DURATEC®
Cutting Tools

THREADING

- Turning Tools
- Milling Tools
- Heavy Duty Processing
- Parting and Grooving
- Cermet Inserts
- Boring Tools

www.duratecindia.com

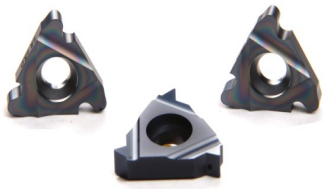
Introduction

This Master Catalouge is your best source for a broad range of advanced indexable machining solutions. These "best in class" products include...

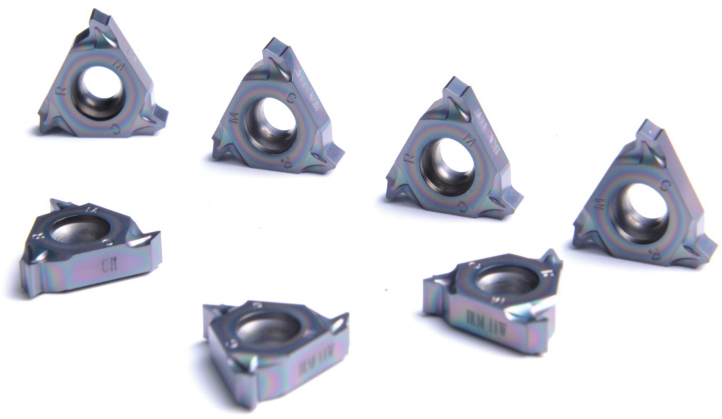
- A complete range of PVD and CVD first choice grades that includes the advantage of Mega range of Turning/Milling/Grooving/Threading/Drilling etc, with State of the Art Technology.
- Geometries that also offer a "first choice" range from finishing to roughing to meet the increasing demands of higher feed rates for greater chip control,
- Application and customer service support from our technical sales engineer is our main motto.

Rely on Duratec to acheive "Best in Class" machining solutions for your high end performance with satisfiying results.

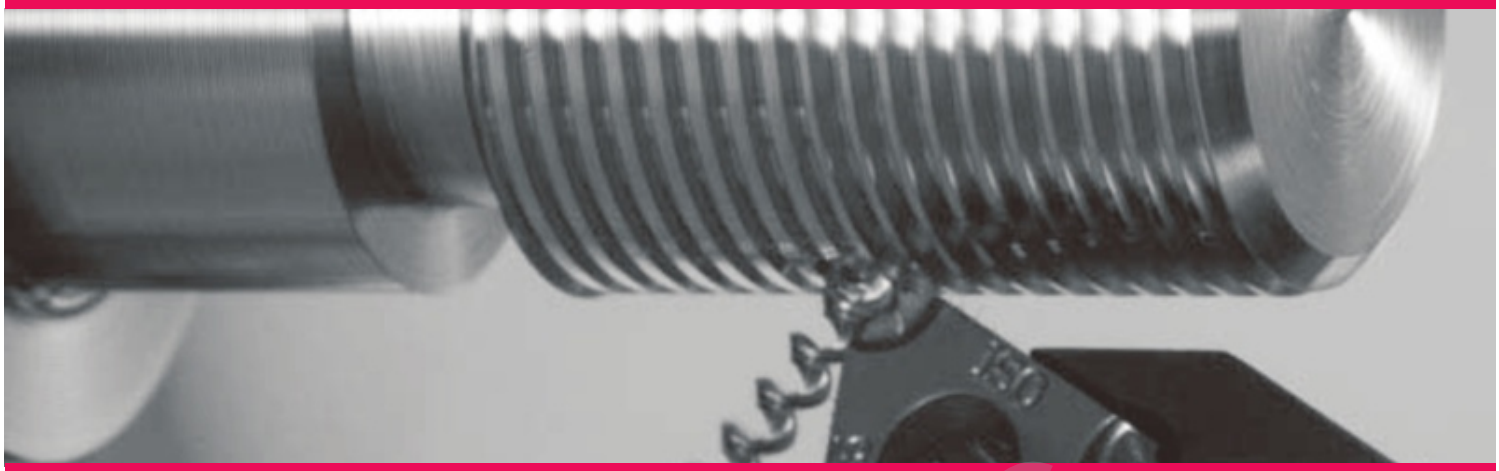
DURATEC™ Cutting Tools



CONTENT



Threading Inserts



DURATEC THREAD
- New Type Turn-Thread

☆ DURATECHTHREAD -DTIG30 for general use
☆ World standard product configuration
☆ Improving the accuracy of thread shape and chip control, excellent cutting performance, especially in stainless steel processing
☆ The new coating increases tool life

DURATEC THREAD
- Mill-Thread

☆ DURATEC Mill-Thread line of Inserts and Tool Holders is full range of high quality inserts and tool holders answering to all the common thread standards.
☆ DURATEC system design is interchangeable with other thread milling tools manufacturers, thus an advantage for the customers.
☆ DURATEC offers different inserts sizes from 12mm up to 40mm length to cover applications from small to big diameters.

DURATEC THREAD
- Solid Carbide Mill-Thread

☆ Thread is generated in one pass.
☆ Spiral flutes allow smooth cutting action.
☆ Shorter machining time due to multi, 3 to 5, flutes.3.0 mm and up cutting diameter.
☆ Threads up to shoulder in blind holes.
☆ Longer tool life due to special multi-layer coating.
☆ Same tool can be used for a variety of materials.
☆ Excellent surface finish.
☆ Low cutting pressure allows thin wall machining.
☆ Same tool used for R.H. and L.H. threads.

Threading Inserts

	SHAPES				
THREADING	 60° Page - 16	 55° Page - 18	 ISO METRIC Page - 21	 UN Page - 24	 WITHWORTH Page - 29
	 BSPT Page - 34	 NPT Page - 36	 ROUND DIN Page - 38	 TRAPEZ Page - 39	 ACME Page - 40
	 STUB ACME Page - 41	 UNJ Page - 42	 AMERICAN BUTTRESS Page - 44	 BRITISH BUTTRESS Page - 45	 METRIC BUTTRESS Page - 45
	 APIV Page - 45	 APIRD Page - 47	 ELC Page - 48	 VAM Page - 48	 Pg Page - 48
MULTI -TOOTH THREADING	 ACME Page - 55	 API Page - 55			
DEEP HOLE THREADING	 ISO 60° Page - 61	 ISO METRIC Page - 61	 AMERICAN UN Page - 62	 NPT Page - 62	 TRAPEZ Page - 62

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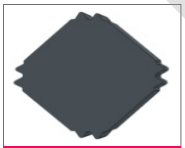
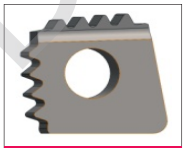
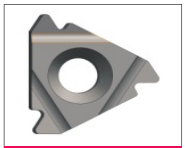
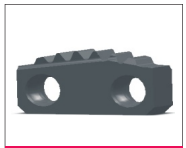
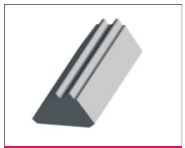
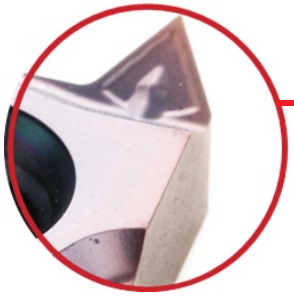
Threading Inserts

	SHAPES				
XN TYPE THREADING	 ACME Page - 82	 API Page - 82	 NPT Page - 82	 UNJ Page - 82	 60° Page - 82
THREADING MILLING	 ISO 60° Page - 91	 UN 60° Page - 92	 55° WITH WORTH Page - 93	 NPT 60° Page - 93	 BSPT 55° Page - 94
THREAD END MILLING	 60° Page - 111	 UN 60° Page - 112	 W 55° Page - 113	 NPT 60° Page - 113	 BSPT 55° Page - 114
OIL & PIPE THREADING	 SQUARE AND RECTANGLE Page - 129	 PARALLELOGRAM Page - 131	 **TRIANGLE** Page - 132	 **BIFORATE** Page - 131	 **PRISM** Page - 131

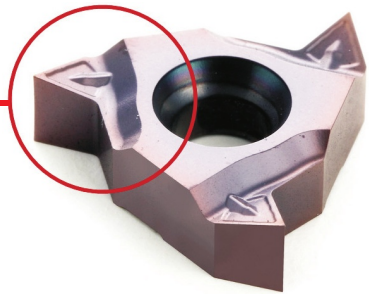
M - Type Inserts

◎ Feature



Excellent Chip Control

A unique chipbreaker gives excellent performance



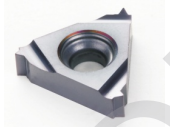
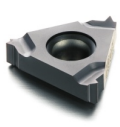
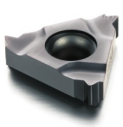
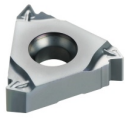
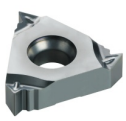
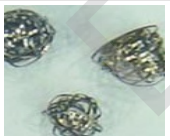
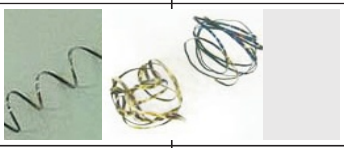
☆ Economical insert

☆ Good toughness and high accuaracy as ground type inserts

☆ Unique insert design improve chip control

☆ New grade enables trouble-free threading on a variety of workpiece materials, especially stainless steel.

Threading Inserts with Chip Breaker

Type	Ground insert		Ground insert		Pressing & Ground insert	
Designation	ER-1.50ISO	IR-1.50ISO	ERU-1.50ISO	IRU-1.50ISO	ERM-1.50ISO	IRM-1.50ISO
Machining	External	Internal	External	Internal	External	Internal
Insert Shape						
Chip Shape						
Class	P,M,K,N,S		P,M,K		P,M,K	
Application	G-Class		G-Class		M-Class	
Feature	● Groove-shape chip breaker with superior chip evacuation lowers cutting load. ● Enables high precision machining ● Applicable for machining of various shapes of threads ● Applicable for machining of various workpieces		● Groove-shape chip breaker with superior chip evacuation lowers cutting load. ● Excellent cutting edge treatment thechnology ensure high precision sharp cutting edge.		• Unique chip breaker design improve machinability with good chip control • Excellent cutting edge treatment thechnology ensure high precision sharp cutting edge.	

Thread Code System

S E R 20 20 - K 16 V

1	2	3	4	5	6	7	8
Clamping Method of Insert	Holder Type	Hand of holder	Height of shank	Width of shank	Length of Holder	Insert Size	Special features

1 Clmaping System

S E R 20 20 - K 16 V

S : Screw on system
C : Clamp on system

2 Holder Type

S E R 20 20 - K 16 V

E : For External N : For Internal

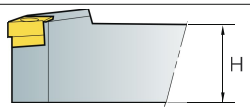
3 Hand of holder

S E R 20 20 - K 16 V

R : Right handed L : Left handed

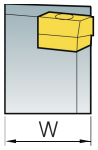
4 Height of shank

S E R 20 20 - K 16 V

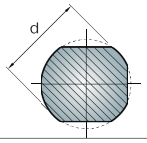


5 Width of shank Bar Diameter

S E R 20 20 - K 16 V



For External



For Internal

6 Length of Holder

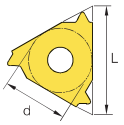
S E R 20 20 - K 16 V

A - 32	H - 100	Q - 180	X-Special Item
B - 40	J - 110	R - 200	
C - 50	K - 125	S - 250	
D - 60	L - 140	T - 300	
E - 70	M - 150	U - 350	
F - 80	N - 160	V - 400	
G - 90	P - 170	W - 450	

7 Insert Size (mm)

S E R 20 20 - K 16 V

08 : d=4.76
11 : d=6.35
16 : d=9.525
22 : d=12.7
27 : d=15.875

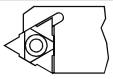


8 Special features

S E R 20 20 - K 16 V

B-Colant Hole	None Code
C-Carbide Shank	
CB-Carbide Shank with Coolant Hole	
A-Api(oil)	Standard
U- U_Style Insert	
V-Vartical Type Insert	
G-Gang Tool	
VS-Slim Throat	

Standard Style Insert and Toolholder Pocket



U-Style Insert and Toolholder Pocket

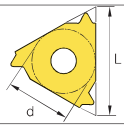
16 □ E R □ 1.50 ISO □ □ DPM8125

1	2	3	4	5	6	7	8	9	10
Insert Size	Insert Style	Insert Type	Hand of Insert	Chip Breaker	Pitch	Standard	API Size	Multi-Tooth Style	Carbide Grade

1 Insert Size (mm)

16 □ E R □ 1.50 ISO □ □ DTIP30

08 : d = 4.76
11 : d = 6.35
16 : d = 9.525
22 : d = 12.7
27 : d = 15.875



2 Insert Style

16 □ E R □ 1.50 ISO □ □ DTIP30

U 

V 

3 Insert Type

16 □ E R □ 1.50 ISO □ □ DTIP30

E:External thread I:Internal thread

4 Hand of Insert

16 □ E R □ 1.50 ISO □ □ DTIP30

R : Right handed L : Left handed

5 Chip Breaker

16 □ E R □ 1.50 ISO □ □ DTIP30

None Code: Reglar Type
M: M type Chip Breaker
U: U type Chip Breaker

6 Pitch

16 □ E R □ 1.50 ISO □ □ DTIP30

Full profile		Partial profile	
mm	tpi	mm	tpi
0.35 - 6.0	72 - 3	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

9 No.of Teeth

16 □ E R □ 1.50 ISO □ □ DTIP30

For Multi-Tooth Style
2 3 5 6 8

7 Standard

16 □ E R □ 1.50 ISO □ □ DTIP30

60° - Partial Profile 60°	NPT - NPT
55° - Partial Profile 55°	NPTF - NPTF
STACME - Stub ACME	NPS - NPS
UN - American UN	PG - Pg DIN 40430
W - Whitworth for BSW, BSP	API - API
BSPT - Britsh Standard Pipe Thread	VAM - VAM
ABUT - American Butterss	H90 - H90
BBUT - British Buttress	ISO - ISO Metric
SAGE - Metric Buttress DIN 513	UNJ - UNJ
RD - Round DIN 405	MJ - ISO 5855
RD20400 - Round DIN 20400	TR - Tarpez DIN 103
BUT - API Buttress Casing	ACME - ACME
APIRD - API Round Casing & Tubing	
EL - Extreme Line Casing	

8 API Size&Taper

16 □ E R □ 1.50 ISO □ □ DTIP30

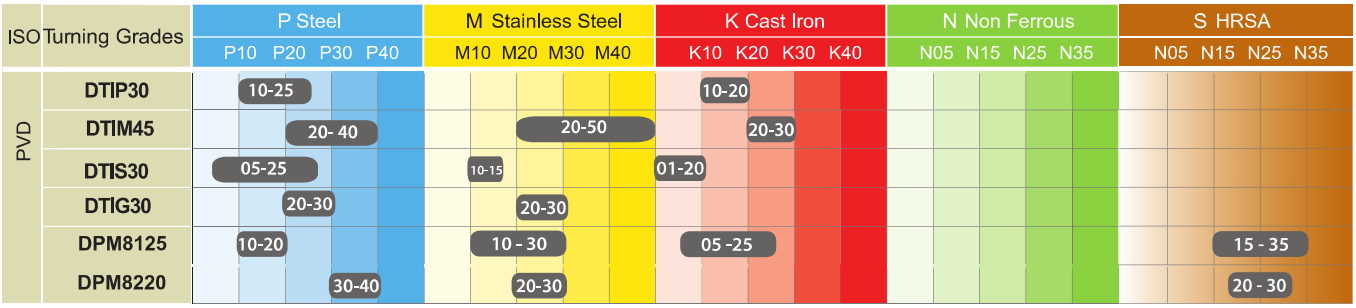
380.5	APIV-0..38R	502	APIV-0.050 1:6
382	APIV-0.038R1:6	503	APIV-0.050 1:4
383	APIV-0.038R1:4	551	APIV-0.055 1:8
403	APIV-0.040 1:4		

10 Carbide Grade

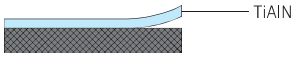
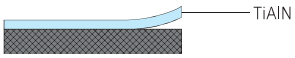
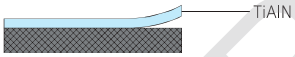
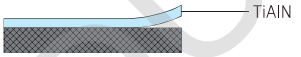
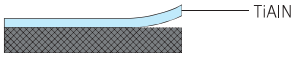
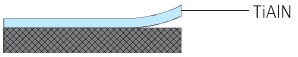
16 □ E R □ 1.50 ISO □ □ DPM8125

DPM8125 DPM8220

Threading Grades



Features of PVD coated grades

Grades	Coating	Features
DTIP30 P15 (P10 - P25) K05 (K10 - K20)		• TiN coated, yellow color, Universal grade for general steel recomended for rigid cutting condition.
DTIM45 P30 (P20 - P40) M35(M20 - M50) K25 (K20 - K30)		• TiALN coated, black color, multilayer PVD coated for stainless steel and steel for medium machining.
DTIS30 P15 (P05 - P25) M10(M10 - M15) K05 (K01 - K10)		• Pressed insert with new chip breaker, compitable with all series of stainless steel and Steel < HR50 for mrdium machining.
DTIG30 P15 (P05 - P25) M10(M10 - M15) K05 (K01 - K10)		• Ceramic grade, good toughness. The collaps edge resistance and wear resistance. Good for steel/stainless steel for roughing to finish
DPM8125 P15 (P10 - P20) M25(M10 - M30) K10 (K05 - K25) S20 (S15 - S30)		• 2-4μm TiALN PVD coated micro-grain carbide. Use for a variety of steel, stainless steel, cast iron & high temperature alloy finishing at medium to low cutting speed. • High thermal shock resistance, suitable for light interrupted cuts.
DPM8220 P30 (P30 - P40) M25(M20 - M30) S25 (S20 - S30)		• Universal grade for stainless, HRSA & hightemperature high hardness alloy machining. • High chipping and welding resistance for longer tool life. • 2-4μm Nano AlCrN+AlCrSiN PVD coating is combined with high tougness of ultra fine grain substrate, suitable for finishing & medium machining.

D

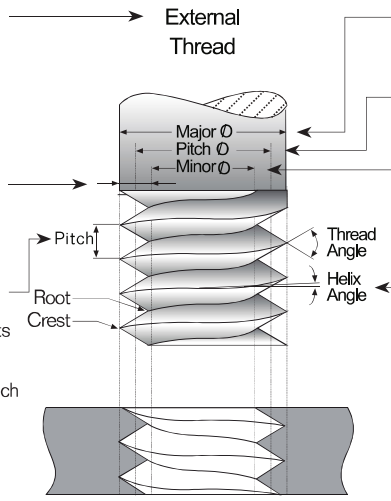
Special Features

External Thread
A thread on the external surface of a cylinder screw or cone

Depth of Thread
The distance between the crest and root measured from normal to the axis

Pitch
The distance between the corresponding points on adjacent thread forms measured parallel to the axis. This distance can be defined in millimeters or by the tpi (threads per inch), which is the reciprocal of the pitch

Nominal Diameter
The diameter of which the diameter limits are derived by the application of deviation allowances and tolerances



Internal Thread
A thread on the internal surface of a cylinder or cone

Major Diameter
The largest diameter of a screw thread

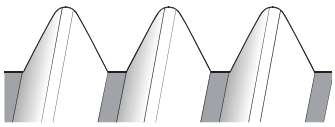
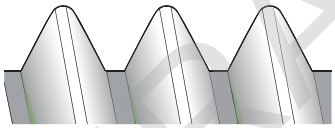
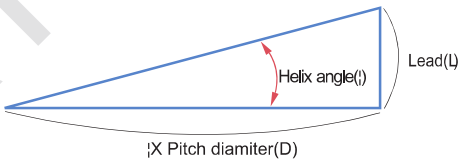
Pitch Diameter
On a straight thread, the diameter of an imaginary cylinder, the surface of which cuts the thread forms where the width of the thread and groove are equal

Minor Diameter
The smallest diameter of a screw thread

Helix Angle
For a straight thread, where the lead of the thread and the pitch diameter circle circumference form a right angled triangle, the helix angle is the angle opposite of the lead

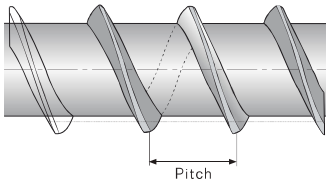
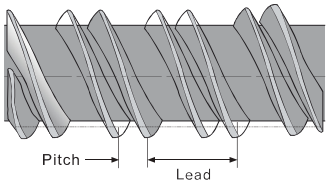
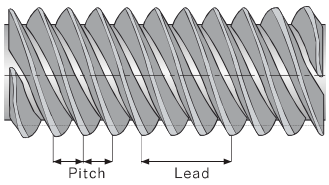
Straight Thread
A thread formed on a cylinder

Taper Thread
A thread formed on a cone

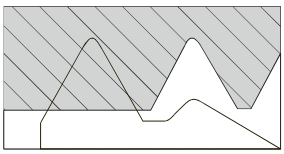
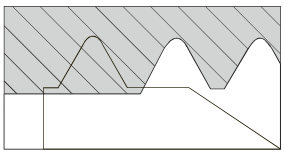
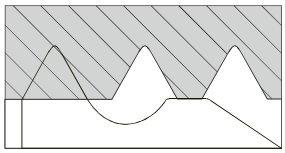
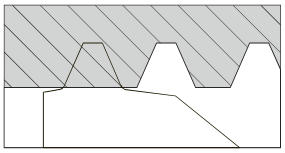
Left handed thread	Right handed thread	The Helix Angle(¦)
		
A thread which, when viewed axially, winds in a counter clockwise and receding direction. All left handed threads are designated LH	A thread which, when viewed axially, winds in a clockwise and receding direction Threads are always right handed unless they are specified	For a straight thread, where the lead of the thread and the pitch diameter circle circumference form a right angled triangle, the helix angle is the angle opposite of the lead

Machining a Multi-start Thread

▶ A thread in which the lead is an integral multiple, greater than one, of the pitch. A multi-start thread permits a more rapid advance without a coarser (larger) thread form

First Start Machined	Second Start Machined	Third Start Machined (Final, 3 Starts Thread)
		

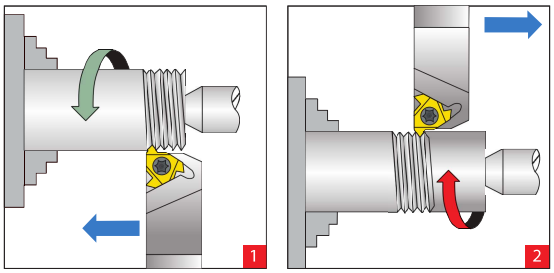
Insert Profile Style

Partial Profile	Full Profile	Full Profile for Fine Pitches	Semi Full
			
The V partial profile insert cuts without topping the outer diameter of the thread. The same insert can be used for a range of different thread pitches which have a common thread angle	The full profile insert will form a complete thread profile including the crest. For every thread pitch and standard, a separate insert is required	The full profile for Fine Pitches will form a complete thread The topping of the outer diameter is generated by second tooth	The Semi profile insert will form a complete thread including crest radius but without topping the outer diameter Mainly used for trapezoidal profiles

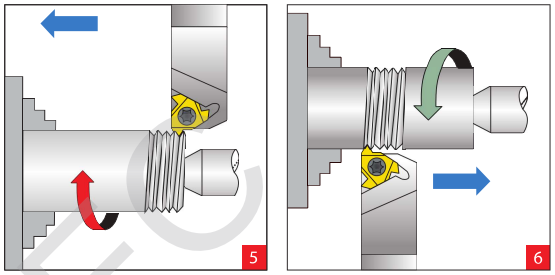
Thread Turning Methos

Thread	Inserts & Tool holder	Rotation	Feed Direction	Helix Method	Drawing No.
Right Hand External	EX RH	Counter clockwise	Towards chuck	Regular	1
	EX LH	Clockwise	From chuck	Reversed	2
Right Hand Internal	IN RH	Counter clockwise	Towards chuck	Regular	3
	IN LH	Clockwise	From chuck	Reversed	4
Left Hand External	EX LH	Counter clockwise	Towards chuck	Regular	5
	EX RH	Clockwise	From chuck	Reversed	6
Left Hand Internal	IN LH	Counter clockwise	Towards chuck	Regular	7
	IN RH	Clockwise	From chuck	Reversed	8

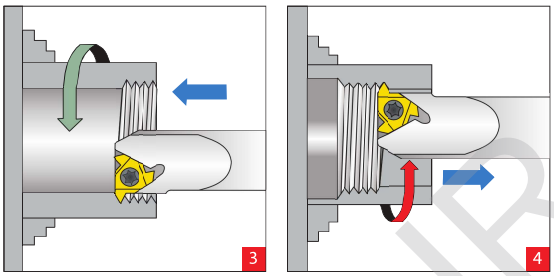
External RH Thread



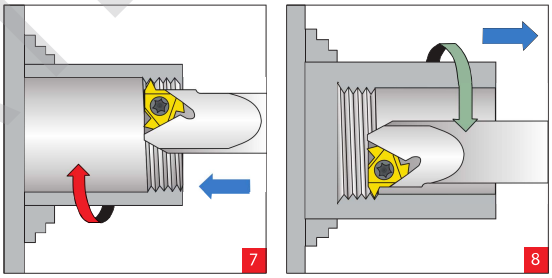
External LH Thread



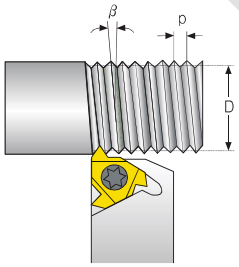
Internal RH Thread



Internal LH Thread



Calculating the Helix Angle(β)



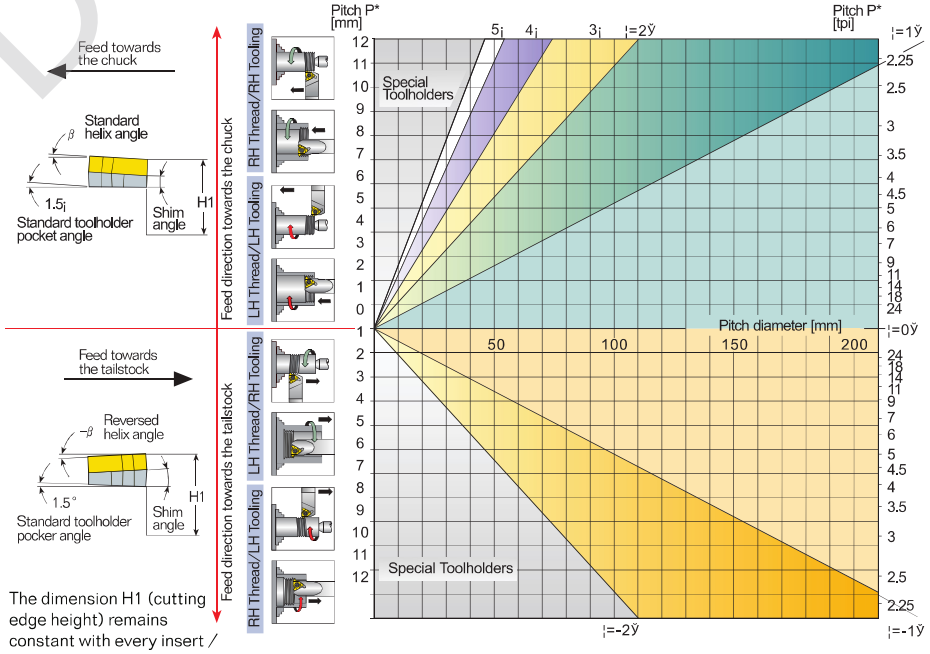
- The helix angle is calculated by the following formula :

$$\beta = \tan^{-1}\frac{P \times N}{\pi \times D}$$

β - Helix angle(°)
P - Pitch(mm)
N - No. of starts
D - Pitch diameter(mm)
Lead = P x N

- The helix angle can also be found from the diagram below

Helix Angle Diagram

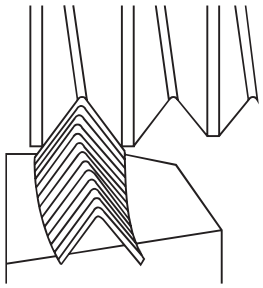
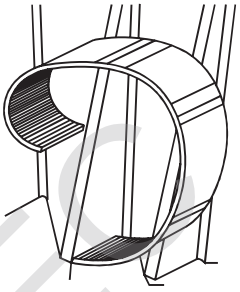
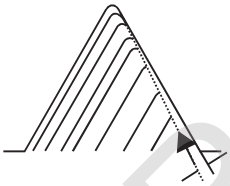
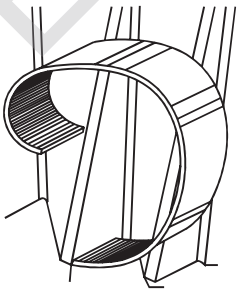
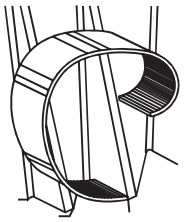
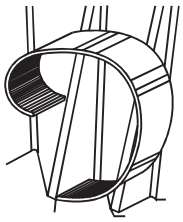


The dimension H1 (cutting edge height) remains constant with every insert / shim combination

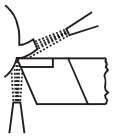
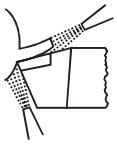
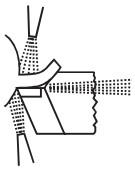
* For Multi-start threads, use the lead value instead of the pitch

D

Infeed Angle Selection And Chip Formation

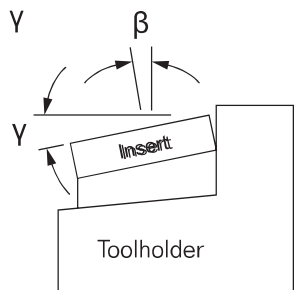
		Typical Chip Formation
Infeed Angle 0° Benefit:Cutting edge is protected from chipping by both sides in cut. Problem :Both sides of insert are heated by the wokpiece. Produces " Vee " chips which can be very difficult to handle.		
Infeed Angle 30° Benefit :Chip is curled away from thread form. Problem: Trailing edge may drag rather than cut, which may cause chipping.		
Infeed Angle 29° Benefit: Cutting edge is protected from chipping by both sides in cut. Chip is curled away from thread from. Part of the heat gene-ratedis dissipated to the trailing edge.Final pass infeed angle should be 0°		
Alternating Flank Infeed For very large thread forms Benefit: Increased tool life because both edges are used effectively. Final pass should be 0°		 

The coolant should provided

 Fast heat removal	 Good surface coverage	 Non-corrosiveness	 Homogeneity and stability	 Good lubricant qualities

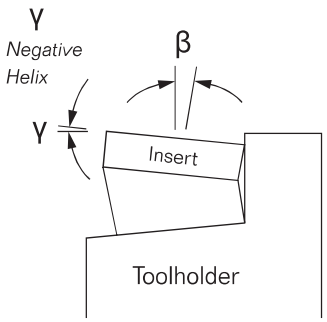
Standard and Slanted Anvils

SANDHOG toolholder and boring bar pockets have a built-in 1.5 helix compensation angle. This angle may be adjusted to match the helix angle of the thread being produced by replacing the anvil.



Positive Helix Angles

Applicable when turning RH thread with RH holder or LH thread with LH holder.



Negative Helix Angles

Applicable when turning RH thread with LH holder or LH thread with RH holder.

Anvils

Resultant Helix Angle		Holder	4.5 °	3.5 °	2.5 °	1.5 °	0.5 °	0 °	-0.5 °	-1.5 °
Insert Size			Ordering Code							
d	Lmm									
9.525	16	ER/NL	STM16R-3P	STM16R-2P	STM16R-1P	**STM16R**	STM16R-1N	STM16R-1.5N	STM16R-2N	STM16R-3N
		EL/NR	STM16L-3P	STM16L-2P	STM16L-1P	**STM16L**	STM16L-1N	STM16L-1.5N	STM16L-2N	STM16L-3N
12.7	22	ER/NL	STM22R-3P	STM22R-2P	STM22R-1P	**STM22R**	STM22R-1N	STM22R-1.5N	STM22R-2N	STM22R-3N
		EL/NR	STM22L-3P	STM22L-2P	STM22L-1P	**STM22L**	STM22L-1N	STM22L-1.5N	STM22L-2N	STM22L-3N
12.7	22	ER/NL	STM22UR-3P	STM22UR-2P	STM22UR-1P	**STM22UR**	STM22UR-1N	STM22UR-1.5N	STM22UR-2N	STM22UR-3N
		EL/NR	STM22UL-3P	STM22UL-2P	STM22UL-1P	**STM22UL**	STM22UL-1N	STM22UL-1.5N	STM22UL-2N	STM22UL-3N
15.875	27	ER/NL	STM27R-3P	STM27R-2P	STM27R-1P	**STM27R**	STM27R-1N	STM27R-1.5N	STM27R-2N	STM27R-3N
		EL/NR	STM27L-3P	STM27L-2P	STM27L-1P	**STM27L**	STM27L-1N	STM27L-1.5N	STM27L-2N	STM27L-3N
15.875	27	ER/NL	STM27UR-3P	STM27UR-2P	STM27UR-1P	**STM27UR**	STM27UR-1N	STM27UR-1.5N	STM27UR-2N	STM27UR-3N
		EL/NR	STM27UL-3P	STM27UL-2P	STM27UL-1P	**STM27UL**	STM27UL-1N	STM27UL-1.5N	STM27UL-2N	STM27UL-3N

Standard Shim

Helix angle 1.5°

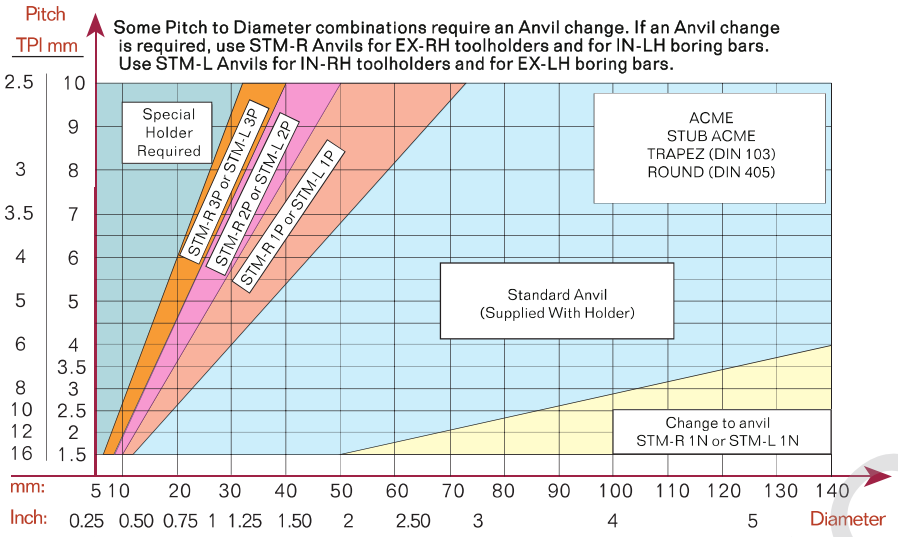
Insert Size	d	9.525		12.7		15.875	
	L	16		22		27	
Holder		ER/NL	EL/NR	ER/NL	EL/NR	ER/NL	EL/NR
Ordering Code		STM16R	STM16L	STM22L	STM22R	STM27L	STM27R

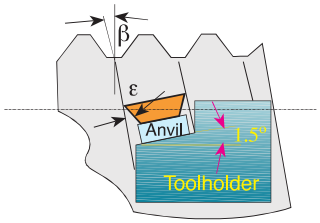
※Standard anvil has lead angle 1.5°

F

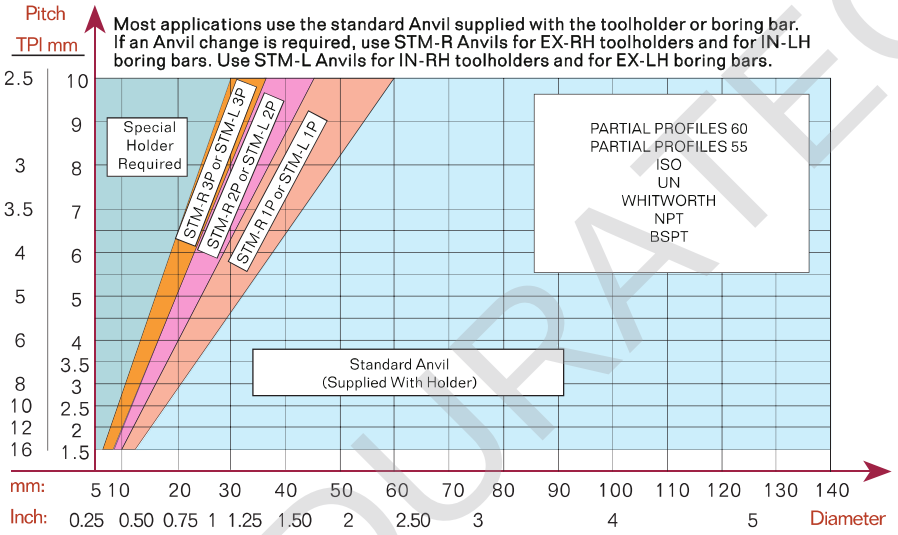
Anvil Change Recommendation

Some Pitch to Diameter combinations require an Anvil change. If an Anvil change is required, use STM-R Anvils for EX-RH toolholders and for IN-LH boring bars. Use STM-L Anvils for IN-RH toolholders and for EX-LH boring bars.

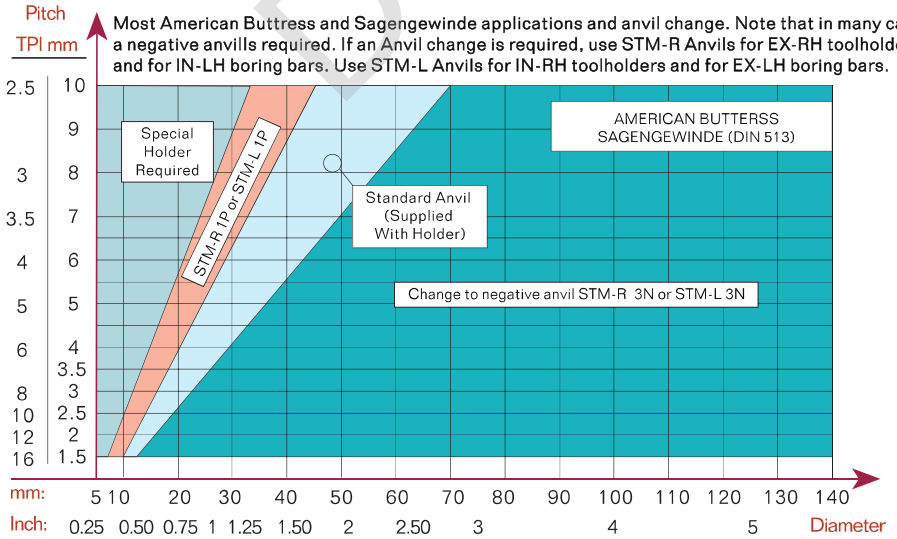


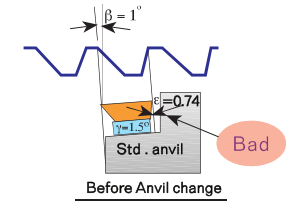


Most applications use the standard Anvil supplied with the toolholder or boring bar. If an Anvil change is required, use STM-R Anvils for EX-RH toolholders and for IN-LH boring bars. Use STM-L Anvils for IN-RH toolholders and for EX-LH boring bars.



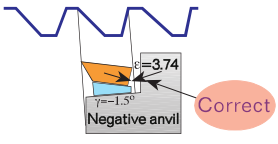
Most American Buttress and Sagengewinde applications and anvil change. Note that in many cases, a negative anvills required. If an Anvil change is required, use STM-R Anvils for EX-RH toolholders and for IN-LH boring bars. Use STM-L Anvils for IN-RH toolholders and for EX-LH boring bars.





Before Anvil change

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



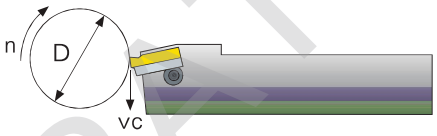
After Anvil change

Recommended Cutting Speed for Threading

Materials			Condition	Vc m/min			
				DTIP30	DTIM45	DTIG30	DTIN30
P Steel	Non-alloy steel and Cast steel,Free Cutting steel	<0.25%C	Annealed	70-150	120-180	110-210	150-250
		⩾0.25%C	Annealed				
		<0.55%C	Quenched & Tempered				
		⩾0.55%C	Annealed				
			Quenched & Tempered				
	Low alloy steel (alloying elements ⩽5%)		Annealed	60-90	80-130	90-140	150-200
			Quenched & Tempered				
	High alloy steel (alloying elements >5%), cast steel, and tool steel		Annealed	50-60	60-80	70-90	100-170
			Quenched & Tempered				
M Stainless steel	Stainless steel & Cast steel		Ferric/Martensitic	50-80	90-130	110-160	100-180
			Martensitic				
			Austenitic				
K Cast iron	Cast iron Nodular (GGG)		Ferritic/Pearlitic	60-90	100-130	120-150	150-250
			Pearlitic				
	Grey cast iron (GG)		Ferritic	65-85	120-130	140-150	170-270
			Pearlitic				
	Malleable cast iron		Ferritic	60-85	100-130	110-140	150-250
			Pearlitic				
N Non-ferrous alloy	Aluminum alloy wrought		Not cureable	450-600	260-830	700-1000	
			Cured				
	Aluminum-cast alloy	⩽12% Si	Not cureable	150-350	200-500	280-750	
			Cured				
		>12% Si	High temperature				
	Copper and copper alloy	>1% Pb	Free cutting	110-180	260-400	190-350	
			Brass				
			Electrolytic Copper				
	Non metallic		Duroplastics, Fiber Plastics	150-210			
			Hard Rubber				

Calculation of N [RPM]

$$n = \frac{vc \times 1000}{\pi \times D} \qquad vc = \frac{\pi \times D \times n}{1000}$$



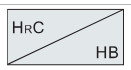
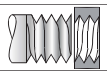
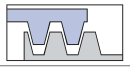
n - Revolution Per Minute [min-1]
vc - Cutting Speed [m/min]
D - Workpiece Diameter [mm]

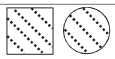
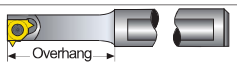
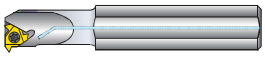
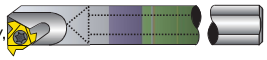
Number of Passes

Pitch																
mm	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	8.00
tpi	48	32	24	20	16	14	12	10	8	7	6	5.5	5	4.5	4	3
No. of passes	4~6	4~7	4~8	5~9	6~10	7~12	7~12	8~14	9~16	10~18	11~18	11~19	12~2	12~20	12~20	15~24

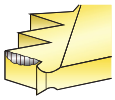
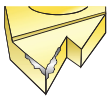
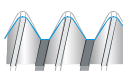
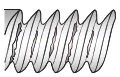
※One cutting depth is calculated by total cutting depth divided into machining times
ex)16ER-1.5ISO, hmin 0.92 : If 10times machining, one cutting depth is 0.092(0.92/10)

Cutting Condition depending on

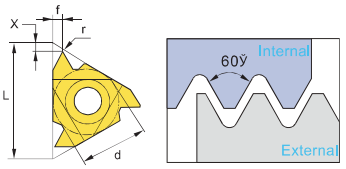
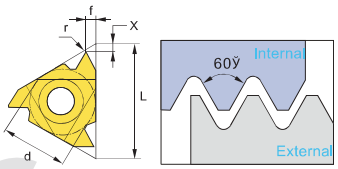
Workpiece	Material Type	
	Material Dimension	
	Diameter and Length Chipflow Character	
	Material Hardness	
Thread Application	External or Internal	
	Profile Shape	
	Surface Finish	
Machine	Machine Stability	
	Max. RPM	
	Clamping System Stability	

Coolant	Coolant Type	
Holders	Holder Cross Section Area	
	Holder Overhang	
	Through Coolant Option	
	Shank Type: Carbide, Alloy,	
Insert	Carbide Implant Grade	
	Profile Shape: Pitch and Depth	
	Nose Radius	
	Chipbreaker Style	

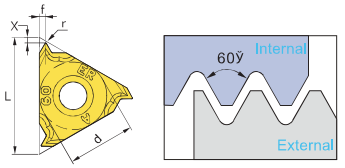
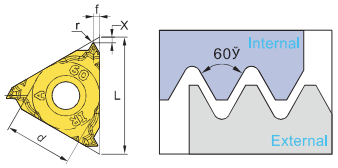
Trouble Shooting

Problem	Possible Cause	Solution
 Increased flank wear	Cutting speed too hight	Reduce cutting speed/ use coated insert
	Depth of cut too low/too many passes	Increase the depth of cut per pass
	Unsuitable carbide grade	Use a coated carbide grade
	Insu f ficient cooling	Increase coolant flow rate
 Uneven cutting edge wear	Incorrect helix angle	Choose the correct shim
	Wrong infeed method	Use the Alternating Flank Infeed method
 Extreme plastic deformation	Depth of cut too large	Decrease depth of cut/ increase number of passes
	Insu f ficient cooling	Increase coolant flow rate
	Cutting speed too high	Reduce cutting speed
	Unsuitable carbide grade	Use a tougher carbide
	Nose radius too small	Use an insert with a larger radius, if possible
 Cutting edge breakage	Depth of cut too large	Decrease depth of cut/ increase number of passes.
	Extreme plastic deformation	Use a tougher carbide
	Insu f ficient cooling	Increase flow rate and/ or correct flow direction
	Unsuitable carbide grade	Use a tougher carbide
	Instability	Check stability of the system
 Built-up edge	Incorrect cutting speed	Change the cutting speed
	Unsuitable carbide grade	Use a coated carbide
 Thread profile is too shallow	The tool is not at the workpiece axis height	Change tool height
	Insert is not machining the thread crest	Measure the workpiece diameter
	Worn insert	Change the cutting edge sooner
 Poor surface quality	Too low cutting speed	Increase cutting speed
	Wrong shim	Choose correct shim
	Flank infeed method is not appropriate	Use the alternate flank or radial infeed method

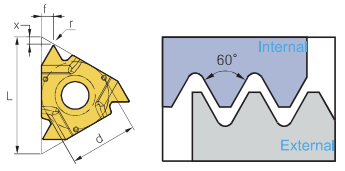
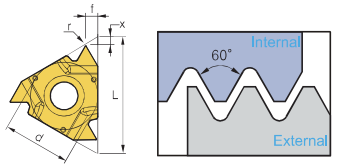
Partial Profile 60°

Type	Designation (Right)	Designation (Left)	Pitch (mm)	Pitch (tpi)	d	L	r	x	f	Picture
External	ER 11-A60	EL 11-A60	0.5~1.5	48~16	6.35	11	0.05	0.8	0.9	
	16-A60	16-A60	0.5~1.5	48~16	9.525	16	0.05	0.8	0.9	
	16-G60	16-G60	1.75~3.0	14~8	9.525	16	0.27	1.2	1.7	
	16-AG60	16-AG60	0.5~3.0	48~8	9.525	16	0.08	1.2	1.7	
	22-N60	22-N60	3.5~5.0	7~5	12.7	22	0.53	1.7	2.5	
	27-Q60	27-Q60	5.5~6.0	4.5~4	15.875	27	0.64	2.1	3.1	
	27-S60	27-S60	5.5~8.0	4.5~4	15.875	27	0.39	2.5	4.0	
Internal	IR 06-A60	IL 06-A60	0.5-1.25	48-20	3.97	6	0.04	0.6	0.6	
	08-A60	08-A60	0.5~1.5	48~16	4.76	8	0.05	0.6	0.7	
	11-A60	11-A60	0.5~1.5	48~16	6.35	11	0.05	0.8	0.9	
	16-A60	16-A60	0.5~1.5	48~16	9.525	16	0.05	0.8	0.9	
	16-G60	16-G60	1.75~3.0	14~8	9.525	16	0.16	1.2	1.7	
	16-AG60	16-AG60	0.5~3.0	48~8	9.525	16	0.05	1.2	1.7	
	22-N60	22-N60	3.5~5.0	7~5	12.7	22	0.30	1.7	2.5	
	27-Q60	27-Q60	5.5~6.0	4.5~4	15.875	27	0.30	1.8	2.7	
	27-S60	27-S60	5.5~8.0	4.5~4	15.875	27	0.39	2.5	4.0	

Partial Profile 60° (M Chip Breaker)

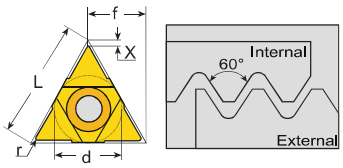
Type	Designation (Right)	Designation (Left)	Pitch (mm)	Pitch (tpi)	d	L	r	x	f	Picture
External	ERM 16-A60		0.5~1.5	48~16	9.525	16	0.05	0.8	0.9	
	16-G60		1.75~3.0	14~8	9.525	16	0.27	1.2	1.7	
	16-AG60		0.5~3.0	48~8	9.525	16	0.08	1.2	1.7	
	22-N60		3.5~5.0	7~5	12.7	22	0.53	1.7	2.5	
Internal	IRM 11-A60		0.5~1.5	48~16	6.35	11	0.08	0.8	0.9	
	16-A60		0.5~1.5	48~16	9.525	16	0.08	0.8	0.9	
	16-G60		1.75~3.0	14~8	9.525	16	0.12	1.2	1.7	
	16-AG60		0.5~3.0	48~8	9.525	16	0.08	1.2	1.7	
	22-N60		3.5~5.0	7~5	12.7	22	0.30	1.7	2.5	

Partial Profile 60° (U Chip Breaker)

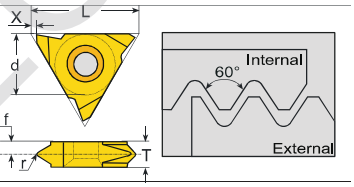
Type	Designation (Right)	Designation (Left)	Pitch (mm)	Pitch (tpi)	d	L	r	x	f	Picture
External	ERU 16-A60		0.5~1.5	48~16	9.525	16	0.08	0.8	0.9	
	16-G60		1.75~3.0	14~8	9.525	16	0.27	1.2	1.7	
	16-AG60		0.5~3.0	48~8	9.525	16	0.08	1.2	1.7	
	22-N60		3.5~5.0	7~5	12.7	22	0.53	1.7	2.5	
Internal	IRU 16-A60		0.5~1.5	48~16	9.525	16	0.08	0.8	0.9	
	16-G60		1.75~3.0	14~8	9.525	16	0.12	1.2	1.7	
	16-AG60		0.5~3.0	48~8	9.525	16	0.08	1.2	1.7	
	22-N60		3.5~5.0	7~5	12.7	22	0.30	1.7	2.5	

F

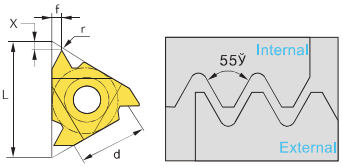
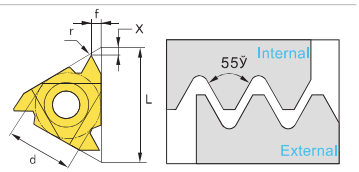
Partial Profile 60° (U Style)

Type	Designation (Right+Left)		Pitch (mm)	Pitch (tpi)	d	Dimensions L	r	x	f	Picture
Internal+External	UEI	08-U60	1.75~2.0	14~11	4.76U	8	0.15	0.8	4.0	
		11-U60	1.75~2.0	14~11	6.35U	11	0.15	0.8	5.5	
		22-U60	5.5~8.0	4.5~3.25	12.7U	22	0.30	0.6	11.0	
		27-U60	6.5~9.0	4~2.75	15.875U	27	0.37	1.0	13.7	

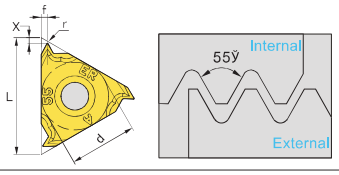
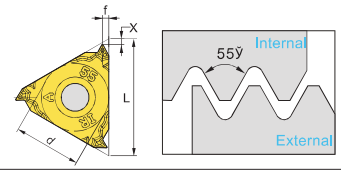
Partial Profile 60° (V Style)

Type	Designation (Right)	Designation (Left)	Pitch (mm)	Pitch (tpi)	Dimensions d	L	r	x	f	t	Picture
External	VER 11-A60	VEL 11-A60	0.5~1.5	48~16	6.35	11	0.05	0.69	2.3	3.2	
	16-A60	16-A60	0.5~1.5	48~16	9.525	16	0.05	1.1	2.7	3.5	
	16-G60	16-G60	1.75~3.0	14~-8	9.525	16	0.27	1.1	1.9	3.5	
	16-AG60	16-AG60	0.5~3.0	48~8	9.525	16	0.08	1.1	1.9	3.5	
	22-N60	22-N60	3.5~5.0	7~5	12.7	22	0.53	1.1	2.3	4.8	

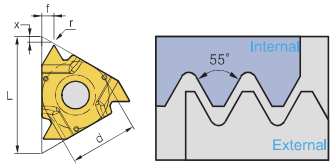
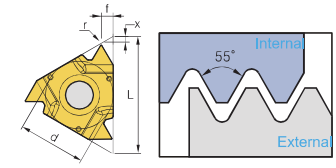
Partial Profile 55°

Type	Designation (Right)	Designation (Left)	Pitch (mm)	Pitch (tpi)	d	L	r	x	f	Picture
External	ER 11-A55	EL 11-A55	0.5~1.5	48~16	6.35	11	0.05	0.8	0.9	
	16-A55	16-A55	0.5~1.5	48~16	9.525	16	0.05	0.8	0.9	
	16-G55	16-G55	1.75~3.0	14~8	9.525	16	0.21	1.2	1.7	
	16-AG55	16-AG55	0.5~3.0	48~8	9.525	16	0.07	1.2	1.7	
	22-N55	22-N55	3.5~5.0	7~5	12.7	22	0.43	1.7	2.5	
	27-Q55	27-Q55	5.5~6.0	4.5~4	15.875	27	0.60	2.0	2.9	
	27-S55	27-S55	5.5~8.0	4.5~4	15.875	27	0.77	2.5	4.0	
Internal	IR 06-A55	IL 06-A55	0.5-1.25	48-20	3.97	6	0.07	0.6	0.6	
	IR 08-A55	IL 08-A55	0.5-1.5	48-16	4.76	8	0.04	0.6	0.7	
	11-A55	11-A55	0.5~1.5	48~16	6.35	11	0.05	0.8	0.9	
	16-A55	16-A55	0.5~1.5	48~16	9.525	16	0.05	0.8	0.9	
	16-G55	16-G55	1.75~3.0	14~8	9.525	16	0.21	1.2	1.7	
	16-AG55	16-AG55	0.5~3.0	48~8	9.525	16	0.07	1.2	1.7	
	22-N55	22-N55	3.5~5.0	7~5	12.7	22	0.43	1.7	2.5	
	27-Q55	27-Q55	5.5~6.0	4.5~4	15.875	27	0.60	2.0	2.9	
	27-S55	27-S55	5.5~8.0	4.5~4	15.875	27	0.77	2.5	4.0	

Partial Profile 55° (M Chip Breaker)

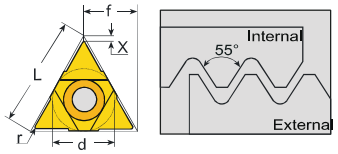
Type	Designation (Right)	Designation (Left)	Pitch (mm)	Pitch (tpi)	d	L	r	x	f	Picture
External	ERM 16-A55		0.5~1.5	48~16	9.525	16	0.08	0.8	0.9	
	16-G55		1.75~3.0	14~8	9.525	16	0.21	1.2	1.7	
	16-AG55		0.5~3.0	48~8	9.525	16	0.07	1.2	1.7	
	22-N55		3.5~5.0	7~5	12.7	27	0.43	1.7	2.5	
Internal	IRM 11-A55		0.5~1.5	48~16	6.35	11	0.08	0.8	0.9	
	16-A55		0.5~1.5	48~16	9.525	16	0.05	0.8	0.9	
	16-G55		1.75~3.0	14~8	9.525	16	0.08	1.2	1.7	
	16-AG55		0.5~3.0	48~8	9.525	16	0.08	1.2	1.7	
	22-N55		3.5~5.0	7~5	12.7	22	0.43	1.7	2.5	

Partial Profile 55° (U Chip Breaker)

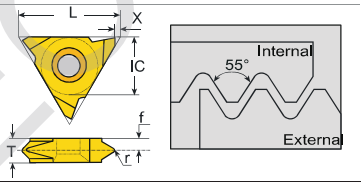
Type	Designation (Right)	Designation (Left)	Pitch (mm)	Pitch (tpi)	d	L	r	x	f	Picture
External	ERU 16-A55		0.5~1.5	48~16	9.525	16	0.08	0.8	0.9	
	16-G55		1.75~3.0	14~8	9.525	16	0.21	1.2	1.7	
	16-AG55		0.5~3.0	48~8	9.525	16	0.07	1.2	1.7	
	22-N55		3.5~5.0	7~5	12.7	22	0.43	1.7	2.5	
Internal	IRU 16-A55		0.5~1.5	48~16	9.525	16	0.05	0.8	0.9	
	16-G55		1.75~3.0	14~8	9.525	16	0.08	1.2	1.7	
	16-AG55		0.5~3.0	48~8	9.525	16	0.08	1.2	1.7	
	22-N55		3.5~5.0	7~5	12.7	22	0.43	1.7	2.5	

D

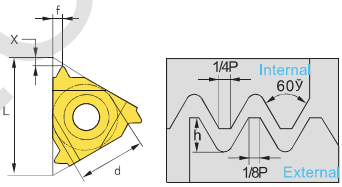
Partial Profile 55° (U Style)

Type	Designation (Right+Left)	Pitch (mm)	Pitch (tpi)	Dimensions d	L	r	x	f	Picture
Internal+External	UEI 08-U55	1.75~2.0	14~11	4.76U	8	0.25	0.8	4.0	
	11-U55	1.75~2.0	14~11	6.35U	11	0.25	0.8	5.5	
	22-U55	5.5~8.0	4.5~3.25	12.7U	22	0.60	0.9	11.0	
	27-U55	6.5~9.0	4~2.75	15.875U	27	0.80	1.2	13.7	

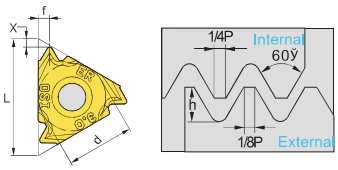
Partial Profile 55° (V Style)

Type	Designation (Right)	Designation (Left)	Pitch (mm)	Pitch (tpi)	Dimensions d	L	r	x	f	T	Picture
External	VER 11-A55	VEL 11-A55	0.5~1.5	48~16	6.35	11	0.05	0.8	2.7	3.2	
	16-A55	16-A55	0.5~1.5	48~16	9.525	16	0.05	1.1	2.7	3.6	
	16-G55	16-G55	1.75~3.0	14~-8	9.525	16	0.21	1.1	1.9	3.6	
	16-AG55	16-AG55	0.5~3.0	48~8	9.525	16	0.07	1.1	1.9	3.6	
	22-N55	22-N55	3.5~5.0	7~5	12.7	22	0.43	1.1	2.3	4.8	

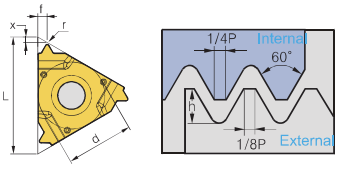
ISO Metric

Type	Designation (Right)	Designation (Left)	Pitch (mm)	Dimensions d	L	hmin	x	f	Picture
External	ER 11-0.35ISO	EL 11-0.35ISO	0.35	6.35	11	0.21	0.8	0.4	
	11-0.4ISO	11-0.4ISO	0.4	6.35	11	0.25	0.7	0.4	
	11-0.45ISO	11-0.45ISO	0.45	6.35	11	0.28	0.7	0.4	
	11-0.5ISO	11-0.5ISO	0.5	6.35	11	0.31	0.6	0.4	
	11-0.6ISO	11-0.6ISO	0.6	6.35	11	0.37	0.6	0.6	
	11-0.7ISO	11-0.7ISO	0.7	6.35	11	0.43	0.6	0.6	
	11-0.75ISO	11-0.75ISO	0.75	6.35	11	0.46	0.6	0.6	
	11-0.8ISO	11-0.8ISO	0.8	6.35	11	0.49	0.6	0.6	
	11-1.0ISO	11-1.0ISO	1.0	6.35	11	0.61	0.7	0.7	
	11-1.25ISO	11-1.25ISO	1.25	6.35	11	0.77	0.8	0.9	
	11-1.5ISO	11-1.5ISO	1.5	6.35	11	0.92	0.8	1.0	
	11-1.75ISO	11-1.75ISO	1.75	6.35	11	1.07	0.8	1.1	
	16-0.35ISO	16-0.35ISO	0.35	9.525	16	0.21	0.8	0.4	
	16-0.4ISO	16-0.4ISO	0.4	9.525	16	0.25	0.7	0.4	
	16-0.45ISO	16-0.45ISO	0.45	9.525	16	0.28	0.7	0.4	
	16-0.5ISO	16-0.5ISO	0.5	9.525	16	0.31	0.6	0.4	
	16-0.6ISO	16-0.6ISO	0.6	9.525	16	0.37	0.6	0.6	
	16-0.7ISO	16-0.7ISO	0.7	9.525	16	0.43	0.6	0.6	
	16-0.75ISO	16-0.75ISO	0.75	9.525	16	0.46	0.6	0.6	
	16-0.8ISO	16-0.8ISO	0.8	9.525	16	0.49	0.6	0.6	
	16-1.0ISO	16-1.0ISO	1.0	9.525	16	0.61	0.7	0.7	
	16-1.25ISO	16-1.25ISO	1.25	9.525	16	0.77	0.8	0.9	
	16-1.5ISO	16-1.5ISO	1.5	9.525	16	0.92	0.8	1.0	
	16-1.75ISO	16-1.75ISO	1.75	9.525	16	1.07	0.9	1.2	
	16-2.0ISO	16-2.0ISO	2.0	9.525	16	1.23	1.0	1.3	
	16-2.5ISO	16-2.5ISO	2.5	9.525	16	1.53	1.1	1.5	
	16-3.0ISO	16-3.0ISO	3.0	9.525	16	1.84	1.2	1.6	
	22-3.5ISO	22-3.5ISO	3.5	12.7	22	2.15	1.6	2.3	
	22-4.0ISO	22-4.0ISO	4.0	12.7	22	2.45	1.6	2.3	
	22-4.5ISO	22-4.5ISO	4.5	12.7	22	2.78	1.7	2.4	
	22-5.0ISO	22-5.0ISO	5.0	12.7	22	3.07	1.7	2.5	
	27-5.5ISO	27-5.5ISO	5.5	15.875	27	3.37	1.9	2.7	
	27-6.0ISO	27-6.0ISO	6.0	15.875	27	3.68	2.0	2.9	
	27-8.0ISO	27-8.0ISO	8.0	15.875	27	4.91	2.2	3.2	

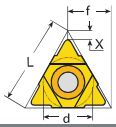
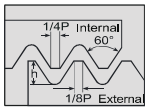
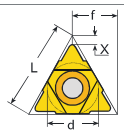
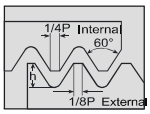
ISO Metric (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch (mm)	Dimensions d	L	hmin	x	f	Picture
External	ERM 16-1.0ISO		1.0	9.525	16	0.61	0.7	0.7	
	16-1.25ISO		1.25	9.525	16	0.77	0.8	0.9	
	16-1.5ISO		1.5	9.525	16	0.93	0.8	1.0	
	16-1.75ISO		1.75	9.525	16	1.09	0.9	1.2	
	16-2.0ISO		2.0	9.525	16	1.25	1.0	1.3	
	16-2.5ISO		2.5	9.525	16	1.55	1.1	1.5	
	16-3.0ISO		3.0	9.525	16	1.87	1.2	1.6	

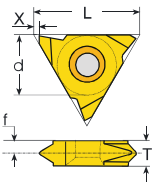
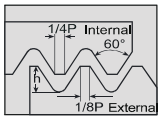
ISO Metric (U Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch (mm)	Dimensions d	L	hmin	x	f	Picture
External	ERU 16-1.0ISO		1.00	9.525	16	0.61	0.7	0.7	
	16-1.25ISO		1.25	9.525	16	0.77	0.8	0.9	
	16-1.5ISO		1.50	9.525	16	0.93	0.8	1.0	
	16-1.75ISO		1.75	9.525	16	1.09	0.9	1.2	
	16-2.0ISO		2.00	9.525	16	1.25	1.0	1.3	
	16-2.5ISO		2.50	9.525	16	1.55	1.1	1.5	
	16-3.0ISO		3.00	9.525	16	1.87	1.2	1.6	

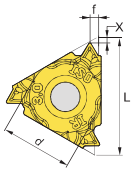
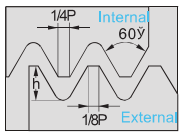
ISO Metric (U Style)

Type	Designation (Right)	Designation (Left)	Pitch (mm)	Dimensions d	L	hmin	x	f	Picture
External	UE 22-5.0ISO		5.0	12.7U	22	3.07	2.2	11.0	 
	22-5.5ISO		5.5	12.7U	22	3.37	2.2	11.0	
	22-6.0ISO		6.0	12.7U	22	3.68	2.2	11.0	
	27-8.0ISO		8.0	15.872U	27	4.91	2.4	13.7	
Internal	UI 22-5.5ISO		5.5	12.7U	22	3.17	2.4	11.0	 
	22-6.0ISO		6.0	12.7U	22	3.46	2.1	11.0	
	27-8.0ISO		8.0	15.875U	27	4.26	2.4	13.7	

ISO Metric (V Style)

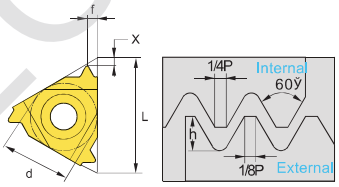
Type	Designation (Right)	Designation (Left)	Pitch (mm)	Dimensions d	L	hmin	x	f	t	Picture
External	VER 11-0.75ISO	VER 11-0.75ISO	0.75	6.35	11	0.46	0.7	2.6	3.2	 
	11-1.0ISO	11-1.0ISO	1.0	6.35	11	0.61	0.7	2.5	3.2	
	11-1.5ISO	11-1.5ISO	1.5	6.35	11	0.92	0.7	2.2	3.2	
	11-1.75ISO	11-1.75ISO	1.75	6.35	11	1.07	0.7	2.1	3.2	
	11-2.0ISO	11-2.0ISO	2.0	6.35	11	1.23	0.7	1.9	3.2	
	16-0.35ISO	16-0.35ISO	0.35	9.525	16	0.20	1.1	3.25	3.6	
	16-0.4ISO	16-0.4ISO	0.4	9.525	16	0.25	1.1	3.2	3.6	
	16-0.5ISO	16-0.5ISO	0.5	9.525	16	0.31	1.1	3.0	3.6	
	16-0.75ISO	16-0.75ISO	0.75	9.525	16	0.46	1.1	3.0	3.6	
	16-0.8ISO	16-0.8ISO	0.8	9.525	16	0.49	1.1	3.0	3.6	
	16-1.0ISO	16-1.0ISO	1.0	9.525	16	0.61	1.1	2.9	3.6	
	16-1.25ISO	16-1.25ISO	1.25	9.525	16	0.77	1.1	2.7	3.6	
	16-1.5ISO	16-1.5ISO	1.5	9.525	16	0.92	1.1	2.6	3.6	
	16-1.75ISO	16-1.75ISO	1.75	9.525	16	1.07	1.1	2.45	3.6	
	16-2.0ISO	16-2.0ISO	2.0	9.525	16	1.23	1.1	2.3	3.6	
	16-2.5ISO	16-2.5ISO	2.5	9.525	16	1.53	1.1	2.1	3.6	
	16-3.0ISO	16-3.0ISO	3.0	9.525	16	1.84	1.1	2.0	3.6	

ISO Metric (M Chip Breaker)

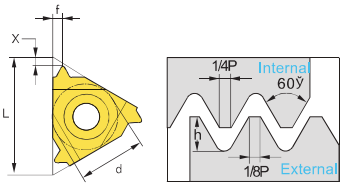
Type	Designation (Right)	Designation (Left)	Pitch (mm)	Dimensions d	L	hmin	x	f	Picture
Internal	IRM 11-1.5ISO		1.5	6.35	11	0.85	0.8	1.0	 
	16-1.0ISO		1.0	9.525	16	0.58	0.6	0.7	
	16-1.25ISO		1.25	9.525	16	0.72	0.8	0.9	
	16-1.5ISO		1.5	9.525	16	0.85	0.8	1.0	
	16-1.75ISO		1.75	9.525	16	1.01	0.9	1.2	
	16-2.0ISO		2.0	9.525	16	1.12	1.0	1.3	
	16-2.5ISO		2.5	9.525	16	1.44	1.1	1.5	
	16-3.0ISO		3.0	9.525	16	1.69	1.1	1.5	

D

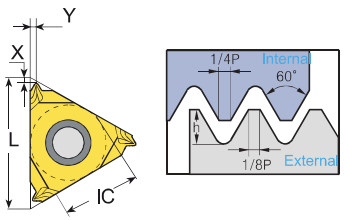
ISO Metric

Type	Designation (Right)	Designation (Left)	Pitch (mm)	Dimensions d	L	hmin	x	f	Picture
Internal	IR 11-0.35ISO	IL 11-0.35ISO	0.35	6.35	11	0.20	0.8	0.3	
	11-0.4ISO	11-0.4ISO	0.4	6.35	11	0.23	0.8	0.4	
	11-0.45ISO	11-0.45ISO	0.45	6.35	11	0.26	0.8	0.4	
	11-0.5ISO	11-0.5ISO	0.5	6.35	11	0.29	0.6	0.4	
	11-0.6ISO	11-0.6ISO	0.6	6.35	11	0.35	0.6	0.6	
	11-0.7ISO	11-0.7ISO	0.7	6.35	11	0.40	0.6	0.6	
	11-0.75ISO	11-0.75ISO	0.75	6.35	11	0.43	0.6	0.6	
	11-0.8ISO	11-0.8ISO	0.8	6.35	11	0.46	0.6	0.6	
	11-1.0ISO	11-1.0ISO	1.0	6.35	11	0.58	0.6	0.7	
	11-1.25ISO	11-1.25ISO	1.25	6.35	11	0.72	0.8	0.9	
	11-1.5ISO	11-1.5ISO	1.5	6.35	11	0.87	0.8	1.0	
	11-1.75ISO	11-1.75ISO	1.75	6.35	11	1.01	0.9	1.1	
	11-2.0ISO	11-2.0ISO	2.0	6.35	11	1.15	0.9	1.1	
	11-2.5ISO	11-2.5ISO	2.5	6.35	11	1.44	0.8	1.1	
	16-0.35ISO	16-0.35ISO	0.35	9.525	16	0.20	0.8	0.3	
	16-0.4ISO	16-0.4ISO	0.4	9.525	16	0.23	0.8	0.4	
	16-0.45ISO	16-0.45ISO	0.45	9.525	16	0.26	0.8	0.4	
	16-0.5ISO	16-0.5ISO	0.5	9.525	16	0.29	0.6	0.4	
	16-0.6ISO	16-0.6ISO	0.6	9.525	16	0.35	0.6	0.6	
	16-0.7ISO	16-0.7ISO	0.7	9.525	16	0.40	0.6	0.6	
	16-0.75ISO	16-0.75ISO	0.75	9.525	16	0.43	0.6	0.6	
	16-0.8ISO	16-0.8ISO	0.8	9.525	16	0.46	0.6	0.6	
	16-1.0ISO	16-1.0ISO	1.0	9.525	16	0.58	0.6	0.7	
	16-1.25ISO	16-1.25ISO	1.25	9.525	16	0.72	0.8	0.9	
	16-1.5ISO	16-1.5ISO	1.5	9.525	16	0.87	0.8	1.0	
	16-1.75ISO	16-1.75ISO	1.75	9.525	16	1.01	0.9	1.2	
	16-2.0ISO	16-2.0ISO	2.0	9.525	16	1.15	1.0	1.3	
	16-2.5ISO	16-2.5ISO	2.5	9.525	16	1.44	1.1	1.5	
	16-3.0ISO	16-3.0ISO	3.0	9.525	16	1.73	1.1	1.5	
	22-3.5ISO	22-3.5ISO	3.5	12.7	22	2.02	1.6	2.3	
	22-4.0ISO	22-4.0ISO	4.0	12.7	22	2.31	1.6	2.3	
	22-4.5ISO	22-4.5ISO	4.5	12.7	22	2.60	1.6	2.4	
	22-5.0ISO	22-5.0ISO	5.0	12.7	22	2.89	1.6	2.3	
	27-5.5ISO	27-5.5ISO	5.5	15.875	27	3.17	1.6	2.3	
	27-6.0ISO	27-6.0ISO	6.0	15.875	27	3.46	1.8	2.5	
	27-8.0ISO	27-8.0ISO	8.0	15.875	27	4.26	2.2	3.2	

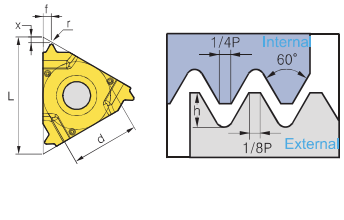
American UN (UN, UNC, UNF, UNEF, UNS)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			(tpi)	d	L	hmin	x	f	
External	ER 11-72UN	EL 11-72UN	72	6.35	11	0.22	0.8	0.4	
	11-64UN	11-64UN	64	6.35	11	0.24	0.8	0.4	
	11-56UN	11-56UN	56	6.35	11	0.28	0.7	0.4	
	11-48UN	11-48UN	48	6.35	11	0.32	0.6	0.6	
	11-44UN	11-44UN	44	6.35	11	0.35	0.6	0.6	
	11-40UN	11-40UN	40z	6.35	11	0.39	0.6	0.6	
	11-36UN	11-36UN	36	6.35	11	0.43	0.6	0.6	
	11-32UN	11-32UN	32	6.35	11	0.49	0.6	0.6	
	11-28UN	11-28UN	28	6.35	11	0.56	0.6	0.7	
	11-27UN	11-27UN	27	6.35	11	0.58	0.7	0.8	
	11-24UN	11-24UN	24	6.35	11	0.65	0.7	0.8	
	11-20UN	11-20UN	20	6.35	11	0.78	0.8	0.9	
	11-18UN	11-18UN	18	6.35	11	0.87	0.8	1.0	
	11-16UN	11-16UN	16	6.35	11	0.97	0.9	1.1	
	11-14UN	11-14UN	14	6.35	11	1.11	0.9	1.1	
	16-72UN	16-72UN	72	9.525	16	0.22	0.8	0.4	
	16-64UN	16-64UN	64	9.525	16	0.24	0.8	0.4	
	16-56UN	16-56UN	56	9.525	16	0.28	0.7	0.4	
	16-48UN	16-48UN	48	9.525	16	0.32	0.6	0.6	
	16-44UN	16-44UN	44	9.525	16	0.35	0.6	0.6	
	16-40UN	16-40UN	40	9.525	16	0.39	0.6	0.6	
	16-36UN	16-36UN	36	9.525	16	0.43	0.6	0.6	
	16-32UN	16-32UN	32	9.525	16	0.49	0.6	0.6	
	16-28UN	16-28UN	28	9.525	16	0.56	0.6	0.7	
	16-27UN	16-27UN	27	9.525	16	0.58	0.7	0.8	
	16-24UN	16-24UN	24	9.525	16	0.65	0.7	0.8	
	16-20UN	16-20UN	20	9.525	16	0.78	0.8	0.9	
	16-18UN	16-18UN	18	9.525	16	0.87	0.8	1.0	
	16-16UN	16-16UN	16	9.525	16	0.97	0.9	1.1	
	16-14UN	16-14UN	14	9.525	16	1.11	1.0	1.2	
	16-13UN	16-13UN	13	9.525	16	1.20	1.0	1.3	
	16-12UN	16-12UN	12	9.525	16	1.30	1.1	1.4	
	16-11.5UN	16-11.5UN	11.5	9.525	16	1.35	1.1	1.5	
	16-11UN	16-11UN	11	9.525	16	1.42	1.1	1.5	
	16-10UN	16-10UN	10	9.525	16	1.56	1.1	1.5	
	16-9UN	16-9UN	9	9.525	16	1.73	1.2	1.7	
	16-8UN	16-8UN	8	9.525	16	1.95	1.2	1.6	
	22-7UN	22-7UN	7	12.7	22	2.22	1.6	2.3	
	22-6UN	22-6UN	6	12.7	22	2.60	1.6	2.3	
	22-5UN	22-5UN	5	12.7	22	3.12	1.7	2.5	
	27-4.5UN	27-4.5UN	4.5	15.875	27	3.46	1.9	2.7	
	27-4UN	27-4UN	4	15.875	27	3.89	2.1	3.0	

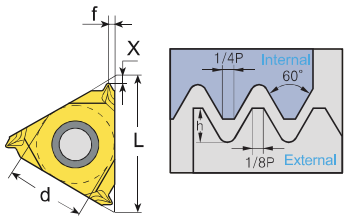
American UN (UN, UNC, UNF, UNEF, UNS) (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi)	d	L	hmin	x	f	
External	ERM 16-20UN		20	9.525	16	0.78	0.7	0.8	
	6-18UN		18	9.525	16	0.87	0.8	0.8	
	16-16UN		16	9.525	16	0.97	0.8	0.8	
	6-14UN		14	9.525	16	1.11	1.2	1.5	
	16-13UN		13	9.525	16	1.20	1.2	1.5	
	6-12UN		12	9.525	16	1.30	1.3	1.5	
	16-11UN		11	9.525	16	1.42	1.2	1.5	
	6-10UN		10	9.525	16	1.56	1.2	1.5	
	16-9UN		9	9.525	16	1.73	1.2	1.5	
	6-8UN		8	9.525	16	1.95	1.3	1.5	

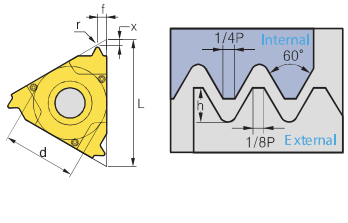
American UN (UN, UNC, UNF, UNEF, UNS) (U Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi)	d	L	hmin	x	f	
External	ERU 16-20UN		20	9.525	16	0.78	0.8	0.9	
	6-18UN		18	9.525	16	0.87	0.8	1.0	
	16-16UN		16	9.525	16	0.97	0.9	1.1	
	6-14UN		14	9.525	16	1.11	1.0	1.2	
	16-13UN		13	9.525	16	1.20	1.0	1.3	
	16-12UN		12	9.525	16	1.30	1.1	1.4	
	16-11UN		11	9.525	16	1.42	1.1	1.5	
	6-10UN		10	9.525	16	1.56	1.1	1.5	
	16-9UN		9	9.525	16	1.73	1.2	1.7	
	6-8UN		8	9.525	16	1.95	1.2	1.6	

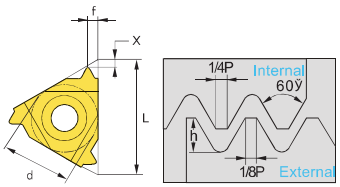
American UN (UN, UNC, UNF, UNEF, UNS) (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			(tpi)	d	L	hmin	x	f	
External	IRM 16-20UN		20	9.525	16	0.73	0.8	0.9	
	16-18UN		18	9.525	16	0.81	0.8	1.0	
	16-16UN		16	9.525	16	0.92	0.9	1.1	
	16-14UN		14	9.525	16	1.05	0.9	1.2	
	16-13UN		13	9.525	16	1.13	1.0	1.3	
	16-12UN		12	9.525	16	1.22	1.1	1.4	
	16-11UN		11	9.525	16	1.33	1.1	1.5	
	16-10UN		10	9.525	16	1.47	1.1	1.5	
	16-9UN		9	9.525	16	1.63	1.2	1.7	
	16-8UN		8	9.525	16	1.83	1.1	1.5	

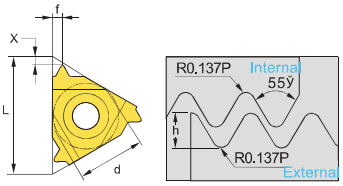
American UN (UN, UNC, UNF, UNEF, UNS) (U CHip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			(tpi)	d	L	hmin	x	f	
External	IRU 16-20UN		20	9.525	16	0.73	0.8	0.9	
	16-18UN		18	9.525	16	0.81	0.8	1.0	
	16-16UN		16	9.525	16	0.92	0.9	1.1	
	16-14UN		14	9.525	16	1.05	0.9	1.2	
	16-13UN		13	9.525	16	1.13	1.0	1.3	
	16-12UN		12	9.525	16	1.22	1.1	1.4	
	16-11UN		11	9.525	16	1.33	1.1	1.5	
	16-10UN		10	9.525	16	1.47	1.1	1.5	
	16-9UN		9	9.525	16	1.63	1.2	1.7	
	16-8UN		8	9.525	16	1.83	1.1	1.5	

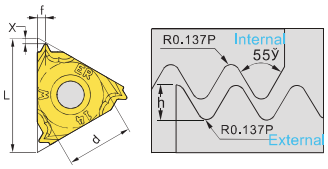
American UN (UN, UNC, UNF, UNEF, UNS)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			(tpi)	d	L	hmin	x	f	
Internal	IR 11-72UN	IL 11-72UN	72	6.35	11	0.20	0.8	0.3	
	11-64UN	11-64UN	64	6.35	11	0.23	0.8	0.4	
	11-56UN	11-56UN	56	6.35	11	0.26	0.7	0.4	
	11-48UN	11-48UN	48	6.35	11	0.31	0.6	0.6	
	11-44UN	11-44UN	44	6.35	11	0.33	0.6	0.6	
	11-40UN	11-40UN	40	6.35	11	0.37	0.6	0.6	
	11-36UN	11-36UN	36	6.35	11	0.41	0.6	0.6	
	11-32UN	11-32UN	32	6.35	11	0.46	0.6	0.6	
	11-28UN	11-28UN	28	6.35	11	0.52	0.6	0.7	
	11-27UN	11-27UN	27	6.35	11	0.54	0.7	0.8	
	11-24UN	11-24UN	24	6.35	11	0.61	0.7	0.8	
	11-20UN	11-20UN	20	6.35	11	0.73	0.8	0.9	
	11-18UN	11-18UN	18	6.35	11	0.81	0.8	1.0	
	11-16UN	11-16UN	16	6.35	11	0.92	0.9	1.1	
	11-14UN	11-14UN	14	6.35	11	1.05	0.9	1.1	
	11-12UN	11-12UN	12	6.35	11	1.22	0.8	1.1	
	11-11UN	11-11UN	11	6.35	11	1.33	0.8	1.1	
	16-72UN	16-72UN	72	9.525	16	0.20	0.8	0.3	
	16-64UN	16-64UN	64	9.525	16	0.23	0.8	0.4	
	16-56UN	16-56UN	56	9.525	16	0.26	0.7	0.4	
	16-48UN	16-48UN	48	9.525	16	0.31	0.6	0.6	
	16-44UN	16-44UN	44	9.525	16	0.33	0.6	0.6	
	16-40UN	16-40UN	40	9.525	16	0.37	0.6	0.6	
	16-36UN	16-36UN	36	9.525	16	0.41	0.6	0.6	
	16-32UN	16-32UN	32	9.525	16	0.51	0.6	0.6	
	16-28UN	16-28UN	28	9.525	16	0.52	0.6	0.7	
	16-27UN	16-27UN	27	9.525	16	0.54	0.7	0.8	
	16-24UN	16-24UN	24	9.525	16	0.61	0.7	0.8	
	16-20UN	16-20UN	20	9.525	16	0.73	0.8	0.9	
	16-18UN	16-18UN	18	9.525	16	0.81	0.8	1.0	
	16-16UN	16-16UN	16	9.525	16	0.92	0.9	1.1	
	16-14UN	16-14UN	14	9.525	16	1.05	0.9	1.2	
	16-13UN	16-13UN	13	9.525	16	1.13	1.0	1.3	
	16-12UN	16-12UN	12	9.525	16	1.22	1.1	1.4	
	16-11.5UN	16-11.5UN	11.5	9.525	16	1.28	1.1	1.5	
	16-11UN	16-11UN	11	9.525	16	1.33	1.1	1.5	
	16-10UN	16-10UN	10	9.525	16	1.47	1.1	1.5	
	16-9UN	16-9UN	9	9.525	16	1.63	1.2	1.7	
	16-8UN	16-8UN	8	9.525	16	1.83	1.2	1.5	
	22-7UN	22-7UN	7	12.7	22	2.09	1.6	2.3	
	22-6UN	22-6UN	6	12.7	22	2.44	1.6	2.3	
	22-5UN	22-5UN	5	12.7	22	2.93	1.7	2.3	
	27-4.5UN	27-4.5UN	4.5	15.875	27	3.26	1.9	2.4	
	27-4UN	27-4UN	4	15.875	27	3.67	2.1	2.7	

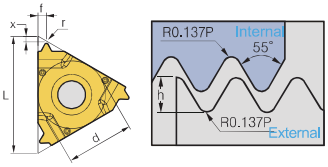
Whithworth (BSW, BSF, BSP, BSB)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			(tpi)	d	L	hmin	x	f	
External	ER 11-72W	EL 11-72W	72	6.35	11	0.23	0.7	0.4	
	11-60W	11-60W	60	6.35	11	0.27	0.7	0.4	
	11-56W	11-56W	56	6.35	11	0.29	0.7	0.4	
	11-48W	11-48W	48	6.35	11	0.34	0.6	0.6	
	11-40W	11-40W	40	6.35	11	0.41	0.6	0.6	
	11-36W	11-36W	36	6.35	11	0.45	0.6	0.6	
	11-32W	11-32W	32	6.35	11	0.51	0.6	0.6	
	11-28W	11-28W	28	6.35	11	0.58	0.6	0.7	
	11-26W	11-26W	26	6.35	11	0.63	0.7	0.8	
	11-24W	11-24W	24	6.35	11	0.68	0.7	0.8	
	11-22W	11-22W	22	6.35	11	0.74	0.8	0.9	
	11-20W	11-20W	20	6.35	11	0.81	0.8	0.9	
	11-19W	11-19W	19	6.35	11	0.86	0.8	1.0	
	11-18W	11-18W	18	6.35	11	0.90	0.8	1.0	
	11-16W	11-16W	16	6.35	11	1.02	0.9	1.1	
	11-14W	11-14W	14	6.35	11	1.16	1.0	1.2	
	16-72W	16-72W	72	9.525	16	0.23	0.7	0.4	
	16-60W	16-60W	60	9.525	16	0.27	0.7	0.4	
	16-56W	16-56W	56	9.525	16	0.29	0.7	0.4	
	16-48W	16-48W	48	9.525	16	0.34	0.6	0.6	
	16-40W	16-40W	40	9.525	16	0.41	0.6	0.6	
	16-36W	16-36W	36	9.525	16	0.45	0.6	0.6	
	16-32W	16-32W	32	9.525	16	0.51	0.6	0.6	
	16-30W	16-30W	30	9.525	16	0.55	0.6	0.7	
	16-28W	16-28W	28	9.525	16	0.58	0.6	0.7	
	16-26W	16-26W	26	9.525	16	0.63	0.7	0.8	
	16-24W	16-24W	24	9.525	16	0.68	0.7	0.8	
	16-22W	16-22W	22	9.525	16	0.74	0.8	0.9	
	16-20W	16-20W	20	9.525	16	0.81	0.8	0.9	
	16-19W	16-19W	19	9.525	16	0.86	0.8	1.0	
	16-18W	16-18W	18	9.525	16	0.90	0.8	1.0	
	16-16W	16-16W	16	9.525	16	1.02	0.9	1.1	
	16-14W	16-14W	14	9.525	16	1.16	1.0	1.2	
	16-12W	16-12W	12	9.525	16	1.36	1.1	1.4	
	16-11W	16-11W	11	9.525	16	1.48	1.1	1.5	
	16-10W	16-10W	10	9.525	16	1.63	1.1	1.5	
	16-9W	16-9W	9	9.525	16	1.81	1.2	1.7	
	16-8W	16-8W	8	9.525	16	2.03	1.2	1.5	
	22-7W	22-7W	7	12.7	22	3.32	1.6	2.3	
	22-6W	22-6W	6	12.7	22	2.71	1.6	2.3	
	22-5W	22-5W	5	12.7	22	3.25	1.7	2.4	
	27-4.5W	27-4.5W	4.5	15.875	27	3.61	1.8	2.6	
	27-4W	27-4W	4	15.875	27	4.07	2.0	2.9	

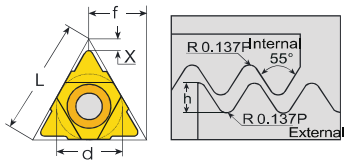
Withworth (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	ERM 16-14W		14	9.525	16	1.16	1.0	1.2	
	16-11W		11	9.525	16	1.48	1.1	1.5	

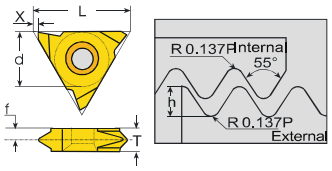
Withworth (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	ERU 16-20W		20	9.525	16	0.81	0.8	0.9	
	16-19W		19	9.525	16	0.86	0.8	1.0	
	16-18W		18	9.525	16	0.90	0.8	1.0	
	16-16W		16	9.525	16	1.02	0.9	1.1	
	16-14W		14	9.525	16	1.16	1.0	1.2	
	16-12W		12	9.525	16	1.36	1.1	1.4	
	16-11W		11	9.525	16	1.48	1.1	1.5	
	16-10W		10	9.525	16	1.63	1.1	1.5	
	16-9W		9	9.525	16	1.81	1.2	1.7	
	16-8W		8	9.525	16	2.03	1.1	1.5	

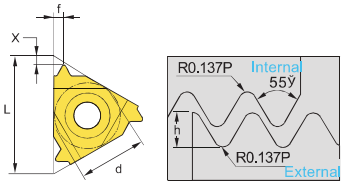
Whithworth (U Style)

Type	Designation (Right Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	UEI 22-4.5W	4.5	12.7U	22	3.61	2.3	11.0	
	22-4W	4	12.7U	22	4.07	1.8	11.0	
	22-3.5W	3.5	12.7U	22	4.65	2.1	11.0	
	22-3.25W	3.25	12.7U	22	5.00	2.0	11.0	
Internal	27-3.5W	3.5	15.875U	27	4.65	2.1	13.7	
	27-.325W	3.25	15.875U	27	5.00	2.0	13.7	
	27-3W	3	15.875U	27	5.42	2.3	13.7	
	27-2.75W	2.75	15.875U	27	5.94	2.4	13.7	

Whithworth (U Style)

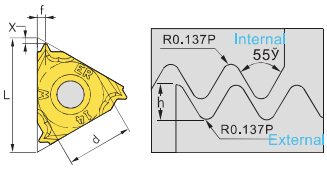
Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	F	t	Picture
External	VER 11-19W	VEL 11-19W	19	6.35	11	0.86	0.69	2.3	3.2	
	11-14W	11-14W	14	6.35	11	1.16	0.69	2.0	3.2	
	11-11W	11-11W	11	6.35	11	1.48	0.69	1.7	3.2	
	16-19W	16-19W	19	9.525	16	0.86	1.1	2.7	3.6	
	16-18W	16-18W	18	9.525	16	0.90	1.31	2.6	3.6	
	16-16W	16-16W	16	9.525	16	1.02	1.1	2.6	3.6	
	16-14W	16-14W	14	9.525	16	1.16	1.1	2.4	3.6	
	16-12W	16-12W	12	9.525	16	1.36	1.1	2.2	3.6	
	16-11W	16-11W	11	9.525	16	1.48	1.1	2.1	3.6	

Withworth (BSW, BSF, BSP, BSB)

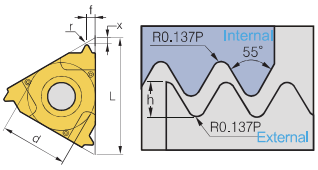
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			(tpi)	d	L	hmin	x	f	
Internal	IR 11-72W	IL 11-72W	72	6.35	11	0.23	0.7	0.4	
	11-60W	11-60W	60	6.35	11	0.27	0.7	0.4	
	11-56W	11-56W	56	6.35	11	0.29	0.7	0.4	
	11-48W	11-48W	48	6.35	11	0.34	0.6	0.6	
	11-40W	11-40W	40	6.35	11	0.41	0.6	0.6	
	11-36W	11-36W	36	6.35	11	0.45	0.6	0.6	
	11-32W	11-32W	32	6.35	11	0.51	0.6	0.6	
	11-28W	11-28W	28	6.35	11	0.58	0.6	0.7	
	11-26W	11-26W	26	6.35	11	0.63	0.7	0.8	
	11-24W	11-24W	24	6.35	11	0.68	0.7	0.8	
	11-22W	11-22W	22	6.35	11	0.74	0.8	0.9	
	11-20W	11-20W	20	6.35	11	0.81	0.8	0.9	
	11-19W	11-19W	19	6.35	11	0.86	0.8	1.0	
	11-18W	11-18W	18	6.35	11	0.90	0.8	1.0	
	11-16W	11-16W	16	6.35	11	1.02	0.9	1.1	
	11-14W	11-14W	14	6.35	11	1.16	1.0	1.2	
	16-72W	16-72W	72	9.525	16	0.23	0.7	0.4	
	16-60W	16-60W	60	9.525	16	0.27	0.7	0.4	
	16-56W	16-56W	56	9.525	16	0.29	0.7	0.4	
	16-48W	16-48W	48	9.525	16	0.34	0.6	0.6	
	16-40W	16-40W	40	9.525	16	0.41	0.6	0.6	
	16-36W	16-36W	36	9.525	16	0.45	0.6	0.6	
	16-32W	16-32W	32	9.525	16	0.51	0.6	0.6	
	16-30W	16-30W	30	9.525	16	0.55	0.6	0.7	
	16-28W	16-28W	28	9.525	16	0.58	0.6	0.7	
	16-26W	16-26W	26	9.525	16	0.63	0.7	0.8	
	16-24W	16-24W	24	9.525	16	0.68	0.7	0.8	
	16-22W	16-22W	22	9.525	16	0.74	0.8	0.9	
	16-20W	16-20W	20	9.525	16	0.81	0.8	0.9	
	16-19W	16-19W	19	9.525	16	0.86	0.8	1.0	
	16-18W	16-18W	18	9.525	16	0.90	0.8	1.0	
	16-16W	16-16W	16	9.525	16	1.02	0.9	1.1	
	16-14W	16-14W	14	9.525	16	1.16	1.0	1.2	
	16-12W	16-12W	12	9.525	16	1.36	1.1	1.4	
	16-11W	16-11W	11	9.525	16	1.48	1.1	1.5	
	16-10W	16-10W	10	9.525	16	1.63	1.1	1.5	
	16-9W	16-9W	9	9.525	16	1.81	1.2	1.7	
	16-8W	16-8W	8	9.525	16	2.03	1.2	1.5	
	22-7W	22-7W	7	12.7	22	3.32	1.6	2.3	
	22-6W	22-6W	6	12.7	22	2.71	1.6	2.3	
	22-5W	22-5W	5	12.7	22	3.25	1.7	2.4	
	27-4.5W	27-4.5W	4.5	15.875	27	3.61	1.8	2.6	
	27-4W	27-4W	4	15.875	27	4.07	2.0	2.9	

D

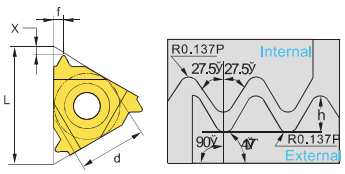
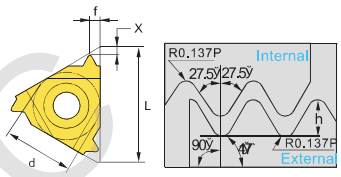
Whithworth (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
Internal	IRM 16-14W		14	9.525	16	1.16	1.0	1.2	
	16-11W		11	9.525	16	1.48	1.1	1.5	

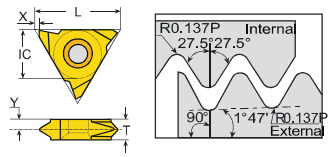
Whithworth (U Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	IRU 16-20W		20	9.525	16	0.81	0.8	0.9	
	16-19W		19	9.525	16	0.86	0.8	1.0	
	16-18W		18	9.525	16	0.90	0.8	1.0	
	16-16W		16	9.525	16	1.02	0.9	1.1	
	16-14W		14	9.525	16	1.16	1.0	1.2	
	16-12W		12	9.525	16	1.36	1.1	1.4	
	16-11W		11	9.525	16	1.48	1.1	1.5	
	16-10W		10	9.525	16	1.63	1.1	1.5	
	16-9W		9	9.525	16	1.81	1.2	1.7	
	16-8W		8	9.525	16	2.03	1.1	1.5	

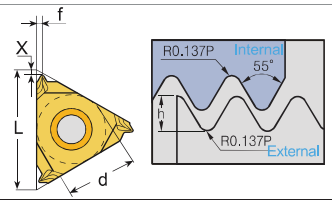
British Standard Pipe Thread (BSPT)

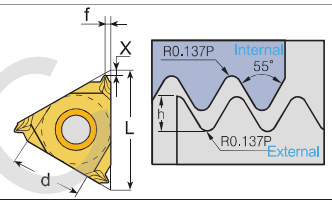
Type	Designation (Right)	Designation (Left)	Pitch (tpi)	d	L	hmin	x	f	Picture
External	ER 11-28BSPT	EL 11-28BSPT	28	6.35	11	0.58	0.6	0.6	
	11-19BSPT	11-19BSPT	19	6.35	11	0.86	0.8	0.9	
	11-14BSPT	11-14BSPT	14	6.35	11	1.16	0.9	1.0	
	16-28BSPT	16-28BSPT	28	9.525	16	0.58	0.6	0.6	
	16-19BSPT	16-19BSPT	19	9.525	16	0.86	0.8	0.9	
	16-14BSPT	16-14BSPT	14	9.525	16	1.16	1.0	1.2	
	16-11BSPT	16-11BSPT	11	9.525	16	1.48	1.1	1.5	
Internal	IR 11-28BSPT	IL 11-28BSPT	28	6.35	11	0.58	0.6	0.6	
	11-19BSPT	11-19BSPT	19	6.35	11	0.86	0.8	0.9	
	11-14BSPT	11-14BSPT	14	6.35	11	1.16	0.9	1.0	
	16-28BSPT	16-28BSPT	28	9.525	16	0.58	0.6	0.6	
	16-19BSPT	16-19BSPT	19	9.525	16	0.86	0.8	0.9	
	16-14BSPT	16-14BSPT	14	9.525	16	1.16	1.0	1.2	
	16-11BSPT	16-11BSPT	11	9.525	16	1.48	1.1	1.5	

British Standard Pipe Thread (V Style)

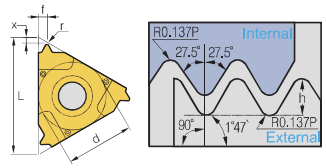
Type	Designation (Right)	Designation (Left)	Pitch (tpi)	d	L	hmin	x	f	t	Picture
External	VER 16-28BSPT	VEL 16-28BSPT	28	9.525	16	0.58	1.10	3.0	3.6	
	16-19BSPT	16-19BSPT	19	9.525	16	0.86	1.10	2.7	3.6	
	16-14BSPT	16-14BSPT	14	9.525	16	1.16	1.10	2.4	3.6	
	16-11BSPT	16-11BSPT	11	9.525	16	1.48	1.10	2.1	3.6	

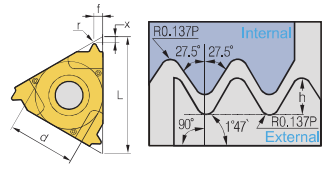
British Standard Pipe Thread (BSPT) (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			(tpi)	d	L	hmin	x	f	
External	ERM 16-14BSPT		14	9.525	16	1.16	1.0	1.2	
	6-11BSPT		11	9.525	16	1.48	1.1	1.5	

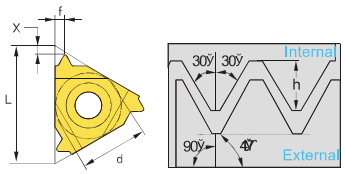
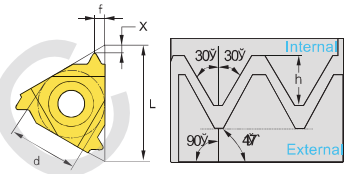
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			(tpi)	d	L	hmin	x	f	
External	IRM 16-14BSPT		14	9.525	16	1.16	1.0	1.2	
	6-11BSPT		11	9.525	16	1.48	1.1	1.5	

British Standard Pipe Thread (BSPT) (U Chip Breaker)

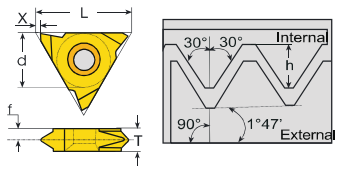
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			(tpi)	d	L	hmin	x	f	
External	ERU 16-14BSPT		14	9.525	16	1.16	1.0	1.2	
	6-11BSPT		11	9.525	16	1.48	1.1	1.5	

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			(tpi)	d	L	hmin	x	f	
External	IRU 16-14BSPT		14	9.525	16	1.16	1.0	1.2	
	6-11BSPT		11	9.525	16	1.48	1.1	1.5	

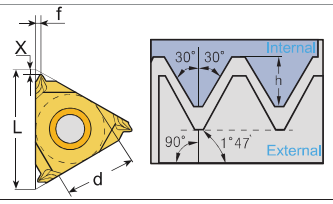
National Pipe Thread (NPT)

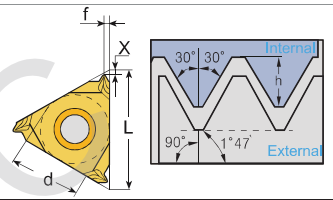
Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	ER 11-27NPT	EL 11-27NPT	27	6.35	11	0.66	0.7	0.8	
	11-18NPT	11-18NPT	18	6.35	11	1.01	0.8	1.0	
	11-14NPT	11-14NPT	14	6.35	11	1.33	0.8	1.0	
	16-27NPT	16-27NPT	27	9.525	16	0.66	0.7	0.8	
	16-18NPT	16-18NPT	18	9.525	16	1.01	0.8	1.0	
	16-14NPT	16-14NPT	14	9.525	16	1.33	0.9	1.2	
	16-11.5NPT	16-11.5NPT	11.5	9.525	16	1.64	1.1	1.5	
	16-8NPT	16-8NPT	8	9.525	16	2.42	1.3	1.8	
Internal	IR 11-27NPT	IL 11-27NPT	27	6.35	11	0.66	0.7	0.8	
	11-18NPT	11-18NPT	18	6.35	11	1.01	0.8	1.0	
	11-14NPT	11-14NPT	14	6.35	11	1.33	0.8	1.0	
	16-27NPT	16-27NPT	27	9.525	16	0.66	0.7	0.8	
	16-18NPT	16-18NPT	18	9.525	16	1.01	0.8	1.0	
	16-14NPT	16-14NPT	14	9.525	16	1.33	0.9	1.2	
	16-11.5NPT	16-11.5NPT	11.5	9.525	16	1.64	1.1	1.5	
	16-8NPT	16-8NPT	8	9.525	16	2.42	1.3	1.8	

National Pipe Thread (V Style)

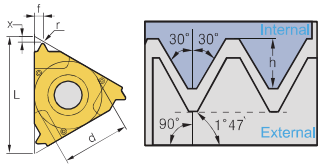
Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	t	Picture
External	VER 11-27NPT	VEL 11-27NPT	27	6.35	11	0.66	0.70	2.0	3.2	
	11-18NPT	11-18NPT	18	6.35	11	1.01	0.70	1.8	3.2	
	11-14NPT	11-14NPT	14	6.35	11	1.33	0.70	1.8	3.2	
	16-27NPT	16-27NPT	27	9.525	16	0.66	1.10	2.9	3.6	
	16-18NPT	16-18NPT	18	9.525	16	1.01	1.10	2.6	3.6	
	16-11.5NPT	16-11.5NPT	11.5	9.525	16	1.64	1.10	2.1	3.6	

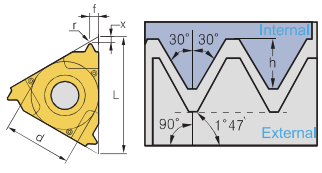
National Pipe Thread (NPT) (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	ERM 16-14NPT		14	9.525	16	1.33	0.9	1.2	
	16-11.5NPT		11.5	9.525	16	1.64	1.1	1.5	
	16-8NPT		8	9.525	16	2.42	1.3	1.8	

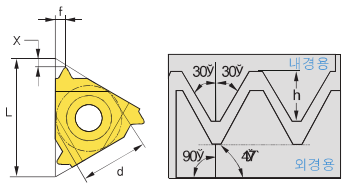
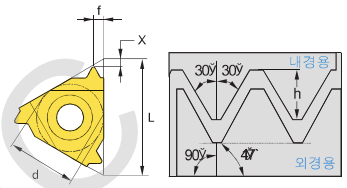
Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	IRM 16-14NPT		14	9.525	16	1.33	0.9	1.2	
	6-11.5NPT		11.5	9.525	16	1.64	1.1	1.5	
	16-8NPT		8	9.525	16	2.42	1.3	1.8	

National Pipe Thread (NPT) (U Chip Breaker)

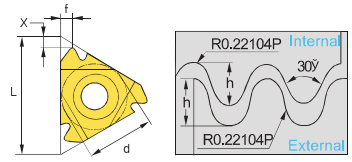
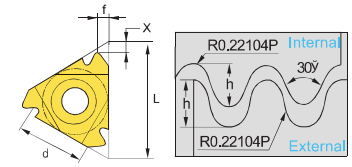
Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	ERU 16-14NPT		14	9.525	16	1.33	0.9	1.2	
	6-11.5NPT		11.5	9.525	16	1.64	1.1	1.5	
	16-8NPT		8	9.525	16	2.42	1.3	1.8	

Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	IRU 16-14NPT		14	9.525	16	1.33	0.9	1.2	
	6-11.5NPT		11.5	9.525	16	1.64	1.1	1.5	
	16-8NPT		8	9.525	16	2.42	1.3	1.8	

National Pipe Thread-Dryseal (NPTF)

Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	ER 11-27NPTF	EL 11-27NPT	27	6.35	11	0.64	0.7	0.8	
	11-18NPTF	11-18NPT	18	6.35	11	1.00	0.8	1.0	
	11-14NPTF	11-14NPT	14	6.35	11	1.35	0.8	1.0	
	16-27NPTF	16-27NPT	27	9.525	16	0.64	0.7	0.8	
	16-18NPTF	16-18NPT	18	9.525	16	1.00	0.8	1.0	
	16-14NPTF	16-14NPT	14	9.525	16	1.35	0.9	1.2	
	16-11.5NPTF	16-11.5NPT	11.5	9.525	16	1.63	1.1	1.5	
	16-8NPTF	16-8NPT	8	9.525	16	2.38	1.3	1.8	
Internal	IR 11-27NPTF	IL 11-27NPT	27	6.35	11	0.64	0.7	0.8	
	11-18NPTF	11-18NPT	18	6.35	11	1.00	0.8	1.0	
	11-14NPTF	11-14NPT	14	6.35	11	1.35	0.8	1.0	
	16-27NPTF	16-27NPT	27	9.525	16	0.64	0.7	0.8	
	16-18NPTF	16-18NPT	18	9.525	16	1.00	0.8	1.0	
	16-14NPTF	16-14NPT	14	9.525	16	1.35	0.9	1.2	
	16-11.5NPTF	16-11.5NPT	11.5	9.525	16	1.63	1.1	1.5	
	16-8NPTF	16-8NPT	8	9.525	16	2.38	1.3	1.8	

Round DIN 405

Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	ER 16-10RD	EL 16-10RD	10	9.525	16	1.27	1.1	1.2	
	16-8RD	16-8RD	8	9.525	16	1.59	1.4	1.3	
	16-6RD	16-6RD	6	9.525	16	2.12	1.5	1.7	
	22-6RD	22-6RD	6	12.7	22	2.12	1.5	1.7	
	22-4RD	22-4RD	4	12.7	22	3.18	2.2	2.3	
	27-4RD	27-4RD	4	15.875	27	3.18	2.2	2.3	
Internal	IR 16-10RD	IL 16-10RD	10	9.525	16	1.27	1.1	1.2	
	16-8RD	16-8RD	8	9.525	16	1.59	1.4	1.3	
	16-6RD	16-6RD	6	9.525	16	2.12	1.5	1.7	
	22-6RD	22-6RD	6	12.7	22	2.12	1.5	1.7	
	22-4RD	22-4RD	4	12.7	22	3.18	2.2	2.3	
	27-4RD	27-4RD	4	15.875	27	3.18	2.2	2.3	

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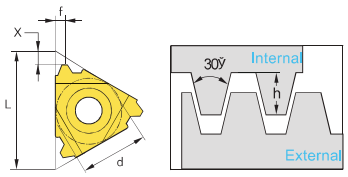
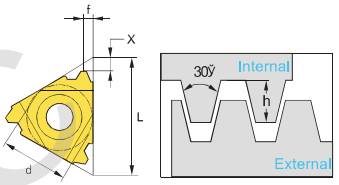
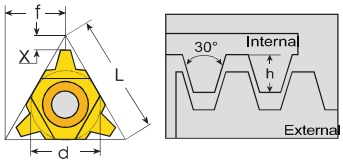
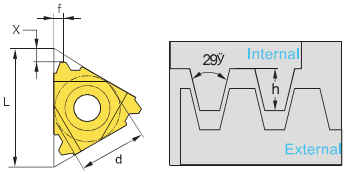
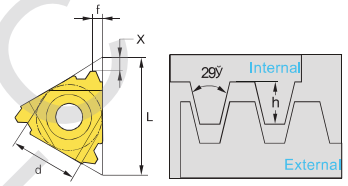
Trapez DIN 103 (TR)

Type	Designation (Right)	Designation (Left)	Pitch (mm)	Dimensions d	L	hmin	x	f	Picture
External	ER 11-1.5TR	EL 11-1.5TR	1.5	6.35	11	0.90	0.8	0.9	
	16-1.5TR	16-1.5TR	1.5	9.525	16	0.90	1.0	1.1	
	16-2.0TR	16-2.0TR	2.0	9.525	16	1.25	1.1	1.3	
	16-3.0TR	16-3.0TR	3.0	9.525	16	1.75	1.3	1.5	
	22-4.0TR	22-4.0TR	4.0	12.7	22	2.25	1.7	1.9	
	22-5.0TR	22-5.0TR	5.0	12.7	22	2.75	2.1	2.5	
	27-6.0TR	27-6.0TR	6.0	15.875	27	3.50	2.3	2.7	
	27-7.0TR	27-7.0TR	7.0	15.875	27	4.00	2.7	3.2	
Internal	IR 11-1.5TR	IL 11-1.5TR	1.5	6.35	11	0.90	0.8	0.9	
	16-1.5TR	16-1.5TR	1.5	9.525	16	0.90	1.0	1.1	
	16-2.0TR	16-2.0TR	2.0	9.525	16	1.25	1.1	1.3	
	16-2.5TR	16-2.5TR	2.5	9.525	16	1.53	1.2	1.4	
	16-3.0TR	16-3.0TR	3.0	9.525	16	1.75	1.3	1.5	
	22-4.0TR	22-4.0TR	4.0	12.7	22	2.25	1.7	1.9	
	22-5.0TR	22-5.0TR	5.0	12.7	22	2.75	2.1	2.5	
	27-6.0TR	27-6.0TR	6.0	15.8	27	3.50	2.3	2.7	
	27-7.0TR	27-7.0TR	7.0	15.875	27	4.00	2.7	3.2	

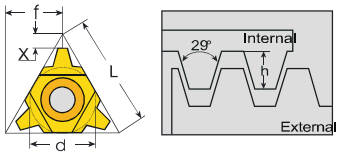
Trapez DIN 103 (TR)

Type	Designation (Right+Left)	Pitch (mm)	Dimensions d	L	hmin	x	f	Picture
Internal+External	UEI 22-6.0TR	6.0	12.7	22	3.50	2.0	11.0	
	22-7.0TR	7.0	12.7	22	4.00	2.3	11.0	
	22-8.0TR	8.0	12.7	22	4.50	2.6	11.0	
	22-8.0TR	8.0	15.875U	27	4.50	2.6	13.7	
	27-9.0TR	90	15.875U	27	5.00	3.0	13.7	

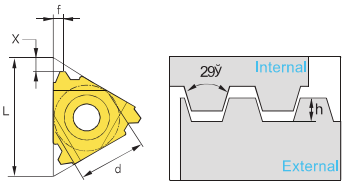
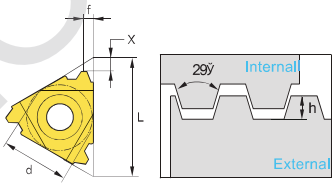
American ACME (ACME)

Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	ER 11-16ACME	EL 11-16ACME	16	6.35	11	0.92	1.0	1.1	
	16-16ACME	16-16ACME	16	9.525	16	0.92	1.0	1.1	
	16-14ACME	16-14ACME	14	9.525	16	1.03	1.0	1.2	
	16-12ACME	16-12ACME	12	9.525	16	1.19	1.1	1.2	
	16-10ACME	16-10ACME	10	9.525	16	1.52	1.3	1.4	
	16-8ACME	16-8ACME	8	9.525	16	1.84	1.4	1.5	
	16-6ACME	16-6ACME	6	9.525	16	2.37	1.7	1.9	
	22-6ACME	22-6ACME	6	12.7	22	2.37	1.8	2.1	
	22-5ACME	22-5ACME	5	12.7	22	2.79	2.0	2.3	
	27-4ACME	27-4ACME	4	15.875	27	3.43	2.4	2.7	
Internal	IR 11-16ACME	IL 11-16ACME	16	6.35	11	0.92	0.9	0.9	
	16-16ACME	16-16ACME	16	9.525	16	0.92	1.0	1.1	
	16-14ACME	16-14ACME	14	9.525	16	1.03	1.1	1.2	
	16-12ACME	16-12ACME	12	9.525	16	1.19	1.2	1.3	
	16-10ACME	16-10ACME	10	9.525	16	1.52	1.2	1.3	
	16-8ACME	16-8ACME	8	9.525	16	1.84	1.4	1.5	
	16-6ACME	16-6ACME	6	9.525	16	2.37	1.7	1.9	
	22-6ACME	22-6ACME	6	12.7	22	2.37	1.8	2.1	
	22-5ACME	22-5ACME	5	12.7	22	2.79	2.0	2.3	
	27-4ACME	27-4ACME	4	15.875	27	3.43	2.3	2.6	

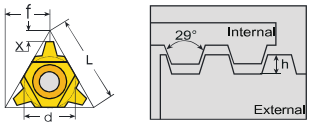
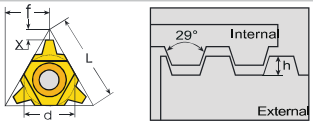
American ACME (U Style)

Type	Designation (Right+Left)	Pitch (mm)	Dimensions d	L	hmin	x	f	Picture
Internal+External	UEI 11-8ACME	8	6.35U	11	1.84	1.0	5.5	
	22-4ACME	4	12.7U	22	3.43	2.3	11.0	
	22-3ACME	3	12.7U	22	4.49	2.9	11.0	
	27-3ACME	3	15.875U	27	4.49	2.9	13.7	

Stub ACME (STACME)

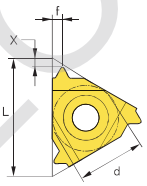
Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	ER 11-16STACME	EL 11-16STACME	16	6.35	11	0.60	1.0	1.0	
	16-16STACME	16-16STACME	16	9.525	16	0.60	1.0	1.0	
	16-14STACME	16-14STACME	14	9.525	16	0.67	1.1	1.1	
	16-12STACME	16-12STACME	12	9.525	16	0.76	1.2	1.2	
	16-10STACME	16-10STACME	10	9.525	16	1.02	1.2	1.3	
	16-8STACME	16-8STACME	8	9.525	16	1.21	1.4	1.5	
	16-6STACME	16-6STACME	6	9.525	16	1.52	1.7	1.8	
	22-6STACME	22-6STACME	6	12.7	22	1.52	1.7	1.8	
	22-5STACME	22-5STACME	5	12.7	22	1.78	2.1	2.3	
	27-4STACME	27-4STACME	4	15.875	27	2.16	2.3	2.4	
	27-3STACME	27-3STACME	3	15.875	27	2.79	2.9	2.9	
Internal	IR 11-16STACME	IL 11-16STACME	16	6.35	11	0.60	1.0	1.0	
	16-16STACME	16-16STACME	16	9.525	16	0.60	1.0	1.0	
	16-14STACME	16-14STACME	14	9.525	16	0.67	1.1	1.1	
	16-12STACME	16-12STACME	12	9.525	16	0.76	1.1	1.2	
	16-10STACME	16-10STACME	10	9.525	16	1.02	1.2	1.3	
	16-8STACME	16-8STACME	8	9.525	16	1.21	1.4	1.5	
	16-6STACME	16-6STACME	6	9.525	16	1.52	1.7	1.8	
	22-6STACME	22-6STACME	6	12.7	22	1.52	1.7	1.8	
	22-5STACME	22-5STACME	5	12.7	22	1.78	2.1	2.3	
	27-4STACME	27-4STACME	4	15.875	27	2.16	2.3	2.4	
	27-3STACME	27-3STACME	3	15.875	27	2.79	2.9	2.9	

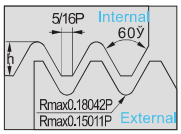
Stub ACME (U Style)

Type	Designation (Right+Left)		Pitch (mm)	Dimensions d	L	hmin	x	f	Picture
External	UE	22-4STACME	5.0	12.7U	22	2.16	2.6	11.0	
		22-3STACME	5.5	12.7U	22	2.79	3.4	11.0	
Internal	UI	22-4STACME	5.5	12.7U	22	2.16	2.5	11.0	
		22-3STACME	6.0	12.7U	22	2.79	3.3	11.0	

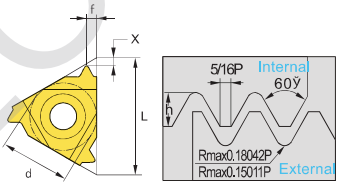
UNJ (Unified Constant Thread)

Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	ER 11-48UNJ	EL 11-48UNJ	48	6.35	11	0.31	0.6	0.5	
	11-44UNJ	11-44UNJ	44	6.35	11	0.33	0.6	0.6	
	11-40UNJ	11-40UNJ	40	6.35	11	0.37	0.6	0.6	
	11-36UNJ	11-36UNJ	36	6.35	11	0.41	0.6	0.6	
	11-32UNJ	11-32UNJ	32	6.35	11	0.46	0.6	0.7	
	11-28UNJ	11-28UNJ	28	6.35	11	0.52	0.7	0.7	
	11-24UNJ	11-24UNJ	24	6.35	11	0.61	0.7	0.8	
	11-20UNJ	11-20UNJ	20	6.35	11	0.73	0.8	0.9	
	11-18UNJ	11-18UNJ	18	6.35	11	0.81	0.8	1.0	
	11-16UNJ	11-16UNJ	16	6.35	11	0.92	0.9	1.1	
	11-14UNJ	11-14UNJ	14	6.35	11	1.05	1.0	1.2	
	16-48UNJ	16-48UNJ	48	9.525	16	0.31	0.6	0.5	
	16-44UNJ	16-44UNJ	44	9.525	16	0.33	0.6	0.6	
	16-40UNJ	16-40UNJ	40	9.525	16	0.37	0.6	0.6	
	16-36UNJ	16-36UNJ	36	9.525	16	0.41	0.6	0.6	
	16-32UNJ	16-32UNJ	32	9.525	16	0.46	0.6	0.7	
	16-28UNJ	16-28UNJ	28	9.525	16	0.52	0.7	0.7	
	16-24UNJ	16-24UNJ	24	9.525	16	0.61	0.7	0.8	
	16-20UNJ	16-20UNJ	20	9.525	16	0.73	0.8	0.9	
	16-18UNJ	16-18UNJ	18	9.525	16	0.81	0.8	1.0	
	16-16UNJ	16-16UNJ	16	9.525	16	0.92	0.9	1.1	
	16-14UNJ	16-14UNJ	14	9.525	16	1.05	1.0	1.2	
	16-13UNJ	16-13UNJ	13	9.525	16	1.13	1.0	1.3	
	16-12UNJ	16-12UNJ	12	9.525	16	1.22	1.1	1.3	
	16-11UNJ	16-11UNJ	11	9.525	16	1.33	1.2	1.5	
	16-10UNJ	16-10UNJ	10	9.525	16	1.47	1.2	1.5	
	16-9UNJ	16-9UNJ	9	9.525	16	1.63	1.3	1.7	
	16-8UNJ	16-8UNJ	8	9.525	16	1.83	1.2	1.6	
	22-7UNJ	22-7UNJ	7	12.7	22	2.09	1.7	2.3	
	22-6UNJ	22-6UNJ	6	12.7	22	2.44	1.7	2.3	
	22-5UNJ	22-5UNJ	5	12.7	22	2.93	1.8	2.5	
	27-4.5UNJ	27-4.5UNJ	4.5	15.875	27	3.26	2.0	2.7	
	27-4UNJ	27-4UNJ	4	15.875	27	3.67	2.2	3.0	

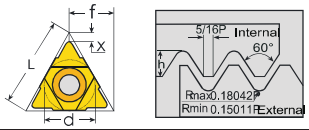
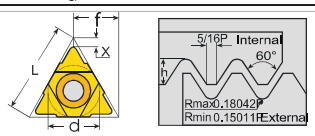




UNJ (Unified Constant Thread)

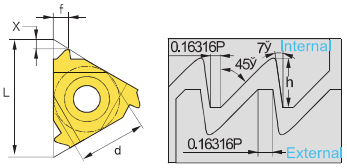
Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	Hmin	x	f	Picture
Internal	IR 11-48UNJ	IL 11-48UNJ	48	6.35	11	0.28	0.6	0.5	
	11-44UNJ	11-44UNJ	44	6.35	11	0.30	0.6	0.6	
	11-40UNJ	11-40UNJ	40	6.35	11	0.33	0.6	0.6	
	11-36UNJ	11-36UNJ	36	6.35	11	0.37	0.6	0.6	
	11-32UNJ	11-32UNJ	32	6.35	11	0.42	0.6	0.7	
	11-28UNJ	11-28UNJ	28	6.35	11	0.47	0.7	0.7	
	11-24UNJ	11-24UNJ	24	6.35	11	0.55	0.7	0.8	
	11-20UNJ	11-20UNJ	20	6.35	11	0.66	0.8	0.9	
	11-18UNJ	11-18UNJ	18	6.35	11	0.74	0.8	1.0	
	11-16UNJ	11-16UNJ	16	6.35	11	0.83	0.9	1.1	
	11-14UNJ	11-14UNJ	14	9.525	11	0.95	1.0	1.2	
	16-48UNJ	16-48UNJ	48	9.525	16	0.28	0.6	0.5	
	16-44UNJ	16-44UNJ	44	9.525	16	0.30	0.6	0.6	
	16-40UNJ	16-40UNJ	40	9.525	16	0.33	0.6	0.6	
	16-36UNJ	16-36UNJ	36	9.525	16	0.37	0.6	0.6	
	16-32UNJ	16-32UNJ	32	9.525	16	0.42	0.6	0.7	
	16-28UNJ	16-28UNJ	28	9.525	16	0.47	0.7	0.7	
	16-24UNJ	16-24UNJ	24	9.525	16	0.55	0.7	0.8	
	16-20UNJ	16-20UNJ	20	9.525	16	0.66	0.8	0.9	
	16-18UNJ	16-18UNJ	18	9.555	16	0.74	0.8	1.0	
	16-16UNJ	16-16UNJ	16	9.525	16	0.83	0.9	1.1	
	16-14UNJ	16-14UNJ	14	9.525	16	0.95	1.0	1.2	
	16-13UNJ	16-13UNJ	13	9.525	16	1.02	1.0	1.3	
	16-12UNJ	16-12UNJ	12	9.525	16	1.11	1.1	1.3	
	16-11UNJ	16-11UNJ	11	9.525	16	1.21	1.2	1.5	
	16-10UNJ	16-10UNJ	10	9.525	16	1.33	1.2	1.5	
	16-9UNJ	16-9UNJ	9	9.525	16	1.48	1.3	1.7	
	16-8UNJ	16-8UNJ	8	9.525	16	1.66	1.2	1.6	
	22-7UNJ	22-7UNJ	7	12.7	22	1.90	1.7	2.3	
	22-6UNJ	22-6UNJ	6	12.7	22	2.21	1.7	2.3	
	22-5UNJ	22-5UNJ	5	12.7	22	2.66	1.8	2.5	
	27-4.5UNJ	27-4.5UNJ	4.5	15.875	27	2.95	2.0	2.7	
	27-4UNJ	27-4UNJ	4	15.875	27	3.32	2.2	3.0	

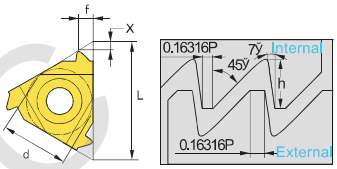
UNJ (U Style)

Type	Designation (Right+Left)	Pitch (mm)	Dimensions d	L	hmin	x	f	Picture
External	UE 22-4.5UNJ	4.5	12.7U	22	3.26	2.1	11.0	
	22-4UNJ	4	12.7U	22	3.67	2.1	11.0	
Internal	UI 22-4.5UNJ	4.5	12.7U	22	2.95	2.1	11.0	
	22-4UNJ	4	12.7U	22	3.32	2.2	11.0	

American Buttress (ABUT)

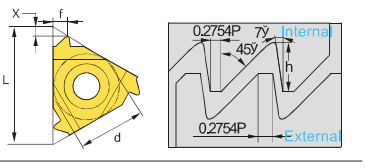
Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	ER 11-20ABUT	EL 11-20ABUT	20	6.35	11	0.84	1.0	1.4	
	11-16ABUT	11-16ABUT	16	6.35	11	1.05	1.3	1.9	
	16-20ABUT	16-20ABUT	20	9.525	16	0.84	1.0	1.4	
	16-16ABUT	16-16ABUT	16	9.525	16	1.05	1.3	1.9	
	16-12ABUT	16-12ABUT	12	9.525	16	1.40	1.4	2.0	
	16-10ABUT	16-10ABUT	10	9.525	16	1.68	1.5	2.3	
	22-8ABUT	22-8ABUT	8	12.7	22	2.10	2.0	3.2	
	22-6ABUT	22-6ABUT	6	12.7	22	2.80	2.2	3.5	
Internal	IR 11-20ABUT	IL 11-20ABUT	20	6.35	11	0.84	1.0	1.4	
	11-16ABUT	11-16ABUT	16	6.35	11	1.05	1.3	1.9	
	16-20ABUT	16-20ABUT	20	9.525	16	0.84	1.0	1.4	
	16-16ABUT	16-16ABUT	16	9.525	16	1.05	1.3	1.9	
	16-12ABUT	16-12ABUT	12	9.525	16	1.40	1.4	2.0	
	16-10ABUT	16-10ABUT	10	9.525	16	1.68	1.5	2.3	
	22-8ABUT	22-8ABUT	8	12.7	22	2.10	2.0	3.2	
	22-6ABUT	22-6ABUT	6	12.7	22	2.80	2.2	3.5	

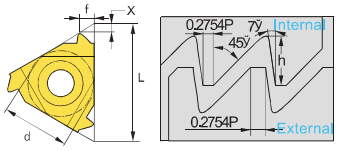




British Buttress (BBUT)

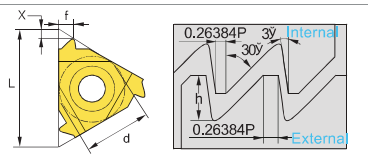
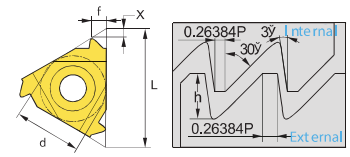
Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	ER 16-16BBUT	EL 16-16BBUT	16	9.525	16	0.80	1.1	1.6	
	16-12BBUT	16-12BBUT	12	9.525	16	1.07	1.4	2.1	
	16-10BBUT	16-10BBUT	10	9.525	16	1.28	1.4	2.2	
	16-8BBUT	16-8BBUT	8	9.525	16	1.61	1.6	2.5	
	22-8BBUT	22-8BBUT	8	12.7	22	1.61	1.6	2.5	
Internal	IR 16-16BBUT	IL 16-16BBUT	16	9.525	16	0.80	1.1	1.6	
	16-12BBUT	16-12BBUT	12	9.525	16	1.07	1.4	2.1	
	16-10BBUT	16-10BBUT	10	9.525	16	1.28	1.4	2.2	
	16-8BBUT	16-8BBUT	8	9.525	16	1.61	1.6	2.5	
	22-8BBUT	22-8BBUT	8	12.7	22	1.61	1.6	2.5	



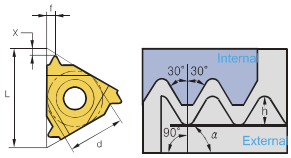
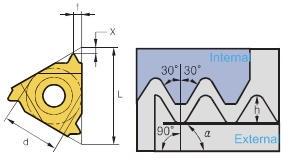


D

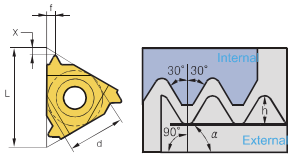
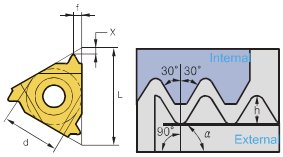
Metric Buttress (SAGE)

Type	Designation (Right)	Designation (Left)	Pitch (mm)	Dimensions d	L	hmin	x	f	Picture
External	ER 16-2.0SAGE	EL 16-2.0SAGE	2.0	9.525	16	1.74	1.47	2.08	
	22-2.0SAGE	22-2.0SAGE	2.0	12.7	22	1.74	1.47	2.08	
	22-3.0SAGE	22-3.0SAGE	3.0	12.7	22	2.60	1.79	2.60	
	27-4.0SAGE	27-4.0SAGE	4.0	15.875	27	3.55	1.93	3.20	
Internal	IR 16-2.0SAGE	IL 16-2.0SAGE	2.0	9.525	16	1.50	1.52	2.2	
	22-3.0SAGE	22-3.0SAGE	3.0	12.7	22	2.25	1.66	2.9	
	27-4.0SAGE	27-4.0SAGE	4.0	5/8	27	3.09	2.12	3.2	

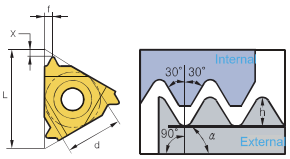
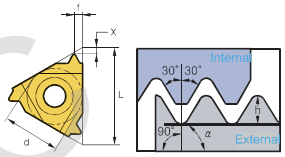
API V-0.038R (Full form) API spec 7-2

Type	Designation	Pitch (mm)	Size	Dimensions d	L	hmin	x	f	Picture
External	ER 22-4API382	4	NC23-NC50	12.7	22	3.09	2.1	2.8	
	22-4API383	4	NC56-NC77	12.7	22	3.08	2.1	2.8	
	EL 22-4API382	4	NC23-NC50	12.7	22	3.09	2.1	2.8	
	22-4API383	4	NC56-NC77	12.7	22	3.08	2.1	2.8	
Internal	IR 22-4API382	4	NC23-NC50	12.7	22	3.09	2.1	2.8	
	22-4API383	4	NC56-NC77	12.7	22	3.08	2.1	2.8	
	IL 22-4API382	4	NC23-NC50	12.7	22	3.09	2.1	2.8	
	22-4API383	4	NC56-NC77	12.7	22	3.08	2.1	2.8	

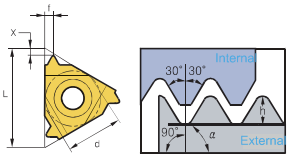
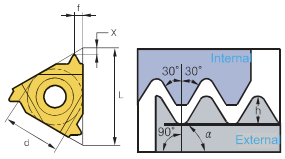
API V-0.040

Type	Designation	Pitch (mm)	Size	Dimensions d	L	hmin	x	f	Picture
External	ER 22-5API403	5	2 3/8"-4 1/2"REG	12.7	22	2.99	1.8	2.6	
	27-5API403	5	2 3/8"-4 1/2"REG	15.875	27	2.99	1.9	2.7	
	EL 22-5API403	5	2 3/8"-4 1/2"REG	12.7	22	2.99	1.8	2.6	
	27-5API403	5	2 3/8"-4 1/2"REG	15.875	27	2.99	1.9	2.7	
Internal	IR 22-5API403	5	2 3/8"-4 1/2"REG	12.7	22	2.99	1.8	2.6	
	27-5API403	5	2 3/8"-4 1/2"REG	15.875	27	2.99	1.9	2.7	
	IL 22-5API403	5	2 3/8"-4 1/2"REG	12.7	22	2.99	1.8	2.6	
	7-5API403	5	2 3/8"-4 1/2"REG	15.875	27	2.99	1.9	2.7	

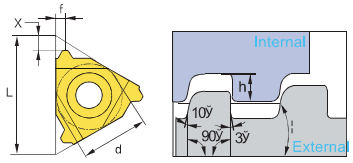
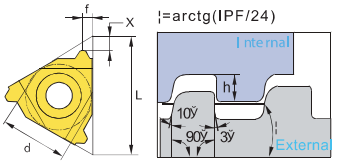
API V-0.050

Type	Designation	Pitch (mm)	Size	Dimensions d	L	hmin	x	f	Picture
External	ER 22-4API502	4	6 5/8"REG	12.7	22	3.75	2.0	2.9	
	22-4API503	4	5 1/2", 7 5/8" 8 5/8"REG	12.7	22	3.74	2.0	2.9	
	27-4API502	4	6 5/8"REG	15.875	27	3.75	2.1	3.1	
	27-4API503	4	5 1/2", 7 5/8" 8 5/8"REG	15.875	27	3.74	2.1	3.1	
	EL 22-4API502	4	6 5/8"REG	12.7	22	3.75	2.0	2.9	
	22-4API503	4	5 1/2", 7 5/8" 8 5/8"REG	12.7	22	3.74	2.0	2.9	
	27-4API502	4	6 5/8"REG	15.875	27	3.75	2.1	3.1	
	27-4API503	4	5 1/2", 7 5/8" 8 5/8"REG	15.875	27	3.74	2.1	3.1	
Internal	IR 22-4API502	4	6 5/8"REG	12.7	22	3.75	2.1	3.1	
	22-4API503	4	5 1/2", 7 5/8" 8 5/8"REG	12.7	22	3.74	2.0	2.9	
	27-4API502	4	6 5/8"REG	15.875	27	3.75	2.1	3.1	
	27-4API503	4	5 1/2", 7 5/8" 8 5/8"REG	15.875	27	3.74	2.1	3.1	
	IL 22-4API502	4	6 5/8"REG	12.7	22	3.75	2.1	3.1	
	22-4API503	4	5 1/2", 7 5/8" 8 5/8"REG	12.7	22	3.74	2.0	2.9	
	27-4API502	4	6 5/8"REG	15.875	27	3.75	2.1	3.1	
	27-4API503	4	5 1/2", 7 5/8" 8 5/8"REG	15.875	27	3.74	2.1	3.1	

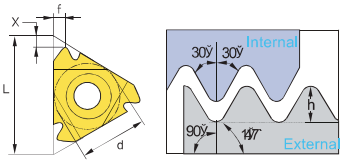
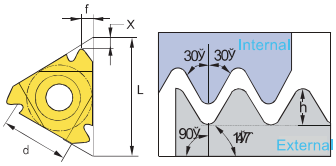
API V-0.040

Type	Designation	Pitch (mm)	Size	Dimensions d	L	hmin	x	f	Picture
External	ER 22-6API551	6	NC10-NC16	12.7	22	1.41	2.6	2.0	
	EL 22-6API551	6	NC10-NC16	12.7	22	1.41	2.6	2.0	
Internal	IR 22-6API551	6	NC10-NC16	12.7	22	1.41	2.6	2.0	
	IL 22-6API551	6	NC10-NC16	12.7	22	1.41	2.6	2.0	

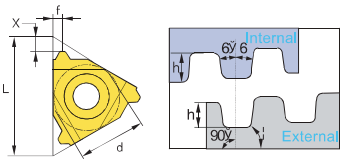
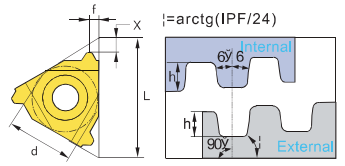
API Buttress Casing (BUT)

Type	Designation (Right)	Designation (Left)	Pitch (tpi)	IPF	Dimensions d	L	hmin	x	f	Picture
External	ER 22-5BUT75	EL 22-5BUT75	5	0.75	12.7	22	1.55	3.1	1.9	
	22-5BUT1	22-5BUT1	5	1	12.7	22	1.55	3.1	1.9	
Internal	IR 22-5BUT75	IL 22-5BUT75	5	0.75	12.7	22	1.55	2.8	1.9	
	22-5BUT1	22-5BUT1	5	1	12.7	22	1.55	2.8	1.9	

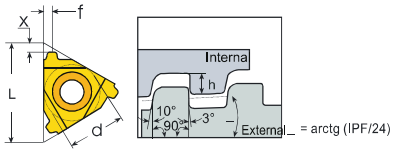
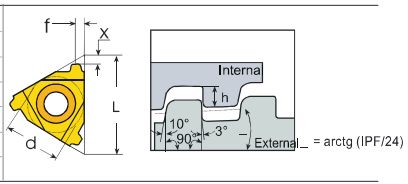
API Round Casing & Tubing (APIRD)

Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Dimensions d	L	hmin	x	f	Picture
External	ER 16-10APIRD	EL 16-10APIRD	10	9.525	16	1.41	1.2	1.4	
	16-8APIRD	16-8APIRD	8	9.525	16	1.81	1.3	1.5	
Internal	IR 16-10APIRD	IL 16-10APIRD	10	9.525	16	1.41	1.2	1.4	
	16-8APIRD	16-8APIRD	8	9.525	16	1.81	1.3	1.5	

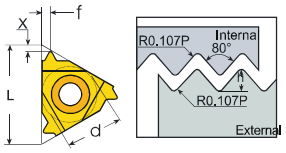
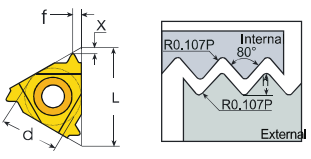
Extreme Line Casing (EL)

Type	Designation (Right)	Designation (Left)	Pitch (mm)	Dimensions IPF	d	L	hmin	x	f	Picture
External	ER 22-6EL15	EL 22-6EL15	6	1.5	12.7	22	1.21	1.9	1.9	
	22-5EL125	22-5EL125	5	1.25	12.7	22	1.71	2.3	2.4	
Internal	IR 22-6EL15	IL 22-6EL15	6	1.5	12.7	22	1.39	1.8	1.9	
	22-5EL125	22-5EL125	5	1.25	12.7	22	1.91	2.2	2.4	

VAM

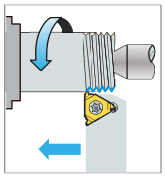
Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Taper IPF	SIZE	Dimensions d	L	hmin	x	f	Picture
External	ER 16-8VAM	EL 16-8VAM	8	0.75	23/8 " 27/8 "	9.525	16	0.97	1.7	1.3	
	22-6VAM	22-6VAM	6	0.75	31/2 "	12.7	22	0.67	2.4	2.4	
	22-5VAM	22-5VAM	5	0.75	5 " ~95/8 "	12.7	22	1.54	2.4	2.7	
Internal	IR 16-8VAM	IL 16-8VAM	8	0.75	23/8 " 27/8 "	9.525	16	0.97	1.7	1.8	
	22-6VAM	22-6VAM	6	0.75	31/2 "	12.7	22	0.97	2.5	2.5	
	22-5VAM	22-5VAM	5	0.75	5 " ~95/8 "	12.7	22	1.54	2.4	2.5	

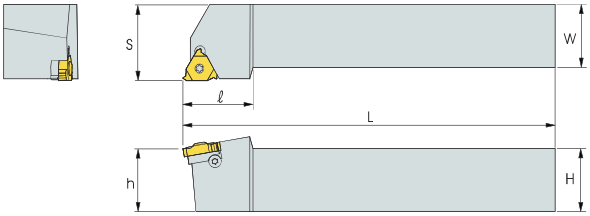
Pg

Type	Designation (Right)	Designation (Left)	Pitch (tpi)	Thread	Dimensions d	L	hmin	x	f	Picture
External	ER 11-20Pg	EL 11-20Pg	20	Pg7	6.35	11	0.61	0.8	0.9	
	11-18Pg	11-18Pg	18	Pg9/11/13.5/16	6.35	11	0.67	0.8	1.0	
	11-16Pg	11-16Pg	16	Pg21/29/36/42/48	6.35	11	0.76	0.9	1.1	
	16-20Pg	16-20Pg	20	Pg7	9.525	16	0.61	0.8	0.9	
	16-18Pg	16-18Pg	18	Pg9/11/13.5/16	9.525	16	0.67	0.8	1.0	
	16-20Pg	16-20Pg	16	Pg21/29/36/42/48	9.525	16	0.76	0.9	1.1	
Internal	IR 11-20Pg	IL 11-20Pg	20	Pg7	6.35	11	0.64	0.8	0.9	
	11-18Pg	11-18Pg	18	Pg9/11/13.5/16	6.35	11	0.67	0.8	1.0	
	11-16Pg	11-16Pg	16	Pg21/29/36/42/48	6.35	11	0.76	0.9	1.1	
	16-20Pg	16-20Pg	20	Pg7	9.525	16	0.64	0.8	0.9	
	16-18Pg	16-18Pg	18	Pg9/11/13.5/16	9.525	16	0.67	0.8	1.0	
	16-20Pg	16-20Pg	16	Pg21/36/42/48	9.525	16	0.76	0.9	1.1	

D

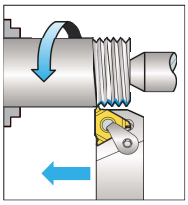
SER/L

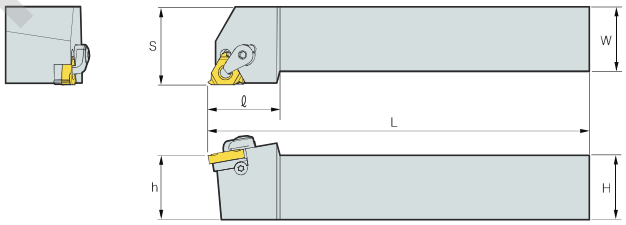




Designation	Dimensions (mm)						Applicable Insert	Shim	Screw	Screw	Wrench
	H	W	L	S	h	l					
SER/L 0808-H11	8	8	100	11	8	17.5	11ER/L	X	M2.5X8	X	T-8
1010-F11	10	10	80	11	10	17.5			M3.5X9		T15
1212-F11	12	12	80	12	12	17.5					
1212-F16	12	12	80	16	12	22	16ER/L	STM16R STM16L	M3.5X12	M3X6N	T-15
1616-H16	16	16	100	20	16	20.5					
2020-K16	20	20	125	25	20	30					
2525-M16	25	25	150	32	25	30					
3232-P16	32	32	170	40	32	30	22ER/L	STM22R STM22L	M4X16	M4X6N	T-20
2525-M22	25	25	150	32	25	36					
3232-P22	32	32	170	40	32	36					
4040-R22	40	40	200	50	40	36					
2525-M27	25	25	150	32	25	35	27ER/L	STM27	M5X20	M4X6N	T-20
3232-P27	32	32	170	40	32	40					
4040-R27	40	40	200	50	40	40					
5050-T27	50	50	300	60	50	40					

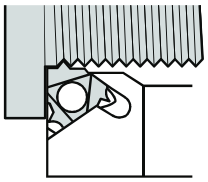
CER/L

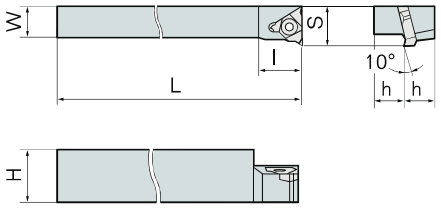




Designation	Dimensions (mm)						Applicable Insert	Spare parts				
	H	W	L	S	h	l		Shim	Clamp	Clamp Screw	Screw	Wrench
CER/L 1616-H16	16	16	100	16	16	20.5	16ER/L	STM16R STM16L	CH5R3	CHX0513	CTS-5	L2.5
2020-K16	20	20	125	20	20	30						
2525-M16	25	25	150	25	25	30						
3232-P16	32	32	170	32	32	30						
2525-M22	25	25	150	25	25	36	22ER/L	STM22R STM22L	CH6R3	CHX0621	CTS-6	L3.0
3232-P22	32	32	170	32	32	36						
4040-R22	40	40	200	40	40	36						
2525-M27	25	25	150	25	25	35	27ER/L	STM27R STM27L	CH8R3	CHX0822	CTS-8	L4.0
3232-P27	32	32	170	32	32	40						
4040-R27	40	40	200	40	40	40						
5050-T27	50	50	300	50	50	40						

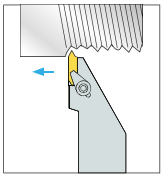
SER/L-G

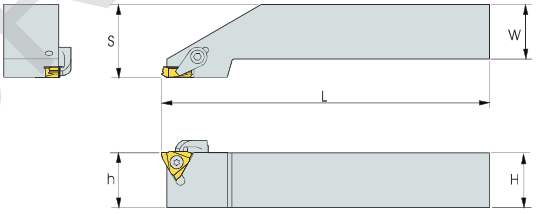




Designation	Dimensions (mm)						Applicable Insert	Spare parts			
	H	W	L	S	h	l		Shim	Screw	Shim Screw	Wrench
SER/L 0808-H11G	8	8	100	12	8	16	11ER/L	X	M2.5*8	X	T-8
1010-H11G	10	10	100	16	10	16					
1010-H16G	10	10	100	16	12	16	16ER/L		M3.5*9		T-15
1212-H16G	12	12	100	17.2	12	17.8					
1414-H16G	14	14	100	17.2	14	17.8					
1616-H16G	16	16	100	20	16	23		STM16R STM16L	M3.5*12	M3*6N	T-15
2020-K16G	20	20	125	25	20	23					

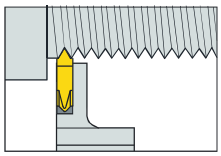
CER/L-V

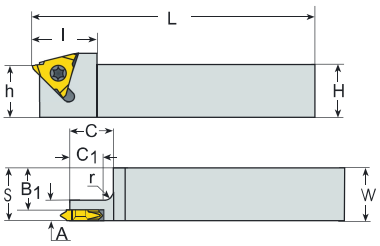




Designation	Dimensions (mm)					Applicable Insert	Spare parts			
	H	W	L	S	h		Clamp	Clamp Screw	Screw	Wrench
CER/L 1616-H16V	16	16	100	20	16	16VER/L	CS6R1	ML0622	M3.5*9	T-15 L3.0
2020-K16V	20	20	125	25	20					
2525-M16V	25	25	150	30	25					
3232-P16V	32	32	170	40	32					
2020-K22V	20	20	125	25	20	22VER/L	CS6R1	ML0622	M4*10	T-20 L4.0
2525-M22V	25	25	150	30	25					
3232-P22V	32	32	170	40	32					

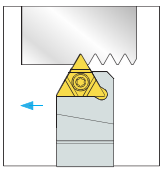
SER/L-VS

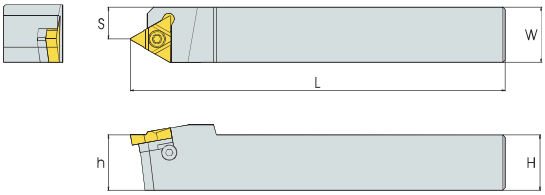




Designation	Dimensions (mm)											Applicable Insert	Spare parts	
	H	W	L	A	B1	C	C1	S	h	l	r		Screw	Wrench
SER/L 0808-F11VS	8	8	80	7	4.8	12.5	11.5	8	10	14.0	1	11VER/L	M2.5*5	T-8
1010-F11VS	10	10	80	7	6.8	12.5	11.5	10	10	14.0	1			
1212-F11VS	12	12	80	7	8.8	14.5	11.5	12	12	14.0	3			
1616-H11VS	16	16	100	7	12.8	14.5	11.5	16	16	14.0	3			
1010-F16VS	10	10	80	7	6.4	14.5	11.5	10	14	18.5	3	16VER/L	M3.5*9	T-15
1212-F16VS	12	12	80	7	8.4	14.5	11.5	12	14	18.5	3			
1616-H16VS	16	16	100	7	12.4	14.5	11.5	16	16	25.0	3			
2020-K16VS	20	20	125	7	16.4	16.5	11.5	20	20	30.0	5			
2525-M16VS	25	25	150	7	21.4	16.5	11.5	25	25	30.0	5			
3232-P16VS	32	32	170	7	28.4	16.5	11.5	32	32	30.0	5			
4040-R16VS	40	40	200	7	36.4	16.5	11.5	40	40	30.5	5			
2525-M22VS	25	25	150	12	20.2	16.5	11.5	25	25	30.0	5	22VER/L	M4*10	T-20
3232-P22VS	32	32	170	12	27.2	16.5	11.5	32	32	30.0	5			
4040-R22VS	40	40	200	12	35.2	16.5	11.5	40	40	30.0	5			

SER/L-U





Designation	Dimensions (mm)						Applicable Insert	Shim	Screw	Shim Screw	Wrench
	H	W	L	S	h	l					
SER/L 2525-M22U	25	25	150	14	25	38	22UE	STM22UR STM22UL	M4*16	M4X6N	T-20
3232-P22U	32	32	170	21.5	32	38					
4040-R22U	40	40	200	29	40	38					
2525-M27U	25	25	150	14	25	40	27UE	STM27UR STM27UL	M5*20	M5*8N	T-20
3232-P27U	32	32	170	21.5	32	40					
4040-R27U	40	40	200	29	40	40					
5050-T27U	50	50	300	39	50	40					

SNR/L

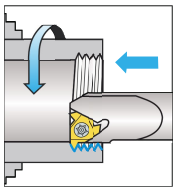


Fig1

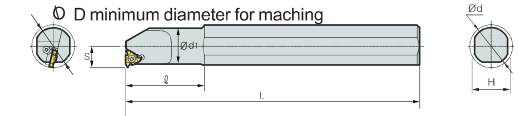
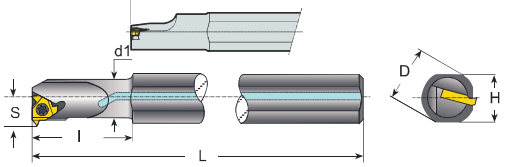


Fig2



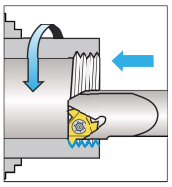
Designation	Dimensions (mm)							Applicable Insert	Spare parts				
	dmin	d	d1	H	L	S	l		Shim	Screw	Shim Screw	Wrench	Fig.
SNR/L 0008-K08	9.9	8	8.0	7	125	5.0	21	08IR/L		M2.2*5		T-6	1
0008-K08-A10	9.9	10	8.0	9	125	5.0	24	11IR/L		M2.5*8		T-8	1
0008-K08-A16	9.9	16	8.0	15	125	5.0	24						1
0010-K11	13	10	10.0	9	125	7.3	25						1
0010-K11-A16	13	16	10.0	15	125	7.3	30						1
0012-K11	15	12	12.0	11	125	8.4	28						1
0012-K11-A16	15	16	12.0	15	125	8.4	36						1
0013-M16	17	16	12.7	15	150	10.3	32	16IR/L		M3.5*9		T-15	1
0016-Q16	20	16	16.0	15	180	11.5	40						1
SNR/L 0020-Q16	24	20	20.0	18	180	13.4	40	16IR/L	STM16L STM16R	M3.5*12	M3X6N	T-15	1
0025-R16	29	25	24.5	23	200	16.3	45						1
0032-S16	36	32	32.0	29	250	19.6	50						1
0040-T16	44	40	40.0	36	300	23.8	55						1
0050-U16	56	50	50.0	48	350	28.7	60						1
0020-Q22	27	20	20.0	18	180	14.9	40	22IR/L	STM22L STM22R	M4*16	M4X6N	T-20	1
0025-R22	32	25	24.6	23	200	18.1	45						1
0032-S22	39	32	32.0	29	250	21.5	50						1
0040-T22	47	40	40.0	36	300	25.8	55						1
0050-U22	57	50	50.0	48	350	30.6	70						1
0032-S27	40	32	32.0	29	250	22.4	60	27IR/L	STM27L STM27R	M5*20	M5X8N	T-20	1
0040-T27	48	40	40.0	36	300	26.4	60						1
0050-U27	58	50	50.0	45	350	31.4	75						1
0060-V27	69	60	60.0	54	400	36.4	75						1

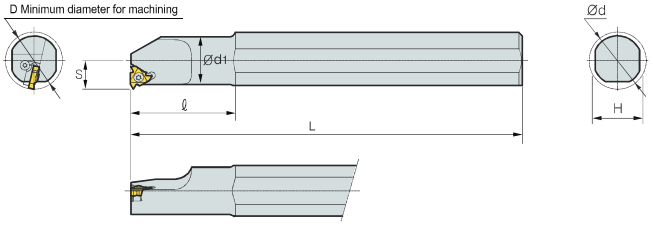
Standard With Coolant Hole

Designation	Dimensions (mm)							Applicable Insert	Spare parts				
	dmin	d	d1	H	L	S	l		Shim	Screw	Shim Screw	Wrench	Fig.
SNR/L 0010-K11B	13	10	10.0	9	125	7.3	25	11IR/L		M2.5*8		T-8	2
0012-K11B	15	12	12.0	11	125	8.4	28						2
0013-M16B	17	16	12.7	15	150	10.3	32	16IR/L		M3.5*9		T-15	2
0016-Q16B	20	16	16.0	15	180	11.5	40						2
0020-Q16B	24	20	20.0	18	180	13.4	40		STM16L STM16R	M3.5*12	M3X6N	T-15	2
0025-R16B	29	25	24.5	23	200	16.3	45						2
0020-Q22B	27	20	20.0	18	180	14.9	40	22IR/L	STM22L STM22R	M4*16	M4X6N	T-20	2
0025-R22B	32	25	24.6	23	200	18.1	45						2

D

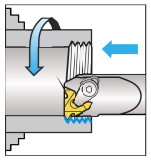
SNR/L-C With Carbide Shank

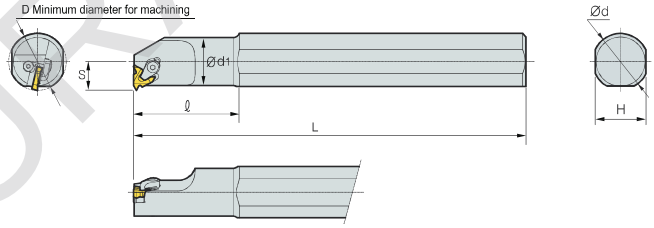




Designation	Dimensions (mm)							Applicable Insert	Spare parts			
	dmin	d	d1	H	L	S	l		Shim	Screw	Shim Screw	Wrench h
SNR/L 0008-K08C	9.9	8	8.0	7	125	5.0	21	08IR/L	X	M2.2*5	X	T-6
0010-M11C	13	10	10.0	9	150	7.3	25	11IR/L	X	M2.5*8	X	T-8
0012-Q11C	15	12	12.0	11	180	8.4	28					
0016-R16C	20	16	16.0	15	200	11.5	40	16IR/L	X	M3.5*9	X	T-15
0020-S16C	24	20	20.0	18	250	13.4	40		STM16L STM16R	M3.5*12	M3X6N	T-15
0025-T16C	29	25	24.5	23	300	16.3	45					
0020-S22C	27	20	20.0	18	250	14.9	40	22IR/L	STM22L STM22R	M4*16	M4X6N	T-20
0025-T22C	32	25	24.6	23	300	18.1	45					

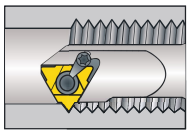
CNR/L





Designation	Dimensions (mm)							Applicable Insert	Spare parts				
	Dmin n	d	d1	H	L	S	l		Shim	Clamp	Clamp Screw	Shim Screw	Wrench
CNR/L 0020-R16	24	20	20.0	18	180	13.4	50	16IR/L	STM16L STM16R	CH5R3	CHX0513	CTS-5	L2.5
0025-R16	29	25	24.6	23	200	16.3	60						
0032-S16	36	32	32.0	29	250	19.6	60						
0040-T16	36	40	40.0	36	300	23.8	60						
0025-R22	44	25	24.6	23	200	17.2	45	22IR/L	STM22L STM22R	CH6R3	CHX0621	CTS-6	L3.0
0032-S22	39	32	32.0	29	250	21.5	60						
0040-T22	47	40	40.0	36	300	25.8	60						
0050-U22	57	50	50.0	48	350	30.6	75						
0032-S27	40	32	32.0	29	250	22.4	60	27IR/L	STM22L STM22R	CH8R3	CHX0822	CTS-8	L4.0
0040-T27	48	40	40.0	36	300	26.4	60						
0050-U27	58	50	50.0	45	350	31.4	75						
0060-V27	69	60	60.5	54	400	36.4	75						

SNR/L-UB



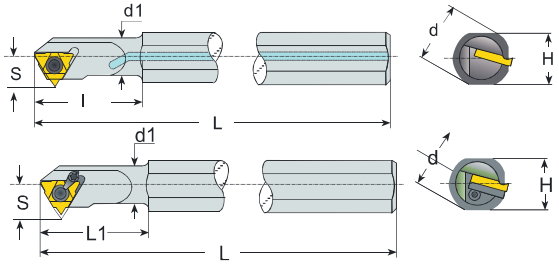


Fig1

Fig2

Designation	Dimensions (mm)							Applicable Insert	Spare parts		
	dmin	d	d1	H	L	S	l		Screw	Wrench	Fig.
SNR/L 0010-K08U-A20B	13	20	8.0	18	125	5.86	20	08UEI	M2.2*5	T-6	1
0010-K11U-A20B	13	20	10.0	18	125	7.40	25	11UEI	M2.5*8	T-8	1
0012-K11U-A20B	15	20	12.0	18	125	7.40	30				1
0020-Q22UB	27	20	19.2	18	180	13.68	40	22UI	M4*12	T-20	1
0025-R22UB	32	25	24.6	23	200	17.63	45				1
0032-S22UB	39	32	29.7	29	250	18.76	50				1
0032-S27UB	39	32	31.6	29	250	20.96	60	27UI	M5*12	T-20	1

CNR/L-UB

Designation	Dimensions (mm)							Applicable Insert	Spare parts					Fig.
	dmin	d	d1	H	L	S	l		Shim	Clamp	Screw	Shim Screw	Wrench	
CNR/L 0032-S22U	39	32	32.0	29	250	25.5	60	22UI	STM22UL STM22UR	CH6R3	CHX0621	CTS-6	L3.0	2
0040-T22U	47	40	40.0	36	300	29.5	60							2
0040-T27U	48	40	40.0	36	300	29.4	60	27UI	STM27UL STM27UR	CH8R3	CHX0822	CTS-8	L4.0	2
0050-U27U	58	50	50.0	45	350	34.4	75							2
0060-V27U	69	60	60.0	54	400	39.3	75							2

Multitooth Threading

DTIP30	DTM45
	
TiN coated, yellow color, the universal grade for general steel, recommended for rigid cutting conditional.	TiALN coated, black color; Multi layer PVD coated for stainless steel & stell medium machining

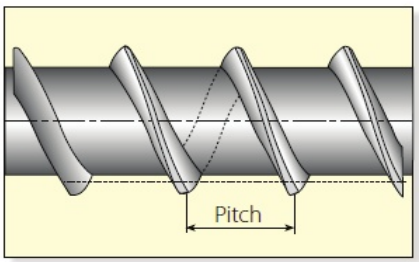
The Duratec Multitooth Thread Turning program offers a wide range of grades for threading any type of material

Machining a Multi-Start Thread

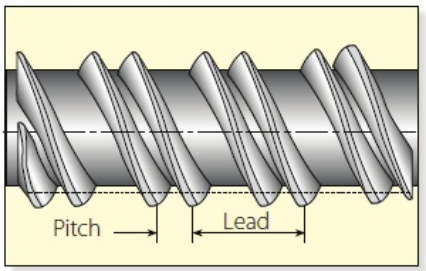
A thread in which the lead is an integral multiple, greater then one, of the pitch

A multi-start thread permits a more rapid advance without a coraser (larger) thread form.

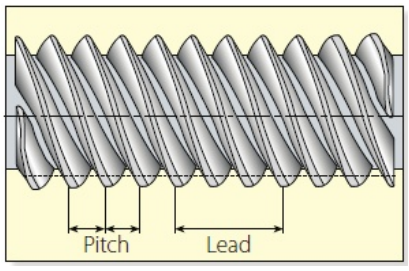
First Start Machined



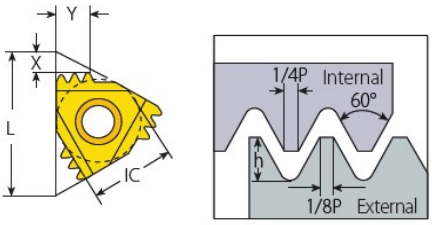
Second Start Machined

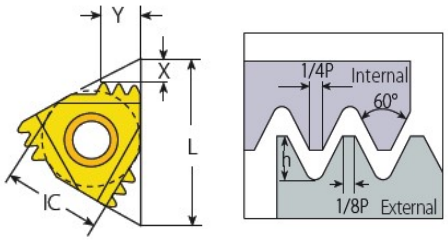


Third Start Machined
(Final, 3 Starts Thread)



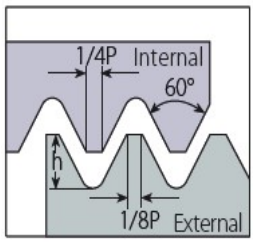
ISO Metric

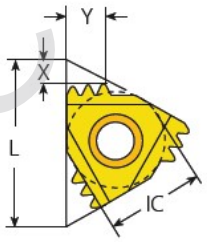
Type	Designation	Pitch	Dimensions (mm)					Tooth	Picture
		mm	IC	L	hmin	X	Y		
External	16ER1.00ISO 3M	1.0	9.525	16	0.61	1.8	2.6	3	
	16ER1.50ISO 2M	1.5	9.525	16	0.92	1.6	2.4	2	
	16ER2.00ISO 2M	2.0	9.525	16	1.23	2.1	3.1	2	
	22ER1.50ISO 3M	1.5	12.7	22	0.92	2.5	3.8	3	
	22ER2.00ISO 2M	2.0	12.7	22	1.23	2.1	3.1	2	
	22ER2.00ISO 3M	2.0	12.7	22	1.23	3.2	5.1	3	
	22ER2.50ISO 2M	2.5	12.7	22	1.53	2.5	3.9	2	
	27ER3.00ISO 2M	3.0	15.875	27	1.84	3.0	4.7	2	

Type	Designation	Pitch	Dimensions (mm)					Tooth	Picture
		mm	IC	L	hmin	X	Y		
Internal	16IR1.00ISO 3M	1.0	9.525	16	0.58	1.7	2.6	3	
	16IR1.50ISO 2M	1.5	9.525	16	0.87	1.6	2.4	2	
	16IR2.00ISO 2M	2.0	9.525	16	1.15	2.0	3.1	2	
	22IR1.50ISO 3M	1.5	12.7	22	0.87	2.5	3.8	3	
	22IR2.00ISO 2M	2.0	12.7	22	1.15	2.0	3.1	2	
	22IR2.00ISO 3M	2.0	12.7	22	1.15	3.2	5.1	3	
	27IR3.00ISO 2M	3.0	15.875	27	1.73	3.0	4.7	2	

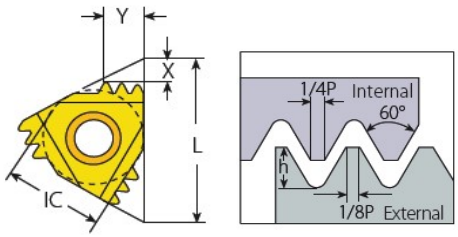
American UN (UN, UNC, UNF, UNEF, UNS)

Type	Designation	TPI	Dimensions (mm)					Tooth	Picture
			IC	L	hmin	X	Y		
External	16ER20UN 3M	20	9.525	16	0.78	2.2	3.3	3	
	16ER18UN 2M	18	9.525	16	0.87	1.5	2.2	2	
	16ER18UN 3M	18	9.525	16	0.87	2.3	3.6	3	
	16ER16UN 2M	16	9.525	16	0.97	1.7	2.5	2	
	16ER14UN 2M	14	9.525	16	1.11	1.9	2.8	2	
	16ER12UN 2M	12	9.525	16	1.30	2.2	3.3	2	
	22ER16UN 3M	16	12.7	22	0.97	2.6	4.1	3	
	22ER14UN 2M	14	12.7	22	1.11	1.9	2.8	2	
	22ER12UN 2M	12	12.7	22	1.30	2.2	3.3	2	
	22ER12UN 3M	12	12.7	22	1.30	3.4	5.4	3	
	22ER11UN 2M	11	12.7	22	1.42	2.3	3.6	2	
	22ER10UN 2M	10	12.7	22	1.56	2.5	3.9	2	
	27ER8UN 2M	8	15.875	27	1.95	3.1	4.9	2	

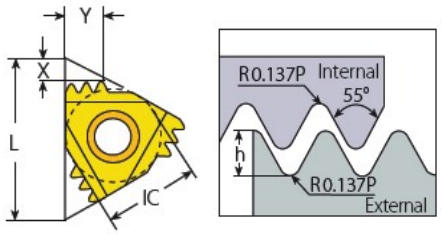


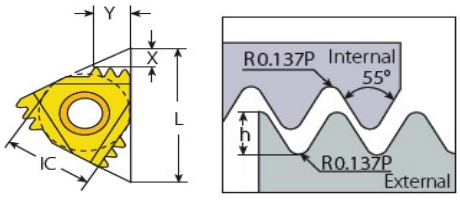


American UN (UN, UNC, UNF, UNEF, UNS)

Type	Designation	TPI	Dimensions (mm)					Tooth	Picture
			IC	L	hmin	X	Y		
Internal	16IR12UN 2M	12	9.525	16	1.22	2.2	3.3	2	
	16IR14UN 2M	14	9.525	16	1.05	1.9	2.8	2	
	16IR16UN 2M	16	9.525	16	0.92	1.7	2.5	2	
	22IR16UN 3M	16	12.7	22	0.92	2.6	4.1	3	
	22IR14UN 2M	14	12.7	22	1.05	1.9	2.8	2	
	22IR12UN 2M	12	12.7	22	1.22	2.2	3.3	2	
	22IR12UN 3M	12	12.7	22	1.22	3.4	5.4	3	
	27IR8UN 2M	8	15.875	27	1.83	3.1	4.9	2	

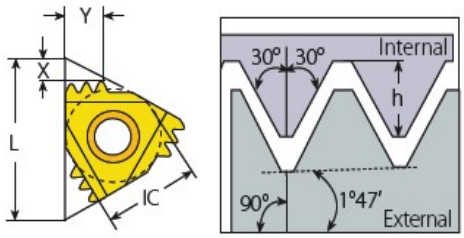
Whitworth (BSW, BSF, BSP, BSB)

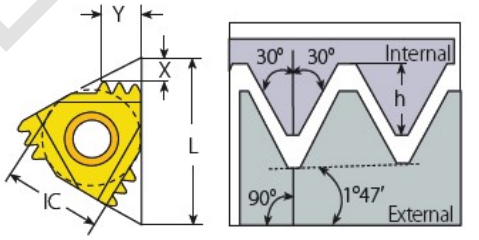
Type	Designation	TPI	Dimensions (mm)					Tooth	Picture
			IC	L	hmin	X	Y		
External	16ER28W 2M	28	9.525	16	0.58	1.2	1.6	2	
	16ER19W 2M	19	9.525	16	0.86	1.6	2.3	2	
	16ER19W 3M	19	9.525	16	0.86	2.2	3.4	3	
	16ER14W 2M	14	9.525	16	1.16	2.0	3.0	2	
	22ER14W 3M	14	12.7	22	1.16	2.9	4.6	3	
	22ER11W 2M	11	12.7	22	1.48	2.3	3.5	2	

Type	Designation	TPI	Dimensions (mm)					Tooth	Picture
			IC	L	hmin	X	Y		
Internal	16IR14W 2M	14	9.525	16	1.16	2.0	3.0	2	
	22IR11W 2M	11	12.7	22	1.48	2.3	3.5	2	

D

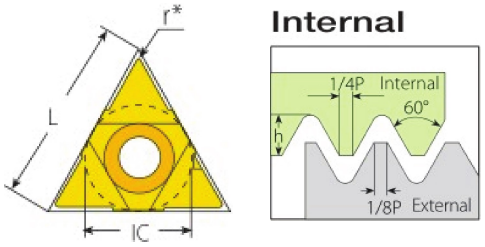
National Pipe Thread (NPT)

Type	Designation	TPI	Dimensions (mm)					Tooth	Picture
			IC	L	hmin	X	Y		
External	16ER14NPT 2M	14	9.525	16	1.33	2.0	3.0	2	
	22ER11.5NPT 2M	11.5	12.7	22	1.64	2.2	3.4	2	
	27ER11.5NPT 3M	11.5	15.875	27	1.64	3.5	5.6	3	
	27ER8NPT 2M	8	15.875	27	2.42	3.1	4.9	2	

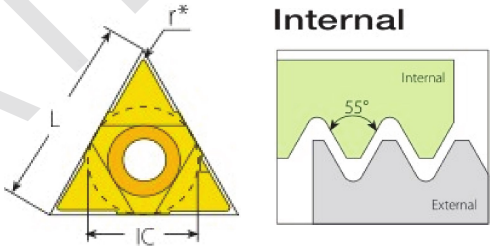
Type	Designation	TPI	Dimensions (mm)					Tooth	Picture
			IC	L	hmin	X	Y		
Internal	16IR14NPT 2M	14	9.525	16	1.33	2.0	3.0	2	
	22IR11.5NPT 2M	11.5	12.7	22	1.64	2.2	3.4	2	
	27IR11.5NPT 3M	11.5	15.875	27	1.64	3.5	3.6	3	
	27IR8NPT 2M	8	15.875	27	2.42	3.1	4.9	2	

D DEEP HOLE OIL THREAD

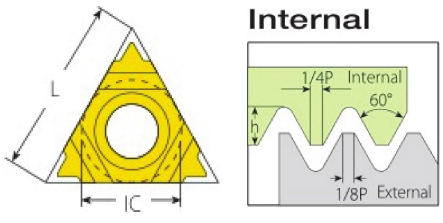
Partial Profile 60°

Type	Designation	Pitch		Dimensions			Picture
		mm	tpi	IC	Lmm	r *	
Internal	11UI 60D	1.5-4.0	16-6	1/4"U	11	0.10	
	16UI 60D	2.5-6.0	10-4	3/8"U	16	0.20	
	16UI 60D-16-12	1.5-2.0	16-12	3/8"U	16	0.06	
	22UI 60D	6.0-8.0	4-3	1/2"U	22	0.30	

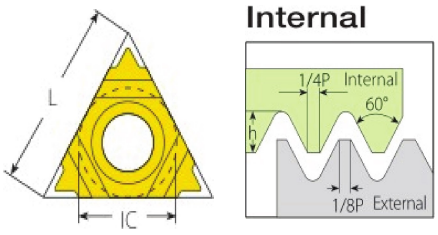
Partial Profile 55°

Type	Designation	Pitch		Dimensions		Picture
		tpi		Lmm		
Internal	11UI 55D	16-6	1/4"U	11	0.1	
	16UI 55D	10-4	3/8"U	16	0	
	16UI 55D-16-12	16-12	3/8"U	16	0	
	22UI 55D	4-3	1/2"U	22	1	

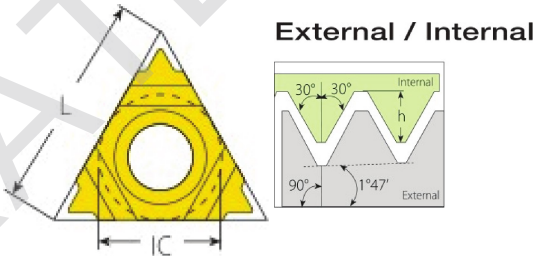
ISO Metric

Type	Designation	Pitch	Dimensions		Toolholder Cutting Diameter D2(mm)	Picture
			IC	Lmm	* D2 Adjustment	
Internal	11UI 1.50ISOD	1.5	1/4"U	11	For 1.5ISO change D2 to D2-1.0	
	11UI 2.00ISOD	2	1/4"U	11	For 2.0ISO change D2 to D2-1.15	

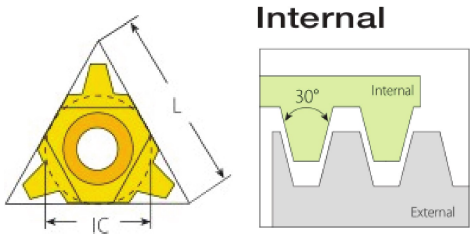
American UN (UN, UNC, UNF, UNEF, UNS)

Type	Designation	Pitch	Dimensions		Toolholder Cutting Diameter D2(mm)	Picture
		tpi	IC	Lmm	* D2 Adjustment	
Internal	11UI 14UND	14	1/4"U	11	For 14UN change D2 to D2-1.06	
	11UI 12UND		1/4"U	11	For 12UN change D2 to D2-1.15	

National Pipe Thread (NPT)

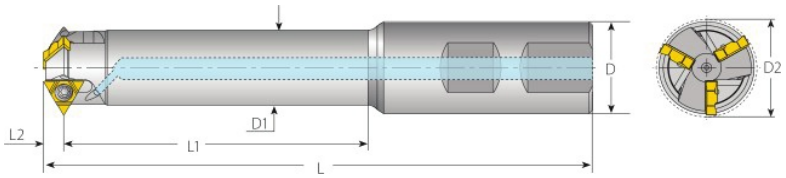
Type	Designation	Pitch	Dimensions		Picture
		tpi	IC	L mm	
Internal / External	11UEI 14NPTD	14	1/4"U	11	
			1/4"U	11	
	16UEI 11.5NPTD	11.5	3/8"U	16	
				16	
	22UEI 8NPTD	8	1/2"U	22	

Trapez

Type	Designation	Pitch	Dimensions		Application	Picture
			IC	Lmm		
Internal	11UI 3.0TRD	3.0	1/4"U	11	(TR22-TR30)x3	
	11UI 4.0TRD	4.0	1/4"U	11	(TR20-TR28)x4	
	11UI 5.0TRD	5.0	1/4"U	11	TR22x5; TR28x5	

D

Standard Toolholders - Weldon Shank (U Style)



Insert Size		Designation	Dimensions (mm)						No. of Flutes	Spare Parts	
L	IC		L	L1	L2	D	D1	D2	Z	Screw	Wrench
11U	1/4"U	SR0015-11U-A16-95	95	40	5.4	16	11.0	14.75	1	M2.5x8	T-8
		SR0021-11U-A25-123	123	60		25	16.0	20.65	2		
		SR0023-11U-A25-135	135	70		25	17.7	23.00	3		
		SR0026-11U-A25-147	147	80		25	20.4	26.00	3		
		SR0031-11U-A32-164	164	95		32	25.7	31.00	4		
16U	3/8"U	SR0036-16U-A32-166	166	95	8.0	32	29.0	36.50	3	M3.5x12	T-15
		SR0036-16U-A32-225	225	145		32	28.0	36.50	3		
		SR0042-16U-A40-201	201	120		40	34.2	42.00	4		

Weldon Shank (U Style) Applications

Thread Applications for Partial Profile Inserts

Tool holder		Min. Thread Dia.						
Designation	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP(G)	Partial 55°	Trapez
SR0015-11U-A16-95	14.75	M18x2.5 M24x3.0	M16x0.5, M16x0.75, 16x1.0, M17x1.25, M17x1.5, 17x2.0	3/4-10	5/8-32UN, 5/8-28UN, 5/8-27UNS, 11/16-24UN, 11/16-20UN, 11/16-16UN, 3/4-14UNS, 3/4-12UN	3/8-19, 1/2-14,1-11	11/16-14; 3/4-12,7/8-11; 3/4- 10, 7/8-9; 1-8, 1 1/8-7	TR22x3, TR24x3
SR0021-11U-A25-123	20.65	M24x3.0 M30x3.5	M22x0.5, M22x0.75, 22x1.0, M23x1.25, M23x1.5, 23x2.0	1-8, 1 1/8-7, 1 3/8-6	7/8-32UN7/8-28UN, 7/8-27UNS, 7/8-24UNS, 7/8-20UNEF, 1-18UNS, 15/16-16UN, 1- 14UNS, 15/16-12UN, 1-10UNS	3/4-14, 1-11	1-26, 1-20, 1-16, 1-12, 1-10, 1 1/8-9, 1-8, 1 1/8-7	TR26- TR60x3
SR0023-11U-A25-135	23	M27x3.0 M30x3.5 M36x4.0	M24x0.5, M24x0.75, 25x1.0, M25x1.25, M26x1.5, 26x2.0, M27x2.5	1 1/8-7	1-32UN, 1-28UN, 1-27UNS, 1-24UNS, 1-20UNEF, 1-18UNS, 1-16UN, 1-14UNS, 1-12UNF, 1 1/8-10UNS, 1 1/8-8UN	3/4 -14, 1-11	1-26, 1-20, 1-16, 1 1/16 -12, 1 1/8-9, 1 1/8-7	-
SR0026-11U-A25-147	26	M30x3.5 M36x4.0	M27x0.5, 27x0.75,M28x1.0, M28x1.25, M28x1.5, 29x2.0, M30x2.5, M30x3.0	1 1/4-7, 1 3/8-6	1 1/8-28UN, 1 1/8-24UNS, 1 1/8-20UN, 1 1/8-18UNEF, 1 1/8-16UN, 1 1/8-14UNS, 1 1/8-12UNF, 1 1/4-10UNS, 1 3/16-8UN	7/8 -14, 1-11	1 1/8-26, 1 1/8-20,1 3/8-16, 1 3/8-12,1 3/16-8, 1 1/4-7	-
SR0031-11U-A32-164	31	M36X4.0	M32x0.5, M32x0.75, 33x1.0, M33x1.25, 33x1.5,M34x2.0, M34x2.5, M35x3.0, M36x3.5	1 1/2 -6	15/16-28UN, 1 3/8-24UNS, 1 5/16-20UN, 1 5/16-18UNEF, 1 5/16-16UN, 1 3/8-14UNS, 1 3/8-12UNF, 1 3/8-10UNS, 1 3/8-8UN	1 1/8-11	1 3/8-26, 1 3/8-20,1 3/8-16, 1 3/8-12,1 7/16-8	-
SR0036-16U-A32-166 SR0036-16U-A32-225	36.5	M42x4.5 M48x5.0 M56x5.5 M64x6.0	M39x1.5, M39x2.0,M40x2.5, M41x3.0, M42x3.5,M42x4.0	1 3/4-5, 2-4.5, 2 1/2-4	1 9/16-16UN, 1 5/8-14UNS, 1 9/16-12UN, 1 5/8-10UNS, 1 5/8-8UN, 1 5/8-6UN	1 1/4 -11	1 5/8-16, 1 5/8-12,1 5/8-8, 1 7/8-6,1 3/4-5	-
SR0042-16U-A40-201	42	M48x5.0 M56x5.5 M64x6.0	M45x1.5, M45x2.0,M46x2.5, M48x3.0,M48x3.5, M48x4.0	2-4.5, 2 1/2-4	1 3/4-16UN, 1 3/4-14UNS, 1 13/16-12UN, 1 13/16-8UN, 1 15/16-6UN	1 1/2 -11	1 7/816, 1 7/8-12,1 7/8-8, 2 1/4-6,2-4.5	-

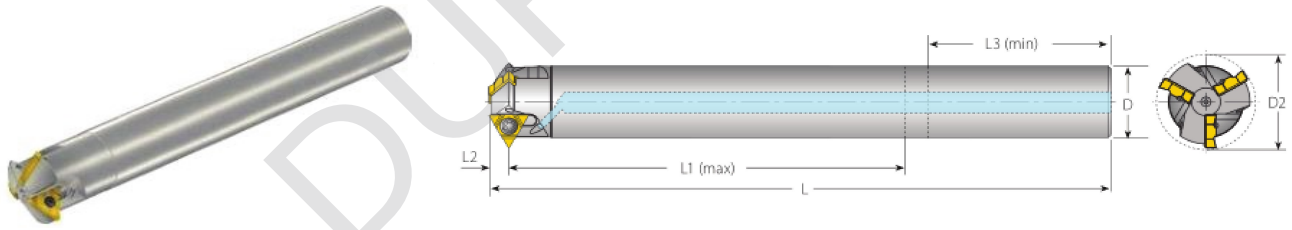
Thread Applications for Full Profile Inserts (ISO & UN)

Designation	mm	tpi	*D2 Adjustment	ISO Fine	UN/UNF/UNEF/UNS
SR0021-11U-A25-123	1.5		22.00	M26x1.5	--
	2.0		21.85	M26x2.0	-
	-	14	21.94	-	1-14UNS
	-	12	21.85	-	1-12UNF
SR0023-11U-A25-135	1.5		25.00	M28x1.5	-
	2.0		24.85	M29x2.0	-
	-	14	24.94	-	1 1/8-14UNS
	-	12	24.85	-	1 1/8-12UNF
SR0026-11U-A25-147	1.5		30.00	M33x1.5	-
	2.0		29.85	M34x2.0	-
	-	14	29.94	-	1 3/8-14UNS
	-	12	29.85	-	1 3/8-12UNF

Thread Applications for Full Profile Inserts (NPT)

Tool holder	Toolholder cutting diameter D2 (mm)	Pitch	Cylindrical or Conical pre-drilled hole	Cylindrical pre-drilled hole
Designation	*D2 Adjustment	Tpi	NPT Threading by 1 Radial Pass	**NPT Threading by 2 Radial Passes (50% / 50%)
SR0015-11U-A16-95	14.59	14	1/2-14NPT; 3/4-14NPT	-
SR0021-11U-A25-123	20.49	14	3/4-14NPT	-
SR0023-11U-A25-135	22.63	11.5	1-11.5NPT; 1 1/4-11.5NPT; 1 1/2-11.5NPT; 2-11.5NPT	-
SR0026-11U-A25-147	25.63	11.5	1-11.5NPT; 1 1/4-11.5NPT; 1 1/2-11.5NPT; 2-11.5NPT	-
SR0031-11U-A32-164	30.63	11.5	1 1/4-11.5NPT; 1 1/2-11.5NPT; 2-11.5NPT	-
SR0036-16U-A32-166	35.65	11.5	1 1/4-11.5NPT; 1 1/2-11.5NPT; 2-11.5NPT	-
SR0036-16U-A32-225				
SR0036-16U-A32-166	35.65	8	-	2 1/2…10-8NPT
SR0036-16U-A32-225				
SR0042-16U-A40-201	41.15	11.5	1 1/2-11.5NPT; 2-11.5NPT	-
SR0042-16U-A40-201	41.15	8	-	2 1/2…10-8NPT

Standard Toolholders - Steel Cylindrical Shank (U Style)



Coolant-Thru is recommended, especially when D2>0.7 x nominal thread diameter

Insert Size		Designation	Dimensions (mm)						No. of Flutes	Spare Parts	
L	IC		L	L1(max)	L2	L3(min)	D	D2	Z	Screw	Wrench
11U	1/4"U	SR0023-11U-C18-166	166	86	5.4	40	18	23.3	2	M2.5x8	T-8
		SR0026-11U-C20-186	186	105		40	20	26.0	3		
		SR0031-11U-C25-196	196	115		46	25	31.0	4		
16U	3/8"U	SR0036-16U-C25-193	193	125	8.0	46	25	36.5	3	M3.5x12	T-15
		SR0036-16U-C28-222	222	144		60	28	36.5	3		

* The length of cylindrical shank toolholders can be modified to reduce chatter (vibration).
Note: The length of the shank inside the clamping device should be L3 at minimum.

Steel Cylindrical Shank (U Style) Applications

Thread Applications for Partial Profile Inserts

Tool holder		Min. Thread Dia.					
Designation	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP(G)	Partial 55°
SR0023-11U-C18-166	23.3	M27x3.0, M30x3.5, M36x4.0	M24x0.5, M25x0.75, M25x1.0, M25x1.25, M26x1.5, M26x2.0, M27x2.5	1 1/8-7	1-32UN, 1-28UN, 1-27UN,1-24UNS, 1-20UNEF, 1-18UNS, 1-16UN,1-14UNS, 1 1/16-12UN, 1 1/8-10UNS, 1 1/8-8UN	3/4-14, 1-11	1-26, 1-20,1 1/8-16, 1 1/8-12,1 1/8-9, 1 1/8-7
SR0026-11U-C20-186	26.0	M30x3.5, M36x4.0	M27x0.5, M27x0.75, M28x1.0, M28x1.25, M28x1.5, M29x2.0, M30x2.5, M30x3.0	1 1/4 -7, 1 3/8-6	1 1/8-28UN, 1 1/8-24UNS,1 1/8-20UN, 1 1/8-18UNEF,1 1/8-16UN, 1 1/8-14UNS, 1 1/8-12UNF, 1 3/8-10UNS,1 7/16-8UN	7/8-14, 1-11	1 1/8-26, 1 1/8-20, 1 3/16-16, 1 3/16-12, 1 3/16-8, 1 1/4-7
SR0031-11U-C25-196	31.0	M36x4.0	M32x0.5, M32x0.75, M33x1.0, M33x1.25, M33x1.5, M34x2.0, M34x2.5, M35x3.0, M36x3.5	1 1/2-6	1 5/16-28UN, 1 1/2-24UNS,1 1/2-20UN, 1 1/2-18UNEF,1 3/8-16UN, 1 3/8-14UNS, 1 3/8-12UNF, 1 3/8-10UNS,1 7/16-8UN	1 1/8-11	1 5/16-26, 1 5/16-20, 1 3/8-16, 1 3/8-12,1 7/16-8
SR0036-16U-C25-193 SR0036-16U-C28-222	36.5	M42.5x4.5, M48x5.0, M56x5.5, M64x6.0	M39x1.5, M40x2.5, M41x3.0, M42x3.5, M42x4.0	1 3/4 -5, 2-4.5, 2 1/2-4	1 9/16-16UN, 1 5/8-14UNS,1 9/16-12UN, 1 5/8-10UNS,1 5/8-8UN, 1 5/8-6UN	1 1/4 -11	1 5/8-16, 1 5/8-12,1 5/8-8, 1 7/8-6,1 3/4-5

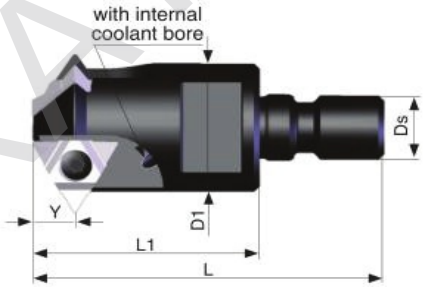
Thread Applications for Full Profile Inserts (ISO & UN)

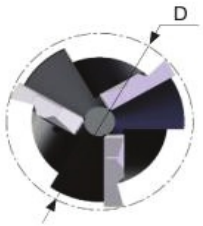
Tool holder	Pitch		Toolholder cutting diameter D2 (mm)	Min. Thread Dia	
Designation	mm	tpi	*D2 Adjustment	ISO Fine	UN/UNF/UNEF/UNS
SR0023-11U-C18-166	1.5		22.00	M26x1.5	--
	2.0		21.85	M26x2.0	-
	-	14	21.94	-	1-14UNS
	-	12	21.85	-	1-12UNF
SR0026-11U-C20-186	1.5		25.00	M28x1.5	-
	2.0		24.85	M29x2.0	-
	-	14	24.94	-	1 1/8-14UNS
	-	12	24.85	-	1 1/8-12UNF
SR0031-11U-C25-196	1.5		30.00	M33x1.5	-
	2.0		29.85	M34x2.0	-
	-	14	29.94	-	1 3/8-14UNS
	-	12	29.85	-	1 3/8-12UNF

Thread Applications for Full Profile Inserts (NPT)

Tool holder	Toolholder cutting diameter D2 (mm)	Pitch	Cylindrical or Conical pre-drilled hole	Cylindrical pre-drilled hole
	*D2 Adjustment	Tpi	NPT Threading by 1 Radial Pass	**NPT Threading by 2 Radial Passes (50% / 50%)
SR0023-11U-C18-166	22.63	11.5	1-11.5NPT; 1 1/4-11.5NPT; 1 1/2-11.5NPT; 2-11.5NPT	-
SR0026-11U-C20-186	25.63	11.5	1-11.5NPT; 1 1/4-11.5NPT; 1 1/2-11.5NPT; 2-11.5NPT	-
SR0031-11U-C25-196	30.63	11.5	1 1/4-11.5NPT; 1 1/2-11.5NPT; 2-11.5NPT	-
SR0036-16U-C25-193	35.65	11.5	1 1/4-11.5NPT; 1 1/2-11.5NPT; 2-11.5NPT	-
SR0036-16U-C28-222				
SR0036-16U-C25-193	35.65	8	-	2 1/2…10-8NPT
SR0036-16U-C28-222				

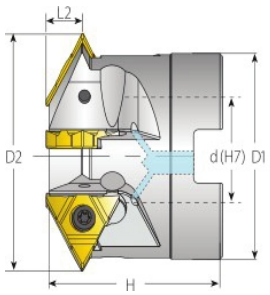
Standard Toolholders – Modular (U Style)

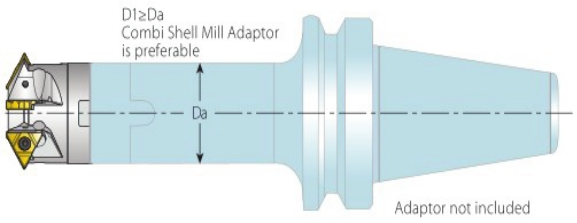




Insert Size		Designation	Dimensions (mm)						No. of Flutes	Spare Parts	
L	IC		Y	D	D1	Ds	L1	L	Z	Screw	Wrench
11U	1/4"U	SR0017-11U-M8	5.4	17	14	M8	21	38	2	M2.5x8	T-8
		SR0020-11U-M8		20	16	M8	32	50	2		
		SR0026-11U-M10		26	20	M10	35	56	3		
		SR0031-11U-M12		31	24	M12	36	60	4		
16U	3/8"U	SR0033-16U-M12	8.0	33	24	M12	40	64	3	M3.5x12	T-15
		SR0036-16U-M16		36	30	M16	45	72	3		
		SR0041-16U-M16		41	32	M16	47	74	4		
		SR0046-16U-M16		46	36	M16	47	74	4		

Shell Mill (U Style)





Coolant-Thru is recommended, especially when D2>0.7 x nominal thread diameter

Insert Size		Designation	Dimensions (mm)					No. of Flutes	Spare Parts	
L	IC		D2	D2	d(h7)	H	L2	Z	Screw	Wrench
16U	3/8"U	SR0042B16U-4	34	42	16	40	8.0	4	M3.5x12	T-15
		SR0048B16U-5	40	48	22	40	8.0	5		
		SR0056B16U-6	48	56	22	40	8.0	6		
22U	1/2"U	SR0088B22U-6	76	88	27	50	10.8	6	M4.0x16	T-20
		SR0098B22U-7	85	98	32	55	10.8	7		

CK Holder Connection Type (U Style)

Insert Size		Designation	Thread Type	Dimensions (mm)					No. of Flutes	Spare Parts	
L	IC			D	D2	d1(h6)	H	L2	Z	Screw	Wrench
11U	1/4"U	SR0026-11U-CK1	M30x3.5	26.0	19	11	30	5.4	3	M2.5x8	T-8
		SR0036-11U-CK3	M40x1.5	36.5	31	18	40		4		
		SR0045-11U-CK4	M50x3	45.0	39	22	45		5		
		SR0056-11U-CK5	M64x3	56.0	50	28	45		6		
16U	3/8"U	SR0031-16U-CK2	M36x4	31.0	24	14	35	8.0	3	M3.5x12	T-15
		SR0042-16U-CK3	M48x5	42.0	31	18	35		3		
		SR0047-16U-CK4	M64x6	47.0	39	22	45		4		
		SR0058-16U-CK5	M80x6	58.0	50	28	45		5		
		SR0080-16U-CK6	M100x6	80.0	64	36	65		6		

Shell Mill (U Style) Applications

Thread Applications for Partial Profile Inserts

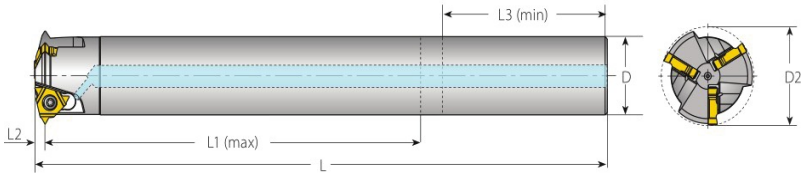
Tool holder				Min. Thread Dia.			
Designation	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP(G)	Partial 55°
SR0042B16U-4	42	M48x5.0, M56x5.5 M64x6.0	M45x1.5, M45x2.0, M46x2.5, M48x3.0, M48x3.5, M48x4.0	2-4.5, 2 1/2 - 4	1 3/4 -16UN, 1 3/4 -14UNS, 1 13/16 -12UN, 1 13/16 -8UN, 1 15/16 -6UN	1 1/2 - 11	1 7/8 -16, 1 7/8 - 12, 1 7/8 -8,1 7/8 -6, 2-4.5
SR0048B16U-5	48	M56x5.5 M64x6.0	M52x1.5, M52x2.0, M52x2.5, M52x3.0, M55x4.0	2 1/4 - 4.5, 2 1/2 - 4	2-16UN, 2-14UN, 2-12UN, 2 1/4 -10UNS, 2 1/8 -8UN, 2 1/8 -6UN	1 3/4 - 11	2-16, 2 1/4 -12, 2 1/4 -8, 2 1/4 -6,3-5, 3 1/2 -4.5, 2 1/4 -4
SR0056B16U-6	56	M64x6.0	M60x1.5, M60x2.0, M60x2.5, M60x3.0, M64x4.0	2 1/2 - 4	2 3/8 -16UN, 2 3/8 -14UN, 2 3/8 -12UN, 2 1/2 -10UNS, 2 3/8 - 8UN, 2 1/2 -6UN	2 - 11	2 1/2 -16, 2 1/2 - 12, 2 1/2 -8, 2 3/4 -6, 3-5, 3 1/2 -4.5, 4 1/4 - 4
SR0088B22U-6	88	-	M95x6.0, M125x8	4- 4	4 1/4 -4UN	-	4-3, 4 1/4 -4
SR0098B22U-7	98	-	M105x6.0, M125x8	-	4 1/4 -4UN	-	4 1/4 -4

Thread Applications for Full Profile Inserts (NPT)

Tool holder	Toolholder cutting diameter D2 (mm)	Pitch	Cylindrical or Conical pre-drilled hole	Cylindrical pre-drilled hole
	*D2 Adjustment	tpi	NPT Threading by 1 Radial Pass	**NPT Threading by 2 Radial Passes (50% / 50%)
SR0042B16U-4	41.15	11.5	1 1/2-11.5NPT; 2-11.5NPT	-
SR0042B16U-4	41.15	8	-	2 1/2…10-8NPT
SR0048B16U-5	47.15	11.5	2-11.5NPT	-
SR0048B16U-5	47.15	8	-	2 1/2…10-8NPT
SR0056B16U-6	55.15	8	-	2 1/2…10-8NPT
SR0088B22U-6	88.06	8	3 1/2 …160D-8NPT	160D … 240D-8NPT
SR0098B22U-7	98.06	8	4 …160D-8NPT	160D … 240D-8NPT

* Correct the toolholder cutting diameter D2 according to adjustment, as indicated in the above table.
** Note: When the pre-drilled hole for 8 NPT is conical, the thread can be machined in one pass.

Standard Toolholders - Steel Cylindrical Shank (A Style)



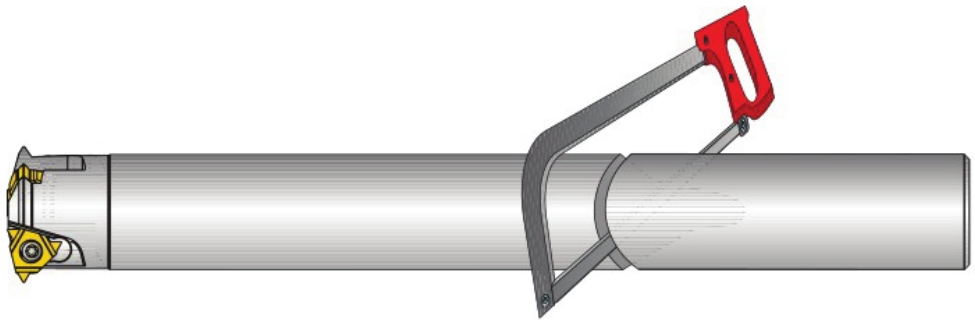
Coolant-Thru is recommended, especially when D2>0.7 x nominal thread diameter

Insert Size		Designation	Dimensions (mm)						No. of Flutes	Spare Parts	
L	IC		L	L1(max)	L2	L3(min)	D	D2	Z	Screw	Wrench
11A	1/4"A	SR0026-11A-C20-184	184	105	3.0	40	20	26	3	M2.5x8	T-8
16A	3/8"A	SR0035-16A-C28-218	218	144	4.0	46	28	35.3	3	M3.5x12	T-15

Steel Cylindrical Shank (A Style) Applications

Thread Applications for Partial Profile Inserts

Tool holder		Min. Thread Dia.					
Designation	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP(G)	Partial 55°
SR0026-11A-C20-184	26	-	M28x1.5, M29x2.0, M30x2.5, M30x3.0	-	1 1/8 -16UN, 1 1/8 -14UNS, 1 3/16 -12UN, 1 1/4 -10UNS, 1 3/16 -8UN	-	-
SR0035-16A-C28-218	35.3	-	M38x2.0, M39x2.5, M39x3.0, M40x4.0	-	1 9/16 -12UN, 1 5/8 -10UNS, 1 5/8 -8UN, 1 5/8 -6UN	-	-



The length of cylindrical shank toolholders can be modified to reduce chatter (vibration).
Note: The length of the shank inside the clamping device should be L3 at minimum.

Recommended Grades, Cutting Speeds Vc [m/min] and Feed f [mm/tooth]

Material Group	Material		Hardness Brinell HB	Vc [m/min]		Feed* f [mm/tooth] by Cutting Dia. (D2)		
				DTIP30	DTIM45	13-23	24-42	Shell Mill
P steel	Unalloyed Steel	Low Carbon (C=0.1-0.25%)	125	100-210	90-180	0.20-0.32	0.30-0.50	0.30-0.75
		Medium Carbon (C=0.25-0.55%)	150	100-180	90-170	0.20-0.32	0.30-0.50	0.30-0.75
		High Carbon (C=0.55-0.85%)	170	100-170	90-160	0.15-0.23	0.25-0.35	0.25-0.52
	Low Alloy Steel (alloying elements≤5%)	Non Hardened	180	60-90	90-155	0.17-0.28	0.28-0.45	0.28-0.67
		Hardened	275	80-150	80-160	0.15-0.28	0.25-0.45	0.25-0.67
		Hardened	350	70-140	70-150	0.15-0.25	0.25-0.40	0.25-0.60
	High Alloy Steel (alloying elements>5%)	Annealed	200	60-130	70-115	0.15-0.22	0.20-0.30	0.20-0.45
		Hardened	325	70-110	60-100	0.13-0.21	0.18-0.30	0.18-0.45
	Cast Steel	Low Alloy (alloying elements <5%)	200	100-170	100-170	0.15-0.22	0.20-0.30	0.20-0.45
		High Alloy (alloying elements >5%)	225	70-120	70-130	0.12-0.22	0.17-0.30	0.17-0.45
M Stainless steel	Stainless Steel Ferritic	Non Hardened	200	100-170	120-180	0.15-0.22	0.22-0.34	0.22-0.50
		Hardened	330	100-170	120-180	0.16-0.23	0.21-0.32	0.21-0.48
	Stainless Steel Austenitic	Austenitic	180	70-140	100-140	0.15-0.25	0.25-0.40	0.25-0.60
		Super Austenitic	200	70-140	100-140	0.12-0.20	0.17-0.26	0.17-0.39
	Stainless Steel Cast Ferritic	Non Hardened	200	70-140	100-140	0.16-0.24	0.25-0.37	0.25-0.55
		Hardened	330	70-140	100-140	0.12-0.20	0.17-0.26	0.17-0.39
	Stainless Steel Cast Austenitic	Austenitic	200	70-120	100-120	0.15-0.22	0.20-0.30	0.20-0.45
		Hardened	330	70-120	100-120	0.12-0.20	0.17-0.26	0.17-0.39
K Cast Iron	Malleable Cast Iron	Ferritic (short chips)	130	60-130	100-120	0.16-0.24	0.25-0.37	0.25-0.55
		Pearlitic (long chips)	230	60-120	80-100	0.15-0.22	0.20-0.30	0.20-0.45
	Grey Cast Iron	Low Tensile Strength	180	60-130	80-100	0.15-0.22	0.22-0.34	0.22-0.50
		High Tensile Strength	260	60-100	80-100	0.15-0.22	0.20-0.30	0.20-0.45
	Nodular Sg Iron	Ferritic	160	60-125	80-100	0.10-0.20	0.15-0.25	0.15-0.37
		Pearlitic	260	50-90	60-90	0.15-0.22	0.20-0.30	0.20-0.45

Recommended Grades, (Con't)

Material Group	Material		Hardness Brinell HB	Vc [m/min]		Feed* f [mm/tooth] by Cutting Dia. (D2)		
				DTIP30	DTIM45	13-23	24-42	Shell Mill
N(K) Non-Ferrous Metals	Aluminum Alloys Wrought	Non Aging	60	100-250		0.30-0.50	0.60-1.00	0.60-1.50
		Aged	100	100-180		0.28-0.50	0.50-0.90	0.50-1.20
	Aluminum Alloys	Cast	75	150-400		0.28-0.50	0.50-0.90	0.50-1.20
		Cast & Aged	90	150-280		0.25-0.40	0.40-0.60	0.40-0.90
	Aluminum Alloys	Cast Si 13-22%	130	80-150		0.28-0.50	0.50-0.90	0.50-1.20
	Copper and Copper Alloys	Brass	90	120-210	100-200	0.30-0.50	0.60-1.00	0.60-1.50
		Bronze and Non Leaded Copper	100	120-210	100-200	0.28-0.50	0.50-0.90	0.50-1.20
S(M) Heat Resistant Material	High Temperature Alloys	Annealed (iron based)	200	20-45	20-40	0.09-0.15	0.12-0.22	0.12-0.33
		Aged (iron based)	280	20-30	20-30	0.07-0.13	0.10-0.20	0.10-0.30
		Annealed (nickel or cobalt based)	250	15-20	15-20	0.08-0.15	0.08-0.20	0.08-0.30
		Aged (nickel or cobalt based)	350	10-15	10-15	0.08-0.15	0.08-0.20	0.08-0.30
	Titanium Alloys	Pure 99.5 Ti	400Rm	70-140	70-120	0.07-0.13	0.10-0.20	0.10-0.30
		α+β alloys	1050Rm	20-50	20-50	0.07-0.13	0.10-0.20	0.10-0.30

D XN TYPE THEAD

XN Type Thread Tooling Is the Proven

High-Productivity Threading Solution!

Choosing XN Type Threading System

• A superior choice for heavy-duty applications like machining of Acme, Buttress, and API threads. XN Type is also the best system for coarse pitch and multitooth threading applications.

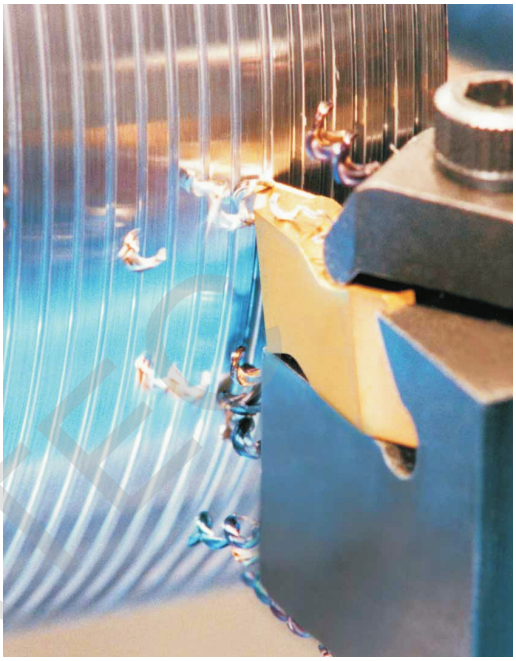
• Largest selection of insert geometries and grades in the industry.

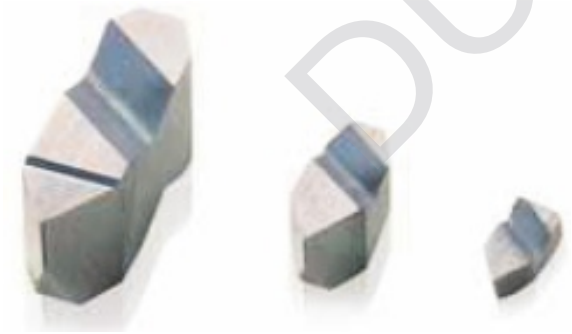
• A very rigid insert clamping design ensures best tool life, surface finish, and workpiece quality.

• Simplicity of the XN Type design does not require shim selection for thread helix angles. This helps to avoid mistakes on the shop floor.

• Reduces inventory by using the same XN Type toolholders and boring bars with either threading or grooving inserts.

• An excellent choice for special thread forms and toolholder designs.





Precision-Ground Thread Form

• Minimises built-up edge.

• Precisely cuts most common materials.

• Reduces cutting forces.

• Ensures accurate high-quality threads.

Superior Chip control

• Eliminates long, troublesome coils.

• Excellent for internal threading operations.

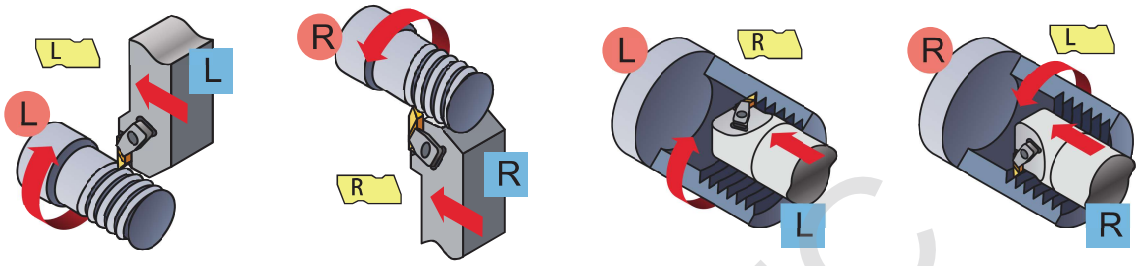
• Available in partial profile inserts for 60° thread forms.

Threading Method and Hand of Tooling

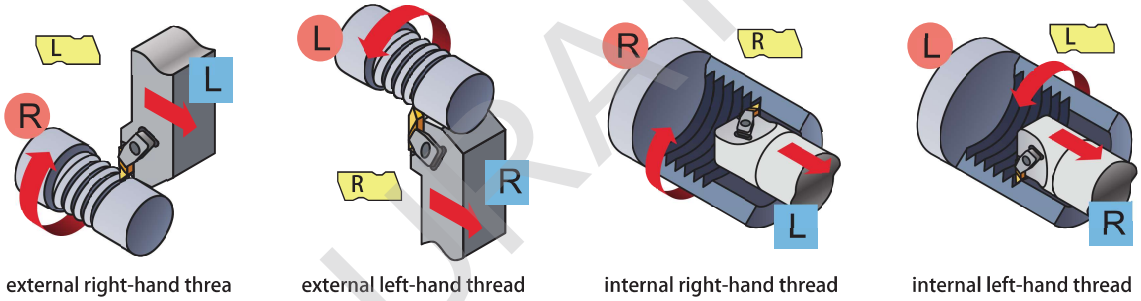
Required Information:

- External/internal operation.
- Spindle rotation/hand of thread.
- Feed direction.

Feed Direction Toward the Chuck • Standard Helix



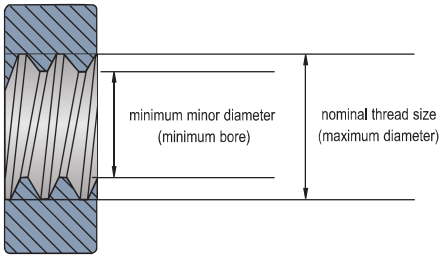
Feed Direction Away from the Chuck • Reverse Helix



NOTE: Top Notch threading bars require opposite hand insert and clamp.
Right-hand bar requires left-hand insert and clamp.
Left-hand bar requires right-hand insert and clamp.

XN Type Thread Tooling Is the Proven

The following charts list the largest thread pitch that can be applied on internal applications using Top Notch threading inserts for 60° V-threading and Acme threading.



Inch-Sized 60° V-Threading Limits
internal threading limitations
XNT-1, XNT-2 V-threading inserts

TPI	nominal thread size		minimum minor diameter (inch)	
	XNT-1	XNT-2	XNT-1	XNT-2
6	1-7/8	–	1.695	–
7	1-3/4	–	1.595	–
8	1-5/8	–	1.490	–
9	1-9/16	–	1.442	–
10	1-1/2	15/16	1.392	0.830
11	1-7/16	15/16	1.339	0.830
11-1/2	1-3/8	15/16	1.281	0.830
12	1-3/8	9/16	1.285	0.472
13	1-5/16	9/16	1.229	0.472
14	1-1/4	9/16	1.173	0.472
16	1-1/4	9/16	1.182	0.472
18	1-1/8	9/16	1.065	0.472
20	1-1/8	1 / 2	1.071	0.440
24*	/1-1/16	1 / 2	1.017	0.440

*Twenty-four threads per inch and finer can be cut with an XNT-2 insert provided the minor diameter is 25mm or larger (11,18mm or larger with XNT-1).

internal threading limitations
XNT-3, XNT-4 V-threading inserts

TPI	nominal thread size	minimum minor diameter (inch)
4**	3	2.792
4-1/2**	2-7/8	2.634
5	2-3/4	2.534
6	2-1/2	2.320
7	2-1/4	2.095
8	2	1.865
9	1-15/16	1.817
10	1-7/8	1.767
11	1-13/16	1.714
11-1/2	1-3/4	1.656
12	1-3/4	1.660
13	1-5/8	1.542
14	1-9/16	1.485
16*	1-7/16	1.370

*Sixteen threads per inch and finer can be cut provided minor diameter is 34,8mm or larger.

Metric-sized 60° V-Threading Limits
internal threading limitations
NT-1, NT-2 60° V-threading inserts

TPI	nominal thread size		minimum thread diameter (mm)	
	XNT-1	XNT-2	XNT-1	XNT-2
4.00	M48x4.00	–	43.67	–
3.00	M42x3.00	–	38.75	–
2.50	M39x2.50	M24x2.50	36.29	21.29
2.00	M33x2.00	M15X2.00	30.84	12.84
1.75	M32x1.75	M15X1.75	30.11	13.11
1.50	M32x1.50	M15x1.50	30.38	13.38
1.25	M29x1.25	M14x1.25	27.65	12.65
1.00*	M27x1.00	M14X1.00	25.92	12.92
0.75	M22x0.75	M12x0.75	21.19	11.19

*Thread pitch of 1mm and less can be cut with an XNT-2 insert provided the core thread diameter is 25mm or larger (11mm or larger with XNT-1).

internal threading limitations
NT-3, NT-4 60° V-threading inserts

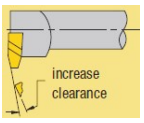
TPI	nominal thread size	minimum thread diameter (mm)
6.00**	M76x6.00	69.50
5.50**	M73x5.50	67.05
5.00	M70x5.00	64.59
4.00	M64x4.00	59.67
3.00	M52x3.00	48.75
2.50	M48x2.50	45.29
2.00	M42x2.00	39.84
1.75	M40x1.75	38.11
1.50*	M38x1.50	36.38

*Thread pitch of 1,5mm and less can be cut provided core thread diameter is 35mm or larger.

Acme Threading Limits
internal threading limitations
XNA and XNAS-2, -3, -4, and -6 Acme threading inserts

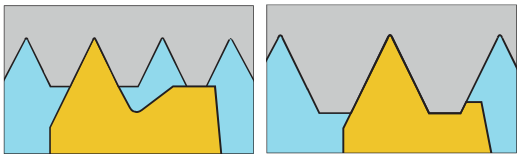
TPI	nominal thread size	minimum thread diameter	
		XNT-1	XNT-2
2*	5	4.500	114.30
2-1/2*	4-1 / 2	4.100	104.10
3**	4	3.665	93.10
4	3-1 / 2	3.250	82.60
5	3	2.800	71.10
6	2-1 / 2	2.333	59.30
8	2-1/4	2.125	54.00
10	2	1.900	48.30
12	1-3/4	1.667	42.40
14	1-5/8	1.554	39.5
16*	1-1 / 2	1.438	36.5

*Sixteen threads per inch and finer can be cut provided minor diameter is 36,5mm (1.438") or larger.
**XNA-6 insert only.
Additional secondary clearance can be ground on leading edge of insert to provide sufficient helical clearance for machining coarser threads and multistart threads. Modified standard inserts may be furnished for machining threads outside of the limits shown.



XN Type Technical Information

60° V-Thread Crest Turning Application Data



XNTC crest turning insert for 12 threads
per inch and finer (P ≤2mm)

NTC crest turning insert for 11 threads
per inch and coarser (P ≥3mm)

"J" thread note for catalogue

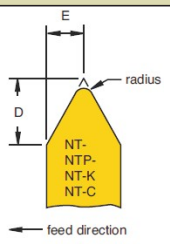
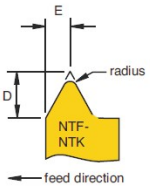
The controlled root radius thread form (SAE8879C) is defined for the external thread only. To machine the corresponding internal thread, choose any insert that will cut a unified class 2B thread, then bore the minor diameter to size. Refer to SAE8879C and MIL-S-8879C and SAEAS8879D for the correct "J" thread minor diameter values.

Controlled Root Radius Specifications for UNJ Threads

insert catalogue number	nose radius on insert	thread radius per MIL-S-8879A
XNJ-3020R/L8 XNJP-3020R/L8	0,477/0,502	0,477/0,574
XNJ-3014R/L12 XNJP-3014R/L12	0,317/0,342	0,317/0,381
XNJ-3010R/L16 XNJP-3010R/L16	0,238/0,264	0,238/0,287
XNJF-3012R/L14 XNJK-3012R/L14	0,271/0,297	0,271/0,327
XNJF-3010R/L16 XNJK-3010R/L16	0,238/0,264	0,238/0,287
XNJF-3009R/L18 XNJK-3009R/L18	0,210/0,236	0,210/0,254
XNJF-3008R/L20 XNJK-3008R/L20	0,190/0,215	0,190/0,228
XNJF-3007R/L24 XNJK-3007R/L24	0,160/0,185	0,160/0,190
XNJF-3006R/L28 XNJK-3006R/L28	0,137/0,162	0,137/0,162
XNJF-3005R/L32 XNJK-3005R/L32	0,119/0,142	0,119/0,142

NOTE: NTC inserts automatically control root to crest dimensions. Therefore, in setting up threading operations with NTC inserts,check the O.D. or I.D. at the thread crest for correct dimensions.

60o V-Thread Application Data

Insert Description	insert	D* (mm)	E* (mm)	recommended TP*		recommended TPI*	
				external	intertnal	external	intertnal
	XNT-1	1.90	1.11	–	1.00-2.00	–	24-12
	XNT-2	28.70	1.90	0.70-3.00	1.25-3.50	36-8	20-7
	XNTF-2	15.75	1.01	0.60-1.75	1.00-2.00	44-14	24-12
	XNTK-2	15.75	1.01	0.60-1.75	1.00-2.00	44-14	24-12
	XNTP-2	28.70	1.90	0.70-3.00	1.25-3.50	36-8	20-7
	XNT-3	37.59	2.46	1.25-4.00	2.00-5.00	20-6	12-5
	XNTF-3	21.08	1.37	0.60-2.50	1.00-2.50	44-10	24-9
	XNTK-3	21.08	1.37	0.60-2.50	1.00-2.50	44-10	24-9
	XNTP-3	37.59	2.46	1.25-4.00	2.00-5.00	20-6	12-5
	XNT-4	49.78	3.22	1.25-6.25	2.00-6.25	20-4	12-4
	XNTF-4	21.08	1.37	0.60-2.50	1.00-2.50	44-10	24-9
	XNTK-4	21.08	1.37	0.60-2.50	1.00-2.50	44-10	24-9
	XNTP-4	49.78	3.22	1.25-6.25	2.00-6.25	20-4	12-5

*Based on maximum insert radius size and class 2A and 2B thread specifications.

**For metric D and E dimensions, multiply by 25,4.

API Thread Forms.Insert Applications Chart for API Rotary Shouldered Connections

Thread form	cresting	non-cresting	tool joint application	minimum box size*
V-.038R 2" TPF 4 TPI	XNDC-4038R/L2 4-E/IR4API382	XND-3038R/L	2-3/8 API internal flush 2-7/8 API internal flush 3-1/2 API internal flush 4 API internal flush 4-1/2 API internal flush 5-1/2 API internal flush 6-5/8 API internal flush 4 API full hole API #23, API #26, API #31, API #35, API #38, API #40, API #44, API #46, API #50	API #31 2-7/8 IF
V-.038R 3" TPF 4 TPI	XNDC-4038R/L3 4-E/IR4API383	XND-3038R/L	API #56 API #61 API #70 API #77	API #56
V-.050 2" TPF 4 TPI	XNDC-4050R/L2 4-E/IRAPI502	XND-4050R/L	5-1/2 API full hole 6-5/8 API regular 6-5/8 API full hole	5-1/2 API full hole
V-.050 3" TPF 4 TPI	XNDC-4050R/L3 4-E/IR4API503	XND-4050R/L	5-1/2 API regular 7-5/8 API regular 8-5/8 API regular	5-1/2 API regular
V-.040 3" TPF 5 TPI	XNDC-3040R/L3 XNDC-4040R/L3 4-E/IR5API403	XND-3040R/L XND-4040R/L	2-3/8 API regular 2-7/8 API regular 3-1/2 API regular 4-1/2 API regular	3-1/2 API regular

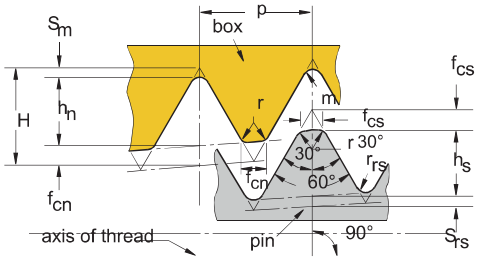
*Minimum box size that can be threaded with a standard Top Notch insert due to minimum bore equipment.

API Thread Forms.Product Thread Dimensions.Rotary Shouldered Connections (Inch)

Thread form	taper inch per f_t	thread height, not truncated H	thread height, truncated $h_n=h_s$	root truncation $s_m=s_{rs}$ $f_m=f_{rs}$	crest truncation $f_{cn}=f_{cs}$	width of flat		root radius $r_m=r_s$	radius at thread corners r	pitch p
						crest $f_{cn}=f_{cs}$	crest $f_m=f_{rs}$			
V-0.38R	2	0.216005	0.121844	0.038000	0.056161	0.065	–	0.038	0.015	0.250
V-0.38R	3	0.215379	0.121381	0.380000	0.055998	0.065	–	0.038	0.015	
V-0.40	3	0.172303	0.117842	0.200000	0.034461	0.040	–	0.020	0.015	0.250
V-0.50	3	0.215379	0.147303	0.250000	0.043076	0.050	–	0.025	0.015	
V-0.50	2	0.216005	0.147804	0.250000	0.043201	0.050	–	0.025	0.015	0.250

Note: All dimensions in inches.

V-.040 and V-.050 Product Thread Form

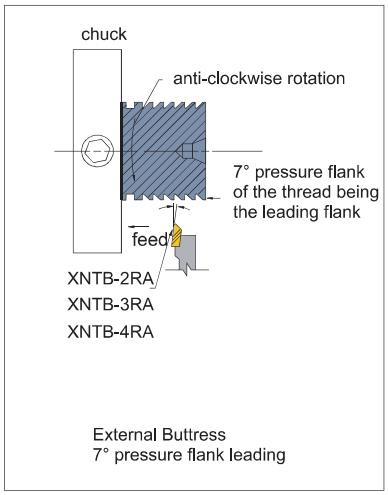


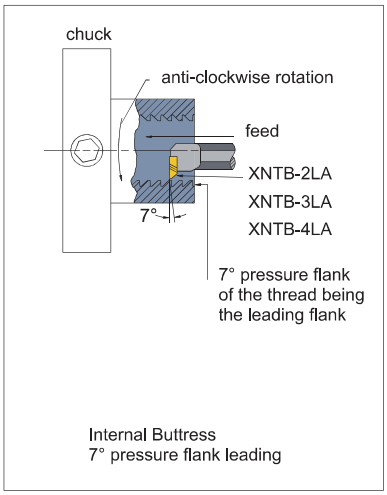
Casing and Tubing Round Thread (Height Dimensions)

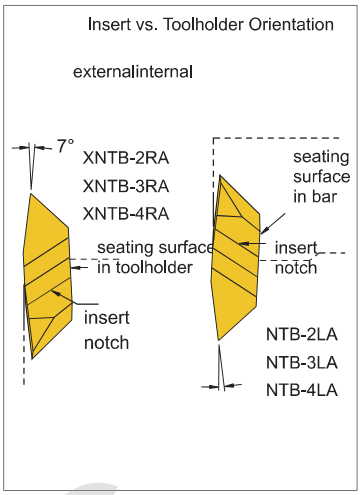
thread element		10 TPI p=.1000	8 TPI p=.1250
H	=.866p	0.08660	0.10825
$H_s=h_s$	=.626p-.007	0.05560	0.07125
$S_{rs}=S_m$	=.120p+.002	0.01400	0.01700
$S_{cs}=S_{cn}$	=.120p+.005	0.17000	0.02000

D

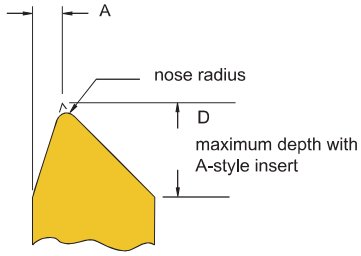
XN Type Technical Information



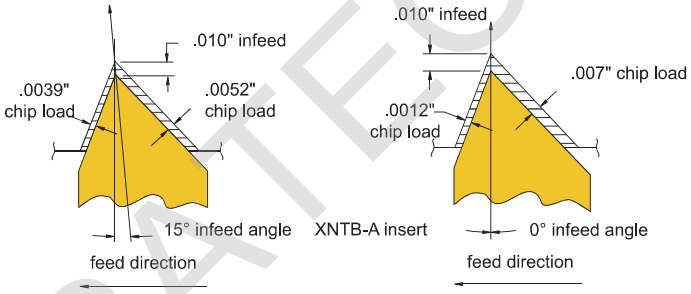




Reference Dimensions



Infeed Angle vs. Chip Load: 7° Pressure Flank Leading



Insert	D (inch)	A (inch)	nose radius (inch)	pitch based on maximum radius
XNTB-2	0.133	0.024	0.002-0.004	16-20 TPI
XNTB-3	0.171	0.031	0.005-0.008	8-16 TPI
XNTB-4	0.218	0.049	0.008-0.012	4-6 TPI

Note: For balanced chip load, 15° infeed angle is suggested.

internal threading limitations
XNTB-2A Buttress threading inserts

TPI	nominal thread size	minimum minor diameter (inch)
8	1-3/4	1.600
10	1-5/8	1.505
12	1-1/2	1.400
16	1-1/4	1.175
20	1-1/16	1.002

internal threading limitations
XNTB-3 and XNTB-4A Buttress threading inserts

TPI	nominal thread size	minimum minor diameter (inch)
4*	2-1/2	2.200
5	2-1/4	2.010
6	2	1.800
8	1-3/4	1.600
10	1-5/8	1.505
12**	1-1/2	1.400

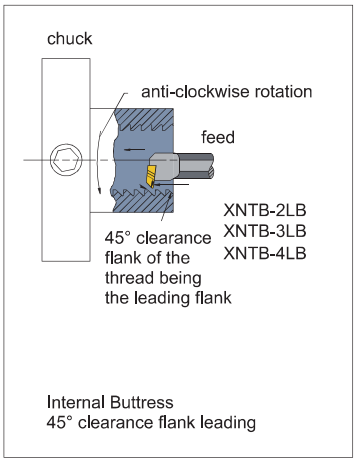
*NTB-4A insert only.
**Can cut 16 or 20 threads per inch provided minor diameter is 1.375" or larger.

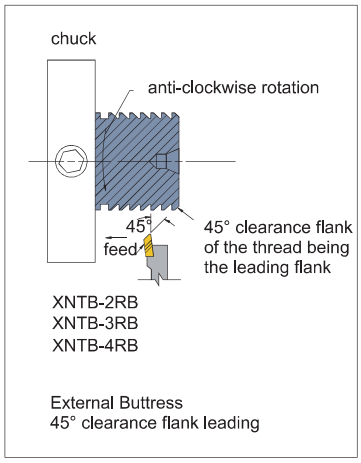
Threads per Inch vs. Maximum Root Radius Chart (Inch)

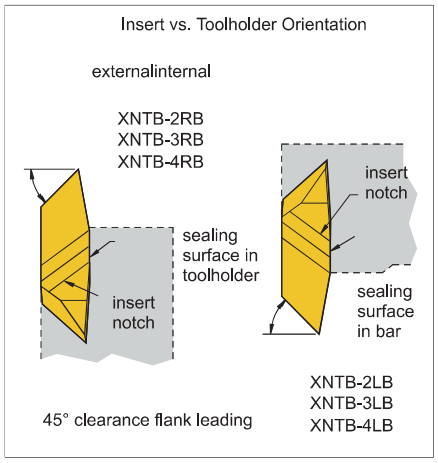
TPI	20	16	12	10	8	6	5	4	3	2-1/2	2.0	1-1/2	1-1/4	1
maximum root radius	0.0036	0.0045	0.0059	0.0071	0.0089	0.1190	0.0143	0.0179	0.0238	0.0286	0.3750	0.0476	0.0572	0.0714

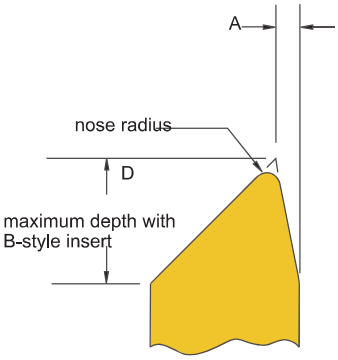
NOTE: Special Buttress forms are available upon request.

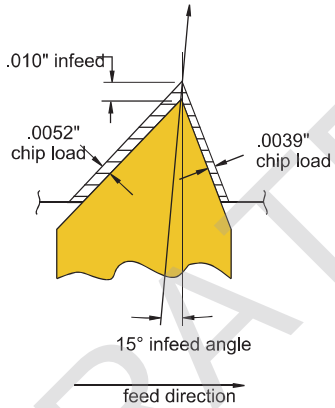
American Butterss (45° Clearance Flank Leading) : XNTB-B Insert . PULL- type

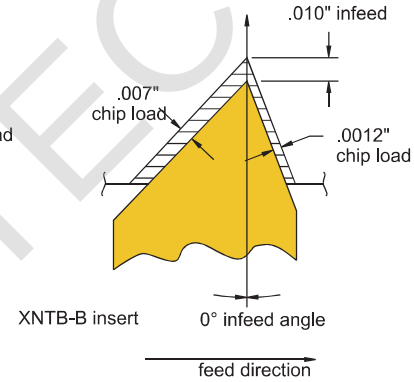












Insert	D (inch)	A (inch)	nose radius (inch)	pitch based on maximum radius
XNTB-2	0.133	0.024	0.002-0.004	16-20 TPI
XNTB-3	0.171	0.031	0.005-0.008	8-16 TPI
XNTB-4	0.218	0.049	0.008-0.012	4-6 TPI

NOTE: For balanced chip load, 15° infeed angle is suggested.

internal threading limitations
XNTB-2A Buttress threading inserts

TPI	nominal thread size	minimum minor diameter (inch)
8	1-3/4	1.600
10	1-5/8	1.505
12	1-1/2	1.400
16	1-1/4	1.175
20	1-1/16	1.002

internal threading limitations
XNTB-3 and XNTB-4A Buttress threading inserts

TPI	nominal thread size	minimum minor diameter (inch)
4*	2-7/8	2.575
5	2-3/4	2.510
6	2-3/8	2.175
8	2-1/8	1.975
10	1-7/8	1.755
12	1-5/8	1.525
16	1-1/2	1.407
20	1-7/16	1.378

*XNTB-4B insert only.

XN Type Threading Code System

XN J F 3 □ R 12 E DTIM45

1	2	3	4	5	6	7	8	9
Insert name	Thread standard	Additional information	Insert size	Industry Thread Identification	Insert hand	Definition of Insert	Additional information	Carbide grades

1 Insert Name

XN J F 3 □ R 12 E DTIM45

XN: Top clamping seriers

2 Thread Standard

XN J F 3 □ R 12 E DTIM45

A = Acme D = API or NPT J = UNJ thread
T = 60° V thread W = 55° V Whitworth

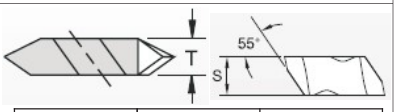
3 Additional Information

XN J F 3 □ R 12 E DTIM45

B = Buttress F = Fine pitch S = Stub Acme
C = Cresting P = Positive rake
K = Fine pitch, psoitive U = Utility**

4 Insert Size

XN J F 3 □ R 12 E DTIM45



Inset Size	S (mm)	T (mm)
1	2.54	2.54
2	5.56	3.81
3	8.74	4.95
4	11.51	6.48
5	17.48	9.65
6	11.51	9.73
8	7.93	11.13

5 Industry Thread Identification

XN J F 3 □ R 12 E DTIM45

Position indicates API or drilling industry form designation (e.g.,10RD, 8RD, .038) or Controlled root radius threading inserts indicate the root radius in 001" increments(NJ, NJF, NJP, NJK) or M indicates metric ISO thread

6 Insert Hand

XN J F 3 □ R 12 E DTIM45

R: right hand L: left hand

7 Definition of Insert

XN J F 3 □ R 12 E DTIM45

- Threads per inch or pitch (for metric)
- "A" or "B" type Buttress insert
- Taper per foot — API threads

8 Additional Information

XN J F 3 □ R 12 E DTIM45

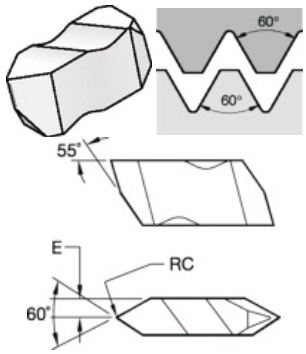
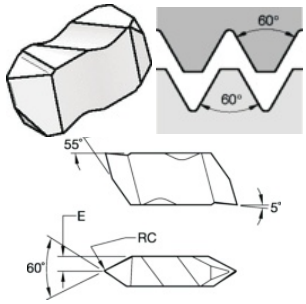
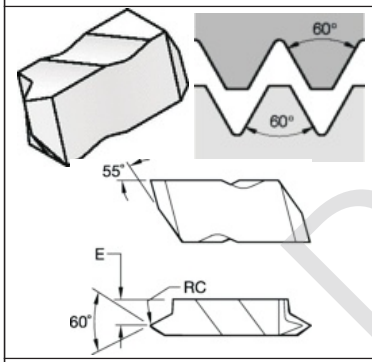
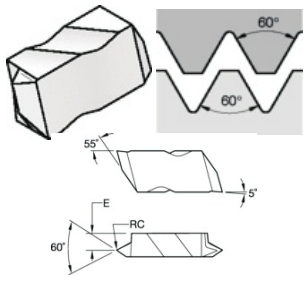
I = Internal thread M = Multiple tooth
E = External thread C = Coarse pitch
(used only if internal D = Dryseal
and external thread
forms are different)

9 Carbide grades

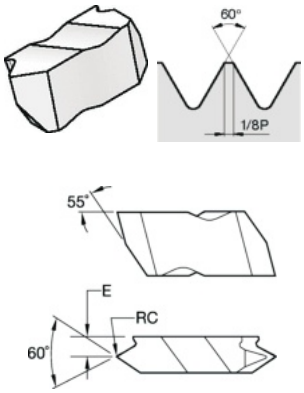
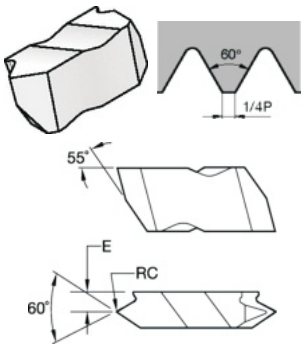
XN J F 3 □ R 12 E DTIM45

DTIP30 DTIM45 DTIS30

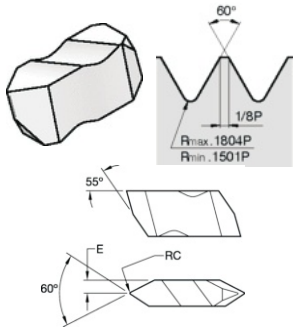
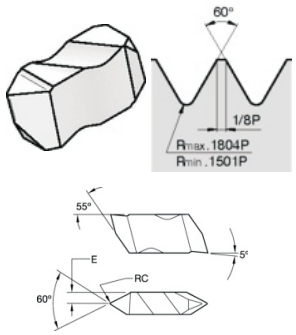
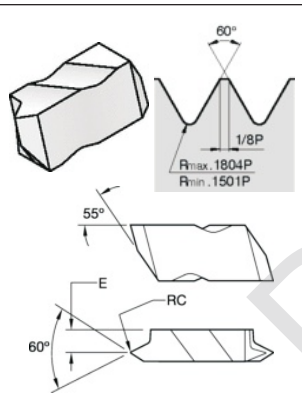
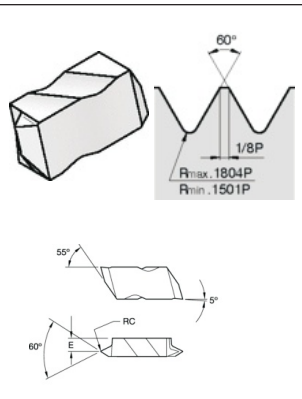
XN Type Threading Insert

Shape	Designation		Pitch (mm)		TPI		RC	E
			External	Internal	External	Internal		
	XNT	2R/L	0.70-3.00	1.25-3.50	8-36	7-20	0.10	1.91
		3R/L	1.25-4.00	2.00-5.00	6-20	5-12	0.17	2.49
		4R/L	1.25-6.25	2.00-6.25	4-20	4-20	0.17	3.25
	XNTP	2R/L	0.70-3.00	1.25-3.50	8-36	7-20	0.10	1.91
		3R/L	1.25-4.00	2.00-5.00	6-20	5-12	0.17	2.49
		4R/L	1.25-6.25	2.00-6.25	4-20	4-12	0.17	3.25
	XNTF	2R/L	0.60-1.75	1.00-2.00	14-44	12-24	0.08	2.79
		3R/L	0.60-2.50	1.00-2.50	14-44	9-24	0.08	3.58
		4R/L	0.60-2.50	1.00-2.50	14-44	9-24	0.08	5.11
	XNTK	2R/L	0.60-1.75	1.00-2.00	14-44	12-24	0.08	2.79
		3R/L	0.60-2.50	1.00-2.50	10-44	9-24	0.08	3.58
		4R/L	0.60-2.50	1.00-2.50	10-44	9-24	0.08	5.11

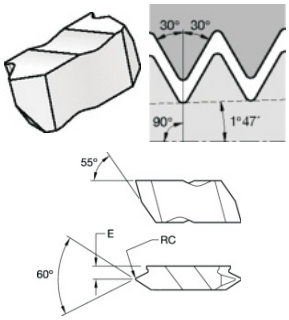
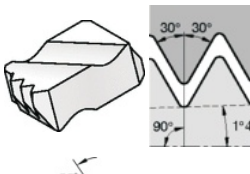
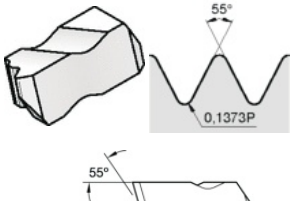
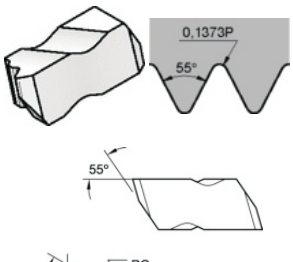
XN Type Threading Inserts

Shape	Designation		Pitch (mm)		TPI		RC	E
			External	Internal	External	Internal		
	XNTC	3MR/L150E	1.50	–	–	–	0.20	3.68
		3MR/L200E	2.00	–	–	–	0.27	3.68
		3MR/L300E	3.00	–	–	–	0.40	2.90
		3R32E	–	–	32	–	0.10	3.76
		3R28E	–	–	28	–	0.12	3.76
		3R24E	–	–	24	–	0.13	3.76
		3R/L20E	–	–	20	–	0.16	3.76
		3R/L18E	–	–	18	–	0.18	3.76
		3R/L16E	–	–	16	–	0.19	3.76
		3R/L14E	–	–	14	–	0.22	3.76
		3R13E	–	–	13	–	0.24	3.76
		3R/L12E	–	–	12	–	0.25	3.76
		3R11E	–	–	11	–	0.28	2.72
		3R/L10E	–	–	10	–	0.32	2.72
		3R9E	–	–	9	–	0.36	2.72
		3R/L8E	–	–	8	–	0.41	2.72
		3R7E	–	–	7	–	0.47	2.72
	XNTC	3R/L16I	–	–	–	16	0.08	3.76
		3R/L14I	–	–	–	14	0.09	3.76
		3R/L12I	–	–	–	12	0.10	3.76
		3R/L10I	–	–	–	10	0.13	2.72
		3R/L8I	–	–	–	8	0.18	2.72

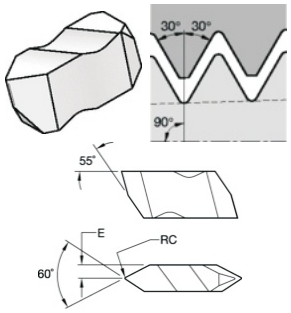
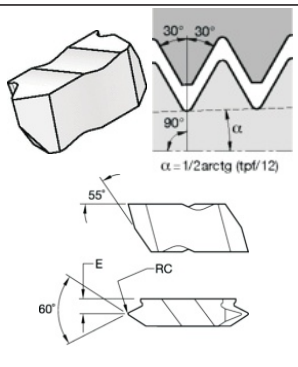
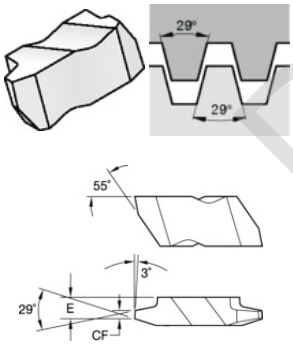
XN Type Threading Insert

Shape	Designation		Pitch (mm)		TPI		RC	E
			External	Internal	External	Internal		
	XNJ	3010R/L16	–	–	16	–	0.25	2.49
		3014R/L12	–	–	12	–	0.33	2.49
		3020R/L8	–	–	8	–	0.49	2.49
	XNJP	3010R/L16	–	–	16	–	0.25	2.49
		3014R/L12	–	–	12	–	0.33	2.49
		3020R/L8	–	–	8	–	0.49	2.49
	XNJF	3005R/L32	–	–	32	–	0.13	3.58
		3006R/L28	–	–	28	–	0.15	3.58
		3007R/L24	–	–	24	–	0.17	3.58
		3008R/L20	–	–	20	–	0.20	3.58
		3009R/L18	–	–	18	–	0.22	3.58
		3010R/L16	–	–	16	–	0.25	3.58
		3012R/L14	–	–	14	–	0.28	3.58
	XNJK	3005R/L32	–	–	32	–	0.13	3.58
		3006R/L28	–	–	28	–	0.15	3.58
		3007R/L24	–	–	24	–	0.17	3.58
		3008R/L20	–	–	20	–	0.20	3.58
		3009R/L18	–	–	18	–	0.22	3.58
		3010R/L16	–	–	16	–	0.25	3.58
		3012R/L14	–	–	14	–	0.28	3.58

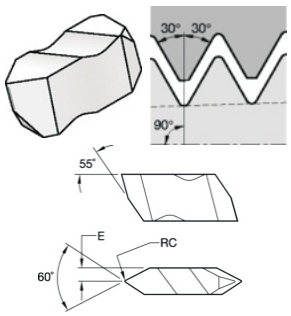
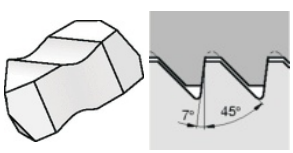
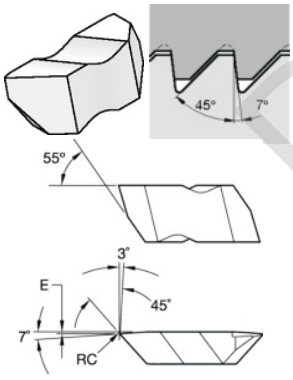
XN Type Threading Inserts

Shape	Designation		TPI	TRF	CF	RC	E
	XNDC	327VR75	27	0.75	–	0.05	3.66
		318VR75	18	0.75	–	0.08	3.66
		314VR75	14	0.75	–	0.08	3.66
		3115VR/L75	11.5	0.75	–	0.10	3.66
		38VR/L75	8	0.75	–	0.13	2.54
		310RDR/L75	10	0.75	–	0.36	3.18
		38RDR/L75	8	0.75	–	0.43	3.18
	XNDC	8115VR/L75M	11.5	0.75	–	0.10	2.59
		88VR/L75M	8	0.75	–	0.13	2.41
		68RDR/L75M	8	0.75	–	0.41	2.62
	XNWC	3R14E	14	–	–	0.235	3.43
		3R11E	11	–	–	0.300	3.43
	XNWC	3L14I	14	–	–	0.235	3.43
		3L11I	11	–	–	0.300	3.43

XN Type Threading Insert

Shape	Designation		TPI	TRF	CF	RC	E
	XND	3040R/L	5	–	–	0.445	2.08
	(Partial Profile)	3038R/L	4	–	–	0.902	2.08
		4040R/L	5	–	–	0.445	3.25
		4050R/L	4	–	–	0.572	3.25
	XNDC	3040R/L3	5	3.00	–	0.445	3.73
	(Cresting)	4040R/L3	5	3.00	–	0.445	3.73
		4050R/L2	4	3.00	–	0.572	4.65
		4050R/L3	4	3.00	–	0.572	4.65
		4038R/L2	4	2.00	–	0.902	4.65
	XNA	3R/L16	16	–	0.523	–	3.79
		3R/L14	14	–	0.607	–	3.79
		3R/L12	12	–	0.719	–	3.79
		3R/L10	10	–	0.810	–	3.79
		4R/L10	10	–	0.810	–	5.13
		3R/L8	8	–	1.044	–	3.79
		4R/L8	8	–	1.044	–	5.13
		3R/L6	6	–	1.438	–	3.79
		4R/L6	6	–	1.438	–	5.13
		3R/L5	5	–	1.750	–	3.79
		4R/L5	5	–	1.750	–	5.13
		3R/L4	4	–	2.223	–	3.79
		4R/L4	4	–	2.223	–	5.13
		6R/L3	3	–	3.007	–	7.19
		6R/L25	2.5	–	3.635	–	7.19
		6R/L2	2	–	4.577	–	7.19

XN Type Threading Inserts

Shape	Designation		TPI	TRF	CF	RC	E
	XNS	3R/L16	16	–	0.605	–	3.79
		3R/L14	14	–	0.701	–	3.79
		3R/L12	12	–	0.828	–	3.79
		3R/L10	10	–	0.940	–	3.79
		3R/L8	8	–	1.209	–	3.79
		3R/L6	6	–	1.656	–	3.79
		3R/L5	5	–	2.014	–	3.79
	XNTB	2R/LA	16-20	–	0.076	–	3.20
		3R/LA	8-16	–	0.165	–	4.17
		4R/LA	4-6	–	0.254	–	5.23
	XNTB	2R/LB	16-20	–	0.076	–	0.25
		3R/LB	8-16	–	0.165	–	0.31
		4R/LB	4-6	–	0.254	–	0.41

D THREAD MILL

Thread Milling Holder Code System

S R 0025 - K 21 C - 2

1 Clamping Method | 2 Hand | 3 Cutting Dia. | 4 Length of Holder | 5 Cutting edge Length | 6 Shank Type | 7 Number of Inserts

1 Clamping Method
S R 0025 - K 21 C - 2

S: Screw only

2 Hand
S R 0025 - K 21 C - 2

R: right hand
L: left hand

3 Cutting Diameter
S R 0025 - K 21 C - 2

0025=25mm

4 Length of Holder
S R 0025 - K 21 C - 2

F H J K M S R

5 Cutting edge Length
S R 0025 - K 21 C - 2

12 12.0mm 14 14.0mm 21 21.0mm
30 30.0mm 40 40.0mm

6 Shank Type
S R 0025 - K 21 C - 2

Non: steel shank
C: carbide shank

7 Number of Insert
S R 0025 - K 21 C - 2

Non: 1 insert
2: 2 inserts

Thread Milling Cutter Code System

S R 0063 C 21 - 5 - 22

1 Clamping Method | 2 Hand | 3 Cutting Dia. | 4 Tool Length | 5 Cutting edge Length | 6 Number of Inserts | 7 Bore Dia

1 Clamping Method
S R 0063 C 21 - 5 - 22

S: Screw only

2 Hand
S R 0063 C 21 - 5 - 22

R: right hand
L: left hand

3 Cutting Diameter
S R 0063 C 21 - 5 - 22

0063=63mm

4 Tool Length
S R 0063 C 21 - 5 - 22

C D E

5 Cutting edge Length
S R 0063 C 21 - 5 - 22

12 12.0mm 14 14.0mm 21 21.0mm
30 30.0mm 40 40.0mm

6 Number of Insert
S R 0063 C 21 - 5 - 22

3: 3 Inserts 4: 4 Inserts
5: 5 Inserts

7 Bore Diameter
S R 0063 C 21 - 5 - 22

22=22.0mm 27=27.0mm
32=32.0mm

Thread Milling Insert Code System

30	E	1.50	ISO	DTIM45
1	2	3	4	5
Clamping Method	Hand	Cutting Dia.	Length of Holder	Cutting edge Length

1 Cutting edge Length

30 E 1.50 ISO DTIM45

12 12.0mm 14 14.0mm 21 21.0mm
30 30.0mm 40 40.0mm

2 Type of Insert

30 E 1.50 ISO DTIM45

E : External I: Internal
EI: External & Interna

3 Pitch

30 E 1.50 ISO DTIM45

mm: 0.5-6.0 TPI 48-6

4 Standard

30 E 1.50 ISO DTIM45

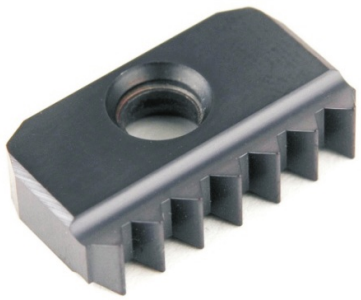
ISO - ISO Metric
UN - American UN (UNC, UNF, UNEF, UNS)
W - Whit Worth (BSW, BSF, BSP, BSB)
NPT - National Pipe Thread
NPTF - National Pipe Thread
BSPT - British Standard Pipe Thread (BSPT)

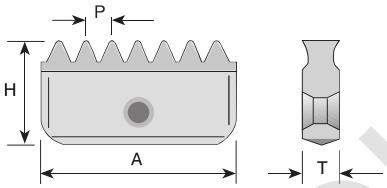
5 Carbide Grades

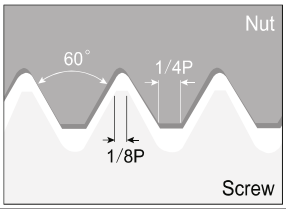
30 E 1.50 ISO DTIM45

DTIP30 DTIM45

ISO 60° Metric

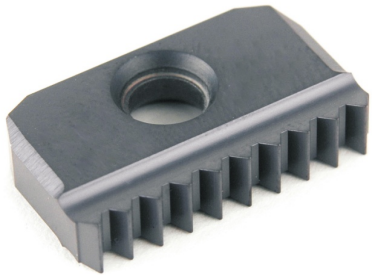


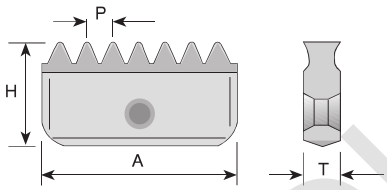




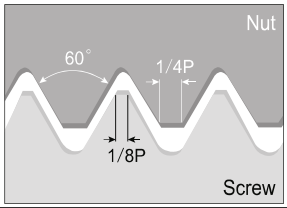
External	Internal	Pitch (mm)	A	H	T
	12I 0.50 ISO	0.5	12	6.5	2.9
	12I 0.75 ISO	0.75	12	6.5	2.9
	12I 1.00 ISO	1.0	12	6.5	2.9
	12I 1.25 ISO	1.25	12	6.5	2.9
	12I 1.50 ISO	1.5	12	6.5	2.9
	14I 0.50 ISO	0.5	14	7.9	3.2
14E 0.75 ISO	14I 0.75 ISO	0.75	14	7.9	3.2
14E 1.00 ISO	14I 1.00 ISO	1.0	14	7.9	3.2
14E 1.25 ISO	14I 1.25 ISO	1.25	14	7.9	3.2
14E 1.50 ISO	14I 1.50 ISO	1.5	14	7.9	3.2
14E 1.75 ISO	14I 1.75 ISO	1.75	14	7.9	3.2
14E 2.00 ISO	14I 2.00 ISO	2.0	14	7.9	3.2
14E 2.50 ISO	14I 2.50 ISO	2.5	14	7.9	3.2
21E 1.00 ISO	21I 1.00 ISO	1.0	21	12.6	4.8
21E 1.50 ISO	21I 1.50 ISO	1.5	21	12.6	4.8
	21I 1.50 ISO	1.75	21	12.6	4.8
21E 2.00 ISO	21I 2.00 ISO	2.0	21	12.6	4.8
21E 2.50 ISO	21I 2.50 ISO	2.5	21	12.6	4.8
21E 3.00 ISO	21I 3.00 ISO	3.0	21	12.6	4.8
	21I 3.50 ISO	3.5	21	12.6	4.8
30E 1.50 ISO	30I 1.50 ISO	1.5	30	16.7	5.6
30E 2.00 ISO	30I 2.00 ISO	2.0	30	16.7	5.6
30E 3.00 ISO	30I 3.00 ISO	3.0	30	16.7	5.6
30E 3.50 ISO	30I 3.50 ISO	3.5	30	16.7	5.6
30E 4.00 ISO	30I 4.00 ISO	4.0	30	16.7	5.6
	30I 4.50 ISO	4.5	30	16.7	5.6
	30I 5.00 ISO	5.0	30	16.7	5.6
40E 1.50 ISO	40I 1.50 ISO	1.5	40	20.8	6.4
40E 2.00 ISO	40I 2.00 ISO	2.0	40	20.8	6.4
40E 3.00 ISO	40I 3.00 ISO	3.0	40	20.8	6.4
	40I 3.50 ISO	3.5	40	20.8	6.4
40E 4.00 ISO	40I 4.00 ISO	4.0	40	20.8	6.4
	40I 4.50 ISO	4.5	40	20.8	6.4
40E 5.00 ISO	40I 5.00 ISO	5.0	40	20.8	6.4
	40I 5.50 ISO	5.5	40	20.8	6.4
40E 6.00 ISO	40I 6.00 ISO	6.0	40	20.8	6.4

UN60° American UN (UNC, UNF, UNEF, UNS)

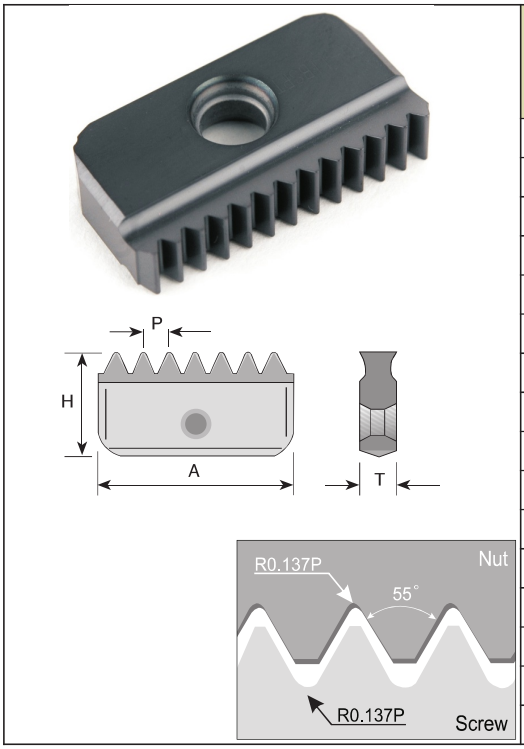




External	Internal	TPI	A	H	T
	12I 32 UN	32	12	63	2.9
	12I 28 UN	28	12	6.3	2.9
	12I 24 UN	24	12	6.3	2.9
	12I 20 UN	20	12	6.3	2.9
	12I 18 UN	18	12	6.3	2.9
	12I 16 UN	16	12	7.9	3.2
14E 32 UN	14I 32 UN	32	14	7.5	3.1
14E 28 UN	14I 28 UN	28	14	7.5	3.1
	14I 27 UN	27	14	7.5	3.1
14E 24 UN	14I 24 UN	24	14	7.5	3.1
14E 20 UN	14I 20 UN	20	14	7.5	3.1
14E 18 UN	14I 18 UN	18	14	7.5	3.1
14E 16 UN	14I 16 UN	16	14	7.5	3.1
14E 14 UN	14I 14 UN	14	14	7.5	3.1
14E 12 UN	14I 12 UN	12	14	7.5	3.1
	14I 11 UN	11	14	7.5	3.1
	14I 10 UN	10	14	7.5	3.1
21E 24 UN	21I 24 UN	24	21	12.0	4.7
21E 20 UN	21I 20 UN	20	21	12.0	4.7
21E 18 UN	21I 18 UN	18	21	12.0	4.7
21E 16 UN	21I 16 UN	16	21	12.0	4.7
21E 14 UN	21I 14 UN	14	21	12.0	4.7
21E 12 UN	21I 12 UN	12	21	12.0	4.7
21E 10 UN	21I 10 UN	10	21	12.0	4.7
	21I 8 UN	8	21	12.0	4.7
	21I 7 UN	7	21	12.0	4.7
30E 20 UN	30I 20 UN	20	30	16.0	5.5
30E 18 UN	30I 18 UN	18	30	16.0	5.5
30E 16 UN	30I 16 UN	16	30	16.0	5.5
30E 14 UN	30I 14 UN	14	30	16.0	5.5
30E 12 UN	30I 12 UN	12	30	16.0	5.5
30E 10 UN	30I 10 UN	10	30	16.0	5.5
30E 8 UN	30I 8 UN	8	30	16.0	5.5
30E 6 UN	30I 6 UN	6	30	16.0	5.5
	30I 5 UN	5	30	16.0	5.5
40E 16 UN	40I 16 UN	16	40	20.0	6.3
40E 14 UN	40I 14 UN	14	40	20.0	6.3
40E 12 UN	40I 12 UN	12	40	20.0	6.3
40E 10 UN	40I 10 UN	10	40	20.0	6.3
40E 8 UN	40I 8 UN	8	40	20.0	6.3
40E 6 UN	40I 6 UN	6	40	20.0	6.3
	40I 4.5 UN	4.5	40	20.0	6.3
	40I 4 UN	4	40	20.0	6.3

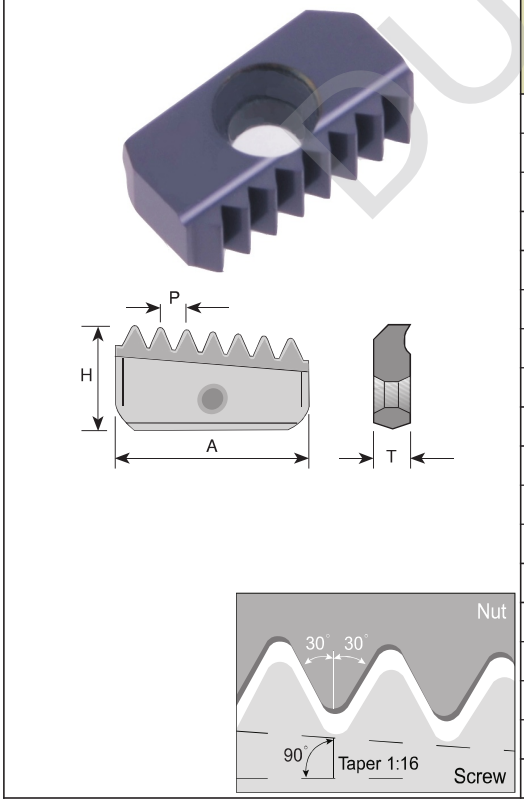


W 55° Withworth (BSW, BSF, BSP, BSB)



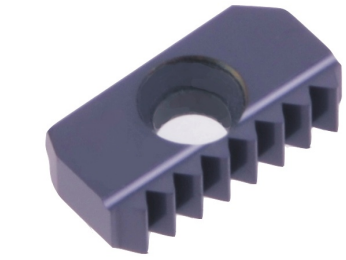
Same Inserts for Exteranl & Internal	TPI	A	H	T
12EI 19 W	19	12	6.3	2.9
14EI 24 W	24	14	7.5	3.1
14EI 20 W	20	14	7.5	3.1
12EI 19 W	19	14	7.5	3.1
12EI 19 W	16	14	7.5	3.1
12EI 19 W	14	14	7.5	3.1
12EI 19 W	20	21	12.0	4.7
12EI 19 W	19	21	12.0	4.7
12EI 19 W	16	21	12.0	4.7
12EI 19 W	14	21	12.0	4.7
12EI 19 W	11	21	12.0	4.7
12EI 19 W	16	30	16.0	5.5
12EI 19 W	14	30	16.0	5.5
12EI 19 W	11	30	16.0	5.5
12EI 19 W	11	40	20	6.3
12EI 19 W	8	40	20	6.3

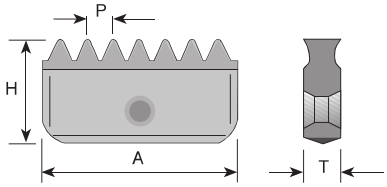
NPT/NPTF 60° National Pipe

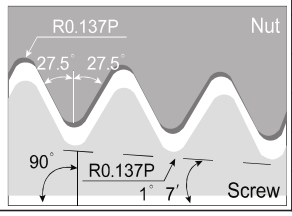


Same Inserts for Exteranl & Internal	TPI	A	H	T
12EI 18 NPT	18	12	6.3	2.9
14EI 18 NPT	18	14	7.5	3.1
14EI 14 NPT	14	14	7.5	3.1
21EI 14 NPT	14	21	12.0	4.7
21EI 11.5 NPT	11.5	21	12.0	4.7
30EI 11.5 NPT	11.5	30	16.0	5.5
30EI 8 NPT	8	30	16.0	5.5
40EI 11.5 NPT	11.5	40	20.0	6.3
40EI 8 NPT	8	40	20.0	6.3
12EI 18 NPTF	18	12	6.3	2.9
14EI 18 NPTF	18	14	7.5	3.1
14EI 14 NPTF	14	14	7.5	3.1
21EI 14 NPTF	14	21	12.0	4.7
21EI 11.5 NPTF	11.5	21	12.0	4.7
30EI 11.5 NPTF	11.5	30	16.0	5.5
30EI 8 NPTF	8	30	16.0	5.5
40EI 11.5 NPTF	11.5	40	20.0	6.3
40EI 8 NPTF	8	40	20.0	6.3

BSPT 55° British Standard Pipe

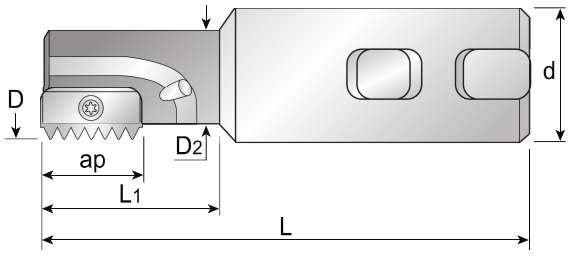






Same Inserts for Exteranl & Internal	TPI	A	H	T
12EI 19 BPST	19	12	6.3	2.9
14EI 19 BSPT	19	14	7.5	3.1
14EI 14 BSPT	14	14	7.5	3.1
21EI 14 BSPT	14	21	12.0	4.7
21EI 11 BSPT	11	21	12.0	4.7
30EI 11 BSPT	11	30	16.5	5.5
40EI 11 BSPT	11	40	20.0	6.3

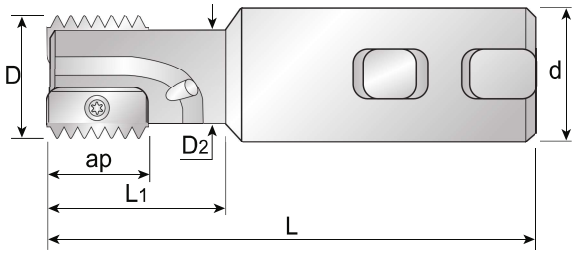
Indexable Threading Endmills



Designation		Dimension (mm)						Applicable Insert	Spare parts	
		D	d	D	L	1	ap		Screw	Wrench
SR	0009-H12	9.5	20	7.50	85	14	12	12E/I	M2.5x7.5	T8
	0010-H12(1)	9.5	20	7.60	85	16	12			
	0012-F14	12.0	20	8.90	75	20	14	14E/I	M3.0x7.5	
	0014-H14	14.5	20	11.20	85	25	14			
	0017-H14	17.0	20	13.40	85	30	14			
	0018-H21(2)	18.0	20	14.40	85	30	21	21E/I	M3.5x8.0	T-15
	0021-H21	21.0	20	16.50	94	40	21			
	0025-K21(3)	25.0	20	–	125	–	21			
	0029-J30	29.0	25	23.00	110	50	30	30E/I	M4.0x11.0	T-20
	0031-M30(3)	31.0	25	–	150	–	30			
	0038-M30(3)	38.0	32	–	150	–	30			
	0048-M40	48.0	40	35.00	153	78	40	40E/I	M5.0x11.0	
	0048-R40(3)	48.0	40	–	210	–	40			

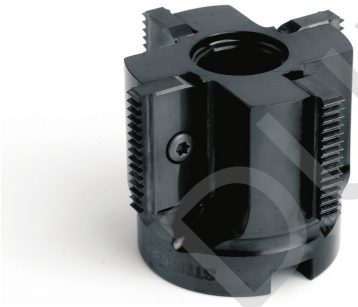
- (1) For conical thread inserts: 12-18 NPT, 12-18 NPTF, 12-19 BSPT
- (2) Not suitable for use with the following insert: 21 I 3.5 ISO, 21I 8 UN, 21-11 BSPT, 21-11.5 NPT, 21-11.5 NPTF
- (3) For long reach

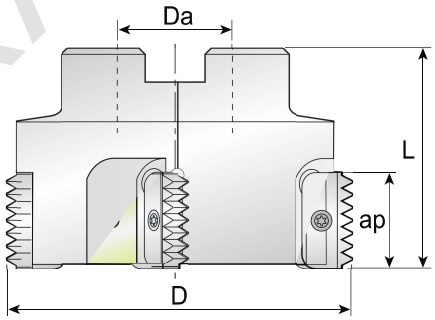
Indexable Twin Inserts Threading endmills



Designation		Dimension (mm)						Applicable Insert	Z	Spare part	
		D	d	D2	L	L1	ap			Screw	Wrench
SR	0020-H14-2	20.0	20	16.00	93	41	14	14E/I	2	M3.0x8.0	T-8
	0030-J21-2	30.0	25	24.00	108	52	21	21E/I	2	M3.5x12.0	T-15
	0040-L30-2	40.0	32	30.00	130	70	30	30E/I	2	M4.0x12.0	T-20
	0050-M40-2	50.0	40	38.00	153	78	40	40E/I	2	M5.0x12.0	

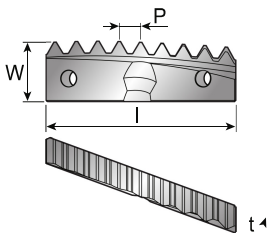
Multi Inserts Threading Mill Cutters

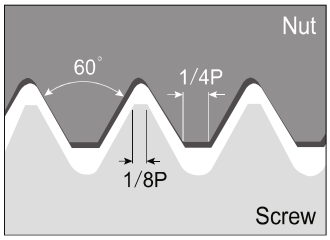




Designation		Dimension (mm)				Applicable Insert	Z	Spare parts	
		D	d	L	ap			Screw	Wrench
SR	0063C21-5-22	63.0	22	50.00	21	21E/I	5	M3.5x7.5	T-15
	0063C30-4-22	63.0	22	50.00	30	30E/I	4	M4.0x11.0	T-20
	0080D30-4-27	80.0	27	55.00	30		4		
	0100D40-4-32	100.0	32	60.00	40	40E/I	4	M5.0x12.0	
	0080D40-4-27	80.0	27	65.00	40		4		
	0100E40-4-32	100.0	32	70.00	40		4		

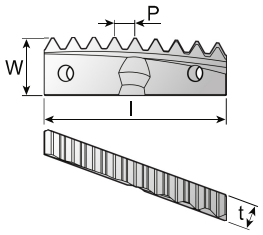
ISO 60° Metric (Internal)

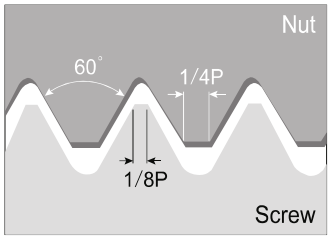




Designation	Pitch (mm)	Thread Size	Dimensions		
			l	W	t
H23I 1.00 ISO	1.0	⩾26	27	8.0	3.5
H23I 1.50 ISO	1.5	⩾27	27	8.0	3.5
H23I 2.00 ISO	2.0	⩾28	27	8.0	3.5
H23I 3.00 ISO	3.0	⩾30	27	8.0	3.5
H32I 1.50 ISO	1.5	⩾35	32	9.0	4.0
H32I 2.00 ISO	2.0	⩾36	32	9.0	4.0
H32I 3.00 ISO	3.0	⩾38	32	9.0	4.0
H32I 4.00 ISO	4.0	⩾40	32	9.0	4.0
H45I 1.50 ISO	1.5	⩾50	37	11.9	5.0
H45I 2.00 ISO	2.0	⩾50	37	11.9	5.0
H45I 3.00 ISO	3.0	⩾56	37	11.9	5.0
H45I 4.00 ISO	4.0	⩾56	37	11.9	5.0
H63I 1.50 ISO	1.5	⩾70	38	11.9	5.0
H63I 2.00 ISO	2.0	⩾70	38	11.9	5.0
H63I 3.00 ISO	3.0	⩾75	38	11.9	5.0
H63I 4.00 ISO	4.0	⩾75	38	11.9	5.0

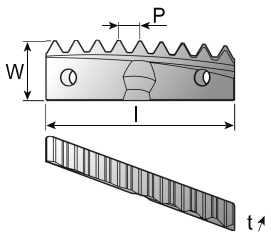
UN 60o American UN (UNC, UNF, UNEF, UNS; Internal)

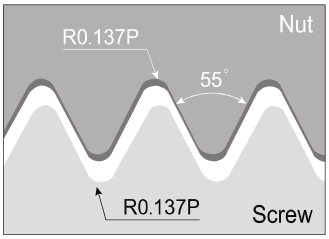




Designation	TPI	Thread Size	Dimensi ns		
			l	W	t
H23I 24 UN	24	⩾1"	27	8.0	3.5
H23I 20 UN	20	⩾1"	27	8.0	3.5
H23I 18 UN	18	⩾1 1/16"	27	8.0	3.5
H23I 16 UN	16	⩾1 1/16"	27	8.0	3.5
H23I 14 UN	14	⩾1 1/8"	27	8.0	3.5
H23I 12 UN	12	⩾1 1/8"	27	8.0	3.5
H23I 8 UN	8	⩾1 3/16"	27	8.0	3.5
H23I 7 UN	7	⩾1 1/4"	27	8.0	3.5
H32I 20 UN	20	⩾1 3/8"	32	9.0	4.0
H32I 18 UN	18	⩾1 3/8"	32	9.0	4.0
H32I 16 UN	16	⩾1 3/8"	32	9.0	4.0
H32I 12 UN	12	⩾1 7/16"	32	9.0	4.0
H32I 8 UN	8	⩾1 1/2"	32	9.0	4.0
H32I 6 UN	6	⩾1 9/16"	32	9.0	4.0
H45I 16 UN	16	⩾2"	37	11.9	5.0
H45I 12 UN	12	⩾2"	37	11.9	5.0
H45I 8 UN	8	⩾2 1/4"	37	11.9	5.0
H45I 6 UN	6	⩾2 1/4"	37	11.9	5.0
H63I 16 UN	16	⩾2 3/4"	38	11.9	5.0
H63I 12 UN	12	⩾2 3/4"	38	11.9	5.0
H63I 8 UN	8	⩾3"	38	11.9	5.0
H63I 6 UN	6	⩾3"	38	11.9	5.0

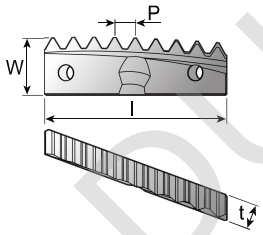
W 55° Whithworth (BSW, BSF, BSP, BSB; Internal & External)

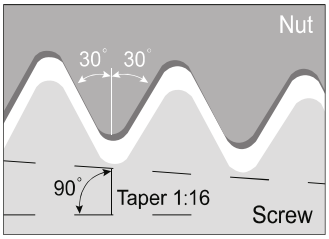




Designation	TPI	Thread Size		Dimensions		
		Internal	External		W	t
H23EI 14 W	14	≥G 7/8"	≥G 1/2"	27	8.0	3.5
H23EI 11 W	11	≥G 1"	≥G 1"	27	8.0	3.5
H32EI 14 W	14	–	≥G 1/2"	32	9.0	4.0
H32EI 11 W	11	≥G 1 1/8"	≥G 1"	32	9.0	4.0
H45EI 11 W	11	≥G 1 3/4"	≥G 1"	37	11.9	5.0
H63EI 11 W	11	≥G 2 1/2"	≥G 1"	38	11.9	5.0

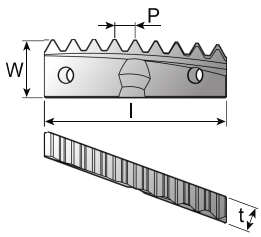
W 55° Whithworth (BSW, BSF, BSP, BSB; Internal & External)

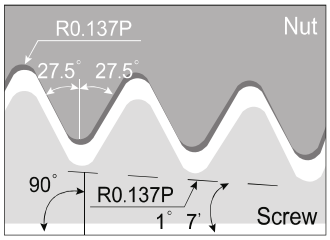




Designation	TPI	Thread Size		Dimensions		
		Internal	External	l	W	t
H23EI 11 .5 NPT	11.5	1"-2"NPT	1"-2"NPT	27	8.0	3.5
H32EI 11.5 NPT	11.5	1 1/4"-2"NPT	1"-2"NPT	32	9.0	4.0
H45EI 11.5 NPT	11.5	2"NPT	1"-2"NPT	37	11.9	5.0
H45EI 8 NPT	8.0	2 1/2"NPT-3"NPT	2 1/2"NPT-3"NPT	37	11.9	5.0
H63EI 11.5 NPT	11.5	–	1"-2"NPT	38	11.9	5.0
H63EI 8 NPT	8.0	2 1/2"NPT-3"NPT	2 1/2"NPT-3"NPT	38	11.9	5.0

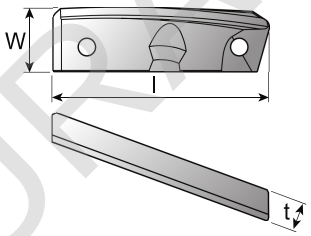
BSPT 55° British Standard Pipe (Internal & External)





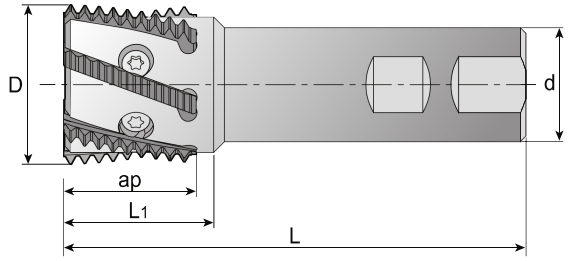
Designation	TPI	Thread Size		Dimensions		
		Internal	External	l	W	t
H23El 11 BSPT	11	⩾1"BSPT	⩾1"BSPT	27	8.0	3.5
H32El 11 BSPT	11	⩾1 1/8"BSPT	⩾1"BSPT	32	9.0	4.0
H45El 11 BSPT	11	⩾1 3/4"BSPT	⩾1"BSPT	37	11.9	5.0
H63El 11 BSPT	11	⩾2 1/2"BSPT	⩾1"BSPT	38	11.9	5.0

Helical Long Edge Finishing Inserts



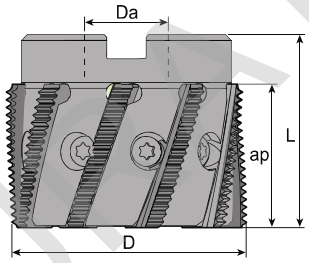
Designation	Dimensions		
	l	W	t
H23F R0.20	27	8.0	3.5
H23F R0.50	27	8.0	3.5
H23F R1.00	27	8.0	3.5
H32F R0.20	32	9.0	4.0
H32F R0.50	32	9.0	4.0
H32F R1.00	32	9.0	4.0
H45F R0.20	37	11.9	5.0

End Mills for Helical Threading Inserts



Designation		Dimensions					Z	Applicable Insert	Spare Parts	
		D	d	L	1	ap			Screw	Wrench
SRH	'23-2	23	25	110	50	27	2	H23	S23	Tk21
	'32-5	32	32	130	60	32	5	H32	S32	Tk22
	'45-6	45	32	130	–	37	6	H45	S45	Tk40

End Shell Mills for Helical Threading Inserts

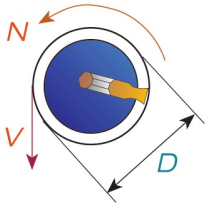


Designation		Dimensions				Z	Applicable Insert	Spare Parts	
		D	Da	L	ap			Screw	Wrench
SRH	63-9-22	63	22	50	30	9	H63	S63	Tk40

Conversion of Cutting Speed to Rotational Speed

Conversion of selected cutting speed to rotational speed is calculated by the following formula:

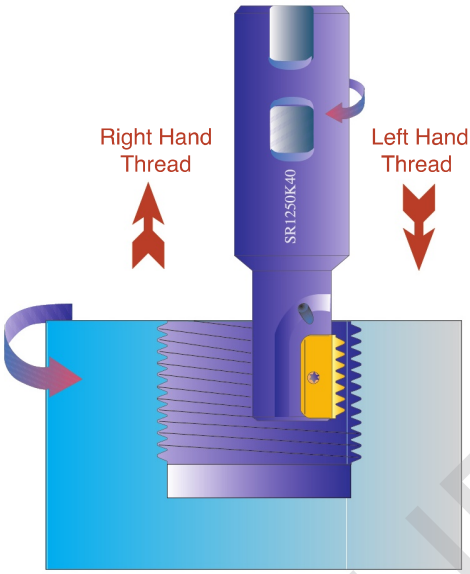
$$N = \frac{V \times 1000}{\pi \times D} = \frac{120 \times 1000}{3.14 \times 30} = 1274 \text{ RPM}$$



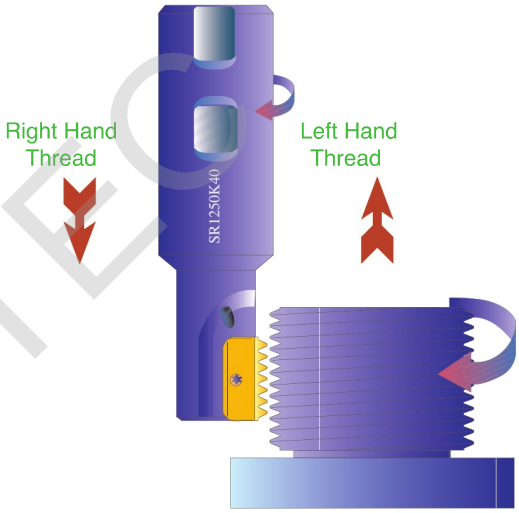
Example: V=120 m/min
D=30 mm

D=Cutting diameter

Internal Thread



External Thread

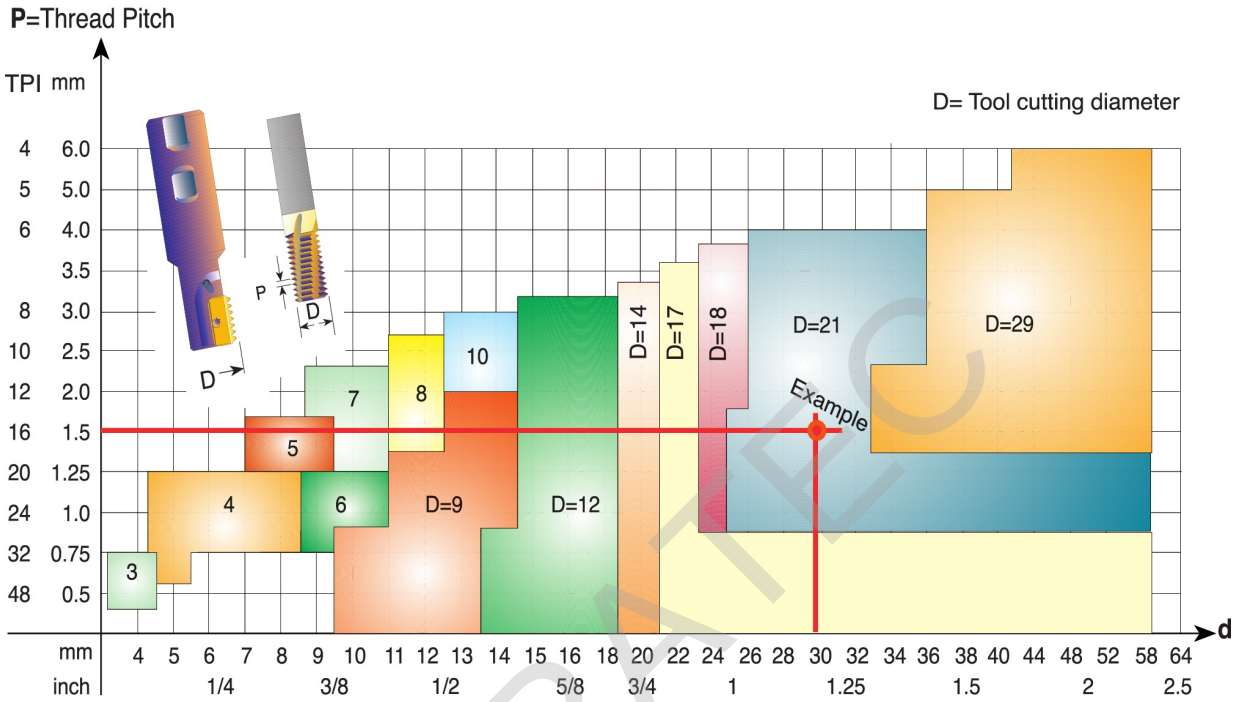


Tool Selection

For indexable and solid carbide Mill Threads

The following chart provides a fairly accurate visual selection tool for Internal Threading.

The chart is suitable for the following thread forms: ISO, UN, WHIT, NPT, NPTF, BSPT and PG.

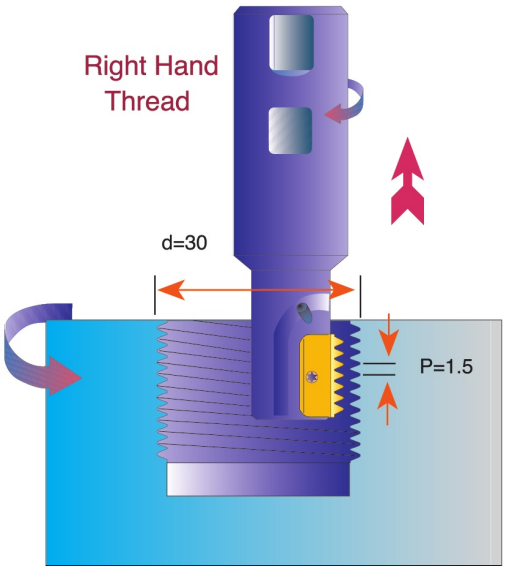


Any tool with a small cutting diameter can produce large diameter threads.

d=Thread Diameter

Example: Internal thread M30 x 1.5:
Find a Milling Tool to produce d=30 mm Internal right hand ISO thread with a thread pitch P=1.5 mm.
As can be seen from the chart above, the two red lines intersect at a selected tool with a cutting diameter of D=21 mm.

Chosen toolholder: SR0021-H21
Insert: 21 I 1.50ISO TTIM45



If you need assistance, please call your local distributor and ask for help in selecting the appropriate tool as well as for a CNC program to suit your CNC milling machine.

Recommended Select for Thread Milling

Mill-Thread Inserts Speed and Feed Selection

DTIM45 Sub-Micro Grade with Titanium Aluminum Nitride multi-layer coating(ISO K10-K10). This is a general purpose grade, which can be used with all materials; It should be run at medium to high cutting speeds.

ISO	Materials	Cutting Speed (m/min)	Feed Rate (mm)
P	Low and Medium Carbon Steels	115-280	0.05-0.15
	High Carbon Steels	130-200	
	Alloy Steels, Treated Steels	105-180	
M	Stainless Steels	130-190	
	Cast Steels	150-190	
K	Cast Iron	80-170	
N	Non-Ferrous and Aluminum	180-340	
	Synthetics, Duroplastics, Thermoplastics	115-460	
S	Nickel Alloys, Titanium Alloys	25-90	

Spiral Mill-Thread Inserts Speed and Feed Selection

DTIM45 Sub-Micro Grade with Titanium Aluminum Nitride multi-layer coating(ISO K10-K10). This is a general purpose grade, which can be used with all materials; It should be run at medium to high cutting speeds.

ISO	Materials	Cutting Speed (m/min)	Feed Rate (mm)
P	Low and Medium Carbon Steels	145-360	0.05-0.15
	High Carbon Steels	165-255	
	Alloy Steels, Treated Steels	135-230	
M	Stainless Steels	165-245	
	Cast Steels	190-245	
K	Cast Iron	100-220	
N	Non-Ferrous and Aluminum	230-440	
	Synthetics, Duroplastics, Thermoplastics	145-590	
S	Nickel Alloys, Titanium Alloys	30-115	

As you may note, cutting speed is shown in range terms. In most standard cases choosing a speed in the middle of the range would be a good choice for a start.

For hard metals reduce cutting speed.

Sprial Finish Mill-Thread Inserts Speed and Feed Selection

DTIM45 Sub-Micro Grade with Titanium Aluminum Nitride multi-layer coating(ISO K10-K10). This is a general purpose grade, which can be used with all materials; It should be run at medium to high cutting speeds.

ISO	Materials	Cutting Speed (m/min)
P	Low and Medium Carbon Steels High Carbon Steels Alloy Steels, Treated Steels	200-330 170-235 100-195
M	Stainless Steels Cast Steels	180-230 180-230
K	Cast Iron	200-350
N	Non-Ferrous and Aluminum Synthetics, Duroplastics, Thermoplastics	500-1100 400-1500
S	Nickel Alloys, Titanium Alloys	30-55

D THREAD ENDMILL

Thread Milling Solid Endmill Code System

E	SMT	B	06	04	C	14	1.00	ISO	DTIM45
1	2	3	4	5	6	7	8	9	10
External	End Mill Type	Shank Dia	Cutting Dia	No.of Flute	No.of Flutes	The Approximate Cutting Length	Thread Pitch	Thread Profile	Carbide Grade

1 External

E SMT B 06 04 C 14 1.00 ISO DTIM45

Non: For Internal
E: For External

2 Type

E SMT B 06 04 C 14 1.00 ISO DTIM45

S=Solid M=Mill T=Thread

3 End Mill Type

E SMT B 06 04 C 14 1.00 ISO DTIM45

Non=Without coolant hole
B=With coolant hole
Z=With coolant hole in the flutes
Q=Tools for threading deep holes

4 Shank Diameter

E SMT B 06 04 C 14 1.00 ISO DTIM45

06=6mm 8=8mm 10=10mm
12=12mm 14=14mm 16=16mm
20=20mm 25=25mm

5 Cutting Diameter

E SMT B 06 04 C 14 1.00 ISO DTIM45

031=3.1mm 04=4.0mm

6 No. of Flutes

E SMT B 06 04 C 14 1.00 ISO DTIM45

C=3 D=4 E=5 F=6

7 The Approximate Cutting Length

E SMT B 06 04 C 14 1.00 ISO DTIM45

8 Thread Pitch

E SMT B 06 04 C 14 1.00 ISO DTIM45

0.25-4.0 mm 72-7 TPI

9 Thread Profile

E SMT B 06 04 C 14 1.00 ISO DTIM45

ISO - ISO Metric
UN - American UN (UNC, UNF, UNEF, UNS)
W - Whit Worth (BSW, BSF, BSP, BSB)
NPT - National Pipe Thread
NPTF - National Pipe Thread
BSPT - British Standard Pipe Thread (BSPT)

10 Carbide Grade

E SMT B 06 04 C 14 1.00 ISO DTIM45

DTIM45 DTIS30

Mini Thread Milling Solid Endmill Code System

MSMT	06	031	C	12	0.7	ISO	DTIM45
1	2	3	4	5	6	7	8
Type	Shank Dia	Cutting Dia	No.of Flute	The Approximate Cutting Length	Thread Pitch	Thread Profile	Carbide Grade

1 Type

MSMT 06 031 C 12 07 ISO DTIM45

M=Mini S=Solid
M=Mill T=Thread

2 Shank Diameter

MSMT 06 031 C 12 07 ISO DTIM45

06=6mm 08=8mm
10=10mm 12=12mm
14=14mm 16=16mm

3 Cutting Diameter

MSMT 06 031 C 12 07 ISO DTIM45

031=3.1mm 04=4.0mm

4 No. of Flutes

MSMT 06 031 C 12 07 ISO DTIM45

C=3 D=4 E=5

5 The Approximate Cutting Length

MSMT 06 031 C 12 07 ISO DTIM45

6 Thread Pitch

MSMT 06 031 C 12 07 ISO DTIM45

0.25-4.0 mm 72-7 TPI

7 Thread Profile

MSMT 06 031 C 12 07 ISO DTIM45

ISO - ISO Metric
UN - American UN (UNC, UNF, UNEF, UNS)
W - Whit Worth (BSW, BSF, BSP, BSB)
NPT - National Pipe Thread
NPTF - National Pipe Thread
BSPT - British Standard Pipe Thread (BSPT)
UNJ - Unified Constant Thread
MJ - ISO 5855

8 Carbide Grade

MSMT 06 031 C 12 07 ISO DTIM45

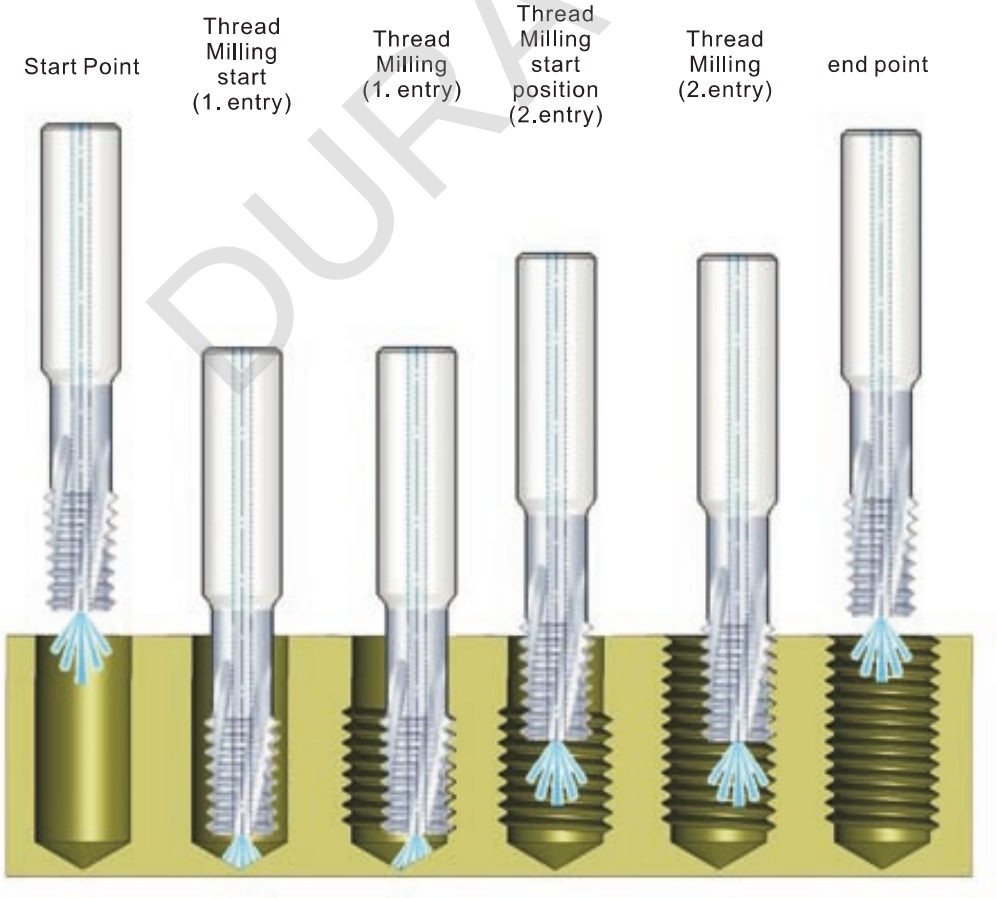
DTIM45 DTIS30

Recommended Select for Solid Threading Endmills

Solid Carbide Threading Endmills Speed and Feed Selection

DTIM45 Sub-Micro Grade with Titanium Aluminum Nitride multi-layer coating(ISO K10-K10). This is a general purpose grade, which can be used with all materials; It should be run at medium to high cutting speeds.

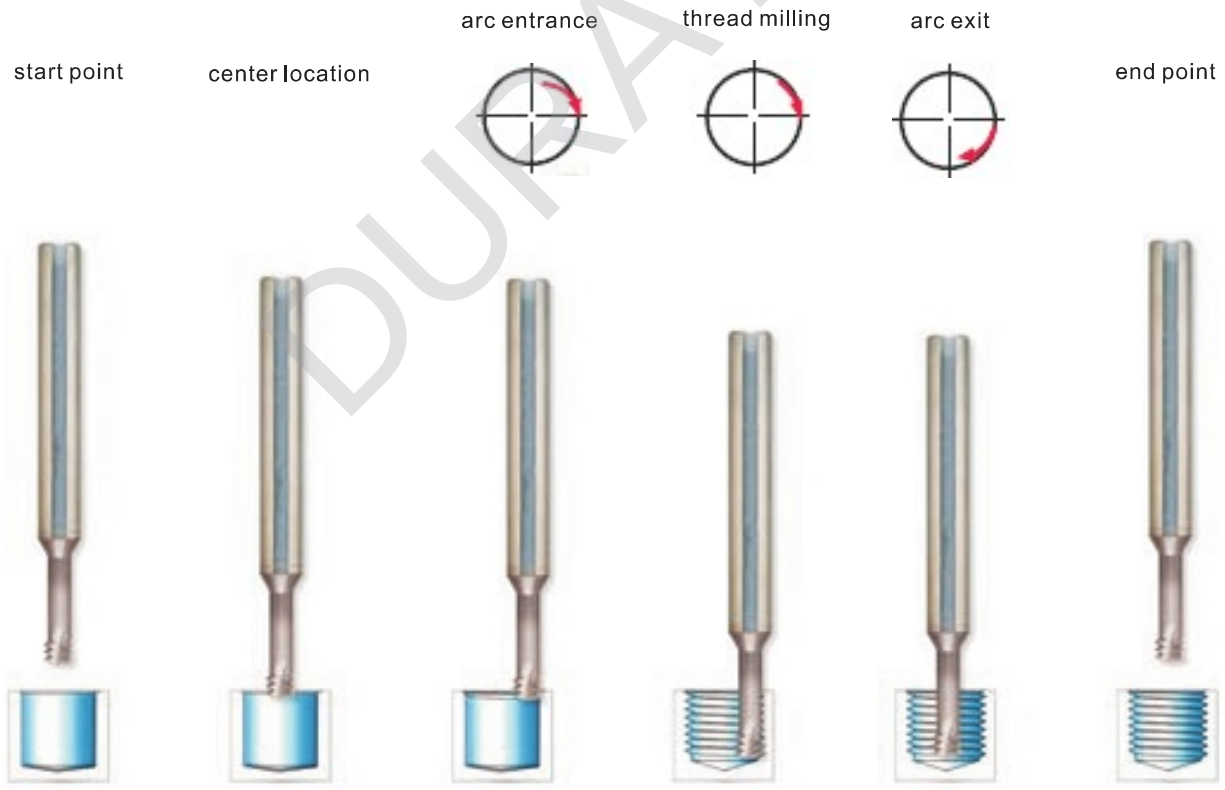
ISO	Materials	Cutting Speed (m/min)	Feed Rate (mm)										
			φ2	φ3	φ4	φ6	φ8	φ10	φ12	φ14	φ16	φ20	φ25
P	Low and Medium Carbon Steels<0.55%C	100-250	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18
	High Carbon Steels≥0.55%C	110-180	0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.09	0.10	0.12	0.15
	Alloy Steels, Treated Steelss	90-160	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
M	Stainless Steels - Free cutting	60-160	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.11
	Stainless Steels - Austenitic	60-120	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
	Cast Steels	130-170	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
K	Cast Iron	70-150	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18
N	Aluminum≤12%Si, Copper	150-350	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18
	Aluminum>12%Si	100-250	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
	Synthetics, Duroplastics	100-400	0.05	0.06	0.07	0.08	0.10	0.11	0.12	0.13	0.15	0.18	0.22
S	Thermoplastics and Nickel Alloys, Titanium Alloys	20-80	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05



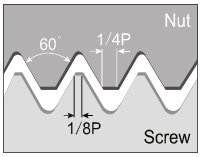
Mini Solid Carbide Threading Endmills Speed and Feed Selection

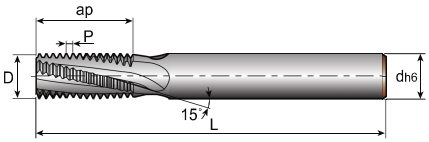
DTIM45 Sub-Micro Grade with Titanium Aluminum Nitride multi-layer coating(ISO K10-K10). This is a general purpose grade, which can be used with all materials; It should be run at medium to high cutting speeds.

ISO	Materials	Cutting Speed (m/min)	Feed Rate (mm)												
			φ1	φ1.5	φ2	φ3	φ4	φ5	φ6	φ7	φ8	φ9	φ10	φ12	φ14	φ16
P	Low and Medium Carbon Steels<0.55%C	60-120	0.04	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
	High Carbon Steels≥0.55%C	60-90	0.03	0.04	0.05	0.06	0.08	0.09	0.10	0.12	0.13	0.14	0.14	0.16	0.17	0.18
	Alloy Steels, Treated Steelss	50-80	0.03	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.10	0.12	0.13	0.14
M	Stainless Steels - Free cutting	70-100	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
	Stainless Steels - Austenitic	60-90	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
	Cast Steels	70-90	0.03	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.10	0.12	0.13	0.14
K	Cast Iron	40-80	0.04	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
N	Aluminum≤12%Si, Copper	100-200	0.04	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.16
	Aluminum>12%Si	60-140	0.03	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.13	0.10
	Synthetics, Duroplastics	50-200	0.09	0.10	0.11	0.12	0.14	0.16	0.18	0.19	0.19	0.19	0.19	0.19	0.20	0.20
S	Thermoplastics and Nickel Alloys, Titanium Alloys	20-40	0.03	0.03	0.03	0.04	0.04	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08



ISO 60° ME

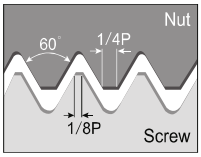


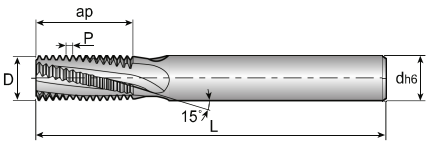


• Application: General engineering

Designation		Pitch (mm)	M coarse	M fine	Dimensio mm)				No.of flutes
					d	D	ap	L	
SMT	06022C5 0.50 ISO	0.50	M3	φ≥4	6	2.2	5.3	58	3
	06038C10 0.50 ISO	0.50	–	φ≥5	6	3.8	10.4	58	3
	06031C7 0.70 ISO	0.70	M4	φ≥5	6	3.1	7.4	58	3
	06045C10 0.75 ISO	0.75	–	φ≥6	6	4.5	10.1	58	3
	06036C9 0.80 ISO	0.80	M5	φ≥6	6	3.6	9.2	58	3
	0604C10 1.00 ISO	1.00	M6	φ≥7	6	4.0	10.5	58	3
	0604C14 1.00 ISO	1.00	M6	φ≥7	6	4.0	14.5	58	3
	0606C12 1.00 ISO	1.00	–	φ≥9	6	6.0	12.5	58	3
	0808D16 1.00 ISO	1.00	–	φ≥10	8	8.0	16.5	64	4
	0605C14 1.25 ISO	1.25	M8	φ≥10	6	5.0	14.4	58	3
	0605C19 1.25 ISO	1.25	M8	φ≥10	6	5.0	19.4	58	3
	0807C17 1.50 ISO	1.50	M10	φ≥12	8	7.0	17.3	64	3
	0807C24 1.50 ISO	1.50	M10	φ≥12	8	7.0	24.8	76	3
	1010D21 1.50 ISO	1.50	–	φ≥14	10	10.0	21.8	73	4
	1616F33 1.50 ISO	1.50	–	φ≥20	16	16.0	33.8	105	6
	0808C20 1.75 ISO	1.75	M12	φ≥14	8	8.0	20.1	64	3
	0808C28 1.75 ISO	1.75	M12	φ≥14	8	8.0	28.9	76	3
	1010C27 2.00 ISO	2.00	M16	φ≥17	10	10.0	27.0	73	3
	1010C39 2.00 ISO	2.00	M16	φ≥17	10	10.0	39.0	105	3
	1212D27 2.00 ISO	2.00	–	φ≥18	12	12.0	27.0	84	4
	2020F41 2.00 ISO	2.00	–	φ≥26	20	20.0	41.0	105	6
	1414D33 2.50 ISO	2.50	M20	φ≥22	14	14.0	33.8	84	4
	1414D48 2.50 ISO	2.50	M20	φ≥22	14	14.0	48.8	105	4
	1616C40 3.00 ISO	3.00	M24	φ≥25	16	16.0	40.5	105	3
	1616C58 3.00 ISO	3.00	M24	φ≥25	16	16.0	58.5	120	3
	2020D43 3.00 ISO	3.00	M27	φ≥28	20	20.0	43.5	105	4

UN 60° American UN (UNC, UNF, UN, EF, UNS)

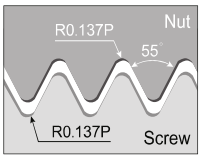


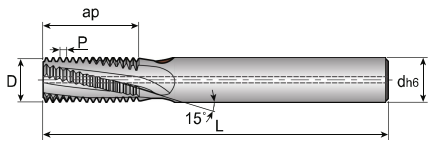


• Application: General engineering

Designation		TPI	UNC	UNF	UNEF	Dimension (mm)				No.of flutes
						d	D	ap	L	
SMT	06025C6 40 UN	40	8	–	–	6	2.5	6.0	62	3
	06032C6 32 UN	32	8	10	12	6	3.2	6.8	58	3
	0604C11 28 UN	28	–	1/4	7/16-1/2	6	4.0	11.3	58	3
	0606C14 28 UN	28	–	–	–	6	6.0	14.5	58	3
	0605C14 24 UN	24	–	5/16	9/16-5/8	6	5.0	14.8	58	3
	0807C21 24 UN	24	–	3/8	–	8	7.0	20.0	64	3
	06045C12 20 UN	20	1/4	–	--	6	4.5	12.1	58	3
	0807C21 20 UN	20	–	7/16-1/2	3/4-1	8	7.0	20.0	64	3
	1212E27 20 UN	20	–	–	–	12	12.0	27.3	84	5
	0605C14 18 UN	18	5/16	–	1 1/8-1 5/8	6	5.0	14.8	58	3
	1010D26 18 UN	18	–	9/16-5/8	–	10	10.0	26.1	73	4
	0606C16 16 UN	16	3/8	–	–	6	6.0	16.7	58	3
	1212D31 16 UN	16	–	3/4	–	12	12.0	30.0	84	4
	0807C20 14 UN	14	7/16	–	–	8	7.0	20.9	64	3
	1615E37 14 UN	14	–	7/8	–	16	15.0	37.2	105	5
	0808C22 13 UN	13	1 / 2	–	–	8	8.0	22.5	64	3
	1016C26 12 UN	12	9/16	–	–	10	10.0	26.5	73	3
	1616E41 12 UN	12	–	1-1-1 / 2	–	16	16.0	41.3	105	5
	1010C28 11 UN	11	5/8	–	–	10	10.0	28.9	73	3
	1212C34 10 UN	10	3/4	–	–	12	12.0	34.3	84	3
	1615C38 9 UN	9	7/8	–	–	16	16.0	38.1	105	3
	1616C42 8 UN	8	1	–	–	16	15.0	42.9	105	3
	2020D45 7 UN	7	1 1/8-1 1/4	–	–	20	20.0	45.4	105	3

W 55° Withworth (BSW, BSF, BSP)

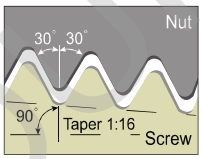


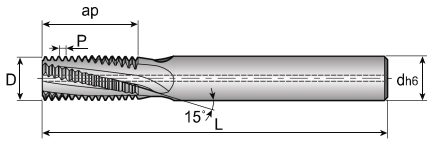


• Application: General engineering fittings and pipe couplings

Designation		TPI	BSP	Dimension (mm)				No.of flutes
				d	D	ap	L	
SMT	0606C9 28 W	28	G1/8	6	6.0	9.5	58	3
	0808C14 19 W	19	G1/4-3/8	8	8.0	14.0	64	3
	1212D19 14 W	14	G1/2-7/8	12	12.0	19.0	84	4
	1212D26 14 W	14	G1/2-7/8	12	12.0	26.3	84	4
	1212C24 11 W	11	G1-1 1 / 2	12	12.0	24.2	84	3
	1616D38 11 W	11	G1-3	16	16,0	38.1	105	4
	2020E47 11 W	11	G≥1	20	20.0	47.3	105	5

NPT 60° National Pipe

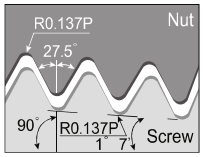


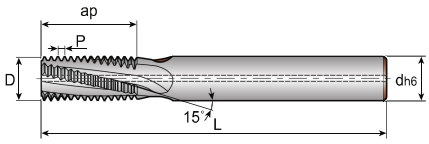


• Application: General engineering

Designation		TPI	BSP	Dimension (mm)				No.of flutes
				d	D	ap	L	
SMT	0606C9 27 NPT	27	1/8	6	6.0	9.9	58	3
	0808C14 18 NPT	18	1/4-3/8	8	8.0	14.8	64	3
	1212D20 14 NPT	14	1/2-3/4	12	12.0	20.9	84	4
	1616D27 11.5 NPT	11.5	1-2	16	16.0	27,6	105	4
	2020D39 8 NPT	8	≥2 1 / 2	20	20.0	39.7	105	4

BSPT 55° British Standard

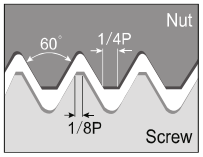


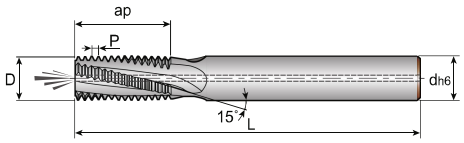


• Application: General engineering fittings and pipe couplings

Designation		TPI	BSP	Dimension (mm)				No.of flutes
				d	D	ap	L	
SMT	0606C9 28 BSPT	28	RC1/8	6	6.0	9.5	58	3
	0808C14 19 BSPT	19	RC1/4-3/8	8	8.0	14.0	64	3
	1212D19 14 BSPT	14	RC1/2-7/8	12	12.0	19.1	84	4
	1616D28 11 BSPT	11	RC1-2	16	16.0	28.9	105	4

ISO 60° Metric

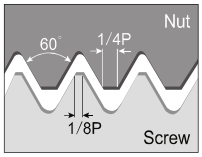


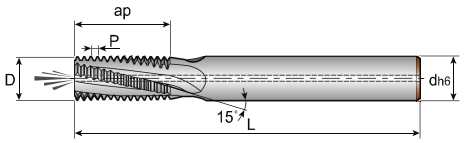


• Application: General engineering

Designation		Pitch (mm)	M coarse	M fine	Dimension (mm)				No.of flutes
					d	D	ap	L	
SMTB	0606C12 1.00 ISO	1.00	–	φ≥9	6	6.0	12.5	58	3
	0808D16 1.00 ISO	1.00	–	φ≥10	8	8.0	16.5	64	4
	1010D24 1.00 ISO	1.00	–	φ≥12	10	10.0	24.5	73	4
	0606C14 1.25 ISO	1.25	M8	φ≥10	6	6.0	14.4	58	3
	0606C19 1.25 ISO	1.25	M8	φ≥10	6	6.0	19.4	58	3
	08078C17 1.50 ISO	1.50	M10	φ≥12	8	7.8	17.0	64	3
	08078C24 1.50 ISO	1.50	M10	φ≥12	8	7.8	24.8	64	3
	1010D21 1.50 ISO	1.50	–	φ≥14	10	10.0	21.8	73	4
	1212D26 1.50 ISO	1.50	–	φ≥16	12	12.0	26.3	84	4
	1616F33 1.50 ISO	1.50	–	φ≥20	16	16.0	33.8	105	6
	1009C20 1.75 ISO	1.75	M12	φ≥12	10	9.0	20.1	73	3
	1009C28 1.75 ISO	1.75	M12	φ≥12	10	9.0	28.9	73	3
	1010C27 2.00 ISO	2.00	M14	φ≥15	10	10.0	27.0	73	3
	12118D27 2.00ISO	2.00	M16	φ≥17	12	11.8	27.0	84	4
	12118D39 2.00ISO	2.00	M16	φ≥17	12	11.8	39.0	105	4
	2020F41 2.00 ISO	2.00	–	φ≥26	20	20.0	41.0	105	6
	1615E33 2.50 ISO	2.50	M20	φ≥22	16	15.0	33.8	105	5
	1615E38 2.50 ISO	2.50	M20	φ≥22	16	15.0	48.8	105	5
	2018D40 3.00 ISO	3.00	M24	φ≥25	20	18.0	40.5	105	4
	2018D58 3.00 ISO	3.00	M24	φ≥25	20	18.0	58.5	120	4
	2020D43 3.00 ISO	3.00	M27	φ≥28	20	20.0	43.5	105	4

UN 60° American UN (UNC, UNF, UNEF)

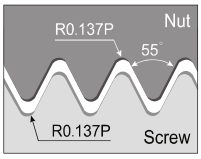


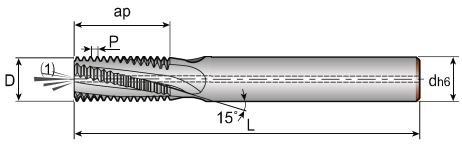


• Application: General engineering

Designation		TPI	UNC	UNF	UNEF	Dimension (mm)				No.of flutes
						d	D	ap	L	
SMTB	0808D18 32 UN	32	–	–	3/8	8	8.0	18.7	64	4
	0606C14 32 UN	32	–	–	5/16	6	6.0	14.7	58	3
	0605C11 28 UN	28	–	1/4	7/16-1/2	6	5.0	11.3	58	3
	0606C14 28 UN	28	–	–	–	6	6.0	14.1	58	3
	08066C14 24 UN	24	–	5/16	9/16-5/8	8	6.6	14.3	64	3
	0808D21 24 UN	24	–	3/8	–	8	8.0	20.6	64	4
	0808C21 20 UN	20	–	7/16	--	8	8.0	21.0	64	3
	1010D22 20 UN	20	–	1 / 2	3/4-1	10	10.0	22.3	73	4
	1212E27 20 UN	20	–	–	–	12	12.0	27.3	84	5
	06056C14 18 UN	18	5/16	–	1 1/8-1 5/8	6	5.6	14.8	58	3
	12113D26 18 UN	18	–	9/16-5/8	–	12	11.3	26.1	84	4
	08067C16 16 UN	16	3/8	–	–	8	6.7	16.7	64	3
	1212D31 16 UN	16	–	3/4	–	12	12.0	31.0	84	4
	08077C20 14 UN	14	7/16	–	–	8	7.7	20.9	64	3
	1616E37 14 UN	14	–	7/8	–	16	16.0	37.2	105	5
	10092C22 13 UN	13	1 / 2	–	–	10	9.2	22.5	73	3
	12105C26 12 UN	12	9/16	–	–	12	10.5	26.5	84	3
	1616E41 12 UN	12	–	1-1-1 / 2	–	16	16.0	41.3	105	5
	12114C28 11 UN	11	5/8	–	–	12	11.4	28.9	84	3
	16144D34 10 UN	10	3/4	–	–	16	14.4	34.3	105	4
	1616C38 9 UN	9	7/8	–	–	16	16.0	38.1	105	3
	20195D42 8 UN	8	1	–	–	20	19.5	42.9	105	4
	2020D45 7 UN	7	1 1/8-1 1/4	–	–	20	20.0	45.3	105	4

W 55° Withworth (BSW, BSF, BSP, BS)

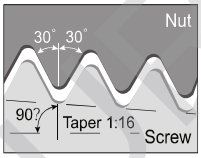


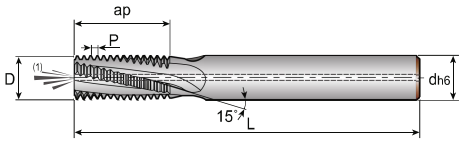


• Application: General engineering fittings and pipe couplings

Designation		TPI	BSP	Dimension (mm)				No.of flutes
				d	D	ap	L	
SMTB	08078C14 28 W	28	G1/8	8	7.8	14.1	64	3
	1010D16 19 W	19	G1/4-3/8	10	10.0	16.7	73	4
	1616E26 14 W	14	G1/2-7/8	16	16.0	26.3	105	5
	1616D38 11 W	11	G≥1	16	16.0	38.1	105	4
	2020E47 11 W	11	G≥1	20	20.0	47.3	105	5

NPT 60° National Pipe

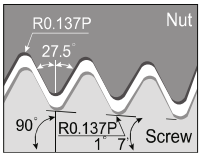


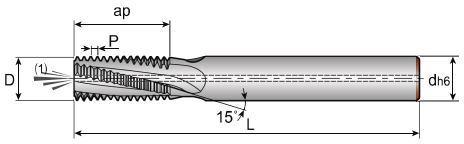


● Application: Steam, gas and water pipes

Designation		TPI	NPT	Dimension (mm)				No.of flutes
				d	D	ap	L	
SMTB	08076C10 27 NPT	27	1/8	8	7.6	10.8	64	3
	1010D16 18 NPT	18	1/4-3/8	10	10.0	16.2	73	4
	16155D22 14 NPT	14	1/2-3/4	16	15.5	22.7	105	4
	2020D29 11.5 NPT	11.5	1-2	20	20.0	29.8	105	4
	2020D39 8 NPT	8	≥2 1 / 2	20	20.0	39.7	105	4

SPT 55° British Standard Pipe

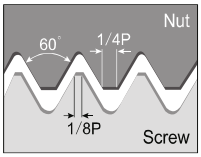


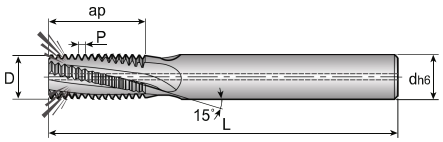


• Application: General engineering fittings and pipe couplings

Designation		TPI	BSP	Dimension (mm)				No.of flutes
				d	D	ap	L	
SMTB	08078C14 28 BSPT	28	RC1/8	8	7.8	14.1	64	3
	1010D16 19 BSPT	19	RC1/4-3/8	10	10.0	16.7	73	4
	1616E26 14 BSPT	14	RC1/2-7/8	16	16.0	26.3	105	5
	1616D28 11 BSPT	11	RC1-2	16	16.0	28.9	105	4

ISO 60° Metric

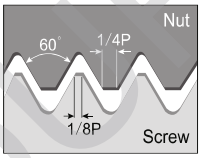


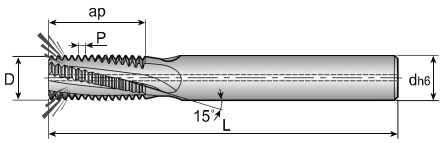


• Application: General engineering

Designation		Pitch (mm)	M coarse	M fine	Dimension (mm)				No.of flutes
					d	D	ap	L	
SMTZ	1010D21 1.50 ISO	1.50	–	φ≥14	10	10.0	21.8	73	4
	1212D26 1.50 ISO	1.50	–	φ≥16	12	12.0	26.3	84	4
	1616E33 1.50 ISO	1.50	–	φ≥20	16	16.0	33.8	101	5
	1009C20 1.75 ISO	1.75	M12	φ≥12	10	9.0	20.1	73	3
	1009C28 1.75 ISO	1.75	M12	φ≥12	10	9.0	28.9	73	3
	1010C27 2.00 ISO	2.00	M14	φ≥15	10	10.0	27.0	73	3
	12118D27 2.00ISO	2.00	M16	φ≥17	12	11.8	27.0	84	4
	1615E33 2.50 ISO	2.00	M20	φ≥22	16	15.0	33.8	101	5

UN 60° American UN (UNC, UNF, UNEF, UNS)

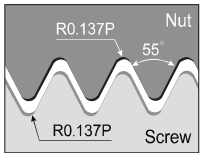


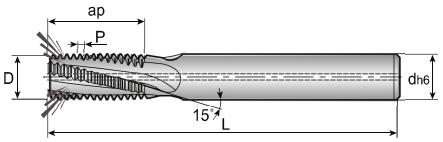


• Application: General engineering

Designation		TPI	UNC	UNF	UNEF	Dimension (mm)				No.of flutes
						d	D	ap	L	
SMTZ	1010D22 20 UN	20	–	1 / 2	–	10	10.0	22.3	73	4
	1212E27 20 UN	20	–	–	3/4-1	12	12.0	27.3	84	5
	06056C14 18 UN	18	5/16	–	–	6	5.6	14.8	58	3
	12113D26 18 UN	18	–	9/16-5/8	1 1/8-1 5/8	12	11.3	26.1	84	4
	08067C16 16 UN	16	3/8	–	–	8	6.7	16.7	64	3
	1212D31 16 UN	16	–	3/4	–	12	12.0	31.0	84	4
	08077C20 14 UN	14	7/16	–	--	8	7.7	20.9	64	3
	1616E37 14 UN	14	–	7/8	–	16	16.0	37.2	105	5
	10092C22 13 UN	13	1 / 2	–	–	10	9.2	22.5	73	3
	12105C26 12 UN	12	9/16	–	–	12	10.5	26.5	84	3
	12114C28 11 UN	11	5/8	–	–	12	11.4	28.9	84	3
	16144D34 10 UN	10	3/4	–	–	16	14.4	34.3	101	4

W 55° Withworth (BSW, BSF, BSP, BSB)

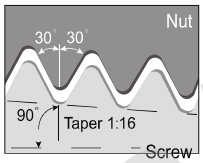


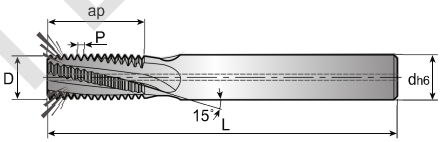


• Application: General engineering fittings and pipe couplings

Designation		TPI	BSP	Dimension (mm)				No.of flutes
				d	D	ap	L	
SMTZ	08078C14 28 W	28	G1/8	8	7.8	14.1	64	3
	1010D16 19 W	19	G1/4-3/8	10	10.0	16.7	73	4
	1616E26 14 W	14	G1/2-7/8	16	16.0	26.3	101	5
	1616D38 11 W	11	G⩾1	16	16.0	38.1	101	4

PT 60° National Pipe

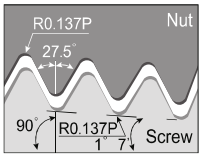


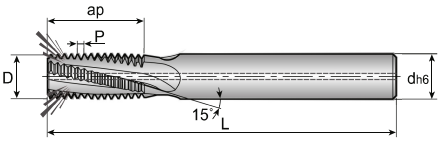


● Application: Steam, gas and water pipes

Designation		TPI	NPT	Dimension (mm)				No.of flutes
				d	D	ap	L	
SMTZ	08076C10 27 NPT	27	1/8	8	7.6	10.8	64	3
	1010D16 18 NPT	18	1/4-3/8	10	10.0	16.2	73	4
	16155D22 14 NPT	14	1/2-3/4	16	15.5	22.7	105	4

SPT 55° British Standard Pipe

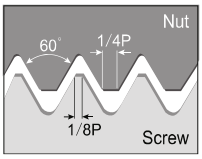


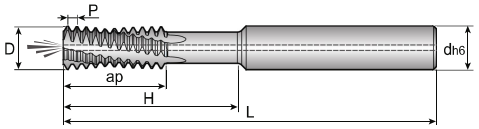


● Application: Steam, gas and water pipes

Designation		TPI	BSPT	Dimension (mm)				No.of flutes
				d	D	ap	L	
SMTZ	08078C14 28 BSPT	28	RC1/8	8	7.8	14.1	64	3
	1010D16 19 BSPT	19	RC1/4-3/8	10	10.0	16.7	73	4
	1616E26 14 BSPT	14	RC1/2-7/8	16	16.0	26.3	101	5
	1616D28 11 BSPT	11	RC1-2	16	16.0	38.1	101	4

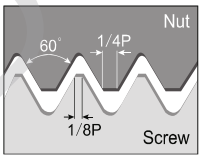
ISO 60° Metric

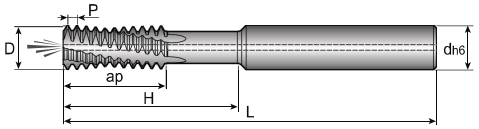




Designation		Pitch (mm)	Thread Size	Dimension (mm)					No.of flutes
				d	D	ap	H	L	
SMTQ	1010D32 1.00 ISO	1.00	φ≥12	10	10.0	18.0	32.0	73	4
	1212D38 1.00 ISO	1.00	φ≥14	12	12.0	21.0	38.0	84	4
	1616F45 1.00 ISO	1.00	φ≥18	16	16.0	26.0	45.0	105	6
	1010D30 1.50 ISO	1.50	φ≥13	10	10.0	18.0	30.0	73	4
	1212D34 1.50 ISO	1.50	φ≥15	12	12.0	19.5	34.5	84	4
	1616F43 1.50 ISO	1.50	φ≥19	16	16.0	25.5	43.5	105	6
	2020F60 1.50 ISO	1.50	φ≥23	20	20.0	36.0	60.0	105	6
	1212D42 2.00 ISO	2.00	φ≥16	12	12.0	24.0	42.0	84	4
	1616E45 2.00 ISO	2.00	φ≥20	16	16.0	26.0	45.0	105	5
	2020F56 2.00 ISO	2.00	φ≥24	20	20.0	34.0	56.0	105	6
	1616D45 3.00 ISO	3.00	φ≥22	16	16.0	30.0	45.0	105	4
	2020E54 3.00 ISO	3.00	φ≥26	20	20.0	33.0	54.0	105	5
	2020D45 3.50 ISO	3.50	φ≥26	20	20.0	28.0	45.5	105	4
	2525D64 4.00 ISO	4.00	φ≥31	25	25.0	40.0	64.0	105	4

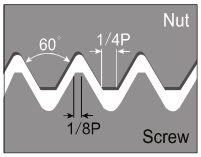
UN 60° American UN (UNC, UNF, UNEF, UNS)

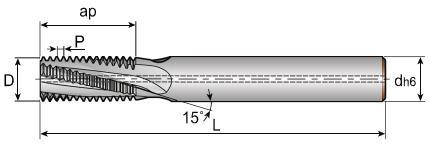




Designation		TPI	Thread Size	Dimension (mm)					No.of flutes
				d	D	ap	H	L	
SMTQ	1010D30 20 UN	20	φ≥12	10	10.0	17.8	30.5	73	4
	1212E35 20 UN	20	φ≥14	12	12.0	20.3	35.6	84	
	1616F43 20 UN	20	φ≥18	16	16.0	25.4	43.2	105	6
	1212D35 18 UN	18	φ≥15	12	12.0	19.7	35.3	84	4
	1212D35 16 UN	16	φ≥15	12	12.0	20.7	35.0	84	4
	1616E42 16 UN	16	φ≥19	16	16.0	25.4	42.8	105	5
	2020F58 16 UN	16	φ≥23	20	20.0	36.6	58.8	105	6
	1616E45 14 UN	14	φ≥20	16	16.0	25.4	45.3	105	5
	1212D42 12 UN	12	φ≥16	12	12.0	25.4	42.3	84	4
	2020E55 12 UN	12	φ≥24	20	20.0	33.9	55.1	105	5

ISO 60° Metric

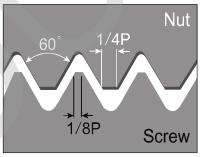


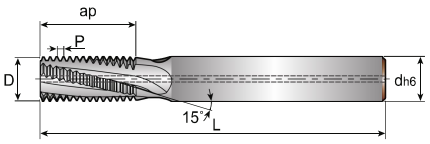


• Application: General engineering

Designation		Pitch(mm)	Dimension (mm)				No.of flutes
			d	D	ap	L	
ESMT	1010D16 1.00 ISO	1.00	10	10.0	16.5	73	4
	1212E20 1.00 ISO	1.00	12	12.0	20.5	84	5
	1010D16 1.25 ISO	1.25	10	10.0	16.9	73	4
	1010D15 1.50 ISO	1.50	10	10.0	15.8	73	4
	1212D20 1.50 ISO	1.50	12	12.0	20.3	84	4
	1212D20 1.75 ISO	1.75	12	12.0	20.1	84	4
	1010C17 2.00 ISO	2.00	10	10.0	17.0	73	3
	1212D21 2.00 ISO	2.00	12	12.0	21.0	84	4

UN 60° American UN (UNC, UNF, UNEF, UNS)

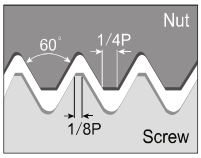


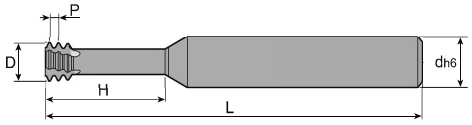


• Application: General engineering

Designation		TPI	Dimension (mm)				No.of flutes
			d	D	ap	L	
ESMT	1010D16 24 UN	24	10	10.0	16.4	73	4
	1212E21 20 UN	20	12	12.0	21.0	84	5
	1212D20 18 UN	18	12	12.0	20.5	84	4
	1212D21 16 UN	16	12	12.0	21.4	84	4
	1212D20 14 UN	14	12	12.0	20.9	84	4
	1212D20 12 UN	12	12	12.0	20.1	84	4

ISO 60° Metric 2xD

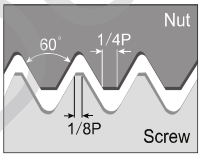


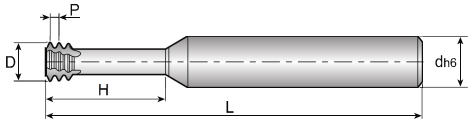


- Thread length up to 2xD
- Application: General engineering

Designation		Pitch(mm)	Thread Size	Dimension (mm)				No.of flutes
				d	D	H	L	
MSMT	06016C4 0.40 ISO	0.40	M2.0	6	1.55	4.5	58	3
	06017C5 0.45 ISO	0.45	M2.2	6	1.65	5.0	58	3
	0602C5 0.45 ISO	0.45	M2.5	6	1.95	5.5	58	3
	06024C6 0.50 ISO	0.50	M3.0	6	2.35	6.5	58	3
	06028C7 0.60 ISO	0.60	M3.5	6	2.75	7.5	58	3
	06031C9 0.70 ISO	0.70	M4.0	6	3.10	9.0	58	3
	06038C12 0.80 ISO	0.80	M5.0	6	3.80	12.5	58	3
	06047C14 1.00 ISO	1.00	M6.0	6	4.65	14.0	58	3
	0606C18 1.25 ISO	1.25	M8.0	6	5.95	18.0	58	3
	0808D25 0.75 ISO	0.75	M10.0	8	8.00	25.0	64	4
	08078C23 1.50 ISO	1.50	M10.0	8	7.80	23.0	64	3
	1009C26 1.75 ISO	1.75	M12.0	10	9.00	26.0	73	3
	12118D35 2.00 ISO	2.00	M16.0	12	11.80	35.0	84	4
	1615E43 2.50 ISO	2.50	M20.0	16	15.00	43.0	105	5

ISO 60° Metric 3xD



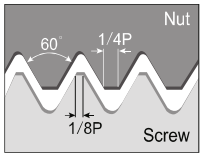


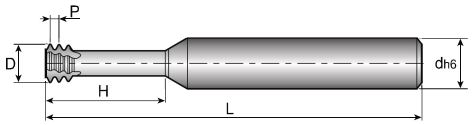
- Thread length up to 3xD

Designation		Pitch(mm)	Thread Size	Dimension (mm)				No.of flutes
				d	D	H	L	
MSMT	03011C4 0.30 ISO(1)	0.30	M1.4	3	1.05	4.0	39	3
	03012C5 0.35 ISO(1)	0.35	M1.6	3	1.20	5.0	58	3
	03016C6 0.40 ISO(1)	0.40	M2.0	3	1.55	6.0	58	3
	0602C7 0.45 ISO	0.45	M2.5	6	1.95	7.5	58	3
	06024C9 0.50 ISO	0.50	M3.0	6	2.35	9.5	58	3
	06028C10 0.60 ISO	0.60	M3.5	6	2.75	10.5	58	3
	06031C12 0.70 ISO	0.70	M4.0	6	3.10	12.5	58	3
	06038C16 0.80 ISO	0.80	M5.0	6	3.80	16.0	58	3
	06047C20 1.00 ISO	1.00	M6.0	6	4.65	20.0	58	3
	0606C24 1.25 ISO	1.25	M8.0	6	5.95	24.0	58	3

(1) Specially designed for the production of dental implants

UN 60° American UN (UNC, UNF, UNEF, UNS) 2xD

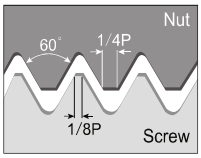


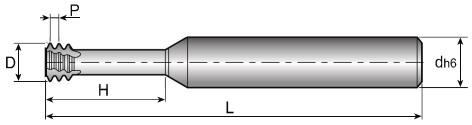


- Left-hand tools (CNC code M04)
- Application: General engineering

Designation		TPI	UNC	UNF	Dimension (mm)				No.of flutes
					d	D	H	L	
MSMT	06014C3 72 UN	72	–	1	6	1.45	3.7	58	3
	06014C3 64 UN	64	1	2	6	1.40	3.8	58	3
	06016C4 56 UN	56	2	3	6	1.65	4.4	58	3
	06019C5 48 UN	48	3	4	6	1.90	5.2	58	3
	06021C6 40 UN	40	4	–	6	2.10	6.3	58	3
	06024C7 40 UN	40	5	6	6	2.45	7.0	58	3
	06033C9 36 UN	36	–	8	6	3.30	9.0	58	3
	06025C7 32 UN	32	6	–	6	2.55	7.1	58	3
	06032C9 32 UN	32	8	–	6	3.20	9.5	58	3
	06037C10 32 UN	32	–	10	6	3.70	10.5	58	3
	06042C11 28 UN	28	–	12	6	4.20	11.0	58	3
	0605C14 28 UN	28	–	1/4	6	5.00	14.5	58	3
	06035C10 24 UN	24	10, 12	–	6	3.50	10.6	58	3
	08066C17 24 UN	24	–	5/16	8	6.6	17.0	64	3
	06047C14 20 UN	20	1/4	–	6	4.75	14,0	58	3
	0808C25 20 UN	20	–	7/16	8	8.00	25.0	64	3
	0606C17 18 UN	18	5/16	–	6	6.00	17.0	58	3
	1212D35 18 UN	18	–	5/8	12	12.00	35.0	84	4
	08067C22 16 UN	16	3/8	–	8	6.70	22.0	64	3
	08077C25 14 UN	14	7/16	–	8	7.70	25.0	64	3
	1092C27 13 UN	13	1 / 2	–	10	9.20	27.5	73	3
	12105C37 12 UN	12	9/16	–	12	10.50	31.5	84	3
	12114C34 11 UN	11	5/8	–	12	11.40	41.5	84	3

ISO 60° American UN (UNC, UNF, UNEF, UNS) 3xD

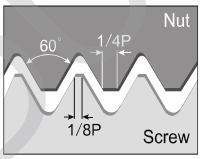


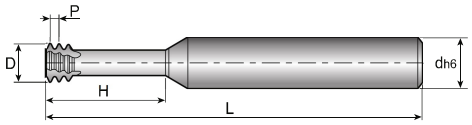


- Left-hand tools (CNC code M04)
- Application: General engineering

Designation		TPI	UNC	UNF	Dimension (mm)				No.of flutes
					d	D	H	L	
MSMT	06012C4 80 UN	80	–	0	6	1.15	4.0	58	3
	06024C9 40 UN	40	5	6	6	2.46	9.6	58	3
	06032C12 32 UN	32	8	–	6	3.20	12.5	58	3
	06037C15 32 UN	32	–	10	6	3.70	15.0	58	3
	0605C19 28 UN	28	–	1/4	6	5.00	19.0	58	3
	08066C24 24 UN	24	–	5/16	8	6.60	24.0	64	3
	06047C19 20 UN	20	1/4	–	6	4.75	19.0	58	3
	0606C23 18 UN	18	5/16	–	6	6.00	23.0	58	3

ISO 60° Metric 3xD

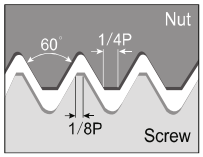


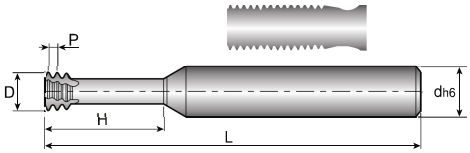


- For applications requiring high fatigue strength in the aerospace and automotive industries

Designation		TPI	UNJC	UNJF	Dimension (mm)				No.of flutes
					d	D	H	L	
MSMT	06033C10 32 UNJ	32	8	10	6	3.30	10.5	58	3
	08051C16 28 UNJ	28	–	1/4	8	5.10	16.0	64	3
	08067C20 24 UNJ	24	–	5/16, 3/8	8	6.70	20.0	64	3
	06049C16 20 UNJ	20	1/4	–	6	4.90	16.0	58	3
	0808C28 20 UNJ	20	–	7/16	8	8.00	28.0	64	3
	08061C20 18 UNJ	18	5/16	–	8	6.15	20.0	64	3
	08069C24 16 UNJ	16	3/8	–	8	6.90	24.0	64	3
	08079C25 14 UNJ	14	7/16	–	8	7.90	25.0	64	3
	10094C27 13 UNJ	13	1 / 2	–	10	9.40	37.5	73	3

MJ ISO 55° 3xD





● For applications requiring high fatigue strength in the aerospace and automotive industries

Designation		Pitch (mm)	Thread Size	Dimension (mm)				No.of flutes
				d	D	H	L	
MSMT	06032C10 0.70 MJ	32	MJ4	6	3.20	10.0	58	3
	06039C12 0.80 MJ	28	MJ5	6	3.90	12.5	58	3
	06048C15 1.00 MJ	24	MJ6	6	4.80	15.0	58	3
	08061C20 1.25 MJ	20	MJ8	8	6.10	20.0	64	3
	0808C25 1.50 MJ	20	MJ10	8	8.00	25.0	64	3
	10092C30 1.75 MJ	18	MJ12	10	9.20	30.0	73	3
	1010C35 2.00 MJ	16	MJ14, MJ16	10	10.00	35.0	73	3

D THREAD FOR OIL & GAS PIPE

Oil Pipe Ordering Code System

R 8 E R 1 3 S 15 T - P3.1 DTIM45

1	2	3	4	5	6	7	8	9	10	11	12
Clamping method of insert	Thread standard	Pitch	Insert type	Hand of insert	Edges of insert	Teeth of edge	Insert Shape or used for machine tools	Insert size	Thread profile	Characteristic parameters	Carbide grades

1 Calmping Method of Insert

R 8 E R 1 3 S 15 T P3.1 DTIM45

V: Vertical style
None: Horizontal style

2 Thread Standard

R 8 E R 1 3 S 15 T P3.1 DTIM45

R: For API Round
B: For API Buttress
G: For API Line Type

3 Pitch

R 8 E R 1 3 S 15 T P3.1 DTIM45

4: 4 TPI 5: 5 TPI 6: 6 TPI
8: 8 TPI 10: 10 TPI

4 Insert Type

R 8 E R 1 3 S 15 T P3.1 DTIM45

E: External
N: Insertnal

5 Hand of Insert

R 8 E R 1 3 S 15 T P3.1 DTIM45

R: Right hand
L: Left hand

6 Edges of Insert

R 8 E R 1 3 S 15 T P3.1 DTIM45

Use figure 1、2、3、4 respectively to represent the number of cutting edge.

7 Teeth of Edge

R 8 E R 1 3 S 15 T P3.1 DTIM45

Use figure 1、2、3、4---8 respectively to represent the number of simultaneous cutting teeth on each cutting edge

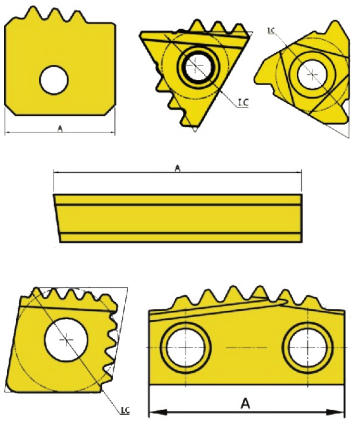
8 Insert Shape or Used for Machine Tools

R 8 E R 1 3 S 15 T P3.1 DTIM45

S: Square and rectangle
P: Parallelogram
T: Triangle
D: Biforate
B: Butterfly
L: Prism

9 Insert Size

R 8 E R 1 3 S 15 T P3.1 DTIM45



10 Thread Profile

R 8 E R 1 3 S 15 T P3.1 DTIM45

T: Thread profile angle 12° F: Thread profile angle 15°
D: BCSG V384: V-0.038R Taper 1:4
V386: V-0.038R Taper 1:6 V404: V-0.040 Taper 1:4
V504: V-0.050 Taper 1:4 V506: V-0.050 Taper 1:6
V558: V-0.055 Taper 1:8 V656: V-0.065 Taper 1:6

11 Characteristic Parameters

R 8 E R 1 3 S 15 T P3.1 DTIM45

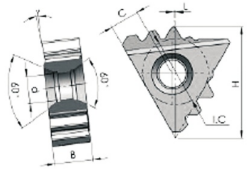
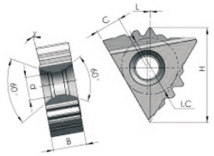
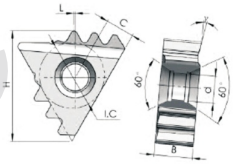
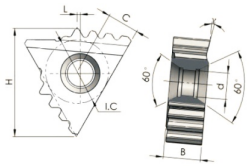
12 Carbide Grades

R 8 E R 1 3 S 15 T P3.1 DTIM45

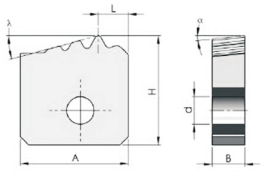
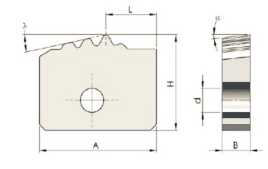
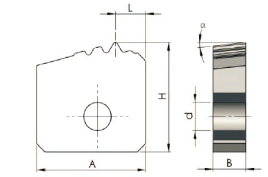
DTIP30 DTIM45

D

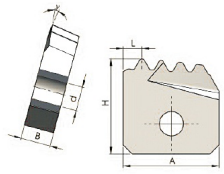
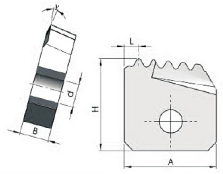
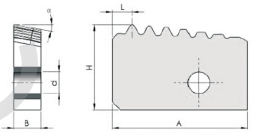
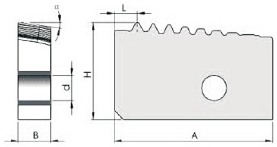
Helter Series API Round Inserts

Type	Designation	Pitch (tpi)	I.C	H	L	B	C	d	Y	Picture
External	R8ER2.3B10T	8	10.170	17.09	0.320	6	4.5	4.2	5°	
	R8ER2.3B10F	8	10.170	17.09	0.320	6	4.5	4.2	5°	
	R8ER2.3B10T-N	8	10.170	17.09	0.010	6	4.5	4.2	5°	
	R8ER2.3B10F-N	8	10.170	17.09	0.010	6	4.5	4.2	5°	
External	R10ER2.4B10	10	10.170	17.09	0.010	6	4.5	4.2	5°	
	R10ER2.4B10-N	10	10.170	17.09	0.010	6	4.5	4.2	5°	
Internal	R8NR2.3B10	8	10.170	17.09	0.320	6	4.5	4.2	10°	
Internal	R10NR2.4B10	10	10.170	17.09	0.010	6	4.5	4.2	10°	

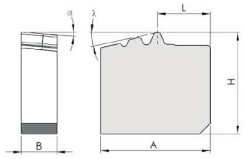
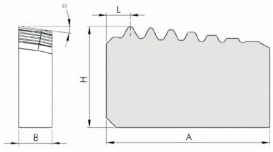
API Round Inserts for Colinet Machine Tools

Type	Designation	Pitch (tpi)	A	H	L	B	d	α	λ	Picture
External	R8ER1.3S15F-2.1	8	15.760	15.540	5.980	4.76	4	6°	15°	
	R8ER1.3S15F-2.2	8	15.760	15.860	4.393	4.76	4	6°	15°	
	R8ER1.3S15T-KX	8	15.875	15.750	4.388	5.00	4	5°30'	12°	
	R8ER1.3S15T-LB	8	15.930	15.750	4.400	5.00	4	6°	12°	
	R8ER1.3S20T-2.1	8	20.000	15.600	10.200	4.76	4	6°	–	
	R8ER1.3S20T-2.2	8	20.000	15.900	8.610	4.76	4	6°	–	
	R10ER1.3S15	10	15.760	15.450	4.400	4.76	4	6°	–	
	R10ER1.3S15-2.1	10	15.760	15.160	15.760	4.76	4	6°	–	
	R10ER1.3S15-2.2	10	15.760	15.450	4.400	4.76	4	6°	–	

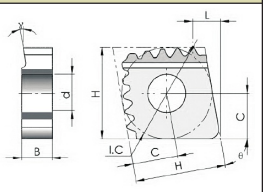
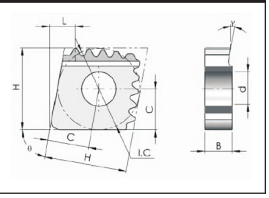
Helter Series API Round Inserts

Type	Designation	Pitch (tpi)	I.C	H	L	B	C	d	Y	Picture
Internal	R8NR1.4S15-Q	8	15.875	15.700	3.100	5.00	4	9°	–	
	R10NR1.5S15-Q	10	15.875	15.750	2.500	5.00	4	9°	–	
	R8NR1.7S25	8	25.000	15.715	3.700	5.00	4	10°	–	
	R10NR1.8S25	10	25.000	15.490	2.500	5.00	4	10°	–	

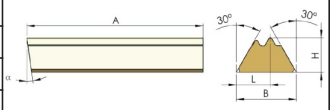
API Round Inserts for PMC Machine Tools (USA)

Type	Designation	Pitch (tpi)	A	H	L	B	d	α	λ	Picture
External	R8ER1.3S15T-P3.1	8	15.930	14.700	7.720	5.185	–	4°	–	
	R8ER1.3S15T-P3.2	8	15.930	14.700	6.670	5.185	–	4°	–	
	R8ER1.3S15T-P3.3	8	15.930	14.700	5.610	5.185	–	4°	–	
Internal	R8NR1.7S25-P	8	25.4	15.715	3.700	5.185	4	7°30'	–	

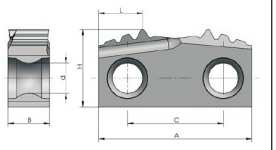
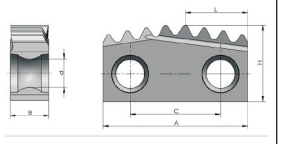
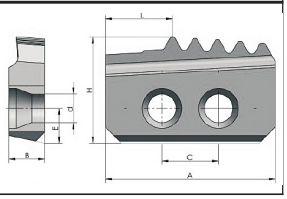
Parallelogram Series API ROund Inserts

Type	Designation	Pitch (tpi)	I.C	H	L	B	C	d	Y	θ	Picture
External	R8ER2.5P19	8	19.000	18.4	5.950	6.35	9.5	8	10°	80°	
	R10ER2.5P19	10	19.000	18.4	5.950	6.35	9.5	8	10°	80°	
Internal	R8NR2.5P19	8	19.000	18.4	5.950	6.35	9.5	8	10°	80°	
	R810NR2.5P19	8	19.000	18.4	5.950	6.35	9.5	8	10°	80°	

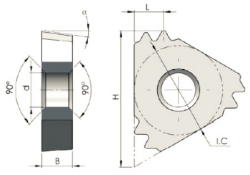
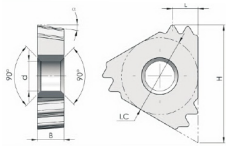
Prism Series API Round Inserts

Type	Designation	Pitch (tpi)	A	H	L	B	α	Picture
External	R8ER1.2L40	8	40.000	7.7	7.850	13.64	8°	
	R10ER1.2L40	10	40.000	7.7	7.200	12.92	8°	

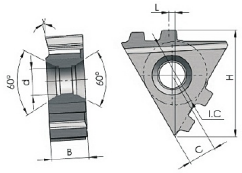
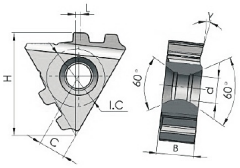
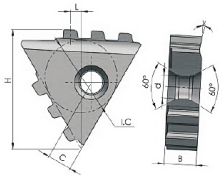
Biforate Series API Round

Type	Designation	Pitch (tpi)	A	H	L	B	C	d	E	Picture
External	R8ER2.3D24	8	24.000	12	10.340	6.4	15	4.70	–	
	R10ER2.3D24	10	24.000	12	6.850	6.4	15	4.70	–	
Internal	R8NR2.4D24	8	24.000	12.4	10.340	6.4	15	4.70	–	
	R8NR1.5D24	8	24.000	14.85	9.500	5	8	4.86	4	
	R8NR1.7D24	8	24.000	14.85	3.400	5	8	4.86	4	
	R10NR1.7D24	10	24.000	14.85	7.400	5	8	4.86	4	

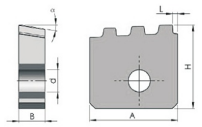
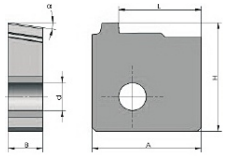
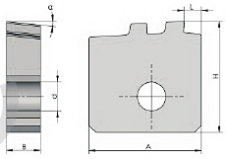
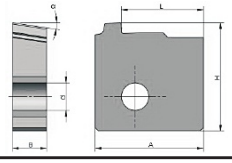
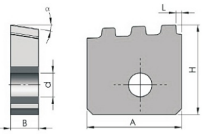
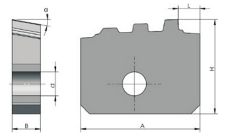
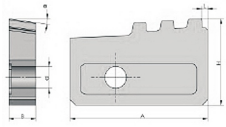
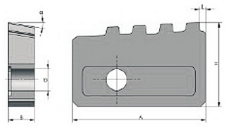
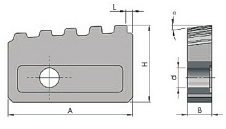
Triangle Series API Round

Type	Designation	Pitch (tpi)	I.C	H	L	B	d	α	Picture
External	R8ER3.2T15	8	15.875	24.30	5.000	5.5	6.2	8°	
	R10ER3.2T15	10	15.875	24.50	4.700	5.5	6.2	8°	
Internal	R8NR1.7S25-P	8	15.875	24.30	5.000	5.5	6.2	8°	
	R8ER1.3S15T-P3.3	8	15.875	24.50	4.700	5.5	6.2	8°	

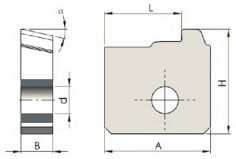
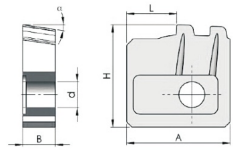
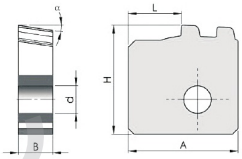
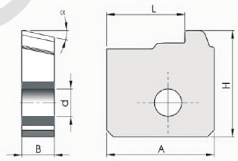
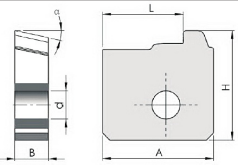
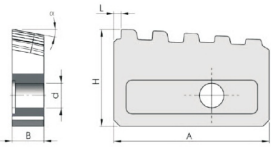
Helter Series API Buttress Inserts

Type	Designation	Pitch (tpi)	I.C	H	L	B	C	d	Y	Picture
External	B5ER2.2B10	5	10.170	17.050	1.000	6	4.5	4.2	10°	
	B5ER2.2B10D	5	10.170	17.050	1.000	6	4.5	4.2	10°	
Internal	B5NR2.2B10	5	10.170	17.100	0.850	6	4.5	4.2	10°	
Internal	B5NR2.3B13	5	13.380	22.075	2.000	6	4.5	4.2	10°	
	B5NR2.3B13D	5	13.380	22.075	2.020	6	4.5	4.2	10°	

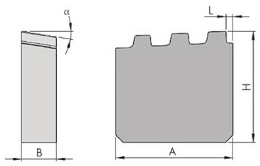
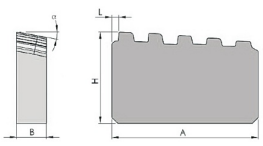
Helter Series API Buttress Inserts

Type	Designation	Pitch (tpi)	A	H	L	B	d	α	Picture
External	B5ER1.3S15	5	15.900	15.100	3.200	4.76	4	9°	
	B5ER1.3S15D	5	15.900	15.100	1.850	4.76	4	9°	
	B5ER1.1S15-CB	5	15.875	15.750	12.000	5	4	8°30'	
	B5ER1.2S15-T	5	15.760	15.450	2.450	4.76	4	6°	
	B6ER1.1S16	6	16.000	15.740	12.500	5	4	8°30'	
	B6ER1.3S15-H16	6	15.875	15.700	2.470	5	4	10°	
	B8ER1.3S15	8	15.875	15.734	3.583	5	4	10°	
	B8ER1.3S16-CBT	8	16.000	15.734	3.578	5	4	10°	
	B5ER1.3S20-2.1	5	20.000	15.700	3.650	4.76	4	10°	
	B5ER1.3S20-2.2	5	20.000	15.880	1.000	4.76	4	10°	
	B5ER1.3S25-KX	5	25.400	15.730	1.100	5	4	8°	
	B5ER1.4S25	5	25.400	15.736	1.185	5	4	9°	
	B5ER1.5S25	5	25.400	15.736	1.185	5	4	7°	
	B5ER1.5S25-KX	5	25.400	15.410	1.200	5	4	8°	
	B5ER1.5S25-KX-2	5	25.000	15.880	1.200	5	4	8°	

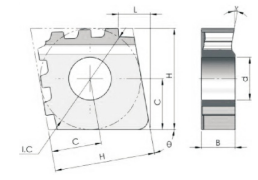
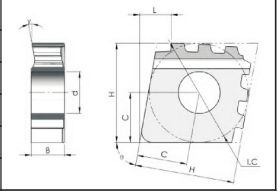
Helter Series API Buttress Inserts

Type	Designation	Pitch (tpi)	A	H	L	B	d	α	Picture
Internal	B4NR1.1S15	4	15.760	15.530	11.470	4.76	4	12°	
	B5NR1.2S15	5	15.875	15.750	7.650	5	4	8°30'	
	B5NR1.2S15-G	5	15.875	15.250	7.680	4.9	4	9°	
	B5NR1.2S15-T	5	15.875	15.750	7.700	5.00	4	9°	
	B5NR1.2S15-TX	5	15.875	15.750	7.350	5.00	4	9°	
	B5NR1.1S15-CB	5	15.875	15.750	12.500	5.00	4	8°30'	
	B5NR1.1S15-CB2	5	15.875	15.750	12.500	5.00	4	8°30'	
	B6NR1.1S16	6	16.000	15.740	12.500	5.00	4	8°30'	
	B6NR1.1S16-H6	6	16.000	15.750	13.200	5.00	4	10°	
	B8NR1.1S15-TB	8	15.875	15.940	13.625	5.00	4	8°30'	
	B8NR1.1S16-CBT	8	16.000	15.740	13.360	5.00	4	8°30'	
	B8NR1.1S16-P	8	16.000	15.740	13.750	5.00	4	8°30'	
	B5NR1.5S25	5	25.400	15.736	1.185	5.185	4	10°	

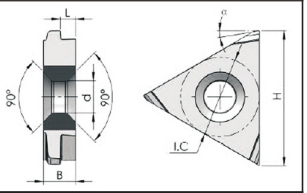
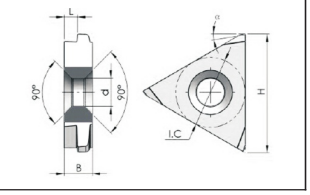
API Buttress Inserts for PMC Machine Tools (USA)

Type	Designation	Pitch (tpi)	A	H	L	B	d	α	Picture
External	B5ER1.3S16-P3.1	5	16.900	14.600	4.370	5.185	–	10°	
	B5ER1.3S16-P3.2	5	16.900	14.860	2.630	5.185	–	10°	
	B5ER1.3S16-P3.3	5	16.900	15.000	0.880	5.185	–	10°	
	B8ER1.3S15-P	8	15.880	15.734	3.583	5.000	–	10°	
Internal	B5NR1.5S25-P	5	25.400	15.600	1.700	5.185	–	9°30'	

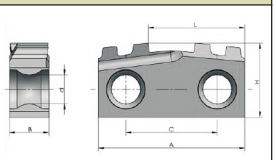
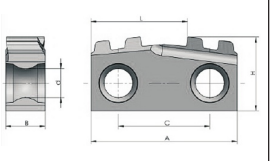
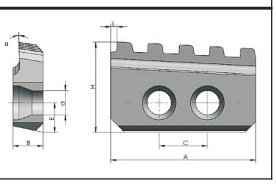
Parallelogram Series API Buttress Inserts

Type	Designation	Pitch (tpi)	I.C	H	L	B	C	d	Y	θ	Picture
External	B5ER2.3P19	5	19.000	18.9	5.950	6.35	9.5	8	10°	80°	
Internal	B5NR2.3P19	5	19.000	18.9	5.950	6.35	9.5	8	10°	80°	

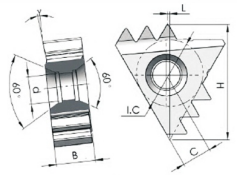
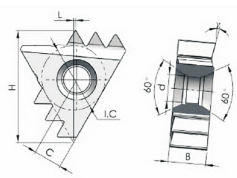
Triangle Series API Buttress Inserts (On-edge Type)

Type	Designation	Pitch (tpi)	I.C	H	L	B	d	α	Picture
External	VB5ER3.1T16	5	16.000	26.2	2.760	6.45	6.4	9°	
	VB5EL3.1T16	5	16.000	26.2	2.760	6.45	6.4	9°	
Internal	VB5NR3.1T16	5	16.000	26.2	2.760	6.45	6.4	9°	
	VB5NL3.1T16	5	16.000	26.2	2.760	6.45	6.4	9°	

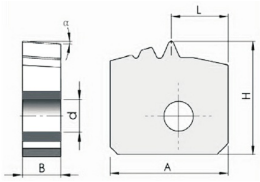
Bifortate Series API Buttress Inserts

Type	Designation	Pitch (tpi)	A	H	L	B	C	d	α	E	Picture
External	B5ER2.2D24	5	24.000	12	15.760	6.5	15	4.70	–	–	
Internal	B5NR2.2D24	5	24.000	12	15.760	6.5	15	4.70	–	–	
	B5NR1.5D24	5	24.000	14.85	1.000	5	8	4	3°	4.86	
	B5NL1.5D24	5	24.000	14.85	3.600	5	8	4	3°	4.86	

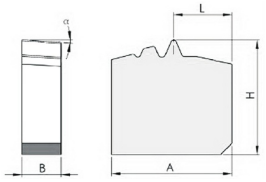
Helter Series API Line Type Inserts

Type	Designation	Pitch (tpi)	I.C	H	L	B	C	d	Y	Picture
External	G8ER2.3B10	8	10.170	17.600	0.320	6	4.5	4.2	5°	
	G11.5ER2.4B10	11.5	10.170	17.000	0.655	6	4.5	4.2	5°	
Internal	G8NR2.3B10	8	10.170	17.600	0.320	6	4.5	4.2	10°	
	G11.5NR2.4B10	11.5	10.170	17.000	0.655	6	4.5	4.2	10°	

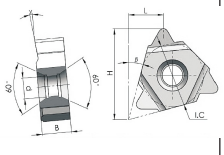
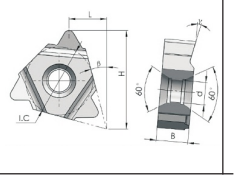
API Line Type Inserts for Colinet Machine Tools

Type	Designation	Pitch (tpi)	A	H	L	B	α	Picture
External	G8ER1.3S15	8	15.760	15.550	4.400	4.76	6°	
	G11.5ER1.4S15	11.5	15.760	15.000	4.400	4.76	6°	

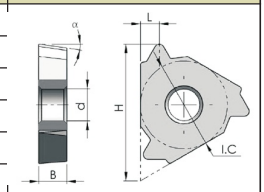
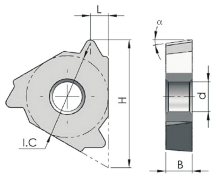
API Line Type Inserts for PMC Machine Tools (USA)

Type	Designation	Pitch (tpi)	A	H	L	B	α	Picture
External	G8ER1.3S15-P3.1	8	15.930	15.178	7.716	5.185	3°30'	
	G8ER1.3S15-P3.2	8	15.930	15.420	6.657	5.185	3°30'	
	G8ER1.3S15-P3.3	8	15.930	15.590	5.600	5.185	3°30'	

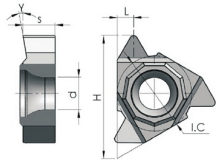
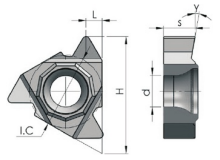
API Inserts for T12 Oil Drill Rods & Connecters

Type	Designation	Pitch (tpi)	Thread Standard	Thread Taper	I.C	B	d	H	L	β	γ	Picture
External	R4ER3.1T12V384	4	V-0.038R	1:4	12.700	6.000	4.200	18.43	7.13	15°	12°	
	R4ER3.1T12V386	4	V-0.038R	1:6	12.700	6.000	4.200	18.43	7.13	15°	12°	
	R4ER3.1T12V504	4	V-0.050	1:4	12.700	6.000	4.200	18.43	7.13	15°	12°	
	R4ER3.1T12V506	4	V-0.050	1:6	12.700	6.000	4.200	18.43	7.13	15°	12°	
	R5ER3.1T12V404	5	V-0.040	1:4	12.700	6.000	4.200	18.58	7.13	15°	12°	
Internal	R4NR3.1T12V384	4	V-0.038R	1:4	12.700	6.000	4.200	18.43	7.13	15°	12°	
	R4NR3.1T12V386	4	V-0.038R	1:4	12.700	6.000	4.200	18.43	7.13	15°	12°	
	R4NR3.1T12V504	4	V-0.050	1:4	12.700	6.000	4.200	18.43	7.13	15°	12°	
	R4NR3.1T12V506	4	V-0.050	1:4	12.700	6.000	4.200	18.43	7.13	15°	12°	
	R5NR3.1T12V404	5	V-0.040	1:4	12.700	6.000	4.200	18.58	7.13	15°	12°	

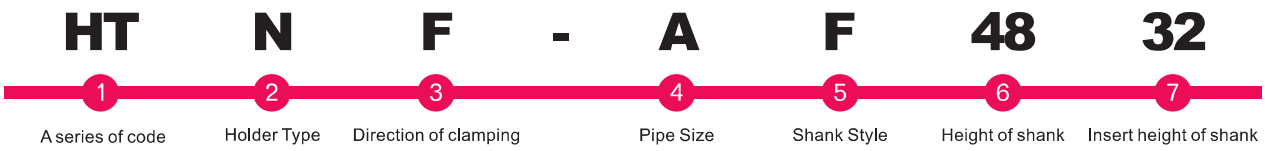
API Inserts for T17 Oil Drill Rods & Conecters

Type	Designation	Pitch (tpi)	Thread Standard	Thread Taper	I.C	B	d	H	L	α	Picture
External	R4ER3.1T17V384	4	V-0.038R	1:4	17.000	5.500	6.200	26.51	3.7	8°	
	R4ER3.1T17V386	4	V-0.038R	1:6	17.000	5.500	6.200	26.51	3.7	8°	
	R4ER3.1T17V504	4	V-0.050	1:4	17.000	5.500	6.200	26.83	3.7	8°	
	R4ER3.1T17V506	4	V-0.050	1:6	17.000	5.500	6.200	26.83	3.7	8°	
	R4ER3.1T17V656	4	V-0.065	1:6	17.000	5.500	6.200	26.24	3.7	8°	
	R5ER3.1T17V404	5	V-0.040	1:4	17.000	5.500	6.200	26.96	3.7	8°	
Internal	R4NR3.1T17V384	4	V-0.038R	1:4	17.000	5.500	6.200	26.51	3.7	8°	
	R4NR3.1T17V386	4	V-0.038R	1:6	17.000	5.500	6.200	26.51	3.7	8°	
	R4NR3.1T17V504	4	V-0.050	1:4	17.000	5.500	6.200	26.83	3.7	8°	
	R4NR3.1T17V506	4	V-0.050	1:6	17.000	5.500	6.200	26.83	3.7	8°	
	R4NR3.1T17V656	4	V-0.065	1:6	17.000	5.500	6.200	26.24	3.7	8°	
	R5NR3.1T17V404	5	V-0.040	1:4	17.000	5.500	6.200	26.96	3.7	8°	

API Inserts for T12 BZ Type Oil Drill Rods & Conecters

Type	Designation	Pitch (tpi)	Thread Standard	Thread Taper	I.C	S	d	H	L	α	Picture
External	R3.5ER3.1T12V506-BZ	4	V-0.050	1:6	12.700	5.500	5.500	20.6	2.8	10°	
	R4ER3.1T12V504-BZ	4	V-0.050	1:4	12.700	5.500	5.500	20.8	2.8	10°	
	R4ER3.1T12V506-BZ	4	V-0.050	1:6	12.700	5.500	5.500	20.8	2.8	10°	
	R4ER3.1T12V656-BZ	4	V-0.065	1:6	12.700	5.500	5.500	19.8	2.8	10°	
	R5ER3.1T12V404-BZ	5	V-0.040	1:4	12.700	5.500	5.500	20.6	2.8	10°	
Internal	R3.5NR3.1T12V506-BZ	4	V-0.050	1:6	12.700	5.500	5.500	20.6	2.8	10°	
	R4NR3.1T12V504-BZ	4	V-0.050	1:4	12.700	5.500	5.500	20.8	2.8	10°	
	R4NR3.1T12V506-BZ	4	V-0.050	1:6	12.700	5.500	5.500	20.8	2.8	10°	
	R4NR3.1T12V656-BZ	4	V-0.065	1:6	12.700	5.500	5.500	19.8	2.8	10°	
	R5NR3.1T12V404-BZ	5	V-0.040	1:4	12.700	5.500	5.500	20.6	2.8	10°	

Conventional Tooth Holders Code System



1 A series of code

HT N F A F 48 32

HT series: applicable to RB series inserts
PP series: applicable to BB series inserts
Z1 series: applicable to RT17 series inserts
Z3 series: applicable to RT12 series inserts
TR series: applicable to RT series inserts
LP series: applicable to VBT series inserts
CT series: applicable to RL series inserts

2 Holder Type

HT N F A F 48 32

W: External
N: Internal

3 Direction of Clamping

HT N F A F 48 32

F: Reversed Clamping
None: Front Clamping

4 Application Range

HT N F A F 48 32

A B C D

5 Shanak Style

HT N F A F 48 32

F: Squre Shank
Y: Round Shank

6 Height of Shank

HT N F A F 48 32

The height of square shank
The diameter of round shank

7 Insert height of Shank

HT N F A F 48 32

The insert height of square shank
The length of round shank

Multi-Clamping Tooth Holders Code System

HT	N	M	S	15	-	B	F	48	32
1	2	3	4	5		6	7	8	9
A series of code	Holder Type	Clamping Method of Insert	Insert Shape	Length of Insert Cutting Edge		Pipe Size	Shank Style	Height of shank	Insert height of shank

1 A series of code

HT N M S 15 B F 48 32

HT series: applicable to RB series inserts
PP series: applicable to BB series inserts

2 Holder Type

HT N M S 15 B F 48 32

W: External
N: Internal

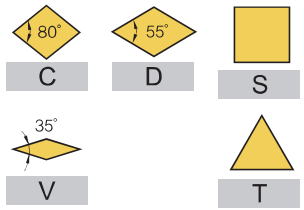
3 Clamping Method of Insert

HT N M S 15 B F 48 32

M: Top and hole, clamping (Multi clamp, pin and clamp)
P: Hole clamping (Pin lock)
S: Screw on

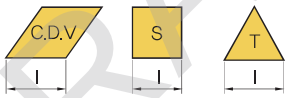
4 Insert Shape

HT N M S 15 B F 48 32



5 Length of Insert Cutting Edge

HT N M S 15 B F 48 32



6 Application Range

HT N M S 15 B F 48 32

A B C D

7 Shanak Style

HT N M S 15 B F 48 32

F: Squre Shank
Y: Round Shank

8 Height of Shank

HT N M S 15 B F 48 32

The height of square shank
The diameter of round shank

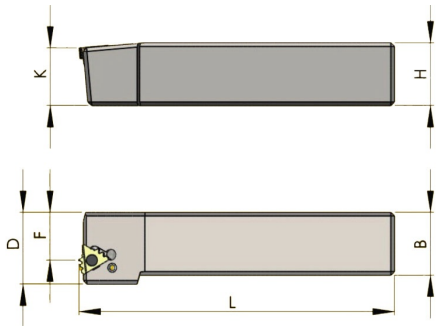
9 Insert height of Shank

HT N M S 15 B F 48 32

The insert height of square shank
The length of round shank

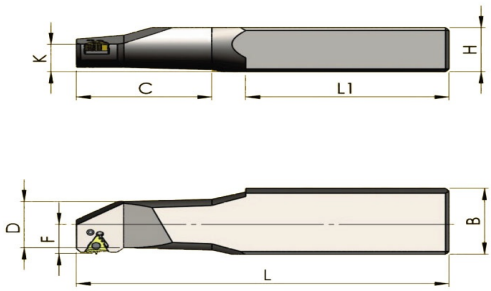
D

External Threading Holder for Helter Series API Round Inserts



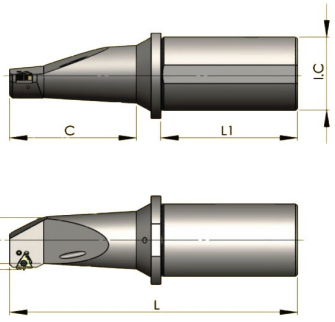
Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts		
			L	H	K	B	D	F	Helix Angle		Shim	Lever	Jackscrew
A	HTW-A2825	2 3/8"~3 1/2" 60.325mm~139.7mm	175	28	25	30	35	21.5	70'	R8ER2.3B10T R10ER2.3B10	169.798	HT-XLG	HT-DS
	HTW-A3232		175	32	32	32	35	21.5	70'				
	HTW-A3532		175	35	32	35	40	26.5	70'				
	HTW-A4040		175	40	40	40	45	29.5	70'				
B	HTW-B3232	4"~5 1/2" 101.6mm~139.7mm	175	32	32	32	35	21.5	50'				
	HTW-B3532		175	35	32	35	40	26.5	50'				
	HTW-B4040		175	40	40	40	45	29.5	50'				
C	HTW-C3232	6 5/8"~8 5/8" 168.275mm~219.075 mm	175	32	32	32	35	21.5	30'				
	HTW-C3532		175	35	32	35	40	26.5	30'				
	HTW-C4040		175	40	40	40	45	29.5	30'				
D	HTW-D3232	9 5/8"~13 3/8" 244.475mm~339.725 mm	175	32	32	32	35	21.5	15'				
	HTW-D3532		175	35	32	35	40	26.5	15'				
	HTW-D4040		175	40	40	40	45	29.5	15'				

Internal Threading Holder for Helter Series API Round Inserts



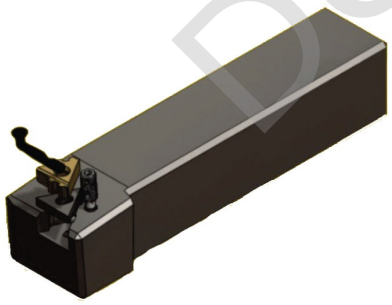
Type	Ordering Number	Pipe Size	Dimension									Available Inserts	Spare parts		
			L	L1	H	C	K	D	F	B	Helix Angle		Shim	Lever	Jackscrew
A	HTN-AF4025	2 3/8"~3 1/2" 60.325mm~139.7mm	275	150	40	100	25	42	26	60	70'	R8NR2.3B10 R10NR2.4B10	169.523	HT-XLG	HT-DS
	HTN-AF4832		305	180	48	100	32	42	26	66	70'				
B	HTN-BF4025	4"~5 1/2" 101.6mm~139.7mm	335	180	40	130	25	50	31	72	50'				
	HTN-BF4832		335	180	48	130	32	50	31	72	50'				
	HTN-BF5536		335	200	55	130	36	50	31	75	50'				
C	HTN-CF4832	6 5/8"~8 5/8" 168.275mm~219.075mm	358	180	48	158	32	56	36	75	30'				
	HTN-CF5536		378	200	55	158	36	56	36	77	30'				
D	HTN-DF4832	9 5/8"~13 3/8" 244.475mm~339.725mm	395	200	48	175	32	60	43	81	30'				
	HTN-DF5536		395	200	55	175	36	60	43	81	15'				

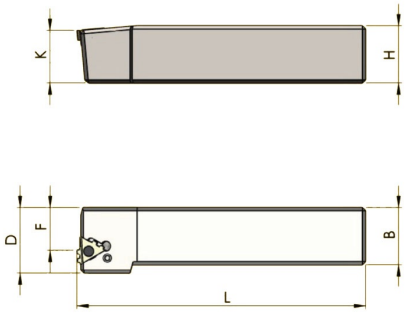
Internal Threading Holder for Helter Series API Round Insertes



Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts		
			L	L1	I.C	C	F	D	Helix Angle		Shim	Lever	Jackscrew
A	HTN-AY4080	2 3/8"~3 1/2" 60.325mm~139.7mm	205	80	40	100	26	42	70'	R8NR2.3B10 R10NR2.4B10	169.523	HT-XLG	HT-DS
	HTN-AY5090		215	90	50	100	26	42	70'				
	HTN-AY60100		225	100	60	100	26	42	70'				
	HTN-AY80140		265	140	80	100	26	42	70'				
B	HTN-BY4086	4"~5 1/2" 101.6mm~139.7mm	235	86	40	130	31	50	50'				
	HTN-BY5090		245	90	50	130	31	50	50'				
	HTN-BY60100		255	100	60	130	31	50	50'				
	HTN-BY80140		295	140	80	130	31	50	50'				
C	HTN-CY5090	6 5/8"~8 5/8" 168.275mm~219.075mm	268	90	50	158	36	56	30'				
	HTN-CY60100		278	100	60	158	36	56	30'				
	HTN-CY80140		318	140	80	158	36	56	30'				
D	HTN-DY60100	9 5/8"~13 3/8" 244.475mm~339.725mm	295	100	60	175	43	70	15'				
	HTN-DY80140		335	140	80	175	43	70	15'				

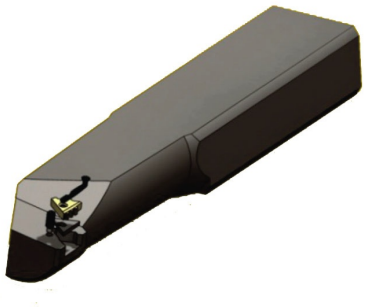
External Threading Holder for Helter Series API Round Insertes

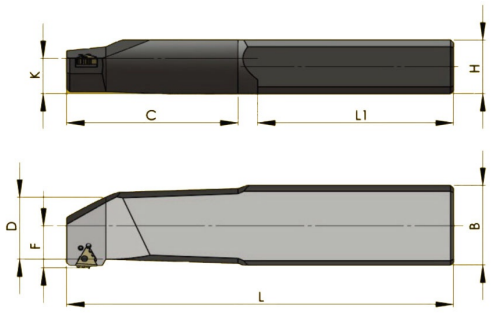




Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts		
			L	H	K	B	D	F	Helix Angle		Shim	Lever	Jackscrew
B	PPW-B3532	4 1/2"~6 5/8" 114.3mm~168.275mm	175	35	32	35	40	25	60'	B5ER2.2B10	169.798	HT-XLG	HT-DS
	PPW-B4040		175	40	40	40	45	30	60'				
C	PPW-C3532	7"~11 3/4" 177.8mm~298.45mm	175	35	32	35	40	25	40'				
	PPW-C4040		175	40	40	40	45	30	40'				
D	PPW-D3532	13 3/8"~20" 339.725mm~508mm	175	35	32	35	40	25	20'				
	PPW-D4040		175	40	40	40	45	30	20'				

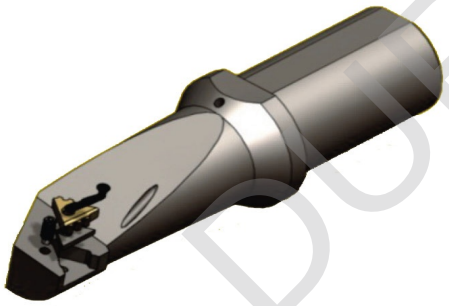
Internal Threading Holder for Helter Series API Buttress Inserts

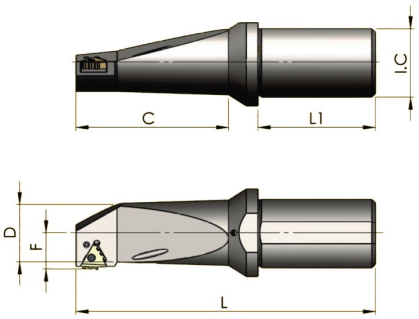




Type	Ordering Number	Pipe Size	Dimension									Available Inserts	Spare parts		
			L	L1	H	C	K	D	F	B	Helix Angle		Shim	Lever	Jackscrew
B	PPN-BF4832	4 1/2"~6 5/8" 114.3mm~168.275mm	335	180	48	130	32	50	31	74	60'	B5NR2.3B13	169.973	HT-XLG	HT-DS
	PPN-BF5536		355	200	55	130	36	50	31	77	60'				
C	PPN-CF4832	7"~11 3/4" 177.8mm~298.45mm	358	180	48	158	32	56	36	74	40'				
	PPN-CF5536		378	200	55	158	36	56	36	77	40'				
D	PPN-DF5536	13 3/8"~20" 339.725mm~508mm	395	200	55	175	36	60	43	81	20'				

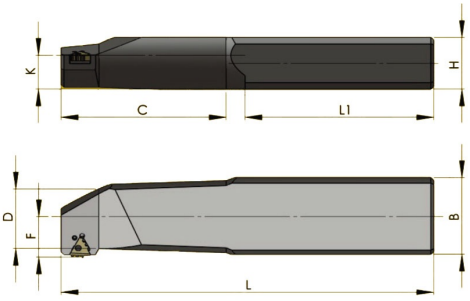
External Threading Holder for Helter Series API Buttress Inserts





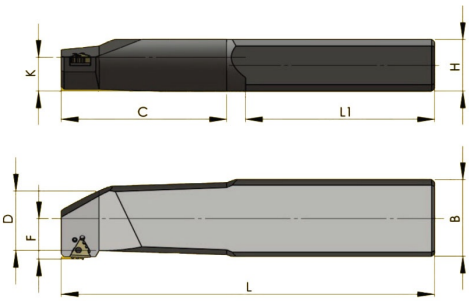
Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts		
			L	L1	I.C	C	F	D	Helix Angle		Shim	Lever	Jackscrew
B	PPN-BY5090	4 1/2"~6 5/8" 114.3mm~168.275mm	245	90	50	130	31	50	60'	B5NR2.3B13	169.973	HT-XLG	HT-DS
	PPN-BY60100		255	100	60	130	31	50	60'				
	PPN-BY80140		295	140	80	130	31	50	60'				
C	PPN-CY5090	7"~11 3/4" 177.8mm~298.45mm	273	90	50	158	36	56	40'				
	PPN-CY60100		283	100	60	158	36	56	40'				
	PPN-CY80140		323	140	80	158	36	56	40'				
D	PPN-DY60100	13 3/8"~20" 339.725mm~508mm	300	100	60	175	43	70	20'				
	PPN-DY80140		340	140	80	175	43	70	20'				

Internal Threading Holder for Helter Series API Buttress Insertes



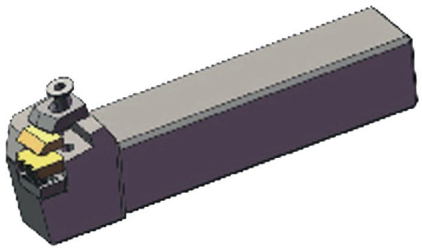
Type	Ordering Number	Pipe Size	Dimension									Available Inserts	Spare parts		
			L	L1	H	C	K	D	F	B	Helix Angle		Shim	Lever	Jackscrew
B	PBN-BF4832	4 1/2"~6 5/8" 114.3mm~168.275mm	335	180	48	130	32	50	31	74	60'	B5NR2.2B10	169.523	HT-XLG	HT-DS
	PBN-BF5536		355	200	55	130	36	50	31	77	60'				
C	PBN-CF4832	7"~11 3/4" 177.8mm~298.45mm	358	180	48	158	32	56	36	74	40'				
	PBN-CF5536		378	200	55	158	36	56	36	77	40'				
D	PBN-DF5536	13 3/8"~20" 339.725mm~508mm	395	200	48	175	32	60	43	81	20'				

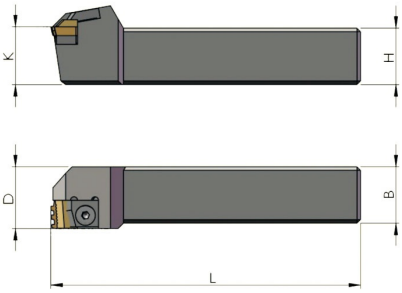
Internal Threading Holder for Helter Series API Buttress Insertes



Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts		
			L	L1	I.C	C	F	D	Helix Angle		Shim	Lever	Jackscrew
B	PBN-BY5090	4 1/2"~6 5/8" 114.3mm~168.275mm	245	90	50	130	31	50	60'	B5NR2.2B10	169.523	HT-XLG	HT-DS
	PBN-BY60100		255	100	60	130	31	50	60'				
	PBN-BY80140		295	140	80	130	31	50	60'				
C	PBN-CY5090	7"~11 3/4" 177.8mm~298.45mm	273	90	50	158	36	56	40'				
	PBN-CY60100		283	100	60	158	36	56	40'				
	PBN-CY80140		323	140	80	158	36	56	40'				
D	PBN-DY60100	13 3/8"~20" 339.725mm~508mm	300	100	60	175	43	68	20'				
	PBN-DY80140		340	140	80	175	43	68	20'				

External Threading Holder for Colinet/PMC Machine Tools



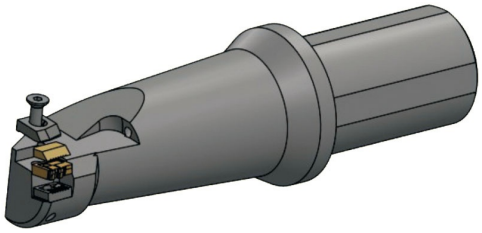


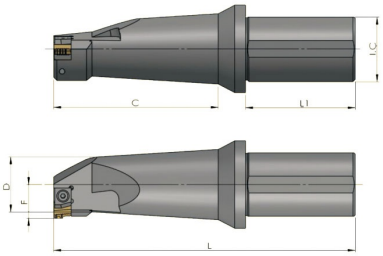
Type	Ordering Number	Pipe Size	Dimension						Available Inserts	Spare parts			
			L≈	H	K	B	D	Helix Angle		Shim	Chipbreaker	Clamp	Screw
A	BS16W-A2825	2 3/8"~3 1/2" 60.325mm~139.7mm	175	28	25	30	35	70'	B5ER1.1S15-CB B6ER1.1S16 B6ER1.3S15-H6 B8ER1.3S15-P B8ER1.3S16-CBT R10ER1.3S15-2.1-BSY R10ER1.3S15-2.2-BSY R8ER1.3S15T-KX R8ER1.3S15T-LB	C/27526E	C/27525	BP-0010-YB	GB703-M6x16-19
	BS16W-A3232		175	32	32	32	32	70'					
	BS16W-A3532		175	35	32	35	40	70'					
	BS16W-A4040		175	40	40	40	45	70'					
B	BS16W-B3232	4"~5 1/2" 101.6mm~139.7mm	175	32	32	32	32	60'					
	BS16W-B3532		175	35	32	35	40	60'					
	BS16W-B4040		175	40	40	40	45	60'					
C	BS16W-C3232	6 5/8"~8 5/8" 168.275mm~219.075mm	175	32	32	32	32	40'					
	BS16W-C3532		175	35	32	35	40	40'					
	BS16W-C4040		175	40	40	40	45	40'					
D	BS16W-D3232	9 5/8"~13 3/8" 244.475mm~339.725mm	175	32	32	32	32	20'					
	BS16W-D3532		175	35	32	35	40	20'					
	BS16W-D4040		175	40	40	40	45	20'					

Internal Threading Holder for Colinet/PMC Machine Tools

Type	Ordering Number	Pipe Size	Dimension									Available Inserts	Spare parts			
			L	L1	H	C	K	D	F	B	Helix Angle		Shim	Chipbreaker	Clamp	Screw
A	BS16N-AF4025	2 3/8"~3 1/2" 60.325mm~139.7mm	275	150	40	100	25	42	26	60	70'	B5NR1.2S15 B5NR1.1S15-CB B5NR1.1S15-CB2 B5NR1.2S15 B5NR1.2S15-T B5NR1.2S15-TX B6NR1.1S16 B6NR1.1S16-H6 B8NR1.1S15-TB B8NR1.1S16-CBT B8NR1.1S16-P R10NR1.5S15-Q R8NR1.4S15-Q	C/27526E	C/27525	BP-0010-YB	GB703-M6x16-19
	BS16N-AF4832		305	180	48	100	32	42	26	66	70'					
B	BS16N-BF4025	4"~5 1/2" 101.6mm~139.7mm	335	180	40	130	25	50	31	72	60'					
	BS16N-BF4832		335	180	48	130	32	50	31	72	60'					
	BS16N-BF5536		355	200	55	130	36	50	31	75	60'					
C	BS16N-CF4832	6 5/8"~8 5/8" 168.275mm~219.075mm	358	180	48	158	32	56	36	75	40'					
	BS16N-CF5536		378	200	55	158	36	56	36	77	40'					
D	BS16N-DF4832	9 5/8"~13 3/8" 244.475mm~339.725mm	395	200	48	175	32	60	43	81	20'					
	BS16N-DF5536		395	200	55	175	36	60	43	81	20'					

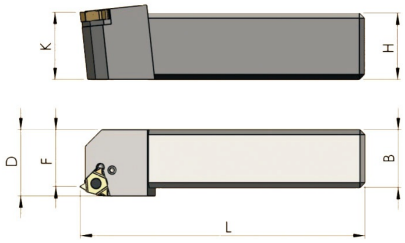
Internal Threading Holder for Colinet/PMC Machine Tools





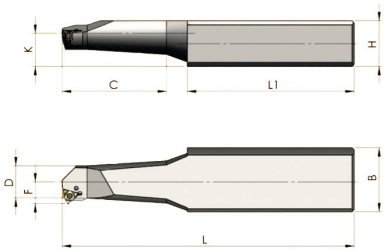
Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts			
			L	L1	I.C	C	F	D	Helix Angle		Shim	Chipbreaker	Clamp	Screw
A	BS16N-AY4086	2 3/8"~3 1/2" 60.325mm~139.7mm	205	86	40	100	26	42	70'	B5NR1.2S15 B5NR1.1S15-CB B5NR1.1S15-CB2 B5NR1.2S15 B5NR1.2S15-T B5NR1.2S15-TX B6NR1.1S16 B6NR1.1S16-H6 B8NR1.1S15-TB B8NR1.1S16-CBT B8NR1.1S16-P R10NR1.5S15-Q R8NR1.4S15-Q	C/27526E	C/27525	BP-0010-YB	GB703-M6x16-19
	BS16N-AY5090		215	90	50	100	26	42	70'					
	BS16N-AY60100		225	100	60	100	26	42	70'					
	BS16N-AY80140		265	140	80	100	26	42	70'					
B	BS16N-BY4086	4"~5 1/2" 101.6mm~139.7mm	235	86	40	130	31	50	60'					
	BS16N-BY5090		245	90	50	130	31	50	60'					
	BS16N-BY60100		255	100	60	130	31	50	60'					
	BS16N-BY80140		295	140	80	130	31	50	60'					
C	BS16N-CY5090	6 5/8"~8 5/8" 168.275mm~219.075mm	268	90	50	158	36	56	40'					
	BS16N-CY60100		278	100	60	158	36	56	40'					
	BS16N-CY80140		318	140	80	158	36	56	40'					
D	BS16N-DY60100	9 5/8"~13 3/8" 244.475mm~339.725mm	295	100	60	175	43	70	20'					
	BS16N-DY80140		335	140	80	175	43	70	20'					

External Threading Holder for T12 Oil Drill Rods & Conecters



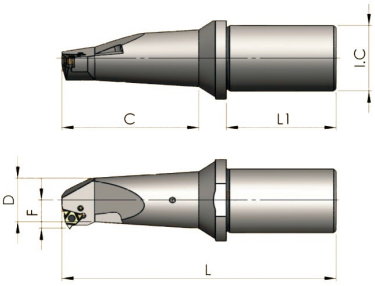
Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts		
			L	H	K	B	D	F	Helix Angle		Shim	Lever	Jackscrew
A	Z3W-A3532	2 3/8"~3 1/2" 60.325mm~88.9mm	175	35	32	35	40	33	110'	R4ER3.1T12V386 R4ER3.1T12V384 R4ER3.1T12V504 R4ER3.1T12V506 R5ER3.1T12V404	169.537	HT-XLG	HT-DS
B	Z3W-B3532	4"~5 1/2" 101.6mm~139.7mm	175	35	32	35	40	33	80'				
C	Z3W-C3532	6 5/8"~8 5/8" 168.275mm~219.075mm	175	35	32	35	40	33	45'				

Internal Threading Holder for T12 Oil Drill Rods & Conecters



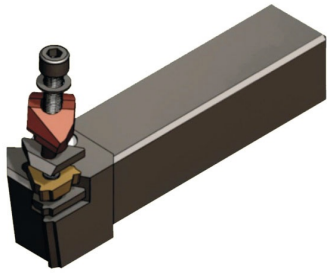
Type	Ordering Number	Pipe Size	Dimension									Available Inserts	Spare parts		
			L	L1	H	C	K	D	F	B	Helix Angle		Shim	Lever	Jackscrew
B	Z3N-AF4832	2 3/8"~3 1/2" 60.325mm~88.9mm	330	180	48	125	32	40	26	74	110'	R4NR3.1T12V386 R4NR3.1T12V384 R4NR3.1T12V504 R4NR3.1T12V506 R5NR3.1T12V404	169.737	HT-XLG	HT-DS
	Z3N-AF5536		350	200	55	125	36	40	26	77	110'				
C	Z3N-BF4832	4"~5 1/2" 101.6mm~139.7mm	345	180	48	140	32	48	31	74	80'				
	Z3N-BF5536		365	200	55	140	36	48	31	77	80'				
D	Z3N-CF5536	6 5/8"~8 5/8" 168.275mm~219.075mm	420	220	55	170	36	55	34	81	45'				

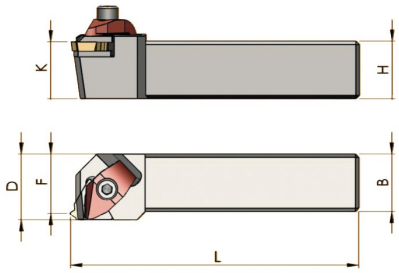
Internal Threading Holder for T12 Oil Drill Rods & Conecters



Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts		
			L	L1	I.C	C	F	D	Helix Angle		Shim	Lever	Jackscrew
A	Z3N-AY60100	2 3/8"~3 1/2" 60.325mm~88.9mm	250	100	60	125	26	40	110'	R4NR3.1T12V386 R4NR3.1T12V384 R4NR3.1T12V504 R4NR3.1T12V506 R5NR3.1T12V404	169.737	HT-XLG	HT-DS
	Z3N-AY80140		290	140	80	125	26	40	110'				
B	Z3N-BY60100	4"~5 1/2" 101.6mm~139.7mm	265	100	60	140	31	48	80'				
	Z3N-BY80140		310	140	80	140	31	48	80'				
C	Z3N-CY60100	6 5/8"~8 5/8" 168.275mm~219.075mm	295	100	60	170	33	53	45'				
	Z3N-CY80140		340	140	80	170	33	53	45'				

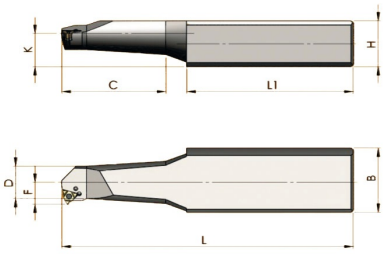
External Threading Holder for T17 Oil Drill Rods & Conecters





Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts			
			L	H	K	B	D	F	Helix Angle		Shim	Chipbreaker	Clamp	Screw
A	Z3W-A3532	2 3/8"~3 1/2" 60.325mm~88.9mm	175	35	32	35	40	36	110'	R4ER3.1T17V386 R4ER3.1T17V384 R4ER3.1T17V504 R4ER3.1T17V506 R5ER3.1T17V404	Z1W-DXQ	Z1W-DD	Z1W-YB	GB701-M8x25-30
B	Z3W-B3532	4"~5 1/2" 101.6mm~139.7mm	175	35	32	35	40	36	80'					
C	Z3W-C3532	6 5/8"~8 5/8" 168.275mm~219.075mm	175	35	32	35	40	36	45'					

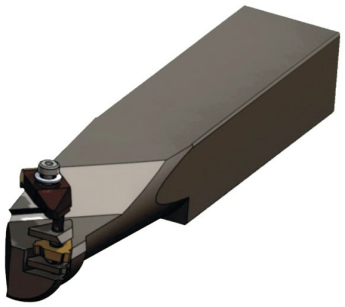
Internal Threading Holder for T17 Oil Drill Rods & Conecters

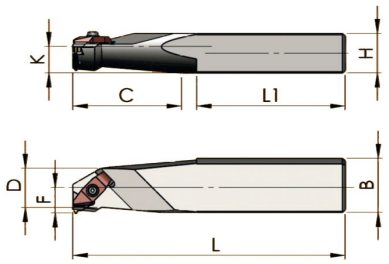


Type	Ordering Number	Pipe Size	Dimension									Available Inserts	Spare parts			
			L	L1	H	C	K	D	F	B	Helix Angle		Shim	Chipbreaker	Clamp	Screw
B	Z1N-BF4832	4"~5 1/2" 101.6mm~139.7mm	330	180	48	150	32	48	31	72	80'	R4NR3.1T17V386 R4NR3.1T17V384 R4NR3.1T17V504 R4NR3.1T17V506 R5NR3.1T17V404	Z1N-DD	Z1N-DXQ	Z1N-YB	GB701-M8x25-30
	Z1N-BF5536		350	200	55	150	36	48	31	77	80'					
C	Z1N-CF4832	6 5/8"~8 5/8" 168.275mm~219.075mm	382	200	48	182	32	53	34	72	45'					
	Z1N-CF5536		382	200	55	182	36	53	34	77	45'					

D

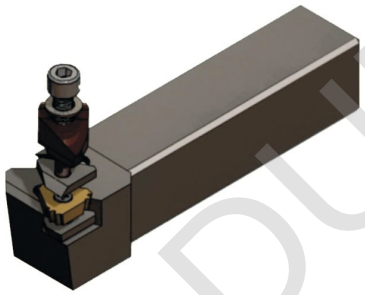
Internal Threading Holder for T12 Oil Drill Rods & Conecters

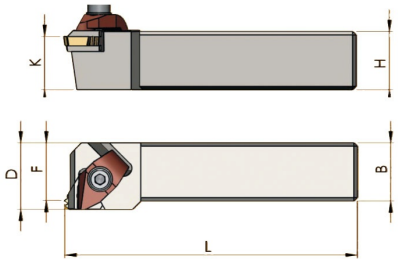




Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts			
			L	L1	I.C	C	F	D	Helix Angle		Shim	Chipbreaker	Clamp	Screw
B	Z1N-BY60100	4"~5 1/2" 101.6mm~139.7mm	265	100	60	140	31	48	80'	R4NR3.1T17V386 R4NR3.1T17V384 R4NR3.1T17V504 R4NR3.1T17V506 R5NR3.1T17V404	Z1N-DD	Z1N-DXQ	Z1N-YB	GB701-M8x25-30
	Z1N-BY80140		310	140	80	140	31	48	80'					
C	Z1N-CY60100	6 5/8"~8 5/8" 168.275mm~219.075mm	295	100	60	170	34	53	45'					
	Z1N-CY80140		340	140	80	170	34	53	45'					

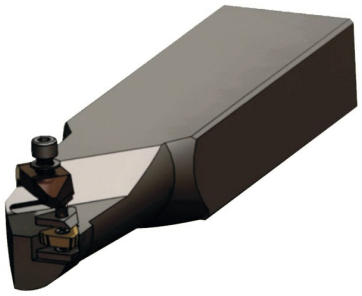
External Threading Holder for Triangle Series API Round Inserts

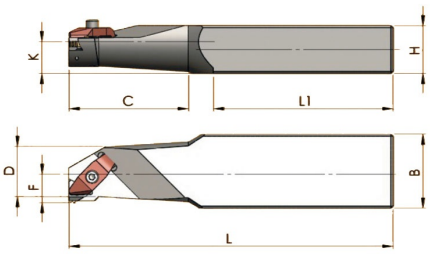




Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts			
			L	H	K	B	D	F	Helix Angle		Shim	Chipbreaker	Clamp	Screw
A	TRW-A2825	2 3/8"~3 1/2" 60.325mm~88.9mm	175	28	25	30	35	30	70'	R8ER3.2T15 R10ER3.2T15	TRW-DD	TRW-DXQ	TRW-YB	GB701-M8x25-30
	TRW-A3532		175	35	32	35	40	35	70'					
	TRW-A4040		175	40	40	40	45	40	70'					
B	TRW-B3532	4"~5 1/2" 101.6mm~139.7mm	175	35	32	35	40	35	50'					
	TRW-B4040		175	40	40	40	45	40	50'					
C	TRW-C3532	6 5/8"~8 5/8" 168.275mm~219.075mm	175	35	32	35	40	35	30'					
	TRW-C4040		175	40	40	40	45	40	30'					
D	TRW-D3532	9 5/8"~13 3/8" 244.475mm~339.725mm	175	35	32	35	40	35	15'					
	TRW-D4040		175	40	40	40	45	40	15'					

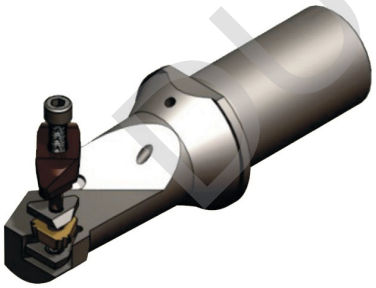
Internal Threading Holder for Triangle Series API Round Inserts

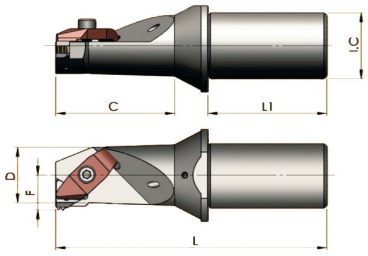




Type	Ordering Number	Pipe Size	Dimension									Available Inserts	Spare parts			
			L	L1	H	C	K	D	F	B	Helix Angle		Shim	Chipbreaker	Clamp	Screw
A	TRN-AF4025	2 3/8"~3 1/2" 60.325mm~88.9mm	265	150	40	90	25	42	26	66	70'	R8NR3.2T15 R10NR3.2T15	TRN-DD	TRN-DXQ	TRN-YB	GB701-M8x25-30
	TRN-AF4832		295	180	48	90	33	42	26	74	70'					
B	TRN-BF4832	4"~5 1/2" 101.6mm~139.7mm	325	180	40	120	32	50	31	74	50'					
	TRN-BF5536		345	200	55	120	36	50	31	77	50'					
C	TRN-CF4832	6 5/8"~8 5/8" 168.275mm~219.075mm	348	180	48	148	32	56	36	74	30'					
	TRN-CF5536		368	200	55	148	36	56	36	77	30'					
D	TRN-DF5536	9 5/8"~13 3/8" 244.475mm~339.725mm	385	200	55	165	36	60	43	81	15'					

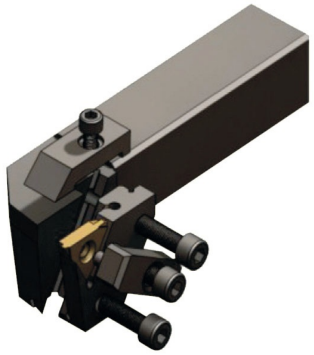
Internal Threading Holder for Triangle Series API Round Inserts

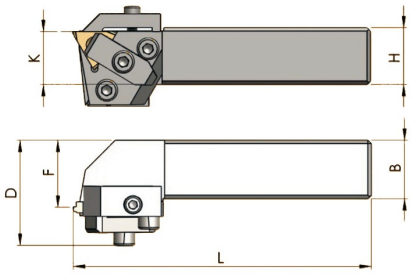




Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts			
			L	L1	I.C	C	F	D	Helix Angle		Shim	Chipbreaker	Clamp	Screw
A	TRN-AY4080	2 3/8"~3 1/2" 60.325mm~88.9mm	195	80	40	90	26	42	70'	R8NR3.2T15 R10NR3.2T15	TRN-DD	TRN-DXQ	TRN-YB	GB701-M8x25-30
	TRN-AY5090		205	90	50	90	26	42	70'					
	TRN-AY60100		215	100	60	90	26	42	70'					
	TRN-AY80140		250	140	80	90	26	42	70'					
B	TRN-BY5090	4"~5 1/2" 101.6mm~139.7mm	235	90	50	120	31	50	50'					
	TRN-BY60100		245	100	60	120	31	50	50'					
	TRN-BY80140		285	140	80	120	31	50	50'					
C	TRN-CY60100	6 5/8"~8 5/8" 168.275mm~219.075mm	268	100	60	148	36	56	30'					
	TRN-CY80140		308	140	80	148	36	56	30'					
D	TRN-DY60100	9 5/8"~13 3/8" 244.475mm~339.725mm	285	100	60	165	43	60	15'					
	TRN-DY80140		325	140	80	165	43	60	15'					

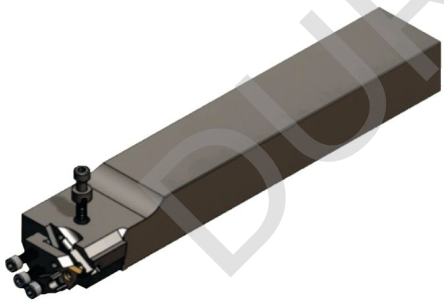
External Threading Holder for Triangle Series API Buttress Inserts (On-Edge Type

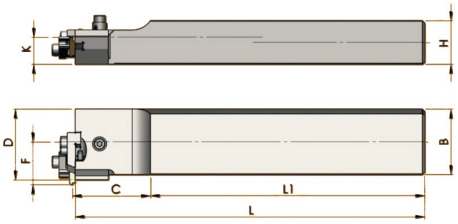




Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts					
			L	H	K	B	D	F	Helix Angle		Clamp	Clamp screw	Chipbreaker	Chipbreaker screw	Cartridge	Cartridge screw
B	LPW-B3532	4 1/2"~5 1/2" 114.3mm~168.275mm	175	35	32	35	56	40	60'	VB5ER3.1T16	GB701-M8x35-40	LPW-YB	LPW-DXB	GB701-M6x12-17	LPW-XK	GB701-M8x25-30
C	LPW-C3532	7"~11 3/4" 177.8mm~298.45mm	175	35	32	35	56	40	40'							
D	LPW-D3532	13 3/8"~20" 339.725mm~508mm	175	35	32	35	56	40	20'							

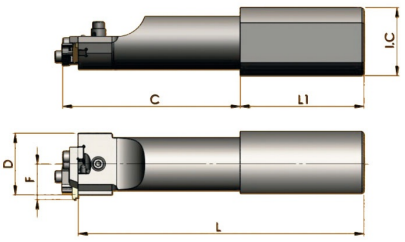
Internal Threading Holder for Triangle Series API Buttress Inserts (On-Edge Type





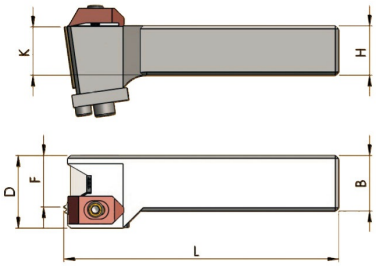
Type	Ordering Number	Pipe Size	Dimension									Available Inserts	Spare parts						
			L	L1	H	C	K	D	F	B	Helix Angle		Clamp	Clamp screw	T-screw	Nut	Cartridge	Stop ring	screw
B	LPN-BF4832	4 1/2"~6 5/8" 114.3mm~168.275mm	340	180	48	135	32	50	31	60	60'	VB5NR3.1T16	LPN-YB	GB701-M8x35-40	LPN-LD	LPN-LM	LPN-XK	LPN-XT	GB701-M8x40-45
	LPN-BF5536		360	200	55	135	36	50	31	60	60'								
C	LPN-CF4832	7"~11 3/4" 177.8mm~298.45mm	363	180	48	163	32	56	36	68	40'								
	LPN-CF5536		383	200	55	163	36	56	36	68	40'								
D	LPN-DF5536	13 3/8"~20" 339.725mm~508mm	400	200	55	180	36	60	43	77	20'								

Internal Threading Holder for Triangle Series API Buttress Inserts (On-edge Type)

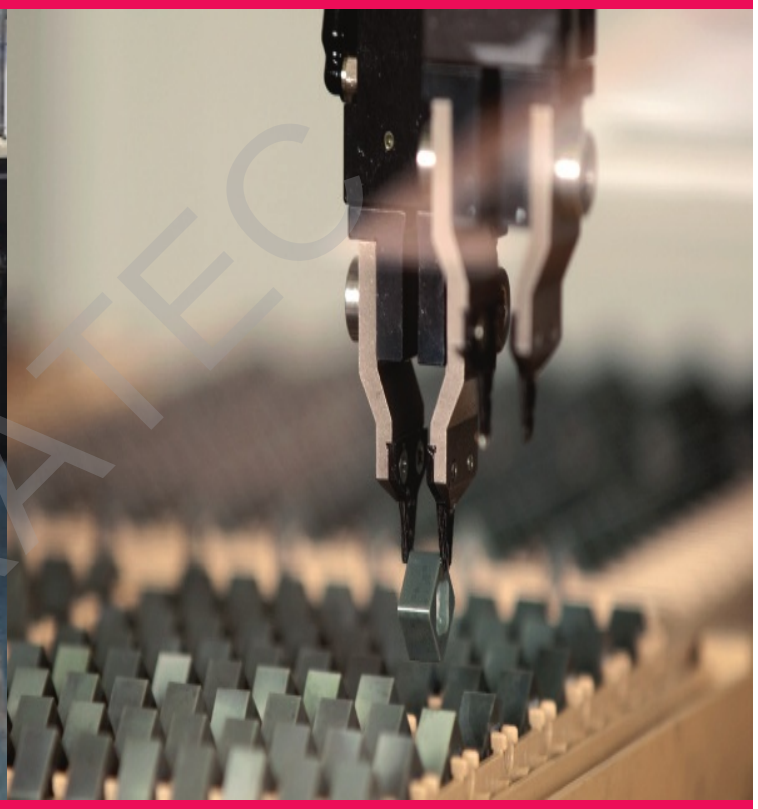


Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts						
			L	L1	I.C	C	F	D	Helix Angle		Clamp	Clamp screw	T-screw	Nut	Cartridge	Stop ring	screw
B	LPN-BY5090	4 1/2"~5 1/2" 114.3mm~168.275mm	250	90	50	135	31	50	60'	VB5NR3.1T16	GB701-M8x35-40	LPN-YB	LPN-LD	LPN-LM	LPN-XK	LPN-XT	GB701-M8x35-40
	LPN-BY60100		360	100	60	135	31	50	60'								
	LPN-BY80140		300	140	80	135	31	50	60'								
C	LPN-CY5090	7"~11 3/4" 177.8mm~298.45mm	237	90	50	163	36	56	40'								
	LPN-CY60100		283	100	60	163	36	56	40'								
	LPN-CY80140		323	140	80	163	36	56	40'								
D	LPN-DY5090	13 3/8"~20" 339.725mm~508mm	290	90	50	180	43	60	20'								
	LPN-DY60100		300	100	60	180	43	60	20'								
	LPN-DY80140		340	140	80	180	43	60	20'								

Internal Threading Holder for Prism Series API Round Inserts



Type	Ordering Number	Pipe Size	Dimension							Available Inserts	Spare parts			
			L	H	K	B	D	F	Helix Angle		Shim	Chipbreaker	Clamp	Screw
A	CTW-A3232	2 3/8"~3 1/2" 60.325mm~88.9mm	175	28	25	30	35	30	70'	R8ER3.2T15 R10ER3.2T15	TRW-DD	TRW-DXQ	TRW-YB	GB701-M8x25-30
BC	CTW-BC3232	4"~8 5/8" 101.6mm~219.075mm	175	35	32	35	40	35	50'					
D	CTW-D3232	9 5/8"~13 3/8" 244.475mm~339.725mm	175	35	32	35	40	35	15'					



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