	.003	.010	-	-
	GL5-D500M04-PR	G8330	■	▣	▣			●	+++	.016	.004	.011	-	-
	GL5-D500M04-PR	T7325	▣	▣	▣			●	+++	.016	.004	.013	-	-
	GL2-D200G02R06-PR	G8330	■	▣	▣			●	+++	.008	.002	.006	-	6°
	GL2-D200G02R06-PR	T7325	▣	▣	▣			●	+++	.008	.002	.006	-	12°
S	GL3-D300G02R06-PR	G8330	■	▣	▣			●	+++	.008	.002	.008	-	6°
	GL3-D300G02R12-PR	G8330	■	▣	▣			●	+++	.008	.002	.008	-	12°
	GL3-D300G02R12-PR	T7325	▣	▣	▣			●	+++	.008	.002	.008	-	12°
	GL4-D400G02R06-PR	G8330	■	▣	▣			●	+++	.008	.003	.010	-	6°
	GL4-D400G02R12-PR	G8330	■	▣	▣			●	+++	.008	.003	.010	-	12°
	GL4-D400G02R12-PR	T7325	▣	▣	▣			●	+++	.008	.003	.010	-	12°
	GL2-D200G02L06-PR	G8330	■	▣	▣			●	+++	.008	.002	.006	6°	-
	GL2-D200G02L12-PR	G8330	■	▣	▣			●	+++	.008	.002	.006	12°	-
	GL3-D300G02L06-PR	G8330	■	▣	▣			●	+++	.008	.002	.008	6°	-
	GL3-D300G02L12-PR	G8330	■	▣	▣			●	+++	.008	.002	.008	12°	-
GL4-D400G02L06-PR	G8330	■	▣	▣			●	+++	.008	.003	.010	6°	-	
GL4-D400G02L12-PR	G8330	■	▣	▣			●	+++	.008	.003	.010	12°	-	

CODE DESIGNATION – PARTING OFF AND GROOVING HOLDERS (EXTERNAL TURNING)

1 2 - 3 4 5 6 7 8 9 10 11
GL 3 - S 16 D F L - .79 - R 4.72 090



1	2	3	4												
Tool group	Pocket size	Shank type	Shank dimensions												
GL	1, 2, 3, 4, 5, 6	<table border="1"> <tr> <td>A</td> <td>steel shank with internal coolant</td> </tr> <tr> <td>S</td> <td>steel shank without internal coolant</td> </tr> </table>	A	steel shank with internal coolant	S	steel shank without internal coolant	<table border="1"> <thead> <tr> <th></th> <th>H/B [in]/[in]</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>.625/.625</td> </tr> <tr> <td>12</td> <td>.075/.075</td> </tr> <tr> <td>16</td> <td>1/1</td> </tr> </tbody> </table>		H/B [in]/[in]	10	.625/.625	12	.075/.075	16	1/1
	A	steel shank with internal coolant													
S	steel shank without internal coolant														
	H/B [in]/[in]														
10	.625/.625														
12	.075/.075														
16	1/1														

5	6	7	8														
Holder total length - LF	Tool style - cutting edge angle	Version (right/left)	Cutting depth maximum - CDX														
<table border="1"> <thead> <tr> <th></th> <th>LF [in]</th> </tr> </thead> <tbody> <tr> <td>C</td> <td>5</td> </tr> <tr> <td>D</td> <td>6</td> </tr> <tr> <td>E</td> <td>7</td> </tr> </tbody> </table>		LF [in]	C	5	D	6	E	7	<table border="1"> <thead> <tr> <th></th> <th>[°]</th> </tr> </thead> <tbody> <tr> <td>G</td> <td>0</td> </tr> <tr> <td>F</td> <td>90</td> </tr> </tbody> </table>		[°]	G	0	F	90	<p>R L</p>	
	LF [in]																
C	5																
D	6																
E	7																
	[°]																
G	0																
F	90																

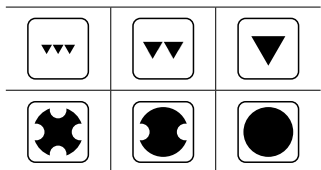
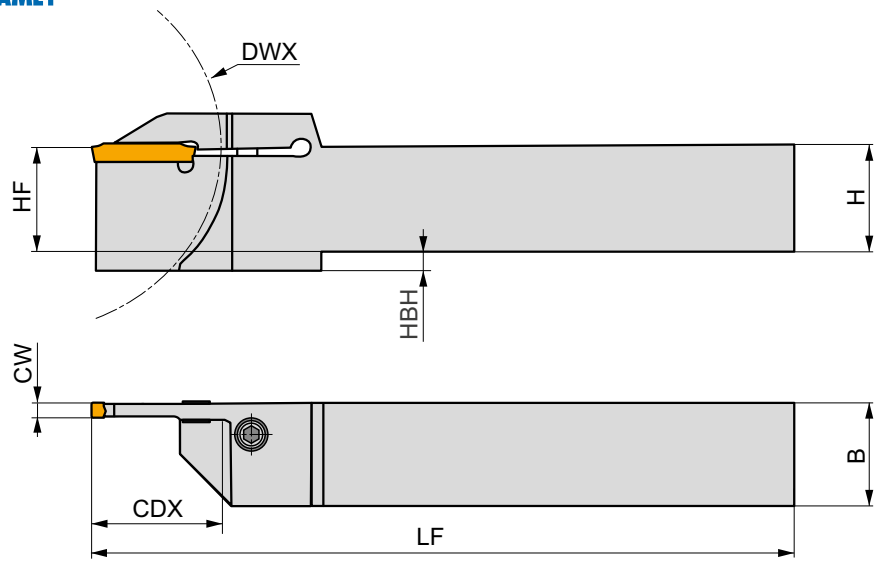
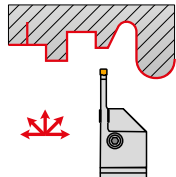
9	10	11
Blade curvature direction	Maximum diameter	Minimum diameter
<p>L R</p> <p>Additional information for axial turning.</p>	<p>DWX</p> <p>DAXX</p>	<p>DMIN</p> <p>DAXN</p>

GLSF(RL) EXT

P M K N S H

G

PRAMET



	HF	H	B	LF	CW	CDX	HBH	DWX	lbs		
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]			
GL2-S10CFR/L-.63-1.78	.625	.625	.625	5.000	.079	.630	.118	1.780	.510	G1334	GL12
GL2-S12CFR/L-.79-3.15	.750	.750	.750	5.000	.079	.790	.000	3.150	.860	G1334	GL11
GL2-S16DFR/L-.79-3.15	1.000	1.000	1.000	6.000	.079	.790	.000	3.150	1.500	G1334	GL11
GL3-S10CFR/L-.63-1.78	.625	.625	.625	5.000	.118	.630	.118	1.780	.510	G1335	GL12
GL3-S12CFR/L-.79-3.15	.750	.750	.750	5.000	.118	.790	.000	3.150	.860	G1335	GL11
GL3-S16DFR/L-.79-3.15	1.000	1.000	1.000	6.000	.118	.790	.000	3.150	1.500	G1335	GL11
GL3-S16EFR/L-1.26-3.15	1.000	1.000	1.000	7.000	.118	1.200	.197	3.150	1.590	G1335	GL11
GL4-S12CFR/L-.79-3.15	.750	.750	.750	5.000	.157	.790	.000	3.150	.860	G1336	GL11
GL4-S16DFR/L-.79-3.15	1.000	1.000	1.000	6.000	.157	.790	.000	3.150	1.500	G1336	GL11
GL4-S16EFR/L-1.26-3.15	1.000	1.000	1.000	7.000	.157	1.200	.197	3.150	1.590	G1336	GL11
GL5-S12CFR/L-.79-3.15	.750	.750	.750	5.000	.197	.790	.000	3.150	.860	G1337	GL11
GL5-S16DFR/L-.79-3.15	1.000	1.000	1.000	6.000	.197	.790	.000	3.150	1.500	G1337	GL11
GL6-S12CFR/L-.79-3.15	.750	.750	.750	5.000	.236	.790	.000	3.150	.860	G1338	GL11
GL6-S16DFR/L-.79-3.15	1.000	1.000	1.000	6.000	.236	.790	.000	3.150	1.500	G1338	GL11

G1334	GL2..	
G1335	GL3..	
G1336	GL4..	
G1337	GL5..	
G1338	GL6..	

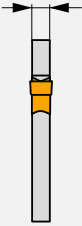
GL11	US 5018-T20P	5.0	M5	.717	-	LK T20P	-
GL12	HS 0516	5.0	M5	-	.63	-	HXK4

CODE DESIGNATION – PARTING OFF AND GROOVING BLADES (EXTERNAL TURNING)


1	2	3	4	5	6
GL	3	S	32	M	B

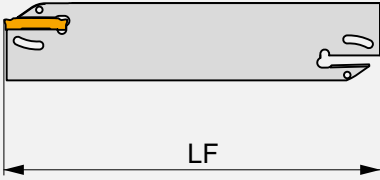


1
Tool group
GL

2
Pocket size
1, 2, 3, 4, 5, 6


3
Shank type
A steel shank with internal coolant
S steel shank without internal coolant

4						
Shank dimensions						
						
<table border="1"> <thead> <tr> <th></th> <th>H [in]</th> </tr> </thead> <tbody> <tr> <td>26</td> <td>26</td> </tr> <tr> <td>32</td> <td>32</td> </tr> </tbody> </table>		H [in]	26	26	32	32
	H [in]					
26	26					
32	32					

5									
Blade total length - LF									
									
<table border="1"> <thead> <tr> <th></th> <th>LF [in]</th> <th>LF [in]</th> </tr> </thead> <tbody> <tr> <td>K</td> <td>125</td> <td>4.921</td> </tr> <tr> <td>M</td> <td>150</td> <td>5.906</td> </tr> </tbody> </table>		LF [in]	LF [in]	K	125	4.921	M	150	5.906
	LF [in]	LF [in]							
K	125	4.921							
M	150	5.906							

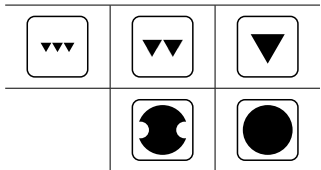
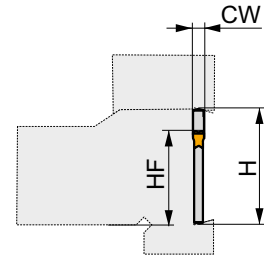
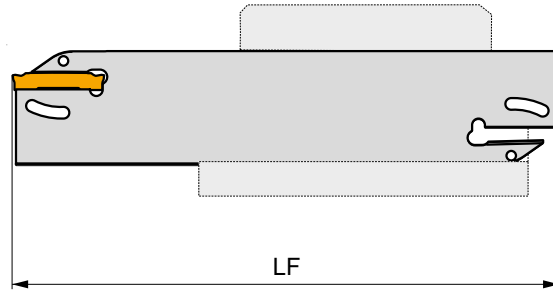
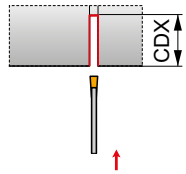
6
Tool style
B - blade

GLS B

P M K N S H

PRAMET

X

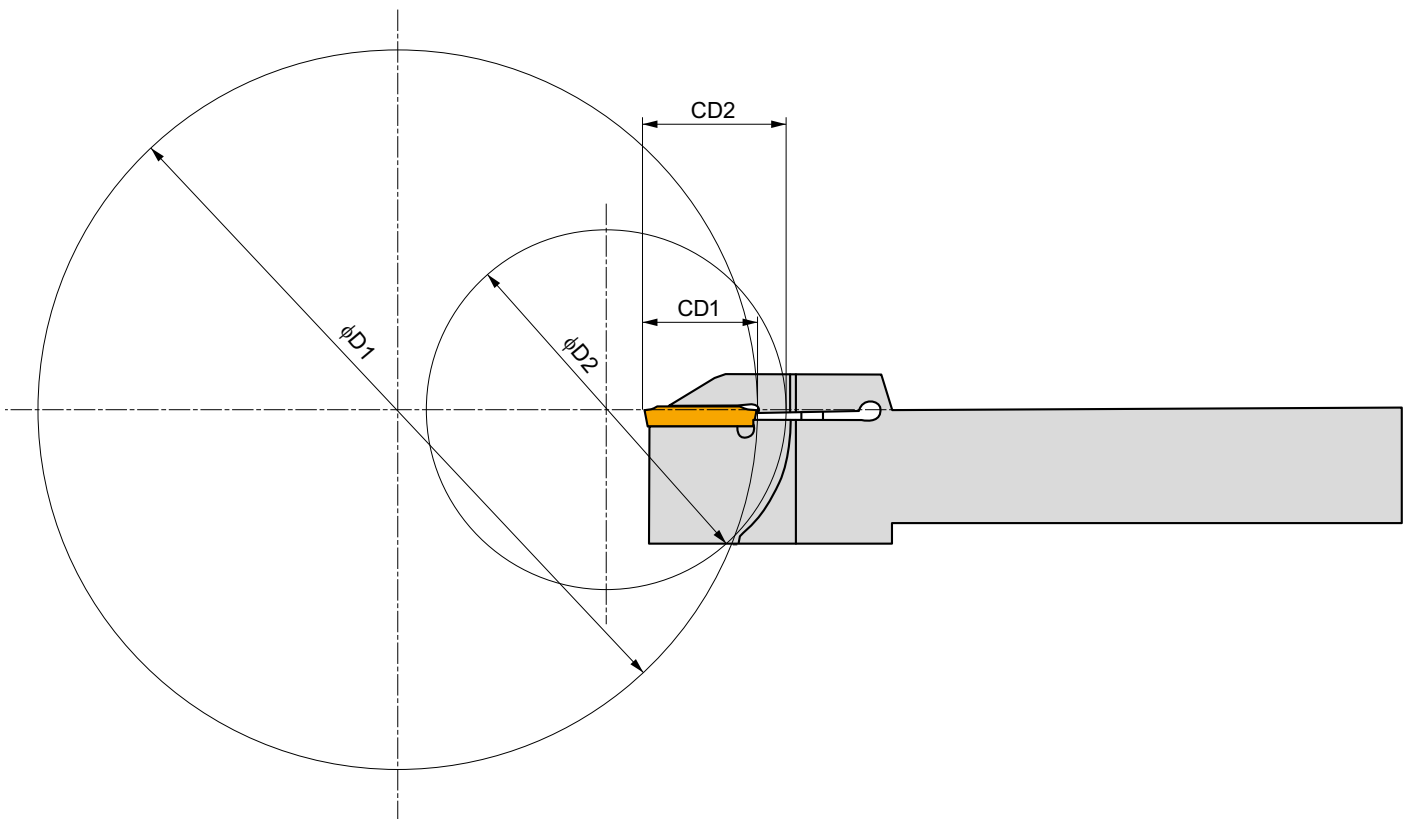
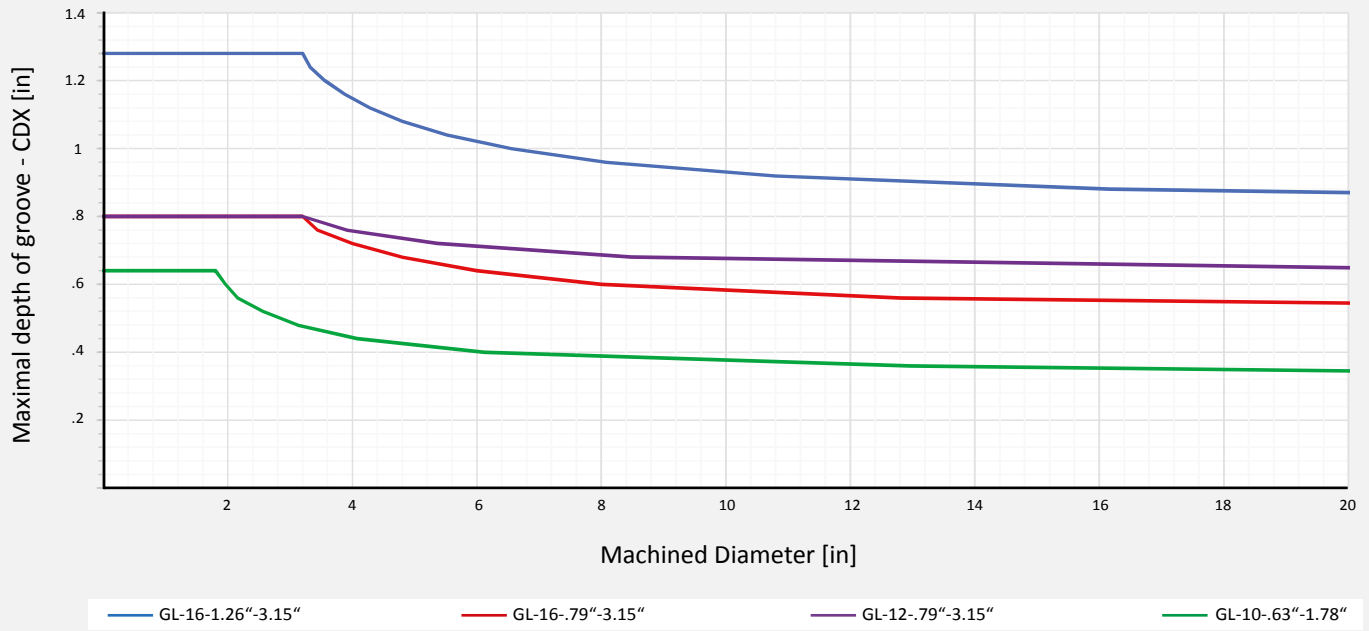


	HF	H	LF	CW	CDX	lbs		
	[in]	[in]	[in]	[in]	[in]			
GL2-S26KB	.787	1.024	4.921	.079	1.378	.310	G1334	KV2
GL2-S32MB	.984	1.260	5.906	.079	1.969	.350	G1334	KV2
GL3-S26KB	.787	1.024	4.921	.118	1.378	.310	G1335	KV2
GL3-S32MB	.984	1.260	5.906	.118	1.969	.350	G1335	KV2
GL4-S32MB	.984	1.260	5.906	.157	1.969	.350	G1336	KV2
GL5-S32MB	.984	1.260	5.906	.197	2.362	.350	G1337	KV2
GL6-S32MB	.984	1.260	5.906	.236	2.362	.350	G1338	KV2

G1334	GL2..
G1335	GL3..
G1336	GL4..
G1337	GL5..
G1338	GL6..

KV2	KV 15x150

CUTTING DEPTHS DEPENDING ON MACHINED DIAMETER







QUICK CHANGE TURNING TOOLS WITH HIGH CONNECTION ACCURACY

The polygon shank coupling spindle interface is a tooling system providing high precision. It is widespread in multi-task machines such as turn-mill centers. The polygonal cone shank and flange surface achieves a fixed accurate positioning and high degree of rigidity.

FEATURES & BENEFITS

- Direct interface tools with high precision
- Highest accuracy and rigidity
- Exact positioning in the circumferential direction
- Internal cooling channels, external tools with adjustable nozzle
- Interface with a unique tapered polygon and flange location face
- Suitable for multi-task machines with ISO 26623-1 receivers
- **Faster and more precise machining** due to the highly stable interface, which results in higher productivity
- **Cost savings** - reduced set-up time and automatic tool change
- **Repeatability** - accuracy of the connection in X, Y, Z direction is $\pm 2 \mu\text{m}$
- **Surface quality** - less vibration due to reduced overhang length

OUR OFFER

- 19 tool styles for external tooling
- 7 tool styles for internal tooling
- 5 shank sizes

Standard shank tools



PSC Quick Change Tools



General breakdown of machining time:

12 %	Servicing / maintenance	13 %
15 %	Batch setup gauging	13 %
20 %	Insert indexing and tool changing	10 %
18 %	Workpiece fixing	19 %
35 %	Machining	45 %

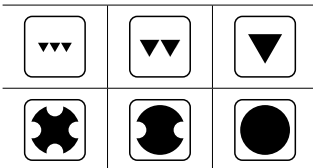
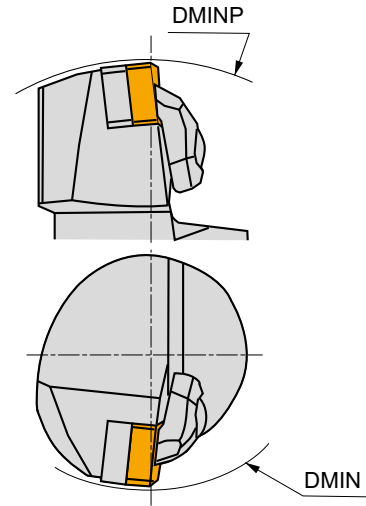
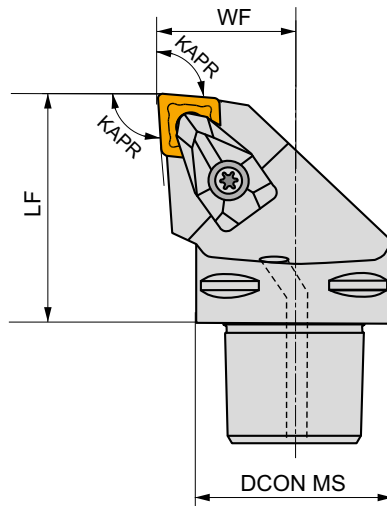
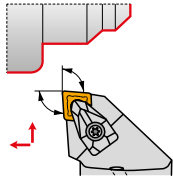
29 % more time in cut

C-DCLN(RL) EXT

P M K N S H

D

PRAMET



	DCON MS	DMIN	DMINP	WF	LF	KAPR	LAMS	GAMO					
	[in]	[in]	[in]	[in]	[in]	[°]	[°]	[°]					
C3-DCLNR-22045-12	1.260	2.362	4.764	0.866	1.772	95	-6	-6	✓	.57	G1043	C-DC12	AT001
C4-DCLNR/L-27050-12	1.575	4.331	5.512	1.063	1.969	95	-6	-6	✓	.97	G1043	C-DC12	AT001
C4-DCLNR/L-27055-16	1.575	4.921	5.709	1.063	2.165	95	-6	-6	✓	1.06	G1050	C-DC16	AT005
C5-DCLNR/L-35060-12	1.969	4.331	6.496	1.378	2.362	95	-6	-6	✓	1.74	G1043	C-DC12	AT001
C5-DCLNR/L-35060-16	1.969	4.921	6.496	1.378	2.362	95	-6	-6	✓	1.74	G1050	C-DC16	AT005
C6-DCLNR/L-45065-12	2.480	4.331	7.480	1.772	2.559	95	-6	-6	✓	2.91	G1043	C-DC12	AT001
C6-DCLNR/L-45065-16	2.480	4.921	7.480	1.772	2.559	95	-6	-6	✓	2.95	G1050	C-DC16	AT005
C6-DCLNR/L-45065-19	2.480	3.189	7.480	1.772	2.559	95	-6	-6	✓	2.95	G1042	C-DC19	-
C8-DCLNL-55080-16	3.150	4.921	9.843	2.165	3.150	95	-6	-6	✓	5.71	G1050	C-DC16	AT005
C8-DCLNR/L-55080-19	3.150	3.937	9.843	2.165	3.150	95	-6	-6	✓	5.75	G1042	C-DC19	-

G1043			CN.. 43..
G1050			CN.. 54..
G1042			CN.. 64..

DC12	DCS 12	3.9	DCS 236-03	US 2002-T15P	FLAG T15P/3.5	-	-
C-DC12	DCS 12	3.9	DCS 234-01	US 2002-T15P	FLAG T15P/3.5	-	CN 045-01
C-DC16	DCS 16	6.4	DCS 234-03	US 2007-T20P	-	LKT20P	CN 045-01
C-DC19	DCS 19	6.4	DCS 236-01	US 2007-T20P	-	LKT20P	CN 045-01

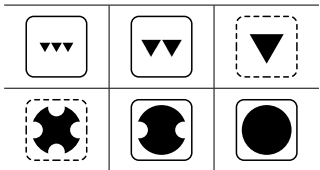
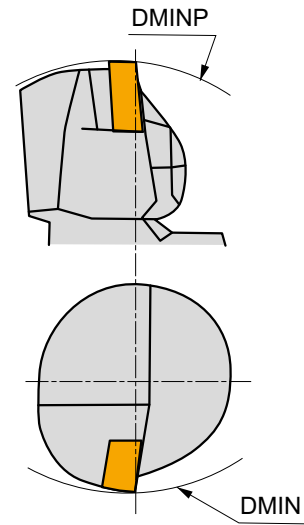
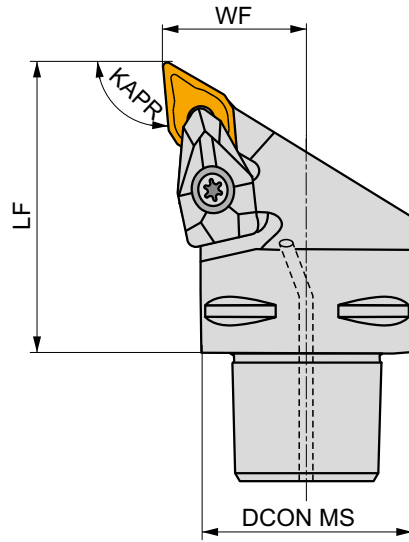
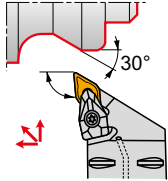
AT001	CN.. 45..	DCS 234-02
AT005	CN.. 55..	DCS 234-04
AT001	CER CN.N 43..	DCS 12C4
AT001	CER CN.A 43..	DCS 12C2
AT005	CER CN.N 54..	DCS 16C4
AT005	CER CN.A 54..	DCS 16C2

C-DDJN(RL) EXT

P M K N S H

D

PRAMET



	DCON MS	DMIN	DMINP	WF	LF	KAPR	LAMS	GAMO					
	[in]	[in]	[in]	[in]	[in]	[°]	[°]	[°]		lbs			
C4-DDJNR/L-27050-11	1.575	2.362	5.512	1.063	1.969	93	-7	-6	✓	.86	GI046	C-DD11	-
C4-DDJNR/L-27055-15	1.575	4.331	5.709	1.063	2.165	93	-7	-6	✓	1.01	GI044	C-DD154-1	AT002
C5-DDJNR/L-35060-15	1.969	4.331	6.496	1.378	2.362	93	-7	-6	✓	1.59	GI044	C-DD154-2	AT002
C6-DDJNR/L-45065-15	2.480	4.331	7.480	1.772	2.559	93	-7	-6	✓	2.60	GI044	C-DD154-3	AT002

GI046		DN.. 33..
GI044		DN.. 44..

C-DD11	DCS 09	Nm 1.7	DDS 267-01	US 2004-T09P	FLAG T09P	CN 034-01
C-DD154-1	DCS 12	3.9	DDS 266-02	US 2002-T15P	FLAG T15P/3.5	CN 034-01
C-DD154-2	DCS 12	3.9	DDS 266-02	US 2002-T15P	FLAG T15P/3.5	CN 045-01
C-DD154-3	DCS 12	3.9	DDS 266-02	US 2002-T15P	FLAG T15P/3.5	CN 034-02

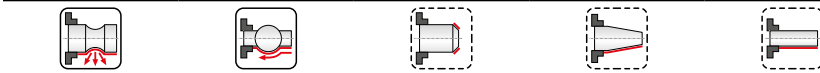
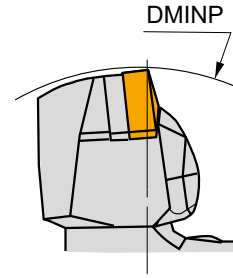
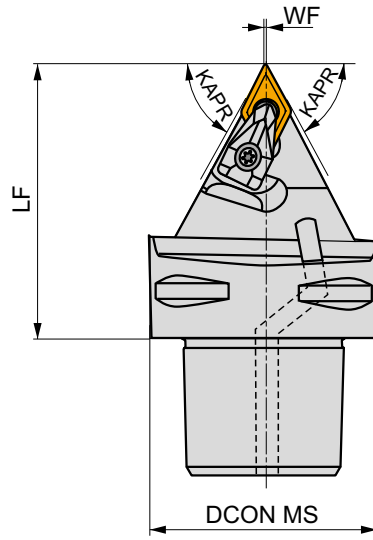
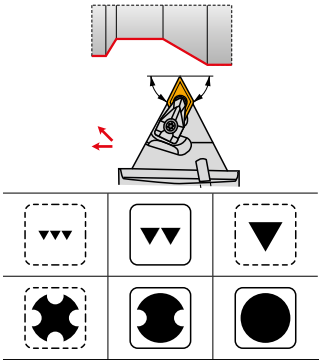
AT002	DN.. 43..	-	DDS 266-01
AT002	CER DN.N 44..	DCS 12C4	-
AT002	CER DN.A 44..	DCS 12C2	-
AT002	CER DN.N 43..	DCS 12C4	DDS 266-01
AT002	CER DN.A 43..	DCS 12C2	DDS 266-01

C.-DDNNN EXT

P M K N S H

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PRAMET



	DCON MS	DMINP	WF	LF	KAPR	LAMS	GAMO					
	[in]	[in]	[in]	[in]	[°]	[°]	[°]					
C5-DDNNN-00060-15	1.969	6.496	.020	2.362	62.5	-9	-5	✓	1.37	GI044	C-DD154-2	AT002
C6-DDNNN-00065-15	2.480	7.480	.020	2.559	62.5	-9	-5	✓	2.34	GI044	C-DD154-2	AT002

GI044					DN.. 44..							

C-DD154-2	DCS 12	3.9	DDS 266-02	US 2002-T15P	FLAG T15P/3.5	CN 045-01						

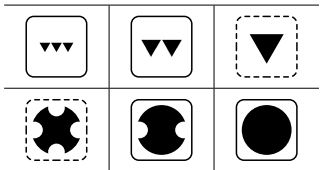
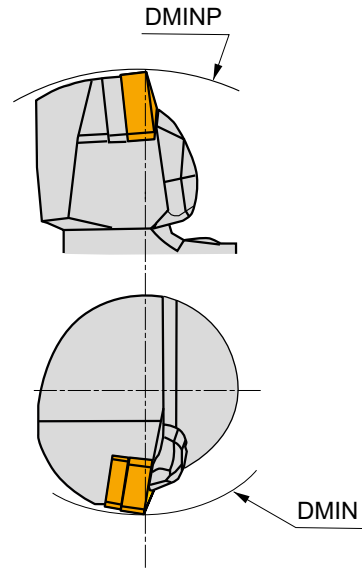
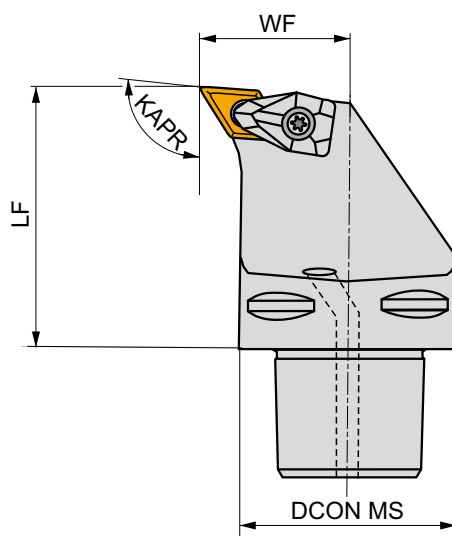
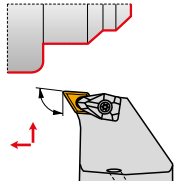
AT002	DN.. 43..											DDS 266-01
AT002	CER DN.N 44..											
AT002	CER DN.A 44..											
AT002	CER DN.N 43..											DDS 266-01
AT002	CER DN.A 43..											DDS 266-01

C.-DDUN(RL) EXT

P M K N S H

D

PRAMET



	DCON MS	DMIN	DMINP	WF	LF	KAPR	LAMS	GAMO					
	[in]	[in]	[in]	[in]	[in]	[°]	[°]	[°]					
C5-DDUNR/L-35060-15	1.969	4.331	6.496	1.378	2.362	93	-7	-6	✓	1.76	G1044	C-DD154-3	AT002
C6-DDUNR-45065-15	2.480	4.331	7.480	1.772	2.559	93	-7	-6	✓	2.98	G1044	C-DD154-3	AT002

G1044						DN.. 44..							

C-DD154-3	DCS 12	3.9	DDS 266-02	US 2002-T15P	FLAG T15P/3.5	CN 034-02							

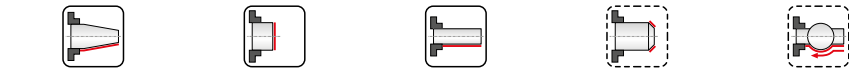
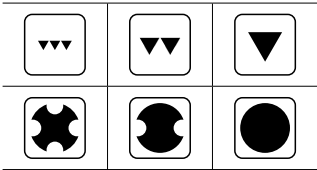
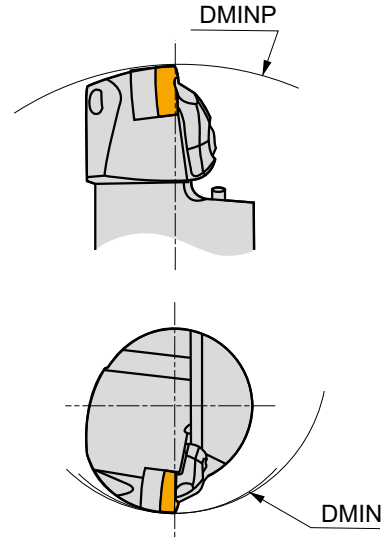
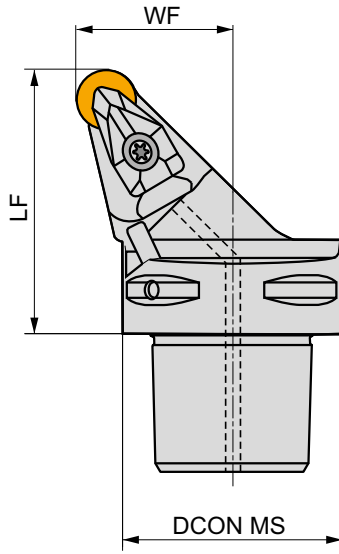
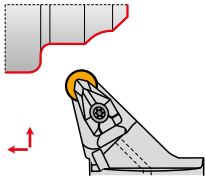
AT002	DN.. 43..	-	DDS 266-01										
AT002	CER DN.N 44..	DCS 12C4	-										
AT002	CER DN.A 44..	DCS 12C2	-										
AT002	CER DN.N 43..	DCS 12C4	DDS 266-01										
AT002	CER DN.A 43..	DCS 12C2	DDS 266-01										

C-DRSN(RL) EXT

P M K

PRAMET

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	DCON MS	DMIN	DMINP	WF	LF	LAMS	GAMO				
	[in]	[in]	[in]	[in]	[in]	[°]	[°]				
C6-DRSNR/L-45065-12	2.480	4.331	7.480	1.772	2.559	-6	-6	✓	2.45	G1083	C-DR12

G1083	RN..430

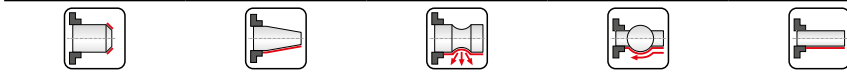
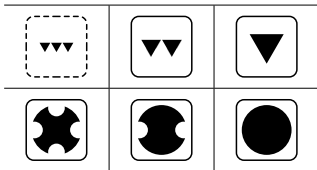
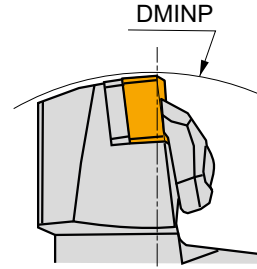
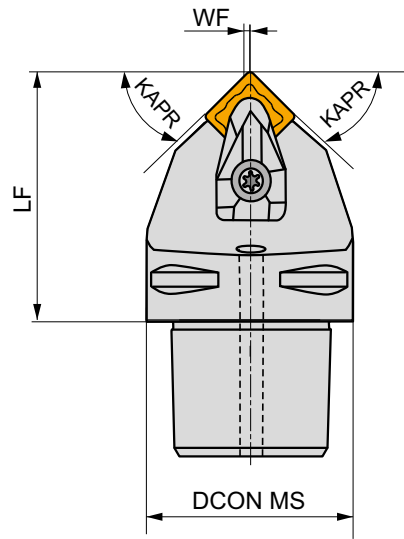
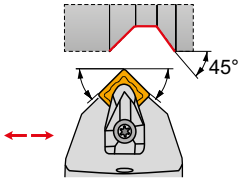
C-DR12	DCS 12	3.9	DRS 155-02	US 2002-T15P	FLAG T15P/3.5	CN 045-01

C.-DSDNN EXT

P M K N S H

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PRAMET



	DCON MS	DMINP	WF	LF	KAPR	LAMS	GAMO					
	[in]	[in]	[in]	[in]	[°]	[°]	[°]					
C4-DSDNN-00050-12	1.575	5.512	0.012	1.969	45	-6	-6	✓	.88	G1029	C-DS12-2	AT003
C5-DSDNN-00060-12	1.969	6.496	0.012	2.362	45	-6	-6	✓	1.72	G1029	C-DS12-2	AT003
C6-DSDNN-00070-19	2.480	7.677	0.020	2.756	45	-6	-6	✓	2.73	G1026	C-DS19	-

G1029					SN.. 43..							
G1026					SN.. 64..							

C-DS12-2	DCS 12	3.9	DSS 425-01	US 2002-T15P	FLAG T15P/3.5	-	CN 045-01
C-DS19	DCS 19	6.4	DSS 425-04	US 2007-T20P	-	LK T20P	CN 045-01

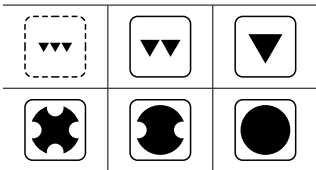
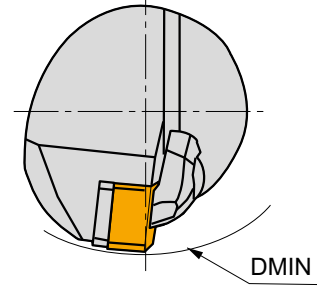
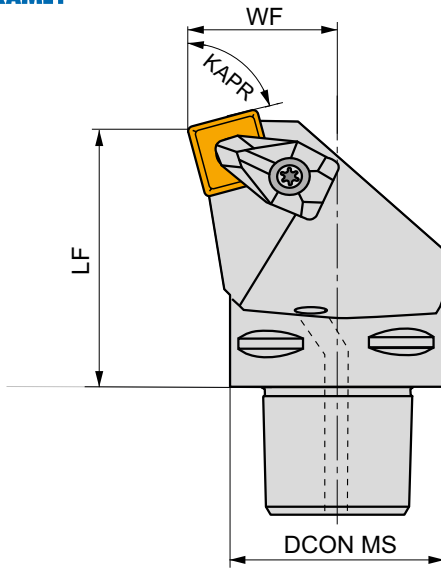
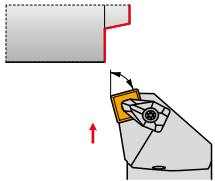
AT003	SN.. 45..	-	DDS 425-02
AT003	CER SN.N 43..	DCS 12C4	-
AT003	CER SN.A 43..	DCS 12C2	-

C.-DSKN(RL) EXT

P M K N S H

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PRAMET



	DCON MS	DMIN	WF	LF	KAPR	LAMS	GAMO					
	[in]	[in]	[in]	[in]	[°]	[°]	[°]					
C4-DSKNR/L-27050-12	1.575	4.331	1.063	1.969	75	-6	-6	✓	1.04	G1029	C-DS12-1	AT003



G1029



SN.. 43..



C-DS12-1



DCS 12



3.9



DSS 425-01



US 2002-T15P



FLAG T15P/3.5



CN 034-01



AT003



SN.. 45..



DCS 12C4



DDS 425-02

AT003

CER SN.N 43..

DCS 12C2

-

AT003

CER SN.A 43..

DCS 12C2

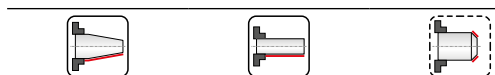
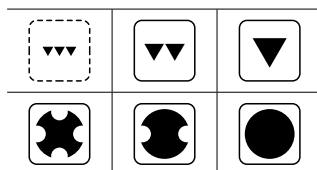
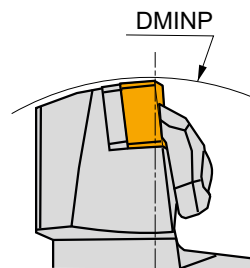
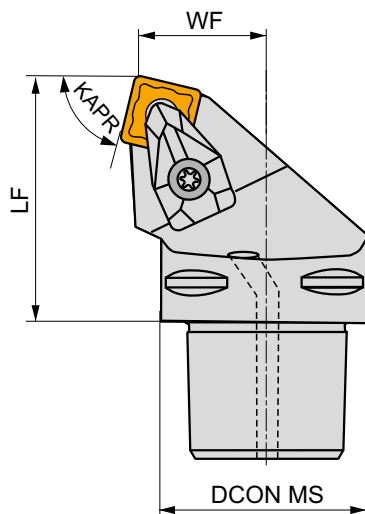
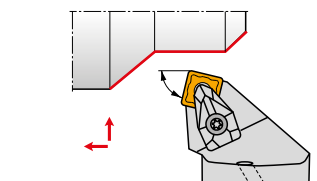
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C-DSRN(RL) EXT

P M K N S H

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PRAMET



	DCON MS	DMINP	WF	LF	KAPR	LAMS	GAMO					
	[in]	[in]	[in]	[in]	[°]	[°]	[°]					
C4-DSRNR/L-22050-12	1.575	5.512	0.866	1.969	75	-6	-6	✓	.88	G1029	C-DS12-1	AT003
C6-DSRNR/L-35065-19	2.480	7.480	1.378	2.559	75	-6	-6	✓	2.87	G1026	C-DS19	-

G1029					SN.. 43..							
G1026					SN.. 64..							

C-DS12-1	DCS 12	3.9	DSS 425-01	US 2002-T15P	FLAG T15P/3.5	-	CN 034-01
C-DS19	DCS 19	6.4	DSS 425-04	US 2007-T20P	-	LKT20P	CN 045-01

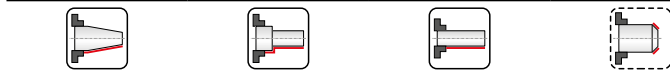
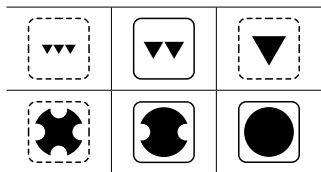
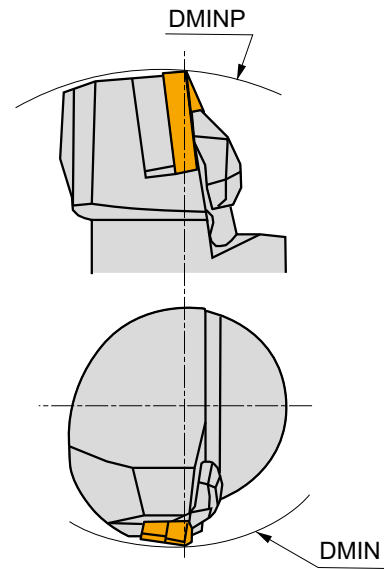
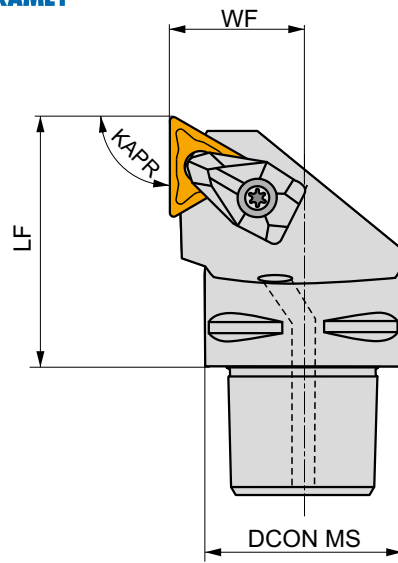
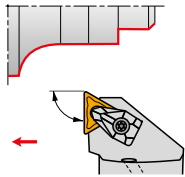
AT003	SN.. 45..	-	DDS 425-02
AT003	CER SN.N 43..	DCS 12C4	-
AT003	CER SN.A 43..	DCS 12C2	-

C.-DTJN(RL) EXT

P M K N S H

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PRAMET



	DCON MS	DMIN	DMINP	WF	LF	KAPR	LAMS	GAMO				
	[in]	[in]	[in]	[in]	[in]	[°]	[°]	[°]				
C4-DTJNR/L-27050-16	1.575	4.331	5.512	1.063	1.969	93	-6	-6	✓	.95	G1024	C-DT16
C5-DTJNR/L-35060-16	1.969	4.331	6.496	1.378	2.362	93	-6	-6	✓	1.72	G1024	C-DT16

G1024						TN..33..						

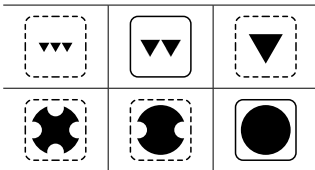
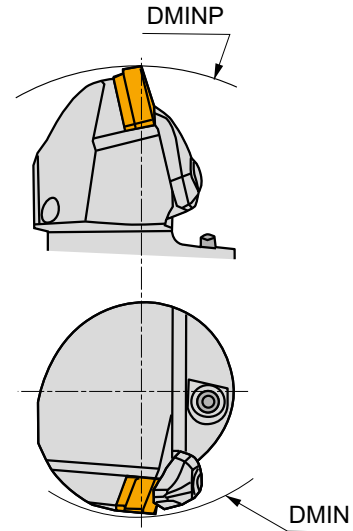
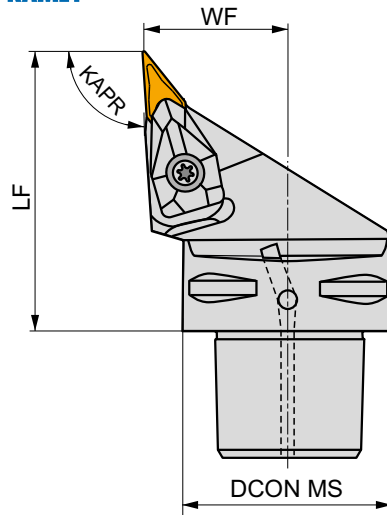
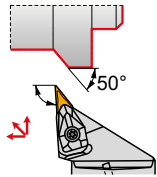
C-DT16	DCS 09	1.7	US 2004-T09P	FLAG T09P	CN 045-01							

C.-DVJN(RL) EXT

P M K N S H

D

PRAMET



	DCON MS	DMIN	DMINP	WF	LF	KAPR	LAMS	GAMO				
	[in]	[in]	[in]	[in]	[in]	[°]	[°]	[°]				
C4-DVJNR/L-27062-16	1.575	2.362	5.984	1.063	2.441	93	-13	-4	✓	.99	GI048	C-DV16-1
C5-DVJNR/L-35065-16	1.969	2.559	6.693	1.378	2.559	93	-13	-4	✓	1.59	GI048	C-DV16-2
C6-DVJNR/L-45065-16	2.480	3.189	7.480	1.772	2.559	93	-13	-4	✓	2.49	GI048	C-DV16-2

	GI048											
						VN..33..						

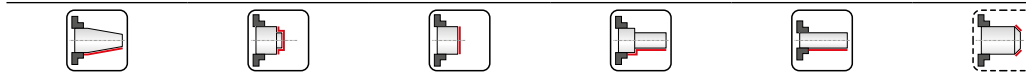
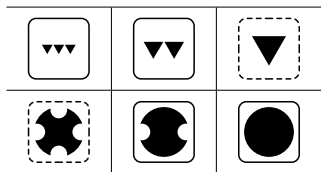
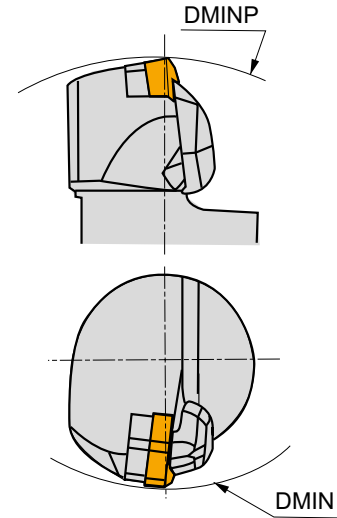
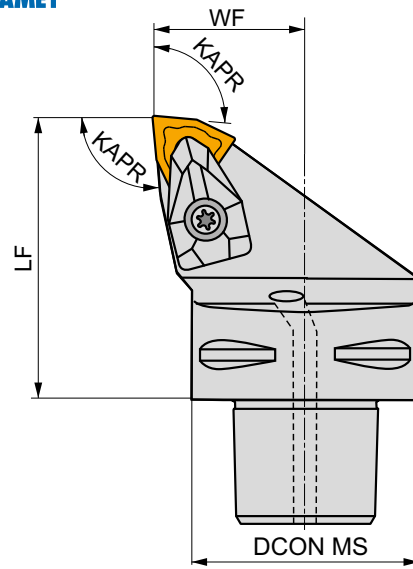
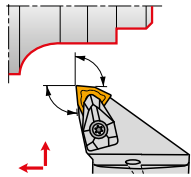
C-DV16-1	DCS 16V	3	DVS 269-01	US 2009-T15P	FLAG T15P/3.5	CN 034-01
C-DV16-2	DCS 16V	3	DVS 269-01	US 2009-T15P	FLAG T15P/3.5	CN 034-02

C.-DWLN(RL) EXT

P M K N S H

D

PRAMET



	DCON MS	DMIN	DMINP	WF	LF	KAPR	LAMS	GAMO					
	[in]	[in]	[in]	[in]	[in]	[°]	[°]	[°]		lbs			
C4-DWLN(RL)-27050-06	1.575	2.362	5.512	1.063	1.969	95	-6	-6	✓	.95	GI028	C-DW06	-
C4-DWLN(RL)-27050-08	1.575	4.331	5.512	1.063	1.969	95	-6	-6	✓	.95	GI072	C-DW08-1	AT004
C5-DWLN(RL)-35060-08	1.969	4.331	6.496	1.378	2.362	95	-6	-6	✓	1.63	GI072	C-DW08-2	AT004
C6-DWLN(RL)-45065-08	2.480	4.331	7.480	1.772	2.559	95	-6	-6	✓	2.95	GI072	C-DW08-2	AT004

GI028						WN.. 33..							
GI072						WN.. 43..							

C-DW06	DCS 09	1.7		DWS 328-01		US 2004-T09P		FLAG T09P				CN 034-01	
C-DW08-1	DCS 12	3.9		DWS 331-12		US 2002-T15P		FLAG T15P/3.5				CN 034-01	
C-DW08-2	DCS 12	3.9		DWS 331-12		US 2002-T15P		FLAG T15P/3.5				CN 045-01	

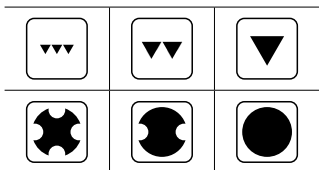
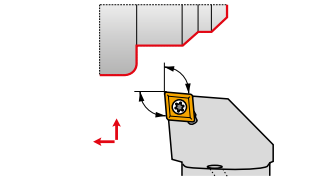
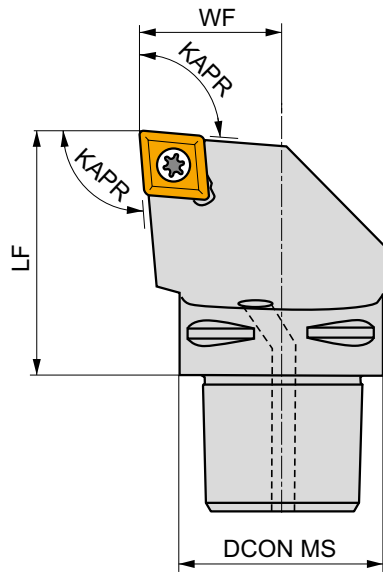
AT004		CER WN.N 43..						DCS 12C4					
AT004		CER WN.A 43..						DCS 12C2					

C.-SCLC(RL) EXT

P M K N S H

PRAMET

S



	DCON MS	WF	LF	KAPR	LAMS	GAMO				
	[in]	[in]	[in]	[°]	[°]	[°]				
C3-SCLCR/L-22040-09	1.260	.866	1.575	95	0	0	✓	.53	GI041	C-SC09S
C4-SCLCR/L-27050-09	1.575	1.063	1.969	95	0	0	✓	1.01	GI041	C-SC09S
C4-SCLCR-27050-12	1.575	1.063	1.969	95	0	0	✓	.99	GI011	C-SC12-1
C5-SCLCR/L-35060-12	1.969	1.378	2.362	95	0	0	✓	1.87	GI011	C-SC12-2

GI041	CC.. 32.5..
GI011	CN.. 43..

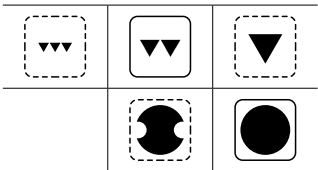
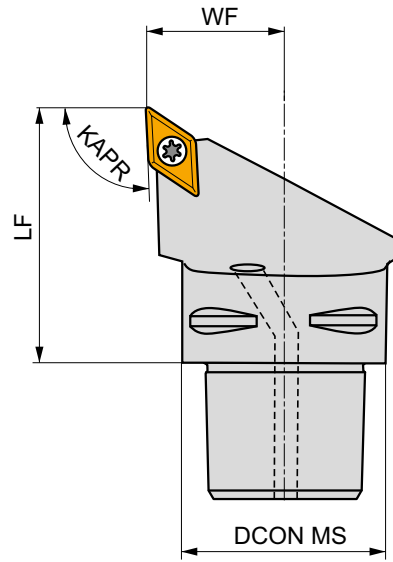
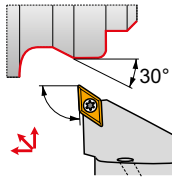
C-SC09S	US 2001-T15P	3.0	M3.5	.48	SCS 232-01	MS 9001	FLAG T15P/3.5	CN 034-01
C-SC12-1	US 2018-T15P	3.0	M4	.55	SCS 232-02	MS 9003	FLAG T15P/4	CN 034-01
C-SC12-2	US 2018-T15P	3.0	M4	.55	SCS 232-02	MS 9003	FLAG T15P/4	CN 034-02

C.-SDJCR(L) EXT

P M K N S H

S

PRAMET



	DCON MS	WF	LF	KAPR	LAMS	GAMO				
	[in]	[in]	[in]	[°]	[°]	[°]				
C3-SDJCR/L-22040-11	1.260	.866	1.575	93	0	0	✓	.46	G1012	C-SD11V-1
C4-SDJCR/L-27050-11	1.575	1.063	1.969	93	0	0	✓	.90	G1012	C-SD11V-1
C5-SDJCR/L-35060-11	1.969	1.378	2.362	93	0	0	✓	1.52	G1012	C-SD11V-2

G1012	DC. 32.5..

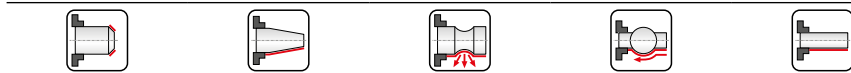
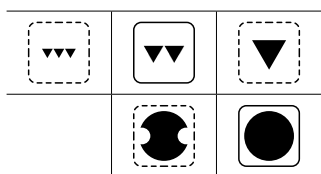
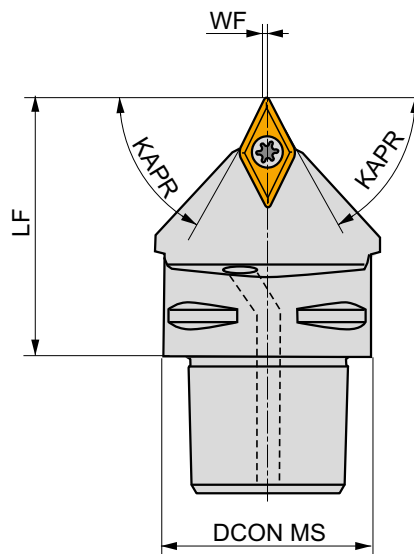
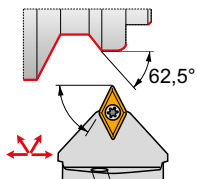
C-SD11V-1	US 2001-T15P	3.0	M3.5	.48	SDS 263-01	MS 9001	FLAG T15P/3.5	CN 034-01
C-SD11V-2	US 2001-T15P	3.0	M3.5	.48	SDS 263-01	MS 9001	FLAG T15P/3.5	CN 034-02

C.-SDN CN EXT

P M K N S H

S

PRAMET



	DCON MS	WF	LF	KAPR	LAMS	GAMO				
	[in]	[in]	[in]	[°]	[°]	[°]		lbs		
C4-SDN CN-00050-11	1.575	.020	1.969	62.5	0	0	✓	.84	GI012	C-SD11V-1
C5-SDN CN-00060-11	1.969	.020	2.362	62.5	0	0	✓	1.46	GI012	C-SD11V-2

	GI012		DC.. 32.5..
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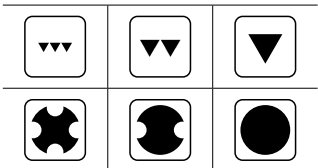
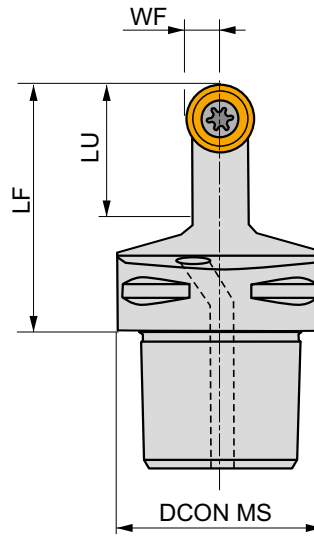
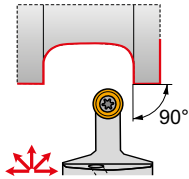
C-SD11V-1	US 2001-T15P	3.0	M3.5	.48	SDS 263-01	MS 9001	FLAG T15P/3.5	CN 034-01
C-SD11V-2	US 2001-T15P	3.0	M3.5	.48	SDS 263-01	MS 9001	FLAG T15P/3.5	CN 034-02

C.-SRDCN EXT

P M K N S H

S

PRAMET



	DCON MS	WF	LF	LU	LAMS	GAMO				
	[in]	[in]	[in]	[in]	[°]	[°]				
C5-SRDCN-00060-10A	1.969	.197	2.362	.984	0	0	✓	1.37	GI013	C-SR10V
C4-SRDCN-00050-12A	1.575	.236	1.969	1.102	0	0	✓	.73	GI014	C-SR12V-1
C5-SRDCN-00060-12A	1.969	.236	2.362	1.102	0	0	✓	1.37	GI014	C-SR12V-2

GI013	RC.. 10T3MO
GI014	RC.. 1204MO

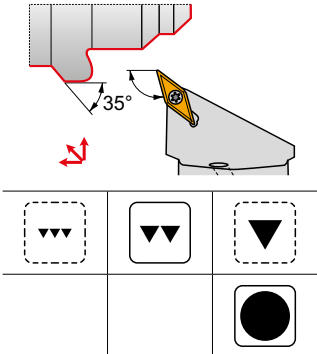
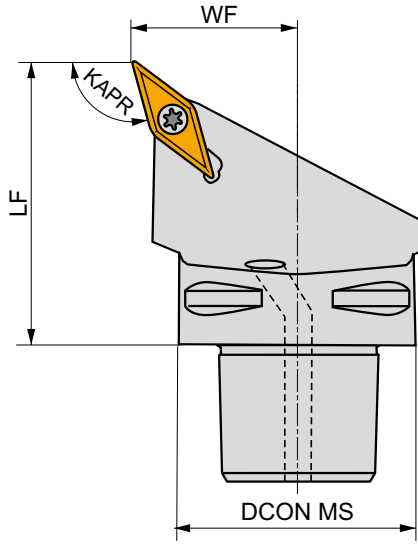
C-SR10V	US 2010-T15P	3.0	M3.5	.40	SRS 110-01	MS 9001	FLAG T15P/3.5	CN 034-02
C-SR12V-1	US 2001-T15P	3.0	M3.5	.48	SRS 110-02	MS 9001	FLAG T15P/3.5	CN 034-01
C-SR12V-2	US 2001-T15P	3.0	M3.5	.48	SRS 110-02	MS 9001	FLAG T15P/3.5	CN 034-02

C.-SVHB(RL) EXT

P M K N S H

S

PRAMET



	DCON MS	WF	LF	KAPR	LAMS	GAMO				
	[in]	[in]	[in]	[°]	[°]	[°]				
C4-SVHBR/L-27050-16	1.575	1.063	1.969	107.5	0	0	✓	.86	GI017	C-SV16S-1
C5-SVHBR/L-35060-16	1.969	1.378	2.362	107.5	0	0	✓	1.54	GI017	C-SV16S-2
C6-SVHBR/L-45065-16	2.480	1.772	2.559	107.5	0	0	✓	2.47	GI017	C-SV16S-2

GI017		VB.. 33..							VC.. 33..	

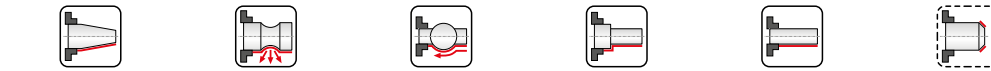
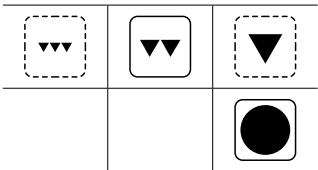
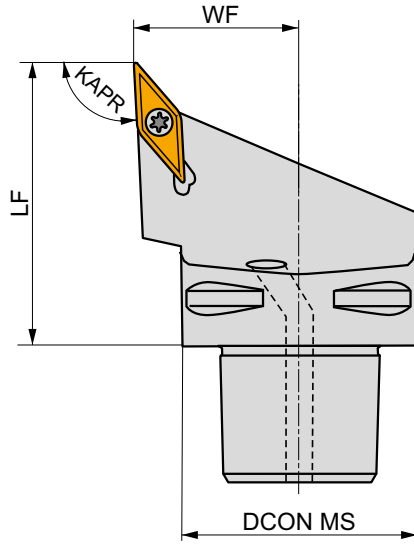
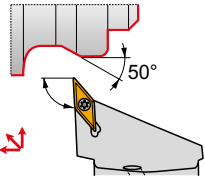
C-SV16S-1	US 2001-T15P	3.0	M3.5	.48	SVS 270-01	MS 9001	FLAG T15P/3.5	CN 034-01	
C-SV16S-2	US 2001-T15P	3.0	M3.5	.48	SVS 270-01	MS 9001	FLAG T15P/3.5	CN 034-02	

C.-SVJB(RL) EXT

P M K N S H

S

PRAMET



	DCON MS	WF	LF	KAPR	LAMS	GAMO				
	[in]	[in]	[in]	[°]	[°]	[°]				
C3-SVJBR-22040-11-B1	1.260	0.866	1.575	93	0	0	✓	0.44	GI194	C-SV11
C4-SVJBR-27050-11-B1	1.575	1.063	1.969	93	0	0	✓	0.84	GI194	C-SV11
C4-SVJBR/L-27050-16	1.575	1.063	1.969	93	0	0	✓	0.77	GI017	C-SV16S-1
C5-SVJBR/L-35060-16	1.969	1.378	2.362	93	0	0	✓	1.41	GI017	C-SV16S-2
C6-SVJBR/L-45065-16	2.480	1.772	2.559	93	0	0	✓	2.45	GI017	C-SV16S-2

GI194	VB.. 22.. VC.. 22..
GI017	VB.. 33.. VC.. 33..

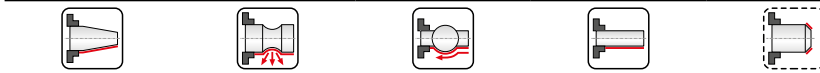
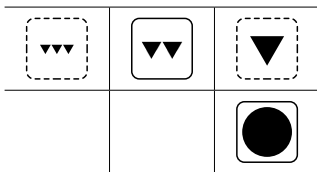
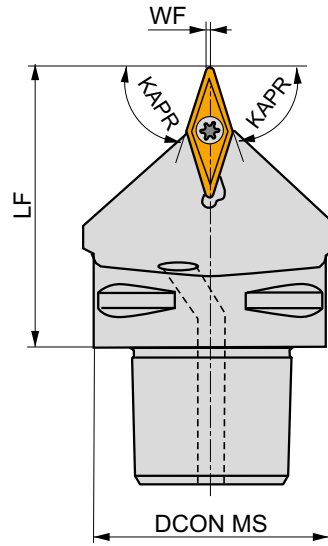
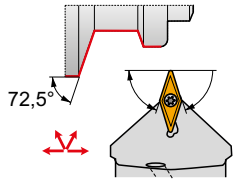
C-SV11	US 2003-T07P	.8	M2.5	.26	-	-	FLAG T07P	CN 034-01
C-SV16S-1	US 2001-T15P	3.0	M3.5	.48	SVS 270-01	MS 9001	FLAG T15P/3.5	CN 034-01
C-SV16S-2	US 2001-T15P	3.0	M3.5	.48	SVS 270-01	MS 9001	FLAG T15P/3.5	CN 034-02

C.-SVVBN EXT

P M K N S H

PRAMET

S



	DCON MS	WF	LF	KAPR	LAMS	GAMO				
	[in]	[in]	[in]	[°]	[°]	[°]				
C4-SVVBN-00050-16	1.575	.024	1.969	72.5	0	0	✓	.79	GI017	C-SV16S-1
C5-SVVBN-00060-16	1.969	.024	2.362	72.5	0	0	✓	1.23	GI017	C-SV16S-2
C6-SVVBN-00065-16	2.480	.024	2.559	72.5	0	0	✓	2.20	GI017	C-SV16S-2

GI017		VB.. 33..							VC.. 33..	

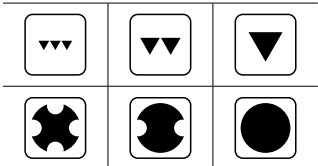
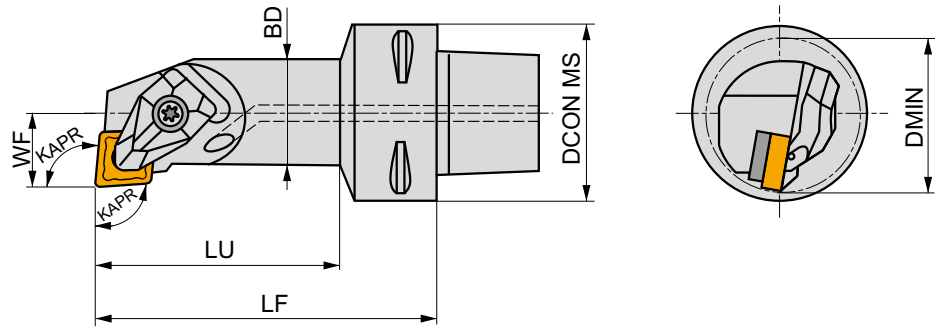
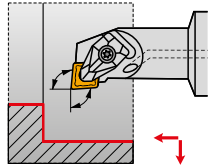
C-SV16S-1	US 2001-T15P	3.0	M3.5	.48	SVS 270-01	MS 9001	FLAG T15P/3.5	CN 034-01
C-SV16S-2	US 2001-T15P	3.0	M3.5	.48	SVS 270-01	MS 9001	FLAG T15P/3.5	CN 034-02

C-DCLN(RL) INT

P M K N S H

PRAMET

D



	DCON MS	DIMN	WF	LF	LU	BD	KAPR	LAMS	GAMO				
	[in]	[in]	[in]	[in]	[in]	[in]	[°]	[°]	[°]				
C4-DCLNR-13080-09	1.575	.984	.512	3.150	2.244	.787	95	-14	-6	✓	.95	G133	DC09
C4-DCLNR/L-17090-12	1.575	1.260	.669	3.543	2.677	.984	95	-12	-6	✓	1.17	G1043	DCI12
C5-DCLNR/L-17090-12	1.969	1.260	.669	3.543	2.598	.984	95	-12	-6	✓	1.61	G1043	DCI12
C6-DCLNR-17100-12	2.480	1.260	.669	3.937	2.835	.984	95	-12	-6	✓	2.51	G1043	DCI12
C6-DCLNR-27140-16	2.480	1.969	1.063	5.512	4.488	1.575	95	-16	-6	✓	3.97	G1050	DC16

G133		CN.. 32..
G1043		CN.. 43..
G1050		CN.. 54..

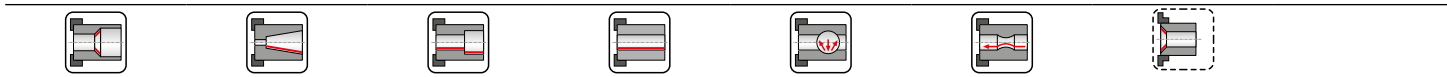
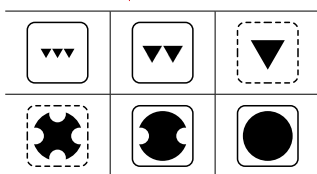
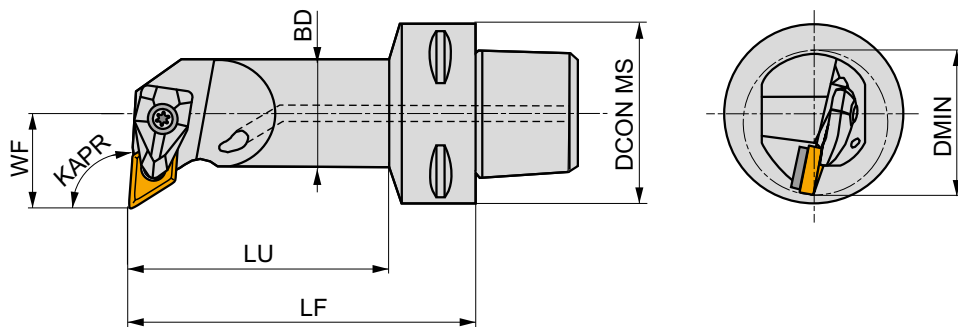
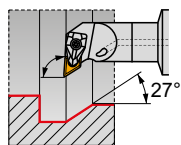
DC09	DCS 09	1.7	DCS 236-04	US 2004-T09P	FLAG T09P	-
DCI12	DCS 12	3.9	DCS 234-01	US 2002-T15P	FLAG T15P/3.5	-
DC16	DCS 16	6.4	DCS 234-03	US 2007-T20P	-	LKT20P

C-DDUN(RL) INT

P M K N S H

PRAMET

D



	DCON MS	DIMN	WF	LF	LU	BD	KAPR	LAMS	GAMO				
	[in]	[in]	[in]	[in]	[in]	[in]	[°]	[°]	[°]				
C4-DDUNR/L-17090-11	1.575	1.260	.669	3.543	2.677	.984	93	-12	-6	✓	1.12	G1046	DD11

G1046						DN..33..							

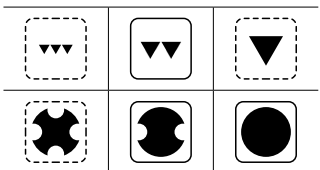
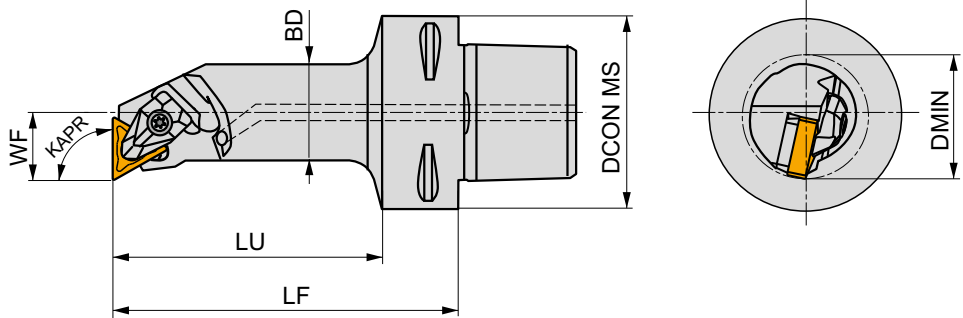
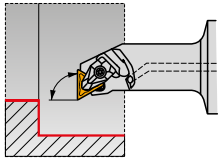
DD11	DCS 09	1.7	DDS 267-01	US 2004-T09P	FLAG T09P								

C.-DTFN(RL) INT

P M K N S H

PRAMET

D



	DCON MS	DIMN	WF	LF	LU	BD	KAPR	LAMS	GAMO				
	[in]	[in]	[in]	[in]	[in]	[in]	[°]	[°]	[°]		lbs		
C4-DTFNR-17090-16	1.575	1.260	.669	3.543	2.677	.984	91	-12	-6	✓	1.21	GI024	DTI16

	GI024						TN..33..						
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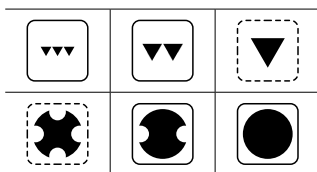
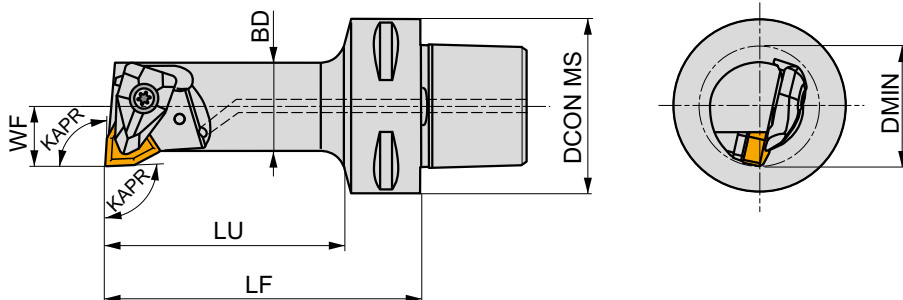
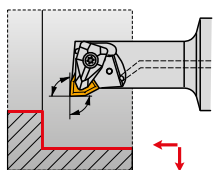
DTI16	DCS 09	1.7	DTS 316-01	US 2004-T09P	FLAG T09P

C-DWLN(RL) INT

P M K N S H

PRAMET

D



	DCON MS	DIMN	WF	LF	LU	BD	KAPR	LAMS	GAMO				
	[in]	[in]	[in]	[in]	[in]	[in]	[°]	[°]	[°]				
C4-DWLN(RL)-13075-06	1.575	1.063	.512	2.953	2.047	.787	95	-17	-6	✓	0.93	GI028	DW06
C4-DWLN(RL)-17090-08	1.575	1.299	.669	3.543	2.677	.984	95	-12	-6	✓	1.17	GI072	DWI08

GI028						WN.. 33..							
GI072						WN.. 43..							

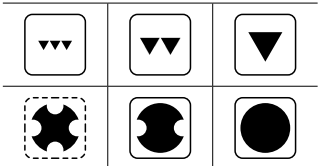
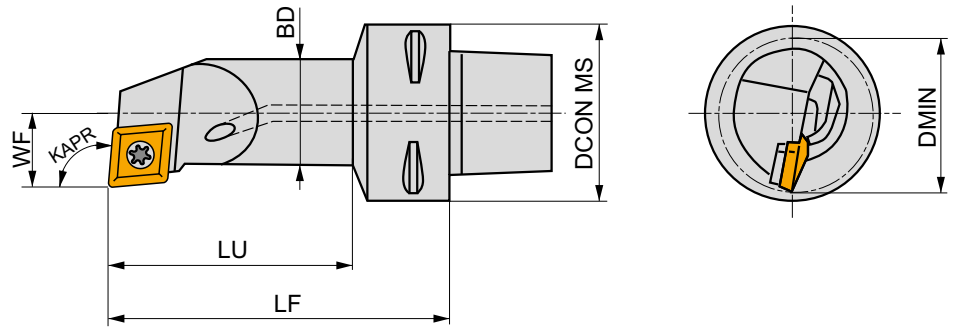
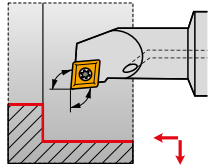
DW06	DCS 09	1.7	DWS 328-01	US 2004-T09P	FLAG T09P								
DWI08	DCS 12	3.9	DWS 328-02	US 2002-T15P	FLAG T15P/3.5								

C.-SCLC(RL) INT

P M K N S H

S

PRAMET



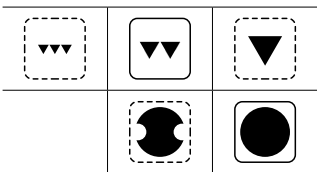
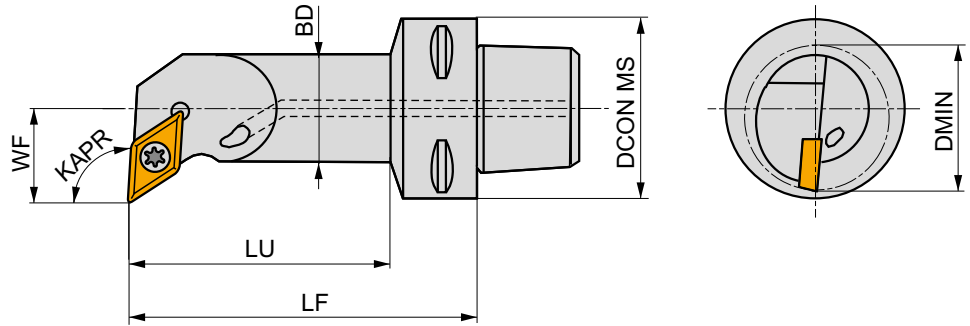
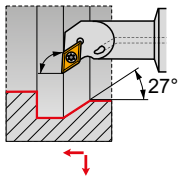
	DCON MS	DMIN	WF	LF	LU	BD	KAPR	LAMS	GAMO				
	[in]	[in]	[in]	[in]	[in]	[in]	[°]	[°]	[°]				
C3-SCLCR-11065-09	1.260	.787	.433	2.559	1.890	.630	95	-8.4	0	✓	.44	G1041	SC09M
C3-SCLCR-13075-09	1.260	.984	.512	2.953	2.283	.787	95	-5.8	0	✓	.57	G1041	SC09M
C4-SCLCR/L-11070-09	1.575	.787	.433	2.756	1.850	.630	95	-8.4	0	✓	.79	G1041	SC09M
C4-SCLCR/L-13080-09	1.575	.984	.512	3.150	2.244	.787	95	-5.8	0	✓	.90	G1041	SC09M
C4-SCLCR-17090-09	1.575	1.260	.669	3.543	2.677	.984	95	-3.4	0	✓	1.15	G1041	SC09M
C5-SCLCR/L-11070-09	1.969	.787	.433	2.756	1.811	.630	95	-8.4	0	✓	1.26	G1041	SC09M
C5-SCLCR/L-13080-09	1.969	.984	.512	3.150	2.205	.787	95	-5.8	0	✓	1.43	G1041	SC09M

C.-SDUC(RL) INT

P M K N S H

PRAMET

S

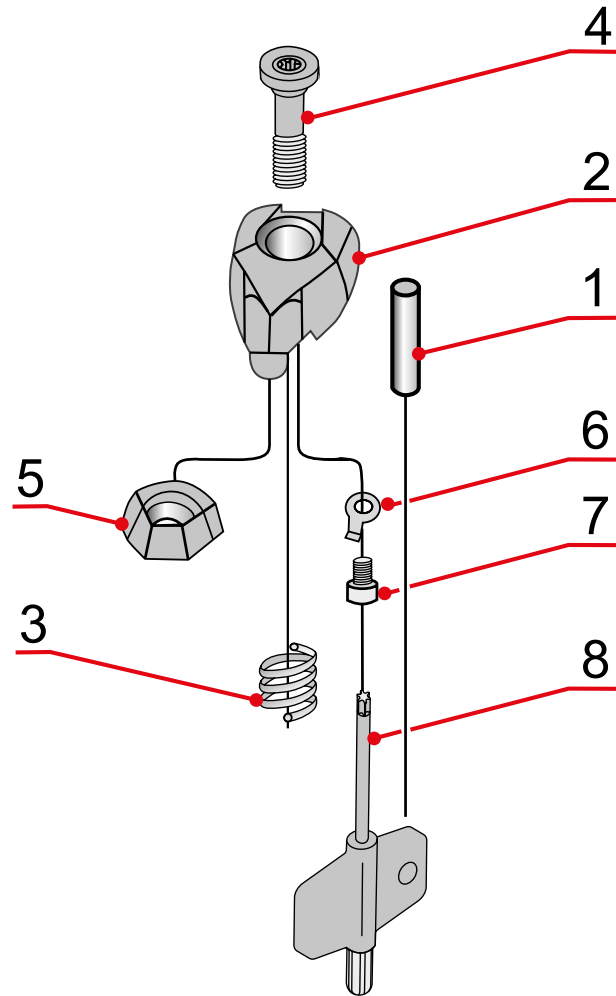












	DCON MS	DMIN	WF	LF	LU	BD	KAPR	LAMS	GAMO				
	[in]	[in]	[in]	[in]	[in]	[in]	[°]	[°]	[°]		lbs		
C3-SDUCR-11065-07	1.969	.787	.433	2.559	1.890	.630	93	-4.3	0	✓	.44	GI052	SV11
C4-SDUCR/L-11070-07	1.575	.787	.433	2.756	1.850	.630	93	-4.3	0	✓	.79	GI052	SV11
C4-SDUCR/L-13080-11	1.575	.984	0.512	3.150	2.244	.787	93	-5.8	0	✓	.90	GI012	SC09M
C4-SDUCR/L-17090-11	1.575	1.260	0.669	3.543	2.677	.984	93	-3.4	0	✓	1.15	GI012	SV16
C5-SDUCR/L-13080-11	1.969	.984	.512	3.150	2.205	.787	93	-5.8	0	✓	1.43	GI012	SC09M
C5-SDUCR-17090-11	1.969	1.260	0.669	3.543	2.638	.984	93	-3.4	0	✓	1.52	GI012	SV16

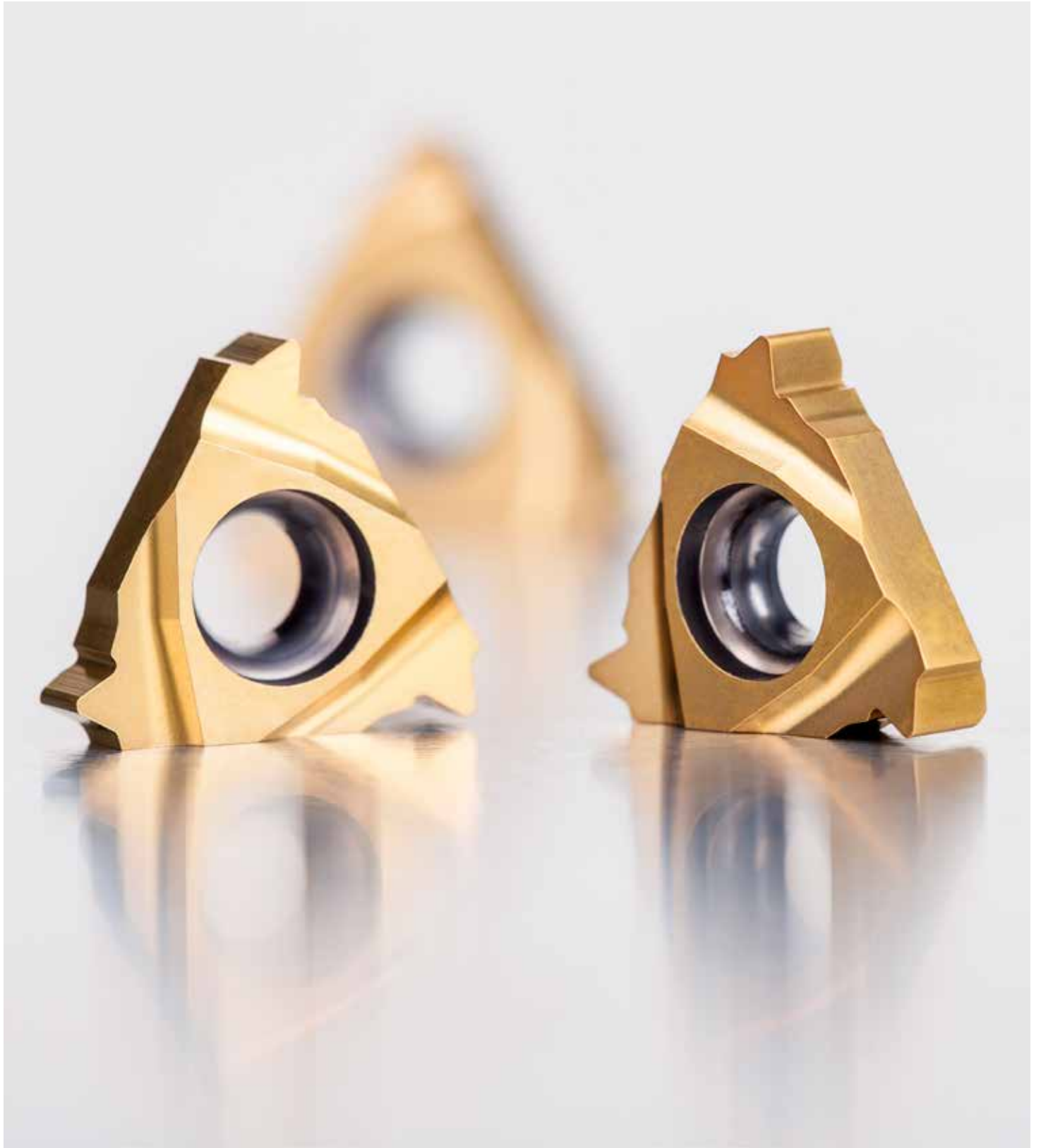
GI052	DC.. 21.5..
GI012	DC.. 32.5..

SV11	US 2003-T07P	0.8	M2.5	.26	FLAGT07P
SC09M	US 2009-T15P	3.0	M3.5	.40	FLAGT15P/3.5
SV16	US 2010-T15P	3.0	M3.5	.40	FLAGT15P/3.5

COMPLETE CLAMP SET



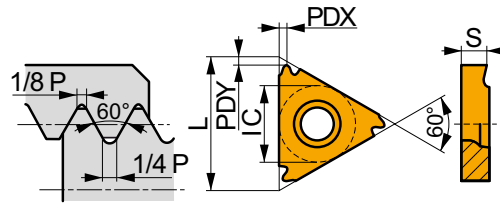
	1	2	3	4		5	6	7	8
									
DCS 09	CP 2655	CD 09	PR 0157	CS 8601-T09P	1.7	-	-	-	-
DCS 12	CP 2607	CD 12	PR 0158	CS 8602-T15P	3.9	-	-	-	-
DCS 16	CP 2607	CD 16	PR 0159	CS 8603-T20P	6.4	-	-	-	-
DCS 19	CP 2607	CD 19	PR 0159	CS 8603-T20P	6.4	-	-	-	-
DCS 25	CP 2607	CD 25	PR 0101	CS 8604-T25P	9.5	-	-	-	-
DCS 16V	CP 2607	CD 16V	PR 0158	CS 8602-T15P	3.9	-	-	-	-
DCS 12C2	CP 2607	CD 12C2	PR 0158	CS 8602-T15P	3.9	PP 3002	H 1201	CS 9701-T07P	FLAG T07P
DCS 16C2	CP 2607	CD 16C2	PR 0159	CS 8603-T20P	6.4	PP 3003	H 1201	CS 9701-T07P	FLAG T07P
DCS 12C4	CP 2607	CD 12C4	PR 0158	CS 8602-T15P	3.9	PP 3002	H 1201	CS 9701-T07P	FLAG T07P
DCS 16C4	CP 2607	CD 16C4	PR 0159	CS 8603-T20P	6.4	PP 3003	H 1201	CS 9701-T07P	FLAG T07P



TN M EXT



	IC	L	S
16	3/8	.650	.137

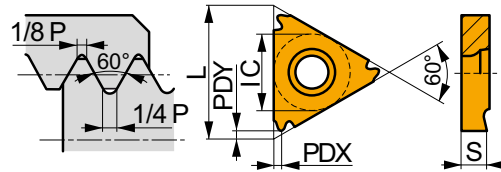


i	ANSI	Material	P	M	K	N	S	H	?	Water	RE	FN	FX	CDN	CDX	TP	TPI	PDX	PDY
	TN 16ER050M-AL	HF7				■			●	+++	-	-	-	-	-	0.50	-	.031	.031
	TN 16ER075M-AL	HF7				■			●	+++	-	-	-	-	-	0.75	-	.031	.031
	TN 16ER080M-AL	HF7				■			●	+++	-	-	-	-	-	0.80	-	.023	.031
	TN 16ER100M-AL	HF7				■			●	+++	-	-	-	-	-	1.00	-	.031	.031
	TN 16ER125M-AL	HF7				■			●	+++	-	-	-	-	-	1.25	-	.031	.031
	TN 16ER150M-AL	HF7				■			●	+++	-	-	-	-	-	1.50	-	.031	.031
	TN 16ER175M-AL	HF7				■			●	+++	-	-	-	-	-	1.75	-	.059	.047
	TN 16ER200M-AL	HF7				■			●	+++	-	-	-	-	-	2.00	-	.059	.047
	TN 16ER250M-AL	HF7				■			●	+++	-	-	-	-	-	2.50	-	.059	.047
	TN 16ER300M-AL	HF7				■			●	+++	-	-	-	-	-	3.00	-	.059	.047

TN M INT



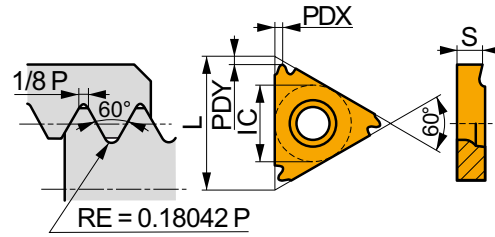
	IC	L	S
16	3/8	.650	.137



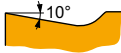
i	ANSI	Material	P	M	K	N	S	H	?	Water	RE	FN	FX	CDN	CDX	TP	TPI	PDX	PDY
	TN 16NR050M-AL	HF7				■			●	+++	-	-	-	-	-	0.50	-	.031	.031
	TN 16NR075M-AL	HF7				■			●	+++	-	-	-	-	-	0.75	-	.031	.031
	TN 16NR100M-AL	HF7				■			●	+++	-	-	-	-	-	1.00	-	.031	.031
	TN 16NR125M-AL	HF7				■			●	+++	-	-	-	-	-	1.25	-	.031	.031
	TN 16NR150M-AL	HF7				■			●	+++	-	-	-	-	-	1.50	-	.031	.031
	TN 16NR175M-AL	HF7				■			●	+++	-	-	-	-	-	1.75	-	.059	.047
	TN 16NR200M-AL	HF7				■			●	+++	-	-	-	-	-	2.00	-	.059	.047
	TN 16NR250M-AL	HF7				■			●	+++	-	-	-	-	-	2.50	-	.059	.047
	TN 16NR300M-AL	HF7				■			●	+++	-	-	-	-	-	3.00	-	.059	.047

TN MJ EXT

	IC	L	S
16	3/8	.650	.137

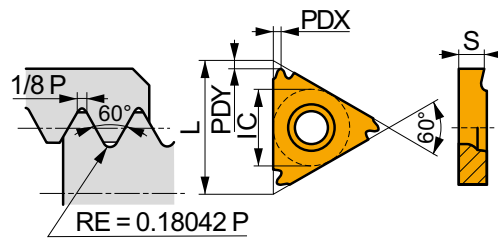


i	ANSI	T8030	P	M	K	N	S	H	?	RE	FN	FX	CDN	CDX	TP	TPI	PDX	PDY
1	TN 16ER100MJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	1.00	-	.031	.031
	TN 16ER150MJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	1.50	-	.031	.031



TN UNJ EXT

	IC	L	S
16	3/8	.650	.137



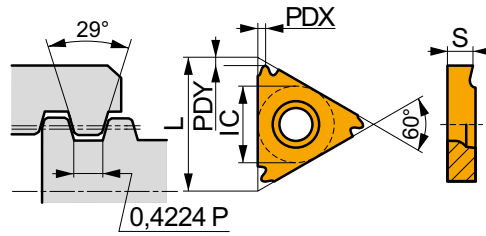
i	ANSI	T8030	P	M	K	N	S	H	?	RE	FN	FX	CDN	CDX	TP	TPI	PDX	PDY
1	TN 16ER320UNJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	-	32	.031	.031
	TN 16ER280UNJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	-	28	.031	.031
	TN 16ER240UNJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	-	24	.031	.031
	TN 16ER200UNJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	-	20	.031	.031
	TN 16ER180UNJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	-	18	.031	.031
	TN 16ER160UNJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	-	16	.059	.047
	TN 16ER120UNJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	-	12	.059	.047
	TN 16EL320UNJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	-	32	.031	.031
U	TN 16EL280UNJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	-	28	.031	.031
	TN 16EL240UNJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	-	24	.031	.031
	TN 16EL200UNJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	-	20	.031	.031
	TN 16EL180UNJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	-	18	.031	.031
	TN 16EL160UNJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	-	16	.059	.047
	TN 16EL120UNJ	T8030	■	■	■	□	□	□	●	+++	-	-	-	-	-	12	.059	.047



TN STACME EXT



	IC	L	S
16	3/8	.650	.137

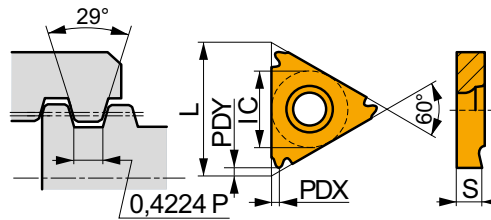


		ANSI		P	M	K	N	S	H			RE	FN	FX	CDN	CDX	TP	TPI	PDX	PDY	
 		TN 16ER160STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	16	.031	.031	
		TN 16ER120STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	12	.031	.031
		TN 16ER100STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	10	.059	.051
		TN 16ER080STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	8	.059	.051
		TN 16ER060STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	6	.055	.051
 		TN 16EL160STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	16	.031	.031	
		TN 16EL120STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	12	.031	.031
		TN 16EL100STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	10	.059	.051
		TN 16EL080STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	8	.059	.051
		TN 16EL060STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	6	.055	.051

TN STACME INT





	IC	L	S
16	3/8	.650	.137



		ANSI		P	M	K	N	S	H			RE	FN	FX	CDN	CDX	TP	TPI	PDX	PDY	
 		TN 16NR160STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	16	.031	.031	
		TN 16NR120STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	12	.031	.031
		TN 16NR100STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	10	.059	.051
		TN 16NR080STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	8	.059	.051
		TN 16NR060STACME*	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	6	.051	.051
 		TN 16NL160STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	16	.031	.031	
		TN 16NL120STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	12	.031	.031
		TN 16NL100STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	10	.059	.051
		TN 16NL080STACME	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	8	.059	.051
		TN 16NL060STACME*	T8030	■	■	■		▣		●	+++	-	-	-	-	-	-	-	6	.051	.051

ADDITIONAL INSERTS

ANSI	
CCMT 32.50.5-UR	T6310
CCMT 32.50.5-UR	T8330
CNMG 543-R	T7335
CNMG 544-NMR	T9315
DCMT 32.51-FM	T9310
DCMT 32.52-FM	T9310
DNMG 443-FM	T9310
TNMG 333-FM	T9310
TNMG 333-SF	T6310
TNMG 333-SF	T9325
TNMG 333-SM	T6310
TNMG 431-SF	T6310
TNMG 431-SF	T7325
TNMG 431-SF	T9325
TNMG 432-SF	T6310
TNMG 432-SF	T7325
TNMG 432-SF	T9325
TNMG 432-SM	T6310
VBMT 332-FM	T9310
VCGT 2.520.5-NF2	T6310
VCGT 2.522-NF2	T6310
WNMG 332-SF	T9315
WNMG 333-RM	T9310

ANSI	
TN 16EL080ACME	T8030
TN 16EL100ACME	T8030
TN 16EL120ACME	T8030
TN 16NL080ACME	T8030
TN 16NL100ACME	T8030
TN 16NL120ACME	T8030
TN 16NR100ACME	T8030
TN 16NR120ACME	T8030
TN 22NL060ACME	T8030
TN 16EL110BSPT	T8030
TN 16EL140BSPT	T8030
TN 16EL190BSPT	T8030
TN 16EL280BSPT	T8030
TN 16ER190BSPT	T8030
TN 16ER280BSPT	T8030
TN 16NL110BSPT	T8030
TN 16NL140BSPT	T8030
TN 16NL190BSPT	T8030
TN 16NL280BSPT	T8030
TN 16NR190BSPT	T8030
TN 16NR280BSPT	T8030
TN 16EL350M*	T8030
TN 16ER350M*	T8030

ANSI	
TN 16NL350M*	T8030
TN 16NR350M*	T8030
TN 16EL060RD*	T8030
TN 16EL080RD	T8030
TN 16EL100RD	T8030
TN 16NL060RD*	T8030
TN 16NL080RD	T8030
TN 16NL100RD	T8030
TN 16EL240W	T8030
TN 16EL260W	T8030
TN 16ER240W	T8030
TN 16ER260W	T8030
TN 16NL240W	T8030
TN 16NL260W	T8030
TN 16NR240W	T8030
TN 16NR260W	T8030

* Toolholders have to be modified

MILLING





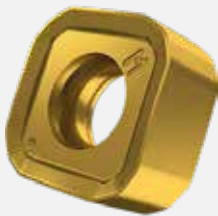
HIGH FEED MILLING WITH EIGHT INDEXES UP TO .067 in DEPTH

Wide range of tools for economical high feed milling in die and mold and general machining industries. Strong inserts with eight cutting edges for high performance machining of various materials and applications.

FEATURES & BENEFITS

- Double-sided square inserts with eight cutting edges
- Axial depth of cut up to 0.067"
- Strong main cutting edge
- MM geometry designed for smoother cut
- Cutters for copy milling, helical interpolation, ramping and face milling
- Diameter range 1.500" - 4.000" with intermediate sizes for die and mold
- End mills, modular and shell mills
- All cutters feature special through coolant design
- **Cost savings** - eight indexes for price-per-edge efficiency
- **Increased productivity** - High feed milling with up to 50% higher metal removal rates due to greater depths
- **Process security** - Especially when machining corners inside a pocket
- **Avoids chatter** - Suitable for 5-10 x D reach (high overhang)
- **Complete die and mold solution** - Wide range of applications, machined materials, cutters diameters and types

INSERT GEOMETRIES

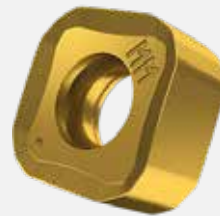


NEW

M

GEOMETRY M

- Steels and cast steels
- Secondary: cast iron



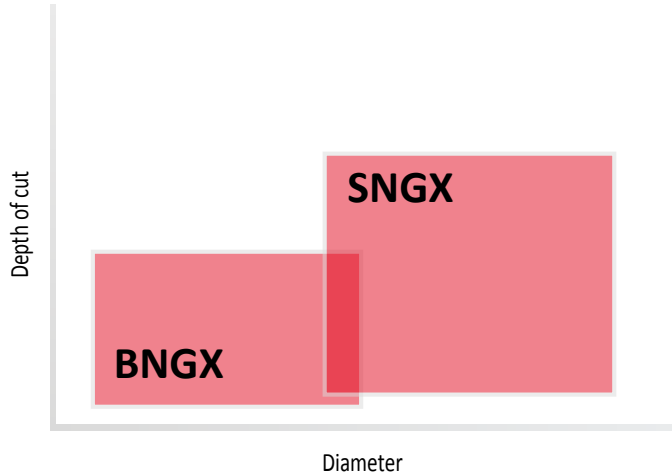
NEW

MM

GEOMETRY MM

- Stainless steels, soft steels and cast steels, and superalloys

AREA OF APPLICATION



Operation			Face milling
Insert geometry			M
Cutting speed	v_c	in/min	656
Inches per tooth	IPT	in	.047
Inches per minute	IPM	in/min	335
Axial depth of cut	a_p	in	.059
Radial depth of cut	a_e	in	1.378

MACHINING EXAMPLE

Material: Tool steel H11 (300 HB)
 Material group: P
 Workpiece: Plate
 Insert: SNGX 110416SR-M:M8310
 Tool: HFC face milling cutter
 200A05R-ISMOSN11-C
 Coolant: No



ISSN11

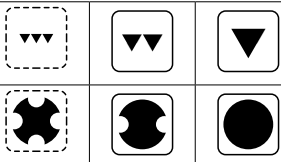
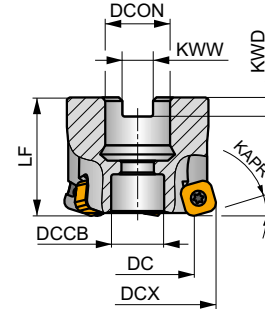
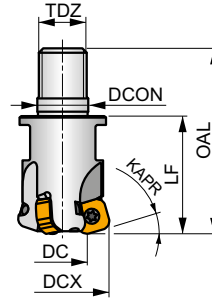
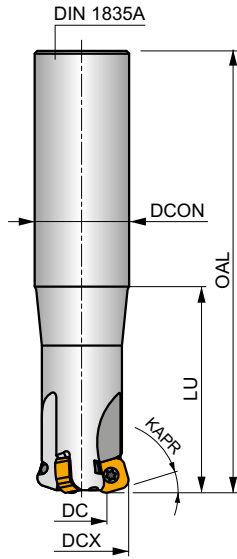
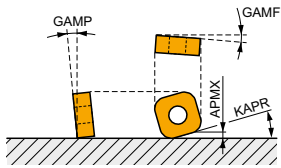
P M K S H

PRAMET

S



KAPR	18°
APMX	.067 in



	.008-.018
	.008-.018



ANSI	DCX	DC	LF	DCON MS	DCCB	KWW	KWD	GAMP	GAMF										
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[°]	[°]										
150A04R-ISMOSN11-C	1.500	0.957	1.575	0.500	0.409	0.258	0.165	-10	-10.5	4	✓	16100	✓	0.18	G339	IC0316	-	-	-
200A05R-ISMOSN11-C	2.000	1.453	1.575	0.750	0.630	0.321	0.193	-10	-10	5	✓	13900	✓	0.34	G339	IC0318	-	-	-
200A06R-ISMOSN11-C	2.000	1.453	1.575	0.750	0.630	0.321	0.193	-10	-10	6	✓	13900	✓	0.34	G339	IC0318	-	-	-
250A06R-ISMOSN11-C	2.500	1.953	1.575	0.750	0.630	0.321	0.193	-10	-10	6	✓	12400	✓	0.49	G339	IC0318	-	-	-
250A08R-ISMOSN11-C	2.500	1.953	1.575	0.750	0.630	0.321	0.193	-10	-10	8	✓	12400	✓	0.49	G339	IC0318	-	-	-
300A07R-ISMOSN11-C	3.000	2.453	1.969	1.000	0.827	0.382	0.224	-10	-10	7	✓	11400	✓	1.02	G339	IC0320	-	-	-
300A09R-ISMOSN11-C	3.000	2.453	1.969	1.000	0.827	0.382	0.224	-10	-10	9	✓	11400	✓	1.01	G339	IC0320	-	-	-
400A08R-ISMOSN11-C	4.000	3.453	1.969	1.500	1.417	0.630	0.382	-10	-10	8	✓	9800	✓	1.93	G339	IC0322	-	-	-



G339



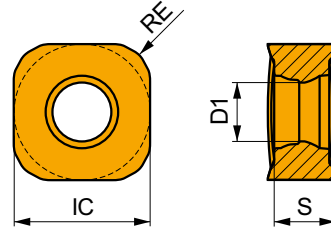
SNGX 1104..

IC0316	US 44012-T15P	3.5	M4	.472	D-T08P/T15P	FG-15	-	HCS025150C
IC0318	US 44012-T15P	3.5	M4	.472	D-T08P/T15P	FG-15	-	HS037100C
IC0320	US 44012-T15P	3.5	M4	.472	D-T08P/T15P	FG-15	-	HS050125C
IC0322	US 44012-T15P	3.5	M4	.472	D-T08P/T15P	FG-15	-	HCS075175C

SNGX 11

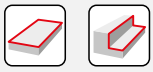


	IC	D1	S
1104	.417	.180	.187



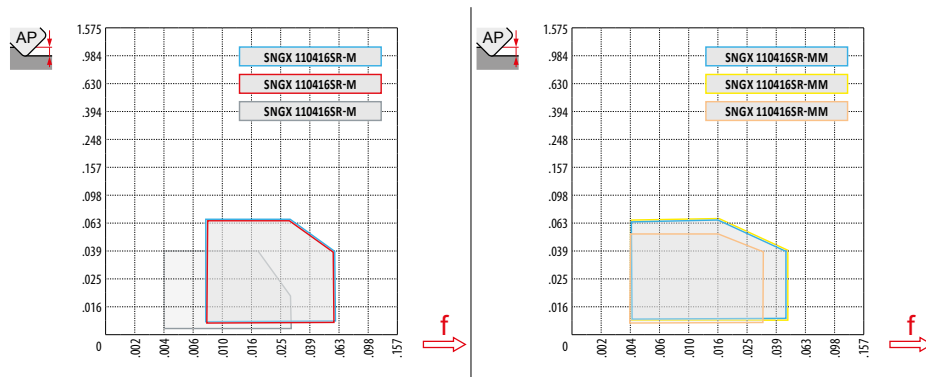
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											?					
 	SNGX 110416SR-M		M9325	■					●	---	.063	.008	.044	.008	.067	
			M9340	■					✘	---	.063	.008	.044	.008	.067	
			M8310	■	▣			▣		✘	-	.063	.008	.059	.008	.067
			M8330	■	▣			▣		✘	-	.063	.008	.059	.008	.067
			M8340	■	▣			▣		✘	+/-	.063	.008	.059	.008	.067
			8215	■	▣			▣		✘	-	.063	.008	.059	.008	.067
 	SNGX 110416SR-MM		M9340	▣	■		■		●	---	.063	.004	.035	.008	.067	
			M6330	▣	■		■		✘	-	.063	.004	.047	.008	.067	
			M8340	▣	■		■		✘	+/-	.063	.004	.047	.008	.067	
			M8345	▣	■		■		✘	+/-	.063	.004	.047	.008	.067	

ANSI	FN	FX	M9325	M9340	M6330	M8310	M8330	M8340	M8345	8215	
P	●	.008	.059	1099	980	755	951	896	808	632	902
	●	.008	.049	1011	902	694	875	824	743	581	830
	✘	.008	.039	868	774	596	752	705	638	499	713
M	●	.004	.047	-	574	533	-	-	468	369	-
	●	.004	.039	-	528	491	-	-	430	340	-
	✘	.004	.031	-	454	421	-	-	369	292	-
K	●	.008	.059	-	-	-	902	846	779	-	853
	●	.008	.049	-	-	-	830	778	717	-	785
	✘	.008	.039	-	-	-	713	666	616	-	674
S	●	.004	.033	-	262	238	-	-	205	164	-
	●	.004	.027	-	241	219	-	-	189	151	-
	✘	.004	.024	-	207	188	-	-	162	130	-
H	●	.004	.030	-	-	-	189	174	-	-	172
	●	.004	.024	-	-	-	174	157	-	-	158
	✘	.004	.018	-	-	-	149	135	-	-	136

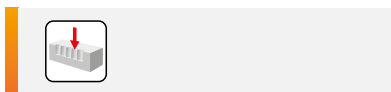


a_e DCX	.05	.10	.15	.20	.25	.30	.40	.50	.60	.70	.75	.80	.90	1.00
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.02	1.01	.99	.98
	2.87	2.05	1.69	1.48	1.33	1.23	1.09	.75	.94	.90	.89	.88	.88	1.00
	.64	.64	.64	.64	.64	.65	.65	.67	.68	.71	.72	.74	.79	1.00

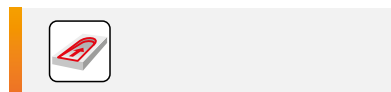
	SNGX 11 - M	SNGX 11 - MM
	.063	.063
	-	-



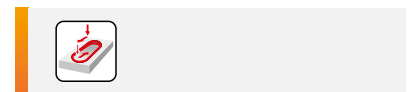
HFC														
		.000	.008	.016	.024	.031	.039	.043	.047	.051	.055	.059	.063	.067
1.500		.957	1.005	1.054	1.102	1.151	1.199	1.223	1.247	1.272	1.296	1.320	1.344	1.369
2.000		1.453	1.501	1.550	1.598	1.647	1.695	1.719	1.744	1.768	1.792	1.816	1.840	1.865
2.500		1.953	2.001	2.050	2.098	2.147	2.195	2.219	2.244	2.268	2.292	2.316	2.340	2.365
3.000		2.453	2.501	2.550	2.598	2.647	2.695	2.719	2.744	2.768	2.792	2.816	2.840	2.865
4.000		3.453	3.501	3.550	3.598	3.647	3.695	3.719	3.744	3.768	3.792	3.816	3.840	3.865



SNGX		
1.500	.204	.012
2.000	.208	.012
2.500	.212	.012
3.000	.216	.014
4.000	.216	.014





SNGX (HFC)		
1.500	.8	.047/3.937
2.000	.8	.035/3.937
2.500	.7	.028/3.937
3.000	.7	.020/3.937
4.000	.5	.012/3.937





SNGX (HFC)		
1.500	.008	.012
2.000	.012	.016
2.500	.012	.016
3.000	.012	.016
4.000	.012	.016






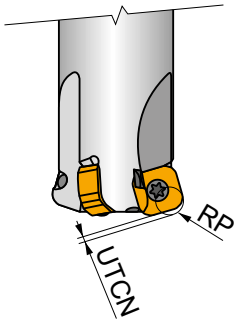
	μm	.118	.197	.394	.591	.787	1.181	1.575	1.969	2.352	3.150	3.937
1.500		.027	.034	.049	.060	.069	.084	.097	.109	.119	.137	.154
2.000		.031	.040	.056	.069	.079	.097	.112	.125	.137	.159	.177
2.500		.034	.044	.063	.077	.089	.109	.125	.140	.154	.177	.198
3.000		.038	.049	.069	.084	.097	.119	.137	.154	.168	.194	.217
4.000		.043	.056	.079	.097	.112	.137	.159	.177	.194	.224	.251



SNGX				
	.008	.020	.039	.067
	.047	.039	.020	.010




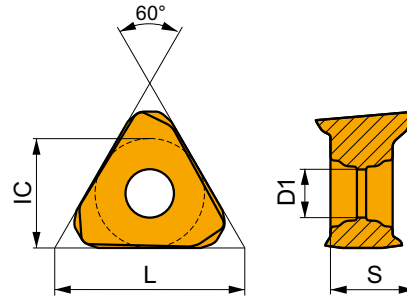
SNGX (HFC)				
	d_{\min}	d_{\max}		
1.500	2.362	2.984	.033	.057
2.000	3.346	3.992	.037	.055
2.500	4.331	4.992	.040	.055
3.000	5.354	5.984	.039	.049
4.000	7.323	7.992	.036	.044









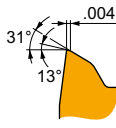



SNGX	RP	UTCN
	[in]	[in]
SNGX 110416	.181	.036

TNGX 10

	IC	D1	L	S
100412	.236	.110	.409	.181
100416	.236	.110	.409	.179



		ANSI		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
												?				
		TNGX 100412SR-M	M8330	■	▣	▣	▣	▣	▣	●	-	.047	.002	.006	.012	.197
			M8340	■	■	▣	▣	▣	▣	●	+/-	.047	.002	.006	.012	.197
		TNGX 100416SR-M	M8310	■	▣	▣	▣	▣	▣	●	-	.063	.002	.006	.012	.197
			M8330	■	▣	▣	▣	▣	▣	●	-	.063	.002	.006	.012	.197
			M8340	■	■	▣	▣	▣	▣	●	+/-	.063	.002	.006	.012	.197

A new standard is developed

ISO 13399 is an international standard that strives to simplify the exchange of data for cutting tools. You will notice a slight difference through the new parameters and descriptions of each tool. For the first time ever, there is a standardized way of describing product data regarding cutting tools. When all tools in the industry share the same parameters and definitions, communicating tool information between software systems becomes very straightforward.

Short name	Preferred Name	Short name	Preferred Name	Short name	Preferred Name
ADJLX	Maximum adjustment limit	DN	Neck diameter	PRFRAD	Profile radius
ADJRG	Adjustment range	DSGN	Design	PRSPC	Profile specification
ALP	Axial clearance angle	EPSR	Insert included angle	PSIR	Tool lead angle
AN	Clearance angle major	FHA	Flute helix angle	PSIRL	Major left hand cutting edge angle
ANN	Minor clearance angle	FLGT	Flange thickness	PSIRR	Major right hand cutting edge angle
APMX	Depth of cut maximum	FTDZ	For thread diameter size	RADH	Radial body height
B	Shank width	GB	Face land angle	RADW	Radial body width
BAWS	Workpiece side body angle	H	Shank height	RAR	Right-hand relief angle
BAMS	Body angle machine side	HA	Thread height theoretical	RE	Corner radius
BBD	Balanced by design	HB	Thread height difference	REEQ	Corner radius equivalent
BBR	Balanced by rotational test	HBH	Head bottom offset height	REL	Corner radius left
BCH	Corner chamfer length	HBL	Head bottom offset length	RER	Corner radius right
BD	Body diameter	HC	Actual thread height	RETOLL	Corner radius lower tolerance
BHTA	Body half taper angle	HF	Functional height	RETOLU	Corner radius upper tolerance
BN	Face land width	HRY	Lowest point from reference plain	RGL	Regrind length
BS	Wiper edge length	HTB	Body height	RMPX	Maximum ramping angle
BSG	Basic standard group	HTH	Height	RPMX	Rotational speed maximum
BSR	Wiper edge radius	IC	Inscribed circle diameter	S	Insert thickness
CDX	Cutting depth maximum	INSL	Insert length	SOL	Step diameter length
CF	Spot chamfer	INSUC	Insert usage code	SIG	Point angle
CHBA	Chamfer body angle	IZC	Insert size code	SPTL	Split line
CHBL	Chamfer body length	KAPR	Tool cutting edge angle	SSC	Insert seat size code
CHW	Corner chamfer width	KCH	Corner chamfer	STA	Step included angle
CHWL	Corner chamfer width, left hand	KCHL	Corner chamfer, left hand	STDNO	Standard number
CHWR	Corner chamfer width, right hand	KCHR	Corner chamfer, right hand	SUBSTRATE	Substrate
CICT	Cutting item count	KRINS	Major cutting-edge angle	TCDC	Tolerance class cutting diameter
CND	Coolant entry diameter	KWW	Keyway width	TCDMM	Shank diameter tolerance
CNSC	Coolant entry style code	L	Cutting edge length	TCHA	Achievable hole tolerance
CNT	Coolant entry thread size	LAMS	ncinclination angle	TCHAL	Achievable hole tolerance lower
COATING	Coating	LB	Body length	TCHAU	Achievable hole tolerance upper
CP	Max coolant pressure	LCF	Chip flute length	TCT	Tolerance class tool
CRKS	Connection retention knob thread size	LCOX	Cut off length maximum	TCTR	Thread tolerance class
CRNT	Coolant radial entry thread size	LE	Cutting edge effective length	TD	Thread diameter
CTPT	Operation type	LF	Functional length	TDZ	Thread diameter size
CUTDIA	Work piece parting diameter maximum	LH	Head length	TFLA	Tap floating length ahead
cw	Cutting width	LPR	Protruding length	TFLB	Tap floating length behind
CWTOLL	Cutting width lower tolerance	LS	Shank length	TG	Taper gradient
CWTOLU	Cutting width upper tolerance	LSC	Clamping length	THCA	Thread helix correction angle
CWX	Cutting width maximum	LSCN	Minimum clamping length	THCHT	Threading chamfer type
CXSC	Coolant exit style code	LSCS	Distance to clamping start	THFT	Thread form type
CZC	Connection size code	LSCX	Maximum clamping length	THL	Thread length
CZCms	Connection size code machine side	LSD	Dead shank length	THUB	Hub thickness
CZCws	Connection size code workpiece side	LU	Usable length (max. recommended)	TP	Thread pitch
D1	DFixing hole diameter	LUX	Usable maximum length	TPI	Threads per inch
DAH	Diameter access hole	MHD	Mounting hole distance	TPIN	Minimum threads per inch
DAXIN	Axial groove inside diameter minimum	MIID	Master insert identification	TPIX	Maximum threads per inch
DAXN	Minimum axial-groove outside diameter	MMCC	Code for preset torque	TPN	Minimum thread pitch
DAXX	Maximum axial groove outside diameter	MMCX	Max cutting torque	TPX	Maximum thread pitch
DBC	Diameter bolt circle	NOF	Flute count	TQ	Torque
DC	Cutting diameter	NT	Tooth count	TSYC	Tool style code
DCB	Connection bore diameter	OAH	Overall height	TTP	Thread type
DCBN	Connection bore diameter minimum	OAL	Overall length	ULDR	Usable length diameter ratio
DCBX	Connection bore diameter maximum	OAW	Overall width	VEX	Maximum cutting speed
DCF	Cutting diameter face contact	OH	Overhang recommended	W1	Insert width
DCN	Minimum cutting diameter	OHN	Minimum overhang	WB	Body width
DCON	Connection diameter	OHX	Maximum overhang	WF	Functional width
DCONMs	Connection diameter machine side	ORDCODE	Order code	WFCIRP	Width to cutting item reference point
DCONws	Connection diameter work piece si	PCL	Peripheral cylindrical length	WSC	Clamping width
DCSfMs	Contact surface diameter machine	POX	Profile distance ex	WT	Weight of item
DCSfws	Workpiece side contact surface di	PDY	Profile distance ey	ZEFF	Face effective cutting edge count
DCX	Maximum cutting diameter	PHO	Premachined hole diameter	ZEFP	Peripheral effective cutting edge count (ZEFP)
DIX	Maximum tool changer interferenc	PHDX	Maximum premachined hole diameter	ZWX	Maximum number of Wiper inserts
DMIN	Minimum bore diameter	PL	Point length		
DMM	Shank diameter	PNA	Profile included angle		

SIMPLY RELIABLE

As a professional you can judge the quality of work by just looking at the chip. Our chip is a clean and uncomplicated shape that in itself tells a story. It is a clear and consistent signal and that's why we use it as a symbol for being **Simply Reliable**.

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