Complete Machining Solutions
THREADING TOOLS & INSERTS

Member IMC Group

ISCAR

TABLE OF CONTENTS

THREADING INSERTS

Main Types of Laydown Inserts

B/M-TYPE | U-TYPE | REGULAR TYPE | MULTI-TOOTH

Additional Threading Systems
External

CUT-GRIP

Partial Profile (TIP)

Full Profile (TIP)

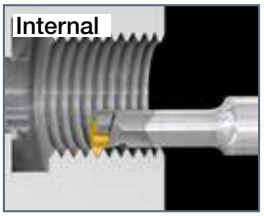
SWISSCUT

DECAIQTHREAD

PENTACUT THREADING LINE

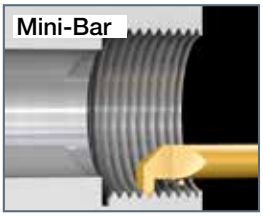
Internal

MINICHAM



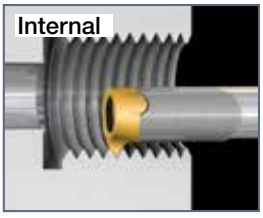
UMGR - Partial Profile 55°/60°
Minimum bore dia. 4 mm

PICCOCUT



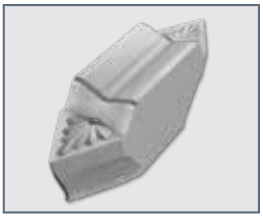
Minimum bore dia. 2.4 mm

CHAMGROOVE

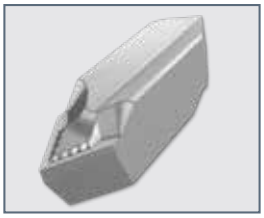


GIQR/L - Partial Profile 55°/60°
Minimum bore dia. 8.0 mm

CUT-GRIP



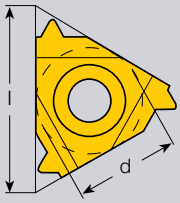
GEPI-Partial Profile
Minimum bore dia. 12.5 mm



TIPI-Partial Profile
Minimum bore dia. 20 mm

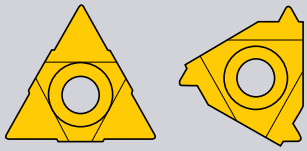
1. Insert Size

l (mm)	d
06	5/32"
08	3/16"
11	1/4"
16	3/8"
22	1/2"
27	5/8"



2. Application

- **E** — External
- **I** — Internal
- **UE** — U-type, External
- **UI** — U-type, Internal
- **UEI** — U-type, External and Internal



U-type Regular Type

3. Hand of Tool

- **R** — Right-**hand**
- **L** — Left-**hand**
- **RL** — Right- and Left-**hand**

4. Type

- **B** — Peripherally ground & chipformer
- **M** — Press to size with a chipformer
- □ — No indication regular type

16	E	R	M	1.50	ISO	2M	IC808
1	2	3	4	5	6	7	8

5. Pitch

Full Profile
(value by number)

0.35-9.0	**mm**
72-2	**TPI**

Partial Profile
(Range by letter)

	mm	**TPI**
A	0.5-1.5	48-16
AG	0.5-3.0	48-8
G	1.75-3.0	14-8
N	3.5-5.0	7-5
Q	5.5-6.0	4.5-4
U	5.5-9.0	4.5-2.75

6. Thread Standard

60	—	Partial Profile 60°
55	—	Partial Profile 55°
ISO	—	**ISO** Metric
UN	—	American UN
W	—	Whitworth
BSPT	—	British **BSPT**
RND	—	Round **DIN** 405
TR	—	Trapeze **DIN** 103
ACME	—	**ACME**
STACME	—	Stub **ACME**
ABUT	—	American Buttress
UNJ	—	**UNJ**
NPT	—	**NPT**
API RD	—	**API** Round
BUT	—	**API** Buttress Casing
API	—	**API**
H90	—	**H**-90
EL	—	Extreme Line Casing
MJ	—	**ISO** 5855

7. No. of Teeth (Optional)

2M	—	2 teeth
3M	—	3 teeth

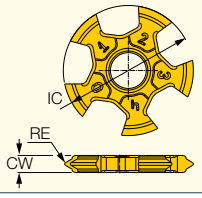
8. Grade

IC1007
IC908
IC808
IC508
IC250
IC228
IC50M
IC806

DECAIQTHREAD

TTG-16E-A55

External Inserts with 10 Threading Corners and a 55° Partial Profile for General Industry



Designation	Dimensions					IC908
	TPIX[1]	TPIN[2]	RE	CW	IC	
TTG-16E-A55	48.00	16	0.05	2.10	16.00	●

• For detailed cutting data, see pages 660-670

[1] Threads per inch maximum

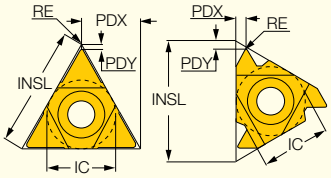
[2] Threads per inch minimum

For tools, see pages: SER/L-TT-JHP (651) • SER/L-TT-JHP-MC (651) • TTADR/L-JHP (651)

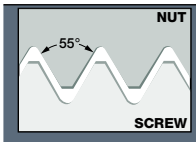
ISCARTHREAD

ER/L-55°

External Laydown Threading Inserts with a 55 ° Partial Profile for General Industry



External right-hand shown



Designation	Dimensions									Tough ↔ Hard					
	IC	TPN[2]	TPX[3]	TPIX[4]	TPIN[5]	INSL	RE	PDY	PDX	IC228	IC50M	IC250	IC808	IC908	IC1007
11ER A 55	6.35	0.500	1.500	48.00	16	11.00	0.05	0.8	0.9			●		●	
16ER/L A 55	9.52	0.500	1.500	48.00	16	16.49	0.05	0.8	0.9		●			●	
16ER/L AG 55	9.52	0.500	3.000	48.00	8	16.49	0.07	1.2	1.7	●		●		●	●
16ERB AG 55 [1]	9.52	0.500	3.000	48.00	8	16.49	0.07	1.2	1.7					●	
16ERM AG 55 [1]	9.52	0.500	3.000	48.00	8	16.49	0.07	1.2	1.7		●	●	●	●	●
16ER/L G 55	9.52	1.750	3.000	14.00	8	16.49	0.20	1.2	1.7			●		●	
16ERB G 55 [1]	9.52	1.750	3.000	14.00	8	16.49	0.23	1.2	1.7					●	
16ERM G 55 [1]	9.52	1.750	3.000	14.00	8	16.49	0.23	1.2	1.7			●	●	●	●
22ER/L N 55	12.70	3.500	5.000	7.00	5	22.00	0.42	1.7	2.5			●		●	
22UEIRL U 55	12.70	5.500	8.000	4.50	3	22.00	0.60	0.9	11.0		●	●			
27ER Q 55	15.88	5.500	6.000	4.50	4	27.50	0.60	2.0	2.9			●		●	
27UEIRL U 55	15.88	6.500	9.000	4.00	3	27.50	0.81	1.2	13.7			●			

• For insert identification system, see pages 605 • For threading between walls use GRIP-type inserts TIP-WT, GEPI-WT, TIPI-WT

• For detailed cutting data, see pages 660-670

[1] With pressed chipformer

[2] Thread pitch minimum (mm)

[3] Thread pitch maximum (mm)

[4] Threads per inch maximum

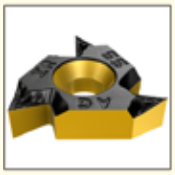
[5] Threads per inch minimum

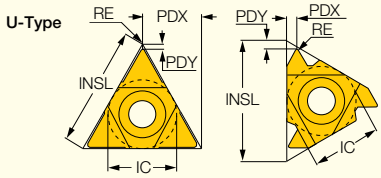
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

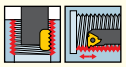
ISCARTHREAD

IR/L-55°

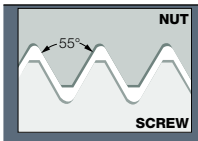
Internal Laydown Threading Inserts with a 55° Partial Profile for General Industry







Internal left-hand shown



Designation	Dimensions									Tough ↔ Hard							
	IC	TPN[2]	TPX[3]	TPIX[4]	TPIN[5]	INSL	RE	PDY	PDX	IC228	IC928	IC50M	IC250	IC508	IC808	IC908	IC1007
06IR/L A 55	3.97	0.500	1.250	48.00	20	6.88	0.05	0.5	0.6	●							
08IR/L A 55	4.76	0.500	1.500	48.00	16	8.24	0.05	0.6	0.7	●	●					●	
08UIRL U 55	4.76	1.750	2.000	14.00	11	8.24	0.10	0.9	4.0	●							
11IR/L A 55	6.35	0.500	1.500	48.00	16	11.00	0.05	0.8	0.9	●			●			●	●
16IR A 55	9.52	0.500	1.500	48.00	16	16.49	0.05	0.8	0.9			●				●	
16IR/L AG 55	9.52	0.500	3.000	48.00	8	16.49	0.07	1.2	1.7				●			●	
16IRB AG 55 [1]	9.52	0.500	3.000	48.00	8	16.49	0.07	1.2	1.7							●	
16IRM AG 55 [1]	9.52	0.500	3.000	48.00	8	16.49	0.05	1.2	1.7				●		●	●	●
16IR/L G 55	9.52	1.750	3.000	14.00	8	16.49	0.20	1.2	1.7				●	●		●	
16IRB G 55 [1]	9.52	1.750	3.000	14.00	8	16.49	0.23	1.2	1.7							●	
16IRM G 55 [1]	9.52	1.750	3.000	14.00	8	16.49	0.20	1.2	1.7				●		●	●	●
22IR N 55	12.70	3.500	5.000	7.00	5	22.00	0.42	1.7	2.5			●	●			●	
27IR Q 55	15.88	5.500	6.000	4.00	4	27.50	0.60	2.0	2.9							●	

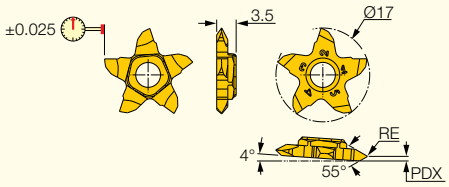
• For insert identification system, see pages 605 • For threading between walls use GRIP-type inserts TIP-WT, GEPI-WT, TIPI-WT.
• For detailed cutting data, see pages 660-670
[1] With pressed chipformer
[2] Thread pitch minimum (mm)
[3] Thread pitch maximum (mm)
[4] Threads per inch maximum
[5] Threads per inch minimum

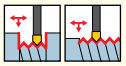
For tools, see pages: MGSIR/L (104) • SIR/L (655)

PENTACUT THREADING LINE

PENTA 17-WT-RS/LS

Precision Ground Pentagonal External Threading Inserts with a 55° Partial Profile





Designation	Dimensions				IC1008
	TPIX[1]	TPIN[2]	RE	PDX	
PENTA 17-WTL003LS	72.00	17.00	0.03	0.8	●
PENTA 17-WTR003RS	72.00	17.00	0.03	0.8	●
PENTA 17-WTL008LS	31.00	7.00	0.08	1.4	●
PENTA 17-WTR008RS	31.00	7.00	0.08	1.4	●

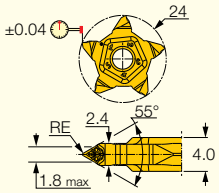
[1] Threads per inch maximum
[2] Threads per inch minimum

For tools, see pages: PCHRS/LS-17 (295)

PENTACUT THREADING LINE

PENTA 24-WT

Precision Ground Pentagonal External Threading Inserts with a Whitworth 55° Partial Profile



Designation	Dimensions TPIX[2]	TPIN[3]	RE	IC908
PENTA 24A-WT-0.15	19.00	14	0.15	●
PENTA 24-WT-0.05 *	48.00	14	0.05	●
PENTA 24A-WT-0.05 [1]	48.00	14	0.05	●

• TPIN=6.4/D(inch) D-nominal thread diameter (inch)
[1] Flat rake (without a chipformer)
[2] Threads per inch maximum
[3] Threads per inch minimum

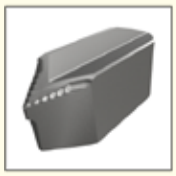
For tools, see pages: PCAD RE/LE-JHP (301) • PCADR/L (300) • PCADR/L-JHP (301) • PCHBR/L (302) • PCHPR/L (300) • PCHR/L-24 (297) • PCHR/L-24-JHP (298) • PCHR/L-24-JHP-MC (298)

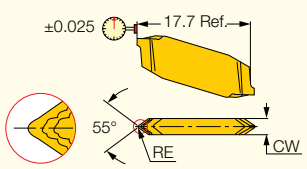
ISCARTHREAD

CUTGRIP

TIP-WT

Precision Ground Double-Ended Threading Inserts with a 55° Partial Profile and a Chipformer





TIP inserts are 1.6 mm longer than GIP in the same pocket

Designation	Dimensions CW	RE	RETOL[2]	TPIX[3]	TPIN[4]	TPX[5]	Tough ↔ Hard IC08	IC908
TIP 2WT-0.05 [1]	2.40	0.05	0.030	54.00	12.00	2.120	●	●
TIP 4WT-0.15 [1]	4.00	0.15	0.030	19.00	7.00	3.630	●	●
TIP 5WT-0.25 [1]	5.50	0.25	0.030	12.00	6.00	4.230		●

• Toolholder seat needs to be modified according to insert profile to ensure clearance • Pitch max 0.187xD
[1] TPIN(thread per inch minimum) = D/6.4 • D-Diameter of thread (inch)
[2] Corner radius tolerance (+/-)
[3] Threads per inch maximum
[4] Threads per inch minimum
[5] Thread pitch maximum (mm)

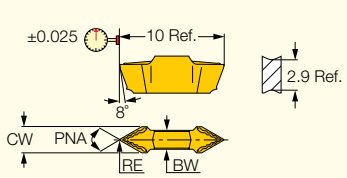
For tools, see pages: C#-GHDR/L (259) • CGHN 26-M (340) • CGHN 32-DGM (342) • CGHN 32-M (341) • CGHN-D (266) • CGHN-DG (267) • CGHN-S (266) • CGPAD (265) • CGPAD-JHP (265) • GHDR/L (short pocket) (259) • GHDR/L-JHP (short pocket) (260) • GHDR/L-JHP-MC (short pocket) (261) • GHGR/L (262) • GHMPR/L (258) • GHMR/L (258) • GHSR/L (357) • GHSR/L-JHP-SL (358)

ISCARTHREAD

CUTGRIP

GEPI-WT

Precision Ground Double-Ended Threading Inserts with a 55° Partial Profile and a Chipformer for 11.5 mm Bore Diameter



Designation	Dimensions CW	RE	RETOL[1]	PNA	BW	TPIX[2]	TPN[3]	TPIN[4]	TPX[5]	Tough ↔ Hard IC08	IC908
GEPI 2.5-WT0.05	2.50	0.05	0.030	55	1.80	54.00	0.470	10.00	2.540	●	●

• Toolholder seat needs to be modified according to insert profile to ensure clearance • Pitch max 0.167xD, TPI min D/6.0
[1] Corner radius tolerance (+/-)
[2] Threads per inch maximum
[3] Thread pitch minimum (mm)
[4] Threads per inch minimum
[5] Thread pitch maximum (mm)

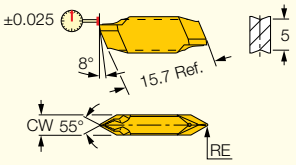
For tools, see pages: E-GEHIR / E-GHIR (326) • GEAIR/L (325) • GEHIMR/L (323) • GEHIMR/L-SC (323) • GEHIR/L (324) • GEHIR/L-SC (324) • GEHSR (356) • GEHSR/L-SL (356)

ISCARTHREAD

CUTGRIP

TIPI-WT

Double-Ended Internal Threading Inserts with a 55° Partial Profile and a Chipformer for 20 mm Min. Bore Diameter



Designation	Dimensions CW	RE	RETOL(1)	TPN(2)	TPIX(3)	TPIN(4)	TPX(5)	Tough ↔ Hard IC08	IC908
TIPI 3.4WT-0.10	3.40	0.10	0.030	0.950	27.00	8.00	3.180	●	●
TIPI 5.4WT-0.20	5.40	0.20	0.030	1.670	15.00	5.00	5.100		●

• Toolholder seat needs to be modified according to insert profile to ensure clearance • Pitch max 0.187xD, TPI min D/5.25 D=Diameter of thread (pitch max<=CW)
• For detailed cutting data, see pages 660-670
(1) Corner radius tolerance (+/-)
(2) Thread pitch minimum (mm)
(3) Threads per inch maximum
(4) Threads per inch minimum
(5) Thread pitch maximum (mm)

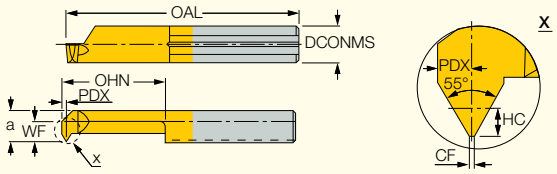
For tools, see pages: GAIR/L (331) • GHIR/L (W=1.9-6.4) (329) • GHIR/L-SC (W=2-4.8) (330)

ISCARTHREAD

PICCOCUT

PICCO-55°-Thread

Inserts for 55° Internal Threading Profile



Right-hand shown

Designation	Dimensions DCONMS	TPIX(1)	TPIN(2)	HC	CF	PDX	WF	a	OHN(3)	OAL	DMIN	IC228
PICCO R 005.5548-15	5.00	48.00	24	0.40	0.06	0.5	1.90	4.40	15.0	30.00	4.80	●
PICCO R 006.5548-15	6.00	48.00	24	0.40	0.06	0.5	2.30	5.30	15.0	30.00	6.00	●
PICCO R 006.5524-15	6.00	24.00	16	0.81	0.12	0.8	2.30	5.30	15.0	30.00	6.00	●
PICCO R 007.5524-15	7.00	24.00	16	0.81	0.12	0.8	2.80	6.30	15.0	30.00	7.00	●

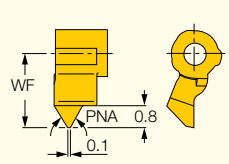
• All mini-bars have sharp corners • For detailed cutting data, see pages 660-670
(1) Threads per inch maximum
(2) Threads per inch minimum
(3) Minimum overhang

ISCARTHREAD

MINICHAM

UMGR-A55

Mini Indexable Inserts with Whitworth Partial Profile for Threading in 5.2 mm and Larger Holes



Right-hand shown

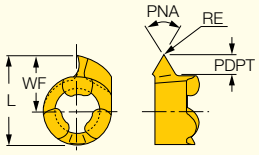
Designation	Dimensions WF	PNA	TPIX(1)	TPIN(2)	TPN(3)	TPX(4)	DMIN	IC508
UMGR 4.0-A55	2.70	55	48.00	18	0.500	1.400	5.20	●

(1) Threads per inch maximum
(2) Threads per inch minimum
(3) Thread pitch minimum (mm)
(4) Thread pitch maximum (mm)

For tools, see pages: MGUHR (372)

ISCARTHREAD
CHAMGROOVE

GIQR/L-WT
Internal Inserts with Whitworth Partial Profile for Threading in 8 mm and Larger Holes



Left-hand shown

Designation	Dimensions L	RE	PNA	PDPT	WF	DMIN	TPN(1)	TPIX(2)	IC528
GIQR/L 8-WT-0.05	7.78	0.05	55	1.50	4.80	8.00	0.500	50.00	●
GIQR/L 11-WT-0.05	10.68	0.05	55	2.00	6.70	11.00	0.500	50.00	●

• Can be used for thread milling by circular interpolation • TPI min D/5.9 • D-diameter of thread (pitch max<=W) • For cutting speed recommendations, see pages 660-670

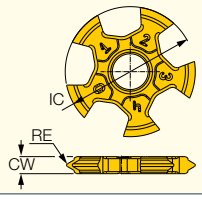
(1) Cutting depth maximum

(2) Thread pitch minimum (mm)

For tools, see pages: MG (375) • MGCH (375)

DECAIQTHREAD

TTG-16E-A60
External Inserts with 10 Threading Corners and 60° Partial Profile for General Industry



Designation	Dimensions TPN(1)	TPX(2)	TPIX(3)	TPIN(4)	RE	CW	IC	IC908
TTG-16E-A60	0.500	1.500	48.00	16	0.05	2.10	16.00	●

• For detailed cutting data, see pages 660-670

(1) Thread pitch minimum (mm)

(2) Thread pitch maximum (mm)

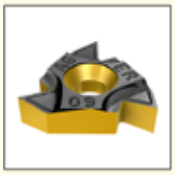
(3) Threads per inch maximum

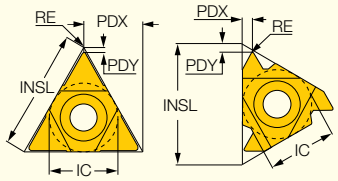
(4) Threads per inch minimum

For tools, see pages: SER/L-TT-JHP (651) • SER/L-TT-JHP-MC (651) • TTADR/L-JHP (651)

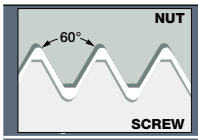
ISCARTHREAD

ER/L-60°
External Laydown Threading Inserts with a 60° Partial Profile for General Industries





External right-hand shown



Dimensions IC	TPN(2)	TPX(3)	TPIX(4)	TPIN(5)	INSL	RE	PDY	PDX	Tough ↔ Hard IC228	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
11ER/L A 60	6.35	0.500	1.500	48.00	16	11.00	0.05	0.8	0.9							●	
16ER/L A 60	9.52	0.500	1.500	48.00	16	16.49	0.06	0.8	0.9	●	●	●	●			●	●
16ERB A 60 (1)	9.52	0.500	1.500	48.00	16	16.49	0.06	0.8	0.8				●			●	
16ERM A 60 (1)	9.52	0.500	1.500	48.00	16	16.49	0.05	0.8	0.9		●	●			●	●	●
16ER/L AG 60	9.52	0.500	3.000	48.00	8	16.49	0.06	1.2	1.7	●	●	●	●	●		●	●
16ERB AG 60 (1)	9.52	0.500	3.000	48.00	8	16.49	0.06	1.2	1.7							●	
16ERM AG 60 (1)	9.52	0.500	3.000	48.00	8	16.49	0.06	1.2	1.7		●	●		●	●	●	●
16ER/L G 60	9.52	1.750	3.000	14.00	8	16.49	0.22	1.2	1.7	●		●				●	●
16ERB G 60 (1)	9.52	1.750	3.000	14.00	8	16.49	0.22	1.2	1.7							●	
16ERM G 60 (1)	9.52	1.750	3.000	14.00	8	16.49	0.17	1.2	1.7		●	●			●	●	●
22ER/L N 60	12.70	3.500	5.000	7.00	5	22.00	0.42	1.7	2.5	●	●	●				●	●
22ERM N 60 (1)	12.70	3.500	5.000	7.00	5	22.00	0.32	1.7	2.5		●	●			●	●	●
22UEIRL U 60	12.70	5.500	8.000	4.50	3	22.00	0.28	0.6	0.6			●				●	
27ER/L Q 60	15.88	5.500	6.000	4.50	4	27.50	0.63	2.0	3.0	●	●	●				●	
27UEIRL U 60	15.88	6.500	9.000	4.00	3	27.50	0.28	1.0	13.7		●	●					

• For Insert Identification System, see page 605 • For threading between walls use GRIP-type inserts SCIR/L B/F -MTR/L, TIP-MT, GEPI-MT, TIPI-MT.

• For technical information and detailed cutting data, see pages 660-670

(1) With pressed chipformer.

(2) Thread pitch minimum (mm)

(3) Thread pitch maximum (mm)

(4) Threads per inch maximum

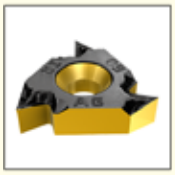
(5) Threads per inch minimum

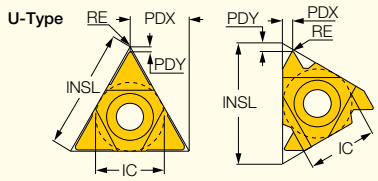
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

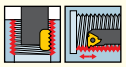
ISCARTHREAD

IR/L-60°

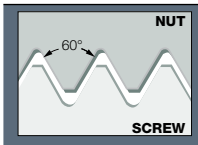
Internal Laydown Threading Inserts with a 60° Partial Profile for General Industry







Internal left-hand shown



Designation	Dimensions IC	TPN(2)	TPX(3)	TPIX(4)	TPIN(5)	INSL	RE	PDY	PDX	Tough ↔ Hard IC28	IC228	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
06IR/L A 60	3.97	0.500	1.250	48.00	20	6.88	0.04	0.6	0.6	●	●							
06IRM A 60 (1)	3.97	0.500	1.250	48.00	20	6.88	0.05	0.5	0.6		●							
08IR/L A 60	4.76	0.500	1.500	48.00	16	8.24	0.04	0.6	0.7	●	●						●	●
08IRM A 60 (1)	4.76	0.500	1.500	48.00	16	8.24	0.05	0.6	0.7		●					●	●	●
08UIRL U 60	4.76	1.750	2.000	14.00	11	8.24	0.10	0.8	4.0		●							
11IR/L A 60	6.35	0.500	1.500	48.00	16	11.00	0.04	0.8	0.9		●	●	●	●			●	●
11IRM A 60 (1)	6.35	0.500	1.500	48.00	16	11.00	0.05	0.7	0.9				●			●	●	●
16IR/L A 60	9.52	0.500	1.500	48.00	16	16.49	0.04	0.8	0.8		●	●	●				●	●
16IRB A 60 (1)	9.52	0.500	1.500	48.00	16	16.49	0.04	0.8	0.8								●	
16IRM A 60 (1)	9.52	0.500	1.500	48.00	16	16.49	0.05	0.8	0.9				●			●	●	●
16IR/L AG 60	9.52	0.500	3.000	48.00	8	16.49	0.04	1.2	1.7		●	●	●		●		●	●
16IRB AG 60 (1)	9.52	0.500	3.000	48.00	8	16.49	0.03	1.2	1.7								●	
16IRM AG 60 (1)	9.52	0.500	3.000	48.00	8	16.49	0.05	1.2	1.7			●	●			●	●	●
16IR/L G 60	9.52	1.750	3.000	14.00	8	16.49	0.13	1.2	1.7		●	●	●				●	●
16IRB G 60 (1)	9.52	1.750	3.000	14.00	8	16.49	0.13	1.2	1.7								●	
16IRM G 60 (1)	9.52	1.750	3.000	14.00	8	16.49	0.10	1.2	1.7			●	●			●	●	●
22IR/L N 60	12.70	3.500	5.000	7.00	5	22.00	0.22	1.7	2.5				●				●	●
22IRM N 60 (1)	12.70	3.500	5.000	7.00	5	22.00	0.19	1.7	2.5			●	●			●	●	●
27IR/L Q 60	15.88	5.500	6.000	4.50	4	27.50	0.31	2.1	3.1			●	●				●	

• For Insert Identification System, see page 605. • For technical information and detailed cutting data, see pages 660-670

(1) With a pressed chipformer

(2) Thread pitch minimum (mm)

(3) Thread pitch maximum (mm)

(4) Threads per inch maximum

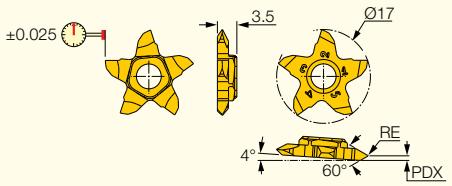
(5) Threads per inch minimum

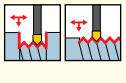
For tools, see pages: MGSIR/L (104) • SIR/L (655)

PENTACUT THREADING LINE

PENTA 17-MT-RS/LS

Precision Ground Pentagonal External Threading Inserts with a 60° Partial Profile





Designation	Dimensions TPN(1)	TPX(2)	RE	PDX	IC1008
PENTA 17-MTL003LS	0.300	1.750	0.03	0.8	●
PENTA 17-MTR003RS	0.300	1.750	0.03	0.8	●
PENTA 17-MTL008LS	0.700	3.500	0.08	1.4	●
PENTA 17-MTR008RS	0.700	3.500	0.08	1.4	●

(1) Thread pitch minimum (mm)

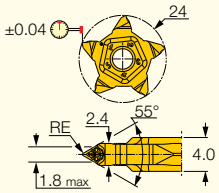
(2) Thread pitch maximum (mm)

For tools, see pages: PCHRS/LS-17 (295)

PENTACUT THREADING LINE

PENTA 24-MT

Precision Ground Pentagonal External Threading Inserts with a 60° Partial Profile



Designation	Dimensions TPN[2]	TPX[3]	RE	IC908
PENTA 24-MT-0.05	0.500	1.750	0.05	●
PENTA 24A-MT-0.05 [1]	0.500	1.750	0.05	●
PENTA 24A-MT-0.15	1.250	1.750	0.15	●

• TPX=0.175xD

[1] Flat rake (without a chipformer)

[2] Thread pitch minimum (mm)

[3] Thread pitch maximum (mm)

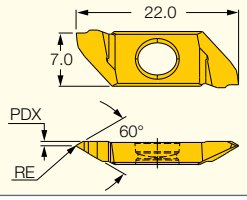
For tools, see pages: PCAD RE/LE-JHP (301) • PCADR/L (300) • PCADR/L-JHP (301) • PCHBR/L (302) • PCHPR/L (300) • PCHR/L-24 (297) • PCHR/L-24-JHP (298) • PCHR/L-24-JHP-MC (298)

ISCARTHREAD

SWISSCUT INNOVAL LINE

SCIR/L-22-MTR/MTL

Threading Inserts with a 60° Partial Profile



Left-hand shown

Designation	Dimensions RE	PDX	TPN[1]	TPX[2]	TPIX[3]	TPIN[4]	Tough ↔ Hard IC1008	IC07	IC1007
SCIL 22-MTL003	0.03	0.4	0.300	0.900	83.00	28	●	●	●
SCIR 22-MTR003	0.03	0.4	0.300	0.900	83.00	28	●	●	●
SCIL 22-MTR/L007	0.07	0.5	0.700	1.100	36.00	23	●	●	●
SCIR 22-MTR/L007	0.07	0.5	0.700	1.100	36.00	23	●	●	●
SCIL 22-MTL010	0.10	0.8	0.900	1.700	28.00	15	●	●	●
SCIR 22-MTR010	0.10	0.8	0.900	1.700	28.00	15	●	●	●

• For detailed cutting data, see pages 660-670

[1] Thread pitch minimum (mm)

[2] Thread pitch maximum (mm)

[3] Threads per inch maximum

[4] Threads per inch minimum

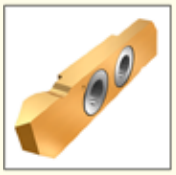
For tools, see pages: SCHR/L-22BF (347) • SCHR/L-22BF-JHP (347)

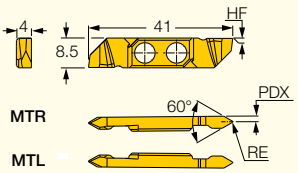
SWISSCUT EXTRA LONG

ISCARTHREAD

SCIR/L-41-MTR/MTL

Threading Inserts with a 60° Partial Profile





Designation	Dimensions RE	PDX	TPN[1]	TPX[2]	TPIN[3]	TPIX[4]	HF[5]	IC1008
SCIL 41-MTL006	0.06	0.9	0.400	1.500	17.00	64.00	0.2	●
SCIR 41-MTR006	0.06	0.9	0.400	1.500	17.00	64.00	0.2	●
SCIL 41-MTL020	0.20	1.6	1.500	2.500	10.00	17.00	0.2	●
SCIR 41-MTR020	0.20	1.6	1.500	2.500	10.00	17.00	0.2	●

• For detailed cutting data, see pages 660-670

[1] Thread pitch minimum (mm)

[2] Thread pitch maximum (mm)

[3] Threads per inch minimum

[4] Threads per inch maximum

[5] Cutting edge below center

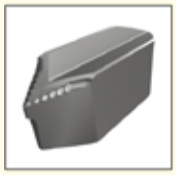
For tools, see pages: SCHR/L-41BF (353)

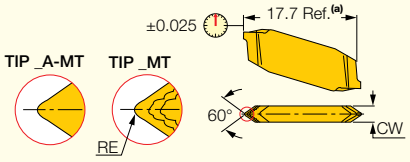
ISCARTHREAD

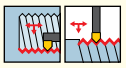
CUTGRIP

TIP-MT

Precision Ground Double-Ended Threading Inserts with a 60° Partial Profile and Chipformer







Designation	Dimensions							Tough ↔ Hard	
	CW	RE	RETOL(2)	TPN(3)	TPIX(4)	TPIN(5)	TPX(6)	IC08	IC908
TIP 2A-MT-0.05 (1)	2.40	0.05	0.030	0.450	56.00	12.00	2.120		●
TIP 2MT-0.05	2.40	0.05	0.030	0.450	56.00	12.00	2.120	●	●
TIP 2MT-0.14	2.40	0.14	0.030	1.110	23.00	12.00	2.120	●	●
TIP 4A-MT-0.15 (1)	4.00	0.15	0.030	1.250	20.00	7.00	3.630		●
TIP 4MT-0.15	4.00	0.15	0.030	1.250	20.00	7.00	3.630		●
TIP 4MT-0.20	4.00	0.20	0.030	1.630	16.00	7.00	3.630	●	●
TIP 5MT-0.25	5.50	0.25	0.030	1.940	13.00	5.00	5.100	●	●

• (a) TIP inserts are 1.6 mm longer than GIP in the same pocket • Toolholder seat needs to be modified according to insert profile to ensure clearance

(1) Without chipformer (flat rake)

(2) Corner radius tolerance (+/-)

(3) Thread pitch minimum (mm)

(4) Threads per inch maximum

(5) Threads per inch minimum

(6) Thread pitch maximum (mm)

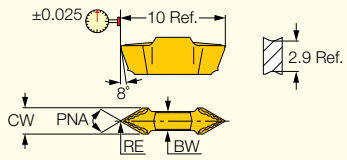
For tools, see pages: C#-GHDR/L (259) • CGHN 26-M (340) • CGHN 32-DGM (342) • CGHN 32-M (341) • CGHN-D (266) • CGHN-DG (267) • CGHN-S (266) • CGPAD (265) • CGPAD-JHP (265) • GHDR/L (short pocket) (259) • GHDR/L-JHP (short pocket) (260) • GHDR/L-JHP-MC (short pocket) (261) • GHGR/L (262) • GHMPR/L (258) • GHMR/L (258) • GHSR/L (357) • GHSR/L-JHP-SL (358)

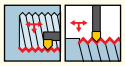
ISCARTHREAD

CUTGRIP

GEPI-MT

Precision Ground Internal Double-Ended Threading Inserts with a 60° Partial Profile for General Applications





Designation	Dimensions									Tough ↔ Hard	
	CW	RE	RETOL(1)	PNA	BW	TPN(2)	TPIX(3)	TPIN(4)	TPX(5)	IC08	IC908
GEPI 2.5-MT0.05	2.50	0.05	0.030	60	1.80	0.900	28.00	10.00	2.540	●	●

• Toolholder seat needs to be modified according to insert profile to ensure clearance • Pitch max 0.187xD, TPI min D/5.35 • D=Diameter of thread (pitch max<=CW)

(1) Corner radius tolerance (+/-)

(2) Thread pitch minimum (mm)

(3) Threads per inch maximum

(4) Threads per inch minimum

(5) Thread pitch maximum (mm)

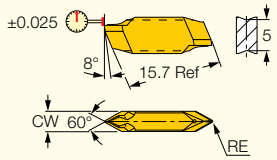
For tools, see pages: E-GEHIR / E-GHIR (326) • GEAIR/L (325) • GEHIMR/L (323) • GEHIMR/L-SC (323) • GEHIR/L (324) • GEHIR/L-SC (324) • GEHSR (356) • GEHSR/L-SL (356)

ISCARTHREAD

CUTGRIP

TIPI-MT

Precision Ground Double-Ended Internal Threading Inserts with 60° Partial Profile and Chipformer for 20mm Min. Bore Dia.



Designation	Dimensions							Tough ↔ Hard	
	CW	RE	RETOL(1)	TPN(2)	TPIX(3)	TPIN(4)	TPX(5)	IC08	IC908
TIPI 3.4MT-0.10	3.40	0.10	0.030	1.800	14.00	8.00	3.180	●	●
TIPI 5.4MT-0.20	5.40	0.20	0.030	3.190	8.00	5.00	5.100	●	●

• Toolholder seat needs to be modified according to insert profile to ensure clearance. • Pitch max 0.205xD, TPI min D/4.8 • D=Diameter of thread (pitch max<=CW)
• TIPI inserts are 1.6 mm longer than GIPI in the same pocket
(1) Corner radius tolerance (+/-)
(2) Thread pitch minimum (mm)
(3) Threads per inch maximum
(4) Threads per inch minimum
(5) Thread pitch maximum (mm)

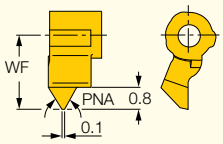
For tools, see pages: CGIN 26 (332) • GAIR/L (331) • GHIR/L (W=1.9-6.4) (329) • GHIR/L-C (W=4-6.4) (330) • GHIR/L-SC (W=2-4.8) (330)

ISCARTHREAD

MINICHAM

UMGR-A60

Mini Indexable Inserts with a 60° Partial Profile for Threading in 5.2 mm and Larger Holes



Right-hand shown

Designation	Dimensions						IC508
	PNA	WF	DMIN	TPN(1)	TPX(2)	PDPT	
UMGR 4.0-A60	60	2.70	5.20	0.500	1.250	0.80	●

• For detailed cutting data, see pages 660-670
(1) Thread pitch minimum (mm)
(2) Thread pitch maximum (mm)

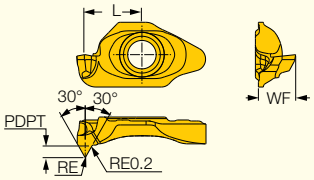
For tools, see pages: MGUHR (372)

ISCARTHREAD

MIN CUT MINI FACE LINE

MITR 8-MT

Internal ISO Metric Threading Inserts for Partial Profile



Designation	Dimensions							IC908
	PDPT(1)	RE	L	WF	DMIN(2)	TPN(3)	TPX(4)	
MITR 8-MT2-0.1	1.17	0.10	5.75	3.80	10.00	1.500	2.000	●
MITR 8-MT1-0.05	1.23	0.05	5.75	3.80	10.00	0.750	1.250	●

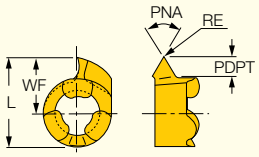
(1) Cutting depth maximum
(2) Minimum diameter
(3) Thread pitch minimum (mm)
(4) Thread pitch maximum (mm)

For tools, see pages: MIFHR (374)

ISCARTHREAD CHAMGROOVE

GIQR/L-MT

Internal Threading Inserts with a 60° Partial Profile for Threading in 8 mm and Larger Holes



Left-hand shown

Designation	Dimensions								IC528
	L	RE	PNA	PDPT(1)	WF	DMIN(2)	TPN(3)	TPIX(4)	
GIQR/L 8-MT-0.05	7.78	0.05	60.0	1.50	4.80	8.00	0.900	28.00	●
GIQR/L 11-MT-0.05	10.68	0.05	60.0	2.00	6.70	11.00	0.900	28.00	●

• Can be used for thread milling by circular interpolation • Pitch max 0.19xD • D-diameter of thread • For detailed cutting data, see pages 660-670

(1) Cutting depth maximum

(2) Minimum diameter

(3) Thread pitch minimum (mm)

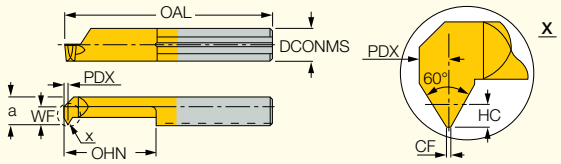
(4) Threads per inch maximum

For tools, see pages: MG (375) • MGCH (375)

ISCARTHREAD PICCOCUT

PICCO R/L-60°-Thread

Inserts with a 60° Internal Thread Profile for 2.4 mm Min. Bore Diameter



Right-hand shown

Designation	Dimensions										Tough ⟷ Hard	
	TP(1)	DCONMS	HC	CF	PDX	WF	a	OHN(2)	OAL	DMIN	IC228	IC908
PICCO R 003.0105-8	0.500	4.00	0.27	0.04	0.3	0.30	2.30	8.0	22.00	2.40		●
PICCO R 004.0105-10	0.500	4.00	0.27	0.09	0.4	1.00	3.00	10.0	24.00	3.20		●
PICCO R/L 004.0205-15	0.500	4.00	0.27	0.06	0.4	1.50	3.50	15.0	30.00	4.00	●	
PICCO R/L 005.0205-15	0.500	5.00	0.27	0.06	0.4	1.90	4.40	15.0	30.00	5.00	●	
PICCO R/L 005.0407-15	0.750	5.00	0.40	0.09	0.5	1.90	4.40	15.0	30.00	5.00	●	●
PICCO R 005.0407-20	0.750	5.00	0.40	0.09	0.5	1.90	4.40	20.0	35.00	5.00		●
PICCO R/L 005.0510-15	1.000	5.00	0.55	0.12	0.6	1.90	4.40	15.0	30.00	4.80	●	
PICCO R 005.0510-20	1.000	5.00	0.55	0.12	0.6	1.90	4.40	20.0	35.00	4.80		●
PICCO R/L 006.0510-15	1.000	6.00	0.55	0.12	0.6	2.30	5.30	15.0	30.00	6.00	●	
PICCO R 006.0510-22	1.000	6.00	0.55	0.12	0.6	2.30	5.30	22.0	37.00	6.00		●
PICCO R/L 006.0612-15	1.250	6.00	0.68	0.15	0.7	2.30	5.30	15.0	30.00	6.00	●	
PICCO R 006.0612-22	1.250	6.00	0.68	0.15	0.7	2.30	5.30	22.0	37.00	6.00		●
PICCO R/L 006.0815-15	1.500	6.00	0.81	0.18	0.8	2.30	5.30	15.0	30.00	6.00	●	
PICCO R 006.0815-22	1.500	6.00	0.81	0.18	0.8	2.30	5.30	22.0	37.00	6.00		●
PICCO R/L 007.0815-15	1.500	7.00	0.81	0.18	0.8	2.70	6.30	15.0	30.00	7.00	●	

• For detailed cutting data, see pages 660-670

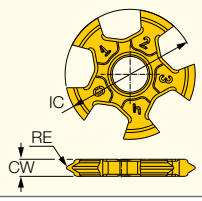
(1) Thread pitch

(2) Minimum overhang

DECAIQTHREAD

TTG-16E-ISO

External ISO Metric (DIN13 12-1986 class: 6G) Threading Inserts with 10 Threading Corners for General Industry



Designation	Dimensions				IC908
	TP	RE	CW	IC	
TTG-16E-0.50-ISO	0.500	0.06	2.10	16.00	●
TTG-16E-0.75-ISO	0.750	0.10	2.10	16.00	●
TTG-16E-1.00-ISO	1.000	0.13	2.10	16.00	●
TTG-16E-1.25-ISO	1.250	0.17	2.10	16.00	●
TTG-16E-1.50-ISO	1.500	0.20	2.10	16.00	●

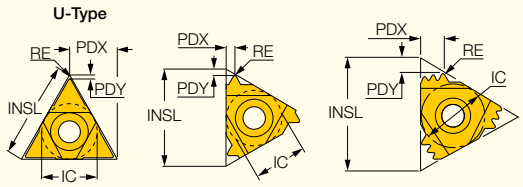
• For detailed cutting data, see pages 660-670

For tools, see pages: SER/L-TT-JHP (651) • SER/L-TT-JHP-MC (651) • TTADR/L-JHP (651)

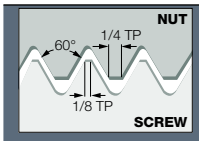
ISCARTHREAD

ER/L-ISO

External ISO Metric
(DIN13 12-1986 class: 6G)
Laydown Threading Inserts
for General Industry



External right-hand shown



Designation	Dimensions IC	TP[3]	RE	INSL	PDY	PDX	CICT[4]	Tough ↔ Hard IC228	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
11ER/L 0.35 ISO	6.35	0.350	0.04	11.00	0.8	0.4	1		●					●	
11ER 0.40 ISO	6.35	0.400	0.04	11.00	0.7	0.4	1							●	
11ER 0.45 ISO	6.35	0.450	0.05	11.00	0.7	0.4	1	●							
11ER/L 0.50 ISO	6.35	0.500	0.06	11.00	0.6	0.6	1			●				●	
11ER 0.60 ISO	6.35	0.600	0.07	11.00	0.6	0.6	1							●	
11ER 0.70 ISO	6.35	0.700	0.07	11.00	0.6	0.6	1		●					●	
11ER/L 0.75 ISO	6.35	0.750	0.08	11.00	0.6	0.6	1		●					●	
11ER 0.80 ISO	6.35	0.800	0.09	11.00	0.6	0.6	1							●	
11ER/L 1.00 ISO	6.35	1.000	0.13	11.00	0.7	0.7	1			●				●	
11ER 1.25 ISO	6.35	1.250	0.16	11.00	0.8	0.9	1							●	
11ER/L 1.50 ISO	6.35	1.500	0.19	11.00	0.8	0.9	1			●				●	
11ER 1.75 ISO	6.35	1.750	0.22	11.00	1.1	0.8	1			●					
16ER/L 0.35 ISO	9.52	0.350	0.04	16.49	0.6	0.4	1							●	
16ER/L 0.40 ISO	9.52	0.400	0.05	16.49	0.7	0.4	1							●	
16ER 0.45 ISO	9.52	0.450	0.05	16.49	0.6	0.4	1							●	
16ER/L 0.50 ISO	9.52	0.500	0.06	16.49	0.6	0.6	1			●	●			●	●
16ER 0.60 ISO	9.52	0.600	0.10	16.49	0.6	0.6	1							●	
16ER/L 0.70 ISO	9.52	0.700	0.11	16.49	0.6	0.6	1			●				●	●
16ER/L 0.75 ISO	9.52	0.750	0.11	16.49	0.6	0.6	1			●	●			●	●
16ER 0.75 ISO 3M [1]	9.52	0.750	0.07	16.49	1.4	1.9	3							●	
16ERM 0.75 ISO [2]	9.52	0.750	0.08	16.49	0.6	0.6	1						●	●	●
16ER/L 0.80 ISO	9.52	0.800	0.12	16.49	0.6	0.6	1			●				●	●
16ERB 0.80 ISO [2]	9.52	0.800	0.12	16.49	0.7	0.7	1							●	
16ER/L 1.00 ISO	9.52	1.000	0.13	16.49	0.7	0.7	1	●	●	●	●			●	●
16ER 1.00 ISO 3M [1]	9.52	1.000	0.07	16.49	1.7	2.5	3							●	
16ERB 1.00 ISO [2]	9.52	1.000	0.13	16.49	0.7	0.7	1							●	
16ERM 1.00 ISO [2]	9.52	1.000	0.11	16.49	0.7	0.7	1		●	●		●	●	●	●
16ER/L 1.25 ISO	9.52	1.250	0.16	16.49	0.8	0.9	1			●	●			●	●
16ERB 1.25 ISO [2]	9.52	1.250	0.16	16.49	0.8	0.9	1							●	
16ERM 1.25 ISO [2]	9.52	1.250	0.14	16.49	0.8	0.9	1			●			●	●	●
16ER/L 1.50 ISO	9.52	1.500	0.19	16.49	0.9	1.2	1	●	●	●	●			●	●
16ER 1.50 ISO 2M [1]	9.52	1.500	0.18	16.49	1.5	2.3	2			●				●	●
16ERB 1.50 ISO [2]	9.52	1.500	0.19	16.49	0.8	1.0	1							●	
16ERM 1.50 ISO [2]	9.52	1.500	0.19	16.49	0.8	1.0	1		●	●		●	●	●	●
16ER/L 1.75 ISO	9.52	1.750	0.22	16.49	0.9	1.2	1	●		●	●			●	●
16ERB 1.75 ISO [2]	9.52	1.750	0.22	16.49	0.9	1.2	1							●	
16ERM 1.75 ISO [2]	9.52	1.750	0.20	16.49	0.9	1.2	1			●			●	●	●
16ER/L 2.00 ISO	9.52	2.000	0.25	16.49	1.0	1.3	1	●	●	●	●			●	●
16ER 2.00 ISO 2M [1]	9.52	2.000	0.09	16.49	1.8	2.9	2							●	
16ERB 2.00 ISO [2]	9.52	2.000	0.25	16.49	0.9	1.2	1							●	
16ERM 2.00 ISO [2]	9.52	2.000	0.24	16.49	1.0	1.3	1			●		●	●	●	●
16ER/L 2.50 ISO	9.52	2.500	0.32	16.49	1.1	1.5	1		●	●				●	●
16ERB 2.50 ISO	9.52	2.500	0.32	16.49	1.1	1.5	1							●	
16ERM 2.50 ISO [2]	9.52	2.500	0.30	16.49	1.1	1.5	1			●			●	●	●
16ER/L 3.00 ISO	9.52	3.000	0.38	16.49	1.2	1.6	1	●	●	●		●		●	●
16ERB 3.00 ISO [2]	9.52	3.000	0.38	16.49	1.2	1.6	1							●	
16ERM 3.00 ISO [2]	9.52	3.000	0.38	16.49	1.2	1.6	1		●	●		●	●	●	●
22ER 1.50 ISO 3M [1]	12.70	1.500	0.07	22.00	2.3	3.7	3			●				●	
22ER 2.00 ISO 2M [1]	12.70	2.000	0.25	22.00	2.0	3.0	2							●	
22ER 2.00 ISO 3M [1]	12.70	2.000	0.25	22.00	3.1	5.0	3			●				●	
22ER/L 3.50 ISO	12.70	3.500	0.46	22.00	1.6	2.3	1	●		●				●	
22ERM 3.50 ISO [2]	12.70	3.500	0.48	22.00	1.6	2.3	1						●	●	
22ER/L 4.00 ISO	12.70	4.000	0.52	22.00	1.6	2.3	1		●	●				●	●
22ERM 4.00 ISO [2]	12.70	4.000	0.52	22.00	1.6	2.3	1						●	●	

• For Insert Identification System, see page 605 • For threading between walls use GRIP-type inserts TIP-ISO class: 6G
• For technical information and detailed cutting data, see pages 660-670 • For recommended number of passes for multi-tooth inserts see page 664

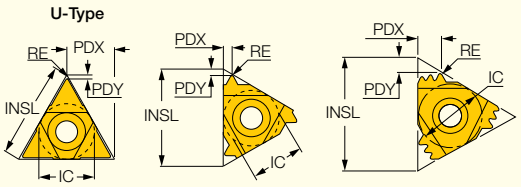
[1] Multi-tooth
[2] With pressed chipformer
[3] Thread pitch
[4] Number of teeth per corner

For tools, see pages: C#-SER/L (643) • SER-D (644) • SER/L (642) • SER/L-JHP (643) • SER/L-JHP-MC (644)

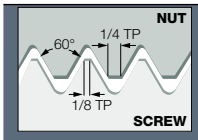
ISCARTHREAD

ER/L-ISO (continued)

External ISO Metric
(DIN13 12-1986 class: 6G)
Laydown Threading Inserts
for General Industry



External right-hand shown

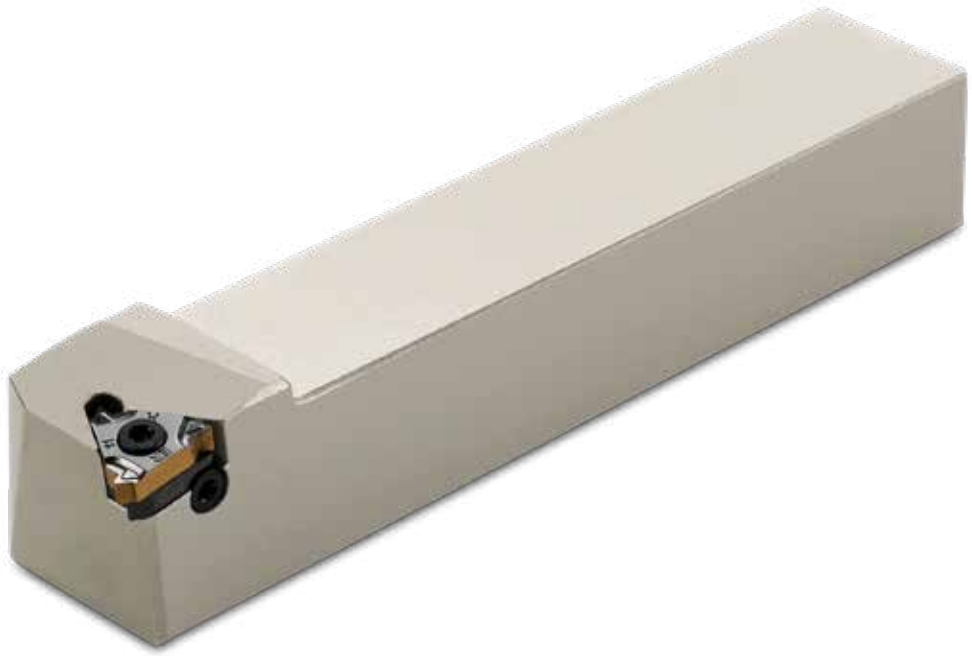


Designation	Dimensions IC	TP[3]	RE	INSL	PDY	PDX	CICT[4]	Tough ↔ Hard IC228	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
22ER 4.50 ISO	12.70	4.500	0.58	22.00	1.6	2.3	1			●				●	
22ER/L 5.00 ISO	12.70	5.000	0.66	22.00	1.7	2.5	1			●				●	
22UERL 5.50 ISO	12.70	5.500	0.70	22.00	2.3	11.0	1	●		●					
22ER/L 6.00 ISO	12.70	6.000	0.78	22.00	2.0	2.7	1			●					
22UERL 6.00 ISO	12.70	6.000	0.78	22.00	2.6	11.0	1	●		●					
27ER 3.00 ISO 2M [1]	15.88	3.000	0.38	27.50	2.9	4.6	2							●	
27ER 5.50 ISO	15.88	5.500	0.71	27.50	2.0	2.9	1							●	
27ER/L 6.00 ISO	15.88	6.000	0.78	27.50	2.0	2.9	1	●		●				●	
27UERL 8.00 ISO	15.88	8.000	1.08	27.50	2.4	13.7	1							●	

• For Insert Identification System, see page 605 • For threading between walls use GRIP-type inserts TIP-ISO class: 6G
• For technical information and detailed cutting data, see pages 660-670 • For recommended number of passes for multi-tooth inserts see page 664

[1] Multi-tooth
[2] With pressed chipformer
[3] Thread pitch
[4] Number of teeth per corner

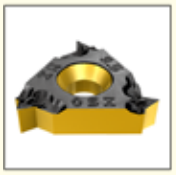
For tools, see pages: C#-SER/L (643) • SER-D (644) • SER/L (642) • SER/L-JHP (643) • SER/L-JHP-MC (644)

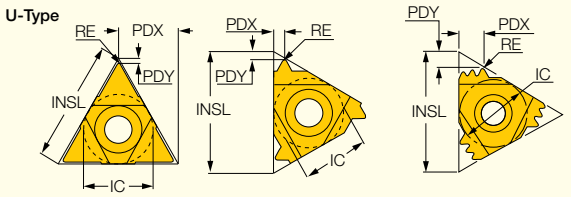


ISCARTHREAD

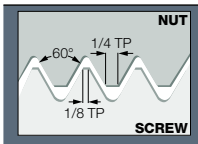
IR/L-ISO

Internal ISO Metric
(DIN13 12-1986 class 6H)
Laydown Threading Inserts
for General Industry





Internal left-hand shown



Designation	Dimensions IC	TP	RE	INSL	PDY	PDX	CICT[3]	Tough ↔ Hard IC28	IC228	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007	IC928
06IR/L 0.50 ISO	3.97	0.500	0.04	6.88	0.9	0.4	1		•						•		•
06IR/L 0.75 ISO	3.97	0.750	0.05	6.88	0.6	0.5	1		•						•		•
06IR/L 1.00 ISO	3.97	1.000	0.05	6.88	0.6	0.6	1		•						•		•
06IR/L 1.25 ISO	3.97	1.250	0.07	6.88	0.6	0.6	1		•						•		•
08IR/L 0.50 ISO	4.76	0.500	0.04	8.24	0.6	0.5	1		•						•		•
08IR 0.75 ISO	4.76	0.750	0.05	8.24	0.6	0.5	1		•						•		•
08IR/L 1.00 ISO	4.76	1.000	0.05	8.24	0.6	0.6	1		•						•		•
08IR/L 1.25 ISO	4.76	1.250	0.07	8.24	0.7	0.7	1		•						•		•
08IR/L 1.50 ISO	4.76	1.500	0.09	8.24	0.7	0.7	1	•	•						•		•
08IR/L 1.75 ISO	4.76	1.750	0.10	8.24	0.6	0.8	1		•						•		•
08UIRL 2.00 ISO	4.76	2.000	0.12	8.24	0.9	4.0	1		•								
11IR/L 0.35 ISO	6.35	0.350	0.02	11.00	0.8	0.3	1					•			•		
11IR 0.40 ISO	6.35	0.400	0.02	11.00	0.8	0.4	1								•		
11IR/L 0.50 ISO	6.35	0.500	0.04	11.00	0.8	0.6	1				•	•			•		
11IRB 0.50 ISO	6.35	0.500	0.04	11.00	0.8	0.6	1								•		
11IR 0.70 ISO	6.35	0.700	0.04	11.00	0.6	0.6	1								•		
11IR/L 0.75 ISO	6.35	0.750	0.05	11.00	0.6	0.6	1								•		
11IRB 0.75 ISO	6.35	0.750	0.05	11.00	0.6	0.6	1								•		
11IR 0.80 ISO	6.35	0.800	0.04	11.00	0.6	0.6	1								•		
11IRB 0.80 ISO	6.35	0.800	0.04	11.00	0.6	0.6	1								•		
11IR/L 1.00 ISO	6.35	1.000	0.07	11.00	0.6	0.7	1		•	•	•	•			•	•	
11IRB 1.00 ISO	6.35	1.000	0.07	11.00	0.6	0.6	1								•		
11IRM 1.00 ISO [1]	6.35	1.000	0.05	11.00	0.6	0.7	1							•	•	•	
11IR/L 1.25 ISO	6.35	1.250	0.09	11.00	0.9	0.8	1								•		
11IRB 1.25 ISO	6.35	1.250	0.09	11.00	0.8	0.9	1								•		
11IR/L 1.50 ISO	6.35	1.500	0.11	11.00	0.8	0.9	1		•	•	•	•			•	•	
11IRB 1.50 ISO	6.35	1.500	0.11	11.00	0.8	0.9	1								•		
11IRM 1.50 ISO [1]	6.35	1.500	0.08	11.00	0.8	1.0	1				•				•	•	
11IR/L 1.75 ISO	6.35	1.750	0.13	11.00	0.8	1.0	1			•					•		
11IRB 1.75 ISO	6.35	1.750	0.13	11.00	0.8	0.9	1								•		
11IR/L 2.00 ISO	6.35	2.000	0.14	11.00	0.8	0.9	1		•		•		•		•	•	
16IR 0.35 ISO	9.52	0.350	0.02	16.49	0.6	0.3	1								•		
16IR/L 0.40 ISO	9.52	0.400	0.02	16.49	0.8	0.4	1								•		
16IL 0.45 ISO	9.52	0.450	0.02	16.49	0.8	0.4	1								•		
16IR/L 0.50 ISO	9.52	0.500	0.04	16.49	0.8	0.6	1				•	•			•		
16IR 0.60 ISO	9.52	0.600	0.03	16.49	0.6	0.6	1								•		
16IR 0.70 ISO	9.52	0.700	0.04	16.49	0.6	0.6	1				•				•		
16IR/L 0.75 ISO	9.52	0.750	0.05	16.49	0.6	0.6	1								•		
16IR/L 0.80 ISO	9.52	0.800	0.04	16.49	0.6	0.6	1			•	•						
16IR/L 1.00 ISO	9.52	1.000	0.07	16.49	0.7	0.8	1			•	•	•			•	•	
16IR 1.00 ISO 3M [2]	9.52	1.000	0.07	16.49	1.6	2.5	3								•		
16IRB 1.00 ISO [1]	9.52	1.000	0.07	16.49	0.7	0.8	1								•		
16IRM 1.00 ISO [1]	9.52	1.000	0.05	16.49	0.6	0.7	1			•	•		•	•	•	•	
16IR/L 1.25 ISO	9.52	1.250	0.07	16.49	0.8	0.9	1			•	•	•			•		
16IRB 1.25 ISO [1]	9.52	1.250	0.09	16.49	0.7	0.8	1								•		
16IRM 1.25 ISO [1]	9.52	1.250	0.06	16.49	0.8	0.9	1				•				•	•	
16IR/L 1.50 ISO	9.52	1.500	0.11	16.49	1.0	1.1	1		•	•	•	•			•	•	
16IR 1.50 ISO 2M [2]	9.52	1.500	0.09	16.49	1.5	2.3	2								•		
16IRB 1.50 ISO [1]	9.52	1.500	0.11	16.49	1.0	1.2	1								•		
16IRM 1.50 ISO [1]	9.52	1.500	0.08	16.49	0.8	1.0	1			•	•		•	•	•	•	
16IR/L 1.75 ISO	9.52	1.750	0.13	16.49	0.9	1.2	1				•	•			•		
16IRB 1.75 ISO [1]	9.52	1.750	0.13	16.49	0.9	1.2	1								•		
16IRM 1.75 ISO [1]	9.52	1.750	0.10	16.49	0.9	1.2	1				•			•	•	•	

• For Insert Identification System, see page 605. • Tolerance: Class 6H. • For technical information and detailed cutting data, see pages 660-670
• For threading between walls use GRIP-type inserts TIP-ISO class: 6G • For recommended number of passes for multi-tooth inserts see page 664

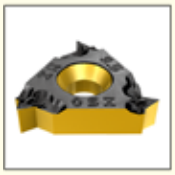
[1] With pressed chipformer
[2] Multi-tooth
[3] Thread pitch

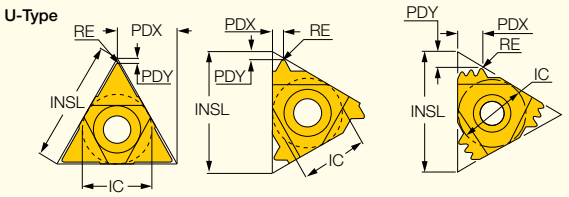
For tools, see pages: MGSIR/L (104) • SIR/L (655)

ISCARTHREAD

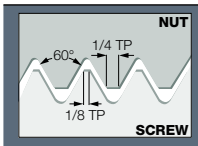
IR/L-ISO (continued)

Internal ISO Metric
(DIN13 12-1986 class 6H)
Laydown Threading Inserts
for General Industry





Internal left-hand shown



Designation	Dimensions IC	TP	RE	INSL	PDY	PDX	CICT(3)	Tough ↔ Hard IC28	IC228	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007	IC928
16IR/L 2.00 ISO	9.52	2.000	0.14	16.49	1.0	1.2	1		•		•		•		•	•	
16IR 2.00 ISO 2M (2)	9.52	2.000	0.09	16.49	1.7	2.7	2								•		
16IRB 2.00 ISO (1)	9.52	2.000	0.14	16.49	1.0	1.2	1								•		
16IRM 2.00 ISO (1)	9.52	2.000	0.11	16.49	1.0	1.3	1				•		•	•	•	•	
16IR/L 2.50 ISO	9.52	2.500	0.18	16.49	1.2	1.5	1		•		•				•	•	
16IRB 2.50 ISO	9.52	2.500	0.18	16.49	1.2	1.5	1								•		
16IRM 2.50 ISO (1)	9.52	2.500	0.14	16.49	1.1	1.5	1				•			•	•	•	
16IR/L 3.00 ISO	9.52	3.000	0.21	16.49	1.1	1.5	1		•		•				•	•	
16IRB 3.00 ISO (1)	9.52	3.000	0.22	16.49	1.1	1.5	1								•		
16IRM 3.00 ISO (1)	9.52	3.000	0.17	16.49	1.1	1.5	1				•		•	•	•	•	
22IR 1.50 ISO 3M (2)	12.70	1.500	0.07	22.00	2.3	3.7	3				•				•		
22IR 2.00 ISO 2M (2)	12.70	2.000	0.09	22.00	2.3	3.0	2								•		
22IR 2.00 ISO 3M (2)	12.70	2.000	0.07	22.00	3.2	5.0	3								•		
22IL 3.00 ISO	12.70	3.000	0.17	16.00	1.1	1.5	1		•								
22IR/L 3.50 ISO	12.70	3.500	0.23	22.00	1.6	2.3	1				•				•	•	
22IR/L 4.00 ISO	12.70	4.000	0.27	22.00	1.6	2.3	1			•	•				•		
22IR/L 4.50 ISO	12.70	4.500	0.31	22.00	1.6	2.3	1				•				•		
22IR/L 5.00 ISO	12.70	5.000	0.33	22.00	1.7	2.5	1			•	•				•		
22IR 6.00 ISO	12.70	6.000	0.40	22.00	1.8	2.5	1								•		
22UIRL 5.50 ISO	12.70	5.500	0.35	22.00	2.4	11.0	1			•	•						
22UIRL 6.00 ISO	12.70	6.000	0.39	22.00	2.1	11.0	1				•						
27IR 3.00 ISO 2M (2)	15.88	3.000	0.18	27.50	2.9	4.6	2								•		
27IR 5.50 ISO	15.88	5.500	0.36	27.50	1.9	2.5	1				•				•		
27IR 6.00 ISO	15.88	6.000	0.40	27.50	1.9	2.5	1				•				•		

• For Insert Identification System, see page 605 • Tolerance: Class 6H. • For technical information and detailed cutting data, see pages 660-670
• For recommended number of passes for multi-tooth inserts see page 664 • For threading between walls use GRIP-type inserts TIP-ISO class: 6G

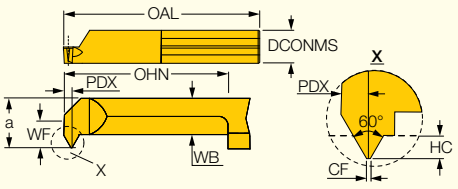
(1) With pressed chipformer
(2) Multi-tooth
(3) Thread pitch

For tools, see pages: MGSIR/L (104) • SIR/L (655)

PICCOCUT

PICCO ISO Full Profile

Inserts for ISO Standard
Full Profile Thread



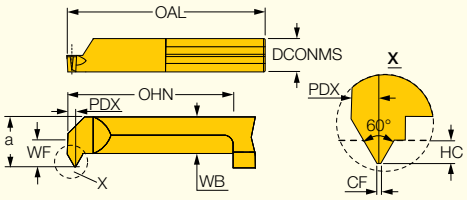
Right-hand shown

Designation	Dimensions TP	DCONMS	WF	a	OAL	LH	WB	PDX	HC	CF	DMIN	IC908
PICCO R/L 105.0510-15	1.000	5.00	1.90	4.40	30.00	15.0	3.30	0.6	0.54	0.12	4.80	•
PICCO R/L 106.0612-15	1.250	6.00	2.30	5.30	30.00	15.0	3.40	0.7	0.67	0.15	6.00	•
PICCO R/L 106.0815-15	1.500	6.00	2.30	5.30	30.00	15.0	3.40	0.8	0.81	0.18	6.00	•
PICCO R/L 107.0815-15	1.500	7.00	2.80	6.30	30.00	15.0	3.80	0.8	0.81	0.18	7.00	•

PICCOCUT

PICCO ISO Full Profile Fine

Inserts for ISO Fine Pitch Full Profile Thread



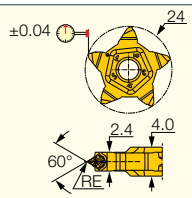
Right-hand shown

Designation	Dimensions											IC908
	TP	DCONMS	WF	a	OAL	LH	WB	PDX	HC	CF	DMIN	
PICCO R/L 104.0205-15	0.500	5.00	1.50	3.50	30.00	15.0	2.40	0.4	0.27	0.06	4.00	●
PICCO R/L 105.0205-15	0.500	5.00	1.90	4.40	30.00	15.0	3.30	0.4	0.27	0.06	5.00	●
PICCO R/L 105.0407-15	0.750	5.00	1.90	4.40	30.00	15.0	3.30	0.5	0.40	0.09	5.00	●
PICCO R/L 106.0510-15	1.000	6.00	2.30	5.30	30.00	15.0	3.40	0.6	0.54	0.12	6.00	●

PENTACUT THREADING LINE

PENTA 24-ISO

Precision Ground ISO Metric Full Profile Pentagonal External Threading Inserts with a Chipformer



Designation	Dimensions		IC908
	TP	RE	
PENTA 24-0.5-ISO	0.500	0.08	●
PENTA 24-0.75-ISO	0.750	0.11	●
PENTA 24-0.8-ISO	0.800	0.12	●
PENTA 24-1.0-ISO	1.000	0.14	●
PENTA 24-1.25-ISO	1.250	0.18	●
PENTA 24-1.5-ISO	1.500	0.22	●
PENTA 24-1.75-ISO	1.750	0.25	●
PENTA 24-2.0-ISO	2.000	0.28	●

• DMIN(mm)=5.435xTP

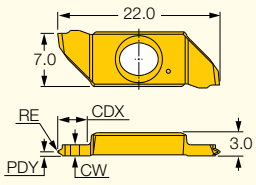
For tools, see pages: PCAD RE/LE-JHP (301) • PCADR/L (300) • PCADR/L-JHP (301) • PCHBR/L (302) • PCHPR/L (300) • PCHR/L-24 (297) • PCHR/L-24-JHP (298) • PCHR/L-24-JHP-MC (298)

ISCARTHREAD

SWISSCUT INNOVAL LINE

SCIR-22-MTR-ISO

Precision Ground ISO Metric Full Profile Threading Inserts



Designation	Dimensions					IC1008
	TP	CW	CDX	RE	PDY	
SCIR 22-MTR-0.3ISO	0.300	1.00	3.00	0.03	0.2	●
SCIR 22-MTR-0.4ISO	0.400	1.00	3.00	0.04	0.2	●
SCIR 22-MTR-0.5ISO	0.500	1.00	3.00	0.06	0.3	●
SCIR 22-MTR-0.75ISO	0.750	1.00	3.00	0.10	0.4	●
SCIR 22-MTR-1.0ISO	1.000	1.50	4.00	0.14	0.6	●
SCIR 22-MTR-1.5ISO	1.500	2.00	4.00	0.20	0.8	●

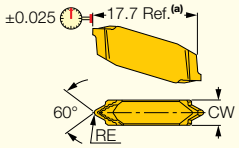
For tools, see pages: SCHR/L-22BF (347) • SCHR/L-22BF-JHP (347)

ISCARTHREAD

CUTGRIP

TIP-P-ISO

Precision Ground ISO Metric Full Profile Double-Ended External Threading Inserts with a Chipformer



Designation	Dimensions TP	CW	RE	RETOL(1)	Tough ↔ Hard IC08	IC908
TIP 2P0.5-ISO	0.500	2.40	0.08	0.030	●	●
TIP 2P0.75-ISO	0.750	2.40	0.11	0.030	●	●
TIP 2P0.8-ISO	0.800	2.40	0.12	0.030	●	●
TIP 2P1.0-ISO	1.000	2.40	0.14	0.030	●	●
TIP 2P1.25-ISO	1.250	2.40	0.18	0.030	●	●
TIP 2P1.5-ISO	1.500	2.40	0.22	0.030	●	●
TIP 2P1.75-ISO	1.750	2.40	0.25	0.030	●	●
TIP 4P2.0-ISO	2.000	4.00	0.28	0.030	●	●
TIP 4P2.5-ISO	2.500	4.00	0.35	0.050	●	●
TIP 4P3.0-ISO	3.000	4.00	0.42	0.050		●
TIP 4P3.5-ISO	3.500	4.00	0.48	0.050		●
TIP 5P4.0-ISO	4.000	5.50	0.55	0.050		●
TIP 5P5.0-ISO	5.000	5.50	0.68	0.050		●

• (a) TIP inserts are 1.6 mm longer than GIP in the same pocket • Toolholder seat needs to be modified according to insert profile to ensure clearance

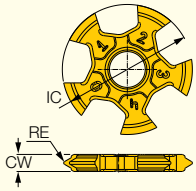
(1) Thread pitch

For tools, see pages: C#-GHDR/L (259) • CGHN-D (266) • CGHN-DG (267) • CGHN-S (266) • CGPAD (265) • CGPAD-JHP (265) • GHDR/L (short pocket) (259) • GHDR/L-JHP (short pocket) (260) • GHDR/L-JHP-MC (short pocket) (261) • GHGR/L (262) • GHMPR/L (258) • GHMR/L (258) • GHSR/L (357) • GHSR/L-JHP-SL (358)

DECAIQTHREAD

TTG-16E-UN

External American UN Full Profile (UN, UNC, UNF, UNEF) Threading Inserts with 10 Threading Corners for General Industry



Designation	Dimensions TPI(1)	RE	CW	IC	IC908
TTG-16E-32-UN	32.0	0.08	2.10	16.00	●
TTG-16E-28-UN	28.0	0.10	2.10	16.00	●
TTG-16E-24-UN	24.0	0.11	2.10	16.00	●
TTG-16E-20-UN	20.0	0.14	2.10	16.00	●
TTG-16E-18-UN	18.0	0.15	2.10	16.00	●
TTG-16E-16-UN	16.0	0.19	2.10	16.00	●

• For detailed cutting data, see pages 660-670

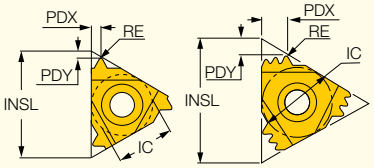
(1) Threads per inch

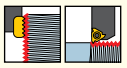
For tools, see pages: SER/L-TT-JHP (651) • SER/L-TT-JHP-MC (651) • TTADR/L-JHP (651)

ISCARTHREAD

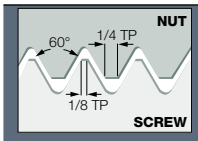
ER/L-UN

External American UN Full Profile (UN, UNC, UNF, UNEF) Laydown Threading Inserts for General Industry





External right-hand shown



Designation	Dimensions IC	TPI[3]	RE	INSL	PDY	PDX	CICT[4]	Tough ↔ Hard IC228	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
11ER 44 UN	6.35	44.0	0.05	11.00	0.6	0.6	1							•	
11ER 36 UN	6.35	36.0	0.07	11.00	0.6	0.6	1							•	
11ER 32 UN	6.35	32.0	0.10	11.00	0.6	0.6	1							•	
11ER 28 UN	6.35	28.0	0.10	11.00	0.6	0.7	1							•	
11ER 24 UN	6.35	24.0	0.12	11.00	0.7	0.8	1							•	
11ER/L 20 UN	6.35	20.0	0.15	11.00	0.8	0.9	1			•				•	
11ER 18 UN	6.35	18.0	0.17	11.00	0.8	1.0	1							•	
11ER 16 UN	6.35	16.0	0.18	11.00	0.9	1.1	1		•	•				•	
16ER 72 UN	9.52	72.0	0.04	16.49	0.8	0.4	1							•	
16ER 56 UN	9.52	56.0	0.06	16.49	0.7	0.4	1							•	
16ER 48 UN	9.52	48.0	0.05	16.49	0.6	0.6	1							•	
16ER 40 UN	9.52	40.0	0.06	16.49	0.6	0.6	1					•		•	
16ER/L 36 UN	9.52	36.0	0.07	16.49	0.6	0.6	1							•	
16ER/L 32 UN	9.52	32.0	0.10	16.49	0.6	0.6	1			•				•	•
16ER/L 28 UN	9.52	28.0	0.11	16.49	0.6	0.7	1			•				•	•
16ER 27 UN	9.52	27.0	0.10	16.49	0.7	0.8	1		•						
16ER/L 24 UN	9.52	24.0	0.13	16.49	0.7	0.8	1			•				•	•
16ERB 24 UN [1]	9.52	24.0	0.13	16.49	0.7	0.8	1							•	
16ERM 24 UN [1]	9.52	24.0	0.11	16.49	0.7	0.8	1			•				•	•
16ER/L 20 UN	9.52	20.0	0.16	16.49	0.9	0.8	1			•	•			•	•
16ERB 20 UN [1]	9.52	20.0	0.16	16.49	0.8	0.9	1							•	
16ERM 20 UN [1]	9.52	20.0	0.14	16.49	0.8	0.9	1			•			•	•	•
16ER/L 18 UN	9.52	18.0	0.17	16.49	0.7	0.8	1		•	•				•	•
16ERB 18 UN [1]	9.52	18.0	0.18	16.49	0.7	0.8	1							•	
16ERM 18 UN [1]	9.52	18.0	0.15	16.49	0.8	1.0	1			•			•	•	•
16ER/L 16 UN	9.52	16.0	0.20	16.49	1.0	1.2	1	•		•				•	•
16ER 16 UN 2M [2]	9.52	16.0	0.09	16.49	1.5	2.3	2							•	
16ERB 16 UN [1]	9.52	16.0	0.20	16.49	1.0	1.2	1							•	
16ERM 16 UN [1]	9.52	16.0	0.19	16.49	0.9	1.1	1			•			•	•	•
16ER/L 14 UN	9.52	14.0	0.22	16.49	1.0	1.2	1			•		•		•	•
16ER 14 UN 2M [2]	9.52	14.0	0.09	16.49	1.6	2.6	2							•	
16ERB 14 UN [1]	9.52	14.0	0.23	16.49	1.0	1.2	1							•	
16ERM 14 UN [1]	9.52	14.0	0.22	16.49	1.0	1.2	1			•			•	•	•
16ER/L 13 UN	9.52	13.0	0.24	16.49	1.0	1.2	1			•				•	
16ERB 13 UN [1]	9.52	13.0	0.25	16.49	0.9	1.2	1							•	
16ERM 13 UN [1]	9.52	13.0	0.24	16.49	1.0	1.3	1							•	
16ER/L 12 UN	9.52	12.0	0.27	16.49	1.1	1.2	1			•	•			•	•
16ER 12 UN 2M [2]	9.52	12.0	0.27	16.49	2.2	3.4	2							•	
16ERB 12 UN [1]	9.52	12.0	0.27	16.49	0.9	1.2	1							•	
16ERM 12 UN [1]	9.52	12.0	0.25	16.49	1.1	1.4	1		•	•			•	•	•
16ER 11.5 UN	9.52	11.5	0.27	16.49	1.2	1.5	1							•	
16ER/L 11 UN	9.52	11.0	0.28	16.49	1.1	1.5	1			•				•	
16ERB 11 UN [1]	9.52	11.0	0.29	16.49	1.1	1.5	1							•	
16ER/L 10 UN	9.52	10.0	0.32	16.49	1.1	1.5	1		•	•				•	•
16ERB 10 UN [1]	9.52	10.0	0.32	16.49	1.1	1.5	1							•	
16ER 9 UN	9.52	9.0	0.35	16.49	1.3	1.6	1							•	
16ERB 9 UN [1]	9.52	9.0	0.35	16.49	1.3	1.6	1							•	
16ER/L 8 UN	9.52	8.0	0.40	16.49	1.2	1.6	1			•				•	•
16ERB 8 UN [1]	9.52	8.0	0.40	16.49	1.2	1.6	1							•	
16ERM 8 UN [1]	9.52	8.0	0.41	16.49	1.2	1.6	1			•				•	•
22ER 12 UN 2M [2]	12.70	12.0	0.27	22.00	2.2	3.4	2							•	
22ER 12 UN 3M [2]	12.70	12.0	0.27	22.00	3.2	5.2	3		•					•	
22ER 7 UN	12.70	7.0	0.47	22.00	1.6	2.3	1							•	
22ER 6 UN	12.70	6.0	0.56	22.00	1.6	2.3	1							•	
22ER 5 UN	12.70	5.0	0.67	22.00	1.7	2.5	1		•	•				•	
27ER 8 UN 2M [2]	15.88	8.0	0.41	27.50	3.1	4.9	2							•	
27ER 4.5 UN	15.88	4.5	0.75	27.50	1.9	2.7	1							•	
27ER 4 UN	15.88	4.0	0.85	27.50	0.7	0.8	1		•	•				•	

• For Insert Identification System, see page 605 • Tolerance: Class 2A • For threading between walls use GRIP-type insert TIP-UN • For technical information and detailed cutting data, see pages 660-670 • For recommended number of passes for multi-tooth inserts see page 664

[1] With pressed chipformer.

[2] Multi-tooth

[3] Threads per inch

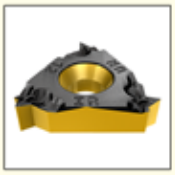
[4] Number of teeth per corner

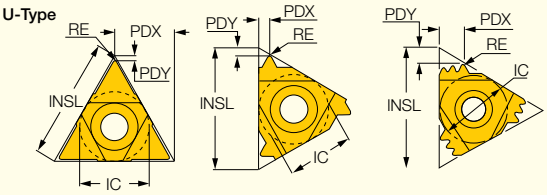
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652) • SER/L-JHP (653) • SER/L-JHP-MC (654)

ISCARTHREAD

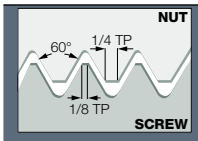
IR/L-UN

Internal American UN Full Profile (UN, UNC, UNF, UNEF) Laydown Threading Inserts for General Industry





Internal left-hand shown



Designation	Dimensions IC	TPI[3]	RE	INSL	PDY	PDX	CICT[4]	Tough ↔ Hard IC228	IC928	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
06IR 32 UN	3.97	32.0	0.04	6.88	0.8	0.5	1	●								
06IL 28 UN	3.97	28.0	0.04	6.88	0.8	0.6	1	●								
06IR/L 24 UN	3.97	24.0	0.05	6.88	0.7	0.6	1	●								
06IR 20 UN	3.97	20.0	0.09	6.88	0.6	0.6	1	●								
06IR/L 18 UN	3.97	18.0	0.07	6.88	0.6	0.7	1	●								
08IR 32 UN	4.76	32.0	0.04	8.24	0.6	0.5	1	●								
08IR/L 28 UN	4.76	28.0	0.04	8.24	0.6	0.6	1	●								
08IR/L 24 UN	4.76	24.0	0.05	8.24	0.6	0.6	1	●								
08IR/L 20 UN	4.76	20.0	0.08	8.24	0.7	0.7	1	●								
08IR 18 UN	4.76	18.0	0.08	8.24	0.8	0.7	1	●								
08IR 16 UN	4.76	16.0	0.09	8.24	0.6	0.7	1	●								
08IR 14 UN	4.76	14.0	0.10	8.24	0.6	0.8	1	●							●	
08UIRL 13 UN	4.76	13.0	0.10	8.24	1.0	4.0	1								●	
08UIRL 12 UN	4.76	12.0	0.10	8.24	0.9	4.0	1		●							
08UIRL 11 UN	4.76	11.0	0.10	8.24	0.9	4.0	1	●								
11IR 64 UN	6.35	64.0	0.02	11.00	0.8	0.4	1								●	
11IR 36 UN	6.35	36.0	0.04	11.00	0.6	0.6	1								●	
11IR/L 32 UN	6.35	32.0	0.04	11.00	0.6	0.6	1								●	
11IRB 32 UN	6.35	32.0	0.04	11.00	0.6	0.6	1								●	
11IR/L 28 UN	6.35	28.0	0.04	11.00	0.6	0.7	1								●	
11IRB 28 UN	6.35	28.0	0.05	11.00	0.6	0.6	1								●	
11IR/L 24 UN	6.35	24.0	0.07	11.00	0.8	0.8	1								●	
11IRB 24 UN	6.35	24.0	0.07	11.00	0.6	0.6	1								●	
11IR/L 20 UN	6.35	20.0	0.09	11.00	0.8	0.9	1								●	
11IRB 20 UN	6.35	20.0	0.09	11.00	0.8	0.9	1								●	
11IR/L 18 UN	6.35	18.0	0.10	11.00	0.9	1.0	1				●				●	●
11IRB 18 UN	6.35	18.0	0.10	11.00	0.9	0.9	1								●	
11IR/L 16 UN	6.35	16.0	0.11	11.00	0.9	1.0	1								●	●
11IRB 16 UN	6.35	16.0	0.11	11.00	0.9	0.9	1								●	
11IR/L 14 UN	6.35	14.0	0.10	11.00	0.9	1.1	1			●					●	
11IRB 14 UN	6.35	14.0	0.13	11.00	0.9	0.9	1								●	
11IR 12 UN	6.35	12.0	0.12	11.00	0.9	1.1	1				●				●	
11IRB 12 UN	6.35	12.0	0.13	11.00	0.9	0.9	1								●	
11IR 11 UN	6.35	11.0	0.14	11.00	0.8	0.9	1				●				●	
16IR 32 UN	9.52	32.0	0.04	16.49	0.6	0.6	1				●				●	
16IR/L 28 UN	9.52	28.0	0.04	16.49	0.6	0.7	1								●	
16IR 27 UN	9.52	27.0	0.04	16.49	0.7	0.8	1			●						
16IR 24 UN	9.52	24.0	0.07	16.49	0.7	0.8	1								●	
16IRB 24 UN [1]	9.52	24.0	0.07	16.49	0.7	0.8	1								●	
16IR/L 20 UN	9.52	20.0	0.06	16.49	0.8	0.9	1				●	●			●	●
16IRB 20 UN [1]	9.52	20.0	0.09	16.49	0.8	0.8	1								●	
16IRM 20 UN [1]	9.52	20.0	0.06	16.49	0.8	0.9	1								●	●
16IR/L 18 UN	9.52	18.0	0.08	16.49	0.7	0.8	1				●				●	
16IRB 18 UN [1]	9.52	18.0	0.08	16.49	0.7	0.8	1								●	
16IRM 18 UN [1]	9.52	18.0	0.08	16.49	0.8	1.0	1							●	●	
16IR/L 16 UN	9.52	16.0	0.11	16.49	1.0	1.1	1				●				●	
16IR 16 UN-2M [2]	9.52	16.0	0.09	16.49	1.5	2.3	2						●		●	
16IRB 16 UN [1]	9.52	16.0	0.11	16.49	0.9	1.1	1								●	
16IRM 16 UN [1]	9.52	16.0	0.09	16.49	0.9	1.1	1				●				●	●
16IR/L 14 UN	9.52	14.0	0.13	16.49	0.9	1.1	1								●	
16IRB 14 UN [1]	9.52	14.0	0.13	16.49	0.9	1.1	1								●	
16IRM 14 UN [1]	9.52	14.0	0.11	16.49	0.9	1.2	1				●			●	●	●

- For Insert Identification System, see page 605 • Tolerance: class 2B,ANSI B1, 3M-1986.
- For technical information and detailed cutting data, see pages 660-670
- Tolerance: Class 2A
- For threading between walls use GRIP-type insert TIP-UN
- For recommended number of passes for multi-tooth inserts see page 664

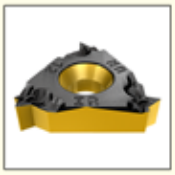
[1] With pressed chipformer.
[2] Multi-tooth
[3] Threads per inch
[4] Number of teeth per corner

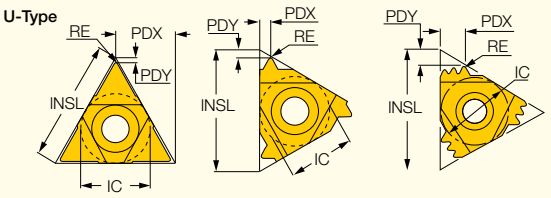
For tools, see pages: MGSIR/L (104) • SIR/L (655)

ISCARTHREAD

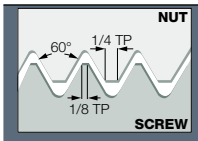
IR/L-UN (continued)

Internal American UN Full Profile (UN, UNC, UNF, UNEF) Laydown Threading Inserts for General Industry





Internal left-hand shown

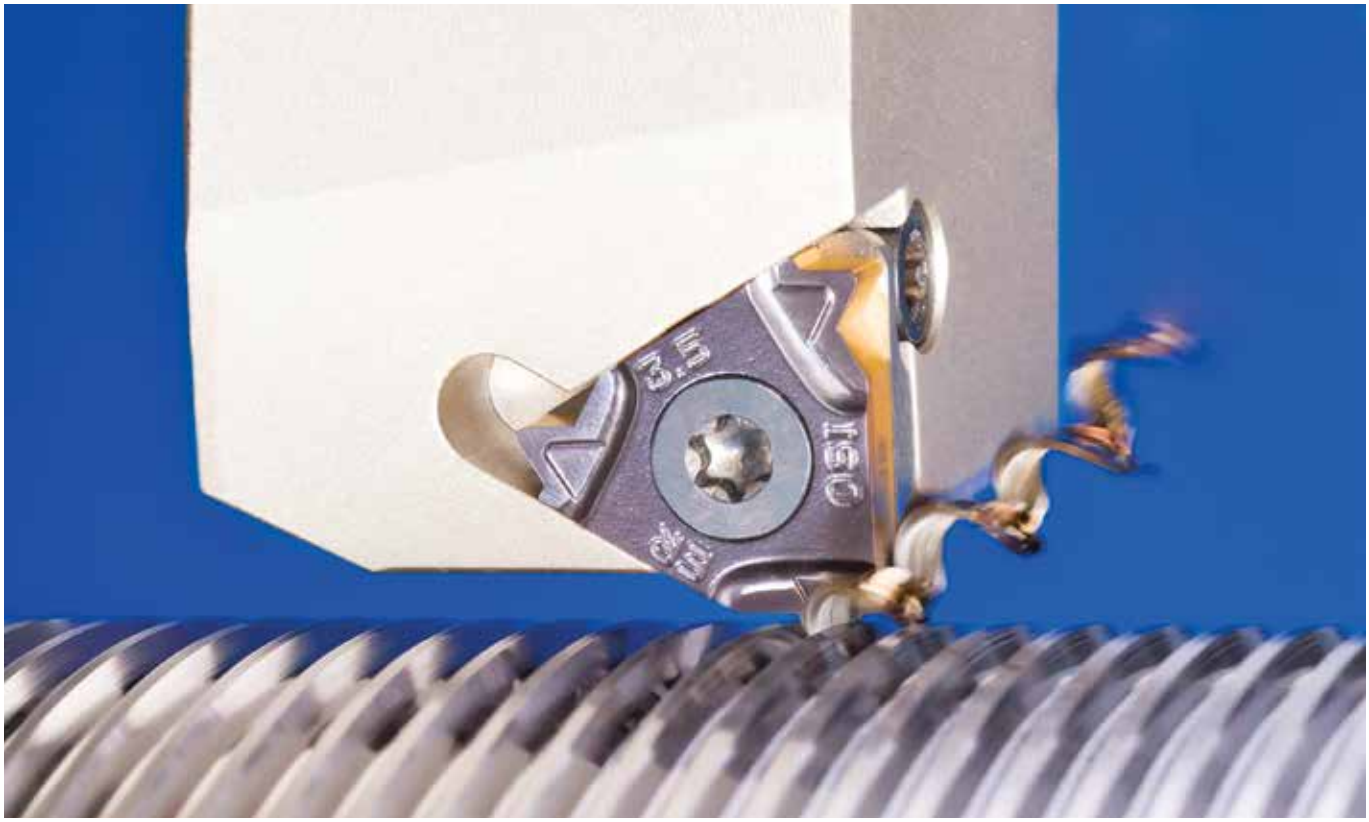


Designation	Dimensions IC	TPI[3]	RE	INSL	PDY	PDX	CICT[4]	Tough ↔ Hard IC228	IC928	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
16IR/L 13 UN	9.52	13.0	0.11	16.49	1.0	1.3	1			●					●	
16IR/L 12 UN	9.52	12.0	0.13	16.49	1.0	1.1	1				●	●			●	●
16IRB 12 UN [1]	9.53	12.0	0.13	16.49	1.0	1.1	1								●	
16IRM 12 UN [1]	9.52	12.0	0.12	16.49	1.1	1.4	1				●			●	●	●
16IR 11.5 UN	9.52	11.5	0.14	16.49	1.0	1.1	1								●	
16IR 11 UN	9.52	11.0	0.14	16.49	1.0	1.1	1								●	
16IR/L 10 UN	9.52	10.0	0.15	16.49	1.1	1.5	1				●				●	
16IRB 10 UN [1]	9.52	10.0	0.15	16.49	1.1	1.5	1								●	
16IR 9 UN	9.52	9.0	0.17	16.49	1.2	1.7	1								●	
16IR/L 8 UN	9.52	8.0	0.23	16.49	1.1	1.5	1				●				●	●
16IRB 8 UN [1]	9.52	8.0	0.23	16.49	1.1	1.5	1								●	
16IRM 8 UN [1]	9.52	8.0	0.20	16.49	1.1	1.5	1				●			●	●	●
22IR 16 UN 3M [2]	12.70	16.0	0.07	22.00	2.5	4.0	3								●	
22IR 12 UN 2M [2]	12.70	12.0	0.09	22.00	2.3	3.4	2								●	
22IR 12 UN 3M [2]	12.70	12.0	0.07	22.00	3.2	5.2	3								●	
22IR/L 7 UN	12.70	7.0	0.22	22.00	1.6	2.3	1	●							●	
22IR 6 UN	12.70	6.0	0.26	22.00	1.6	2.3	1								●	
22IR 5 UN	12.70	5.0	0.32	22.00	1.6	2.3	1				●				●	
22UIRL 4 UN	15.88	4.0	0.36	22.00	2.4	11.0	1								●	
27IR 8 UN 2M [2]	15.88	8.0	0.19	27.50	3.1	4.9	2								●	
27IR 4.5 UN	15.88	4.5	0.36	27.50	1.7	2.4	1				●					
27IR 4 UN	15.88	4.0	0.43	27.50	1.9	2.5	1								●	

• For Insert Identification System, see page 605 • Tolerance: class 2B,ANSI B1, 3M-1986. • For technical information and detailed cutting data, see pages 660-670
• For recommended number of passes for multi-tooth inserts see page 664 • Tolerance: Class 2A • For threading between walls use GRIP-type insert TIP-UN

[1] With pressed chipformer.
[2] Multi-tooth
[3] Threads per inch
[4] Number of teeth per corner

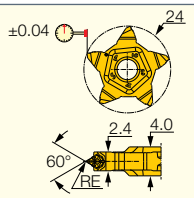
For tools, see pages: MGSIR/L (104) • SIR/L (655)

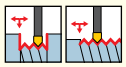


PENTACUT THREADING LINE

PENTA 24-UN

American UN (UNC, UNF, UNEF) Precision Ground Full Profile Pentagonal External Inserts with a Chipformer





Designation	Dimensions TPI[1]	RE	IC908
PENTA 24-24-UN	24.0	0.13	●
PENTA 24-20-UN	20.0	0.16	●
PENTA 24-18-UN	18.0	0.18	●
PENTA 24-16-UN	16.0	0.21	●
PENTA 24-14-UN	14.0	0.23	●

• DMIN(inch)=5.435/TPI • Tolerance: Class 2A

(1) Threads per inch

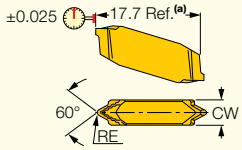
For tools, see pages: PCAD RE/LE-JHP (301) • PCADR/L (300) • PCADR/L-JHP (301) • PCHBR/L (302) • PCHPR/L (300) • PCHR/L-24 (297) • PCHR/L-24-JHP (298) • PCHR/L-24-JHP-MC (298)

ISCARTHREAD

CUTGRIP

TIP-P-UN

American UN (UNC,UNF,UNEF) Precision Ground External Double-Ended Full Profile Threading Inserts with a Chipformer



Designation	Dimensions CW	RE	RETOL[1]	TPI[2]	Tough ↔ Hard IC08	IC808	IC908
TIP 2P32-UN	2.40	0.10	0.030	32.0	●		●
TIP 2P28-UN	2.40	0.11	0.030	28.0	●		●
TIP 2P24-UN	2.40	0.13	0.030	24.0	●		●
TIP 2P20-UN	2.40	0.16	0.030	20.0	●		●
TIP 2P18-UN	2.40	0.18	0.030	18.0	●		●
TIP 2P16-UN	2.40	0.20	0.030	16.0	●		●
TIP 2P14-UN	2.40	0.23	0.030	14.0	●		●
TIP 2P13-UN	2.40	0.25	0.030	13.0	●		●
TIP 2P12-UN	2.40	0.27	0.030	12.0	●		●
TIP 4P11-UN	4.00	0.30	0.030	11.0			●
TIP 4P10-UN	4.00	0.33	0.050	10.0		●	●
TIP 4P08-UN	4.00	0.41	0.050	8.0			●

• (a) TIP inserts are 1.6 mm longer than GIP in the same pocket • Toolholder seat needs to be modified according to insert profile to ensure clearance

(1) Corner radius tolerance (+/-)

(2) Threads per inch

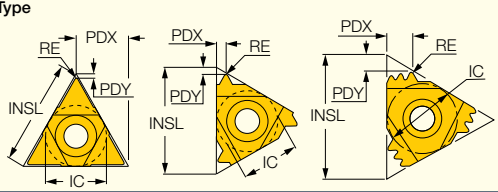
For tools, see pages: C#-GHDR/L (259) • CGHN-D (266) • CGHN-DG (267) • CGHN-S (266) • CGPAD (265) • CGPAD-JHP (265) • GHDR/L (short pocket) (259) • GHDR/L-JHP (short pocket) (260) • GHDR/L-JHP-MC (short pocket) (261) • GHGR/L (262) • GHMPR/L (258) • GHMR/L (258) • GHSR/L (357) • GHSR/L-JHP-SL (358)

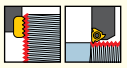
ISCARTHREAD

ER/L-W

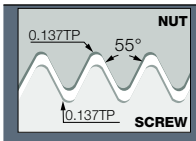
External Whitworth (BSW, BSF, BSP) B.S.84-1956 DIN 259 Medium Class Full Profile Laydown Threading Inserts

U-Type





External right-hand shown



Designation	Dimensions IC	TPI[3]	RE	INSL	PDY	PDX	CICT[4]	Tough ↔ Hard IC228	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
11ER 36 W	6.35	36.0	0.07	11.00	0.6	0.6	1							●	
11ER 20 W	6.35	20.0	0.14	11.00	8.0	0.9	1		●						
11ER/L 19 W	6.35	19.0	0.15	11.00	0.8	1.0	1							●	
11ER 18 W	6.35	18.0	0.16	11.00	0.8	1.0	1			●					
11ER 16 W	6.35	16.0	0.18	11.00	0.9	1.1	1		●						
11ER 14 W	6.35	14.0	0.21	11.00	0.9	1.1	1		●	●				●	
16ER 40 W	9.52	40.0	0.06	16.49	0.6	0.6	1					●			
16ER 32 W	9.52	32.0	0.09	16.49	0.6	0.6	1		●						
16ER 28 W	9.52	28.0	0.11	16.49	0.6	0.7	1			●				●	●
16ER 26 W	9.52	26.0	0.12	16.49	0.7	0.7	1							●	
16ER 24 W	9.52	24.0	0.14	16.49	0.7	0.8	1							●	
16ER/L 22 W	9.52	22.0	0.13	16.49	0.8	0.9	1		●					●	
16ER 20 W	9.52	20.0	0.16	16.49	0.7	0.8	1							●	
16ER/L 19 W	9.52	19.0	0.17	16.49	0.7	0.8	1	●		●				●	●
16ERB 19 W [1]	9.52	19.0	0.17	16.49	0.7	0.8	1							●	
16ERM 19 W [1]	9.52	19.0	0.16	16.49	0.8	1.0	1		●	●			●	●	●
16ER/L 18 W	9.52	18.0	0.17	16.49	0.9	1.2	1		●					●	
16ER 16 W	9.52	16.0	0.20	16.49	0.9	1.2	1							●	
16ERB 16 W [1]	9.52	16.0	0.20	16.49	0.9	1.2	1							●	
16ERM 16 W [1]	9.52	16.0	0.20	16.49	0.9	1.1	1			●			●	●	●
16ER/L 14 W	9.52	14.0	0.23	16.49	1.0	1.2	1	●		●				●	
16ER 14 W 2M [2]	9.52	14.0	0.21	16.49	1.7	2.7	2							●	
16ERB 14 W [1]	9.52	14.0	0.23	16.49	1.0	1.2	1							●	
16ERM 14 W [1]	9.52	14.0	0.24	16.49	1.0	1.2	1		●	●			●	●	●
16ER/L 12 W	9.52	12.0	0.27	16.49	1.2	1.4	1							●	
16ER/L 11 W	9.52	11.0	0.29	16.49	1.1	1.5	1	●	●	●	●	●		●	●
16ERB 11 W [1]	9.52	11.0	0.29	16.49	1.1	1.5	1							●	
16ERM 11 W [1]	9.52	11.0	0.27	16.49	1.1	1.5	1			●		●	●	●	●
16ER 10 W	9.52	10.0	0.32	16.49	1.1	1.5	1			●				●	
16ERB 10 W [1]	9.52	10.0	0.32	16.49	1.1	1.5	1							●	
16ER 9 W	9.52	9.0	0.34	16.49	1.2	1.7	1			●					
16ER/L 8 W	9.52	8.0	0.39	16.49	1.2	1.5	1							●	
22ER 14 W 3M [2]	12.70	14.0	0.21	22.00	2.8	4.5	3							●	
22ER 11 W 2M [2]	12.70	11.0	0.09	22.00	2.2	3.4	2							●	
22ER 7 W	12.70	7.0	0.45	22.00	1.6	2.3	1							●	
22ER 6 W	12.70	6.0	0.52	22.00	1.6	2.3	1							●	
22ER 5 W	12.70	5.0	0.65	22.00	1.7	2.4	1		●	●					
22UEIRL 4.5 W	12.70	4.5	0.73	22.00	2.3	11.0	1		●						
22UEIRL 4 W	12.70	4.0	0.87	22.00	1.8	11.0	1		●						
27ER 4.5 W	15.88	4.5	0.73	27.50	1.8	2.6	1		●						
27ER 4 W	15.88	4.0	0.87	27.50	2.0	2.9	1							●	
27UEIRL 3.5 W	15.88	3.5	0.95	27.50	2.1	13.7	1							●	
27UEIRL 3 W	15.88	3.0	1.12	27.50	2.3	13.7	1			●					

• For Insert Identification System, see page 605 • For threading between walls use GRIP-type insert TIP-BSW • Tolerance: medium class • For technical information and detailed cutting data, see pages 660-670 • For recommended number of passes for multi-tooth inserts see page 664

[1] With pressed chipformer

[2] Multi-tooth

[3] Threads per inch

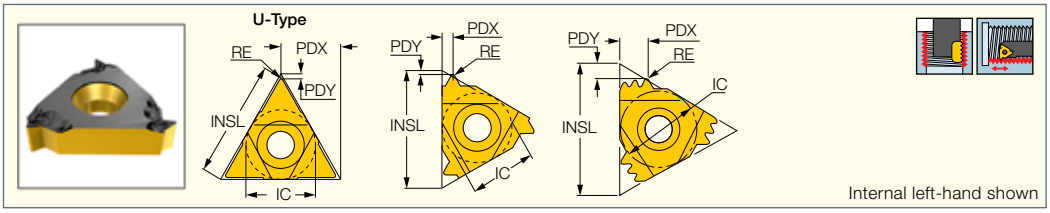
[4] Number of teeth per corner

For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652) • SER/L-JHP (653) • SER/L-JHP-MC (654)

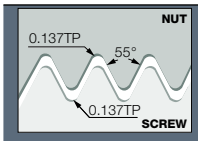
ISCARTHREAD

IR/L-W

Internal Whitworth (BSW, BSF, BSP) B.S.84-1956 DIN 259 Medium Class Full Profile Laydown Threading Inserts



Internal left-hand shown



Designation	Dimensions IC	TPI[3]	RE	INSL	PDY	PDX	CICT[4]	Tough ↔ Hard IC228	IC928	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
06IR 26 W	3.97	26.0	0.10	6.88	0.7	0.6	1	●								
08IR 28 W	4.76	28.0	0.11	8.24	0.5	0.6	1	●								
08IR 24 W	4.76	24.0	0.11	8.24	0.6	0.6	1	●								
08IR 19 W	4.76	19.0	0.15	8.24	0.6	0.6	1	●	●						●	
08IR 18 W	4.76	18.0	0.16	8.24	0.6	0.7	1	●								
08IR 16 W	4.76	16.0	0.18	8.24	0.6	0.7	1	●								
08UIRL 12 W	4.76	12.0	0.25	8.24	0.9	4.0	1	●								
11IR 36 W	6.35	36.0	0.07	11.00	0.6	0.6	1					●				
11IR 28 W	6.35	28.0	0.10	11.00	0.6	0.7	1				●					
11IRB 28 W	6.35	28.0	0.10	11.00	0.6	0.6	1								●	
11IR 26 W	6.35	26.0	0.10	11.00	0.7	0.7	1	●								
11IR/L 24 W	6.35	24.0	0.11	11.00	0.7	0.8	1								●	
11IRB 24 W	6.35	24.0	0.11	11.00	0.6	0.6	1								●	
11IR 20 W	6.35	20.0	0.14	11.00	0.8	0.9	1				●				●	
11IRB 20 W	6.35	20.0	0.14	11.00	0.8	0.9	1								●	
11IR 19 W	6.35	19.0	0.15	11.00	0.8	1.0	1				●				●	●
11IRB 19 W	6.35	19.0	0.17	11.00	0.7	0.9	1								●	
11IR/L 18 W	6.35	18.0	0.16	11.00	0.8	1.0	1								●	
11IRB 18 W	6.35	18.0	0.18	11.00	0.9	0.9	1								●	
11IR 16 W	6.35	16.0	0.18	11.00	0.9	1.1	1								●	
11IRB 16 W	6.35	16.0	0.18	11.00	0.8	0.9	1								●	
11IR/L 14 W	6.35	14.0	0.23	11.00	0.9	1.1	1	●			●	●			●	●
11IRB 14 W	6.35	14.0	0.23	11.00	0.9	1.0	1								●	
11IL 12 W	6.35	12.0	0.27	11.00	1.0	1.1	1								●	
16IR 40 W	9.52	40.0	0.06	16.49	0.6	0.6	1			●						
16IR/L 32 W	9.52	32.0	0.09	16.49	0.6	0.6	1			●						
16IR 28 W	9.52	28.0	0.09	16.49	0.6	0.7	1				●					
16IR 26 W	9.52	26.0	0.12	16.49	0.8	0.8	1								●	
16IR 24 W	9.52	24.0	0.11	16.49	0.7	0.8	1								●	
16IR 22 W	9.52	22.0	0.13	16.49	0.8	0.9	1			●	●				●	
16IR/L 20 W	9.52	20.0	0.14	16.49	0.8	0.9	1				●				●	
16IRM 20 W [1]	9.52	20.0	0.14	16.49	0.8	0.9	1								●	
16IR/L 19 W	9.52	19.0	0.17	16.49	0.8	1.0	1			●	●				●	
16IRB 19 W [1]	9.52	19.0	0.17	16.49	0.7	0.8	1								●	
16IRM 19 W [1]	9.52	19.0	0.15	16.49	0.8	1.0	1				●					
16IR/L 18 W	9.52	18.0	0.18	16.49	0.8	0.8	1								●	
16IR 16 W	9.52	16.0	0.20	16.49	1.0	1.0	1								●	
16IRB 16 W [1]	9.52	16.0	0.20	16.49	1.0	1.2	1								●	
16IRM 16 W [1]	9.52	16.0	0.18	16.49	0.9	1.1	1								●	
16IR/L 14 W	9.52	14.0	0.23	16.49	1.0	1.2	1	●			●	●			●	●
16IR 14 W 2M [2]	9.52	14.0	0.19	16.49	1.7	2.6	2								●	●
16IRB 14 W [1]	9.52	14.0	0.23	16.49	1.0	1.2	1								●	
16IRM 14 W [1]	9.52	14.0	0.21	16.49	1.0	1.2	1				●			●	●	●
16IR 12 W	9.52	12.0	0.27	16.49	1.2	1.5	1								●	
16IR/L 11 W	9.52	11.0	0.29	16.49	1.1	1.5	1	●		●	●	●			●	●
16IRB 11 W [1]	9.52	11.0	0.28	16.49	1.1	1.5	1								●	
16IRM 11 W [1]	9.52	11.0	0.27	16.49	1.1	1.5	1				●		●	●	●	●
16IR 10 W	9.52	10.0	0.32	16.49	1.1	1.1	1								●	
16IRB 10 W [1]	9.52	10.0	0.31	16.49	1.1	1.5	1								●	
16IR 9 W	9.52	9.0	0.34	16.49	1.2	1.7	1				●					
16IR/L 8 W	9.52	8.0	0.41	16.49	1.1	1.1	1			●					●	
22IR 14 W 3M [2]	12.70	14.0	0.21	22.00	2.8	4.5	3								●	
22IR 11 W 2M [2]	12.70	11.0	0.09	22.00	2.3	3.4	2								●	
22IR 7 W	12.70	7.0	0.45	22.00	1.6	2.3	1								●	
22IR 6 W	12.70	6.0	0.52	22.00	1.6	2.3	1				●					
22IR/L 5 W	12.70	5.0	0.65	22.00	1.7	2.4	1			●	●					
27IR 4.5 W	15.88	4.5	0.73	27.50	1.8	2.6	1				●					
27IR 4 W	15.88	4.0	0.82	27.50	2.0	2.9	1								●	

• For Insert Identification System, see page 605. • Tolerance: medium class. • For technical information and detailed cutting data, see pages 660-670

• For threading between walls use GRIP-type insert TIP-BSW • Tolerance: medium class

• For recommended number of passes for multi-tooth inserts see page 664

[1] With pressed chipformer

[2] Multi-tooth

[3] Threads per inch

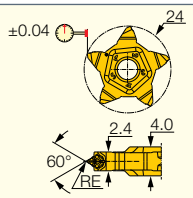
[4] Number of teeth per corner

For tools, see pages: MGSIR/L (104) • SIR/L (655)

PENTACUT THREADING LINE

PENTA 24-W

Whitworth (BSW, BSF, BSP)
B.S.84-1956 DIN 259 Pentagonal
Full Profile External Threading
Inserts with a Chipformer



Designation	Dimensions TPI(1)	RE	IC908
PENTA 24-28-W	28.0	0.09	●
PENTA 24-19-W	19.0	0.15	●
PENTA 24-14-W	14.0	0.21	●

• DMIN(inch)=5.435/TPI
(1) Threads per inch

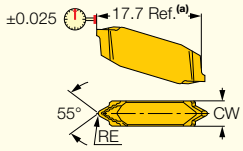
For tools, see pages: PCAD RE/LE-JHP (301) • PCADR/L (300) • PCADR/L-JHP (301) • PCHBR/L (302) • PCHPR/L (300) • PCHR/L-24 (297) • PCHR/L-24-JHP (298) • PCHR/L-24-JHP-MC (298)

ISCARTHREAD

CUTGRIP

TIP-P-BSW

American (BSW, BSF, BSP)
Precision Ground External
Double-Ended Full Profile Threading
Inserts with a Chipformer



Designation	Dimensions CW	RE	TPI(1)	Tough ↔ Hard IC08	IC908
TIP 2P28-BSW	2.40	0.11	28.0	●	●
TIP 2P26-BSW	2.40	0.12	26.0	●	●
TIP 2P-24BSW	2.40	0.12	24.0		●
TIP 2P24-BSW	2.40	0.12	24.0	●	
TIP 2P-20BSW	2.40	0.16	20.0		●
TIP 2P20-BSW	2.40	0.16	20.0	●	
TIP 2P19-BSW	2.40	0.16	19.0	●	●
TIP 2P-18BSW	2.40	0.17	18.0		●
TIP 2P18-BSW	2.40	0.17	18.0	●	
TIP 2P-16BSW	2.40	0.19	16.0		●
TIP 2P16-BSW	2.40	0.19	16.0	●	
TIP 2P14-BSW	2.40	0.22	14.0	●	●
TIP 4P12-BSW	4.00	0.25	12.0		●
TIP 4P11-BSW	4.00	0.28	11.0	●	●
TIP 4P10-BSW	4.00	0.31	10.0		●

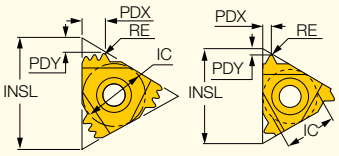
• (a) TIP inserts are 1.6 mm longer than GIP in the same pocket • Toolholder seat needs to be modified according to insert profile to ensure clearance
(1) Threads per inch

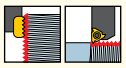
For tools, see pages: C#-GHDR/L (259) • CGHN-D (266) • CGHN-DG (267) • CGHN-S (266) • CGPAD (265) • CGPAD-JHP (265) • GHDR/L (short pocket) (259) • GHDR/L-JHP (short pocket) (260) • GHDR/L-JHP-MC (short pocket) (261) • GHGR/L (262) • GHMPR/L (258) • GHMR/L (258) • GHSR/L (357) • GHSR/L-JHP-SL (358)

ISCARTHREAD

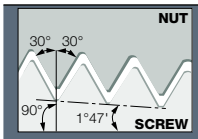
ER/L-NPT

External NPT (National Pipe Threads) Full Profile Laydown Threading Inserts for Steam, Gas and Water Pipes





External right-hand shown



Designation	Dimensions							Tough ↔ Hard					
	IC	TPI[3]	RE	INSL	PDY	PDX	CICT[4]	IC228	IC50M	IC250	IC808	IC908	IC1007
16ER 27 NPT	9.52	27.0	0.04	16.49	0.7	0.8	1					●	
16ER 18 NPT	9.52	18.0	0.06	16.49	0.9	1.1	1	●				●	●
16ERB 18 NPT [1]	9.52	18.0	0.06	16.49	0.9	1.1	1					●	
16ERM 18 NPT [1]	9.52	18.0	0.05	16.49	0.8	1.0	1				●	●	●
16ER/L 14 NPT	9.52	14.0	0.07	16.49	0.9	1.2	1	●				●	●
16ERB 14 NPT [1]	9.52	14.0	0.07	16.49	0.9	1.2	1					●	
16ERM 14 NPT [1]	9.52	14.0	0.05	16.49	0.9	1.2	1		●	●	●	●	●
16ER/L 11.5 NPT	9.52	11.5	0.09	16.49	1.1	1.5	1		●	●		●	●
16ERB 11.5 NPT [1]	9.52	11.5	0.09	16.49	1.1	1.5	1					●	
16ERM 11.5 NPT [1]	9.52	11.5	0.09	16.49	1.1	1.5	1			●		●	●
16ER 8 NPT	9.52	8.0	0.11	16.49	1.4	1.6	1		●			●	
16ERB 8 NPT [1]	9.52	8.0	0.11	16.49	1.4	1.7	1					●	
16ERM 8 NPT [1]	9.52	8.0	0.12	16.49	1.3	1.8	1			●	●	●	●
22ER 11.5 NPT 2M [2]	12.70	11.5	0.09	22.00	2.3	3.5	2					●	
27ER 11.5 NPT 3M [2]	15.88	11.5	0.09	27.50	3.3	5.5	3					●	
27ER 8 NPT 2M [2]	15.88	8.0	0.09	27.50	3.3	5.0	2					●	

• For Insert Identification System, see page 605. • For threading between walls use GRIP-type insert TIP-NPT. • National Pipe Threads ANSI/ASME B1.20.1-1983 • For technical information and detailed cutting data, see pages 660-670 • For recommended number of passes for multi-tooth inserts see page 664

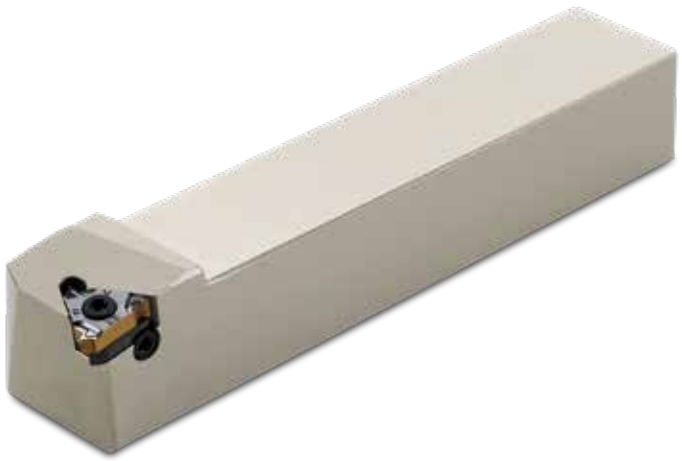
[1] With pressed chipformer.

[2] Multi-tooth

[3] Threads per inch

[4] Number of teeth per corner.

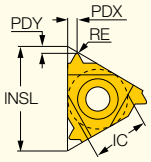
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

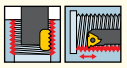


ISCARTHREAD

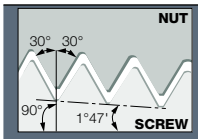
IR/L-NPT

Internal NPT (National Pipe Threads) Full Profile Laydown Threading Inserts for Steam, Gas and Water Pipes





Internal left-hand shown



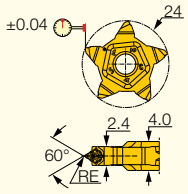
Designation	Dimensions IC	TPI[3]	RE	INSL	PDY	PDX	CICT[4]	Tough ↔ Hard IC228	IC50M	IC250	IC508	IC808	IC908	IC1007
06IR 27 NPT	3.97	27.0	0.04	6.88	0.6	0.6	1	●						
08IR 18 NPT	4.76	18.0	0.06	8.24	0.6	0.8	1	●					●	
11IR 27 NPT	6.35	27.0	0.04	11.00	0.7	0.8	1			●				
11IR/L 18 NPT	6.35	18.0	0.06	11.00	0.8	1.0	1			●			●	
11IRB 18 NPT	6.35	18.0	0.06	11.00	0.8	1.0	1						●	
11IR/L 14 NPT	6.35	14.0	0.07	11.00	0.8	1.0	1			●			●	●
16IR 27 NPT	9.52	27.0	0.04	16.49	0.7	0.8	1		●				●	
16IR 18 NPT	9.52	18.0	0.06	16.49	0.8	1.0	1						●	
16IRM 14 NPT [1]	9.52	14.0	0.05	16.49	0.9	1.2	1			●		●	●	●
16IRB 14 NPT [1]	9.52	14.0	0.07	16.49	0.9	1.2	1						●	
16IR/L 14 NPT	9.52	14.0	0.07	16.49	0.9	1.2	1	●		●			●	●
16IRM 11.5 NPT [1]	9.52	11.5	0.09	16.49	1.1	1.5	1				●	●	●	●
16IRB 11.5 NPT [1]	9.52	11.5	0.09	16.49	1.1	1.5	1						●	
16IR/L 11.5 NPT	9.52	11.5	0.09	16.49	1.1	1.5	1						●	●
16IRM 8 NPT [1]	9.52	8.0	0.12	16.49	1.3	1.8	1					●	●	●
16IRB 8 NPT [1]	9.52	8.0	0.11	16.49	1.2	1.7	1						●	
16IR/L 8 NPT	9.52	8.0	0.11	16.49	1.3	1.8	1						●	
22IR 11.5 NPT 2M [2]	12.70	11.5	0.09	22.00	2.3	3.5	2						●	
27IR 11.5 NPT 3M [2]	15.88	11.5	0.09	27.50	3.3	5.5	3						●	
27IR 8 NPT 2M [2]	15.88	8.0	0.12	27.50	3.1	5.0	2						●	

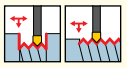
• For Insert Identification System, see page 605 • National Pipe Threads ANSI/ASME B1.20.1-1983.
• For technical information and detailed cutting data, see pages 660-670 • For recommended number of passes for multi-tooth inserts see page 664
[1] With pressed chipformer
[2] Multi-tooth
[3] Threads per inch
[4] Number of teeth per corner
For tools, see pages: MGSIR/L (104) • SIR/L (655)

PENTACUT THREADING LINE

PENTA 24-NPT

NPT (National Pipe Threads) Precision Ground Pentagonal External Full Profile Threading Inserts with a Chipformer





Designation	Dimensions TPI[1]	RE	IC908
PENTA 24-18-NPT	18.0	0.07	●
PENTA 24-14-NPT	14.0	0.09	●

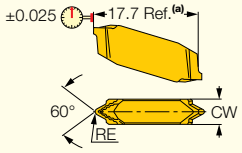
[1] Threads per inch
For tools, see pages: PCAD RE/LE-JHP (301) • PCADR/L (300) • PCADR/L-JHP (301) • PCHBR/L (302) • PCHPR/L (300) • PCHR/L-24 (297) • PCHR/L-24-JHP (298) • PCHR/L-24-JHP-MC (298)

ISCARTHREAD

CUTGRIP

TIP-P-NPT

NPT (National Pipe Threads) Precision Ground Double-Ended External Full Profile Threading Inserts with a Chipformer



Designation	Dimensions CW	RE	RETOL(1)	TPI(2)	Tough ↔ Hard IC08	IC908
TIP 2P27-NPT	2.40	0.05	0.030	27.0	●	●
TIP 2P18-NPT	2.40	0.07	0.030	18.0	●	●
TIP 2P14-NPT	2.40	0.09	0.030	14.0		●
TIP 4P11.5-NPT	4.00	0.10	0.030	11.5	●	●
TIP 4P8-NPT	4.00	0.13	0.030	8.0	●	●

• (a) TIP inserts are 1.6 mm longer than GIP in the same pocket • Toolholder seat needs to be modified according to insert profile to ensure clearance

(1) Corner radius tolerance (+/-)

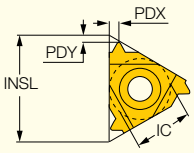
(2) Threads per inch

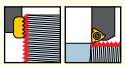
For tools, see pages: C#-GHDR/L (259) • CGHN-D (266) • CGHN-DG (267) • CGHN-S (266) • CGPAD (265) • CGPAD-JHP (265) • GHDR/L (short pocket) (259) • GHDR/L-JHP (short pocket) (260) • GHDR/L-JHP-MC (short pocket) (261) • GHGR/L (262) • GHMPR/L (258) • GHMR/L (258) • GHSR/L (357) • GHSR/L-JHP-SL (358)

ISCARTHREAD

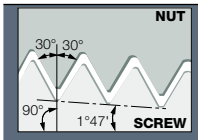
ER-NPTF

External NPTF (National Pipe Threads) Full Profile Laydown Threading Inserts for Steam, Gas and Water Pipes





External right-hand shown



Designation	Dimensions IC	TPI(1)	INSL	PDY	PDX	Tough ↔ Hard IC250	IC908
11ER 18 NPTF	6.35	18.0	11.00	0.8	1.0	●	
11ER 14 NPTF	6.35	14.0	11.00	0.8	1.0		●
16ER 27 NPTF	9.52	27.0	16.49	0.7	0.8		●
16ER 18 NPTF	9.52	18.0	16.49	0.8	0.9		●
16ER 14 NPTF	9.52	14.0	16.49	0.9	1.1	●	●
16ER 11.5 NPTF	9.52	11.5	16.49	1.1	1.5		●

• For Insert Identification System, see page 605 • (National Pipe Threads-Dry Seal) ANSI/ASME B1.20.1-1976 full profile • For technical information and detailed cutting data, see pages 660-670

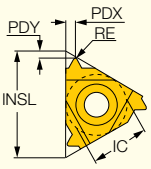
(1) Threads per inch

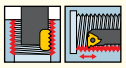
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

ISCARTHREAD

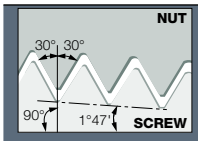
IR/L-NPTF

Internal NPTF (National Pipe Threads) Full Profile Laydown Threading Inserts for Steam, Gas and Water Pipes





Internal left-hand shown



Designation	Dimensions IC	TPI[1]	RE	INSL	PDY	PDX	Tough ↔ Hard IC228	IC250	IC908
06IR 27 NPTF	3.97	27.0	0.04	6.88	0.7	0.6	●		
08IR 27 NPTF	4.76	27.0	0.04	8.24	0.6	0.6	●		
08IR 18 NPTF	4.76	18.0	0.04	8.24	0.6	0.8	●		
11IR 18 NPTF	6.35	18.0	0.04	11.00	0.8	1.0			●
11IRB 18 NPTF	6.35	18.0	0.04	11.00	0.8	0.9			●
11IR 14 NPTF	6.35	14.0	0.04	16.49	0.8	1.1			●
16IR 18 NPTF	9.52	18.0	0.06	16.49	0.8	1.0			●
16IR/L 14 NPTF	9.52	14.0	0.07	16.49	0.9	1.2			●
16IR 11.5 NPTF	9.52	11.5	0.04	16.49	1.1	1.5		●	●

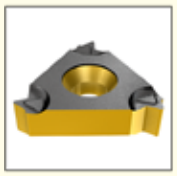
• For Insert Identification System, see page 605 • (National Pipe Threads-Dry seal) ANSI/ASME B1.20.1-1976
• For technical information and detailed cutting data, see pages 660-670
[1] Threads per inch

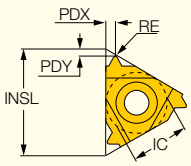
For tools, see pages: MGSIR/L (104) • SIR/L (655)

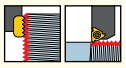
ISCARTHREAD

ER/L-BSPT

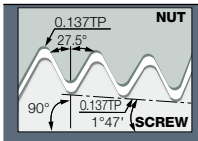
External BSPT (British Standard Pipe) B.S.21-1957 Full Profile Laydown Threading Inserts







External right-hand shown



Designation	Dimensions IC	INSL	TPI[2]	RE	PDY	PDX	Tough ↔ Hard IC250	IC808	IC908	IC1007
16ER 28 BSPT	9.52	16.49	28.0	0.11	0.6	0.6			●	
16ER/L 19 BSPT	9.52	16.49	19.0	0.16	0.7	0.8			●	●
16ER/L 14 BSPT	9.52	16.49	14.0	0.23	1.0	1.1	●		●	●
16ERB 14 BSPT [1]	9.52	16.49	14.0	0.23	1.0	1.1			●	
16ERM 14 BSPT [1]	9.52	16.49	14.0	0.24	1.0	1.2		●	●	●
16ER/L 11 BSPT	9.52	16.49	11.0	0.29	1.1	1.5	●		●	
16ERB 11 BSPT [1]	9.52	16.49	11.0	0.29	1.1	1.5			●	
16ERM 11 BSPT [1]	9.52	16.49	11.0	0.31	1.1	1.5			●	●

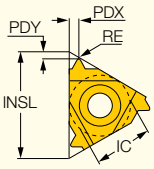
• For Insert Identification System, see page 605 • For threading between walls use insert TIP-BSPT • For technical information and detailed cutting data, see pages 660-670
• (National Pipe Threads-Dry seal) ANSI/ASME B1.20.1-1976
[1] With pressed chipformer
[2] Threads per inch

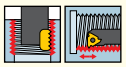
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

ISCARTHREAD

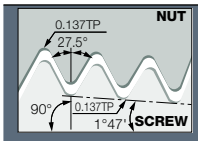
IR/L-BSPT

Internal BSPT (British Standard Pipe) B.S.21-1957 Full Profile Laydown Threading Inserts





Internal left-hand shown



Designation	Dimensions IC	INSL	TPI(2)	RE	PDY	PDX	Tough ↔ Hard IC228	IC50M	IC250	IC808	IC908	IC1007
06IR 28 BSPT	3.97	6.88	28.0	0.11	0.7	0.6	●					
08IR 28 BSPT	4.76	8.24	28.0	0.11	0.6	0.6	●					
08IR 19 BSPT	4.76	8.24	19.0	0.16	0.6	0.7	●					
11IR 19 BSPT	6.35	11.00	19.0	0.16	0.8	0.9					●	●
11IRB 19 BSPT	6.35	11.00	19.0	0.16	0.8	0.9					●	
11IR/L 14 BSPT	6.35	11.00	14.0	0.23	0.9	1.0					●	
16IR 28 BSPT	9.52	16.49	28.0	0.11	0.6	0.6					●	
16IR 19 BSPT	9.52	16.49	19.0	0.16	0.8	0.9		●	●			
16IRB 14 BSPT (1)	9.52	16.49	14.0	0.23	1.0	1.1					●	
16IRM 14 BSPT (1)	9.52	16.49	14.0	0.21	1.0	1.2				●	●	●
16IR/L 14 BSPT	9.52	16.49	14.0	0.21	1.0	1.2					●	
16IRM 11 BSPT (1)	9.52	16.49	11.0	0.28	1.1	1.5				●	●	●
16IRB 11 BSPT (1)	9.52	16.49	11.0	0.29	1.1	1.5					●	
16IR/L 11 BSPT	9.52	16.49	11.0	0.29	1.1	1.5	●				●	

• For Insert Identification System, see page 605 • For technical information and detailed cutting data, see pages 660-670

• (National Pipe Threads-Dry seal) ANSI/ASME B1.20.1-1976

(1) With pressed chipformer

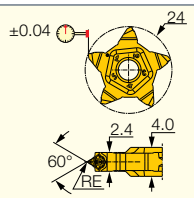
(2) Threads per inch

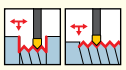
For tools, see pages: MGSIR/L (104) • SIR/L (655)

PENTACUT THREADING LINE

PENTA 24-BSPT

BSPT (British Standard Pipe) Precision Ground External Pentagonal Full Profile Threading Inserts with a Chipformer





Designation	Dimensions TPI(1)	RE	IC908
PENTA 24-19-BSPT	19.0	0.16	●
PENTA 24-14-BSPT	14.0	0.22	●

• DMIN(inch)=5.435/TPI

(1) Threads per inch

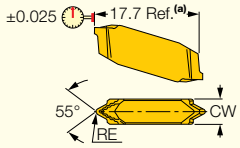
For tools, see pages: PCAD RE/LE-JHP (301) • PCADR/L (300) • PCADR/L-JHP (301) • PCHBR/L (302) • PCHPR/L (300) • PCHR/L-24 (297) • PCHR/L-24-JHP (298) • PCHR/L-24-JHP-MC (298)

ISCARTHREAD

CUTGRIP

TIP-P-BSPT

Precision Ground BSPT (British Standard Pipe) External Double-Ended Full Profile Threading Inserts with a Chipformer



Designation	Dimensions CW	RE	RETOL(1)	TPI(2)	Tough ↔ Hard IC08	IC908
TIP 2P28-BSPT	2.40	0.11	0.030	28.0	●	●
TIP 2P19-BSPT	2.40	0.16	0.030	19.0	●	●
TIP 2P14-BSPT	2.40	0.22	0.030	14.0	●	●
TIP 4P11-BSPT	4.00	0.28	0.030	11.0	●	●

• (a) TIP inserts are 1.6 mm longer than GIP in the same pocket • Toolholder seat needs to be modified according to insert profile to ensure clearance

(1) Corner radius tolerance (+/-)

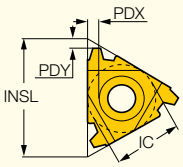
(2) Threads per inch

For tools, see pages: C#-GHDR/L (259) • CGHN-D (266) • CGHN-DG (267) • CGHN-S (266) • CGPAD (265) • CGPAD-JHP (265) • GHDR/L (short pocket) (259) • GHDR/L-JHP (short pocket) (260) • GHDR/L-JHP-MC (short pocket) (261) • GHGR/L (262) • GHMPR/L (258) • GHMR/L (258) • GHSR/L (357) • GHSR/L-JHP-SL (358)

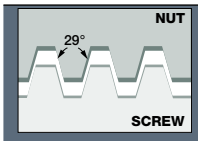
ISCARTHREAD

ER/L-STACME

External STUB ACME Laydown Threading Inserts with a Shallow ACME Profile for Control Valves



External right-hand shown

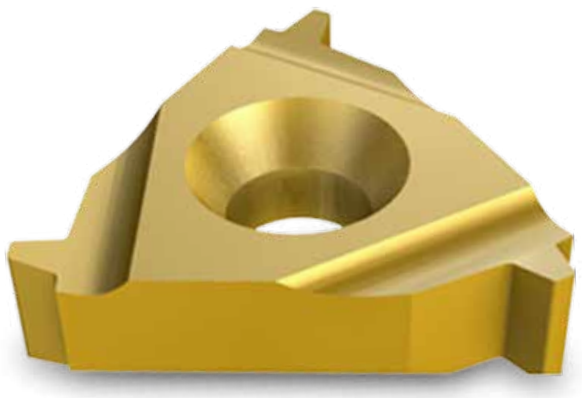


Designation	Dimensions IC	INSL	TPI(1)	PDY	PDX	Tough ↔ Hard IC50M	IC250	IC908
16ER/L 16 STACME	9.52	16.49	16.0	1.0	1.0		●	●
16EL 14 STACME	9.52	16.49	14.0	1.1	1.1	●		
16ER/L 12 STACME	9.52	16.49	12.0	1.2	1.2			●
16ER/L 10 STACME	9.52	16.49	10.0	1.3	1.3	●		●
16ER/L 8 STACME	9.52	16.49	8.0	1.5	1.5	●	●	●
16ER/L 6 STACME	9.52	16.49	6.0	1.8	1.8		●	●
22EL 6 STACME	12.70	22.00	6.0	1.8	1.8	●		
22ER/L 5 STACME	12.70	22.00	5.0	2.0	2.3	●		●
27ER/L 4 STACME	15.88	27.50	4.0	2.3	2.4	●		●
27EL 3 STACME	15.88	27.50	3.0	2.8	2.9			●

• For Insert Identification System, see page 605 • STUB ACME ASME/ANSI B1.8-1988 Class 2G • For technical information and detailed cutting data, see pages 660-670

(1) Threads per inch

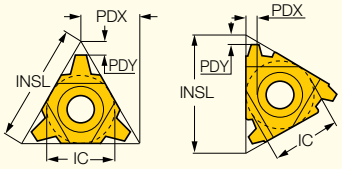
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

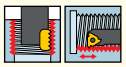


ISCARTHREAD

IR/L-STACME

Internal STUB ACME Laydown Threading Inserts with a Shallow ACME Profile for Control Valves





Internal left-hand shown

Designation	Dimensions IC	INSL	TPI(1)	PDY	PDX	Tough ↔ Hard IC50M	IC250	IC908
16IR/L 16 STACME	9.52	16.49	16.0	1.0	1.0	●		
16IR/L 14 STACME	9.52	16.49	14.0	1.1	1.1	●		
16IR 12 STACME	9.52	16.49	12.0	1.2	1.2			●
16IR 10 STACME	9.52	16.49	10.0	1.2	1.2	●		●
16IR 8 STACME	9.52	16.49	8.0	1.5	1.5	●		●
16IR 6 STACME	9.52	16.49	6.0	1.6	1.7		●	●
22IR/L 5 STACME	12.70	22.00	5.0	2.0	2.3	●		
22UIR 3 STACME	12.70	22.00	3.0	3.3	11.0		●	
27IR/L 4 STACME	15.88	27.50	4.0	2.3	2.4	●		●
27IR/L 3 STACME	15.88	27.50	3.0	2.8	2.9		●	

• For Insert Identification System, see page 605 • Tolerance: Class 2G. • For technical information and detailed cutting data, see pages 660-670

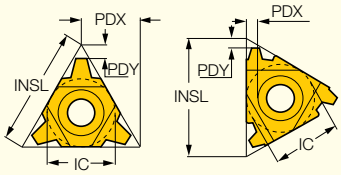
(1) Threads per inch

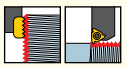
For tools, see pages: SIR/L (655)

ISCARTHREAD

ER/L-ACME

External ACME Profile Laydown Threading Inserts for Feed Screws





External right-hand shown

Designation	Dimensions IC	INSL	TPI(1)	PDY	PDX	Tough ↔ Hard IC50M	IC250	IC908
11ER 16 ACME	6.35	11.00	16.0	0.9	1.0			●
16ER 16 ACME	9.52	16.49	16.0	1.0	1.0			●
16ER 12 ACME	9.52	16.49	12.0	1.0	1.0			●
16ER 10 ACME	9.52	16.49	10.0	1.4	1.3		●	●
16ER/L 8 ACME	9.52	16.49	8.0	1.3	1.5			●
22ER/L 6 ACME	12.70	22.00	6.0	1.8	2.1	●		●
22ER/L 5 ACME	12.70	22.00	5.0	2.0	2.4		●	●
22ER/L 4 ACME	12.70	22.00	4.0	2.1	2.3			●
22UERL 4 ACME	12.70	22.00	4.0	2.3	11.0	●		●
27ER/L 4 ACME	15.88	27.50	4.0	2.3	2.7		●	●
27UERL 3 ACME	15.88	27.50	3.0	2.8	13.7			●

• For Insert Identification System, see page 605 • ACME ASME/ANSI B1.5-1988 Class 3G • For technical information and detailed cutting data, see pages 660-670

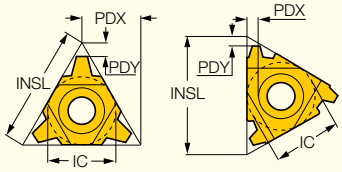
(1) Threads per inch

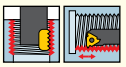
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

ISCARTHREAD

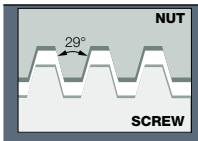
IR/L-ACME

Internal ACME Profile Laydown Threading Inserts for Feed Screws





Internal left-hand shown



Designation	Dimensions IC	INSL	TPI(1)	PDY	PDX	Tough ↔ Hard IC50M	IC250	IC08	IC508	IC908
16IR/L 16 ACME	9.52	16.49	16.0	0.9	1.0	●	●			
16IR/L 14 ACME	9.52	16.49	14.0	1.0	1.2	●				
16IR/L 12 ACME	9.52	16.49	12.0	1.1	1.2	●				●
16IR/L 10 ACME	9.52	16.49	10.0	1.3	1.3	●	●			
16IR/L 8 ACME	9.52	16.49	8.0	1.5	1.5		●			●
22IR/L 6 ACME	12.70	22.00	6.0	1.9	2.1	●	●			●
22IR/L 5 ACME	12.70	22.00	5.0	2.0	2.1	●			●	●
22IR 4 ACME	12.70	22.00	4.0	2.1	2.1					●
22UIRL 4 ACME	12.70	22.00	4.0	2.3	11.0	●		●		
27IR/L 4 ACME	15.88	27.50	4.0	2.3	2.6		●			●
27UIRL 3 ACME	15.88	27.50	3.0	2.8	13.7					●

• For Insert Identification System, see page 605 • ACME ASME/ANSI B1.5-1988 Class 3G • For technical information and detailed cutting data, see pages 660-670

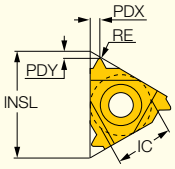
(1) Threads per inch

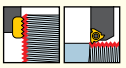
For tools, see pages: SIR/L (655)

ISCARTHREAD

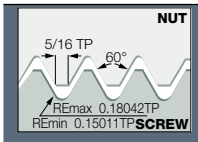
ER/L-UNJ

External UNJ Profile Laydown Threading Inserts for the Aviation and Aerospace Industry





External right-hand shown



Designation	Dimensions IC	TPI(1)	RE	INSL	PDY	PDX	Tough ↔ Hard IC50M	IC250	IC08	IC908	IC806	IC1007
11ER 28 UNJ	6.35	28.0	0.14	11.00	0.6	0.6				●		
11ER 24 UNJ	6.35	24.0	0.16	11.00	0.7	0.8				●		
11ER/L 20 UNJ	6.35	20.0	0.19	11.00	0.8	0.9				●		
11EL 18 UNJ	6.35	18.0	0.21	11.00	0.8	1.0				●		
16ER 48 UNJ	9.52	48.0	0.08	16.49	0.6	0.6				●		
16ER 44 UNJ	9.52	44.0	0.09	16.49	0.6	0.6				●		
16ER 40 UNJ	9.52	40.0	0.10	16.49	0.6	0.6				●		
16ER 32 UNJ	9.52	32.0	0.13	16.49	0.6	0.6				●	●	
16ER/L 28 UNJ	9.52	28.0	0.15	16.49	0.6	0.6				●	●	
16ER/L 24 UNJ	9.52	24.0	0.16	16.49	0.7	0.8		●		●	●	
16ER/L 20 UNJ	9.52	20.0	0.21	16.49	0.8	0.9				●	●	●
16ER/L 18 UNJ	9.52	18.0	0.23	16.49	0.7	0.8			●	●	●	●
16ER/L 16 UNJ	9.52	16.0	0.26	16.49	0.9	1.2	●			●	●	●
16ER/L 14 UNJ	9.52	14.0	0.30	16.49	1.1	1.2				●	●	
16ER 13 UNJ	9.52	13.0	0.29	16.49	1.1	1.3				●		
16ER/L 12 UNJ	9.52	12.0	0.35	16.49	1.1	1.2				●	●	
16ER 11 UNJ	9.52	11.0	0.32	16.49	1.1	1.5				●		
16ER 10 UNJ	9.52	10.0	0.38	16.49	1.1	1.5	●			●		
16ER/L 8 UNJ	9.52	8.0	0.48	16.49	1.2	1.6	●	●		●		

• UNJ MIL-S-8879C 9-1992 Class 3A • Only right-hand inserts are available in grade IC806 • For Insert Identification System, see page 605 • For technical information and detailed cutting data, see pages 660-670

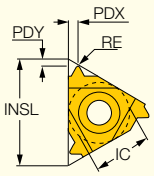
(1) Threads per inch

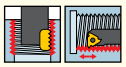
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652) • SER/L-JHP (653) • SER/L-JHP-MC (654)

ISCARTHREAD

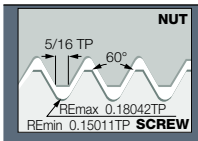
IR/L-UNJ

Internal UNJ Profile Laydown Threading Inserts for the Aviation and Aerospace Industry





Internal left-hand shown



Designation	Dimensions IC	TPI[1]	RE	INSL	PDY	PDX	Tough ↔ Hard IC228	IC50M	IC908	IC806
08IR 20 UNJ	4.76	20.0	0.07	8.24	0.7	0.7	●			
08IR 18 UNJ	4.76	18.0	0.08	8.24	0.7	0.7	●			
11IR 32 UNJ	6.35	32.0	0.04	11.00	0.6	0.6			●	
11IRB 32 UNJ	6.35	32.0	0.04	11.00	0.6	0.6			●	
11IR 28 UNJ	6.35	28.0	0.05	11.00	0.6	0.6			●	
11IRB 28 UNJ	6.35	28.0	0.05	11.00	0.6	0.6			●	
11IR 24 UNJ	6.35	24.0	0.05	11.00	0.7	0.8			●	
11IRB 24 UNJ	6.35	24.0	0.05	11.00	0.6	0.6			●	
11IR 20 UNJ	6.35	20.0	0.07	11.00	0.8	0.9			●	
11IRB 20 UNJ	6.35	20.0	0.07	11.00	0.8	0.9			●	
11IR 18 UNJ	6.35	18.0	0.08	11.00	0.8	0.9			●	●
11IRB 18 UNJ	6.35	18.0	0.08	11.00	0.9	1.0			●	
11IR 16 UNJ	6.35	16.0	0.09	11.00	0.8	0.9			●	
11IRB 16 UNJ	6.35	16.0	0.09	11.00	0.8	0.9			●	
11IRB 14 UNJ	6.35	14.0	0.10	11.00	0.8	0.9			●	
16IR 24 UNJ	9.52	24.0	0.05	16.49	0.7	0.8		●		
16IR 20 UNJ	9.52	20.0	0.07	16.49	0.8	0.8			●	
16IR 18 UNJ	9.52	18.0	0.08	16.49	0.7	0.8			●	
16IR/L 16 UNJ	9.52	16.0	0.09	16.49	1.0	1.2			●	●
16IR 14 UNJ	9.52	14.0	0.10	16.49	1.1	1.1			●	
16IR/L 12 UNJ	9.52	12.0	0.12	16.49	1.1	1.0			●	●
16IR/L 8 UNJ	9.52	8.0	0.19	16.49	1.2	1.6			●	

• For Insert Identification System, see page 605 • For technical information and detailed cutting data, see pages 660-670

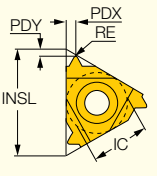
[1] Threads per inch

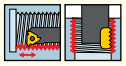
For tools, see pages: SIR/L (655)

ISCARTHREAD

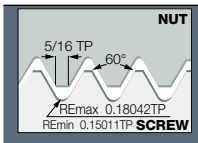
IR-MJ

Internal MJ ISO 5855 Metric Full Profile Laydown Threading Inserts for the Aviation and Aerospace Industry





Internal left-hand shown



Designation	Dimensions IC	TP	INSL	RE	PDY	PDX	IC908
11IR 1.00 MJ	6.35	1.000	11.00	0.05	0.6	0.6	●
11IRB 1.00 MJ	6.35	1.000	11.00	0.05	0.6	0.6	●
11IR 1.25 MJ	6.35	1.250	11.00	0.07	0.8	0.9	●
11IR 1.50 MJ	6.35	1.500	11.00	0.08	0.8	1.0	●
11IRB 1.50 MJ	6.35	1.500	11.00	0.08	0.8	0.9	●
11IR 2.00 MJ	6.35	2.000	11.00	0.12	0.9	1.0	●
16IR 1.00 MJ	9.52	1.000	16.49	0.05	0.7	0.8	●
16IR 1.25 MJ	9.52	1.250	16.49	0.07	0.8	0.9	●
16IR 1.50 MJ	9.52	1.500	16.49	0.08	1.1	1.1	●

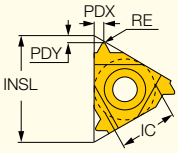
• For Insert Identification System, see page 605 • For technical information and detailed cutting data, see pages 660-670

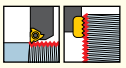
For tools, see pages: SIR/L (655)

ISCARTHREAD

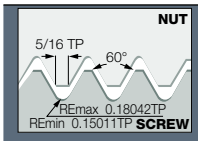
ER-MJ

External MJ ISO 5855 Metric Full Profile Laydown Threading Inserts for the Aviation and Aerospace Industry





External right-hand shown



Designation	Dimensions IC	TP	INSL	RE	PDY	PDX	Tough ↔ Hard IC250	IC908
16ER 1.00 MJ	9.52	1.000	16.49	0.17	0.7	0.8		●
16ER 1.25 MJ	9.52	1.250	16.49	0.21	0.8	0.8		●
16ER 1.50 MJ	9.52	1.500	16.49	0.25	0.9	1.1	●	●
16ER 2.00 MJ	9.52	2.000	16.49	0.33	1.0	1.1		●

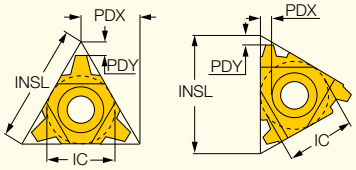
• For Insert Identification System, see page 605 • For technical information and detailed cutting data, see pages 660-670

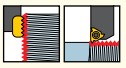
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

ISCARTHREAD

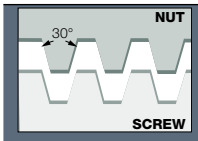
ER/L-TR

External Trapeze Shaped DIN 103 Laydown Threading Inserts for Feed Screws





External right-hand shown



Designation	Dimensions IC	TP	INSL	PDY	PDX	Tough ↔ Hard IC228	IC50M	IC250	IC908	IC1007
16ER/L 1.5 TR	9.52	1.500	16.49	1.0	1.0			●	●	
16ER/L 2 TR	9.52	2.000	16.49	1.0	1.0			●	●	
16ER/L 3 TR	9.52	3.000	16.49	1.4	1.6	●		●	●	●
16ER 4 TR	9.52	4.000	16.49	1.8	1.9			●		
22ER/L 4 TR	12.70	4.000	22.00	1.8	1.9		●	●	●	
22ER/L 5 TR	12.70	5.000	22.00	2.0	2.4		●	●	●	
22ER/L 6 TR	12.70	6.000	22.00	2.0	2.4				●	
22UERL 6 TR	12.70	6.000	22.00	2.0	11.0		●	●	●	
22UERL 7 TR	12.70	7.000	22.00	2.3	11.0			●		
22UERL 8 TR	12.70	8.000	22.00	2.5	11.0			●		
27ER/L 6 TR	15.88	6.000	27.50	2.3	2.6			●	●	
27ER/L 7 TR	15.88	7.000	27.50	2.2	2.6			●	●	
27UERL 8 TR	15.88	8.000	27.50	2.5	13.7			●	●	
27UERL 9 TR	15.88	9.000	27.50	3.0	13.7			●	●	
27UERL 10 TR (1)	15.88	10.000	27.50	3.2	13.7			●	●	

• For Insert Identification System, see page 605 • DIN 103 04/1977,1502901/1977 Class 7e • For technical information and detailed cutting data, see pages 660-670

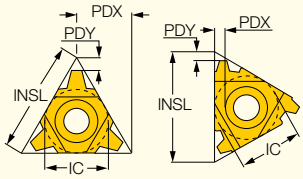
(1) One cutting edge only

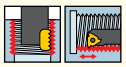
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

ISCARTHREAD

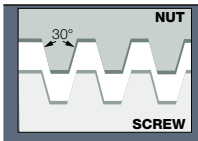
IR/L-TR

Internal Trapeze Shaped DIN 103 Laydown Threading Inserts for Feed Screws





Internal left-hand shown



Designation	Dimensions IC	TP	INSL	PDY	PDX	Tough ↔ Hard IC228	IC50M	IC250	IC908
08IR 1.5 TR (1)	4.76	1.500	8.24	0.6	0.6	●			
08UIRL 2 TR	4.76	2.000	8.24	0.9	4.0	●			
16IR 1.5 TR	9.52	1.500	16.49	1.0	1.0			●	●
16IR/L 2 TR	9.52	2.000	16.49	1.0	1.3			●	●
16IR/L 3 TR	9.52	3.000	16.49	1.3	1.5	●			●
22IR/L 4 TR	12.70	4.000	22.00	1.9	2.0			●	●
22IR/L 5 TR	12.70	5.000	22.00	2.0	2.3			●	●
22IR/L 6 TR	12.70	6.000	22.00	2.0	2.3		●	●	●
22UIRL 6 TR	12.70	6.000	22.00	2.0	11.0			●	●
22UIRL 7 TR	12.70	7.000	22.00	2.3	11.0			●	
27IR/L 6 TR	15.88	6.000	27.50	2.3	2.7			●	●
27IR 7 TR	15.88	7.000	27.50	999.0	2.6			●	
27UIRL 8 TR	15.88	8.000	27.50	2.5	13.7	●		●	●
27UIRL 9 TR	15.88	9.000	27.50	3.0	13.7			●	●
27UIRL 10 TR (1)	15.88	10.000	27.50	3.2	2.5				●

• For Insert Identification System, see page 605 • Tolerance: Class 7H • For technical information and detailed cutting data, see pages 660-670

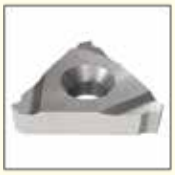
(1) A single threading corner

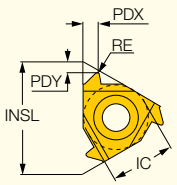
For tools, see pages: SIR/L (655)

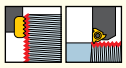
ISCARTHREAD

ER-PG

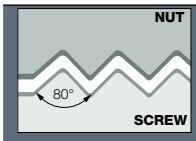
External Threading Inserts for the Electrical Industry







External right-hand shown



Designation	Dimensions IC	TP	INSL	PDY	PDX	RE	IC908
16ER 16 PG	9.52	16.000	16.49	0.8	1.0	0.17	●
16ER 18 PG	9.52	18.000	16.49	0.8	0.9	0.15	●
16ER 20 PG	9.52	20.000	16.49	0.7	0.8	0.13	●

• For Insert Identification System, see page 605 • (National Pipe Threads-Dry seal) ANSI/ASME B1.20.1-1976

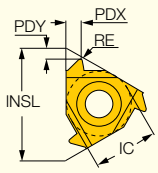
• For technical information and detailed cutting data, see pages 660-670

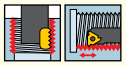
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

ISCARTHREAD

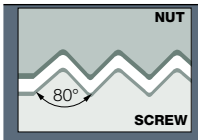
IR/L-PG

Internal Thread Profile Inserts for the Electrical Industry





Internal left-hand shown



Designation	Dimensions IC	TP	RE	INSL	PDY	PDX	IC908
11IR 18 PG	6.35	18.000	0.15	11.00	0.8	0.9	●
16IR 18 PG	9.52	18.000	0.15	16.49	0.8	0.9	●
16IR 16 PG	9.52	16.000	0.17	16.49	0.7	0.9	●

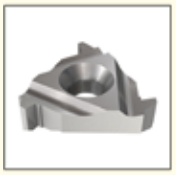
• For Insert Identification System, see page 605 • (National Pipe Threads-Dry seal) ANSI/ASME B1.20.1-1976

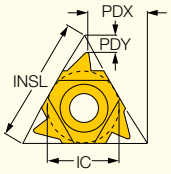
For tools, see pages: SIR/L (655)

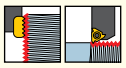
ISCARTHREAD

ER/L-SAGE

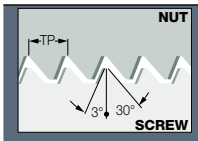
External Buttress Thread (DIN 513) for High Force in One Direction Applications







External right-hand shown



Designation	Dimensions IC	INSL	TP	PDY	PDX	Tough ↔ Hard IC250	IC908
16ER/L 2 SAGE	9.52	16.49	2.000	1.1	1.6		●
22ER 3 SAGE	12.70	22.00	3.000	1.5	2.4		●
22ER/L 4 SAGE	12.70	22.00	4.000	1.9	3.1	●	●
22UER 5 SAGE (1)	12.70	22.00	5.000	1.2	11.6		●
22UER/L 6 SAGE (1)	12.70	22.00	6.000	1.2	11.7		●

• For Insert Identification System, see page 605 • For technical information and detailed cutting data, see pages 660-670

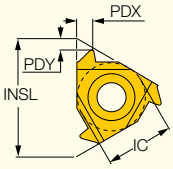
(1) Requires special anvil

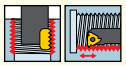
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

ISCARTHREAD

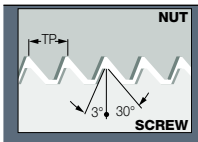
IR/L-SAGE

Internal Sagengenwinde (DIN 513) Thread Application for High Force in One Direction





Internal left-hand shown



Designation	Dimensions IC	TP	INSL	PDY	PDX	IC908
16IR/L 2 SAGE	9.52	2.000	16.49	1.2	1.7	●
22IR 3 SAGE	12.70	3.000	22.00	1.9	2.9	●
22IR 4 SAGE	12.70	4.000	22.00	2.3	3.5	●
22UIR 5 SAGE	12.70	5.000	22.00	1.9	11.7	●
22UIR 6 SAGE (1)	12.70	6.000	22.00	2.1	11.9	●

• For Insert Identification System, see page 605. • For technical information and detailed cutting data, see pages 660-670

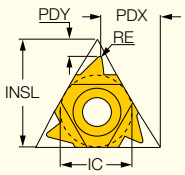
(1) Requires special anvil

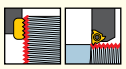
For tools, see pages: SIR/L (655)

ISCARTHREAD

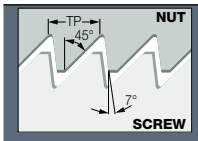
ER/L-ABUT

External American Buttress Laydown Threading Inserts for High Force Transmission in One Direction





External right-hand shown



Designation	Dimensions IC	TPI(1)	RE	INSL	PDY	PDX	Tough ↔ Hard IC250	IC08	IC908
11ER 20 ABUT	6.35	20.0	0.07	11.00	1.0	1.3	●	●	
11ER 16 ABUT	6.35	16.0	-	11.00	1.0	1.5		●	
16ER 20 ABUT	9.52	20.0	0.07	16.49	1.0	1.3			●
16ER/L 16 ABUT	9.52	16.0	0.09	16.49	1.1	1.5			●
16ER/L 12 ABUT	9.52	12.0	0.12	16.49	1.4	2.0			●
16ER/L 10 ABUT	9.52	10.0	0.15	16.49	1.5	2.3			●
22ER 8 ABUT	12.70	8.0	0.18	22.00	2.1	3.3	●		●
22ER 6 ABUT	12.70	6.0	0.25	22.00	2.1	3.4			●
22UER 4 ABUT	12.70	4.0	0.41	22.00	2.3	9.5	●		●
27UER/L 3 ABUT	15.88	3.0	0.56	27.50	3.1	11.7	●		●
27UER 3 ABUT *	15.88	3.0	-	27.50	3.1	11.7			●

• For Insert Identification System, see page 605. • ANSI B1.9-1973 Class 2 • For technical information and detailed cutting data, see pages 660-670

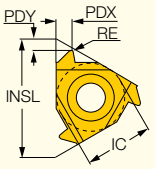
(1) Threads per inch

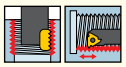
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

ISCARTHREAD

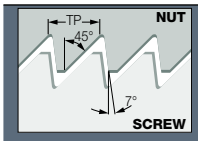
IR/L-ABUT

Internal American Buttress Laydown Threading Inserts for High Force Transmission in One Direction





Internal left-hand shown



Designation	Dimensions IC	TPI[1]	RE	INSL	PDY	PDX	Tough ↔ Hard IC50M	IC250	IC908
11IR 20 ABUT	6.35	20.0	0.07	11.00	1.0	1.3			●
11IR/L 16 ABUT	6.35	16.0	0.09	11.00	1.0	1.5		●	●
16IR 20 ABUT	9.52	20.0	0.07	16.49	1.0	1.3		●	●
16IR/L 16 ABUT	9.52	16.0	0.09	16.49	1.0	1.5			●
16IR/L 12 ABUT	9.52	12.0	0.12	16.49	1.4	2.0		●	●
16IR/L 10 ABUT	9.52	10.0	0.15	16.49	1.5	2.3			●
22IR 8 ABUT	12.70	8.0	0.18	22.00	2.2	3.3			●
22IR 6 ABUT	12.70	6.0	0.25	22.00	2.2	3.4			●
22UIR 4 ABUT	12.70	4.0	0.41	22.00	2.3	9.5	●	●	
27UIR/L 3 ABUT	15.88	3.0	0.60	27.50	3.1	11.7			●

• For Insert Identification System, see page 605 • ANSI B1.9-1973 Class 2 • For technical information and detailed cutting data, see pages 660-670

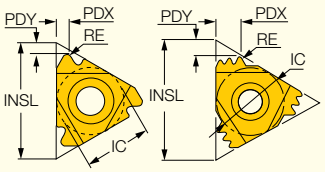
[1] Threads per inch

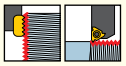
For tools, see pages: SIR/L (655)

ISCARTHREAD

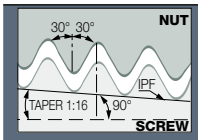
ER/L-API RD

External API - Oil Thread Round Profile Laydown Threading Inserts





External right-hand shown



Designation	Dimensions IC	TPI[2]	RE	INSL	IPF	PDY	PDX	CICT[3]	Tough ↔ Hard IC250	IC908
16ER 10 API RD	9.52	10.0	0.36	16.49	0.75	1.2	1.5	1	●	●
16ER/L 8 API RD	9.52	8.0	0.43	16.49	0.75	1.3	1.6	1	●	●
22ER 10 API RD 2M [1]	12.70	10.0	0.36	22.00	0.75	2.4	3.7	2		●
27ER 8 API RD 2M [1]	15.88	8.0	0.43	27.50	0.75	3.0	4.5	2		●

• For Insert Identification System, see page 605 • API Spec 5B8-1996. • For technical information and detailed cutting data, see pages 660-670

• For recommended number of passes for multi-tooth inserts, see page 664

[1] Multi-tooth

[2] Threads per inch

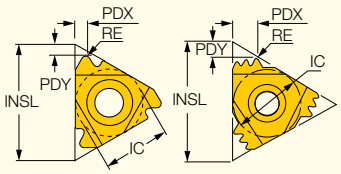
[3] Number of teeth per corner

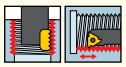
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

ISCARTHREAD

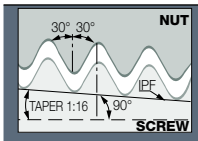
IR/L-API RD

Internal API - Oil Thread Round Profile Laydown Threading Inserts





Internal left-hand shown



Designation	Dimensions IC	TPI[2]	RE	INSL	IPF	PDY	PDX	CICT[3]	Tough ↔ Hard IC250	IC908
16IR/L 10 API RD	9.52	10.0	0.36	16.49	0.75	1.5	1.4	1	●	●
16IR/L 8 API RD	9.52	8.0	0.43	16.49	0.75	1.3	1.6	1	●	●
22IR 10 API RD 2M [1]	12.70	10.0	0.36	22.00	0.75	2.4	3.7	2		●
27IR 8 API RD 2M [1]	15.88	8.0	0.43	27.50	0.75	3.0	4.5	2		●

• For Insert Identification System, see page 605 • API Spec 5B8-1996 • For technical information and detailed cutting data, see pages 660-670
• For recommended number of passes for multi-tooth inserts see page 664

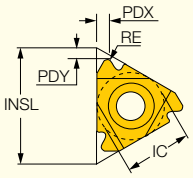
[1] Multi-tooth
[2] Threads per inch
[3] Number of teeth per corner

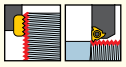
For tools, see pages: SIR/L (655)

ISCARTHREAD

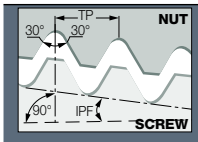
ER/L-API

External API - Oil Thread Profile Laydown Threading Inserts





External right-hand shown



Designation	Dimensions IC	RE	INSL	TPI[4]	IPF	PDX	PDY	Size[5]	Tough ↔ Hard IC250	IC908
22ER 5 API 403 [1]	12.70	0.49	22.00	5.0	3	1.8	2.5	2.375"-4.5"REG	●	●
27ER 4 API 382 [2]	15.88	0.96	27.50	4.0	2	2.1	2.8	NC23-NC50	●	●
27ER 4 API 383 [2]	15.88	0.96	27.50	4.0	3	2.1	2.8	NC56-NC77	●	●
27ER/L 4 API 502 [3]	15.88	0.64	27.50	4.0	2	2.0	3.0	6-5/8" REG	●	●
27ER 4 API 503 [3]	15.88	0.64	27.50	4.0	3	2.0	3.0	5-1/2,7-5/8,8-5/8REG		●

• For Insert Identification System, see page 605 • For technical information and detailed cutting data, see pages 660-670

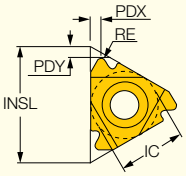
[1] V-0.040
[2] V-0.038R
[3] V-0.050
[4] Threads per inch
[5] Connection no. or size

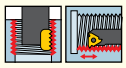
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

ISCARTHREAD

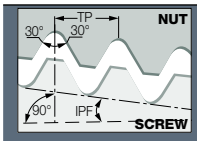
IR/L-API

Internal API - Oil Thread Profile Laydown Threading Inserts





Internal left-hand shown



Designation	Dimensions IC	INSL	TPI[4]	RE	PDY	PDX	Size[5]	Tough ↔ Hard IC50M	IC250	IC908
22IR 5 API 403 [1]	12.70	22.00	5.0	0.51	1.8	2.5	2.375"-4.5"REG		●	●
27IR 4 API 382 [2]	15.88	27.50	4.0	0.96	2.1	2.8	NC23-NC50		●	●
27IR 4 API 383 [2]	15.88	27.50	4.0	0.96	2.1	2.8	NC56-NC77			●
27IR/L 4 API 502 [3]	15.88	27.50	4.0	0.64	2.0	3.0	6-5/8" REG		●	
27IR/L 4 API 503 [3]	15.88	27.50	4.0	-	2.0	3.0	5-1/2,7-5/8,8-5/8REG	●	●	

• For Insert Identification System, see page 605 • 0.050, API Spec 74-1994 • For technical information and detailed cutting data, see pages 660-670

[1] V-0.040

[2] V-0.038R

[3] V-0.050

[4] Threads per inch

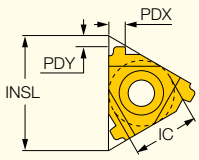
[5] Connection no. or size

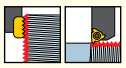
For tools, see pages: SIR/L (655)

ISCARTHREAD

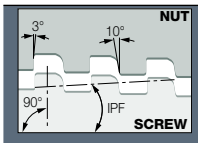
ER-BUT

External BUT - Oil Thread Profile Laydown Threading Inserts for Buttress Casing





External right-hand shown



Designation	Dimensions IC	TPI[1]	INSL	IPF	PDY	PDX	Size[2]	Tough ↔ Hard IC250	IC908
22ER 5 BUT 0.75	12.70	5.0	22.00	0.75	2.2	2.4	4-1/2" - 13-3/8"	●	●
22ER 5 BUT-1.00	12.70	5.0	22.00	1.0	2.3	2.4	16" - 20"	●	

• For Insert Identification System, see page 605 • ANSI B1.9.1973 Class 2 • For technical information and detailed cutting data, see pages 660-670

[1] Threads per inch

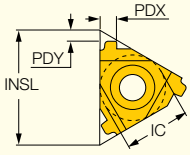
[2] Connection no. or size

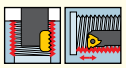
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

ISCARTHREAD

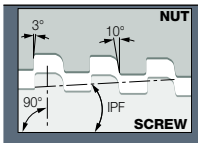
IR-BUT

Internal BUT - Oil Thread Profile Laydown Threading Inserts for Buttress Casing





Internal left-hand shown



Designation	Dimensions IC	TPI[1]	INSL	IPF	PDY	PDX	Size[2]	THFT	Tough ↔ Hard IC250	IC908
22IR 5 BUT 0.75	12.70	5.0	22.00	0.75	2.2	2.4	4-1/2" - 13-3/8"	BUT		●
22IR 5 BUT 1.00	12.70	5.0	22.00	1.00	2.3	2.4	16" - 20"	BUT	●	

• For Insert Identification System, see page 605 • ANSI B1.9.1973 Class 2 • For technical information and detailed cutting data, see pages 660-670

[1] Threads per inch

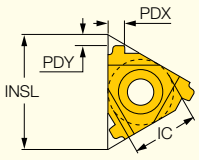
[2] Connection no. or size

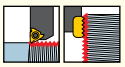
For tools, see pages: SIR/L (655)

ISCARTHREAD

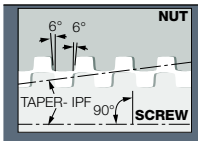
ER-EL

External EL - Extreme Line Oil Thread Profile Laydown Threading Inserts





External right-hand shown



Designation	Dimensions IC	TPI[1]	INSL	IPF	PDY	PDX	Size[2]	Tough ↔ Hard IC250	IC908
22ER 6 EL 1.5	12.70	6.0	22.00	1.5	1.9	1.9	5" - 7-5/8"	●	●
22ER 5 EL 1.25	12.70	5.0	22.00	1.25	2.4	2.3	8-5/8" - 10-3/4"	●	●

• For Insert Identification System, see page 605 • ANSI B1.9.1973 Class 2

[1] Threads per inch

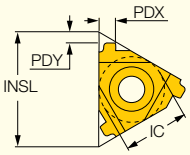
[2] Connection no. or size

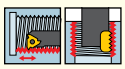
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

ISCARTHREAD

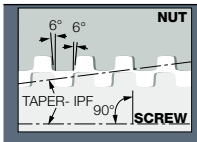
IR-EL

Internal EL - Extreme Line Oil Thread Profile Laydown Threading Inserts





Internal left-hand shown



Designation	Dimensions IC	TPI[1]	INSL	IPF	PDY	PDX	Size[2]	Tough ↔ Hard IC250	IC908
22IR 6 EL 1.5	12.70	6.0	22.00	1.5	1.9	1.9	5" - 7-5/8"		●
22IR 5 EL 1.25	12.70	5.0	22.00	1.25	2.4	2.3	8-5/8" - 10-3/4"	●	

• For Insert Identification System, see page 605 • ANSI B1.9.1973 Class 2

[1] Threads per inch

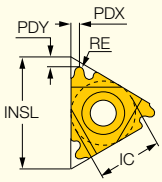
[2] Connection no. or size

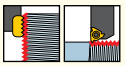
For tools, see pages: SIR/L (655)

ISCARTHREAD

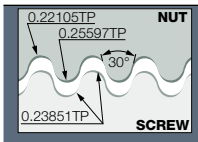
ER/L-RND

External DIN 405 Round Laydown Threading Inserts for Fire Fighting and Food Industry Pipe Couplings





External right-hand shown



Designation	Dimensions IC	TPI[2]	RE	INSL	PDY	PDX	Tough ↔ Hard IC228	IC50M	IC250	IC508	IC908
16ER/L 10 RND	9.52	10.0	0.61	16.49	1.1	1.2			●		●
16ER/L 8 RND	9.52	8.0	0.76	16.49	1.4	1.3			●		●
16ERM 8 RND [1]	9.52	8.0	0.75	16.49	1.4	1.3					●
16ER/L 6 RND	9.52	6.0	1.01	16.49	1.5	1.7		●	●		●
16ERM 6 RND [1]	9.52	6.0	1.01	16.49	1.5	1.7				●	●
22ER 6 RND	12.70	6.0	1.01	22.00	1.5	1.7	●				●
22ER/L 4 RND	12.70	4.0	1.51	22.00	2.2	2.3			●		●
27ER 4 RND	15.88	4.0	1.51	27.50	2.2	2.3			●		

• For Insert Identification System, see page 605 • Tolerance: Class 7H • For technical information and detailed cutting data, see pages 660-670

[1] With pressed chipformer

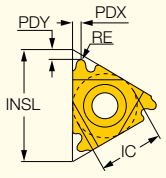
[2] Threads per inch

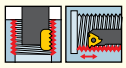
For tools, see pages: C#-SER/L (653) • SER-D (654) • SER/L (652)

ISCARTHREAD

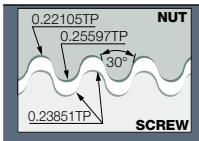
IR/L-RND

Internal DIN 405 Round Laydown Threading Inserts for Fire Fighting and Food Industry Pipe Couplings





Internal left-hand shown



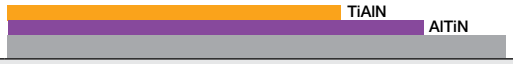
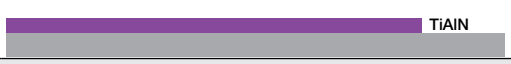
Designation	Dimensions IC	TPI[2]	RE	INSL	PDY	PDX	Tough ↔ Hard IC250	IC908
16IR 10 RND	9.52	10.0	0.36	16.49	1.1	1.2		●
16IR/L 8 RND	9.52	8.0	0.70	16.49	1.4	1.4		●
16IR/L 6 RND	9.52	6.0	0.94	16.49	1.4	1.5	●	●
16IRM 6 RND [1]	9.52	6.0	0.94	16.49	1.4	1.5		●
22IR 6 RND	12.70	6.0	0.94	22.00	1.5	1.7		●
22IR 4 RND	12.70	4.0	1.40	22.00	2.2	2.3		●
27IR 4 RND	15.88	4.0	1.40	27.50	2.2	2.3	●	●

• For Insert Identification System, see page 605 • Tolerance: Class 7H • For technical information and detailed cutting data, see pages 660-670

[1] With pressed chipformer

[2] Threads per inch

For tools, see pages: SIR/L (655)

Grades	ISO	Coating Layers
IC228	P30-P45 M25-M45	
IC250	P15-P35 M20-M40	
S.T. IC806	S05-S15 M05-M15	
S.T. IC808	P15-P30 M20-M30 K20-K40 S15-S30 H20-H30	
IC908	P15-P30 M20-M30 K20-K40 S15-S30 H20-H30	
IC1007	P10-P20 M05-M15 K15-K30 S10-S20 H05-H15	

S.T. SUMO TEC ■ PVD COATED

Grades	ISO	Coating Layers
IC08	M15-M30 N10-N25 S15-S30	

■ UNCOATED

Recommended Applications
TiCN+TiN PVD coated grade on very tough substrate. The grade is recommended for threading of steels and stainless steels at low to medium cutting speeds.
TiCN+TiN PVD coated grade on tough substrate. Used for threading of steels and alloy steels at low to medium cutting speeds.
A hard submicron substrate with **AlTiN + TiAlN PVD** coating and a special **SUMO TEC** surface treatment. Suitable for threading of high temperature and titanium alloys at low to medium cutting speeds.
A tough submicron substrate with **TiAlN + TiN PVD** coating and a special **SUMO TEC** surface treatment. Recommended for threading of large variety of materials as well as steels, austenitic stainless steels and high temperature alloys at low to medium cutting speeds. Good choice also for nonferrous materials and cast iron.
A tough submicron substrate with **TiAlN PVD** coating. Recommended for threading of large variety of materials as well as steels, austenitic stainless steels and high temperature alloys at low to medium cutting speeds. Good choice also for nonferrous materials and cast iron.
A hard submicron grain size substrate with **TiAlN + TiN PVD** coating. Features high plastic deformation resistance. Suitable for threading of steels, stainless steel and hard steels with moderate to high cutting speeds at stable conditions. Good choice also for nonferrous materials and cast iron.

Recommended Applications
An uncoated submicron carbide grade, used for steels, stainless steel and high temperature alloys at low cutting speeds. Good choice also for nonferrous materials.

THREADING TOOLS

Toolholder Identification System

1. Clamping System

S — Screw Clamping

2. Application

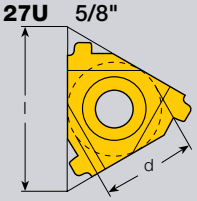
E — External
I — Internal

5. Tool Length

	mm
D	60
F	80
H	100
K	125
L	140
M	150
P	170
R	200
S	250
T	300
U	350
V	400

6. Insert Size

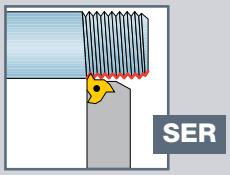
l (mm)	d
06	5/32"
08	3/16"
08U	3/16"
11	1/4"
16	3/8"
22	1/2"
22U	1/2"
27	5/8"
27U	5/8"

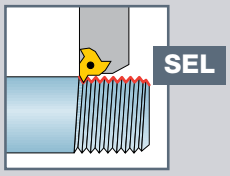


S	E	R	2020	K	16	□
1	2	3	4	5	6	7

3. Hand of Tool

R — Right-hand
L — Left-hand





External
Toolholders
Shank: hxb
2020 - 20x20 mm

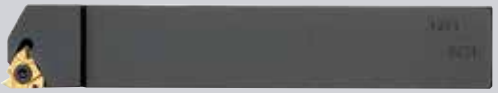
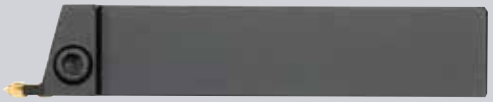
7. Optional Specifications

U - For U-type inserts
B - Bore for coolant
C - Carbide shank
O - Offset style
D - Drop head
G - Gang tool
SP - Special

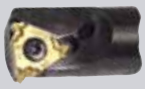
* Optional Prefix

C
HSK
KM
] Exchangeable Adaptation System

Tool Types

C#-SER/L HSK-SEL		Standard 
		U-Type 
ISCAR GROOVE-TURN TOOLS		
DECAIQTHREAD Carrying Insert with 10 Threading Corners		
PENTACUT Carrying Inserts with 5 Threading Corners For tool information, refer to the Groove-Turn chapter		

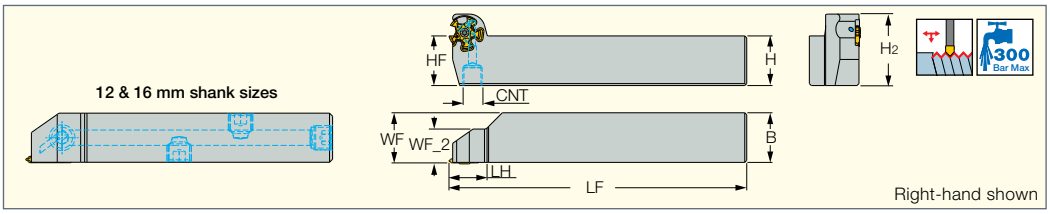
Boring Bars

E-SIR-HEAD		Standard 
		U-Type 
GROOVE-TURN Boring Bars		
CHAMGROOVE Holder and Carbide Bar		
CHAMGROOVE Integral		
PICCOCUT Holders and Carbide Bars		

DECAIQTHREAD
JETCUT

SER/L-TT-JHP

External Threading Tools Carrying Inserts with 10 Threading Corners



Designation	H	HF	B	WF	WF_2	LH	LF	H_2	CNT			
SER/L 1212 F16TT-JHP	12.0	12.0	12.0	12.20	-	20.0	80.00	23.0	UNF 5/16-24	SR M4X0.7-L10 IP10X2	IP-10/5	SR 5/16UNF TL360
SER/L 1616 H16TT-JHP	16.0	16.0	16.0	16.20	-	20.0	100.00	27.0	UNF 5/16-24	SR M4X0.7-L10 IP10X2	IP-10/5	SR 5/16UNF TL360
SER/L 2020 K16TT-JHP	20.0	20.0	20.0	20.20	-	20.0	125.00	31.0	G 1/8-28	SR M4X0.7-L10 IP10X2	IP-10/5	
SER/L 2525 M16TT-JHP	25.0	25.0	25.0	25.20	17.00	20.0	150.00	36.0	G 1/8-28	SR M4X0.7-L10 IP10X2	IP-10/5	

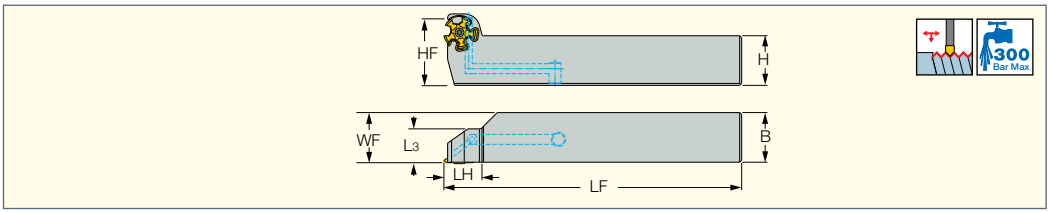
• IMPORTANT: Applying coolant through the tool is mandatory

For inserts, see pages: TTG-16E-A55 (606) • TTG-16E-A60 (610) • TTG-16E-ISO (615) • TTG-16E-UN (621)

DECAIQTHREAD
JETCUT

SER/L-TT-JHP-MC

External Threading Tools with Bottom Inlet Coolant Channels, Carrying Inserts with 10 Threading Corners



Designation	H	HF	B	WF	LF	LH	L_3	Insert
SER/L 2020X16TT-JHP-MC	20.0	20.0	20.0	20.25	90.00	20.0	-	TTG-16E..
SER/L 2525X16TT-JHP-MC	25.0	25.0	25.0	25.25	105.00	20.0	17.00	TTG-16E..

• IMPORTANT: Applying coolant through the tool is mandatory

For inserts, see pages: TTG-16E-A55 (606) • TTG-16E-A60 (610) • TTG-16E-ISO (615) • TTG-16E-UN (621)

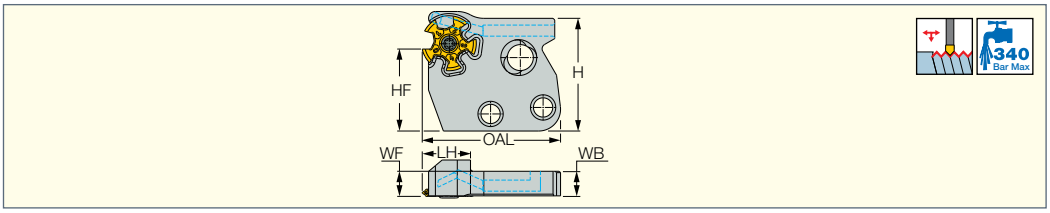
Spare Parts

Designation		
SER/L-TT-JHP-MC	SR M4X0.7-L10 IP10X2	IP-10/5

DECAIQTHREAD
MODULAR-GRIP

TTADR/L-JHP

Adapters with Coolant Channels for High Pressure, Carrying Inserts with 10 Threading Corners



Designation	HF	OAL	LH	WF	WB(1)	H	Insert
TTADR/L 16-JHP	24.0	40.50	14.1	7.35	7.2	33.0	TTG-16E..

(1) Thread pitch

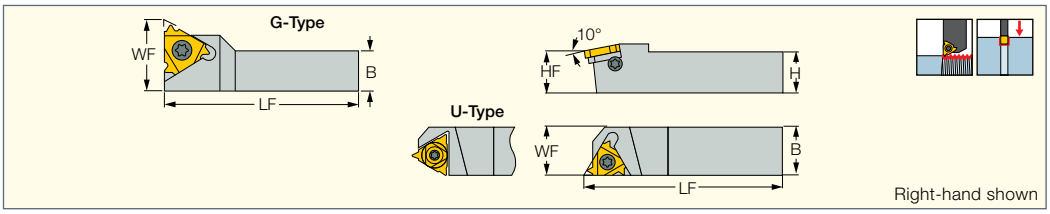
For inserts, see pages: TTG-16E-A55 (606) • TTG-16E-A60 (610) • TTG-16E-ISO (615) • TTG-16E-UN (621)

Spare Parts

Designation		
TTADR/L-JHP	SR M4X0.7-L10 IP10X2	IP-10/5

ISCARTHREAD

SER/L
External Threading Toolholders



Designation	H	HF	B	LF	WF	Insert(2)
SER 0808 H11 (1)	8.0	8.0	8.0	100.00	11.00	11 ER..
SER/L 1010 H11 (1)	10.0	10.0	10.0	100.00	11.00	11 ER/L..
SER/L 1212 F16	12.0	12.0	12.0	80.00	12.00	16 ER/L..
SER 1212 X16	12.0	12.0	12.0	120.00	12.00	16 ER/L..
SER/L 1616 H16	16.0	16.0	16.0	100.00	16.00	16 ER/L..
SER 1616 K16G	16.0	16.0	16.0	125.00	21.70	16 ER..
SER/L 2020-16-AD	20.0	20.0	20.0	67.00	20.00	16 ER/L..
SER/L 2020 K16	20.0	20.0	20.0	125.00	20.00	16 ER/L..
SER/L 2525 M16	25.0	25.0	25.0	150.00	25.00	16 ER/L..
SER/L 3232 P16	32.0	32.0	32.0	170.00	32.00	16 ER/L..
SER/L 2525 M22	25.0	25.0	25.0	150.00	25.00	22 ER/L..
SER/L 3232 P22	32.0	32.0	32.0	170.00	32.00	22 ER/L..
SER/L 2525 M22U	25.0	25.0	25.0	150.00	28.00	22 UER/L..
SER/L 3232 P22U	32.0	32.0	32.0	170.00	32.00	22 UER/L..
SER/L 4040 R22U	40.0	40.0	40.0	200.00	40.00	22 UER/L..
SER 4040 R22U	40.0	40.0	40.0	200.00	40.00	22 UER/L..
SER/L 2525 M27	25.0	25.0	25.0	150.00	25.00	27 ER/L..
SER/L 3232 P27	32.0	32.0	32.0	170.00	32.00	27 ER/L..
SER/L 2525 M27U	25.0	25.0	25.0	150.00	32.00	27 UER/L..
SER/L 3232 P27U	32.0	32.0	32.0	170.00	32.00	27 UER/L..
SER/L 4040 R27U	40.0	40.0	40.0	200.00	40.00	27 UER/L..
SER 4040 R27U	40.0	40.0	40.0	200.00	40.00	27 UER/L..

• All tools are made for 1.5 helix angle • For multi-tooth inserts use anvils AE16M / AI16M; AE22M / AI22M; AE27M / AI27M • For GTGA inserts, use anvil AE 16-0

(1) Toolholder without anvil

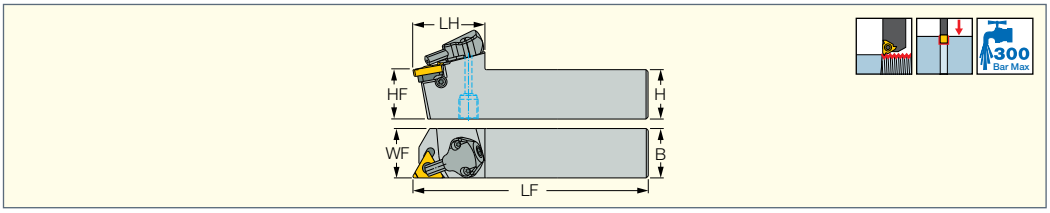
(2) Right-hand inserts (ER) for right-hand tools (SER)

Spare Parts

Designation						
SER 0808 H11	SR M2.6-L6.7-S11				T-8/5	
SER/L 1010 H11		SR M2.6-L6.7-S11				T-8/5
SEL 1212 F16		SR 5-40-L12.2-S16	SR 5-40-L6.8-A16		AI16	T-10/5
SER 1212 F16		SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SER 1212 X16		SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SEL 1616 H16		SR 5-40-L12.2-S16	SR 5-40-L6.8-A16		AI16	T-10/5
SER 1616 H16		SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SER 1616 K16G		SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SEL 2020-16-AD		SR 5-40-L12.2-S16	SR 5-40-L6.8-A16		AI16	T-10/5
SER 2020-16-AD		SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SEL 2020 K16		SR 5-40-L12.2-S16	SR 5-40-L6.8-A16		AI16	T-10/5
SER 2020 K16		SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SEL 2525 M16		SR 5-40-L12.2-S16	SR 5-40-L6.8-A16		AI16	T-10/5
SER 2525 M16		SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SEL 3232 P16		SR 5-40-L12.2-S16	SR 5-40-L6.8-A16		AI16	T-10/5
SER 3232 P16		SR 5-40-L12.2-S16	SR 5-40-L6.8-A16	AE16		T-10/5
SEL 2525 M22		SR 8-32-L15-S22	SR 8-32-L5.8-A22		AI22	T-20/5
SER 2525 M22		SR 8-32-L15-S22	SR 8-32-L5.8-A22	AE22		T-20/5
SEL 3232 P22		SR 8-32-L15-S22	SR 8-32-L5.8-A22		AI22	T-20/5
SER 3232 P22		SR 8-32-L15-S22	SR 8-32-L5.8-A22	AE22		T-20/5
SER 4040 R22		SR 8-32-L15-S22	SR 8-32-L5.8-A22	AE22		T-20/5
SEL 2525 M22U		SR 8-32-L15-S22	SR 8-32-L5.8-A22		AI22U	T-20/5
SER 2525 M22U		SR 8-32-L15-S22	SR 8-32-L5.8-A22	AE22U		T-20/5
SEL 3232 P22U		SR 8-32-L15-S22	SR 8-32-L5.8-A22		AI22U	T-20/5
SER 3232 P22U		SR 8-32-L15-S22	SR 8-32-L5.8-A22	AE22U		T-20/5
SEL 4040 R22U					AI22U	
SER/L 4040 R22U		SR 8-32-L15-S22	SR 8-32-L5.8-A22			T-20/5
SER 4040 R22U				AE22U		
SEL 2525 M27		SR M5-L22-S40	SR M5-L5.8-A27		AI27	T-25/3
SER 2525 M27		SR M5-L22-S40	SR M5-L5.8-A27	AE27		T-25/3
SEL 3232 P27		SR M5-L22-S40	SR M5-L5.8-A27		AI27	T-25/3
SER 3232 P27		SR M5-L22-S40	SR M5-L5.8-A27	AE27		T-25/3
SER 4040 R27		SR M5-L22-S40	SR M5-L5.8-A27	AE27		T-25/3
SEL 2525 M27U		SR M5-L22-S40	SR M5-L5.8-A27		AI27U	T-25/3
SER 2525 M27U		SR M5-L22-S40	SR M5-L5.8-A27	AE27U		T-25/3
SEL 3232 P27U		SR M5-L22-S40	SR M5-L5.8-A27		AI27U	T-25/3
SER 3232 P27U		SR M5-L22-S40	SR M5-L5.8-A27	AE27U		T-25/3
SEL 4040 R27U		SR M5-L22-S40	SR M5-L5.8-A27		AI27U	K40
SER 4040 R27U	T-25/3	SR M5-L22-S40	SR M5-L5.8-A27	AE27U		T-25/3

ISCARTHREAD
JETCUT

SER/L-JHP
External Threading Tools
with Coolant Channels



Designation	H	B	HF	LF	LH	WF	Insert(1)
SER/L 2020 K16-JHP	20.0	20.0	20.0	125.00	37.0	20.00	16 ER/L..
SER/L 2525 M16-JHP	25.0	25.0	25.0	150.00	37.0	25.00	16 ER/L..
SER/L 3232 P16-JHP	32.0	32.0	32.0	170.00	37.0	32.00	16 ER/L..

• All tools are made for 1.5 helix angle • For multi-tooth inserts use anvils AE16M / AI16M; AE22M / AI22M; AE27M / AI27M • For GTGA inserts, use anvil AE 16-0

(1) Right-hand inserts (ER) for right-hand tools (SER)

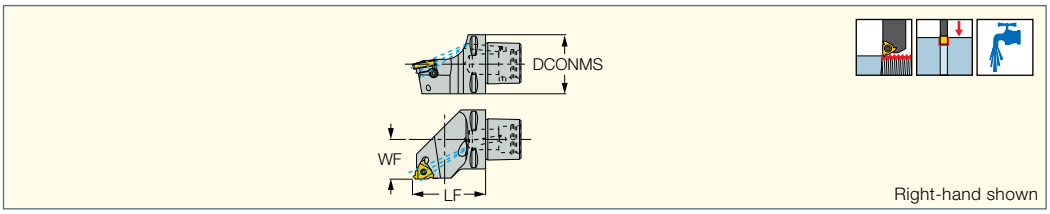
For inserts, see pages: ER-MJ (638) • ER-NPTF (631) • ER-PG (639) • ER/L-55° (606) • ER/L-60° (610) • ER/L-ABUT (640) • ER/L-ACME (635) • ER/L-API RD (641) • ER/L-BSPT (632) • ER/L-ISO (616) • ER/L-NPT (629) • ER/L-RND (644) • ER/L-SAGE (640) • ER/L-STACME (634) • ER/L-TR (638) • ER/L-UN (622) • ER/L-UNJ (636) • ER/L-W (626) • GTGA (311) • GTMA (312)

Spare Parts

Designation						
SEL 2020 K16-JHP	SR 5-40-L12.2-S16	AI16	T-8/5	SR 5-40-L6.8-A16	T-10/5	CU-V-JHP
SER 2020 K16-JHP	SR 5-40-L12.2-S16	AE16	T-8/5	SR 5-40-L6.8-A16	T-10/5	CU-V-JHP
SEL 2525 M16-JHP	SR 5-40-L12.2-S16	AI16	T-8/5	SR 5-40-L6.8-A16	T-10/5	CU-V-JHP
SER 2525 M16-JHP	SR 5-40-L12.2-S16	AE16	T-8/5	SR 5-40-L6.8-A16	T-10/5	CU-V-JHP
SEL 3232 P16-JHP	SR 5-40-L12.2-S16	AI16	T-8/5	SR 5-40-L6.8-A16	T-10/5	CU-V-JHP
SER 3232 P16-JHP	SR 5-40-L12.2-S16	AE16	T-8/5	SR 5-40-L6.8-A16	T-10/5	CU-V-JHP

ISCARTHREAD
CAMFIX

C#-SER/L
External Threading Tools with
CAMFIX Exchangeable Shanks



Designation	DCONMS	WF	LF	Insert(1)
C4 SER/L-27050-16	40	27.00	50.00	16ER/L...
C5 SER/L-35060-16	50	35.00	60.00	16ER/L...
C6 SER/L-45065-16	63	45.00	65.00	16ER/L...
C4 SER/L-27050-22	40	27.00	50.00	22ER/L...
C5 SER/L-35060-22	50	35.00	60.00	22ER/L...
C6 SER/L-45065-22	63	45.00	65.00	22ER/L...
C8 SER/L-55080-22	80	55.00	80.00	22ER/L...

(1) Right-hand inserts for right-hand tools and vice versa

For inserts, see pages: ER-BUT (643) • ER-EL (644) • ER-MJ (638) • ER-NPTF (631) • ER-PG (639) • ER/L-55° (606) • ER/L-60° (610) • ER/L-ABUT (640) • ER/L-ACME (635) • ER/L-API (642) • ER/L-API RD (641) • ER/L-BSPT (632) • ER/L-ISO (616) • ER/L-NPT (629) • ER/L-RND (644) • ER/L-SAGE (640) • ER/L-STACME (634) • ER/L-TR (638) • ER/L-UN (622) • ER/L-UNJ (636) • ER/L-W (626) • GTGA (311) • GTMA (312)

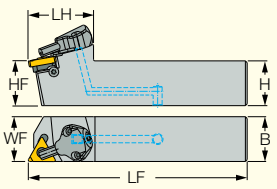
For holders, see pages: HSK-C# (676)

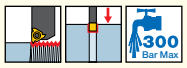
Spare Parts

Designation					
C4 SEL-27050-16	AI16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
C4 SER-27050-16	AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	EZ 83
C5 SEL-35060-16	AI16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	EZ 104
C5 SER-35060-16	AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	EZ 104
C6 SEL-45065-16	AI16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
C6 SER-45065-16	AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
C4 SEL-27050-22	AI22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
C4 SER-27050-22	AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
C5 SEL-35060-22	AI22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
C5 SER-35060-22	AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
C6 SEL-45065-22	AI22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
C6 SER-45065-22	AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
C8 SEL-55080-22	AI22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
C8 SER-55080-22	AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	

ISCARTHREAD
JETCUT

SER/L-JHP-MC
External Threading Tools with
Bottom Inlet Coolant Channels





Designation	H	HF	B	LF	LH	WF	Insert(1)
SER/L 2020X16 JHP-MC	20.0	20.0	20.0	107.00	36.2	20.00	16 ER/L..
SER/L 2525X16 JHP-MC	25.0	25.0	25.0	122.00	36.2	25.00	16 ER/L..

• All tools are made for 1.5 helix angle • For multi-tooth inserts use anvils AE16M / AI16M; AE22M / AI22M; AE27M / AI27M • For GTGA inserts, use anvil AE 16-0

(1) Right-hand inserts (ER) for right-hand tools (SER)

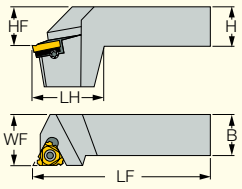
For inserts, see pages: ER-MJ (638) • ER-NPTF (631) • ER-PG (639) • ER/L-55° (606) • ER/L-60° (610) • ER/L-ABUT (640) • ER/L-ACME (635) • ER/L-API RD (641) • ER/L-BSPT (632) • ER/L-ISO (616) • ER/L-NPT (629) • ER/L-RND (644) • ER/L-SAGE (640) • ER/L-STACME (634) • ER/L-TR (638) • ER/L-UN (622) • ER/L-UNJ (636) • ER/L-W (626) • GTGA (311) • GTMA (312)

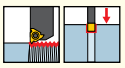
Spare Parts

Designation						
SEL 2020X16 JHP-MC	SR 5-40-L12.2-S16	AI16	T-8/5	SR 5-40-L6.8-A16	T-10/5	CU-V-JHP
SER 2020X16 JHP-MC	SR 5-40-L12.2-S16	AE16	T-8/5	SR 5-40-L6.8-A16	T-10/5	CU-V-JHP
SEL 2525X16 JHP-MC	SR 5-40-L12.2-S16	AI16	T-8/5	SR 5-40-L6.8-A16	T-10/5	CU-V-JHP
SER 2525X16 JHP-MC	SR 5-40-L12.2-S16	AE16	T-8/5	SR 5-40-L6.8-A16	T-10/5	CU-V-JHP

ISCARTHREAD

SER-D
External Threading
Drophead Toolholders

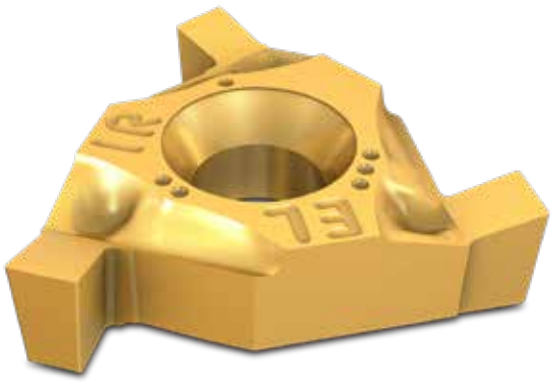




Right-hand shown

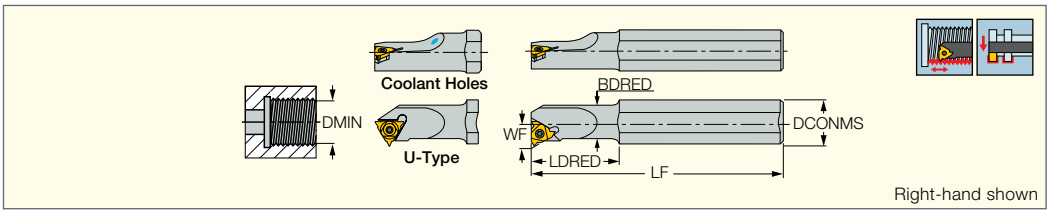
Designation	H	HF	B	LF	WF	LH	Insert				
SER 2525 M16D	25.0	25.0	25.0	150.00	32.00	38.0	16 ER..	SR 5-40-L12.2-S16	T-10/5	AE16	SR 5-40-L6.8-A16
SER 2525 M22D	25.0	25.0	25.0	150.00	32.00	38.0	22 ER..	SR 8-32-L15-S22	T-20/5	AE22	SR 8-32-L5.8-A22

• All toolholders are made for 1.5 helix angle. • For GTGA inserts, use anvil AE 16-0



ISCARTHREAD

SIR/L
Internal Threading Bars



Designation	DMIN	DCONMS	BDRED	LF	LDRED	WF	CSP[5]	Shank m.[6]	Insert[7]
SIR/L 0005 H06CB [1]	6.40	6.00	5.10	100.00	25.0	4.30	1	C	06 IR/IL..
SIR/L 0005 H06 [2]	6.40	12.00	5.10	100.00	12.0	4.30	0	S	06 IR/IL..
SIR 0005 H06-W [3]	6.40	12.00	5.10	100.00	12.0	4.30	0	S	06 IR/IL..
SIR/L 0007 K08CB [1]	7.80	8.00	6.60	125.00	30.0	5.30	1	C	08 IR/IL..
SIR/L 0007 K08 [2]	7.80	16.00	6.60	125.00	18.0	5.30	0	S	08 IR/IL..
SIR 0008 K08UCB [1]	9.00	8.00	7.30	125.00	35.0	6.40	1	C	08 UIRL..
SIR/L 0008 K08U [2]	9.00	16.00	7.30	125.00	21.0	6.60	0	S	08 UIRL..
SIR/L 0010 H11 [2]	12.00	10.00	10.00	100.00	-	7.40	0	S	11 IR/IL..
SIR/L 0010 M11CB [1]	12.00	10.00	10.00	150.00	-	7.40	1	C	11 IR/IL..
SIR 0010 H11B [2]	12.00	10.00	10.00	100.00	-	7.40	1	S	11 IR/IL..
SIR/L 0010 K11 [2]	12.00	16.00	10.00	125.00	25.0	6.50	0	S	11 IR/IL..
SIR/L 0010 K11B [2]	12.00	16.00	10.00	125.00	25.0	7.40	1	S	11 IR/IL..
SIR/L 0012 P11CB [1]	15.00	12.00	12.00	170.00	-	8.40	1	C	11 IR/IL..
SIR/L 0013 L11 [2]	15.00	16.00	13.00	140.00	32.0	8.90	0	S	11 IR/IL..
SIR/L 0013 M16 [2]	16.00	16.00	13.00	150.00	32.0	10.00	0	S	16 IR/L..
SIR/L 0013 M16B [2]	16.00	16.00	13.00	150.00	32.0	10.20	1	S	16 IR/L..
SIR 0016 R16CB [1]	19.00	16.00	16.00	200.00	-	11.70	1	C	16 IR/IL..
SIR/L 0016 P16 [2]	19.00	20.00	16.00	170.00	40.0	11.40	0	S	16 IR/L..
SIR/L 0016 P16B [2]	19.00	20.00	16.00	170.00	40.0	11.70	1	S	16 IR/L..
SIR/L 0020 P16	24.00	20.00	20.00	170.00	-	13.70	0	S	16 IR/L..
SIR/L 0020 P16B	24.00	20.00	20.00	170.00	-	13.70	1	S	16 IR/L..
SIR/L 0020 P22 [2]	24.00	20.00	20.00	170.00	-	15.60	0	S	22 IR/L..
SIR/L 0020-16-AD	24.00	20.00	20.00	80.00	-	13.70	0	S	16 IR/L..
SIR 0020 S16CB	24.00	20.00	20.00	250.00	-	13.70	1	C	16 IR/L..
SIR 0025 S16CB	28.00	25.00	25.00	250.00	-	16.20	1	C	16 IR/L..
SIR/L 0025 R16	29.00	25.00	25.00	200.00	-	16.30	0	S	16 IR/L..
SIR/L 0025 R16B	29.00	25.00	25.00	200.00	-	16.20	1	S	16 IR/L..
SIR/L 0025 R22	29.00	25.00	25.00	200.00	-	17.20	0	S	22 IR/L..
SIR/L 0025 R22B	29.00	25.00	25.00	200.00	-	18.10	1	S	22 IR/L..
SIR/L 0025-16-AD	29.00	25.00	25.00	100.00	-	16.30	0	S	16 IR/L..
SIR/L 0032 S16	36.00	32.00	32.00	250.00	-	19.70	0	S	16 IR/L..
SIR/L 0032 S22	38.00	32.00	32.00	250.00	-	21.50	0	S	22 IR/L..
SIR/L 0032 S22U	38.00	32.00	32.00	250.00	-	25.50	0	S	22 UIRL..
SIR/L 0032 S27	40.00	32.00	32.00	250.00	-	22.40	0	S	27 IR/L
SIR/L 0032 S27U [4]	40.00	32.00	32.00	250.00	-	24.70	0	S	27 UIRL..
SIR/L 0040 T16	44.00	40.00	40.00	300.00	-	23.70	0	S	16 IR/L..
SIR/L 0040 T22	46.00	40.00	40.00	300.00	-	25.80	0	S	22 IR/L..
SIR 0040 T22U	46.00	40.00	40.00	300.00	-	29.50	0	S	22 UIRL..
SIR/L 0040 T27	48.00	40.00	40.00	300.00	-	26.60	0	S	27 IR/L..
SIR 0040 T27U [4]	48.00	40.00	40.00	300.00	-	29.40	0	S	27 UIRL..
SIR/L 0050 U16	54.00	50.00	50.00	350.00	-	28.70	0	S	16 IR/L..
SIR/L 0050 U22	56.00	50.00	50.00	350.00	-	30.60	0	S	22 IR/L..
SIR/L 0050 U27	58.00	50.00	50.00	350.00	-	31.60	0	S	27 IR/L..
SIR/L 0050 U27U [4]	58.00	50.00	50.00	350.00	-	34.30	0	S	27 UIRL..
SIR/L 0060 V27	68.00	60.00	60.00	400.00	-	36.60	0	S	27 IR/L..
SIR/L 0060 V27U [4]	68.00	60.00	60.00	400.00	-	39.30	0	S	27 UIRL..

• B-steel shank with coolant hole, C-carbide shank without coolant hole, CB-carbide shank with coolant hole • All toolholders are made for 1.5 helix angle • For GTGA inserts, use anvil AL 16-0

[1] Carbide shank without anvil

[2] Toolholder without anvil

[3] For ACME, STUB ACME, TRAPEZ (DIN 103) and ROUND (DIN 405) thread profiles check in user guide for anvil information

[4] 0 - Without coolant supply, 1 - With coolant supply

[5] C-carbide,S-steel

[6] Right-hand inserts (IR) for right-hand tools (SIR)

[7] Right-hand inserts (IR) for right-hand tools (SIR)

Spare Parts

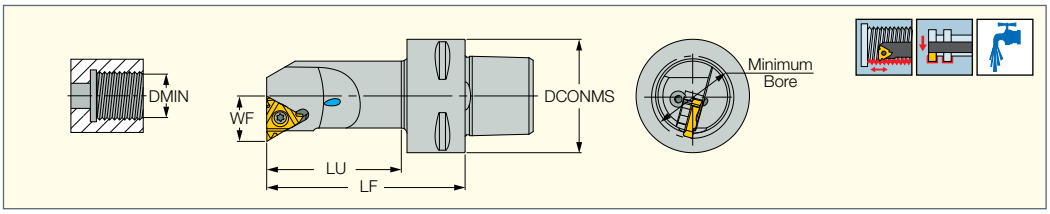
Designation						
SIR/L 0005 H06CB				SR 14-552	T-6/5	
SIR/L 0005 H06				SR 14-552	T-6/5	
SIR 0005 H06-W				SR 14-552	T-6/5	
SIR/L 0007 K08CB				SR 14-558	T-6/5	
SIR/L 0007 K08				SR 14-558	T-6/5	
SIR 0008 K08UCB				SR 14-558	T-6/5	
SIR/L 0008 K08U				SR 14-558	T-6/5	
SIR/L 0010 H11				SR M2.6-L6.7-S11	T-8/5	
SIR/L 0010 M11CB				SR M2.6-L6.7-S11	T-8/5	
SIR 0010 H11B				SR M2.6-L6.7-S11	T-8/5	
SIR/L 0010 K11				SR M2.6-L6.7-S11	T-8/5	
SIR/L 0010 K11B				SR M2.6-L6.7-S11	T-8/5	PL 16
SIR/L 0012 P11CB				SR M2.6-L6.7-S11	T-8/5	
SIR/L 0013 L11				SR M2.6-L6.7-S11	T-8/5	
SIR/L 0013 M16				SR 5-40-L9.7-S16S	T-10/5	
SIR/L 0013 M16B				SR 5-40-L9.7-S16S	T-10/5	PL 16
SIR 0016 R16CB				SR 5-40-L9.7-S16S	T-10/5	
SIR/L 0016 P16				SR 5-40-L9.7-S16S	T-10/5	
SIR/L 0016 P16B				SR 5-40-L9.7-S16S	T-10/5	PL 20
SIL 0020 P16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIL 0020 P16B		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	PL 20
SIR/L 0020 P22				SR 8-32-L12-S22S	T-20/5	
SIL 0020-16-AD		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0020 P16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0020 P16B	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	PL 20
SIR 0020 S16CB	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0020-16-AD	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0025 S16CB	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIL 0025 R16		AE16				
SIR/L 0025 R16			SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIL 0025 R16B		AE16				
SIR/L 0025 R16B			SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	PL 25
SIL 0025 R22		AE22				
SIR/L 0025 R22			SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIL 0025 R22B		AE22				
SIR/L 0025 R22B			SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	PL 25
SIL 0025-16-AD		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0025 R16	AI16					
SIR 0025 R16B	AI16					
SIR 0025 R22	AI22					
SIR 0025 R22B	AI22					
SIR 0025-16-AD	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIL 0032 S16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0032 S16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIL 0032 S22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIL 0032 S22U		AE22U	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIR 0032 S22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIR 0032 S22U	AI22U		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIL 0032 S27		AE27	SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIL 0032 S27U		AE27U	SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0032 S27	AI27		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0032 S27U	AI27U		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIL 0040 T16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0040 T16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIL 0040 T22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIR 0040 T22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIR 0040 T22U	AI22U		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIL 0040 T27		AE27	SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0040 T27	AI27		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0040 T27U	AI27U		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIL 0050 U16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIR 0050 U16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5	
SIL 0050 U22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIR 0050 U22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5	
SIL 0050 U27		AE27	SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIL 0050 U27U		AE27U	SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0050 U27	AI27		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0050 U27U	AI27U		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIL 0060 V27		AE27	SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIL 0060 V27U		AE27U	SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0060 V27	AI27		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	
SIR 0060 V27U	AI27U		SR M5-L5.8-A27	SR M5-L22-S40	T-25/3	

ISCARTHREAD

CAMFIX

C#-SIR/L

Internal Threading Bars with CAMFIX Exchangeable Shanks



Designation	DCONMS	DMIN	WF	LU	LF	Insert
C4 SIR/L-12060-16	40	20.00	11.70	37.0	60.00	16 IR/L..
C4 SIR/L-14060-16	40	25.00	13.50	38.0	60.00	16 IR/L..
C4 SIR-15065-22	40	25.00	15.40	42.0	65.00	22 IR/L..
C4 SIR/L-17070-16	40	29.00	16.00	48.0	70.00	16 IR/L..
C4 SIR/L-19070-22	40	29.00	17.90	48.0	70.00	22 IR/L..
C4 SIR/L-22090-16	40	36.00	19.50	69.0	90.00	16 IR/L..
C4 SIR/L-22090-22	40	38.00	21.40	69.0	90.00	22 IR/L..
C4 SIR/L-27080-16	40	44.00	23.50	60.0	80.00	16 IR/L..
C4 SIR/L-27080-22	40	46.00	25.40	60.0	80.00	22 IR/L..
C5 SIR/L-12060-16	50	20.00	11.70	35.0	60.00	16 IR/L..
C5 SIR/L-14060-16	50	25.00	13.50	36.0	60.00	16 IR/L..
C5 SIR/L-15065-22	50	25.00	15.40	41.0	65.00	22 IR/L..
C5 SIR/L-17070-16	50	29.00	16.00	47.0	70.00	16 IR/L..
C5 SIR/L-19070-22	50	29.00	17.90	47.0	70.00	22 IR/L..
C5 SIR/L-22090-16	50	36.00	19.50	68.0	90.00	16 IR/L..
C5 SIR/L-22090-22	50	38.00	21.40	68.0	90.00	22 IR/L..
C5 SIR/L-27105-16	50	44.00	23.50	84.0	105.00	16 IR/L..
C5 SIR/L-27105-22	50	46.00	25.40	84.0	105.00	22 IR/L..
C6 SIR/L-14070-16	63	25.00	13.50	42.0	70.00	16 IR/L..
C6 SIR/L-17075-16	63	29.00	16.00	48.0	75.00	16 IR/L..
C6 SIR/L-19075-22	63	29.00	17.90	48.0	75.00	22 IR/L..
C6 SIR/L-22090-16	63	36.00	19.50	64.0	90.00	16 IR/L..
C6 SIR/L-22090-22	63	38.00	21.40	64.0	90.00	22 IR/L..
C6 SIR/L-27105-16	63	44.00	23.50	80.0	105.00	16 IR/L..
C6 SIR/L-27105-22	63	46.00	25.40	80.0	105.00	22 IR/L..

For inserts, see pages: IR-BUT (522) • IR-EL (523) • IR-MJ (517) • IR/L-55° (491) • IR/L-60° (494) • IR/L-ABUT (520) • IR/L-ACME (515) • IR/L-API (522) • IR/L-API RD (521) • IR/L-BSPT (513) • IR/L-ISO (499) • IR/L-NPT (510) • IR/L-NPTF (512) • IR/L-PG (519) • IR/L-RND (524) • IR/L-SAGE (520) • IR/L-STACME (514) • IR/L-TR (518) • IR/L-UN (504) • IR/L-UNJ (516) • IR/L-W (508) • GTGA (278) • GTMA (278)

Spare Parts

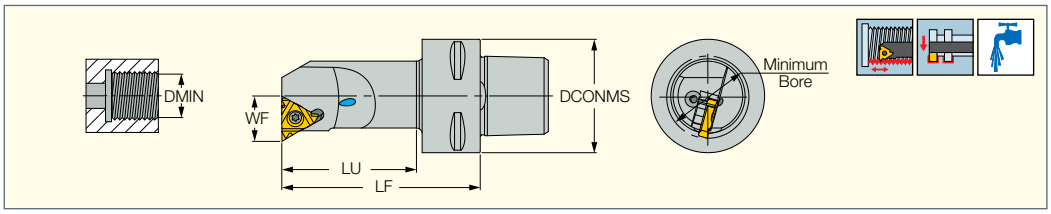
Designation					
C4 SIL-12060-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIR-12060-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIL-14060-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIR-14060-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIR-15065-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C4 SIL-17070-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIL-19070-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C4 SIR-17070-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIR-19070-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C4 SIL-22090-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIR-22090-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIL-22090-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C4 SIR-22090-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C4 SIL-27080-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIR-27080-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C4 SIL-27080-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C4 SIR-27080-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIL-12060-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIR-12060-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIL-14060-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIL-15065-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIR-14060-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIR-15065-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIL-17070-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIL-19070-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIR-17070-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIR-19070-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIL-22090-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIR-22090-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIL-22090-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIR-22090-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIL-27105-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5

ISCARTHREAD

CAMFIX

C#-SIR/L (continued)

Internal Threading Bars with CAMFIX Exchangeable Shanks



Spare Parts

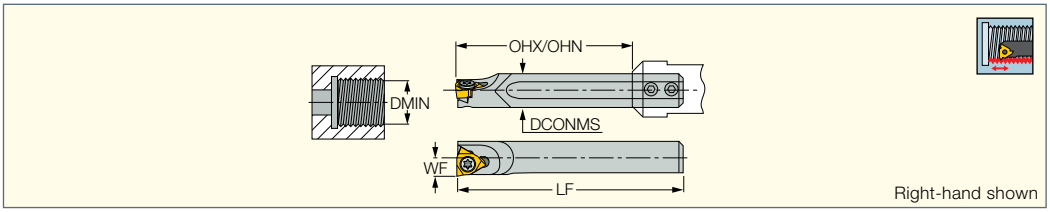
Designation					
C5 SIR-27105-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C5 SIL-27105-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C5 SIR-27105-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C6 SIL-14070-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIR-14070-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIL-17075-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIL-19075-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C6 SIR-17075-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIR-19075-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C6 SIL-22090-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIR-22090-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIL-22090-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C6 SIR-22090-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C6 SIL-27105-16		AE16	SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIR-27105-16	AI16		SR 5-40-L6.8-A16	SR 5-40-L12.2-S16	T-10/5
C6 SIL-27105-22		AE22	SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5
C6 SIR-27105-22	AI22		SR 8-32-L5.8-A22	SR 8-32-L15-S22	T-20/5

ISOTURN

ISCARTHREAD

MGSIR/L

Solid Carbide Bars for Internal Turning and Threading



Designation	DCONMS	LF	OHN(1)	OHX(2)	WF	DMIN		
MGSIR/L 06-06	6.00	59.00	16.0	42.0	3.90	7.00	SR 14-552	T-6/5
MGSIR/L 08-06	8.00	72.00	20.0	56.0	5.00	9.20	SR 14-552	T-6/5

• In order to maintain high machining reliability, we strongly recommend replacing the clamping screw every 10 insert indexes

(1) Minimum overhang in adjustment range

(2) Maximum overhang in adjustment range

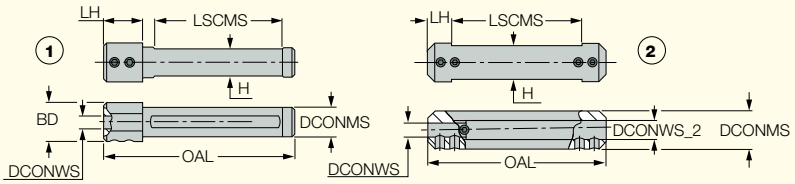
For inserts, see pages: IR/L-55° (607) • IR/L-60° (611) • IR/L-BSPT (633) • IR/L-ISO (618) • IR/L-NPT (630) • IR/L-NPTF (632) • IR/L-UN (623) • IR/L-W (627)

For holders, see pages: SBB (106)

PICCOCUT

PICCO/MG PCO (holder)

Holders for PICCO Inserts and Small Diameter Boring Bars

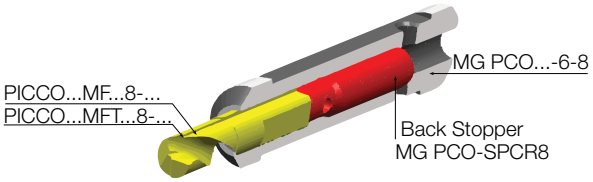


Designation	DCONMS	DCONWS	DCONWS_2	OAL	LH	LSCMS	DRVS(2)	BD	Fig.				
PICCO 12-4-5	12.00	4.00	5.00	75.00	10.00	55.00	10.3	-	2.	SR M5X4-PF	HW 2.5		
PICCO 16-4-5	16.00	4.00	5.00	75.00	10.00	55.00	14.0	-	2.	SR M5X6-PF	HW 2.5		
PICCO 20-4-5	20.00	4.00	5.00	90.00	10.00	70.00	18.0	-	2.	SR M5X6-PF	HW 2.5		
PICCO 22-4-5 (1)	22.00	4.00	5.00	90.00	10.00	70.00	20.0	-	2.	SR M5X6-PF	HW 2.5		
PICCO 16-6-7	16.00	6.00	7.00	75.00	10.00	55.00	14.0	-	2.	SR M5X6-PF	HW 2.5		
PICCO 20-6-7	20.00	6.00	7.00	90.00	10.00	70.00	18.0	-	2.	SR M5X6-PF	HW 2.5		
PICCO 22-6-7 (1)	22.00	6.00	7.00	90.00	10.00	70.00	20.0	-	2.	SR M5X6-PF	HW 2.5		
MG PCO-12-6	12.00	6.00	-	75.00	15.00	50.80	11.0	18.00	1.	SR M5X6-PF	HW 2.5		
MG PCO-16-6-8	16.00	6.00	8.00	75.00	10.00	55.00	14.0	-	2.	SR M5X6-PF	HW 2.5		MG PCO-SPCR8
MG PCO-20-6-8	20.00	6.00	8.00	90.00	10.00	70.00	18.0	-	2.	SR M5X6-PF	HW 2.5		MG PCO-SPCR8
MG PCO-22-6-8 (1)	22.00	6.00	8.00	90.00	10.00	70.00	20.0	-	2.	SR M5X6-PF	HW 2.5		MG PCO-SPCR8
MG PCO-25-6-8	25.00	6.00	8.00	90.00	10.00	70.00	23.0	-	2.	SR M5X6-PF	HW 2.5		MG PCO-SPCR8
MG PCO-16-9	16.00	9.00	-	75.00	15.00	53.00	15.0	20.00	1.	SR M5X6-PF	HW 2.5	PL 16	

• Holders are suitable for right- and left-hand inserts, and boring bars

(1) Tools for Swiss-type CNC

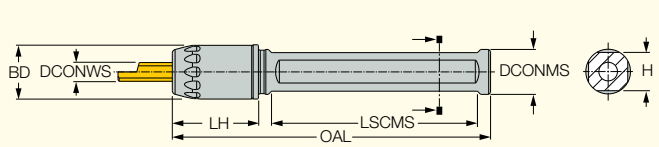
(2) Key flat size



PICCOACE

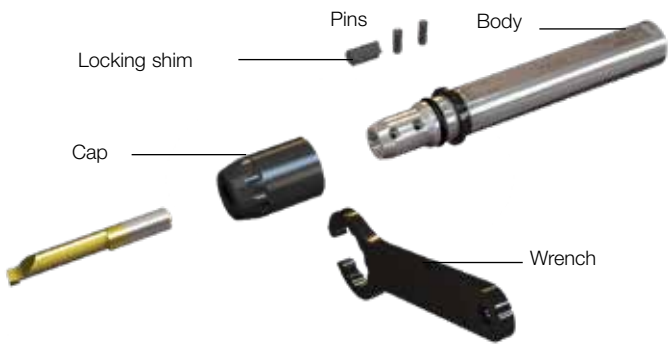
PICCO ACE

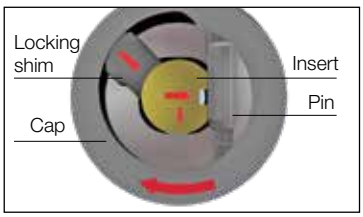
Holders for PICCOCUT Inserts

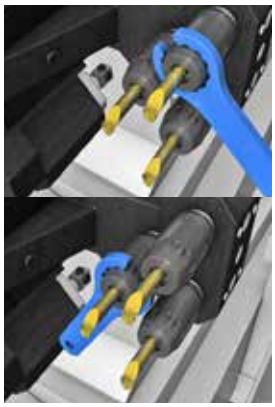


Designation	DCONMS	DCONWS	BD	OAL	LH	LSCMS	H		
PICCO ACE 12-4	12.00	4.00	14.50	85.00	23.00	53.00	10.3	PL 16 M6-D5	WRENCH ACE 4-5
PICCO ACE 12-5	12.00	5.00	14.50	85.00	23.00	53.00	10.3	PL 16 M6-D5	WRENCH ACE 4-5
PICCO ACE 16-4	16.00	4.00	14.50	85.00	21.50	53.50	14.0	PL 16 M6-D5	WRENCH ACE 4-5
PICCO ACE 16-5	16.00	5.00	14.50	85.00	21.50	53.00	14.0	PL 16 M6-D5	WRENCH ACE 4-5
PICCO ACE 16-6	16.00	6.00	19.90	85.00	23.00	53.50	14.0	PL 16 M6-D5	WRENCH ACE 6-7
PICCO ACE 16-7	16.00	7.00	19.90	85.00	23.00	53.50	14.0	PL 16 M6-D5	WRENCH ACE 6-7
PICCO ACE 20-4	20.00	4.00	14.50	150.00	21.50	118.00	18.0	PL 16 M6-D5	WRENCH ACE 4-5
PICCO ACE 20-5	20.00	5.00	14.50	150.00	21.50	118.00	18.0	PL 16 M6-D5	WRENCH ACE 4-5
PICCO ACE 20-6	20.00	6.00	19.90	150.00	21.50	118.00	18.0	PL 16 M6-D5	WRENCH ACE 6-7
PICCO ACE 20-7	20.00	7.00	19.90	150.00	21.50	118.00	18.0	PL 16 M6-D5	WRENCH ACE 6-7
PICCO ACE 22-4	22.00	4.00	14.50	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 4-5
PICCO ACE 22-5	22.00	5.00	14.50	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 4-5
PICCO ACE 22-6	22.00	6.00	19.90	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 6-7
PICCO ACE 22-7	22.00	7.00	19.90	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 6-7
PICCO ACE 25-4	25.00	4.00	14.50	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 4-5
PICCO ACE 25-5	25.00	5.00	14.50	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 4-5
PICCO ACE 25-6	25.00	6.00	19.90	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 6-7
PICCO ACE 25-7	25.00	7.00	19.90	150.00	21.50	118.00	20.0	PL 16 M6-D5	WRENCH ACE 6-7

• Holders are suitable for right- and left-hand PICCO inserts







Machining Data for Threading

ISO	Material		Condition	Tensile Strength [N/mm²]	Hardness HB	Material No.
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1
		>= 0.25 %C	Annealed	650	190	2
		< 0.55 %C	Quenched and tempered	850	250	3
		>= 0.55 %C	Annealed	750	220	4
			Quenched and tempered	1000	300	5
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	6
			Quenched and tempered	930	275	7
				1000	300	8
				1200	350	9
	High alloyed steel, cast steel, and tool steel		Annealed	680	200	10
			Quenched and tempered	1100	325	11
	Stainless steel and cast steel		Ferritic/martensitic	680	200	12
			Martensitic	820	240	13
M	Stainless steel		Austenitic	600	180	14
K	Cast iron nodular (GGG)		Ferritic/pearlitic		180	15
			Pearlitic		260	16
	Grey cast iron (GG)		Ferritic		160	17
			Pearlitic		250	18
	Malleable cast iron		Ferritic		130	19
			Pearlitic		230	20
N	Aluminum-wrought alloy		Not cureable		60	21
			Cured		100	22
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23
			Cured		90	24
		>12% Si	High temperature		130	25
	Copper alloys	>1% Pb	Free cutting		110	26
			Brass		90	27
			Electrolitic copper		100	28
	Non-metallic		Duroplastics, fiber plastics			29
			Hard rubber			30
S	High temp. alloys	Fe based	Annealed		200	31
			Cured		280	32
		Ni or Co based	Annealed		250	33
			Cured		350	34
			Cast		320	35
	Titanium Ti alloys			RM 400		36
			Alpha+beta alloys cured	RM 1050		37
H	Hardened steel		Hardened		55 HRC	38
			Hardened		60 HRC	39
	Chilled cast iron		Cast		400	40
	Cast iron		Hardened		55 HRC	41

Coated			
IC228	IC908	IC808	IC1007
Cutting Speed (m/min)			
60-100	115-190	125 - 205	135-230
60-95	110-180	120 - 195	130-220
50-90	100-175	105 - 185	120-210
45-85	90-165	95 - 175	110-200
45-85	90-165	95 - 175	110-200
50-95	100-180	105 - 195	120-215
40-75	75-140	80 - 150	90-170
35-70	70-135	75 - 145	85-160
35-70	70-135	75 - 145	85-160
40-65	80-120	85 - 130	95-145
25-50	50-100	55 - 105	60-120
35-70	70-130	75 - 140	85-155
45-60	85-110	90 - 120	100-130
45-75	90-140	95 - 150	110-170
65-85	125-160	135 - 170	150-190
45-65	90-120	95 - 130	110-145
35-70	70-130	75 - 140	85-155
30-60	60-115	65 - 125	70-140
30-35	60-70	65 - 75	70-85
30-75	60-145	65 - 155	70-175
50-195	100-365	105 - 390	120-440
40-115	80-220	85 - 235	95-265
105-215	200-400	215 - 430	240-480
105-150	200-280	215 - 300	240-335
105-150	200-280	215 - 300	240-335
40-135	80-255	85 - 275	95-305
40-135	80-255	85 - 275	95-305
40-130	80-255	85 - 275	95-305
40-130	80-250	85 - 265	95-300
40-130	80-250	85 - 265	95-300
25-30	45-60	50 - 65	55-70
15-25	35-50	35 - 55	40-60
10-15	20-30	20 - 30	25-35
5-10	15-25	15 - 25	18-30
5-10	15-25	15 - 25	18-30
75-90	140-170	150 - 180	170-205
25-35	50-70	55 - 75	60-85
25-30	45-60	50 - 65	55-70
25-30	45-60	50 - 65	55-70
25-30	45-60	50 - 65	55-70
25-30	45-60	50 - 65	55-70

Types and Profiles of Threading Inserts

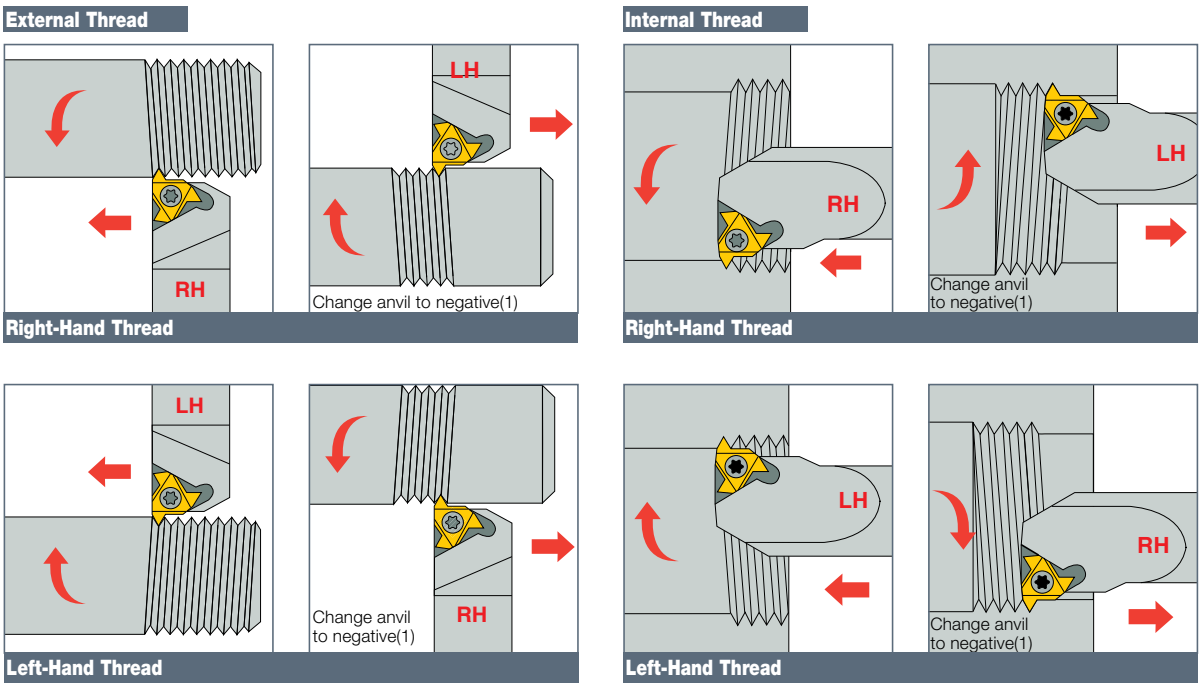
Partial Profile

- Performs different thread standards and is suitable for a wide range of pitches that have a common angle (60° or 55°)
- Inserts with a small root-corner radius suitable for the smallest pitch of the range
- Additional operations to complete the outer/internal diameter are necessary
- Not recommended for mass production
- Eliminates the need for different inserts

Full Profile

- Performs complete thread profile
- Root corner radius is only suitable for the relevant pitch
- Recommended for mass production
- Suitable for one profile only

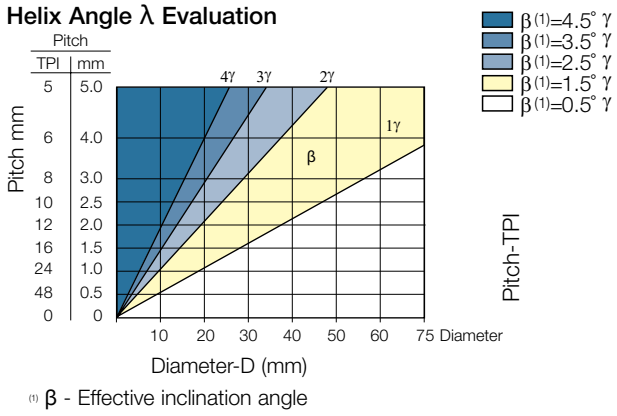
Thread Turning Methods



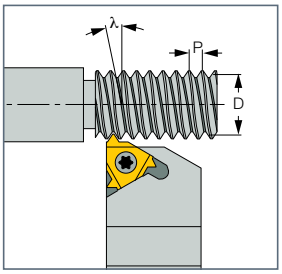
(1) See pages 663-664

Thread Helix Angle and Anvil Selection

Helix Angle λ Evaluation



(1) β - Effective inclination angle

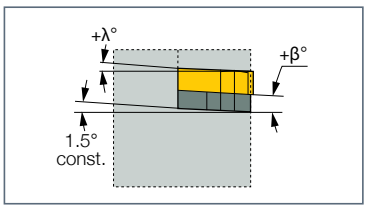


$$tg\,\lambda = \frac{P}{3.14 \cdot D} \qquad \lambda° \approx \frac{20 \cdot P}{D}$$

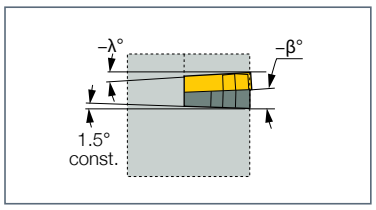
P - Pitch in mm
D - Effective diameter of thread in mm
λ - Angle of inclination

Anvil Selection According to Thread Helix Angle λ

Standard								
Thread Helix Angle λ		>4°	3°-4°	2°-3°	1°-2°	0°-1°	Negative Anvils	
	Inclination Angle β	4.5°	3.5°	2.5°	1.5°	0.5°	-0.5°	-1.5°
I (d)	Toolholder	Anvil Designation						
16	EX RH OR IN LH	AE16+4.5	AE16+3.5	AE16+2.5	AE16	AE16+0.5	AE16-0.5	AE16-1.5
(3/8)	EX LH OR IN RH	AI16+4.5	AI16+3.5	AI16+2.5	AI16	AI16+0.5	AI16-0.5	AI16-1.5
22	EX RH OR IN LH	AE22+4.5	AE22+3.5	AE22+2.5	AE22	AE22+0.5	AE22-0.5	AE22-1.5
(1/2)	EX LH OR IN RH	AI22+4.5	AI22+3.5	AI22+2.5	AI22	AI22+0.5	AI22-0.5	AI22-1.5
27	EX RH OR IN LH	AE27+4.5	AE27+3.5	AE27+2.5	AE27	AE27+0.5	AE27-0.5	AE27-1.5
(5/8)	EX LH OR IN RH	AI27+4.5	AI27+3.5	AI27+2.5	AI27	AI27+0.5	AI27-0.5	AI27-1.5
22U	EX RH OR IN LH	AE22U+4.5	AE22U+3.5	AE22U+2.5	AE22U	AE22U+0.5	AE22U-0.5	AE22U-1.5
(1/2U)	EX LH OR IN RH	AI22U+4.5	AI22U+3.5	AI22U+2.5	AI22U	AI22U+0.5	AI22U-0.5	AI22U-1.5
27U	EX RH OR IN LH	AE27U+4.5	AE27U+3.5	AE27U+2.5	AE27U	AE27U+0.5	AE27U-0.5	AE27U-1.5
(5/8U)	EX LH OR IN RH	AI27U+4.5	AI27U+3.5	AI27U+2.5	AI27U	AI27U+0.5	AI27U-0.5	AI27U-1.5

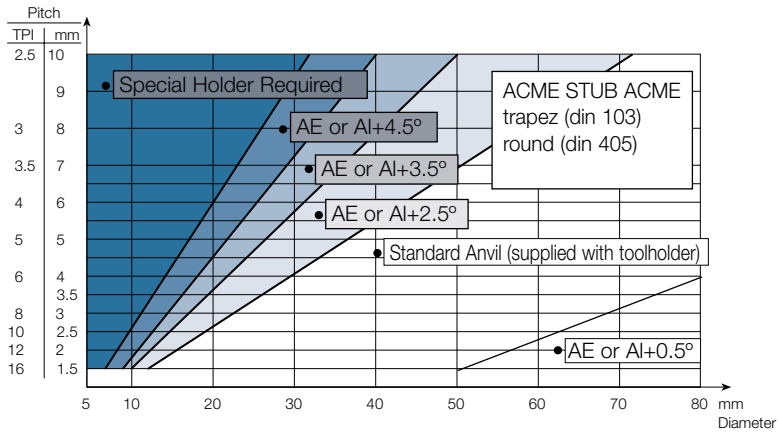


Anvils for positive inclination angle applicable when turning **RH** thread with **RH** holders or **LH** thread with **LH** toolholders.

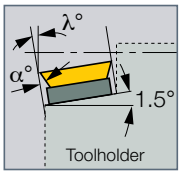


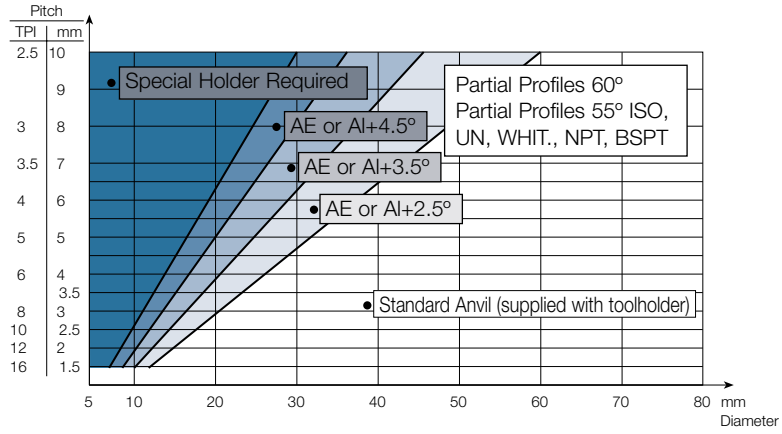
Anvils for negative inclination used when turning **RH** thread with **LH** holder or **LH** thread with **RH** toolholder.

Thread Helix Angle and Anvil Selection

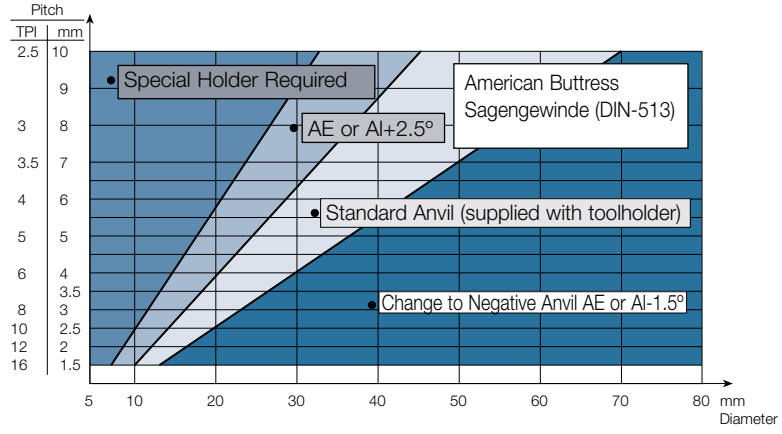


Use **AE** Anvils for **EX**-**RH** and **IN**-**LH** Toolholders.
Use AI Anvils for **IN**-**RH** and **EX**-**LH** Toolholders.

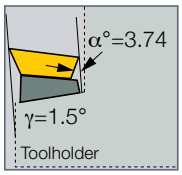




Use **AE** Anvils for **EX**-**RH** and **IN**-**LH** Toolholders.
Use AI Anvils for **IN**-**RH** and **EX**-**LH** Toolholders.

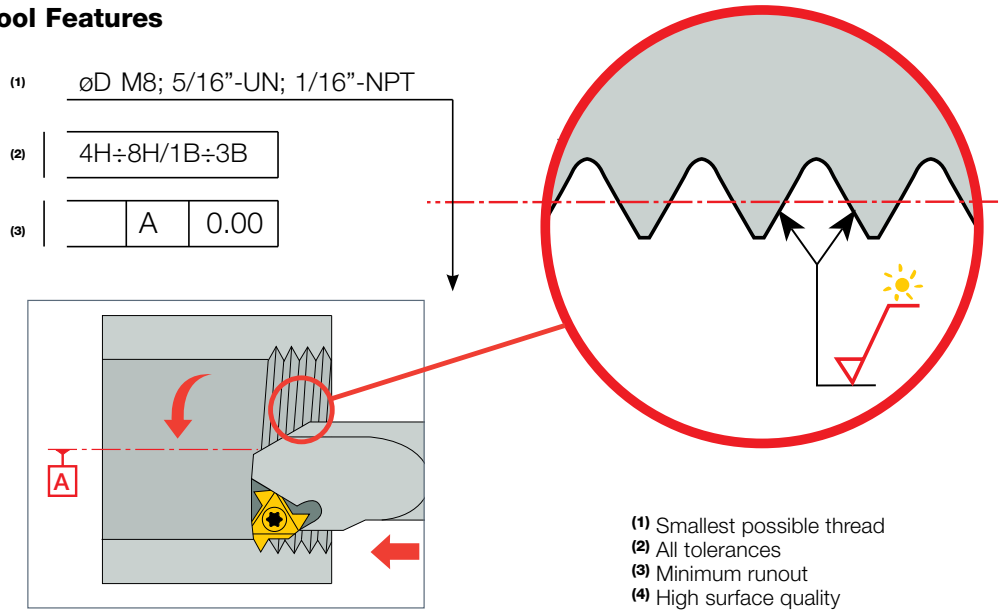


Use **AE** Anvils for **EX**-**RH** and **IN**-**LH** Toolholders.
Use AI Anvils for **IN**-**RH** and **EX**-**LH** Toolholders.



Replacing the standard anvil with a negative angle anvil will eliminate side rubbing

Mini-Tool Features

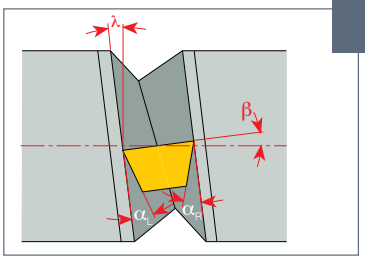


(1) Smallest possible thread
(2) All tolerances
(3) Minimum runout
(4) High surface quality

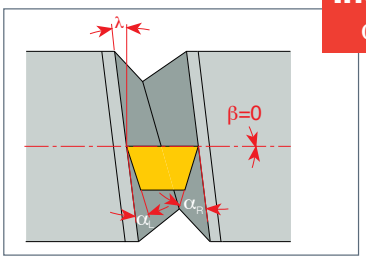
Flank Clearance and Effective Inclination Angle

Inclination angle β of the cutting edges corresponds to a specific thread helix angle l and ensures an equal clearance angle on both sides of the insert.

$\alpha_L = \alpha_R$



Incorrect
$\alpha_L < \alpha_R$

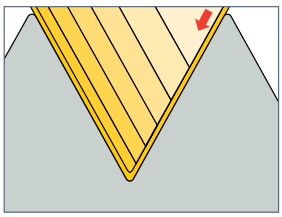


α - Flank clearance angle
λ - Helix angle
β - Effective inclination angle is achieved by selecting the suitable anvil

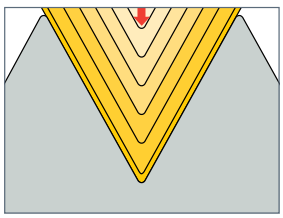
H - Depth of thread profile (on ø)
D - Depth of pass (on ø)
U - Depth of finishing pass (on ø)

Infeed Methods for Threading Operations

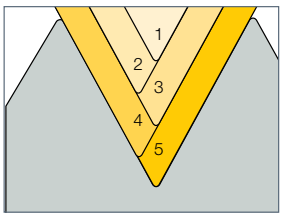
Flank Infeed



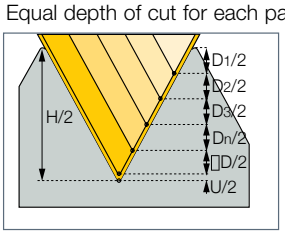
Radial Infeed



Alternating Flanks Infeed

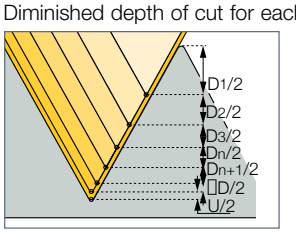


Flank Equal
Equal depth of cut for each pass



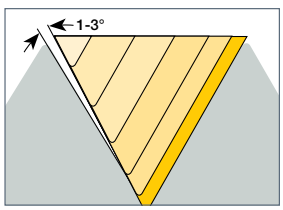
$$\frac{D_1}{2} = \frac{D_2}{2} = \frac{D_3}{2} = \frac{D_n}{2}$$

Flank Diminishing
Diminished depth of cut for each pass



$$\frac{D_1}{2} > \frac{D_2}{2} > \frac{D_3}{2} > \frac{D_n}{2} > \frac{D_{n+1}}{2}$$

Modified Flank Infeed



Number of Cutting Passes for Regular Type Inserts

TPI Pitch mm	0.5 48	1.0 24	1.5 16	2.0 12	2.5 10	3.0 8	4.0 6	6.0 4
Number of Passes	4-6	5-9	5-12	6-14	7-15	8-17	10-20	11-22

For mini-tools (**06IR** or **08IR**) add 1-3 passes. Increase for hard materials.

Maximum Depth of First Cut for CNC Control External Threading - M-Type Inserts

Full Profile	Pitch	TPI	Insert Designation	No. of Passes		Max. Depth for First Pass (D1) mm									
						Low Carbon Steel		High Carbon Steel		Alloy Steel		Stainless Steel		Nonferrous Aluminium	
				Min.	Max.	Eq.(2)	Dim.(3)	Eq.(2)	Dim.(3)	Eq.(2)	Dim.(3)	Eq.(2)	Dim.(3)	Eq.(2)	Dim.(3)
ISO Metric	1.00		**16 ER/L 1.00 ISO**	5	9	0.34	0.51	0.31	0.46	0.27	0.41	0.22	0.33	0.48	0.71
	1.25		**16 ER/L 1.25 ISO**	6	11	0.42	0.63	0.38	0.57	0.34	0.50	0.27	0.41	0.59	0.88
	1.50		**16 ER/L 1.50 ISO**	6	12	0.46	0.69	0.41	0.62	0.37	0.55	0.30	0.45	0.64	0.97
	1.75		**16 ER/L 1.75 ISO**	8	13	0.48	0.72	0.43	0.65	0.38	0.58	0.31	0.47	0.67	1.01
	2.00		**16 ER/L 2.00 ISO**	8	14	0.50	0.75	0.45	0.68	0.40	0.60	0.33	0.49	0.70	1.05
	2.50		**16 ER/L 2.50 ISO**	10	15	0.53	0.80	0.48	0.72	0.42	0.64	0.34	0.52	0.74	1.12
	3.00		**16 ER/L 3.00 ISO**	12	17	0.56	0.84	0.50	0.76	0.45	0.67	0.36	0.55	0.78	1.18
American UN		24	**16 ER/L 24 UN**	5	9	0.34	0.51	0.31	0.46	0.27	0.41	0.22	0.33	0.48	0.71
		20	**16 ER/L 20 UN**	6	10	0.42	0.63	0.38	0.57	0.34	0.50	0.27	0.41	0.59	0.88
		18	**16 ER/L 18 UN**	6	11	0.46	0.69	0.41	0.62	0.37	0.55	0.30	0.45	0.64	0.97
		16	**16 ER/L 16 UN**	7	12	0.47	0.71	0.42	0.64	0.38	0.57	0.31	0.46	0.66	0.99
		14	**16 ER/L 14 UN**	6	13	0.46	0.69	0.41	0.62	0.37	0.55	0.28	0.41	0.64	0.97
		12	**16 ER/L 12 UN**	8	14	0.50	0.75	0.45	0.68	0.40	0.60	0.33	0.49	0.70	1.05
		8	**16 ER/L 8 UN**	12	17	0.56	0.84	0.50	0.76	0.45	0.67	0.36	0.55	0.78	1.18
British BSW		19	**16 ER/L 19 W**	6	11	0.35	0.52	0.32	0.47	0.28	0.42	0.21	0.31	0.49	0.73
		16	**16 ER/L 16 W**	7	12	0.47	0.71	0.42	0.64	0.38	0.57	0.31	0.46	0.66	0.99
		14	**16 ER/L 14 W**	8	13	0.50	0.75	0.45	0.68	0.40	0.60	0.33	0.49	0.70	1.05
		11	**16 ER/L 11 W**	9	14	0.44	0.66	0.40	0.59	0.35	0.53	0.29	0.43	0.62	0.92
NPT		18	**16 ER/L 18 NPT**	10	20	0.24	0.36	0.22	0.32	0.19	0.29	0.16	0.23	0.34	0.50
		14	**16 ER/L 14 NPT**	13	26	0.24	0.36	0.22	0.32	0.19	0.29	0.14	0.22	0.34	0.50
		11.5	**16 ER/L 11.5 NPT**	15	24	0.27	0.40	0.24	0.36	0.22	0.32	0.18	0.26	0.38	0.56
		8	**16 ER/L 8 NPT**	17	30	0.31	0.46	0.28	0.41	0.25	0.37	0.20	0.30	0.43	0.64
Round		6	**16 ER/L 6 Rnd**	9	20	0.42	0.63	0.38	0.57	0.34	0.50	0.27	0.41	0.59	0.88
Partial Profile 60°	0.50-1.50	48-16	**16 ER/L A60**		(1)	0.22	0.33	0.20	0.30	0.18	0.26	0.14	0.21	0.31	0.46
	1.75-3.00	14-8	**16 ER/L G60**			0.50	0.75	0.45	0.68	0.40	0.60	0.33	0.49	0.70	1.05
	0.50-3.00	48-8	**16 ER/L AG60**			0.24	0.36	0.22	0.32	0.19	0.29	0.16	0.23	0.34	0.50
	3.50-5.00	7-5	**22 ER/L N60**			0.41	0.62	0.37	0.56	0.33	0.50	0.27	0.40	0.57	0.87
Partial Profile 55°	1.75-3.00	14-8	**16 ER/L G55**			0.50	0.75	0.45	0.68	0.40	0.60	0.33	0.49	0.70	1.05
	0.50-3.00	48-8	**16 ER/L AG55**			0.22	0.33	0.20	0.30	0.18	0.26	0.14	0.21	0.31	0.46

(1) Per the number of passes for the relevant pitch
(2) Equal depth of cut method
(3) Diminished depth of cut for each pass method

Cutting Data

Maximum Depth of First Cut for CNC Control
Internal Threading - M-Type Inserts

Full Profile	Pitch	TPI	Insert Designation	No. of Passes		Max. Depth for First Pass (D1) mm									
						Low Carbon Steel		High Carbon Steel		Alloy Steel		Stainless Steel		Nonferrous Aluminium	
				Min.	Max.	Eq.(2)	Dim.(3)	Eq.(2)	Dim.(3)	Eq.(2)	Dim.(3)	Eq.(2)	Dim.(3)	Eq.(2)	Dim.(3)
ISO Metric	1.50		11 IRM 1.50 ISO	10	20	0.20	0.30	0.18	0.27	0.16	0.24	0.12	0.18	0.28	0.42
	1.00		16 IRM 1.00 ISO	9	16	0.14	0.20	0.13	0.18	0.11	0.16	0.09	0.13	0.20	0.28
	1.25		16 IRM 1.25 ISO	9	16	0.19	0.28	0.17	0.25	0.15	0.22	0.12	0.18	0.27	0.39
	1.50		16 IRM 1.50 ISO	10	20	0.20	0.30	0.18	0.27	0.16	0.24	0.12	0.18	0.28	0.42
	1.75		16 IRM 1.75 ISO	11	18	0.21	0.32	0.19	0.29	0.17	0.26	0.14	0.21	0.29	0.45
	2.00		16 IRM 2.00 ISO	12	21	0.22	0.33	0.20	0.30	0.18	0.26	0.14	0.21	0.31	0.46
	2.50		16 IRM 2.50 ISO	14	21	0.23	0.34	0.21	0.31	0.18	v0.27	0.15	0.22	0.32	0.48
	3.00		16 IRM 3.00 ISO	16	22	0.24	0.35	0.22	0.32	0.19	0.29	0.16	0.23	0.34	0.50
American UN 16		20	16 IRM 20UN	7	13	0.20	0.30	0.18	0.27	0.16	0.24	0.12	0.18	0.28	0.42
		18	16 IRM 18UN	8	15	0.20	0.30	0.18	0.27	0.16	0.24	0.12	0.18	0.28	0.42
			16 IRM 16 UN	11	19	0.20	0.30	0.18	0.27	0.16	0.24	0.13	0.20	0.28	0.42
		14	16 IRM 14 UN	11	20	0.21	0.31	0.19	0.28	0.17	0.25	0.13	0.19	0.29	0.43
		12	16 IRM 12 UN	12	21	0.23	0.34	0.21	0.31	0.18	0.27	0.15	0.22	0.32	0.48
		8	16 IRM 8 UN	14	20	0.24	0.36	0.22	0.32	0.19	0.29	0.16	0.23	0.34	0.50
British BSW		19	16 IRM 19 W	7	12	0.28	0.42	0.25	0.38	0.22	0.34	0.17	0.25	0.39	0.59
		16	16 IRM 16 W	9	14	0.26	0.39	0.23	0.35	0.21	0.31	0.17	0.25	0.36	0.55
		14	16 IRM 14 W	10	16	0.27	0.41	0.24	0.37	0.22	0.33	0.18	0.27	0.38	0.57
		11	16 IRM 11 W	12	19	0.31	0.46	0.28	0.41	0.25	0.37	0.20	0.30	0.43	0.64
NPT		14	16 IRM 14 NPT	21	35	0.13	0.20	0.12	0.18	0.10	0.16	0.08	0.12	0.18	0.28
		11.5	16 IRM 11.5 NPT	21	33	0.17	0.25	0.15	0.23	0.14	0.20	0.11	0.16	0.24	0.35
		8	16 IRM 8 NPT	20	34	0.23	0.34	0.21	0.31	0.18	0.27	0.14	0.20	0.32	0.48
Round		6	16 IRM 6 RND	12	24	0.30	0.46	0.27	0.41	0.24	0.37	0.20	0.30	0.42	0.64
Partial Profile 60°	0.50-1.25	48-16	06 IRM A60			0.22	0.33	0.20	0.30	0.18	0.26	0.14	0.21	0.31	0.46
	0.50-1.50	48-16	08 IRM A60		(1)	0.13	0.20	0.12	0.18	0.10	0.16	0.08	0.13	0.18	0.28
	0.50-1.50	48-16	11 IRM A60			0.13	0.20	0.12	0.18	0.10	0.16	0.08	0.13	0.18	0.28
	0.50-1.50	48-16	16 IRM A60			0.13	0.20	0.12	0.18	0.10	0.16	0.08	0.13	0.18	0.28
	1.75-3.00	14-8	16 IRM G60			0.22	0.33	0.20	0.30	0.18	0.26	0.14	0.21	0.31	0.46
	0.50-3.00	48-8	16 IRM AG60			0.14	0.21	0.13	0.19	0.11	0.17	0.09	0.14	0.20	0.29
	3.50-5.00	7-5	22 IRM N60			0.23	0.34	0.21	0.31	0.18	0.27	0.15	0.22	0.32	0.48
Partial Profile 55°	1.75-3.00	14-8	16 IRM G55			0.34	0.50	0.31	0.45	0.27	0.40	0.22	0.33	0.48	0.70
	0.50-3.00	48-8	16 IRM AG55			0.14	0.20	0.13	0.18	0.11	0.16	0.09	0.13	0.20	0.28

(1) Per the number of passes for the relevant pitch
(2) Equal depth of cut method
(3) Diminished depth of cut for each pass method

Recommended Number of Passes for Multi-Tooth Insert

ISO - (Metric)

External

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
16 ER 1.0 ISO 3M	2	0.39	0.24	–	–
16 ER 1.5 ISO 2M	3	0.40	0.31	0.21	–
22 ER 1.5 ISO 3M	2	0.54	0.38	–	–
22 ER 2.0 ISO 2M	3	0.56	0.42	0.27	–
22 ER 2.0 ISO 3M	2	0.75	0.50	–	–
27 ER 3.0 ISO 2M	4	0.60	0.52	0.44	0.30

Internal

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
16 IR 1.0 ISO 3M	2	0.32	0.26	–	–
16 IR 1.5 ISO 2M	3	0.36	0.29	0.22	–
22 IR 1.5 ISO 3M	2	0.49	0.38	–	–
22 IR 2.0 ISO 2M	3	0.50	0.40	0.25	–
22 IR 2.0 ISO 3M	2	0.72	0.43	–	–
27 IR 3.0 ISO 2M	4	0.57	0.45	0.38	0.33

UN

External

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
16 ER 16 UN 2M	3	0.45	0.32	0.20	–
22 ER 16 UN 3M	2	0.60	0.37	–	–
22 ER 12 UN 2M	3	0.60	0.39	0.31	–
22 ER 12 UN 3M	2	0.80	0.50	–	–
27 ER 8 UN 2M	4	0.63	0.55	0.42	0.36

Internal

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
16 IR 16 UN 2M	3	0.40	0.29	0.23	–
22 IR 16 UN 3M	2	0.57	0.35	–	–
22 IR 12 UN 2M	3	0.55	0.39	0.28	–
22 IR 12 UN 3M	2	0.75	0.47	–	–
27 IR 8 UN 2M	4	0.65	0.49	0.42	0.27

NPT

External

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
22 ER 11.5 NPT 2M	4	0.55	0.46	0.35	0.32
27 ER 11.5 NPT 3M	3	0.75	0.57	0.36	–
27 ER 8 NPT 2M	4	0.80	0.62	0.54	045

Internal

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
22 IR 11.5 NPT 2M	4	0.55	0.46	0.35	0.32
27 IR 11.5 NPT 3M	3	0.75	0.57	0.36	–
27 IR 8 NPT 2M	4	0.80	0.62	0.54	045

WHITWORTH

External

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
16 ER 14 W 2M	3	0.51	0.39	0.26	–
22 ER 14 W 3M	2	0.72	0.44	–	–
22 ER 11 W 2M	3	0.65	0.46	0.37	–

Internal

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
16 IR 14 W 2M	3	0.51	0.39	0.26	–
22 IR 14 W 3M	2	0.72	0.44	–	–
22 IR 11 W 2M	3	0.65	0.46	0.37	–

API-ROUND

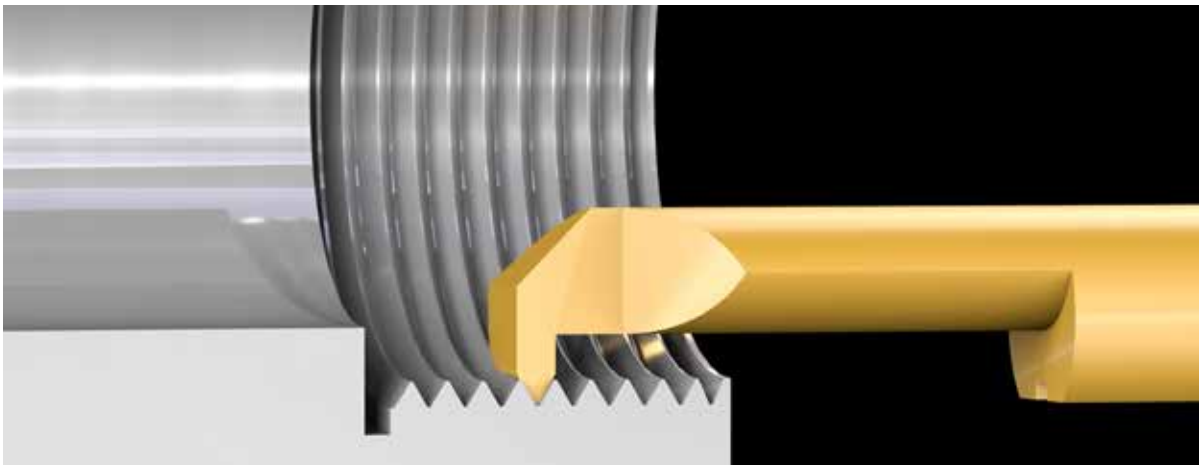
External

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
22 ER 10 API RD 2M	3	0.58	0.53	0.30	–
27 ER 10 API RD 3M	2	0.98	0.43	–	–
27 ER 8 API RD 2M	3	0.82	0.59	0.40	–

Internal

Insert Description	No. of Passes	1st Pass	2nd Pass	3rd Pass	4th Pass
22 IR 10 API RD 2M	3	0.58	0.53	0.30	–
27 IR 10 API RD 3M	2	0.98	0.43	–	–
27 IR 8 API RD 2M	3	0.82	0.59	0.40	–

Cutting Data



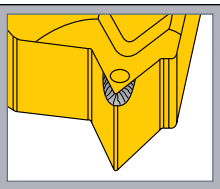
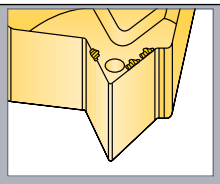
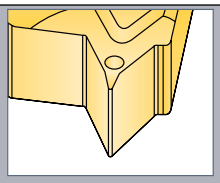
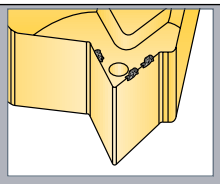
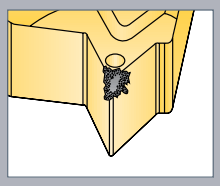
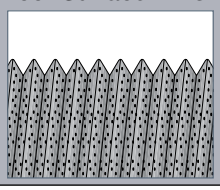
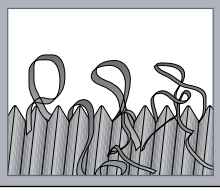
Carbide Grade		Steel (N/mm Tensile Strength)					Stainless Steel	Cast Iron	Non-ferrous
		400-500	500-700	700-850	850-1150	>1150			
Cutting Speed Vc m/min.	IC228	160	140	120	90	70	90	100	300
	IC908	185	160	140	105	80	105	115	350
Pitch (p) mm	TPI	No. of Passes							
0.5	48	6	6	7	7	8	8	7	6
0.75	32	8	8	9	9	10	10	9	8
1.0	24	10	10	12	12	12	12	12	10
1.25	20-19	12	12	14	14	15	15	14	12
1.5	16	15	15	17	17	18	18	17	15

For internal threading of small diameters, the PVD coated grade IC228 is recommended.

Material groups		ISO P		ISO M	ISO K	ISO N	ISO S	ISO H
		1-11 Steel	12-13 Stainless Steel Ferritic & Martensitic	14 Stainless Steel Austenitic & Duplex (Ferritic-Austenitic)	15-20 Cast Iron	21-28 Non-ferrous	31-37 High Temperature Alloys	38-41 Hard Steel & Cast Iron
THREADING	Harder	IC1007	IC1007	IC1007	IC1007	IC08	IC806	IC1007
		IC808 (IC908)			IC808 (IC908)		IC1007	
		IC250 (IC950)	IC808 (IC908)	IC808 (IC908)	IC250 (IC950)	IC228	IC808 (IC908)	IC808 (IC908)
	Tougher	IC228	IC228	IC228	IC228	IC28		

First choice

Troubleshooting

Problem	Cause	Solution
 Premature Wear	• Cutting speed too high	• Reduce **RPM**
	• Infeed depth too small	• Modify flank infeed • Increase depth of cut
	• Highly abrasive material	• Use coated grade
	• Inadequate coolant supply	• Apply coolant
	• Wrong inclination anvil	• Reselect anvil
	• Wrong turned dia. prior to threading	• Check turned dia.
	• Insert is above center line	• Check center height
 Chipped Edge	• Cutting speed too high	• Reduce **RPM**
	• Depth of cut large	• Reduce depth of cut
	• Wrong grade	• Use coated grade • Use tougher grade
	• Poor chip control	• Modify flank infeed
	• Inadequate coolant supply	• Apply coolant
	• Center height incorrect	• Adjust center height
 Plastic Deformation	• Excessive heat in cutting zone	• Reduce **RPM** • Reduce depth of cut • Check turned dia.
	• Wrong grade	• Use coated grade • Use harder grade
	• Inadequate coolant supply	• Apply coolant
 Built-Up Edge	• Cutting edge too cold	• Increase **RPM** • Increase depth of cut
	• Wrong grade	• Use coated grade
	• Inadequate coolant supply	• Apply coolant
 Broken Nose During 1st Pass	• Cutting edge too cold	• Increase **RPM**
	• Depth of cut too large	• Reduce depth of cut • Increase number of infeed passes
	• Wrong grade	• Use tougher grade
	• Wrong turned dia. prior to threading	• Check turned dia.
	• Corner height incorrect	• Adjust center height
	• Infeed depth too shallow	• Modify flank infeed
	• Wrong inclination anvil	• Re-select anvil
	• Tool overhang too long	• Reduce tool overhang
Poor Surface Finish 	• Wrong cutting speed	• Increase **RPM** • Reduce **RPM**
	• Excessive heat in cutting zone	• Reduce depth of cut
	• Poor chip control	• Modify flank infeed
	• Inadequate coolant supply	• Apply coolant
	• Wrong inclination anvil	• Reselect anvil
	• Tool overhang too long	• Reduce tool overhang
	• Center height incorrect	• Check center height
Poor Chip Control 	• Excessive heat in cutting zone	• Reduce **RPM** • Change depth of cut • Check turned dia.
	• Wrong grade	• Use coated grade • Check turned dia. • Use M-type insert
	• Inadequate coolant supply	• Apply coolant
	• Wrong turned dia. prior to threading	• Check turned dia.