

THREADING

J1 - J54



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Tooling Application (External)

Thread Types		Metric	Unified	Parallel Pipe	Whitworth	Tapered Pipe	American National Pipe	30° Trapezoidal
		M	UN, UNC UNF, UNEF	G (PF)	W	R (PT) (BSPT)	NPT	Tr
Thread Shape								
Pitch		mm	TPI	TPI	TPI	TPI	TPI	mm
KTN J20 (KTN-JCT) J21 	Full Profile	0.50~5.00 (0.50~3.00) ➡ J6	24~8 (24~8) ➡ J8	19~11 (19~11) ➡ J10	16~11 (16~11) ➡ J10	28~11 (28~11) ➡ J12	18.0~11.5 (18.0~11.5) ➡ J14	-
	Partial Profile	0.50~5.00 (0.50~3.00) ➡ J16	48~5 (48~8) ➡ J16	28~11 (28~11) ➡ J18	40~5 (40~8) ➡ J18	28~11 (28~11) ➡ J18	-	2.00~5.00 (2.00~3.00) ➡ J18
KTNS J20 	Full Profile	0.50~3.00 ➡ J6	24~8 ➡ J8	19~11 ➡ J10	16~11 ➡ J10	28~11 ➡ J12	18.0~11.5 ➡ J14	-
	Partial Profile	0.50~3.00 ➡ J16	48~8 ➡ J16	28~11 ➡ J18	40~8 ➡ J18	28~11 ➡ J18	-	2.00~3.00 ➡ J18
KTT J30 	Full Profile	1.00~2.00 ➡ J30	-	-	-	-	-	-
	Partial Profile	0.50~3.50 ➡ J30	56~8 ➡ J30	28~11 ➡ J30	24~7 ➡ J30	28~11 ➡ J30	-	-
KTTX J28 S-KTTX J28 	Partial Profile	0.50~2.00 ➡ J29	56~14 ➡ J29	28~11 ➡ J29	24~11 ➡ J29	28~11 ➡ J29	-	-
	Partial Profile	0.20~1.50 ➡ J26	64~18 ➡ J26	28~19 ➡ J26	40~16 ➡ J26	28~19 ➡ J26	-	-
KTKF J26 (Goose-neck Holders) 	Partial Profile	0.20~1.50 ➡ J26	64~18 ➡ J26	28~19 ➡ J26	40~16 ➡ J26	28~19 ➡ J26	-	-
	Partial Profile	0.70~4.00 ➡ J25	44~5 ➡ J25	-	-	-	-	-
KKC J24 	Partial Profile	0.70~4.00 ➡ J25	44~5 ➡ J25	-	-	-	-	-
	Partial Profile	0.50~4.00 ➡ J23	72~6 ➡ J23	-	-	-	-	-

• Threading Inserts Identification System

Full Profile See Page ➡ **J6**

Partial Profile See Page ➡ **J16**

• Pitch in parentheses () applies to the KTN-JCT

Tooling Application (Internal)

Thread Types		Metric	Unified	Parallel Pipe	Whitworth	Tapered Pipe	American National Pipe	30° Trapezoidal
		M	UN, UNC UNF, UNEF	G (PF) Rp (PS)	W	Rc (PT) (BSPT)	NPT	Tr
Thread Shape								
Pitch		mm	TPI	TPI	TPI	TPI	TPI	mm
Toolholder Shape								
EZT J32 	Partial Profile	0.50~1.75 J32	36~16 J32	28~19 J32	24~18 J32	28~19 J32	18~14 J32	-
	Full Profile	-	-	-	-	-	-	-
VNT J36 	Partial Profile	0.75~1.50 J36	28~18 J36	-	-	-	-	-
	Full Profile	-	-	-	-	-	-	-
SIN J22 	Partial Profile	0.50~5.00 J7	24~8 J9	19~11 J11	16~11 J11	28~11 J13	18~11.5 J15	-
	Full Profile	0.50~5.00 J17	48~5 J17	28~11 J19	40~5 J19	28~11 J19	-	2.00~5.00 J19
CIN J22 	Partial Profile	1.00~5.00 J7	24~8 J9	19~11 J11	16~11 J11	28~11 J13	18~11.5 J15	-
	Full Profile	0.50~5.00 J17	48~5 J17	28~11 J19	40~5 J19	28~11 J19	-	2.00~5.00 J19
KITG J31 	Partial Profile	0.50~3.00 J31	48~8 J31	28~11 J31	24~8 J31	28~11 J31	-	-
STWP J37 	Partial Profile	0.75~3.50 J37	28~8 J37	-	-	-	-	-
A-KKC J25 	Partial Profile	2.50~3.50 J25	44~5 J25	-	-	-	-	-

INSERT GRADES	A
TURNING INSERTS	B
GEN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

TQ Chipbreaker

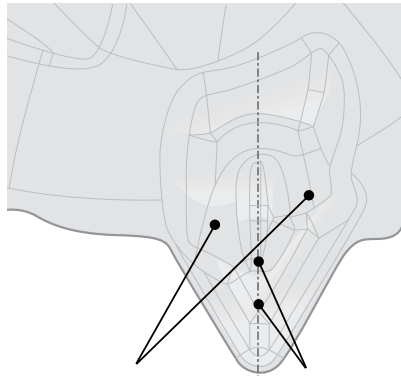
Advanced Productivity with Chip Control Improvements
Prolonged Tool Life with Newly Added Grades

1 Stable Chip Control

Stable Chip Control with Asymmetrical Chipbreaker Design

Chipbreaker Geometry

Stable chip control regardless of cutting direction

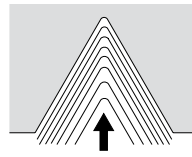


For Radial Infeed
Asymmetric dot design controls chip-flow direction

For Flank Infeed / Flank Compound Infeed
Breaks chips easily with shallow chipbreaker depth

Chip Control Comparison (Internal Evaluation)

Radial Infeed

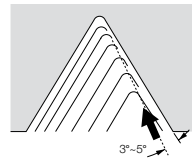


TQ Chipbreaker



Competitor A

Flank Compound Infeed



TQ Chipbreaker



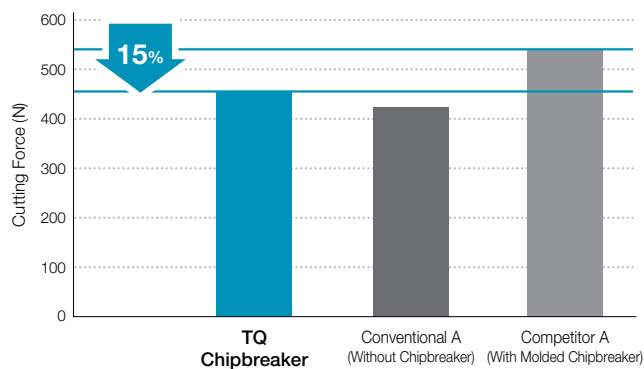
Competitor A

Cutting Conditions: $V_c = 490$ sfm, D.O.C. = 0.005" (4th pass), $L = 0.984$ ", Wet, 16ER150ISO type, M45 x TP1.5 Workpiece Material: 4115

2 Low Cutting Force and Resists Vibration

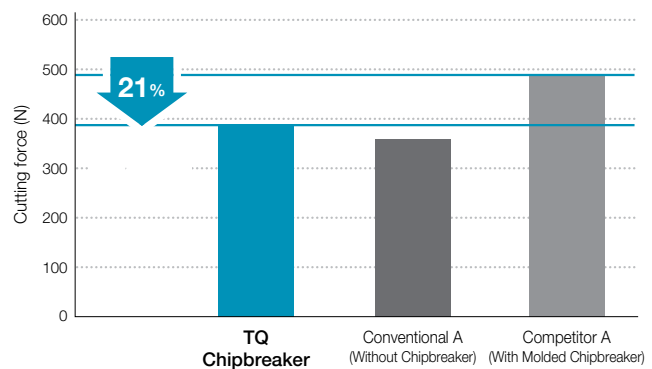
Strong Edge and Low Cutting Forces

Cutting Force Comparison with Radial Infeed (Internal Evaluation)



Cutting Conditions: $V_c = 490$ sfm, Wet, 16ER150ISO type
Cutting force is average of total passes (6 passes), M35 x TP1.5 Workpiece Material: 4115

Cutting Force Comparison with Flank Compound Infeed (Internal Evaluation)



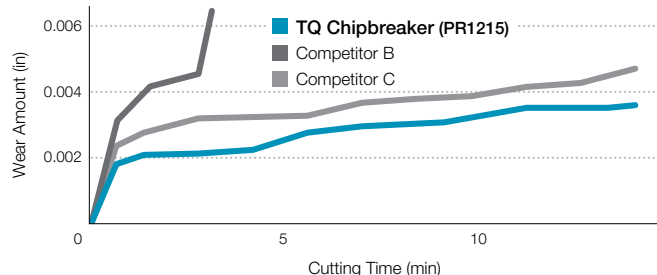
Cutting Conditions: $V_c = 490$ sfm, Adjusted Angle 5°, Wet, 16ER150ISO type
Cutting force is average of total passes (6 passes), M35 x TP1.5 Workpiece Material: 4115

3 Improved Tool Life with Newly Added Grades

PR1215 for Steel Machining
PR1515 / PR1535 (Stability Oriented) for Stainless Steel Machining

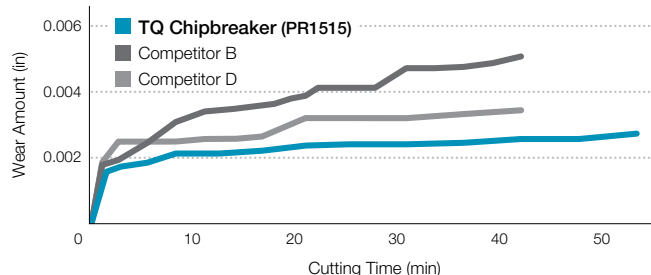
Wear Resistance Comparison (Internal Evaluation)

Workpiece Material : 4137



Cutting Conditions: Vc = 490 sfm, TP = 1.5 mm, No. of Passes = 6, Wet, 16ER150ISO type Radial Infeed

Workpiece Material : 304



Cutting Conditions: Vc = 330 sfm, TP = 1.5 mm, No. of Passes = 8, Wet, 16ER150ISO type Radial Infeed

KTKF J26

"JX" Toolholders (Overall Length 4.75") Are Available!

Threading For Threading
TKFT

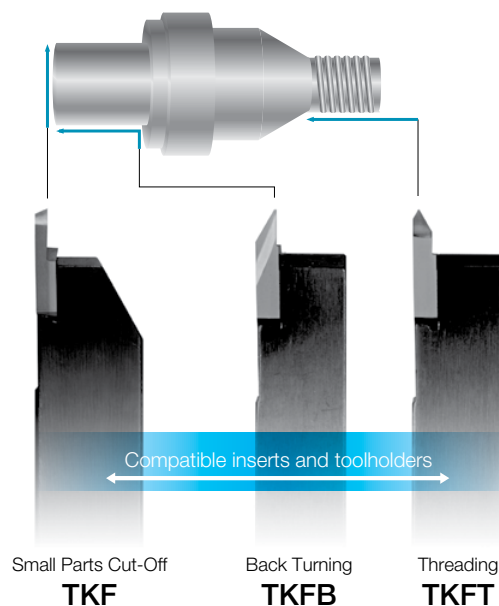
- Applicable for various types of threading

Metric (M)

Parallel Pipe [G(PF)]

Unified (UN)

Tapered Pipe [R(PT), (BSPT)]



Threading Insert Features

- Full Profile and Partial Profile

	Shape	Function	Advantages
Full Profile		 Wiper Edge	<ul style="list-style-type: none"> ① Burr-free thread surface; high quality (smooth feeling) ② Leave the workpiece diameter slightly oversized for full topping ③ Every pitch size requires a specific insert
Partial Profile			<ul style="list-style-type: none"> ① Threads crest tends to be sharp edged ② Thread's O.D. or I.D. needs to be finished to the size before threading ③ One insert can machine various pitch sizes

Thread Precision

Thread Type		Thread Precision		
		Tight		Loose
Metric	External Threading	4h (1st Class)	6g (2nd Class)	8g (3rd Class)
	Internal Threading	5h (1st Class)	6h (2nd Class)	7h (3rd Class)
Unified	External Threading	3A	2A	1A
	Internal Threading	3B	2B	1B
Applicable Accuracy with Wiper Edge		*X	✓	✓

* Not recommended if tight thread precision is required

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The diagram illustrates a triangular thread profile. The top part is labeled "Internal Threading" and the bottom part is labeled "External Threading". The angle between the two flanks of the thread is marked as 60° . The distance between corresponding points on adjacent threads is labeled "TP" (Thread Pitch).

60° Full Profile

➡ J39

Recommended Cutting Conditions ➡ J38

Applicable
Thread

The diagram illustrates the six fields of a metric thread specification, each with a corresponding table of examples:

- ① Insert Size**:

11	6.350
16	9.525
22	12.70
Symbol	I.C. Size (mm)
- ② External / Internal**:

E	External Threading
I	Internal Threading
- ③ Insert Hand**:

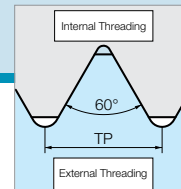
R	Right hand
L	Left hand
- ④ Pitch**:

Metric (M)	
100	Pitch 1.0mm
150	Pitch 1.5mm
Inch Screw Threading	
24	24 TPI
20	20 TPI
Full Profile	
- ⑤ Applicable Thread**:

ISO	Metric (M)
M	Metric (M)
UN	Unified
W	Whitworth
BSPT	Tapered Pipe
NPT	American National Pipe
Full Profile	
- ⑥ Optional Code**:

-TF	TF Cutting Edge
-TQ	Molded Chipbreaker


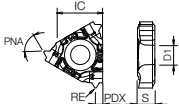
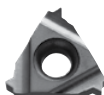
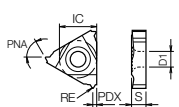

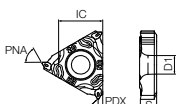
All other grade Inserts are sold in 5 piece boxes.



External Threading Inserts

Unified (UN)

60° Full Profile

60° Full Profile					(in)	Usage Classification ● : 1st Choice ○ : 2nd Choice		P	Carbon Steel / Alloy Steel			●									
Part Number	Previous Part Number	IC	S	D1	M			Stainless Steel				●	○								
16ER	TNN32ER	0.375	0.145	0.157	K			Cast Iron													
22ER	TNN43ER	0.500	0.193	0.191	N	Non-ferrous															
Insert Right-handed Insert Shown		Part Number	Previous Part Number	Applicable Thread	Dimensions (in)		Angle	Cermet	MEGACOAT / MEGACOAT NANO				PVD Coated Carbide		Carbide						
				UN, UNF	RE	PDX	PNA	TC60	PR1215		PR1515		PR1535	PR1115		GW15					
				Pitch					R	L	R	L		R	L		R	L			
				TPI	R	L	R	L	R	L	R	L	R	L							
<div>Full Profile</div>	 	16ER	24UN-TF	-	24	0.0047	0.0315	60°									●				
			20UN-TF		20	0.0059	0.0394											●			
			18UN-TF		18	0.0071	0.0394											●			
			16UN-TF		16	0.0079	0.0433											●			
			14UN-TF		14	0.0091	0.0591											●			
			13UN-TF		13	0.0098	0.0591											●			
			12UN-TF		12	0.0106	0.0591											●			
			10UN-TF		10	0.0134	0.0591											●			
			08UN-TF		8	0.0169	0.0689											●			
	 	16ER	24UN	TNN32ER	24UN	24	0.0051	0.0315	60°	●											
			20UN		20UN	20	0.0063	0.0394		●											
			16UN		16UN	16	0.0079	0.0433		●											
			14UN		14UN	14	0.0091	0.0591		●											
			12UN		12UN	12	0.0106	0.0591		●											
		22ER	08UN	TNN43ER	08UN	8	0.0169	0.0827	●									●			
	 	16ER	24UN-TQ	-	24	0.0047	0.0315	60°		●		●		●							
			20UN-TQ		20	0.0059	0.0394			●		●		●							
			18UN-TQ		18	0.0071	0.0394			●		●		●							
			16UN-TQ		16	0.0079	0.0433			●		●		●							
			14UN-TQ		14	0.0091	0.0591			●		●		●							
			13UN-TQ		13	0.0098	0.0591			●		●		●							
			12UN-TQ		12	0.0106	0.0591			●		●		●							
			10UN-TQ		10	0.0134	0.0591			●		●		●							
			08UN-TQ		8	0.0169	0.0689			●		●		●							

Ref. Page for D.O.C. & Number of Passes

J3

Recommended Cutting Conditions J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16(JCT) KTNSR...-16	J20~J21
22ER...	KTNR...-22	


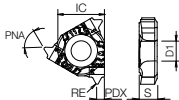

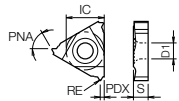

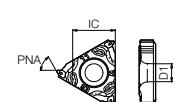
Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

TC60 Threading Inserts sold in 10 piece boxes.

All other grade Inserts are sold in 5 piece boxes.

55° Full Profile

(in)

Part Number		Previous Part Number		IC	S	D1	Material		Coating		PVD		Carbide					
16ER	TNN32ER	0.375	0.145	0.157			K	Cast Iron										
Insert Right-handed Insert Shown		Part Number	Previous Part Number	Applicable Thread		Dimensions (in)		Angle	Cermet	MEGACOAT / MEGACOAT NANO				PVD Coated Carbide		Carbide		
				G (PF)	W	RE	PDX	PNA	TC60	PR1215	PR1515	PR1535	PR1115	GW15				
				Pitch	TPI													
				R	L	R	L	R	L	R	L	R	L					
Full Profile	 	16ER 19W-TF	-	19	-	0.0063	0.0394	55°							●			
		16W-TF		-	16	0.0075	0.0433								●			
		14W-TF		14	14	0.0091	0.0591								●			
		11W-TF		11	11	0.0118	0.0591								●			
	 	16ER 19W	-	19	-	0.0063	0.0394	55°	●									
		14W		14	14	0.0091	0.0591		●									
		11W		11	11	0.0118	0.0591		●									
	 Molded Chipbreaker 	16ER 19W-TQ	-	19	-	0.0063	0.0394	55°			●	●	●					
		14W-TQ		14	14	0.0091	0.0591				●	●	●					
		11W-TQ		11	11	0.0118	0.0591				●	●	●					

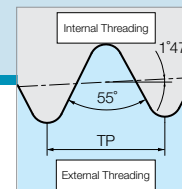
Ref: Page for D.O.C. & Number of Pages

J40

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16(JCT) KTNSR...-16	 <u>J20~J21</u>

Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

All other grade Inserts are sold in 5 piece boxes.



External Threading Insert

Tapered Pipe [R(PT), (BSPT)]

55° Full Profile

55° Full Profile

(in)

Usage Classification

● : 1st Choice

○ : 2nd Choice

Part Number	Previous Part Number	IC	S	D1	P	Carbon Steel / Alloy Steel																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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Recommended Cutting Conditions J38

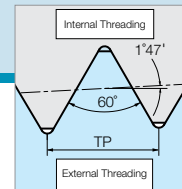
Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16(JCT) KTNSR...-16	J20~J21

Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

TC60 Threading Inserts sold in 10 piece boxes.

All other grade Inserts are sold in 5 piece boxes.


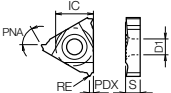


External Threading Insert

American National Pipe [NPT]

60° Full Profile

(in)

60° Full Profile				(in)		Usage Classification ● : 1st Choice ○ : 2nd Choice		P Carbon Steel / Alloy Steel						●		Ref. Page for D.O.C. & Number of Passes											
Part Number		Previous Part Number		IC	S			D1	M Stainless Steel						●												
16ER		TNN32ER		0.375	0.145			0.157	K Cast Iron								●										
							N Non-ferrous							●													
Insert Right-handed Insert Shown				Part Number		Previous Part Number		Applicable Thread		Dimensions (in)		Angle		Cermet		MEGACOAT / MEGACOAT NANO				PVD Coated Carbide		Carbide					
								NPT		RE		PDX		PNA		TC60		PR1215		PR1515		PR1535		PR1115		GW15	
								Pitch																			
								TPI																			
Full Profile			16ER 18NPT		-		18.0	0.0016	0.0354	60°		●						●	●								
			14NPT				14.0	0.0020	0.0591			●						●	●	➡ J40							
			11.5NPT				11.5	0.0024	0.0591			●							●	●							

Recommended Cutting Conditions **J38**

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16(JCT) KTNSR...-16	J20~J21

Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal


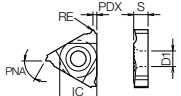
TC60 Threading Inserts sold in 10 piece boxes.

All other grade Inserts are sold in 5 piece boxes.

Internal Threading Insert

American National Pipe [NPT]

60° Full Profile

60° Full Profile					(in)	Usage Classification ● : 1st Choice ○ : 2nd Choice		P	Carbon Steel / Alloy Steel						●		Ref. Page for D.O.C. & Number of Passes		
Part Number	Previous Part Number	IC	S	D1	M			Stainless Steel						●					
16IR	TNN32IR	0.375	0.145	0.157	K			Cast Iron							●				
					N	Non-ferrous							●						
Insert Right-handed Insert Shown		Part Number		Previous Part Number		Applicable Thread	Dimensions (in)		Angle	Cermet	MEGACOAT / MEGACOAT NANO							PVD Coated Carbide	Carbide
						NPT	RE	PDX	PNA	TC60	PR1215		PR1515		PR1535			PR1115	GW15
						Pitch					R	L	R	L	R	L			
						TPI					R	L	R	L	R	L			
Full Profile			16IR	18NPT	-	18.0	0.0016	0.0354	60°	●					●	●		J40	
			14NPT	14.0		0.0020	0.0591	60°	●					●	●				
			11.5NPT	11.5		0.0024	0.0591	60°	●					●	●				

Recommended Cutting Conditions J38


Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16IR...	SINR...-16 CINR...-16	J22


Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

- Metric (M), Unified (UN)

(in)

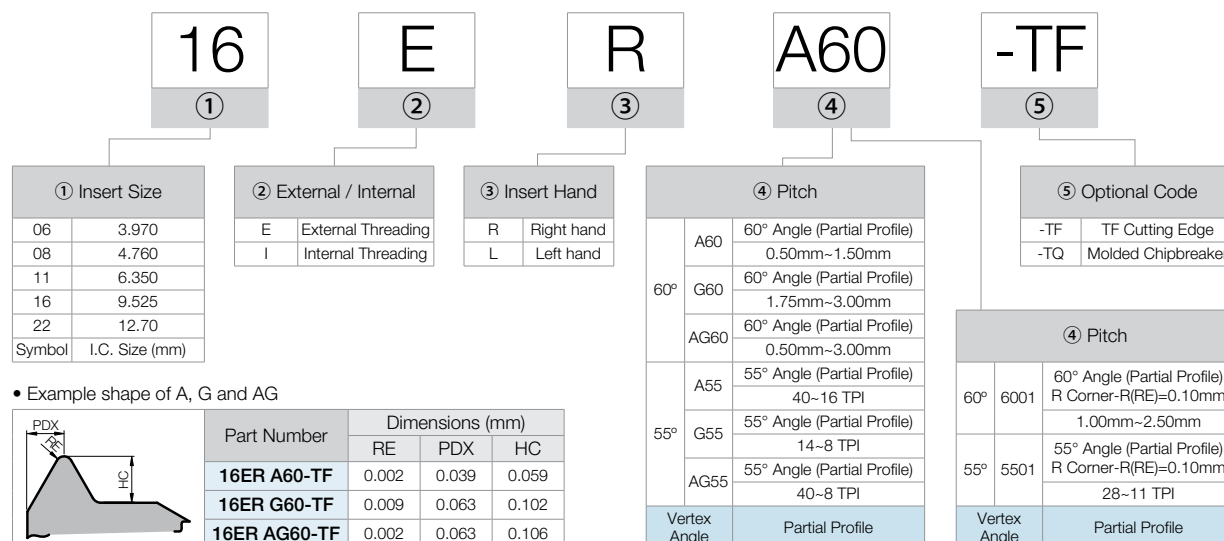
[illegible]Recommended Cutting Conditions  J38

THREADING

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16(JCT) KTNSR...-16	 <u>J20-J21</u>
22ER...	KTNR...-22	

Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

Threading Insert Identification System (Partial Profile) J16 ~ J19




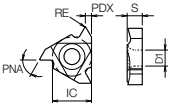
Note: Pitch and threads per inch of an insert without wiper depend on the size of insert.

All other grade Inserts are sold in 5 piece boxes.

Internal Threading Insert

Metric (M), Unified (UN)

60° Partial Profile (in)

Part Number		Previous Part Number		IC	S	D1																	
06IR		TNN06IR		0.156	0.075	0.091	Usage Classification ● : 1st Choice ○ : 2nd Choice					P	Carbon Steel / Alloy Steel								●		
08IR		TNN08IR		0.187	0.094	0.091						M	Stainless Steel									●	
11IR		TNN22IR		0.250	0.125	0.118						K	Cast Iron										●
16IR		TNN32IR		0.375	0.145	0.157						N	Non-ferrous										●
22IR		TNN43IR		0.500	0.193	0.191																	
Insert Right-handed Insert Shown				Part Number	Previous Part Number	Applicable Thread		Dimensions (in)		Angle	Cermet	MEGACOAT / MEGACOAT NANO				PVD Coated Carbide		Carbide					
						M	UN UNF	RE	PDX			PNA	TC60	PR1215	PR1515	PR1535	PR1115		GW15				
																				Pitch			
																				mm	TPI		
											R	L	R	L	R	L	R	L					
<div>Partial Profile</div>  	11IR A60		-	0.50~1.50	48~16	0.001	0.039	60°									●	●					
	16IR A60			0.50~1.50	48~16	0.001	0.039	60°										●	●				
	G60			1.75~3.00	14~8	0.004	0.067											●	●				
	AG60			0.50~3.00	48~8	0.001	0.067											●	●				
	22IR N60			3.50~5.00	7~5	0.009	0.098	60°										●	●				
	06IR 60005		TNN06IR 60005	0.75~1.25	28~20	0.002	0.024	60°											●				
	08IR 60007		TNN08IR 60007	1.00~1.75	20~16	0.003	0.031	60°											●				
	11IR 60005		TNN22IR 60005	0.75~1.50	32~16	0.002	0.039	60°	●														
	16IR 6001		TNN32IR 6001	1.50~2.50	16~10	0.004	0.059	60°	●														
	60015		60015	2.50	11~10	0.006	0.059		●														

Ref. Page for D.O.C. & Number of Passes

➡ J41
➡ J42

➡ J44

Recommended Cutting Conditions ● J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
06IR...	SINR...-06E	● J22
08IR...	SINR...-08E	
11IR...	SINR...-11E SINR...-11	
16IR...	SINR...-16 CINR...-16	
22IR...	SINR...-22 CINR...-22	

Applicable Thread	M: Metric	R, Rc, (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

Corner-R (RE) Selection for Partial Profiling Inserts

	External Threading	Internal Threading	
External Threading	RE ≤ 0.1443 X P	RE ≤ 0.0720 X P	● Metric, Unified Thread Corner-R (RE) at Internal Threading is almost half of that of External.
Parallel Pipe Whitworth Tapered Pipe	For Both External and Internal Thread RE ≤ 0.1373 X P		● Parallel Pipe, Tapered Pipe, Whitworth Thread Same Corner-R (RE) for both External and Internal Threading.

RE : Corner-R TP : Pitch (TPI) $(= \frac{1}{n})$ n : TPI
 TP : Pitch (Metric) $(= \frac{25.4}{n})$

TC60 Threading Inserts sold in 10 piece boxes.

All other grade Inserts are sold in 5 piece boxes.

55° Partial Profile

Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

30° Partial Profile

Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

Internal Threading Insert

Parallel Pipe [G(PF)], Tapered Pipe [Rc, (PT), (BSPT)], Whitworth (W)

55° Partial Profile

(in)

Part Number		Previous Part Number		IC	S	D1													Usage Classification ● : 1st Choice ○ : 2nd Choice	P	Carbon Steel / Alloy Steel			●																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Applicable Toolholders

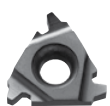
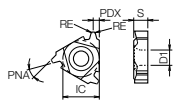
Part Number	Applicable Toolholders	Ref. Page for Toolholder	Part Number	Applicable Toolholders	Ref. Page for Toolholder	Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
06IR...	SINR...-06E	J22	16IR...	SINR...-16 CINR...-16	J22		UN: Unified	W: Whitworth
08IR...	SINR...-08E			UNF: Unified Fine Thread			NPT: American National Pipe	
11IR...	SINR...-11E SINR...-11		22IR...	SINR...-22 CINR...-22	G (PF): Parallel Pipe		Tr: 30° Trapezoidal	

Internal Threading Insert


Trapezoidal (Tr)

30° Partial Profile

(mm)

Part Number		Previous Part Number		IC	S	D1	Usage Classification		M	Stainless Steel													
16IR		TNN32IR		9.525	3.68	4.0	● : 1st Choice ○ : 2nd Choice		K	Cast Iron													
22IR		TNN43IR		12.70	4.9	4.85			N	Non-ferrous													
Insert Right-handed Insert Shown				Part Number		Previous Part Number		Applicable Thread		Dimensions (mm)		Angle		Cermet		MEGACOAT / MEGACOAT NANO				PVD Coated Carbide		Carbide	
								Tr		RE	PDX	PNA	TC60	PR1215	PR1515	PR1535	PR1115	GW15					
								Pitch															
								mm															
Partial Profile			16IR	200TR	-		G(PF) Rc(PT)	W	Pitch	mm	RE	PDX	PNA	TC60	PR1215	PR1515	PR1535	PR1115	GW15				
			300TR																				
			22IR	400TR																			
			500TR																				

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16IR...	SINR...-16 CINR...-16	 J22
22IR...	SINR...-22 CINR...-22	

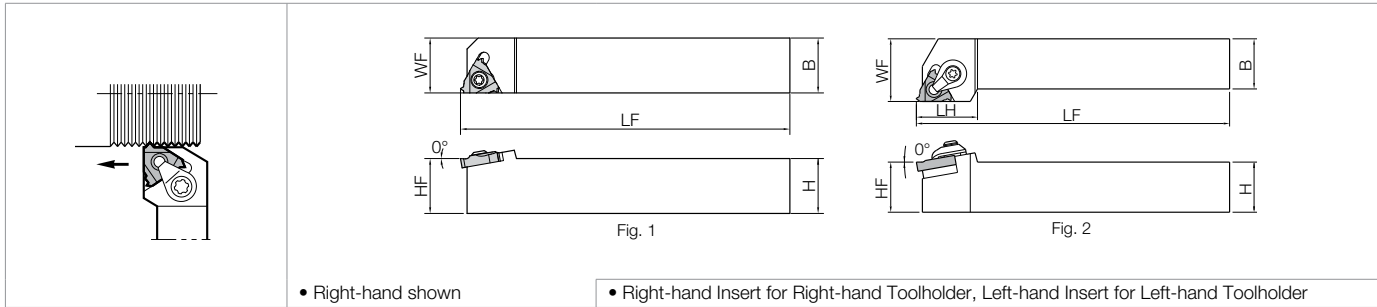
Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

TC60 Threading Inserts sold in 10 piece boxes.

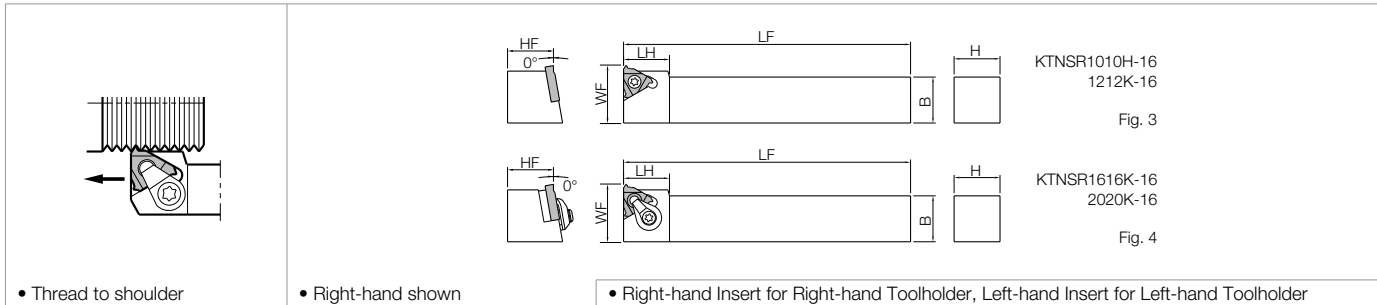
All other grade Inserts are sold in 5 piece boxes.

EXTERNAL THREADING TOOLHOLDERS

KTN



KTNS (For Gang Type NC Lathe)



Toolholder Dimensions

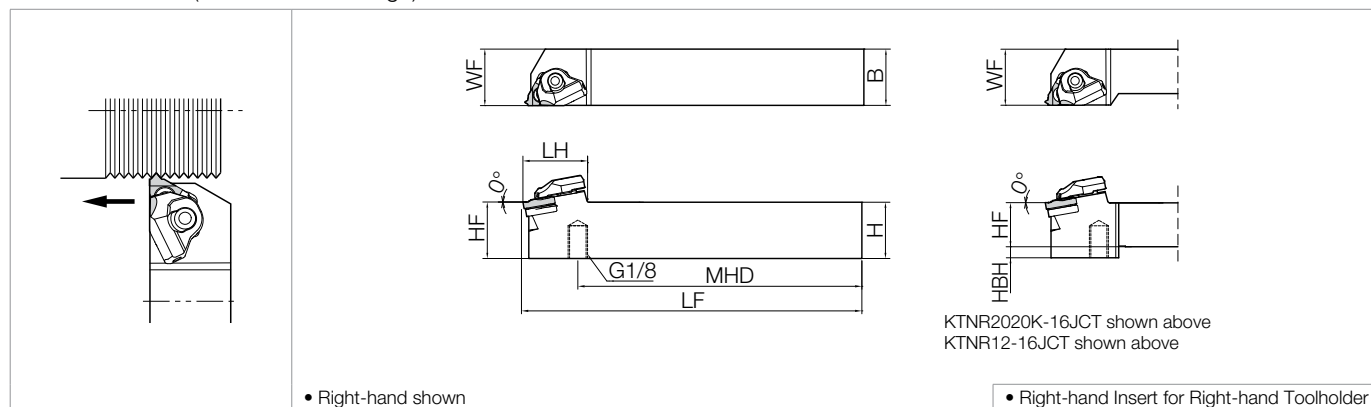
Part Number	Stock		Unit	Dimensions						Drawing	Spare Parts					Applicable Inserts
	R	L		H	HF	B	LF	LH	WF		Clamp Set	Insert Screw	Wrench	Shim	Shim Screw	
KTN% 12-3	●	□	inch	0.750	0.750	0.750	5.00	0.87	0.875	Fig.2	CPS-5S	-	FT-15	TN-32	SP3X8	16E%...
16-3	●	□	inch	1.000	1.000	1.000	6.00	1.250	1.250	Fig.2	CPS-5S	-	FT-15	TN-32	SP3X8	16E%...
KTN% 1216JX-16F	●	●	mm	12	12	16	120	-	16	Fig.1	-	SB-3.5TR	LTW-15S	-	-	16E%...
1616H-16	●	●	mm	16	16	16	100	25	20	Fig.2	CPS-5S	-	FT-15	TN-32	SP3X8	16E%...
1616JX-16F	●	●	mm	16	16	16	120	-	16	Fig.1	-	SB-3.5TR	LTW-15S	-	-	16E%...
2020H-16*	●	●	mm	20	20	20	100	25	25	Fig.2	CPS-5S	-	FT-15	TN-32	SP3X8	16E%...
2020JX-16F	●	●	mm	20	20	20	120	-	20	Fig.1	-	SB-3.5TR	LTW-15S	-	-	16E%...
2020K-16	●	●	mm	20	20	20	125	25	25	Fig.2	CPS-5S	-	FT-15	TN-32	SP3X8	16E%...
2525M-16	●	●	mm	25	25	25	150	29	30	Fig.2	CPS-6S	-	LW-3	TN-43	SP3X8	22ER...
2525M-22	●	●	mm	25	25	25	150	29	30	Fig.2	CPS-6S	-	LW-3	TN-43	SP3X8	22ER...
3225P-22	●	●	mm	32	32	25	170	34	32	Fig.2	CPS-6S	-	LW-3	TN-43	SP3X8	22ER...
KTNSR 1010H-16	●	●	mm	10	10	10	100	16	16	Fig.3	-	SB-3.5TR	FT-15	-	-	16ER...
1212K-16	●	●	mm	12	12	12	125	18	18	Fig.3	-	SB-3.5TR	FT-15	-	-	16ER...
1616K-16	●	●	mm	16	16	16	125	18	22	Fig.4	CPS-5S	-	FT-15	TN-32	SP3X8	16ER...
2020K-16	●	●	mm	20	20	20	125	20	27.4	Fig.4	CPS-5S	-	FT-15	TN-32	SP3X8	16ER...

* Mark indicates short shank type.






Reference Page for Applicable Inserts

Applicable Thread	Full Profile	Partial Profile	Applicable Thread	Full Profile	Partial Profile
M: Metric	● J6	● J16	R (PT), (BSPT): Tapered Pipe	● J12	● J18
UN: Unified	● J8	● J16	W: Whitworth	● J10	● J18
UNF: Unified Fine Thread	● J8	● J16	NPT: American National Pipe	● J14	-
G (PF): Parallel Pipe	● J10	● J16	Tr: 30° Trapezoidal	-	● J18

■ KTN-JCT (Jet Coolant-Through)



● Toolholder Dimensions

Part Number	Stock		Unit	Dimensions								Spare Parts					Applicable Inserts
	R	L		H	HF	HBH	B	WF	LF	LH	MHD	Clamp Set	Pipe Connection (*1 with O-Ring)	Wrench	Shim	Shim Screw	
																	
KTNR 12-16JCT	●		inch	0.750	0.750	0.234	0.750	0.875	5.000	1.122	4.042	CPS-5S-R-JCT	FP-12	FT-15	TN-32	SP3X8	16ER.
16-16JCT	●			1.000	1.000	-	1.000	1.000	6.000	1.122	5.042	CPS-5S-R-JCT	FP-12	FT-15	TN-32	SP3X8	16ER.
KTNR 2020K-16JCT	●		mm	20	20	5	20	25	125	33.3	100.7	CPS-5S-R-JCT	FP-12	FT-15	TN-32	SP3X8	16ER.
2525M-16JCT	●			25	25	-	25	25	150	-	125.7	CPS-5S-R-JCT	FP-12	FT-15	TN-32	SP3X8	16ER.

*1 O-ring (SS-035) is available to order separately

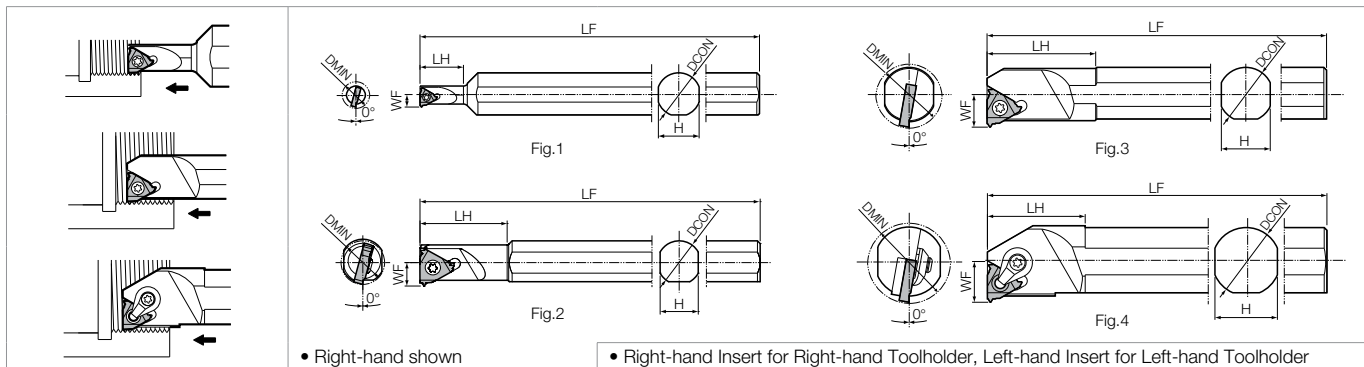
Coolant Connections and Pipe Parts ● D11

● Reference Page for Applicable Inserts








Applicable Thread	Full Profile	Partial Profile	Applicable Thread	Full Profile	Partial Profile
M: Metric	● J6	● J16	R (PT), (BSPT): Tapered Pipe	● J12	● J18
UN: Unified	● J8	● J16	W: Whitworth	● J10	● J18
UNF: Unified Fine Thread	● J8	● J16	NPT: American National Pipe	● J14	-
G (PF): Parallel Pipe	● J10	● J16	Tr: 30° Trapezoidal	-	● J18

INTERNAL THREADING TOOLHOLDERS

SIN / CIN



Toolholder Dimensions

Part Number	Stock		Unit	Min. Bore Dia.	Dimensions					Drawing	Spare Parts						Applicable Inserts	
	R	L			DMIN	DCON	H	LF	LH		WF	Insert Screw	Clamp Set		Wrench	Shim		Shim Screw
													 5S	 6S	 FT  LW			
S10M- SINR-2	●		inch	0.590	0.625	0.56	5.91	1.18	0.295	Fig.1	SB-2TR		FT-8			111%...		
S10M- SINR-3	●			0.790		0.584		1.46	0.369	Fig.3	SB-3.5TR		FT-15			161%...		
S12X- SINR-3	●			0.940	0.750	0.710	7.09	1.57	0.456									
SIN% 0612S-06E 0816S-08E 1216S-11E 1516S-11 1616S-16 2016S-16 2420S-16 2420S-22	●		mm	6.4	12	11	100	10	3.8	Fig.1	SB-2040TR	-	FT-6	-	-	061R...		
	●			7.8	16	15	125	16	4.0		SB-2050TR	-	FT-6	-	-	081R...		
	●	●		12	16	14	150	25	6.3		SB-2TR	-	FT-8	-	-	111%...		
	●	●		15				30	7.5									
	●	●		16	16	14	150	32	8.6	Fig.2	SB-3.5TR	-	FT-15	-	-	161%...		
	●	●		20				37	10.0								Fig.3	
	●	●		24	20	18	180	40	12.0									
	●			24	20	18	180	40	13.5	SB-4085TR	-	FT-15	-	-	221R...			
CIN% 3025S-16 3732S-16 3025S-22 3732S-22	●	●		30	25	23	200	36	15.0	Fig.4	-	CPS-5S	FT-15	TN-32	SP3X8	161%...		
	●		37	32	30	250	45	18.5										
	●		30	25	23	200	40	16.5	-		CPS-6S	LW-3	TN-43	SP3X8	221R...			
	●		37	32	30	250	45	20										

Reference Page for Applicable Inserts

Applicable Thread	Full Profile	Partial Profile	Applicable Thread	Full Profile	Partial Profile
M: Metric	● J7	● J17	R (PT), (BSPT): Tapered Pipe	● J13	● J19
UN: Unified	● J9	● J17	W: Whitworth	● J11	● J19
UNF: Unified Fine Thread			NPT: American National Pipe	● J15	-
G (PF): Parallel Pipe	● J11	● J19	Tr: 30° Trapezoidal	-	● J19

Guide for Internal Threading

For internal threading, ensure consistent diameter and pay attention to chip evacuation.

1. Consistent diameters of pre-drilled holes

Because fine pitch internal threads have small corner radii, any variation in the diameter of pre drilled holes will greatly affect the tool life of the insert. Please minimize any variation of pre drilled holes and add an air pass to the first thread pass for safety.

2. Chip evacuation

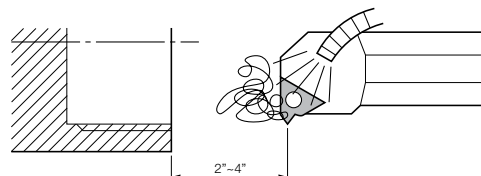
If chips become entangled on the holder or in the part it may damage the insert. We suggest starting each thread pass at least 2" from the part to allow room for the coolant to remove chips from the tool on each pass.

< 1 When running the first part of a setup>

Run the program in single block to make sure coolant can remove the chips from the tool after each threading pass.

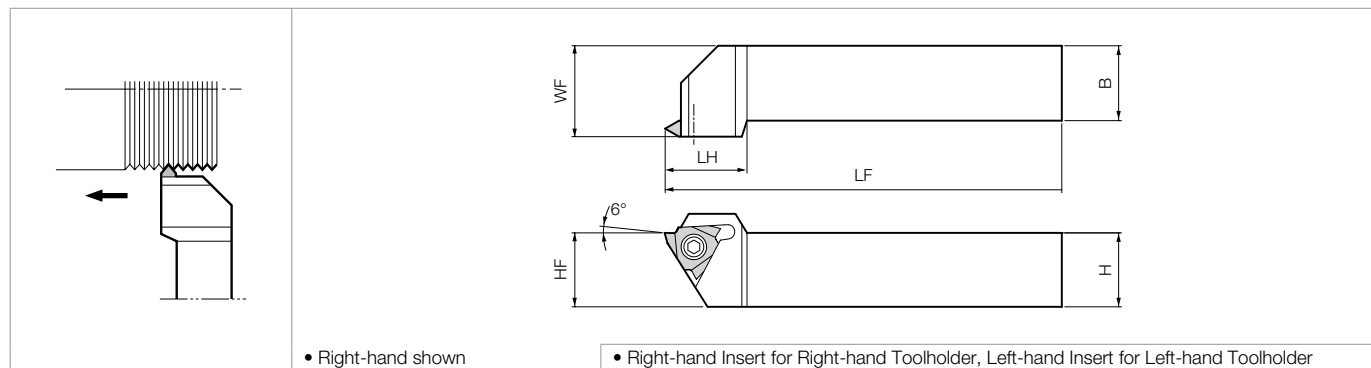
< 2 When running the second part of a setup>

Run through the full threading cycle and again check that chips are removed from the tool before going into production.



EXTERNAL THREADING TOOLHOLDERS [TNMC, TPMC INSERTS]

STVP



Toolholder Dimensions

Part Number	Stock		Unit	Dimensions						Spare Parts	
	R	L		H	HF	B	LF	LH	WF	Insert Screw	Wrench
STVP [®] / 12-3	●		inch	0.750	0.750	0.750	4.50	0.750	0.875	SB-4TR	FT-15
16-3	●			1.000	1.000	1.000	6.00	0.750	1.125		

Applicable Inserts

Part Number	Applicable Inserts	Ref. Page for Inserts
STVP [®] /...-3	TPMC32NV TNMC32NV	See Below

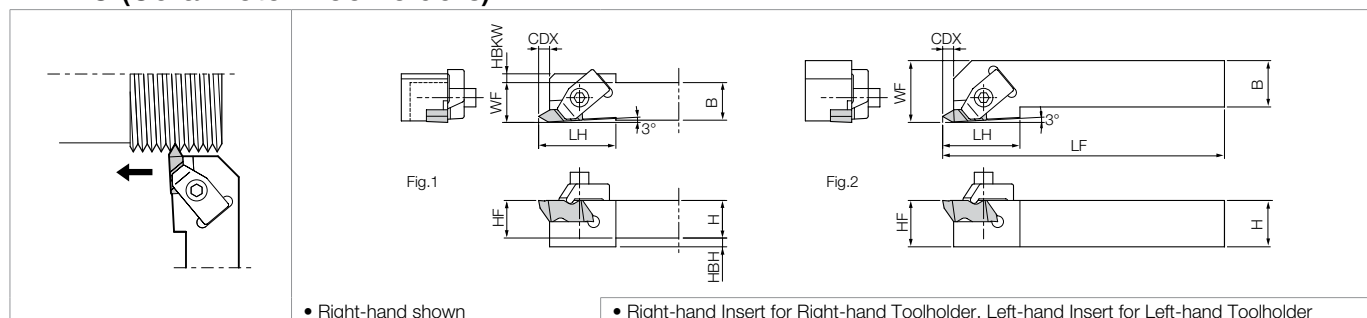
External Threading Inserts

TNMC / TPMC

Shape Right-handed Insert Shown		Part Number	Applicable Thread	Pitch		Dimensions (in)				Angle (°)	Insert Grade	
				mm	TPI	IC	S	D1	RE		Cermet	
Partial Profile		TNMC 32NV60004	M UN	0.75~4.25	36~6	0.375	0.125	0.150	0.004	60°	TC40	●
		TNMC 43NV60004	M UN	0.75~4.25	36~6	0.500	0.188	0.203	0.004	60°	TC40	●
		TPMC 32NV60002	M UN	0.35~3.00	72~8				0.002	60°	TC40	●
		32NV60004	M UN	0.75~3.00	36~8	0.375	0.125	0.177	0.004	60°	TC40	●
		32NV60008	M UN	1.50~3.00	18~8				0.008	60°	TC40	●
		TPMC 43NV60004	M UN	0.75~4.25	36~6	0.500	0.188	0.217	0.004	60°	TC40	●

Inserts are sold in 10 piece boxes.

■ KKC (Cera-Notch Toolholders)



● Toolholder Dimensions

Part Number	Stock		Unit	Dimensions									Drawing	Spare Parts		
	R	L		H	HF	HBH	B	LF	LH	WF	HBKW	CDX*		Clamp	Clamp Bolt	Wrench
KKCR 1212M-2-150F	●		mm (inch)	12 (0.472)	12 (0.472)	-	12 (0.472)	150 (5.906)	19.05 (0.750)	12.25 (0.482)	-	3.5 (0.138)	Fig.1	CKC-2R	SKC-2	(7/64 hex)
KKC% 6-2CF	●	●	inch	0.375	0.375	0.125	0.375	5.000	0.750	0.385	0.125	0.138	Fig.1	CKC-2%	SKC-2	(7/64 hex)
8-2X	●			0.500	0.500	-	0.500	3.500	0.750	0.750	-	0.138	Fig.2			
8-2DF	●			0.500	0.500	-	0.500	6.000	0.750	0.510	-	0.138	Fig.1			
10-2DF	●	●		0.625	0.625	-	0.625	6.00	0.750	0.635	-	0.138	Fig.1			
12-2B	●	●		0.750	0.750	-	0.750	4.50	0.750	1.000	-	0.138	Fig.2	CKC-2%	SKC-2	(7/64 hex)
12-2C	●			0.750	0.750	-	0.750	5.00	0.750	1.000	-	0.138	Fig.2			
16-2C	●	●		1.000	1.000	-	1.000	5.00	0.750	1.250	-	0.138	Fig.2			
16-2D	●	●		1.000	1.000	-	1.000	6.00	0.750	1.250	-	0.138	Fig.2			
KKC% 12-3B	●	●		0.750	0.750	-	0.750	4.50	1.250	1.000	-	0.210	Fig.2	CKC-3%	SKC-3	(LW-156)
12-3C	●	●		0.750	0.750	-	0.750	5.00	1.250	1.000	-	0.210	Fig.2			
16-3C	●	●		1.000	1.000	-	1.000	5.00	1.250	1.250	-	0.210	Fig.2			
16-3D	●	●		1.000	1.000	-	1.000	6.00	1.250	1.250	-	0.210	Fig.2			
20-3D	●	●		1.250	1.250	-	1.250	6.00	1.250	1.500	-	0.210	Fig.2			
16-4D	●	●		1.000	1.000	-	1.000	6.00	1.380	1.250	-	0.294	Fig.2			
20-4D	●			1.250	1.250	-	1.250	6.00	1.380	1.500	-	0.294	Fig.2			

• Dimension CDX shows the distance from the toolholder to the cutting edge.

Also Available for Grooving. See Page [G47](#)

• **Right-hand** bars require **Right-hand** inserts and clamps.

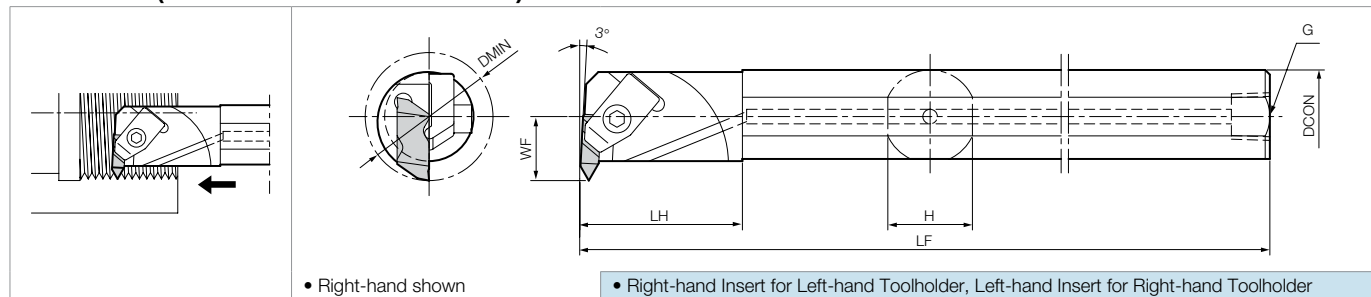
Left-hand bars require **Left-hand** inserts and clamps

• Spare parts in parentheses () are not included with toolholder. Please order separately.
















● Applicable Inserts

Part Number	Applicable Inserts	Ref. Page for Inserts
KKC% ...2-	KCT-2%, KCTK-2%, KCTP-2%	● J25
KKC% ...3-	KCT-3%, KCTK-3%, KCTP-3%	
KKC% ...4-	KCT-4%, KCTP-4%	

A-KKC (Cera-Notch Toolholders)



Toolholder Dimensions

Part Number	Stock		Unit	Min. Bore Dia.	Dimensions						Spare Parts								
	R	L			DMIN	DCON	H	LF	LH	WF	G								
A10M-KKCR-2	●		inch	1.000	0.625	0.596	6.00	1.153	0.500	1/8-27 NPT									
A10S-KKCR-2	●			1.000	0.625	0.596	10.00	1.153	0.500										
A12R-KKCR-2	●			1.125	0.750	0.728	8.00	1.171	0.562										
A12S-KKCR-2	●			1.125	0.750	0.728	10.00	1.171	0.562										
A16T-KKCR-2	●	●		1.375	1.000	0.910	12.00	1.100	0.688	1/8-27 NPT									
A16X-KKCR-3	●			1.375	1.000	0.910	9.00	1.750	0.688										
A16T-KKCR-3	●	●		1.375	1.000	0.910	12.00	1.750	0.688										
A20U-KKCR-3	●			1.750	1.250	1.138	14.00	1.750	0.875	1/4-18 NPT									
A24U-KKCR-3	●	●		2.000	1.500	1.366	14.00	1.750	1.000										
A28U-KKCR-4	●			2.500	1.750	1.593	14.00	1.750	1.250	1/4-18 NPT									
A32V-KKCR-4	●	●		2.750	2.000	1.820	16.00	1.750	1.375										

Applicable Inserts

Part Number	Applicable Inserts	Ref. Page for Inserts
A...KKC%-2	KCT-2%, KCTK-2%, KCTP-2%	See Below
A...KKC%-3	KCT-3%, KCTK-3%, KCTP-3%	
A...KKC%-4	KCT-4%, KCTP-4%	


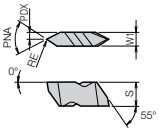

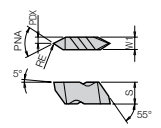

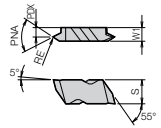
Also Available for Internal Grooving. See Page G91

• **Right-hand** bars require **Left-hand** inserts and clamps.
Left-hand bars require **Right-hand** inserts and clamps

• Spare parts in parentheses () are not included with toolholder. Please order separately.

Cera-Notch External Threading Inserts

KCT / KCTP / KCTK

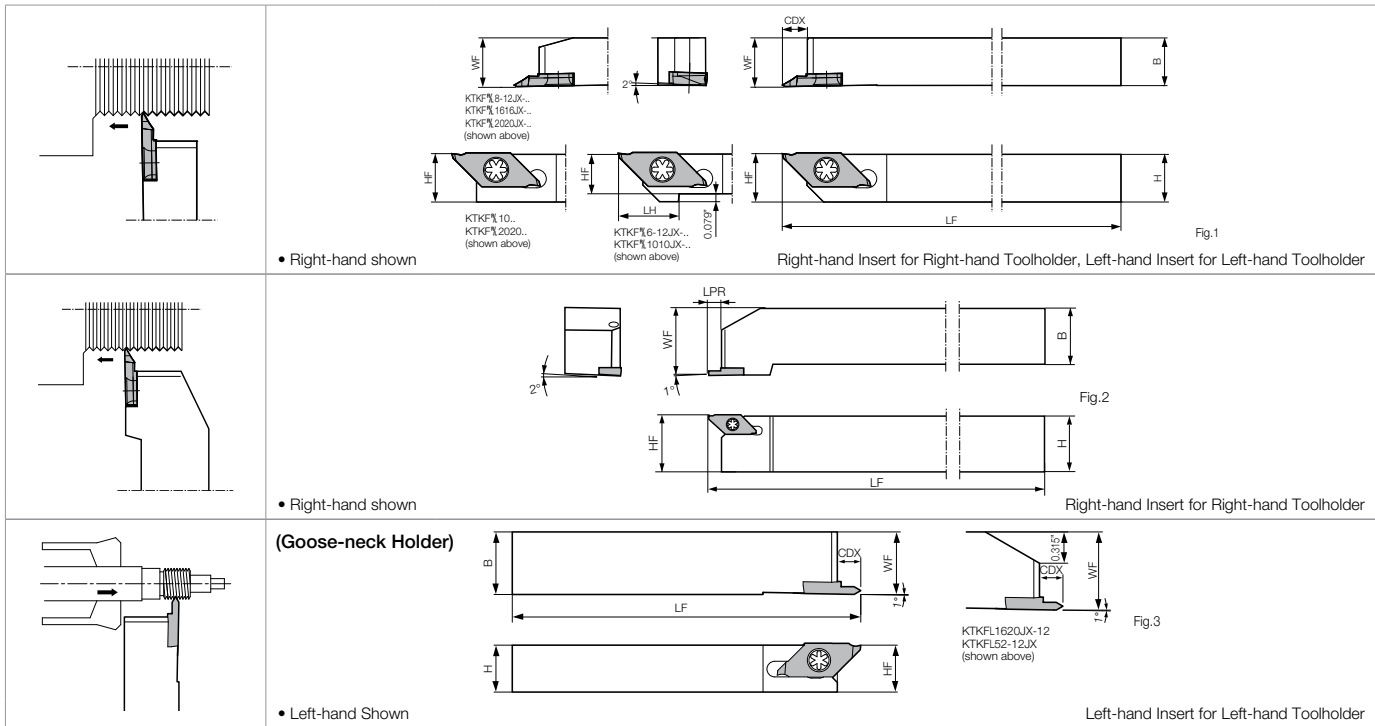
Shape Right-handed Insert Shown			Part Number	Applicable Thread	Pitch				Dimensions (in)				Angle (°)	Insert Grade						Ref. Page for Toolholder	
														Cermet	MEGA COAT CVD		Carbide				
					mm		TPI		RE	W1	S	PDX			PNA	TC60		PR1215			PR660
					External	Internal	External	Internal										R	L		
Partial Profile	 	KCT 2%	M UN	3.00-0.75	3.50-1.25	8-36	7-20	0.004	0.150	0.219	0.075	60°	●	●	●	●					
		3%	M UN	4.25-1.25	5.00-2.00	6-20	5-12	0.007	0.195	0.344	0.098		●	●	●	●	●				
		4%	M UN	6.35-1.25	6.35-2.00	4-20	4-12	0.008	0.255	0.453	0.128				●	●					
	 	KCTP 2%	M UN	3.00-0.75	3.50-1.25	8-36	7-20	0.004	0.150	0.219	0.075	60°	●	●	●	●	●				
		3%	M UN	4.25-1.25	5.00-2.00	6-20	5-12	0.007	0.195	0.344	0.098				●	●					
		4%	M UN	6.35-1.25	6.35-2.00	4-20	4-12	0.008	0.255	0.459	0.128				●	●					
	 	KCTK 2%	M UN	1.75-0.50	2.00-1.00	14-44	12-24	0.003	0.150	0.219	0.110	60°	●		●	●		●			
		3%	M UN	2.50-0.50	2.80-1.00	10-44	9-24	0.003	0.195	0.344	0.141			●	●	●	●				

Cera-Notch Conversion Table R45

Recommended Cutting Conditions J38

Inserts are sold in 10 piece boxes.

KTKF / KTKF Goose-neck Holder



Toolholder Dimensions

Part Number	Stock		Unit	Dimensions							Drawing	Spare Parts		Applicable Inserts
	R	L		H	HF	B	LF	LH	WF	LPR		Clamp Screw	Wrench	
KTKF% 6-12JX	●	●	inch	0.375	0.375	0.375	4.750	0.590	0.375	0.236	Fig.1	SB-4590TRWN	LTW-10S	TKFT12%...
8-12JX	●	●		0.500	0.500	0.500	4.750	-	0.500	0.236				
10-12JX	●	●		0.625	0.625	0.625	4.750	-	0.625	0.236				
KTKF% 1010JX-12	●	●	mm	10	10	10	120	15	10	6	Fig.1	SB-4590TRWN	LTW-10S	TKFT12%...
1212JX-12	●	●		12	12	12	120	-	12	6				
1616JX-12	●	●		16	16	16	120	-	16	6				
2020JX-12	●	●		20	20	20	120	-	20	6				
KTKFR 1212F-12	●	●	inch	12	12	12	85	-	12	6	Fig.1	SB-4590TRWN	LTW-10S	TKFT12R...
KTKFR 2525M-12	●	●		25	25	25	150	-	30	6	Fig.2	SB-4590TRWN	LTW-10S	TKFT12R...
KTKFL 52-12JX	●	●		0.500	0.500	0.625	4.750	-	0.625	0.236	Fig.3	SB-4590TRWN	LTW-10S	TKFT12L...
62.5-12JX	●	●	mm	0.625	0.625	0.750	4.750	-	0.750	0.236				
KTKFL 1216JX-12	●	●		12	12	16	120	-	16	6				
1620JX-12	●	●		16	16	20	120	-	20	6	Fig.3	SB-4590TRWN	LTW-10S	


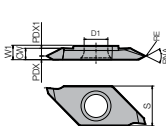
• Dimension LPR shows the distance from the toolholder to the cutting edge.

For Coolant-Through Holders, See [H17](#)

For Y-Axis Holders, See [H20](#)

Applicable Inserts

Insert		Part Number	Applicable Thread	Pitch		Dimensions (in)								Angle (°)	MEGACOAT NANO			MEGA COAT	PVD Coated Carbide	Carbide	Applicable Toolholder
				mm	TPI	W1	CW	S	D1	RE	PDX	PDX1	PNA	PR1725	PR1535	PR1425	PR1225	PR1025	KW10		
Right-handed Insert Shown																					







<div>Partial Profile</div> 	 <p>• Right-hand Shown</p>	TKFT 12RA6000	M	UN	0.20~0.60	64~48	0.118	0.098	0.343	0.205	Max 0.002 or Flat	0.016	0.083	60°	●	●	△	●	△	●	KTKFR ...12						
							0.118	0.098	0.343	0.205		0.002	0.083		0.016	●	●	△	●	△		●					
							0.118	0.098	0.343	0.205		0.002	0.031		0.067	●	●	△	●	△		●					
							0.118	0.098	0.343	0.205		0.004	0.049		0.049	●	●	△	●	△		●					
					1.00~1.50	24~18	0.118	0.098	0.343	0.205	0.002	0.031	0.067	●	●	△	●	△	●	●							
							0.118	0.098	0.343	0.205		0.067	0.031	●	●	△	●	△	●								
							TKFT 12LA6000	M	UN	0.20~0.60		64~48	0.118	0.098	0.343	0.205	Max 0.002 or Flat	0.083	0.016	60°	●	●	△	●	△	●	KTKFL ...12
													0.118	0.098	0.343	0.205		0.002	0.016		0.083	●	●	△	●	△	
		0.118	0.098	0.343	0.205	0.002					0.067		0.031	●	●	△		●	△		●						
		0.118	0.098	0.343	0.205	0.004					0.049		0.049	●	●	△		●	△		●						
		1.00~1.50	24~18	0.118	0.098	0.343				0.205	0.002	0.067	0.031	●	●	△	●	△	●	●							
				0.118	0.098	0.343				0.205		0.031	0.067	●	●	△	●	△	●								
				12LA5500S	G,R	W				-		40~16	0.118	0.098	0.343	0.205	0.002	0.067	0.031	60°	●	●	△	●	△	●	KTKFL ...12
													0.118	0.098	0.343	0.205		0.031	0.067		●	●	△	●	△	●	

Inserts are sold in 10 piece boxes.

■ Indication of Description (See Table 1) ◆ Recommended Cutting Conditions

TKFT	12	R	A	60	00
Name of Insert	Insert Size	Location of Edge	Corner-R(RE)		
	Insert Hand	Angle of Thread Shape			
	R: Right-hand L: Left-hand				

Table 1

R-hand Inserts		
Type-A  TKFT12RA..	Type-B  TKFT12RB..	Type-N  TKFT12RN..
L-hand Inserts		
Type-A  TKFT12LA..	Type-B  TKFT12LB..	Type-N  TKFT12LN..

Workpiece Material	Recommended Insert Grade					
	MEGACOAT NANO		MEGA COAT	PVD Coated Carbide		Carbide
	PR1725	PR1535	PR1425	PR1225	PR1025	KW10
Carbon Steel	Vc (sfm) = 230-560 First D.O.C. (Radial) under 0.0079"			Vc (sfm) = 200-490 First D.O.C. (Radial) under 0.0079"		-
Alloy Steel	Vc (sfm) = 230-560 First D.O.C. (Radial) under 0.0079"			Vc (sfm) = 200-490 First D.O.C. (Radial) under 0.0079"		-
Stainless Steel	Vc (sfm) = 200-330 First D.O.C. (Radial) under 0.0079"			Vc (sfm) = 160-260 First D.O.C. (Radial) under 0.0079"		-
Cast Iron	-			-		Vc (sfm) = 330 First D.O.C. (Radial) under 0.0079"
Aluminum	-			-		Vc (sfm) = 490-1310 First D.O.C. (Radial) under 0.0079"
Brass	-			-		Vc (sfm) = 490-980 First D.O.C. (Radial) under 0.0079"

- Coolant is recommended.
- In case of threading stainless steel, please set two to three passes more than <D.O.C. - passes> listed above.

■ D.O.C. & Number of Passes

● 60° / 55° Partial Profile

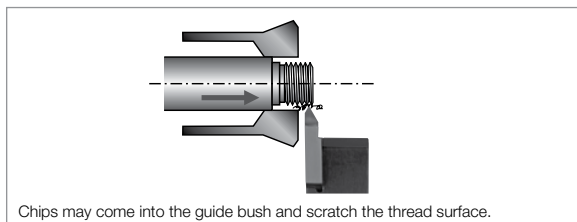
(D.O.C. shows the value of radial ap.)

Thread Type		Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass
Metric	External Threading	0.20mm	TKFT 12R/L A/B6000	Max 0.05 Flat	0.15	4	0.06	0.04	0.03	0.02								
		0.25mm			0.19	4	0.07	0.06	0.04	0.02								
		0.30mm			0.23	4	0.08	0.07	0.06	0.02								
		0.35mm			0.27	5	0.08	0.07	0.06	0.04	0.02							
		0.40mm			0.30	5	0.10	0.08	0.06	0.04	0.02							
		0.45mm			0.34	6	0.10	0.08	0.06	0.04	0.04	0.02						
		0.50mm	TKFT 12R/L A/B6000 12R/L A/B60005	Max 0.05 Flat	0.38	6	0.10	0.10	0.07	0.05	0.04	0.02						
				0.05	0.33	5	0.10	0.10	0.07	0.04	0.02							
		0.60mm	TKFT 12R/L A/B6000 12R/L A/B60005	Max 0.05 Flat	0.45	7	0.10	0.10	0.08	0.06	0.05	0.04	0.02					
				0.05	0.40	6	0.10	0.10	0.08	0.06	0.04	0.02						
		0.70mm	TKFT 12R/L A/B60005		0.05	0.48	6	0.10	0.10	0.10	0.10	0.06	0.02					
					0.05	0.52	7	0.10	0.10	0.10	0.08	0.07	0.05	0.02				
		0.75mm	TKFT 12R/L A/B60005		0.05	0.56	7	0.10	0.10	0.10	0.10	0.08	0.06	0.02				
					0.05	0.56	7	0.10	0.10	0.10	0.10	0.08	0.06	0.02				
		0.80mm	TKFT 12R/L A/B60005 12R/L N6001		0.05	0.71	8	0.15	0.15	0.12	0.10	0.08	0.06	0.03	0.02			
					0.10	0.66	7	0.18	0.15	0.12	0.10	0.06	0.03	0.02				
		1.00mm			0.05	0.90	9	0.20	0.18	0.13	0.10	0.10	0.07	0.05	0.05	0.02		
					0.10	0.85	8	0.20	0.18	0.13	0.10	0.10	0.07	0.05	0.02			
		1.25mm	TKFT 12R/L N6001		0.10	1.04	10	0.20	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.05	0.02	
					0.10	1.04	10	0.20	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.05	0.02	
Parallel Pipe	External Threading	28 TPI	TKFT 12R/L A/B55005	0.0020	0.0264	7	0.007	0.006	0.005	0.004	0.002	0.002	0.001					
		19 TPI		0.0020	0.0398	9	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002	0.001			
Whitworth	External Threading	24 TPI	TKFT 12R/L A/B55005	0.0020	0.0311	8	0.007	0.007	0.005	0.004	0.003	0.003	0.002	0.001				
		20 TPI		0.0020	0.0378	9	0.008	0.008	0.006	0.004	0.004	0.003	0.002	0.002	0.001			
		18 TPI		0.0020	0.0421	10	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.001		
		16 TPI		0.0020	0.0476	11	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.001	

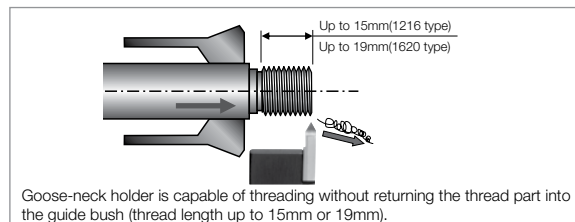
■ Swiss Tool Automatic Lathe (Guide Bush System)

Goose-neck Holder is applicable to automatic lathes whose toolholder does not move in longitudinal direction (Z-axis)

● Conventional Threading Tool

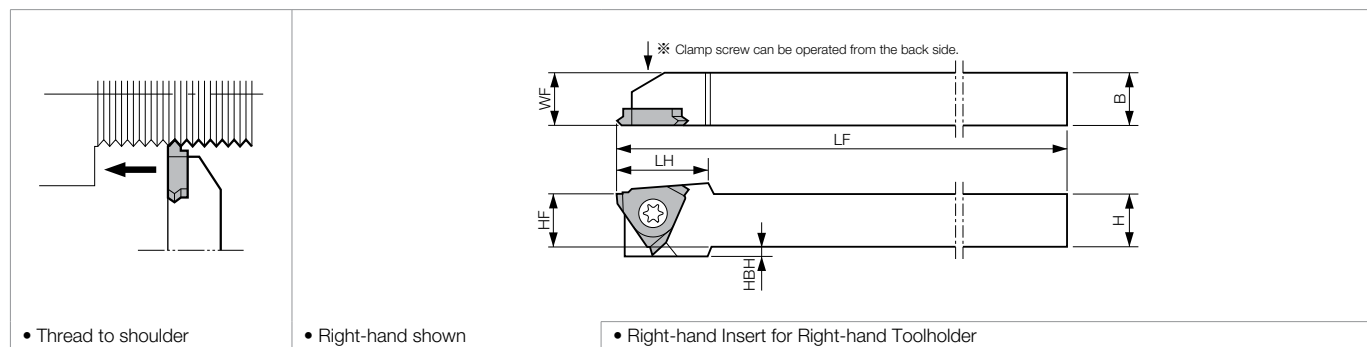


● Goose-neck Holder (for Threading)



EXTERNAL THREADING TOOLHOLDERS [TTX INSERT]

KTTX

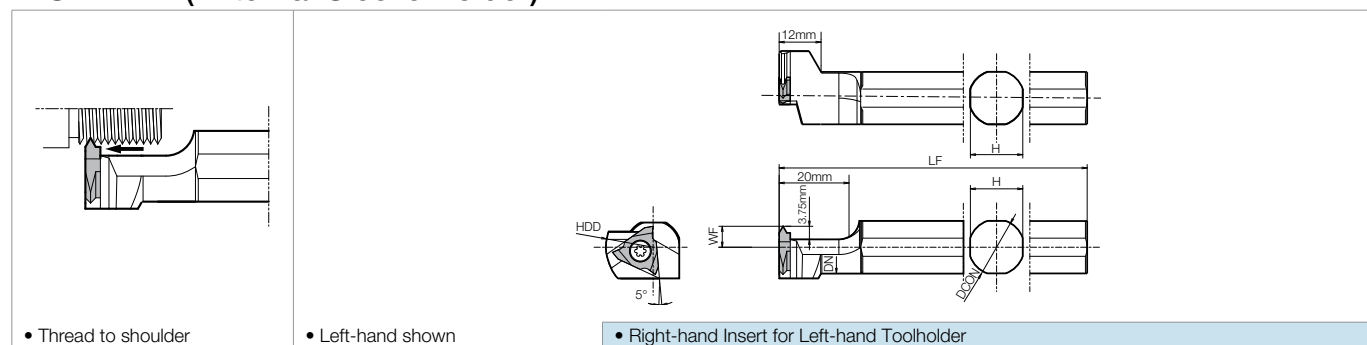


Toolholder Dimensions

Part Number	Stock	Unit	Dimensions							Spare Parts	
			H	HF	HBH	B	LF	LH	WF	Insert Screw	Wrench
KTTXR 6-3JXF	●	inch	0.375	0.375	0.079	0.375	4.750	0.693	0.383	SB-4070TRW	FT-8
8-3JXF	●		0.500	0.500	-	0.500	4.750	0.693	0.508		
10-3JXF	●		0.625	0.625	-	0.625	4.750	0.693	0.633		
KTTXR 1010JX-16F	●	mm	10	10	2	10	120	17.6	10	SB-4070TRW	FT-8
1212JX-16F	●		12	12	-	12	120	17.6	12		
1616JX-16F	●		16	16	-	16	120	17.6	16		
KTTXR 1212F-16F	●		12	12	-	12	85	17.6	12		
2020K-16F	●		20	20	-	20	125	17.6	20		

Applicable Inserts J29

S...KTTX (External Sleeve Holder)



Toolholder Dimensions

Part Number	Stock	Dimensions (mm)						Spare Parts	
		DCON	LF	WF	DN	HDD	H	Insert Screw	Wrench
S12F-KTTXL16	●	12	80	6.0	11.0	27	11	SB-4070TRW	FT-8
S14H-KTTXL16	●	14	100	6.0	13.0	27	13		
S15F-KTTXL16	●	5/8"	85	6.0	14.6	27	15		
S16F-KTTXL16	●	16	85	6.0	14.6	27	15		
S19G-KTTXL16	●	3/4"	90	6.0	17.6	27	17		
S19K-KTTXL16	●	3/4"	120	6.0	17.6	27	17		
S20G-KTTXL16	●	20	90	6.0	18.6	27	18		
S20K-KTTXL16	●	20	120	6.0	18.6	27	18		
S25.0H-KTTXL16	●	25	100	10.0	23.6	32	23		
S25K-KTTXL16	●	1"	120	10.0	23.6	32	23		

Applicable Inserts J29

EXTERNAL THREADING TOOLHOLDERS [TTX INSERT]

Applicable Inserts

Applicable Inserts					P		Carbon Steel / Alloy Steel				○	○	●	Classification of Usage					
(in)					M		Stainless Steel					○	●	● : Light Interruption / 1st Choice					
					K		Cast Iron							○ : Light Interruption / 2nd Choice					
					N		Non-ferrous Metals							● : Continuous / 1st Choice					
														○ : Continuous / 2nd Choice					
Shape					Part Number		Applicable Thread	Pitch		Dimensions (in)			Angle	Cermet	PVD Coated Carbide		Carbide	Applicable Toolholders ➡ J28	Ref. Page for D.O.C. & Number of Passes
Right-handed Insert Shown								mm	TPI	RE	PDX	PDX1	PNA	TC60	PR930	PR1115	KW10		
Partial Profile		TTX32R 6000		M UN	0.5~1.0	-	0.000	0.024	0.044	60°				●	KTTXR...-3 KTTXR...-16 S...KTTXL16	➡ J46			
		6000S			0.5~1.0	-	0.002	0.024	0.044	60°	●	●	●	●					
		6001			1.0~2.0	-	0.004	0.043	0.064	60°	●	●	●	●					
		TTX32R 6000S		M UN	0.5	-	0.000	0.012	0.044	60°		●	●	●			●		
		6000S			0.5	-	0.002	0.012	0.044	60°		●	●	●			●		
		TTX32R 5501		G, R W	-	28~19 24~20	0.004	0.030	0.040	55°	●	●	●	●					
		5501S			-	19~11 20~11	0.006	0.047	0.057	55°	●	●		●					

Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	

Recommended Cutting Conditions J38

Advantages of TTX

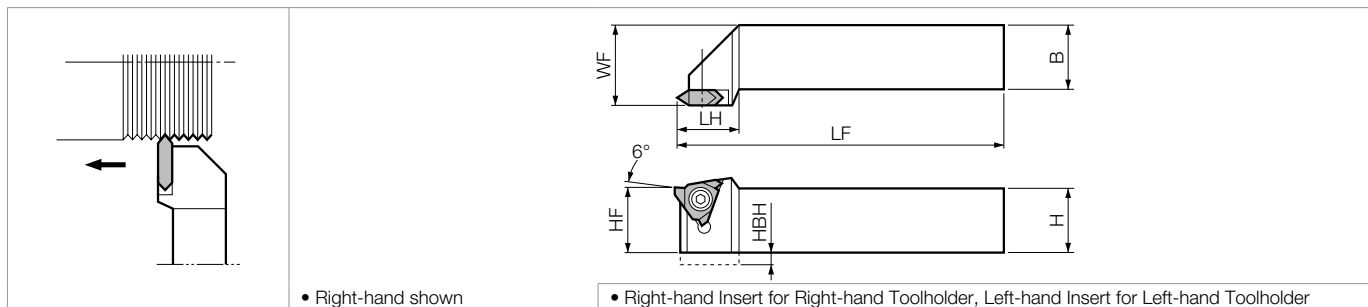
Type	Insert	Advantages		
		Rake Angle after Installation	Condition	Dead Space
TT			<ul style="list-style-type: none"> One insert can machine various pitch sizes 	
TTX			<ul style="list-style-type: none"> The Least Cutting Resistance Thread to shoulder (Less dead space) 3-edge 	

PR930/PR1115 Threading Inserts are sold in 5 piece boxes.





All other grade Inserts are sold in 10 piece boxes.

EXTERNAL THREADING TOOLHOLDERS [TT INSERT]

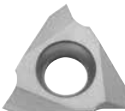

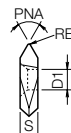
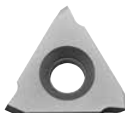

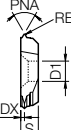
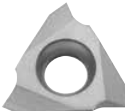

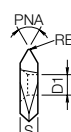
KTT



- **Toolholder Dimensions**

Part Number		Stock		Dimensions (mm)						Spare Parts				
										Insert Screw		Wrench		
		R	L	H	HF	HBH	B	LF	LH	WF				
KTT%	1010F-16	●	●	10	10	4	10	80	18	12	SB-4070TRS	-	FT-10	-
	1212H-16	●	●	12	12	2	12	100		16				
	1616H-16	●	●	16	16	-	16	100		20				
	2020K-16	●	●	20	20		20	125		25	SB-4TR	-	FT-15	-
	2525M-16	●	●	25	25	25	150	30						
	2020K-22	●	●	20	20	-	20	125	25	-	GS-50	-	LW-3	
	2525M-22	●	●	25	25		25	150	30					

■ Applicable Inserts

				(in)	P	Carbon Steel / Alloy Steel	○	○	●	Classification of Usage													
Part Number	IC	S	D1	M	Stainless Steel			○	●	● : Continuous / 1st Choice													
TT32%	0.375	0.125	0.173	K	Cast Iron					○ : Continuous / 2nd Choice													
TT43%	0.500	0.187	0.217	N	Non-ferrous Metals					●													
Shape Right-handed Insert Shown				Part Number	Applicable Thread	Pitch		Dimensions (in)		Angle	Cermet		PVD Coated Carbide				Carbide	Applicable Toolholders	Ref. Page for D.O.C. & Number of Passes				
						mm	TPI	RE	PDX		PNA	TC60	PR930	PR1115	KW10								
											R	L	R	L	R	L	R	L					
Partial Profile				TT32%	6000	M UN	0.5~2.5 -	-	56~10	0.000	-	60°	●	●	●	●	●	●	●	KTT%...-16	J45		
					6001	M UN	1.0~2.5 -	-	24~10	0.004			●	●	●	●	●	●	●			●	
					6002	M UN	1.5~2.5 -	-	16~10	0.008			●	●	●	●	●	●	●			●	
					6003	M UN	2.5 -	-	11~10	0.012			●	●	●	●	●	●	●			●	
				TT32%	5501	G,PT W	-	28~11 24~10	0.004	-	55°	●		●	●	●		●	●				
					5502	G,PT W	-	14~11 14~10	0.008			●		●	●	●		●	●				
Full Profile				TT43ER	100M	M	1.00	-		0.005	0.031	60°	●		●		●			KTT%...-22	J46		
					125M		1.25			0.006	0.035		●		●		●						
					150M		1.50			0.007	0.039		●		●		●						
					200M		2.00			0.010	0.067		●		●		●						
Partial Profile				TT43%	6001	M UN	1.0~3.5 -	-	24~8	0.004	-	60°	●		●	●	●	●	●	KTT%...-22	J45		
					6002	M UN	1.5~3.5 -	-	16~8	0.008			●	●	●	●	●	●	●			●	
					6003	M UN	2.5~3.5 -	-	11~8	0.012			●	●	●	●	●	●	●			●	
					6004	M UN	3.0~3.5 -	8	0.016	●			●	●	●	●	●	●	●			●	
				TT43%	5501	G,PT W	-	28~11 24~7	0.004	-	55°	●			●		●	●					
					5502	G,PT W	-	14~11 16~7	0.008			●	●	●	●	●	●	●	●			●	
					5503	G,PT W	-	11 10~7	0.012			●		●	●	●	●	●	●			●	
					5504	G,PT W	-	8~7	0.016			●	●										

Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

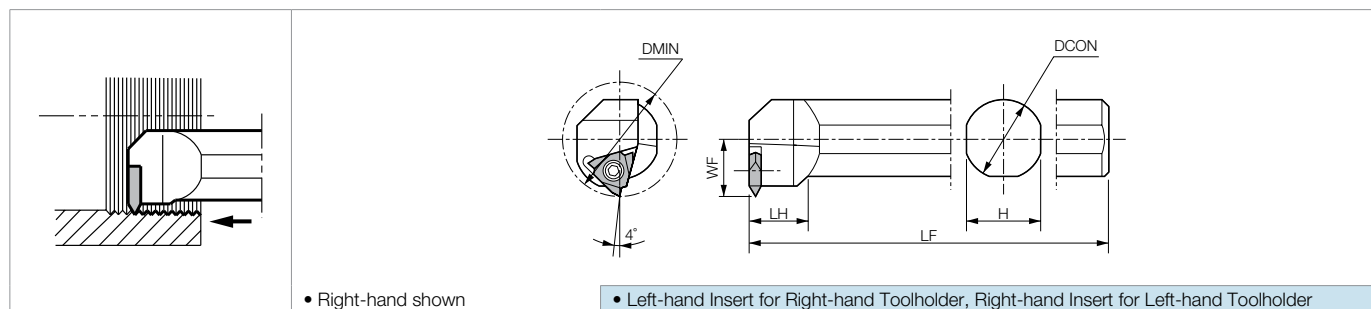
Recommended Cutting Conditions  J38

PR930/PR1115 Threading Inserts are sold in 5 piece boxes.

All other grade Inserts are sold in 10 piece boxes.

INTERNAL THREADING TOOLHOLDERS [TT INSERT]

KITG

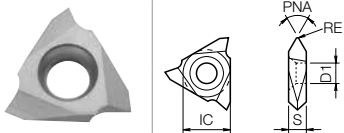


Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)					Spare Parts			
	R	L		DMIN	DCON	H	LF	LH	WF	Insert Screw	Wrench	
KITG% 3525T-16	●	●	35	25	23	220	18	17.5	SB-4TR	-	FT-15	-
4532T-22	●	●	45	32	30	250	20	22.5	-	GS-50	-	LW-3

• Max. available Pitch: KITG% 3525T-16...P2.5 or 10TPI, KITG% 4532T-22...P3.0 or 8TPI.

Applicable Inserts

(in)				P	Carbon Steel / Alloy Steel				○	○	●		Classification of Usage ● : Continuous / 1st Choice ○ : Continuous / 2nd Choice			
Part Number	IC	S	D1	M	Stainless Steel					○	●					
TT32%	0.375	0.125	0.173	K	Cast Iron							●				
TT43%	0.500	0.187	0.217	N	Non-ferrous Metals							●				
Shape Right-handed Insert Shown				Part Number	Applicable Thread	Pitch		Dimensions (in)	Angle	Cermet		PVD Coated Carbide		Carbide	Applicable Toolholders	Ref. Page for D.O.C. & Number of Passes
						mm	TPI	RE	PNA	TC60	PR930	PR1115	KW10			
										R	L	R	L	R	L	
<div>Partial Profile</div> <div></div>	TT32%		6000	M UN	0.5~2.5 -	48~10	0.000	60°	●	●	●	●	●	●	KITG%...-16	
	6001		M UN	1.0~2.5 -	16~10	0.004	●		●	●	●	●	●	●		
	TT32%		5501	G _{PT} W	-	28~11 24~10	0.004	55°	●		●	●	●	●		●
	5502		G _{PT} W	16~18		0.008	●			●	●	●	●	●		
	TT43%		6001	M UN	1.5~3.0 -	14~11 16~10	0.004	60°	●		●	●	●	●	KITG%...-22	
	6002		M UN	3.0 -	8	0.008	●		●	●	●	●	●	●		
	TT43%		5501	G _{PT} W	-	28~11 24~8	0.004	55°	●		●		●	●		●
	5502		G _{PT} W	14~11 16~8		0.008	●		●	●		●		●		●
	5503		G _{PT} W	11 11~8		0.012	●			●		●				
	5504		G _{PT} W	- 8		0.016	●		●							

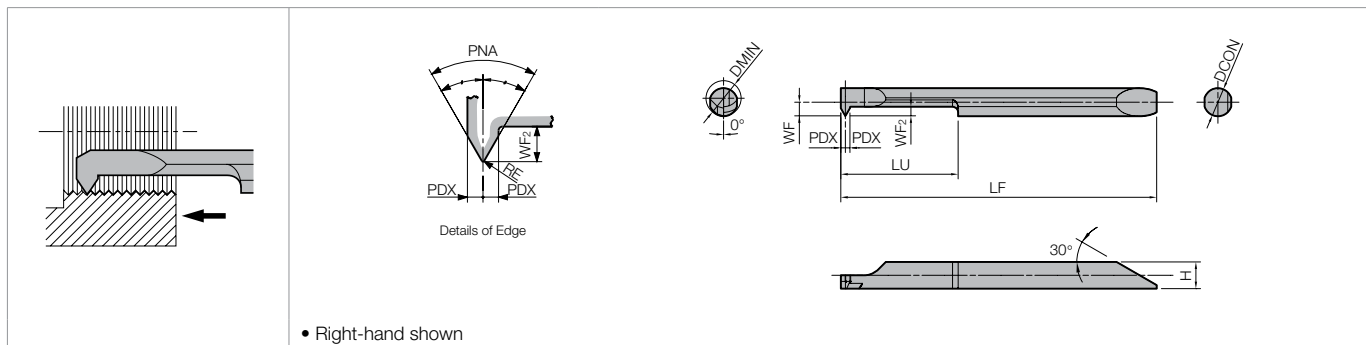
Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	

Recommended Cutting Conditions J38

PR930/PR1115 Threading Inserts are sold in 5 piece boxes.

All other grade Inserts are sold in 10 piece boxes.

EZT



Toolholder Dimensions

Part Number	Min. Bore Dia.	Dimensions (mm)										MEGA COAT	Carbide	Applicable Screw					
														Metric		Unified		American National Pipe	
	DMIN	DCON	H	LF	LU	WF	WF ₂	PDX	RE	PNA	PR1225	GW05	Applicable Thread	Pitch (mm)	Applicable Thread	Pitch (TPI)	Applicable Thread	Pitch (TPI)	
EZTR 030025-60-002	3.0	2.5	2.3	35.0	6.5	1.19	1.0	0.5	0.02 ^{+0.01}	60°	●	●	M4 or more Fine Thread: M3.5 or more	P0.5~P0.8	No.8-32UNC No.8-36UNF or more	36~32	-	-	
035030-60-002	3.5	3.0	2.8	39.0	9.0	1.44	1.2	0.6			●	●	M4.5 or more Fine Thread: M4.5 or more	P0.5~P1.0	No.10-24UNC No.8-36UNF or more	36~24	-	-	
040035-60-004	4.0	3.5	3.3	42.0	11.0	1.69	1.2	0.6	0.04 ^{+0.01}		●	●	M5 or more Fine Thread: M5 or more	P0.75~P1.25	No.12-24UNC No.12-28UNF or more	28~20	-	-	
050040-60-004	5.0	4.0	3.8	45.0	16.0	1.94	1.3	0.65			●	●	M7 or more Fine Thread: M6 or more	P0.75~P1.5	1/4-20UNC 1/4-28UNF or more	28~18	-	-	
060050-60-004	6.0	5.0	4.8	53.2	20.0	2.44	1.6	0.8			●	●	M8 or more Fine Thread: M7 or more	P0.75~P1.5	5/16-18UNC 5/16-24UNF or more	24~16	1/4NPT 3/8NPT	18	
070060-60-004	7.0	6.0	5.8	61.2	25.0	2.94	2.0	1.0			●	●	M9 or more Fine Thread: M8 or more	P0.75~P1.75	3/8-16UNC 3/8-24UNF or more	24~16	1/4NPT or more	18,14	
													Whitworth		Parallel Pipe / Tapered Pipe				
EZTR 060050-55-008	6.0	5.0	4.8	53.2	20.0	2.44	1.6	0.8	0.085 ^{+0.015}	55°	●	●	W10 TPI 24 or more	24~20	G1/16 R1/16 or more	28			
080070-55-008	8.0	7.0	6.8	64.2	20.5	3.44	2.0	1.0			●	●	W11 TPI 20 or more	20~18	G1/8 R1/8 or more	28,19			

• For American National Pipe (NPT), use EZTR...-60-004 see J35

For applicable sleeve see J33

Bars are sold in 1 piece boxes

EZH Sleeves EZ Bar Sleeves (Listed by Sleeve Shank Dia.)

Sleeve Part Number				EZ Bar Part Number		Applicable Machine Manufacturer
EZH-CT (Adjustable Overhang Length / with Coolant Hole) ● F32~F33	EZH-HP (Adjustable Overhang Length) ● F34~F35	EZH-ST ● F36~F37	Sleeve Shank Dia DCON (mm)	EZT	EZ Bar Shank Dia DCON (mm)	
-	-	EZH 02512ST-80 03012ST-80 03512ST-80 04012ST-80 05012ST-80 06012ST-80 07012ST-80	12.00	EZTR 030025-... EZTR 035030-... EZTR 040035-... EZTR 050040-... EZTR 060050-... EZTR 070060-... EZTR 080070-...	2.5 3.0 3.5 4.0 5.0 6.0 7.0	General Machines
-	EZH 02516HP-100 03016HP-100 03516HP-100 04016HP-100 05016HP-100 06016HP-100 07016HP-100	EZH 02516ST-100 03016ST-100 03516ST-100 04016ST-100 05016ST-100 06016ST-100 07016ST-100	16.00	EZTR 030025-... EZTR 035030-... EZTR 040035-... EZTR 050040-... EZTR 060050-... EZTR 070060-... EZTR 080070-...	2.5 3.0 3.5 4.0 5.0 6.0 7.0	General Machines
EZH 02519CT-120 03019CT-120 03519CT-120 04019CT-120 05019CT-120 06019CT-120 07019CT-120	EZH 02519HP-120 03019HP-120 03519HP-120 04019HP-120 05019HP-120 06019HP-120 07019HP-120	EZH 02519ST-120 03019ST-120 03519ST-120 04019ST-120 05019ST-120 06019ST-120 07019ST-120	0.750"	EZTR 030025-... EZTR 035030-... EZTR 040035-... EZTR 050040-... EZTR 060050-... EZTR 070060-... EZTR 080070-...	2.5 3.0 3.5 4.0 5.0 6.0 7.0	Citizen Machinery
EZH 02520CT-120 03020CT-120 03520CT-120 04020CT-120 05020CT-120 06020CT-120 07020CT-120	EZH 02520HP-120 03020HP-120 03520HP-120 04020HP-120 05020HP-120 06020HP-120 07020HP-120	EZH 02520ST-120 03020ST-120 03520ST-120 04020ST-120 05020ST-120 06020ST-120 07020ST-120	20.00	EZTR 030025-... EZTR 035030-... EZTR 040035-... EZTR 050040-... EZTR 060050-... EZTR 070060-... EZTR 080070-...	2.5 3.0 3.5 4.0 5.0 6.0 7.0	Amada Machine Tools Eguro Tsugami Citizen Machinery General Machines
EZH 02522CT-135 03022CT-135 03522CT-135 04022CT-135 05022CT-135 06022CT-135 07022CT-135	EZH 02522HP-135 03022HP-135 03522HP-135 04022HP-135 05022HP-135 06022HP-135 07022HP-135	EZH 02522ST-135 03022ST-135 03522ST-135 04022ST-135 05022ST-135 06022ST-135 07022ST-135	22.00	EZTR 030025-... EZTR 035030-... EZTR 040035-... EZTR 050040-... EZTR 060050-... EZTR 070060-... EZTR 080070-...	2.5 3.0 3.5 4.0 5.0 6.0 7.0	Star Micronics Nomura DS Tsugami
EZH 02525.0CT-135 03025.0CT-135 03525.0CT-135 04025.0CT-135 05025.0CT-135 06025.0CT-135 07025.0CT-135	EZH 02525.0HP-135 03025.0HP-135 03525.0HP-135 04025.0HP-135 05025.0HP-135 06025.0HP-135 07025.0HP-135	EZH 02525.0ST-135 03025.0ST-135 03525.0ST-135 04025.0ST-135 05025.0ST-135 06025.0ST-135 07025.0ST-135	25.00	EZTR 030025-... EZTR 035030-... EZTR 040035-... EZTR 050040-... EZTR 060050-... EZTR 070060-... EZTR 080070-...	2.5 3.0 3.5 4.0 5.0 6.0 7.0	Amada Machine Tools Eguro Tsugami Citizen Machinery General Machines
EZH 02525.4CT-120 03025.4CT-120 03525.4CT-120 04025.4CT-120 05025.4CT-120 06025.4CT-120 07025.4CT-120	EZH 02525.4HP-120 03025.4HP-120 03525.4HP-120 04025.4HP-120 05025.4HP-120 06025.4HP-120 07025.4HP-120	EZH 02525.4ST-120 03025.4ST-120 03525.4ST-120 04025.4ST-120 05025.4ST-120 06025.4ST-120 07025.4ST-120	1.000"	EZTR 030025-... EZTR 035030-... EZTR 040035-... EZTR 050040-... EZTR 060050-... EZTR 070060-... EZTR 080070-...	2.5 3.0 3.5 4.0 5.0 6.0 7.0	Citizen Machinery

- Choose sleeves (DCB) to meet with DCON dimension of bar.
- Adjustment Pin cannot be installed to EZH-ST sleeves. To adjust overhang of the bar, please use EZH-CT/HP sleeves.
- Machine manufacturers in random order.

INSERT GRADES	A
TURNING INSERTS	B
GEN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

EZT RECOMMENDED CUTTING CONDITIONS

◆ Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)	
	MEGACOAT	Carbide
	PR1225	GW05
Carbon Steel/Alloy Steel	★ 100-160	-
Stainless Steel	★ 100-160	-
Non-ferrous Metals	-	★ 100-160

★ : 1st Recommendation

Note:

1) The table feed may not follow the expected conditions when machining small diameter workpieces at high speeds. Variable RPMs due to constant surface speed can result in inaccurate threads. Constant RPM programming is recommended.

2) Coolant is recommended.

◆ D.O.C. & Number of Passes (Metric)

Pitch (mm)	Total D.O.C. (mm)	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass	20 Pass
0.50	0.30	9	0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.02	0.02											
0.70	0.42	10	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.02										
0.75	0.45	10	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03										
0.80	0.48	11	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.03									
1.00	0.61	12	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03								
1.25	0.77	14	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03						
1.50	0.93	17	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.03			
1.75	1.10	20	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03

◆ D.O.C. & Number of Passes (Whitworth)

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass
24	0.0256	13	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001				
20	0.0319	15	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001		
18	0.0358	17	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001

◆ D.O.C. & Number of Passes (Unified: UN, UNC, UNF, UNEF)

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass
36	0.0173	8	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001								
32	0.0197	10	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001							
28	0.0217	12	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001						
24	0.0256	12	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001						
20	0.0307	14	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001				
18	0.0346	17	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	
16	0.0390	18	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001

Application of Parallel Pipe and Tapered Pipe Thread

Parallel Pipe: G (PF), Rp (PS)

Applicable Thread		TPI	Internal Threading (G, Rp)		Min. Bore Dia. (mm)	Same Root Radius
Inch	Symbol Previous Symbol		Insert			
-	G 1/16 (-)	28	EZTR	06005-55-008	6.56	0.12
1/8	G 1/8 (PF 1/8)	28		08007-55-008	8.57	0.12
2/8	G 1/4 (PF 1/4)	19	EZTR	08007-55-008	11.45	0.18
3/8	G 3/8 (PF 3/8)	19		08007-55-008	14.95	0.18

Tapered Pipe: R, Rc (PT) (BSPT)

Applicable Thread		TPI	Internal Threading (Rc)		Min. Bore Dia. (mm)	Same Root Radius
Inch	Symbol Previous Symbol		Insert			
-	R 1/16, Rc 1/16 (-)	28	EZTR	06005-55-008	-	0.12
1/8	R 1/8, Rc 1/8 (PT 1/8)	28		08007-55-008	-	0.12
2/8	R 1/4, Rc 1/4 (PT 1/4)	19	EZTR	08007-55-008	-	0.18
3/8	R 3/8, Rc 3/8 (PT 3/8)	19		08007-55-008	-	0.18

• When using "EZT type" for Parallel Pipe / Tapered Pipe threading, the thread's corners become sharp edged due to its partial profile, and the shape will not be the same as the standard shape for Parallel Pipe / Tapered Pipe.

D.O.C. & Number of Passes (Parallel Pipe / G(PF), Tapered Pipe / BSPT (PT) (Rc))

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass
28	0.0240	12	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001						
19	0.0374	18	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001

Application of American National Tapered Pipe Thread (NPT)

Applicable Thread	TPI	Internal Threading	
		Toolholder	Insert
			Partial Profile Full Profile
1/16 NPT	27	No Tools Available	
1/8 NPT		No Tools Available	
1/4 NPT	18	EZH Sleeve	EZTR060050-60-004
3/8 NPT			EZTR070060-60-004
1/2 NPT	14	EZH Sleeve	EZTR070060-60-004
3/4 NPT			
1/2 NPT	14	SINR1616S-16	-
3/4 NPT		SINR2016S-16	-

• Application of NPTF Thread

NPTF is the thread for sealing pipes without using any sealing material.

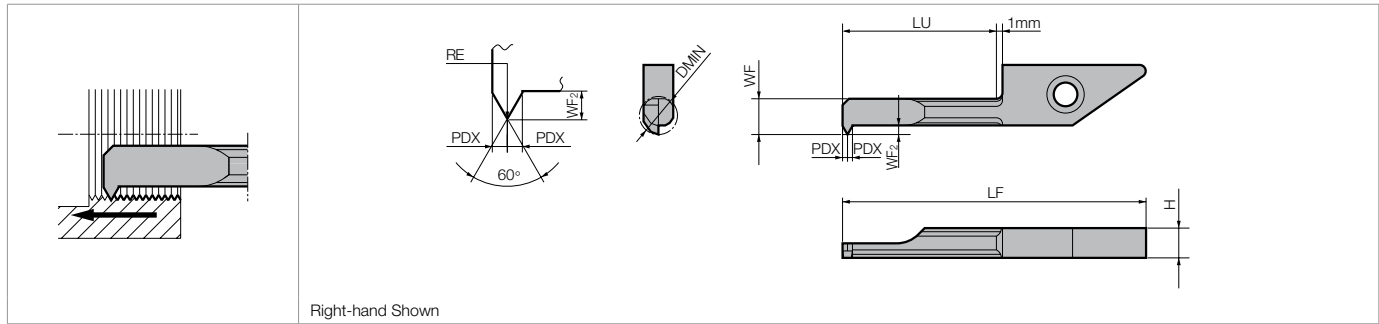
Thread symbol is similar to NPT but the Tolerance is different from that of NPT and the above inserts are not applicable to NPTF.

D.O.C. & Number of Passes (American National Tapered Pipe (NPT))

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass
18	0.0484	16	0.007	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001			
14	0.0614	19	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001

TIP-BARS FOR MICRO THREADING

VNT (Swiss IQ Bar)



Tip-Bar Dimensions

Part Number		Min. Bore Dia.	Dimensions (mm)							Insert Grades			Applicable Thread			
										MEGA COAT	PVD Coated Carbide	Carbide	Metric		Unified	
		DMIN	H	LF	LU	WF	WF ₂	PDX	RE	PR1225	PR930	KW10	Applicable Thread	Pitch (mm)	Applicable Thread	Pitch TPI
VNTR	045-11	4.5	3.9	30.8	11	3.6	1.3	0.6	+0.02 0.05	●	●	●	M6 or more	P0.75~P1.25	1/4-20UNC, 1/4-28UNF or more	28~20
	060-11	6.0	3.9	30.8	11	4.6	1.6	0.8		●	●	●	M8 or more	P0.75~P1.50	5/16-18UNC, 5/16-24UNF or more	24~18

• See Page [F34~F35](#) for applicable toolholders.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)		
	MEGACOAT	PVD Coated Carbide	Carbide
	PR1225	PR930	KW10
Carbon Steel/Alloy Steel	★ 100-160	☆ 100-160	-
Stainless Steel	★ 100-160	☆ 100-160	-
Non-ferrous Metals	-	-	★ 100-160

★ : 1st Recommendation ☆ : 2nd Recommendation

D.O.C. & Number of Passes (Metric)

Pitch (mm)	Total D.O.C. (mm)	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass
0.75	0.44	10	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.03							
1.00	0.60	12	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03					
1.25	0.76	14	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.03			
1.50	0.92	17	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.03

Note:

1) The table feed may not follow the expected conditions when machining small diameter workpieces at high speeds. Variable RPMs due to constant surface speed can result in inaccurate threads. Constant RPM programming is recommended.

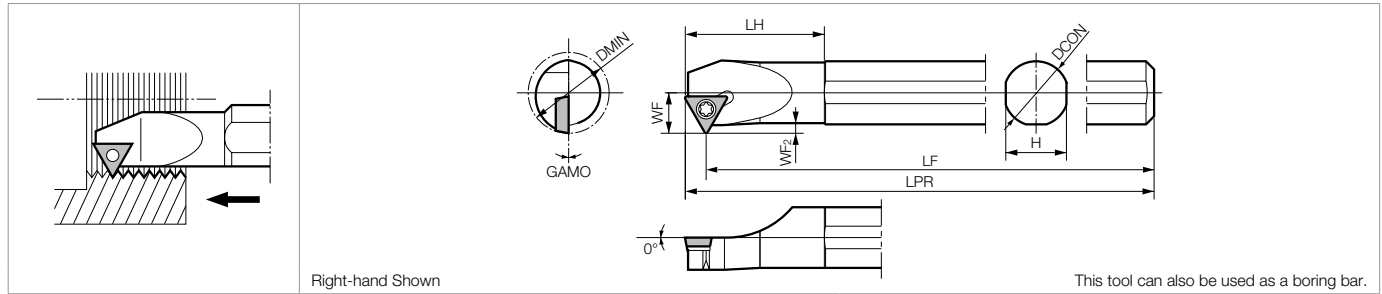
2) Coolant is recommended.

Tip-Bar is sold in 1 piece boxes.

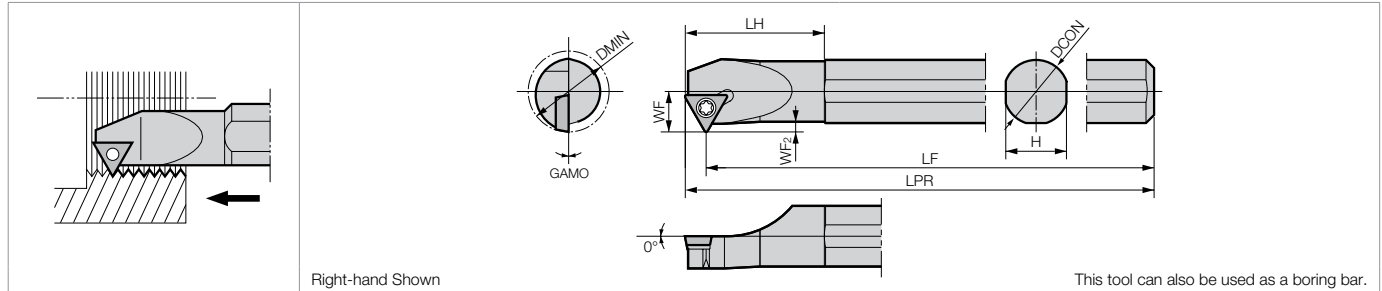
Swiss IQ Bar is sold in 5 piece boxes.

INTERNAL THREADING TOOLHOLDERS [TPGB INSERTS]



S...STWP




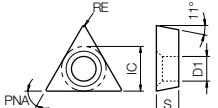
S...STWP-E Excellent Bar



Toolholder Dimensions

Part Number	Stock		Unit	Min. Bore Dia.	Dimensions							Available Pitch (TPI / mm)	Spare Parts		
	R	L			DMIN	DCON	H	LPR	LH	WF	WF ₂		GAMO		
S06M -STWP $\frac{R}{L}$ -2	●		inch	0.476	0.375	0.340	6.00	0.910	0.238	0.050	0.050	14-32 TPI	SB-3STR	FT-10	
S12R -STWP $\frac{R}{L}$ -2	●			0.970	0.750	0.720	8.00	1.600	0.485	0.110	0.110	8-32 TPI			
S10M -STWPR11-12	●		mm	12	10	9.2	150	23	6	1.0	1.0	1.5 and under	SB-3STR	FT-10	
S12M -STWPR11-16	●			16	12	11	150	30	8	1.5	1.5	2.0 and under			
S16Q -STWPR11-20	●			20	16	15	180	35	10	2.0	2.0	3.0 and under	SB-3TR		
S20R -STWPR11-25	●			25	20	19	200	40	12.5	2.5	2.5	3.5 and under			
S10M -STWP $\frac{R}{L}$ 11-12E	●	●		12	10	9.2	150	23	6	1.0	1.0	1.5 and under	SB-3STR	FT-10	
S12M -STWP $\frac{R}{L}$ 11-16E	●	●		16	12	11	150	30	8	1.5	1.5	2.0 and under			
S16R -STWP $\frac{R}{L}$ 11-20E	●	●		20	16	15	200	35	10	2.0	2.0	3.0 and under	SB-3TR		
S20X -STWP $\frac{R}{L}$ 11-25E	●	●		25	20	19	220	40	12.5	2.5	2.5	3.5 and under			

Applicable Inserts

Applicable Inserts				(in)	P	Carbon Steel / Alloy Steel												
Part Number		IC	S	D1	M	Stainless Steel												
TPGB215...		1/4	3/32	0.138	K	Cast Iron												
TPGB22...		1/4	1/8	0.130	N	Non-ferrous Metals												
Shape Right-handed Insert Shown					Part Number		Applicable Thread	Pitch		Dimensions (in)	Angle (°)	Cermet		PVD	Carbide	Applicable Toolholders		Ref. Page for D.O.C. & Number of Passes
								mm	TPI	RE	PNA	TN620	TN60	PV720	KW10			
Partial Profile					TPGB	21501	M UN	0.75~1.5 -	28~16	0.002	60°		●		●	S06M-STWP%L-2		J47
						21502	M UN	1.5 -	16	0.004			●		●	...STWP%L 11-12(E)		
						2202	M UN	1.5~3.5 -	16~8	0.004			●			...STWP%L-2 ...STWP%L 11-16(E)		
						2205	M UN	3.0~3.5 -	8	0.20		●	●	●	●	...STWP%L 11-20(E) ...STWP%L 11-25(E)		

Recommended Cutting Conditions J38

Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	

Inserts are sold in 10 piece boxes.

RECOMMENDED CUTTING CONDITIONS

KTN / KTNS / SIN / CIN

Workpiece Material	Recommended Insert Grade (Vc sfm)					
	Cermet	MEGACOAT	MEGACOAT NANO		PVD Coated Carbide	Carbide
	TC60	PR1215	PR1515	PR1535	PR1115	GW15
Carbon Steel	☆ 330-490	★ 330-490	-	-	☆ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	-	-	0.0118" or less	-
Alloy Steel	☆ 330-490	★ 330-490	-	-	☆ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	-	-	0.0118" or less	-
Stainless Steel	☆ 200-260	-	★ 200-330	☆ 130-260	☆ 200-260	-
Initial D.O.C. (Radial)	0.0098" or less	-	0.0098" or less	0.0098" or less	0.0098" or less	-
Cast Iron	-	-	-	-	-	★ 330
Initial D.O.C. (Radial)	-	-	-	-	-	0.0118" or less
Aluminum	-	-	-	-	-	★ 490-1310
Initial D.O.C. (Radial)	-	-	-	-	-	0.0118" or less
Brass	-	-	-	-	-	★ 490-980
Initial D.O.C. (Radial)	-	-	-	-	-	0.0118" or less

• For 06IR / 08IR inserts, we recommend 40% lower sfm.

KTT

Workpiece Material	Recommended Insert Grade (Vc sfm)			
	Cermet	PVD Coated Carbide	Carbide	
	TC60	PR930	PR1115	KW10
Carbon Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	0.0118" or less	-
Alloy Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	0.0118" or less	-
Stainless Steel	☆ 200-260	☆ 200-260	★ 200-260	-
Initial D.O.C. (Radial)	0.0098" or less	0.0098" or less	0.0098" or less	-
Cast Iron	-	-	-	★ 330
Initial D.O.C. (Radial)	-	-	-	0.0118" or less
Aluminum	-	-	-	★ 490-1310
Initial D.O.C. (Radial)	-	-	-	0.0118" or less
Brass	-	-	-	★ 490-980
Initial D.O.C. (Radial)	-	-	-	0.0118" or less

S...STWP (-E)

Workpiece Material	Recommended Insert Grade (Vc sfm)			
	Cermet	PVD Coated Carbide	Carbide	
	TN6020	TN60	PV7020	KW10
Carbon Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0098" or less	0.0098" or less	0.0098" or less	-
Alloy Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0098" or less	0.0098" or less	0.0098" or less	-
Stainless Steel	-	-	-	-
Initial D.O.C. (Radial)	-	-	-	-
Cast Iron	-	-	-	★ 330
Initial D.O.C. (Radial)	-	-	-	0.0098" or less
Aluminum	-	-	-	★ 490-1310
Initial D.O.C. (Radial)	-	-	-	0.0098" or less
Brass	-	-	-	★ 490-980
Initial D.O.C. (Radial)	-	-	-	0.0098" or less

KTTX / S-KTTX

Workpiece Material	Recommended Insert Grade (Vc sfm)			
	Cermet	PVD Coated Carbide	Carbide	
	TC60	PR930	PR1115	GW15
Carbon Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	0.0118" or less	-
Alloy Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	0.0118" or less	-
Stainless Steel	☆ 200-260	☆ 200-260	★ 200-260	-
Initial D.O.C. (Radial)	0.0098" or less	0.0098" or less	0.0098" or less	-
Cast Iron	-	-	-	★ 330
Initial D.O.C. (Radial)	-	-	-	0.0118" or less
Aluminum	-	-	-	★ 490-1310
Initial D.O.C. (Radial)	-	-	-	0.0118" or less
Brass	-	-	-	★ 490-980
Initial D.O.C. (Radial)	-	-	-	0.0118" or less

KITG

Workpiece Material	Recommended Insert Grade (Vc sfm)			
	Cermet	PVD Coated Carbide	Carbide	
	TC60	PR930	PR1115	GW15
Carbon Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	0.0118" or less	-
Alloy Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	0.0118" or less	-
Stainless Steel	☆ 200-260	☆ 200-260	★ 200-260	-
Initial D.O.C. (Radial)	0.0098" or less	0.0098" or less	0.0098" or less	-
Cast Iron	-	-	-	★ 330
Initial D.O.C. (Radial)	-	-	-	0.0118" or less
Aluminum	-	-	-	★ 490-1310
Initial D.O.C. (Radial)	-	-	-	0.0118" or less
Brass	-	-	-	★ 490-980
Initial D.O.C. (Radial)	-	-	-	0.0118" or less

KKC / A-KKC (Cera-Notch)

Workpiece Material	Recommended Insert Grade (Vc sfm)			Initial D.O.C. (Radial)
	Cermet	PVD Coated Carbide	MEGACOAT	
	TC60	PR660	PR1215	
Carbon Steel	☆ 300-650	☆ 300-500	★ 300-550	0.012" Max
Alloy Steel	☆ 300-600	☆ 300-450	★ 300-500	0.012" Max
Stainless Steel	☆ 200-300	☆ 150-250	★ 200-300	0.010" Max
Cast Iron	☆ 150-350	-	★ 150-350	0.012" Max
Heat-Resistant Alloy	-	☆ 25-100	★ 25-150	0.010" Max

★ : 1st Recommendation ☆ : 2nd Recommendation

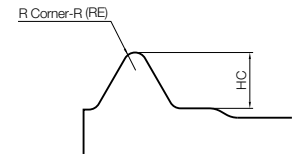
- Coolant is recommended.
- When using cermet inserts if edge chipping occurs lightly hone cutting edge with diamond file.
- For stainless steel threading, please set smaller initial D.O.C. and two or three more passes than threading for carbon steel.

★ : 1st Recommendation ☆ : 2nd Recommendation

DEPTH OF CUT AND NUMBER OF PASSES

◆ Usage caution for Full Profile insert.

- 1) Max. D.O.C. is based on the value of $(HC+0.0020)-(HC+0.0031)$.
- 2) Final D.O.C. for Finishing should be 0.0008"-0.0020".
- 3) To improve insert life, pre chamfer to thread minor diameter.
- 4) Coolant is recommended.



(D.O.C. shows the value of radial D.O.C.)

11 / 16 / 22 (Full Profile)

Thread Type	Pitch mm & TPI	Part Number	HC (mm)	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass	
Metric (mm)	External Thread	1.00mm	16ER 100ISO-TF/TQ	0.64	0.72	5	0.23	0.19	0.15	0.10	0.05														
		1.25mm	125ISO-TF/TQ	0.80	0.88	6	0.26	0.21	0.16	0.12	0.08	0.05													
		1.50mm	150ISO-TF/TQ	0.95	1.03	6	0.26	0.24	0.21	0.16	0.11	0.05													
		1.75mm	175ISO-TF/TQ	1.11	1.19	8	0.26	0.22	0.19	0.16	0.13	0.10	0.08	0.05											
		2.00mm	200ISO-TF/TQ	1.27	1.35	10	0.26	0.21	0.18	0.16	0.14	0.12	0.10	0.08	0.05	0.05									
		2.50mm	250ISO-TF/TQ	1.57	1.65	12	0.26	0.23	0.21	0.18	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.05							
		3.00mm	300ISO-TF/TQ	1.87	1.95	14	0.26	0.24	0.22	0.20	0.18	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.05	0.02					
		0.50mm	16E% 050ISO	0.33	0.38	4	0.14	0.12	0.08	0.04															
		0.75mm	075ISO	0.48	0.53	5	0.17	0.14	0.10	0.08	0.04														
		1.00mm	100ISO	0.64	0.72	5	0.23	0.19	0.15	0.10	0.05														
		1.25mm	125ISO	0.80	0.88	6	0.26	0.21	0.16	0.12	0.08	0.05													
		1.50mm	150ISO	0.95	1.03	6	0.26	0.24	0.21	0.16	0.11	0.05													
		2.00mm	200ISO	1.27	1.35	10	0.26	0.21	0.18	0.16	0.14	0.12	0.10	0.08	0.05	0.05									
		2.50mm	250ISO	1.57	1.65	12	0.26	0.23	0.21	0.18	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.05							
		3.00mm	22ER 300ISO	1.87	1.95	14	0.26	0.24	0.22	0.20	0.18	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.05	0.02					
		3.50mm	350ISO	2.18	2.26	15	0.28	0.25	0.22	0.20	0.20	0.18	0.16	0.15	0.15	0.12	0.10	0.10	0.08	0.05	0.02				
		4.00mm	400ISO	2.48	2.56	17	0.28	0.25	0.24	0.22	0.20	0.18	0.16	0.15	0.15	0.14	0.12	0.12	0.10	0.10	0.08	0.05	0.02		
		4.50mm	450ISO	2.79	2.87	18	0.30	0.28	0.26	0.24	0.22	0.20	0.18	0.16	0.16	0.16	0.14	0.14	0.13	0.12	0.10	0.10	0.07	0.05	0.02
		5.00mm	500ISO	3.10	3.18	19	0.30	0.28	0.27	0.26	0.23	0.20	0.18	0.18	0.17	0.16	0.16	0.15	0.15	0.13	0.12	0.10	0.07	0.05	0.02
		Internal Thread	1.00mm	111R 100ISO-TF/TQ	0.60	0.68	5	0.20	0.18	0.15	0.11	0.04													
			1.25mm	125ISO-TF/TQ	0.74	0.82	7	0.20	0.18	0.14	0.12	0.08	0.06	0.04											
			1.50mm	150ISO-TF/TQ	0.88	0.96	8	0.24	0.18	0.14	0.10	0.10	0.08	0.07	0.05										
			1.75mm	175ISO-TF/TQ	1.02	1.10	9	0.24	0.18	0.16	0.14	0.10	0.10	0.08	0.05	0.05									
			0.50mm	111% 050ISO	0.31	0.36	4	0.14	0.10	0.08	0.04														
	0.75mm		075ISO	0.45	0.50	5	0.15	0.14	0.10	0.07	0.04														
	1.00mm		100ISO	0.60	0.68	5	0.20	0.18	0.15	0.11	0.04														
	1.25mm		125ISO	0.74	0.82	7	0.20	0.18	0.14	0.12	0.08	0.06	0.04												
	1.50mm		150ISO	0.88	0.96	8	0.24	0.18	0.14	0.10	0.10	0.08	0.07	0.05											
	1.75mm		175ISO	1.02	1.10	9	0.24	0.18	0.16	0.14	0.10	0.10	0.08	0.05	0.05										
	2.00mm		200ISO	1.18	1.26	10	0.24	0.20	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.05	0.05								
	1.00mm		161R 100ISO-TF/TQ	0.60	0.68	5	0.20	0.18	0.15	0.11	0.04														
	1.25mm		125ISO-TF/TQ	0.74	0.82	7	0.20	0.18	0.14	0.12	0.08	0.06	0.04												
	1.50mm		150ISO-TF/TQ	0.88	0.96	8	0.22	0.18	0.14	0.12	0.10	0.08	0.07	0.05											
	1.75mm		175ISO-TF/TQ	1.02	1.10	9	0.22	0.18	0.16	0.14	0.12	0.10	0.08	0.05	0.05										
	2.00mm		200ISO-TF/TQ	1.18	1.26	10	0.24	0.20	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.05									
	2.50mm		250ISO-TF/TQ	1.46	1.54	12	0.26	0.22	0.18	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.05	0.05							
	3.00mm		300ISO-TF/TQ	1.76	1.84	14	0.26	0.24	0.21	0.18	0.16	0.15	0.13	0.12	0.10	0.10	0.07	0.05	0.05	0.02					
	1.00mm		161% 100ISO	0.60	0.68	5	0.20	0.18	0.15	0.11	0.04														
	1.25mm		125ISO	0.74	0.82	7	0.20	0.18	0.14	0.12	0.08	0.06	0.04												
	1.50mm		150ISO	0.88	0.96	8	0.22	0.18	0.14	0.12	0.10	0.08	0.07	0.05											
	2.00mm		200ISO	1.18	1.26	10	0.24	0.20	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.05									
	2.50mm		250ISO	1.46	1.54	12	0.26	0.22	0.18	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.05	0.05							
	3.00mm		300ISO	1.76	1.84	14	0.26	0.24	0.21	0.18	0.16	0.15	0.13	0.12	0.10	0.10	0.07	0.05	0.05	0.02					
	3.00mm	221R 300ISO	1.76	1.84	14	0.26	0.24	0.21	0.18	0.16	0.15	0.13	0.12	0.10	0.10	0.07	0.05	0.05	0.02						
	3.50mm	350ISO	2.05	2.13	15	0.26	0.24	0.22	0.20	0.17	0.17	0.14	0.14	0.12	0.12	0.10	0.10	0.08	0.05	0.02					
	4.00mm	400ISO	2.34	2.42	17	0.26	0.24	0.22	0.20	0.18	0.18	0.16	0.15	0.14	0.13	0.12	0.12	0.10	0.10	0.05	0.05	0.02			
	4.50mm	450ISO	2.63	2.71	18	0.26	0.25	0.24	0.22	0.22	0.20	0.18	0.17	0.15	0.13	0.13	0.12	0.12	0.10	0.10	0.05	0.05	0.02		
	5.00mm	500ISO	2.92	3.00	19	0.28	0.26	0.24	0.22	0.20	0.20	0.18	0.18	0.16	0.16	0.15	0.14	0.13	0.12	0.11	0.10	0.10	0.05	0.02	
Unified (in)	External Thread	24 TPI	16ER 24UN-TF/TQ	0.0264	0.0295	5	0.009	0.008	0.006	0.004	0.002														
		20 TPI	20UN-TF/TQ	0.0315	0.0346	6	0.009	0.008	0.006	0.005	0.004	0.002													
		18 TPI	18UN-TF/TQ	0.0350	0.0382	6	0.010	0.009	0.007	0.006	0.004	0.002													
		16 TPI	16UN-TF/TQ	0.0398	0.0429	7	0.010	0.009	0.007	0.006	0.005	0.004	0.002												
		14 TPI	14UN-TF/TQ	0.0453	0.0484	8	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.002											
		13 TPI	13UN-TF/TQ	0.0488	0.0520	9	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.003	0.002										
		12 TPI	12UN-TF/TQ	0.0528	0.0559	11	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002								
		10 TPI	10UN-TF/TQ	0.0626	0.0657	12	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002						
		8 TPI	08UN-TF/TQ	0.0780	0.0811	14	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002	0.002				
		24 TPI	16ER 24UN	0.0264	0.0295	5	0.009	0.008	0.006	0.004	0.002														
		20 TPI	20UN	0.0315	0.0346	6	0.009	0.008	0.006	0.005	0.004	0.002													
		18 TPI	18UN	0.0350	0.0382	6	0.010	0.009	0.007	0.006	0.004	0.002													
	16 TPI	16UN	0.0398	0.0429	7	0.010	0.009	0.007	0.006	0.005	0.004	0.002													
	14 TPI	14UN	0.0453	0.0484	8	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.002												
	12 TPI	12UN	0.0528	0.0559	11	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002									
	8 TPI	22ER 08UN	0.0780	0.0811	15	0.012	0.010	0.009	0.008	0.006	0.006	0.006	0.005	0.004											

DEPTH OF CUT AND NUMBER OF PASSES

11 / 16 (Full Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch TPI	Part Number	HC (mm)	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass
Parallel Pipe	External Thread	19 TPI	16ER 19W-TF/TQ	0.0350	0.0382	6	0.011	0.009	0.007	0.006	0.004	0.002										
		14 TPI	14W-TF/TQ	0.0469	0.0500	9	0.011	0.009	0.007	0.006	0.004	0.004	0.004	0.003	0.002							
		11 TPI	11W-TF/TQ	0.0591	0.0622	12	0.011	0.009	0.007	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
	Internal Thread	19 TPI	16IR 19W-TF/TQ	0.0346	0.0378	6	0.010	0.008	0.007	0.006	0.004	0.002										
		14 TPI	14W-TF/TQ	0.0469	0.0500	9	0.011	0.009	0.007	0.006	0.004	0.004	0.004	0.003	0.002							
		11 TPI	11W-TF/TQ	0.0591	0.0622	12	0.011	0.009	0.007	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
Whitworth	External Thread	16 TPI	16ER 16W-TF/TQ	0.0413	0.0445	8	0.010	0.008	0.007	0.006	0.005	0.003	0.003	0.002								
		14 TPI	14W-TF/TQ	0.0469	0.0500	9	0.011	0.009	0.007	0.006	0.004	0.004	0.004	0.003	0.002							
		11 TPI	11W-TF/TQ	0.0591	0.0622	12	0.011	0.009	0.007	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
	Internal Thread	16 TPI	16IR 16W-TF/TQ	0.0413	0.0445	8	0.010	0.008	0.007	0.006	0.005	0.003	0.003	0.002								
		14 TPI	14W-TF/TQ	0.0469	0.0500	9	0.011	0.009	0.007	0.006	0.004	0.004	0.004	0.003	0.002							
		11 TPI	11W-TF/TQ	0.0591	0.0622	12	0.011	0.009	0.007	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
Tapered Pipe	External Thread	28 TPI	16ER 28BSPT-TF/TQ	0.0228	0.0248	5	0.008	0.006	0.005	0.004	0.002											
		19 TPI	19BSPT-TF/TQ	0.0339	0.0370	6	0.010	0.008	0.007	0.006	0.004	0.002										
		14 TPI	14BSPT-TF/TQ	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		11 TPI	11BSPT-TF/TQ	0.0583	0.0614	12	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002				
		28 TPI	16ER 28BSPT	0.0228	0.0248	5	0.008	0.006	0.005	0.004	0.002											
		19 TPI	19BSPT	0.0339	0.0370	6	0.010	0.008	0.007	0.006	0.004	0.002										
	Internal Thread	14 TPI	14BSPT	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		11 TPI	11BSPT	0.0583	0.0614	12	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002				
		28 TPI	11IR 28BSPT-TF/TQ	0.0228	0.0248	5	0.008	0.006	0.005	0.004	0.002											
		19 TPI	19BSPT-TF/TQ	0.0339	0.0370	7	0.009	0.008	0.007	0.006	0.004	0.002	0.002									
		14 TPI	14BSPT-TF/TQ	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		28 TPI	11IR 28BSPT	0.0228	0.0248	5	0.008	0.006	0.005	0.004	0.002											
		19 TPI	19BSPT	0.0339	0.0370	7	0.009	0.008	0.007	0.006	0.004	0.002	0.002									
		14 TPI	14BSPT	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		14 TPI	16IR 14BSPT-TF/TQ	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		11 TPI	11BSPT-TF/TQ	0.0583	0.0614	12	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002				
		14 TPI	16IR 14BSPT	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		11 TPI	11BSPT	0.0583	0.0614	12	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002				
American National Tapered Pipe	External Thread	18 TPI	16ER 18NPT	0.0449	0.0480	13	0.008	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.001				
		14 TPI	14NPT	0.0575	0.0606	15	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.002	0.002	0.001			
		11.5 TPI	11.5NPT	0.0697	0.0728	16	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.002	0.001		
	Internal Thread	18 TPI	16IR 18NPT	0.0449	0.0480	13	0.008	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.001				
		14 TPI	14NPT	0.0575	0.0606	15	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.002	0.002	0.001			
		11.5 TPI	11.5NPT	0.0697	0.0728	16	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002	0.001		0.001

60° / 55° (Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch mm	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	
Metric	External Thread	0.50mm	16ER A60-TF/TQ	0.06	0.33	5	0.10	0.08	0.07	0.05	0.03											
			AG60-TF/TQ	0.06	0.33	5	0.10	0.08	0.07	0.05	0.03											
		0.75mm	16ER A60-TF/TQ	0.06	0.51	6	0.14	0.11	0.09	0.07	0.06	0.04										
			AG60-TF/TQ	0.06	0.51	6	0.14	0.11	0.09	0.07	0.06	0.04										
		1.00mm	16ER A60-TF/TQ	0.06	0.70	7	0.18	0.13	0.12	0.09	0.08	0.06	0.04									
			AG60-TF/TQ	0.06	0.70	7	0.18	0.13	0.12	0.09	0.08	0.06	0.04									
		1.25mm	16ER A60-TF/TQ	0.06	0.89	8	0.18	0.15	0.14	0.12	0.10	0.08	0.07	0.05								
			AG60-TF/TQ	0.06	0.89	8	0.18	0.15	0.14	0.12	0.10	0.08	0.07	0.05								
		1.50mm	16ER A60-TF/TQ	0.06	1.08	9	0.21	0.17	0.16	0.14	0.11	0.09	0.08	0.07	0.05							
			AG60-TF/TQ	0.06	1.08	9	0.21	0.17	0.16	0.14	0.11	0.09	0.08	0.07	0.05							
		1.75mm	16ER G60-TF/TQ	0.22	1.11	8	0.24	0.20	0.18	0.16	0.13	0.10	0.06	0.04								
			AG60-TF/TQ	0.06	1.27	11	0.22	0.20	0.18	0.13	0.11	0.09	0.09	0.08	0.07	0.06	0.04					
		2.00mm	16ER G60-TF/TQ	0.22	1.30	10	0.24	0.20	0.18	0.16	0.14	0.12	0.09	0.07	0.06	0.04						
			AG60-TF/TQ	0.06	1.46	11	0.25	0.22	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.06	0.04					
		2.50mm	16ER G60-TF/TQ	0.22	1.67	12	0.25	0.22	0.20	0.18	0.16	0.14	0.12	0.12	0.10	0.08	0.06	0.04				
			AG60-TF/TQ	0.06	1.84	13	0.25	0.22	0.20	0.19	0.17	0.16	0.14	0.11	0.10	0.09	0.09	0.07	0.05			
		3.00mm	16ER G60-TF/TQ	0.22	2.05	14	0.25	0.23	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.11	0.10	0.09	0.07	0.05		
			AG60-TF/TQ	0.06	2.22	15	0.27	0.25	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.12	0.11	0.10	0.09	0.08	0.05	
		0.50mm	16ER A60	0.06	0.33	5	0.10	0.08	0.07	0.05	0.03											
			AG60	0.06	0.33	5	0.10	0.08	0.07	0.05	0.03											
		0.75mm	16ER A60	0.06	0.51	6	0.14	0.11	0.09	0.07	0.06	0.04										
			AG60	0.06	0.51	6	0.14	0.11	0.09	0.07	0.06	0.04										
		1.00mm	16ER A60	0.06	0.70	7	0.18	0.13	0.12	0.09	0.08	0.06	0.04									
			AG60	0.06	0.70	7	0.18	0.13	0.12	0.09	0.08	0.06	0.04									
		1.25mm	16ER A60	0.06	0.89	8	0.18	0.15	0.14	0.12	0.10	0.08	0.07	0.05								
			AG60	0.06	0.89	8	0.18	0.15	0.14	0.12	0.10	0.08	0.07	0.05								
		1.50mm	16ER A60	0.06	1.08	9	0.21	0.17	0.16	0.14	0.11	0.09	0.08	0.07	0.05							
AG60	0.06		1.08	9	0.21	0.17	0.16	0.14	0.11	0.09	0.08	0.07	0.05									
1.75mm	16ER G60	0.22	1.11	8	0.24	0.20	0.18	0.16	0.13	0.10	0.06	0.04										
	AG60	0.06	1.27	11	0.22	0.20	0.18	0.13	0.11	0.09	0.09	0.08	0.07	0.06	0.04							
2.00mm	16ER G60	0.22	1.30	10	0.24	0.20	0.18	0.16	0.14	0.12	0.09	0.07	0.06	0.04								
	AG60	0.06	1.46	11	0.25	0.22	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.06	0.04							
2.50mm	16ER G60	0.22	1.67	12	0.25	0.22	0.20	0.18	0.16	0.14	0.12	0.12	0.10	0.08	0.06	0.04						
	AG60	0.06	1.84	13	0.25	0.22	0.20	0.19	0.17	0.16	0.14	0.11	0.10	0.09	0.09	0.07	0.05					
3.00mm	16ER G60	0.22	2.05	14	0.25	0.23	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.11	0.10	0.09	0.07	0.05				
	AG60	0.06	2.22	15	0.27	0.25	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.12	0.11	0.10	0.09	0.08	0.05			

(D.O.C. shows the value of radial D.O.C.)

J41

DEPTH OF CUT AND NUMBER OF PASSES

60° / 55° (Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass		
Unified (inch)	Internal Thread	18 TPI	081R 60007	0.0028	0.0335	17	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001				
		16 TPI	081R 60007	0.0028	0.0378	18	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001		
		48 TPI			0.0126	5	0.003	0.003	0.003	0.003	0.002	0.002															
		24 TPI	111R A60	0.0008	0.0264	7	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002													
		20 TPI			0.0315	8	0.006	0.005	0.005	0.005	0.004	0.003	0.002	0.002													
		18 TPI			0.0354	9	0.006	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002												
		16 TPI			0.0398	10	0.006	0.006	0.005	0.005	0.005	0.004	0.003	0.003	0.002	0.002											
		48 TPI			161R A60 AG60	0.0008 0.0008	0.0126 0.0126	5 5	0.003 0.003	0.003 0.003	0.003 0.003	0.002 0.002	0.002 0.002														
		24 TPI	161R A60 AG60	0.0008 0.0008	0.0264 0.0264	7 7	0.006 0.006	0.005 0.005	0.005 0.005	0.004 0.004	0.003 0.003	0.002 0.002	0.002 0.002														
		20 TPI	161R A60 AG60	0.0008 0.0008	0.0315 0.0315	8 8	0.006 0.006	0.005 0.005	0.005 0.005	0.005 0.005	0.004 0.004	0.003 0.003	0.002 0.002	0.002 0.002													
		18 TPI	161R A60 AG60	0.0008 0.0008	0.0354 0.0354	9 9	0.006 0.006	0.006 0.006	0.005 0.005	0.005 0.005	0.004 0.004	0.003 0.003	0.003 0.003	0.002 0.002	0.002 0.002												
		16 TPI	161R A60 AG60	0.0008 0.0008	0.0398 0.0398	10 10	0.006 0.006	0.006 0.006	0.005 0.005	0.005 0.005	0.004 0.004	0.003 0.003	0.003 0.003	0.002 0.002	0.002 0.002	0.002											
		14 TPI	161R G60 AG60	0.0043 0.0008	0.0421 0.0457	9 11	0.008 0.006	0.007 0.006	0.006 0.006	0.006 0.005	0.005 0.005	0.004 0.004	0.003 0.004	0.002 0.004	0.002 0.003	0.002	0.002	0.002	0.002								
		13 TPI	161R G60 AG60	0.0043 0.0008	0.0457 0.0492	10 12	0.008 0.007	0.007 0.006	0.006 0.006	0.006 0.005	0.005 0.005	0.004 0.004	0.003 0.004	0.003 0.004	0.002 0.003	0.002	0.002	0.002	0.002	0.002							
		12 TPI	161R G60 AG60	0.0043 0.0008	0.0496 0.0531	11 13	0.008 0.008	0.007 0.007	0.006 0.006	0.006 0.005	0.005 0.005	0.004 0.004	0.004 0.003	0.003 0.003	0.002 0.003	0.002	0.002	0.002	0.002	0.002	0.001						
		10 TPI	161R G60 AG60	0.0043 0.0008	0.0606 0.0642	14 16	0.008 0.008	0.007 0.007	0.006 0.006	0.006 0.006	0.006 0.005	0.005 0.005	0.004 0.004	0.004 0.004	0.003 0.003	0.002	0.002	0.002	0.002	0.002	0.001	0.001					
		9 TPI	161R G60 AG60	0.0043 0.0008	0.0677 0.0713	16 17	0.008 0.008	0.007 0.007	0.006 0.006	0.006 0.006	0.006 0.005	0.005 0.005	0.004 0.004	0.004 0.004	0.003 0.003	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001				
		8 TPI	161R G60 AG60	0.0043 0.0008	0.0768 0.0803	17 19	0.009 0.008	0.008 0.007	0.007 0.007	0.006 0.006	0.006 0.006	0.005 0.005	0.004 0.004	0.004 0.004	0.003 0.003	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	
		7 TPI			0.0843	14	0.010	0.009	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002							
		6 TPI	221R N60	0.0087	0.0996	17	0.011	0.010	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	
		5 TPI			0.1213	18	0.012	0.011	0.010	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	
		Parallel Pipe / Tapered Pipe	External Thread	28 TPI	16ER A55-TF/TQ AG55-TF/TQ	0.0024 0.0024	0.0264 0.0264	7 7	0.006 0.006	0.006 0.006	0.004 0.004	0.004 0.004	0.003 0.003	0.002 0.002	0.002 0.002												
				19 TPI	16ER A55-TF/TQ AG55-TF/TQ	0.0024 0.0024	0.0402 0.0402	8 8	0.008 0.008	0.007 0.007	0.006 0.006	0.006 0.005	0.005 0.004	0.003 0.003	0.002 0.002	0.002 0.002											
				14 TPI	16ER G55-TF/TQ AG55-TF/TQ	0.0087 0.0024	0.0472 0.0551	9 11	0.009 0.009	0.008 0.009	0.007 0.008	0.006 0.006	0.005 0.005	0.004 0.004	0.003 0.003	0.002 0.002	0.002 0.002	0.002	0.002	0.002	0.002	0.001					
				11 TPI	16ER G55-TF/TQ AG55-TF/TQ	0.0087 0.0024	0.0630 0.0705	12 13	0.009 0.010	0.009 0.009	0.008 0.008	0.007 0.007	0.006 0.006	0.005 0.005	0.004 0.004	0.003 0.003	0.002 0.002	0.002	0.002	0.002	0.002	0.001					
				28 TPI	16ER A55 AG55	0.0024 0.0024	0.0264 0.0264	7 7	0.006 0.006	0.006 0.006	0.004 0.004	0.004 0.003	0.003 0.003	0.002 0.002	0.002 0.002	0.002 0.002											
				19 TPI	16ER A55 AG55	0.0024 0.0024	0.0402 0.0402	8 8	0.008 0.008	0.007 0.007	0.006 0.006	0.006 0.005	0.005 0.004	0.003 0.003	0.002 0.002	0.002 0.002											
				14 TPI	16ER G55 AG55	0.0087 0.0024	0.0472 0.0551	9 11	0.009 0.009	0.008 0.009	0.007 0.008	0.006 0.006	0.005 0.005	0.004 0.004	0.003 0.003	0.002 0.002	0.002 0.002	0.002	0.002	0.002	0.002	0.001					
				11 TPI	16ER G55 AG55	0.0087 0.0024	0.0630 0.0705	12 13	0.009 0.010	0.009 0.009	0.008 0.008	0.007 0.007	0.006 0.006	0.005 0.005	0.004 0.004	0.003 0.003	0.002 0.002	0.002	0.002	0.002	0.002	0.001					
				28 TPI	061R 5501	0.0039	0.0240	12	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001							
				19 TPI	081R 5501	0.0039	0.0374	18	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001					
				28 TPI	111R A55	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
19 TPI	111R A55			0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002													
28 TPI	161R A55 AG55			0.0024 0.0024	0.0264 0.0264	7 7	0.006 0.006	0.006 0.006	0.004 0.004	0.004 0.003	0.003 0.002	0.002 0.002	0.002 0.002														
19 TPI	161R A55 AG55			0.0024 0.0024	0.0402 0.0402	8 8	0.008 0.008	0.007 0.007	0.006 0.006	0.006 0.005	0.005 0.004	0.003 0.003	0.002 0.002	0.002 0.002													
14 TPI	161R G55 AG55			0.0087 0.0024	0.0472 0.0551	9 11	0.009 0.009	0.008 0.009	0.007 0.008	0.006 0.006	0.005 0.005	0.004 0.004	0.003 0.003	0.002 0.002	0.002 0.002	0.002	0.002	0.002	0.002	0.001							
11 TPI	161R G55 AG55			0.0087 0.0024	0.0630 0.0705	12 13	0.009 0.010	0.009 0.009	0.008 0.008	0.007 0.007	0.006 0.006	0.005 0.005	0.004 0.004	0.003 0.003	0.002 0.002	0.002	0.002	0.002	0.002	0.001							
Whitworth	External Thread		48 TPI	16ER A55-TF/TQ AG55-TF/TQ	0.0024 0.0024	0.0146 0.0146	5 5	0.005 0.005	0.004 0.004	0.003 0.003	0.002 0.002	0.002 0.002															
			24 TPI	16ER A55-TF/TQ AG55-TF/TQ	0.0024 0.0024	0.0311 0.0311	7 7	0.007 0.007	0.006 0.006	0.006 0.004	0.004 0.003	0.003 0.003	0.002 0.002	0.002 0.002													
			20 TPI	16ER A55-TF/TQ AG55-TF/TQ	0.0024 0.0024	0.0378 0.0378	8 8	0.008 0.008	0.007 0.007	0.006 0.005	0.005 0.004	0.003 0.003	0.002 0.002	0.002 0.002													
			18 TPI	16ER A55-TF/TQ AG55-TF/TQ	0.0024 0.0024	0.0421 0.0421	9 9	0.008 0.008	0.007 0.007	0.006 0.006	0.004 0.004	0.003 0.003	0.002 0.002	0.002 0.002	0.002												
			16 TPI	16ER A55-TF/TQ AG55-TF/TQ	0.0024 0.0024	0.0480 0.0480	11 11	0.008 0.008	0.007 0.007	0.006 0.005	0.004 0.004	0.003 0.003	0.002 0.002	0.002 0.002	0.002	0.002			</								

DEPTH OF CUT AND NUMBER OF PASSES

60° / 55° (Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type	Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass
Whitworth	External Thread	24 TPI	16ER A55	0.0024	0.0311	7	0.007	0.006	0.006	0.004	0.003	0.003	0.002											
			AG55	0.0024	0.0311	7	0.007	0.006	0.006	0.004	0.003	0.003	0.002											
		20 TPI	16ER A55	0.0024	0.0378	8	0.008	0.007	0.006	0.005	0.004	0.003	0.003	0.002										
			AG55	0.0024	0.0378	8	0.008	0.007	0.006	0.005	0.004	0.003	0.003	0.002										
		18 TPI	16ER A55	0.0024	0.0421	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.003	0.002									
			AG55	0.0024	0.0421	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.003	0.002									
		16 TPI	16ER A55	0.0024	0.0480	11	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002							
			AG55	0.0024	0.0480	11	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002							
		14 TPI	16ER G55	0.0087	0.0472	9	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002									
			AG55	0.0024	0.0551	11	0.009	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002							
		12 TPI	16ER G55	0.0087	0.0567	10	0.009	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002								
			AG55	0.0024	0.0646	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002						
		11 TPI	16ER G55	0.0087	0.0630	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002	0.002					
			AG55	0.0024	0.0705	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001					
		10 TPI	16ER G55	0.0087	0.0701	12	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002						
			AG55	0.0024	0.0780	14	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002					
		9 TPI	16ER G55	0.0087	0.0791	14	0.009	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
			AG55	0.0024	0.0866	15	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002				
		8 TPI	16ER G55	0.0087	0.0902	15	0.011	0.010	0.009	0.009	0.008	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.002	0.002			
			AG55	0.0024	0.0980	16	0.012	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.002			
		7 TPI	22ER N55	0.0185	0.0957	16	0.012	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.004	0.003					
		6 TPI			0.1150	18	0.012	0.011	0.010	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	
		5 TPI			0.1417	21	0.012	0.011	0.011	0.010	0.010	0.009	0.009	0.008	0.007	0.007	0.007	0.006	0.006	0.005	0.004	0.004	0.004	0.003
	Internal Thread	28 TPI	06IR 5501	0.0039	0.0256	13	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001						
			08IR 5501		0.0319	15	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001					
		24 TPI	11IR A55	0.0024	0.0283	7	0.006	0.006	0.005	0.004	0.003	0.003	0.002											
					0.0343	8	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002										
					0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002										
		20 TPI	16IR A55	0.0024	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002									
					0.0433	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002									
		18 TPI	16IR A55	0.0024	0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002										
			AG55	0.0024	0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002										
		16 TPI	16IR A55	0.0024	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002									
			AG55	0.0024	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002									
		14 TPI	16IR G55	0.0087	0.0417	8	0.008	0.008	0.007	0.006	0.005	0.004	0.003	0.002										
			AG55	0.0024	0.0500	11	0.008	0.007	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002							
		12 TPI	16IR G55	0.0087	0.0504	9	0.009	0.008	0.008	0.007	0.006	0.005	0.004	0.003	0.002									
			AG55	0.0024	0.0583	11	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.002	0.002	0.002							
		11 TPI	16IR G55	0.0087	0.0559	10	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.002								
			AG55	0.0024	0.0638	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002	0.002						
		10 TPI	16IR G55	0.0087	0.0626	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002						
			AG55	0.0024	0.0705	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001					
		9 TPI	16IR G55	0.0087	0.0705	12	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002						
			AG55	0.0024	0.0783	14	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
		8 TPI	16IR G55	0.0087	0.0807	14	0.009	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
			AG55	0.0024	0.0886	15	0.011	0.01	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002			
		7 TPI	22IR N55	0.0185	0.0823	14	0.009	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.002			
					0.0996	16	0.012	0.011	0.010	0.009	0.008	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.002	0.002			
		6 TPI			0.1236	19	0.012	0.011	0.011	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002
30° Trapezoidal	External Thread	2.00mm	16ER 200TR	-	1.25	10	0.22	0.20	0.17	0.16	0.13	0.12	0.10	0.07	0.05	0.03								
		3.00mm	16ER 300TR	-	1.75	14	0.24	0.20	0.18	0.16	0.15	0.14	0.12	0.11	0.10	0.10	0.07	0.05	0.03					
		4.00mm	22ER 400TR	-	2.24	15	0.26	0.23	0.22	0.20	0.20	0.18	0.16	0.15	0.14	0.13	0.12	0.10	0.07	0.05	0.03			
		5.00mm	22ER 500TR	-	2.73	17	0.28	0.26	0.24	0.22	0.21	0.20	0.19	0.18	0.16	0.15	0.14	0.13	0.12	0.10	0.07	0.05	0.03	
		2.00mm	16IR 200TR	-	1.25	10	0.22	0.20	0.17	0.16	0.13	0.12	0.10	0.07	0.05	0.03								
	Internal Thread	3.00mm	16IR 300TR	-	1.75	14	0.24	0.20	0.18	0.16	0.15	0.14	0.12	0.11	0.10	0.10	0.07	0.05	0.03					
		4.00mm	22IR 400TR	-	2.24	15	0.26	0.23	0.22	0.20	0.20	0.18	0.16	0.15	0.14	0.13	0.12	0.10	0.07	0.05	0.03			
		5.00mm	22IR 500TR	-	2.73	17	0.28	0.26	0.24	0.22	0.21	0.20	0.19	0.18	0.16	0.15	0.14	0.13	0.12	0.10	0.07	0.05	0.03	

Corner-R (R) Selection for Partial Profiling Inserts

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DEPTH OF CUT AND NUMBER OF PASSES

11 / 16 (60° / 55° Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type	Pitch mm & TPI	Part Number	Previous Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass
Metric (60°)	External Thread	1.00mm 16ER 6001	TNN32ER 6001	0.10	0.66	5	0.20	0.18	0.12	0.09	0.05									
		1.25mm 16ER 6001	TNN32ER 6001	0.10	0.85	6	0.23	0.20	0.14	0.12	0.07	0.05								
		1.50mm 16ER 6001	TNN32ER 6001	0.10	1.04	8	0.23	0.21	0.19	0.15	0.11	0.06	0.05	0.04						
		1.75mm 6002	6002	0.20	0.94	7	0.23	0.20	0.18	0.14	0.10	0.05	0.04							
		2.00mm 16ER 6001	TNN32ER 6001	0.10	1.23	9	0.25	0.22	0.20	0.17	0.14	0.09	0.07	0.05	0.04					
		6002	6002	0.20	1.13	8	0.25	0.22	0.20	0.16	0.14	0.07	0.05	0.04						
	Internal Thread	2.50mm 16ER 6001	TNN32ER 6001	0.10	1.42	11	0.25	0.22	0.20	0.16	0.14	0.12	0.10	0.08	0.06	0.05	0.04			
		6002	6002	0.20	1.32	10	0.25	0.22	0.20	0.16	0.14	0.12	0.08	0.07	0.04	0.04				
		2.50mm 16ER 6001	TNN32ER 6001	0.10	1.79	13	0.25	0.22	0.20	0.18	0.16	0.16	0.14	0.12	0.10	0.09	0.08	0.05	0.04	
		6002	6002	0.20	1.69	12	0.25	0.22	0.20	0.18	0.16	0.16	0.12	0.12	0.10	0.08	0.06	0.04		
		0.75mm 11IR 60005	TNN22IR 60005	0.05	0.44	5	0.14	0.12	0.10	0.06	0.02									
		1.00mm 11IR 60005	TNN22IR 60005	0.05	0.60	6	0.18	0.15	0.10	0.08	0.05	0.04								
		1.25mm 11IR 60005	TNN22IR 60005	0.05	0.76	7	0.18	0.15	0.12	0.10	0.10	0.07	0.04							
		1.50mm 11IR 60005	TNN22IR 60005	0.05	0.92	9	0.18	0.16	0.12	0.10	0.10	0.08	0.08	0.06	0.04					
		1.75mm 16IR 6001	TNN32IR 6001	0.10	0.87	8	0.18	0.16	0.12	0.10	0.10	0.08	0.08	0.05						
		2.00mm 16IR 6001	TNN32IR 6001	0.10	1.04	9	0.20	0.18	0.15	0.12	0.12	0.10	0.08	0.05	0.04					
		2.50mm 16IR 6001	TNN32IR 6001	0.10	1.20	11	0.20	0.18	0.15	0.12	0.12	0.10	0.10	0.08	0.06	0.05	0.04			
		60015	60015	0.10	1.52	14	0.20	0.18	0.16	0.14	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.06	0.04	0.02
		60015	60015	0.15	1.47	13	0.20	0.18	0.16	0.15	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.04	0.02	
Parallel Pipe / Tapered Pipe (55°)	External Thread	28 TPI 16ER 5501	TNN32ER 5501	0.0039	0.0240	5	0.008	0.006	0.005	0.003	0.002									
		19 TPI 16ER 5501	TNN32ER 5501	0.0039	0.0374	7	0.009	0.008	0.006	0.006	0.004	0.003	0.002							
		14 TPI 16ER 5501	TNN32ER 5501	0.0039	0.0528	10	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.002				
		5502	5502	0.0079	0.0480	9	0.009	0.008	0.007	0.006	0.004	0.004	0.004	0.003	0.002					
		11 TPI 16ER 5501	TNN32ER 5501	0.0039	0.0681	13	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.002	0.002	0.001	
	Internal Thread	5502	5502	0.0079	0.0638	12	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002	0.001		
		28 TPI 11IR 55005	TNN22IR 55005	0.0020	0.0264	7	0.007	0.006	0.005	0.003	0.002	0.002	0.001							
		16IR 5501	TNN32IR 5501	0.0039	0.0240	6	0.007	0.006	0.005	0.003	0.002	0.001								
		19 TPI 11IR 55005	TNN22IR 55005	0.0020	0.0398	8	0.008	0.007	0.006	0.006	0.005	0.003	0.003	0.002						
		16IR 5501	TNN32IR 5501	0.0039	0.0374	7	0.008	0.007	0.006	0.006	0.005	0.004	0.002							
		14 TPI 11IR 55005	TNN22IR 55005	0.0020	0.0547	11	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002			
		16IR 5501	TNN32IR 5501	0.0039	0.0528	10	0.008	0.007	0.007	0.006	0.006	0.006	0.004	0.004	0.003	0.002				
		5502	5502	0.0079	0.0480	9	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002					
		11 TPI 16IR 5501	TNN32IR 5501	0.0039	0.0681	12	0.010	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002		
		5502	5502	0.0079	0.0638	11	0.010	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.003	0.002			
Whitworth (55°)	External Thread	24 TPI 16ER 5501	TNN32ER 5501	0.0039	0.0287	6	0.009	0.007	0.005	0.004	0.003	0.002								
		20 TPI 16ER 5501	TNN32ER 5501	0.0039	0.0354	6	0.009	0.007	0.007	0.006	0.005	0.002								
		18 TPI 16ER 5501	TNN32ER 5501	0.0039	0.0398	7	0.009	0.008	0.007	0.006	0.004	0.003	0.002							
		16 TPI 16ER 5501	TNN32ER 5501	0.0039	0.0453	9	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002					
		5502	5502	0.0079	0.0409	8	0.009	0.008	0.006	0.006	0.004	0.003	0.003	0.002						
		14 TPI 16ER 5501	TNN32ER 5501	0.0039	0.0528	10	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002				
		5502	5502	0.0079	0.0480	9	0.009	0.008	0.007	0.006	0.004	0.004	0.004	0.003	0.002					
		12 TPI 16ER 5501	TNN32ER 5501	0.0039	0.0622	12	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.003	0.003	0.002		
		5502	5502	0.0079	0.0575	11	0.010	0.008	0.007	0.006	0.006	0.006	0.004	0.003	0.003	0.003	0.002			
		11 TPI 16ER 5501	TNN32ER 5501	0.0039	0.0681	12	0.010	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002		
		5502	5502	0.0079	0.0638	11	0.010	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002			
		10 TPI 16ER 5501	TNN32ER 5501	0.0039	0.0756	14	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.002	0.001
	Internal Thread	5502	5502	0.0079	0.0709	13	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.001	
		9 TPI 16ER 5502	TNN32ER 5502	0.0079	0.0799	14	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.001	0.001
		24 TPI 11IR 55005	TNN22IR 55005	0.0020	0.0280	7	0.007	0.006	0.005	0.004	0.003	0.002	0.001							
		16IR 5501	TNN32IR 5501	0.0039	0.0256	6	0.007	0.006	0.005	0.004	0.003	0.001								
		20 TPI 11IR 55005	TNN22IR 55005	0.0020	0.0343	8	0.007	0.006	0.006	0.005	0.004	0.002	0.002	0.002						
		16IR 5501	TNN32IR 5501	0.0039	0.0319	7	0.007	0.006	0.006	0.005	0.004	0.002	0.002							
		18 TPI 11IR 55005	TNN22IR 55005	0.0020	0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002						
		16IR 5501	TNN32IR 5501	0.0039	0.0358	7	0.008	0.007	0.006	0.006	0.004	0.003	0.002							
		16 TPI 11IR 55005	TNN22IR 55005	0.0020	0.0429	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.003	0.002					
		16IR 5501	TNN32IR 5501	0.0039	0.0409	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002						
		5502	5502	0.0079	0.0362	7	0.008	0.007	0.006	0.006	0.004	0.003	0.002							
		14 TPI 11IR 55005	TNN22IR 55005	0.0020	0.0496	10	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002				
		16IR 5501	TNN32IR 5501	0.0039	0.0472	9	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002					
		5502	5502	0.0079	0.0425	8	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.002						
		12 TPI 16IR 5501	TNN32IR 5501	0.0039	0.0559	10	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002				
		5502	5502	0.0079	0.0512	9	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.003	0.002					
		11 TPI 16IR 5501	TNN32IR 5501	0.0039	0.0614	11	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002			
		5502	5502	0.0079	0.0567	10	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002				

<How to use>

DEPTH OF CUT AND NUMBER OF PASSES

TT (60° / 55° Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	
Metric (60°)	External Thread	0.50mm	TT32% 6000	0.00	0.38	6	0.10	0.10	0.07	0.05	0.04	0.02											
		0.70mm	TT32% 6000	0.00	0.53	7	0.10	0.10	0.10	0.08	0.07	0.06	0.02										
		0.75mm	TT32% 6000	0.00	0.57	8	0.10	0.10	0.10	0.08	0.08	0.05	0.04	0.02									
		0.80mm	TT32% 6000	0.00	0.61	8	0.10	0.10	0.10	0.10	0.08	0.06	0.05	0.02									
		1.00mm	TT32% 6000	0.00	0.76	8	0.15	0.12	0.12	0.11	0.10	0.08	0.06	0.02									
			TT32/43% 6001	0.10	0.66	6	0.20	0.15	0.12	0.10	0.07	0.02											
		1.25mm	TT32% 6000	0.00	0.95	9	0.18	0.16	0.14	0.12	0.10	0.10	0.08	0.05	0.02	0.05	0.02						
			TT32/43% 6001	0.10	0.85	7	0.25	0.20	0.13	0.10	0.10	0.05	0.02										
		1.50mm	TT32% 6000	0.00	1.14	10	0.20	0.18	0.16	0.14	0.12	0.10	0.10	0.10	0.07	0.05	0.02	0.02					
			TT32/43% 6001	0.10	1.04	9	0.25	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.02	0.05	0.02						
			6002	0.20	0.94	8	0.25	0.18	0.14	0.12	0.10	0.08	0.05	0.02									
		1.75mm	TT32% 6000	0.00	1.33	11	0.25	0.23	0.20	0.13	0.10	0.10	0.10	0.10	0.08	0.07	0.05	0.02	0.05	0.02			
			TT32/43% 6001	0.10	1.23	10	0.25	0.23	0.20	0.13	0.10	0.10	0.08	0.07	0.05	0.02	0.02						
			6002	0.20	1.13	9	0.25	0.23	0.20	0.13	0.10	0.08	0.07	0.05	0.02								
		2.00mm	TT32% 6000	0.00	1.52	12	0.25	0.23	0.20	0.16	0.13	0.10	0.10	0.10	0.10	0.10	0.08	0.05	0.02	0.02			
			TT32/43% 6001	0.10	1.42	11	0.25	0.23	0.20	0.16	0.13	0.10	0.10	0.10	0.10	0.08	0.05	0.02	0.02				
			6002	0.20	1.32	10	0.25	0.23	0.20	0.16	0.13	0.10	0.10	0.08	0.05	0.02							
		2.50mm	TT32% 6000	0.00	1.89	13	0.27	0.25	0.20	0.18	0.17	0.15	0.14	0.14	0.13	0.10	0.08	0.06	0.02	0.02	0.02		
			TT32/43% 6001	0.10	1.79	12	0.27	0.25	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.10	0.06	0.02					
			6002	0.20	1.69	11	0.27	0.25	0.20	0.18	0.17	0.15	0.14	0.13	0.10	0.08	0.02						
			6003	0.30	1.59	11	0.27	0.25	0.20	0.18	0.17	0.15	0.12	0.10	0.08	0.05	0.02						
		3.00mm	TT43% 6001	0.10	2.17	14	0.30	0.25	0.23	0.20	0.20	0.18	0.16	0.14	0.14	0.12	0.10	0.08	0.05	0.02	0.02	0.02	
			6002	0.20	2.07	13	0.30	0.25	0.23	0.20	0.20	0.18	0.15	0.14	0.13	0.12	0.10	0.05	0.02				
			6003	0.30	1.97	12	0.30	0.25	0.23	0.20	0.20	0.18	0.15	0.14	0.12	0.10	0.08	0.02					
			6004	0.40	1.87	12	0.30	0.25	0.23	0.20	0.20	0.18	0.14	0.12	0.10	0.08	0.05	0.02					
		3.50mm	TT43% 6001	0.10	2.55	16	0.30	0.27	0.23	0.22	0.20	0.18	0.18	0.16	0.16	0.14	0.14	0.12	0.10	0.08	0.05	0.02	0.02
			6002	0.20	2.45	15	0.30	0.27	0.23	0.22	0.20	0.18	0.18	0.16	0.16	0.14	0.14	0.10	0.10	0.05	0.02		
			6003	0.30	2.35	14	0.30	0.27	0.23	0.22	0.20	0.18	0.18	0.16	0.15	0.14	0.12	0.10	0.08	0.02			
			6004	0.40	2.25	14	0.30	0.27	0.23	0.22	0.20	0.18	0.18	0.16	0.15	0.14	0.12	0.10	0.08	0.05	0.02		
	Internal Thread	0.50mm	TT32% 6000	0.00	0.32	5	0.12	0.08	0.06	0.04	0.02												
		0.70mm	TT32% 6000	0.00	0.45	6	0.15	0.10	0.08	0.06	0.04	0.02											
		0.75mm	TT32% 6000	0.00	0.49	6	0.15	0.12	0.08	0.07	0.05	0.02											
		0.80mm	TT32% 6000	0.00	0.52	6	0.15	0.12	0.10	0.08	0.05	0.02											
		1.00mm	TT32% 6000	0.00	0.65	7	0.15	0.14	0.12	0.10	0.08	0.04	0.02										
		1.25mm	TT32% 6000	0.00	0.81	8	0.18	0.16	0.14	0.12	0.10	0.05	0.04	0.02									
		1.50mm	TT32% 6000	0.00	0.97	9	0.20	0.18	0.16	0.14	0.10	0.08	0.05	0.04	0.02	0.02							
		TT32/43% 6001	0.10	0.87	8	0.20	0.18	0.16	0.14	0.08	0.05	0.04	0.02										
1.75mm		TT32% 6000	0.00	1.14	10	0.20	0.18	0.16	0.13	0.12	0.10	0.10	0.08	0.05	0.02	0.02							
		TT32/43% 6001	0.10	1.04	9	0.20	0.18	0.16	0.13	0.12	0.10	0.08	0.05	0.02	0.02								
2.00mm		TT32% 6000	0.00	1.30	12	0.20	0.18	0.16	0.13	0.13	0.12	0.10	0.10	0.08	0.05	0.03	0.02	0.02					
		TT32/43% 6001	0.10	1.20	11	0.20	0.18	0.16	0.13	0.13	0.12	0.10	0.08	0.05	0.03	0.02							
2.50mm		TT32% 6000	0.00	1.62	14	0.23	0.20	0.18	0.18	0.13	0.13	0.12	0.10	0.10	0.08	0.07	0.05	0.03	0.02	0.02			
		TT32/43% 6001	0.10	1.52	13	0.23	0.20	0.18	0.18	0.13	0.13	0.12	0.10	0.08	0.07	0.05	0.03	0.02	0.02				
3.00mm		TT43% 6001	0.10	1.85	15	0.25	0.22	0.20	0.18	0.14	0.14	0.13	0.12	0.10	0.10	0.08	0.07	0.05	0.05	0.02	0.02		
		6002	0.20	1.75	14	0.25	0.22	0.20	0.18	0.14	0.14	0.13	0.12	0.10	0.08	0.07	0.05	0.05	0.02				
Parallel Pipe / Tapered Pipe (55°)	External Thread	28 TPI	TT32% 5501	0.0039	0.0240	5	0.008	0.007	0.006	0.002	0.001												
		19 TPI	TT32/43% 5501	0.0039	0.0374	8	0.008	0.007	0.006	0.005	0.005	0.004	0.002	0.001									
		14 TPI	TT32/43% 5501	0.0039	0.0528	10	0.010	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.001	0.001						
			5502	0.0079	0.0480	9	0.010	0.009	0.008	0.007	0.005	0.004	0.003	0.002	0.001								
		11 TPI	TT32/43% 5501	0.0039	0.0681	13	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.002	0.002	0.002	0.001	0.001		
			5502	0.0079	0.0638	12	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002	0.001					
			5503	0.0118	0.0591	11	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001						
		28 TPI	TT32/43% 5501	0.0039	0.0240	6	0.007	0.006	0.005	0.003	0.002	0.001											
		19 TPI	TT32/43% 5501	0.0039	0.0374	7	0.008	0.007	0.006	0.006	0.005	0.004	0.002										
	Internal Thread	14 TPI	TT32/43% 5501	0.0039	0.0528	10	0.008	0.007	0.007	0.006	0.006	0.006	0.004	0.003	0.003	0.002	0.002						
			5502	0.0079	0.0480	9	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002							
		11 TPI	TT32/43% 5501	0.0039	0.0681	13	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002	0.002	0.001		
			5502	0.0079	0.0638	12	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002	0.001					
			5503	0.0118	0.0591	11	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001						
		24 TPI	TT32/43% 5501	0.0039	0.0287	6	0.008	0.007	0.006	0.005	0.002	0.001											
		20 TPI	TT32/43% 5501	0.0039	0.0354	7	0.008	0.007	0.006	0.006	0.005	0.003	0.001										
		18 TPI	TT32/43% 5501	0.0039	0.0398	8	0.008	0.007	0.007	0.006	0.005	0.004	0.002	0.001									
		16 TPI	TT32/43% 5501	0.0039	0.0453	9	0.010	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.001								
			5502	0.0079	0.0409	8	0.010	0.008	0.007	0.006	0.004	0.003	0.003	0.001									
		14 TPI	TT32/43% 5501	0.0039	0.0528	10	0.010	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.003	0.002	0.001						
			5502	0.0079	0.0480	9	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002								
		11 TPI	TT32/43% 5501	0.0039	0.0681	13	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.002	0.002	0.002	0.001			
			5502	0.																			

DEPTH OF CUT AND NUMBER OF PASSES

TT (60° / 55° Partial Profile) Continued...

(D.O.C. shows the value of radial ap.)

Thread Type	Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass
Whitworth (55°)	Internal Thread	24 TPI	TT32/43% 5501	0.0039	0.026	0.236	0.008	0.006	0.005	0.004	0.002	0.001								
		20 TPI	TT32/43% 5501	0.0039	0.032	0.276	0.008	0.007	0.006	0.005	0.003	0.002								
		18 TPI	TT32/43% 5501	0.0039	0.036	0.315	0.008	0.007	0.006	0.006	0.004	0.002	0.001							
		16 TPI	TT32/43% 5501	0.0039	0.041	0.354	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001					
			5502	0.0079	0.036	0.315	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.001						
		14 TPI	TT32/43% 5501	0.0039	0.047	0.394	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.001				
			5502	0.0079	0.043	0.354	0.008	0.007	0.006	0.006	0.006	0.004	0.003	0.002	0.001					
		12 TPI	TT32/43% 5501	0.0039	0.056	0.394	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.002	0.001				
			5502	0.0079	0.051	0.354	0.010	0.009	0.008	0.007	0.006	0.005	0.004	0.002	0.001					
		11 TPI	TT32/43% 5501	0.0039	0.061	0.433	0.010	0.009	0.009	0.007	0.006	0.006	0.005	0.004	0.004	0.002	0.001			
			5502	0.0079	0.057	0.394	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.002	0.001				
		10 TPI	TT43% 5503	0.0118	0.052	0.354	0.010	0.009	0.008	0.007	0.006	0.006	0.004	0.002	0.001					
			TT32/43% 5501	0.0039	0.068	0.472	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.002	0.001			
			5502	0.0079	0.063	0.433	0.010	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.002	0.001			
		9 TPI	TT43% 5503	0.0118	0.059	0.394	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.002	0.001				
			TT32/43% 5501	0.0039	0.076	0.512	0.010	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001	
			5502	0.0079	0.072	0.472	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.002	0.001			
		8 TPI	5503	0.0118	0.067	0.433	0.010	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.004	0.002	0.001			
			TT43% 5501	0.0039	0.086	0.591	0.011	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.001
			5502	0.0079	0.081	0.551	0.011	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001
			5503	0.0118	0.077	0.512	0.012	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002	0.001	
			5504	0.0157	0.072	0.472	0.012	0.010	0.009	0.008	0.008	0.007	0.006	0.005	0.003	0.002	0.002	0.001		

TT (60° / 55° Full Profile)

(D.O.C. shows the value of radial ap.)

Thread Type	Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass
Metric	External Thread	1.00mm	TT43E% 100M	0.64	0.72	5	0.23	0.19	0.15	0.10	0.05						
		1.25mm	125M	0.80	0.88	6	0.26	0.21	0.16	0.12	0.08	0.05					
		1.50mm	150M	0.95	1.03	6	0.26	0.24	0.21	0.16	0.11	0.05					
		2.00mm	200M	1.27	1.35	10	0.26	0.21	0.18	0.16	0.14	0.12	0.10	0.08	0.05	0.05	

TTX (60° / 55° Partial Profile)

(D.O.C. shows the value of radial ap.)

Thread Type	Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass
Metric (60°)	External Thread	0.50mm	TTX32R 6000	0.00	0.38	6	0.10	0.10	0.07	0.05	0.04	0.02					
			6000S														
			60005	0.05	0.33	5	0.10	0.10	0.07	0.04	0.02						
			60005S														
		0.70mm	TTX32R 6000	0.00	0.53	7	0.10	0.10	0.10	0.08	0.07	0.06	0.02				
			60005	0.05	0.48	6	0.10	0.10	0.10	0.10	0.06	0.02					
		0.75mm	TTX32R 6000	0.00	0.57	8	0.10	0.10	0.10	0.08	0.08	0.05	0.04	0.02			
			60005	0.05	0.52	7	0.10	0.10	0.10	0.08	0.07	0.05	0.02				
		0.80mm	TTX32R 6000	0.00	0.61	8	0.10	0.10	0.10	0.10	0.08	0.06	0.05	0.02			
			60005	0.05	0.56	7	0.10	0.10	0.10	0.10	0.08	0.06	0.02				
		1.00mm	TTX32R 6000	0.00	0.76	8	0.15	0.13	0.12	0.12	0.10	0.08	0.04	0.02			
			60005	0.05	0.71	7	0.18	0.15	0.12	0.10	0.08	0.06	0.02				
			6001	0.10	0.66	6	0.20	0.15	0.12	0.10	0.07	0.02					
		1.25mm	TTX32R 6001	0.10	0.85	7	0.25	0.20	0.13	0.10	0.10	0.05	0.02				
		1.50mm	6001	0.10	1.04	9	0.25	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.02		
Parallel Pipe (65°)	External Thread	1.75mm	6001	0.10	1.23	10	0.25	0.23	0.20	0.13	0.10	0.10	0.08	0.07	0.05	0.02	
		2.00mm	6001	0.10	1.42	11	0.25	0.23	0.20	0.16	0.13	0.10	0.10	0.10	0.08	0.05	0.02
		28 TPI	TTX32R 5501	0.0039	0.0240	5	0.008	0.007	0.006	0.002	0.001						
		19 TPI	TTX32R 5501	0.0039	0.0374	8	0.008	0.007	0.006	0.005	0.005	0.004	0.002	0.001			
			5501S	0.0059	0.0354	7	0.008	0.007	0.006	0.005	0.005	0.003	0.001				
		14 TPI	TTX32R 5501S	0.0059	0.0504	10	0.010	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002	0.001	
		11 TPI	5501S	0.0059	0.0657	12	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001
		24 TPI	TTX32R 5501	0.0039	0.0287	6	0.008	0.007	0.006	0.005	0.002	0.001					
		20 TPI	TTX32R 5501	0.0039	0.0354	7	0.008	0.007	0.006	0.006	0.005	0.003	0.001				
			TTX32R 5501S	0.0059	0.0331	7	0.008	0.007	0.006	0.005	0.004	0.002	0.001				
		18 TPI		0.0059	0.0374	8	0.008	0.007	0.006	0.006	0.005	0.004	0.002	0.001			
				0.0059	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.002	0.001		
Whitworth (55°)	External Thread	14 TPI	TTX32R 5501S	0.0059	0.0504	10	0.010	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002	0.001	
		12 TPI		0.0059	0.0598	11	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.002	0.001	
		11 TPI		0.0059	0.0657	12	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001

<How to use>

- 1) Select the insert with suitable corner-R (RE) determined by the pitch.
- 2) Do not exceed 0.0118" for the 1st D.O.C.
- 3) Final D.O.C. for Finishing should be 0.0008" - 0.0020".
- 4) To improve insert life, pre chamfer to thread minor diameter.
- 5) Coolant is recommended.

TTX Type

Suitable for threading to the shoulder.

Insert Part Number	Thread Type	Metric (mm)	Unified TPI	Parallel Pipe TPI	Whitworth TPI
TTX32R 6000		0.5~1.0	56~32	-	-
60005		0.5~1.0	48~32	-	-
6001		1.0~2.0	28~14	-	-
TTX32R 6000S		0.5	56~48	-	-
60005S		0.5	48	-	-
TTX32R 5501		-	-	28~19	24~20
5501S		-	-	19~11	20~14

DEPTH OF CUT AND NUMBER OF PASSES

TPGB Type (60° Partial Profile)

(D.O.C. shows the value of radial ap.)

Thread Type	Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass
Metric (60°)	Internal Thread	TPGB 21501 2201	0.05	0.44	5	0.15	0.12	0.10	0.05	0.02												
		TPGB 21501 2201	0.05	0.47	5	0.15	0.14	0.10	0.06	0.02												
		TPGB 21501 2201	0.05	0.60	6	0.18	0.14	0.12	0.10	0.04	0.02											
		TPGB 21501 2201	0.05	0.76	7	0.18	0.16	0.14	0.12	0.10	0.04	0.02										
		TPGB 21501 2201	0.05	0.92	8	0.20	0.18	0.16	0.14	0.10	0.08	0.04	0.02									
		TPGB 21501 2201	0.05	1.09	9	0.20	0.18	0.16	0.14	0.13	0.12	0.10	0.04	0.02								
		TPGB 21501 2201	0.05	1.25	11	0.20	0.18	0.16	0.14	0.13	0.12	0.10	0.10	0.06	0.04	0.02						
		TPGB 21501 2201	0.05	1.57	13	0.23	0.20	0.18	0.18	0.14	0.13	0.12	0.10	0.08	0.07	0.07	0.05	0.02				
		TPGB 21501 2201	0.05	1.90	15	0.25	0.22	0.20	0.18	0.14	0.14	0.13	0.12	0.12	0.10	0.08	0.08	0.07	0.05	0.02		
		TPGB 21501 2201	0.05	2.22	16	0.25	0.22	0.20	0.18	0.18	0.16	0.16	0.14	0.14	0.12	0.12	0.10	0.10	0.08	0.05	0.02	
		TPGB 21501 2201	0.05	2.17	16	0.25	0.22	0.20	0.18	0.18	0.16	0.16	0.14	0.14	0.12	0.10	0.10	0.08	0.07	0.05	0.02	
		TPGB 21501 2201	0.05	2.07	15	0.25	0.22	0.20	0.18	0.18	0.16	0.16	0.14	0.14	0.12	0.10	0.08	0.07	0.05	0.02		
		TPGB 21501 2201	0.05	1.85	15	0.25	0.22	0.20	0.18	0.14	0.14	0.13	0.12	0.10	0.10	0.08	0.07	0.05	0.05	0.02		
		TPGB 21501 2201	0.05	1.52	13	0.23	0.20	0.18	0.18	0.13	0.13	0.12	0.10	0.08	0.07	0.05	0.03	0.02				
		TPGB 21501 2201	0.05	1.20	11	0.20	0.18	0.16	0.13	0.13	0.12	0.10	0.08	0.05	0.03	0.02						
		TPGB 21501 2201	0.05	1.04	9	0.20	0.18	0.16	0.13	0.12	0.10	0.08	0.05	0.02								
		TPGB 21501 2201	0.05	0.87	8	0.20	0.18	0.16	0.14	0.08	0.05	0.04	0.02									
		TPGB 21501 2201	0.05	0.76	7	0.18	0.16	0.14	0.12	0.10	0.04	0.02										
		TPGB 21501 2201	0.05	0.60	6	0.18	0.14	0.12	0.10	0.04	0.02											
		TPGB 21501 2201	0.05	0.47	5	0.15	0.14	0.10	0.06	0.02												
		TPGB 21501 2201	0.05	0.44	5	0.15	0.12	0.10	0.05	0.02												

Guide for Internal Threading

For internal threading, ensure consistent diameter and pay attention to chip evacuation.

1. Stabilizing diameters of pre-drilled holes

Because small pitch internal threads have a small corner radius any variation in the diameter of pre drilled holes will greatly affect the tool life of the insert. Please minimize any variation of pre drilled holes and add an air pass to the first thread pass for safety.

2. Chip evacuation

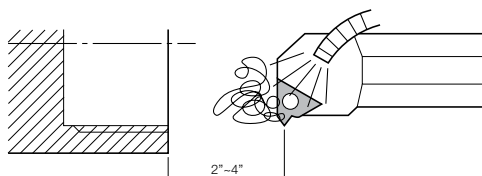
If the threading cycle continues with chips tangled on the holder or in the part it may damage the insert. We suggest starting each thread pass at least 2" from the part to allow room for the coolant to remove chips from the tool on each pass.

< 1 When running the first part of a setup>

Run the program in single block to make sure coolant can remove the chips from the tool after each threading pass.

< 2 When running the second part of a setup>

Run through the full threading cycle and again check that chips are removed from the tool before going into production.






APPLICABLE TOOLHOLDERS & INSERTS

The standard specification of the inch size thread is based on the dimension of 1/8".

In Applicable Toolholders and Inserts Lists on **J34~J37**, Right-hand Insert / Right-hand Toolholder descriptions are listed based on the previous TNN type inserts. For other applicable inserts / toolholders or stock availability of Left-hand, see each relevant page and **J40**.

Parallel Pipe : G (PF), Rp (PS)

Nominal Thread		TPI	External Thread (G)			Internal Thread (G,Rp)			Root Radius Ext./Int. (mm)	
Inch	Symbol (Previous Symbol)		Toolholder	Insert		Toolholder	Insert			Min. Bore Dia.(mm)
				Partial Profile	Full Profile		Partial Profile	Full Profile		
-	G 1/16 (-)	28	KTNR○○○○□-16 KTNSR○○○○□-16	16ERA55-TF/TQ 16ERAG55-TF/TQ 16ERA55 16ERAG55	-	SINR0612S-06E (EZT  J32)	06IR5501	-	6.56	0.12
1/8	G 1/8 (PF 1/8)									
2/8	G 1/4 (PF 1/4)	19	KTNR○○○○□-16 KTNSR○○○○□-16	16ERA55-TF/TQ 16ERAG55-TF/TQ 16ERA55 16ERAG55	16ER19W-TF/TQ 16ER19W	SINR0816S-08E (EZT  J32)	08IR5501	-	11.45	0.18
3/8	G 3/8 (PF 3/8)							SINR1216S-11E (EZT  J32)	11IRA55 11IR55005	
4/8	G 1/2 (PF 1/2)	14	KTNR○○○○□-16 KTNSR○○○○□-16	16ERAG55-TF/TQ 16ERG55-TF/TQ 16ERAG55 16ERG55	16ER14W-TF/TQ 16ER14W	SINR1516S-11	11IR55005	-	18.63	0.25
5/8	G 5/8 (PF 5/8)					SINR1616S-16	16IRAG55 16IRG55 16IR5501 16IR5502	16IR14W-TF/TQ 16IR14W	20.59	
6/8	G 3/4 (PF 3/4)					SINR2016S-16			24.12	
7/8	G 7/8 (PF 7/8)					SINR2420S-16			27.88	
8/8	G 1 (PF 1)	11	KTNR○○○○□-16 KTNSR○○○○□-16	16ERAG55-TF/TQ 16ERG55-TF/TQ 16ERAG55 16ERG55	16ER11W-TF/TQ 16ER11W	SINR2420S-16	16IRAG55 16IRG55 16IR5501 16IR5502	16IR11W-TF/TQ 16IR11W	30.29	0.32
9/8	G 1 1/8 (PF 1 1/8)					CINR3025S-16			34.94	
10/8	G 1 1/4 (PF 1 1/4)					CINR3732S-16			38.95	
		Hereafter, all the threads are 11 TPI and the root radius 0.32. The same tool for G 1 1/4 is recommended.								

Tapered Pipe : R, Rc(PT), (BSPT)

Nominal Thread		TPI	External Thread (G)			Internal Thread (Rc)			Root Radius Ext./Int. (mm)
Inch	Symbol (Previous Symbol)		Toolholder	Insert		Toolholder	Insert		
				Partial Profile	Full Profile		Partial Profile	Full Profile	
-	R 1/16, Rc 1/16 (-)	28	KTNR○○○○□-16 KTNSR○○○○□-16	(16ERA55-TF/TQ) (16ERAG55-TF/TQ) (16ERA55) (16ERAG55)	16ER28BSPT-TF/ TQ 16ER28BSPT	SINR0612S-06E (EZT ➡ J32)	06IR5501	-	0.12
1/8	R 1/8, Rc 1/8 (PT 1/8)	28							
2/8	R 1/4, Rc 1/4 (PT 1/4)	19	KTNR○○○○□-16 KTNSR○○○○□-16	(16ERA55-TF/TQ) (16ERAG55-TF/TQ) (16ERA55) (16ERAG55)	16ER19BSPT-TF/ TQ 16ER19BSPT	SINR0816S-08E (EZT ➡ J32)	08IR5501	-	0.18
3/8	R 3/8, Rc 3/8 (PT 3/8)	19				SINR1216S-11E (EZT ➡ J32)	(11IRA55) (11IR55005)	11IR19BSPT-TF/TQ 11IR19BSPT	
4/8	R 1/2, Rc 1/2 (PT 1/2)	14	KTNR○○○○□-16 KTNSR○○○○□-16	(16ERAG55-TF/TQ) (16ERG55-TF/TQ) (16ERAG55) (16ERG55)	16ER14BSPT-TF/ TQ 16ER14BSPT	SINR1516S-11	(11IR55005)	11IR14BSPT-TF/TQ 11IR14BSPT	0.25
6/8	R 3/4, Rc 3/4 (PT 3/4)	14				SINR1616S-16	(16IRAG55) (16IRG55) (16IR5501) (16IR5502)	16IR14BSPT-TF/TQ 16IR14BSPT	
8/8	R 1, Rc 1 (PT 1)	11	KTNR○○○○□-16 KTNSR○○○○□-16	(16ERAG55-TF/TQ) (16ERG55-TF/TQ) (16ERAG55) (16ERG55)	16ER11BSPT-TF/ TQ 16ER11BSPT	SINR2420S-16	(16IRAG55) (16IRG55) (16IR5501) (16IR5502)	16IR11BSPT-TF/TQ 16IR11BSPT	0.32
10/8	R 1 1/4, Rc 1 1/4 (PT 1 1/4)					CINR3025S-16			
12/8	R 1 1/2, Rc 1/2 (PT 1/2)					CINR3732S-16			
			Hereafter, all the threads are 11 TPI and the root's radius 0.32. The same tool for G 1 1/2 is recommended.			Hereafter, all the threads are 11 TPI and the root radius 0.32. The same tool for G 1 1/4 is recommended.			

1) The largest toolholder available for the minimum bore dia. is recommended for the female threading in these tables.

Then, the toolholder whose min. bore dia. is smaller than the recommended toolholder can be used for threading

2) When using "Partial Profile" for Tapered Pipe threading, thread's corners become sharp edged, and the shape will not be the same as the standard shape for Tapered Pipe.

American National Pipe : NPT

Nominal Thread	TPI	External Thread			Internal Thread		
		Toolholder	Insert		Toolholder	Insert	
			Partial Profile	Full Profile		Partial Profile	Full Profile
1/16 NPT 1/8 NPT	27	KTTR○○○○□-16 KTTXR○○○○□-16F	TT32R6000 TTX32R6000	-	No Tools Available		
1/4 NPT 3/8 NPT	18	KTNR○○○○□-16 KTNSR○○○○□-16	-	16ER18NPT	EZH Sleeve (See J33)	EZTR060050-60-004 EZTR070060-60-004	-
1/2 NPT 3/4 NPT	14	KTNR○○○○□-16 KTNSR○○○○□-16	-	16ER14NPT	EZH Sleeve (See J33)	EZTR070060-60-004	-
1/2 NPT 3/4 NPT	14	KTNR○○○○□-16 KTNSR○○○○□-16	-	16ER14NPT	SINR1616S-16 SINR2016S-16	-	16IR14NPT
1 NPT 1 1/4 NPT 1 1/2 NPT 2 NPT	11.5	KTNR○○○○□-16 KTNSR○○○○□-16	-	16ER11.5NPT	SINR2420S-16 CINR3025S-16 CINR3732S-16	-	16IR11.5NPT

• Application of NPTF Thread

NPTF is the thread for sealing pipes without using any sealing material.

Thread symbol is similar to NPT but the Tolerance is different from that of NPT and the above Inserts are not available to NPTF.

30° Trapezoidal : Tr

The JIS Standard Trapezoidal Size to be machined by TNN Insert are shown.

Nominal Thread	Pitch (mm)	External Thread			Internal Thread			Min. Bore Dia.(mm)
		Toolholder	Insert		Toolholder	Insert		
			Partial Profile	Full Profile		Partial Profile	Full Profile	
Tr 16X2 Tr 18X2 Tr 20X2	2	No Tools Available			No Tools Available	-	-	14.00
		KTNR○○○○□-16 KTNSR○○○○□-16	16ER200TR	-	SINR1616S-16	16IR200TR	-	16.00 18.00
Tr 22X3	3				SINR1616S-16	16IR300TR	-	19.00
Tr 24X3 Tr 26X3	3				SINR2016S-16		-	21.00 23.00
Tr 28X3 Tr 30X3 Tr 32X3 Tr 34X3 Tr 36X3 Tr 38X3 Tr 40X3	3				SINR2420S-16	16IR300TR	-	25.00 27.00 29.00
					SINR3025S-16	16IR300TR	-	31.00 33.00 35.00 37.00
Tr 42X3 Tr 44X3 Tr 46X3 Tr 48X3 Tr 50X3 Tr 52X3 Tr 55X3 Tr 60X3 Tr 65X3	3	KTNR○○○○□-16 KTNSR○○○○□-16	16ER300TR	-	CINR3732S-16	16IR300TR	-	39.00 41.00 43.00 45.00 47.00 49.00 52.00 57.00 62.00
Tr 70X3 Tr 75X3 Tr 80X3 Tr 90X3 Tr 95X3 Tr 100X3 Tr 105X3 Tr 110X3	4	KTNR○○○○□-22 KTNSR○○○○□-22	22ER400TR	-	CINR3732S-22	22IR400TR	-	66.00 71.00 76.00 86.00 91.00 96.00 101.00 106.00

TM Thread: TM Thread of old JIS 30°Trapezoidal Thread has been discontinued. But if the Nominal Dia. X Pitch is the same, the above Tr Thread can be used.

TW Thread: TW Thread is 29° Trapezoidal Thread and the above Inserts are not available.

Metric Coarse Thread : M

Nominal Thread	Pitch (mm)	Toolholder	Internal Threading Insert		Min. Bore Dia.(mm)
			Insert		
			Partial Profile	Full Profile	
M1 • • • M3	0.25 0.50	No Tools Available	-	-	0.73 • • • 2.46
M4	0.70		EZTR030025-60-002		3.24
M5	0.80		EZTR040035-60-004		4.13
M6	1.00		VNTR045-11		4.92
M7	1.00	-	EZTR050040-60-004	-	5.92
			VNTR045-11		
M8	1.25	-	EZTR060050-60-004	-	6.65
		-	VNTR060-11		
		SINR0612S-06E	06IR60005	-	
M9	1.25	-	EZTR070060-60-004	-	7.65
		SINR0612S-06E	06IR60005	-	
M10	1.50	SINR0816S-08E	08IR60007	-	8.38
M11	1.50				9.38
M12	1.75	SINR0816S-08E	08IR60007	-	10.11
M16	2.00	SINR1216S-11E	-	11IR200ISO	13.84
M18	2.50	No Tools Available			15.29
M20	2.50	SINR1616S-16	Table 5	16IR250ISO-□□	17.29
M22	2.50				19.29
M24	3.00	SINR2016S-16	Table 4	16IR300ISO-□□	20.75
M27	3.00				23.75
M30	3.5	SINR2420S-22	22IRN60	22IR350ISO	26.21
M33	3.5			22IR400ISO	29.21
M36	4.0	CINR3025S-22			31.67
M39	4.0				34.67
M42	4.5	CINR3732S-22		22IR450ISO	37.13
M45	4.5				40.13
M48	5.0	CINR3732S-22		22IR500ISO	42.59
M52	5.0				46.59
M56 • • •	5.5	* Threading of M56 and over is not available due to too large pitch size.			50.05 • • •

Metric Fine Thread : M

Part 2

Nominal Thread	Pitch (mm)	Toolholder	Internal Threading Insert		Min. Bore Dia.(mm)
			Partial Profile	Full Profile	
M12.0x1.50	1.50	SINR0816S-08E	08IR60007	-	10.38
M12.0x1.25	1.25	SINR0816S-08E	08IR60007	-	10.65
M12.0x1.00	1.00	SINR0816S-08E	08IR60007	-	10.92
M14.0x1.50	1.50	SINR1216S-11E	11IRA60 11IR60005	11IR150ISO-□□	12.38
M14.0x1.25	1.25	SINR1216S-11E		11IR125ISO-□□	12.65
M14.0x1.00	1.00	SINR1216S-11E	11IRA60 11IR60005	11IR100ISO-□□	12.92
M15.0x1.50	1.50	SINR1216S-11E		11IR150ISO-□□	13.38
M15.0x1.00	1.00	SINR1216S-11E	11IR60005	11IR100ISO-□□	13.92
M16.0x1.50	1.50	SINR1216S-11E	11IRA60	11IR150ISO-□□	14.38
M16.0x1.00	1.00	SINR1216S-11E	11IR60005	11IR100ISO-□□	14.92
M17.0x1.50	1.50	SINR1516S-11E	11IRA60	11IR150ISO-□□	15.38
M17.0x1.00	1.00	SINR1516S-11E	11IR60005	11IR100ISO-□□	15.92
M18.0x2.00	2.00	SINR1516S-11E	-	11IR200ISO	15.84
M18.0x1.50	1.50	SINR1616S-16	Table 2	16IR150ISO-□□	16.38
M18.0x1.00	1.00	SINR1616S-16	Table 3	16IR100ISO-□□	16.92
M20.0x2.00	2.00	SINR1616S-16	Table 1	16IR200ISO-□□	17.84
M20.0x1.50	1.50	SINR1616S-16	Table 2	16IR150ISO-□□	18.38
M20.0x1.00	1.00	SINR1616S-16	Table 3	16IR100ISO-□□	18.92
M22.0x2.00	2.00	SINR1616S-16	Table 1	16IR200ISO-□□	19.84
M22.0x1.50	1.50	SINR2016S-16	Table 2	16IR150ISO-□□	20.38
M22.0x1.00	1.00	SINR2016S-16	Table 3	16IR100ISO-□□	20.92
M24.0x2.00	2.00	SINR2016S-16	Table 1	16IR200ISO-□□	21.84
M24.0x1.50	1.50	SINR2016S-16	Table 2	16IR150ISO-□□	22.38
M24.0x1.00	1.00	SINR2016S-16	Table 3	16IR100ISO-□□	22.92
M25.0x2.00	2.00	SINR2016S-16	Table 1	16IR200ISO-□□	22.84
M25.0x1.50	1.50	SINR2016S-16	Table 2	16IR150ISO-□□	23.38
M25.0x1.00	1.00	SINR2016S-16	Table 3	16IR100ISO-□□	23.92
M26.0x1.50	1.50	SINR2420S-16	Table 2	16IR150ISO-□□	24.38
M27.0x2.00	2.00	SINR2420S-16	Table 1	16IR200ISO-□□	24.84
M27.0x1.50	1.50	SINR2420S-16	Table 2	16IR150ISO-□□	25.38
M27.0x1.00	1.00	SINR2420S-16	Table 3	16IR100ISO-□□	25.92
M28.0x2.00	2.00	SINR2420S-16	Table 1	16IR200ISO-□□	25.84
M28.0x1.50	1.50	SINR2420S-16	Table 2	16IR150ISO-□□	26.38
M28.0x1.00	1.00	SINR2420S-16	Table 3	16IR100ISO-□□	26.92
M30.0x3.00	3.00	SINR2420S-22	-	22IR300ISO	26.75
		SINR2420S-16	Table 4	16IR300ISO-□□	
M30.0x2.00	2.00	SINR2420S-16	Table 1	16IR200ISO-□□	27.84
M30.0x1.50	1.50	SINR2420S-16	Table 2	16IR150ISO-□□	28.38
M30.0x1.00	1.00	SINR2420S-16	Table 3	16IR100ISO-□□	28.92
M32.0x2.00	2.00	SINR2420S-16	Table 1	16IR200ISO-□□	29.84
M32.0x1.50	1.50	CINR3025S-16	Table 2	16IR150ISO-□□	30.38
M33x3.0	3.0	SINR2420S-22	-	22IR300ISO	29.75
		SINR2420S-16	Table 4	16IR300ISO-□□	
M33x2.0	2.0	CINR3025S-16	Table 1	16IR200ISO-□□	30.84
M33x1.5	1.5		Table 2	16IR150ISO-□□	31.38
M35x1.5	1.5	CINR3025S-16	Table 2	16IR150ISO-□□	33.38
		CINR3025S-22	-	22IR300ISO	32.75
M36x3.0	3.0	CINR3025S-16	Table 4	16IR300ISO-□□	33.84
		CINR3025S-22	-	22IR300ISO	
M36x2.0	2.0	CINR3025S-16	Table 1	16IR200ISO-□□	33.84
M36x1.5	1.5		Table 2	16IR150ISO-□□	34.38
M38x1.5	1.5	CINR3025S-16	Table 2	16IR150ISO-□□	36.38
		CINR3025S-22	-	22IR300ISO	35.75
M39x3.0	3.0	CINR3025S-16	Table 4	16IR300ISO-□□	36.84
M39x2.0	2.0	CINR3025S-16	Table 1	16IR200ISO-□□	36.84
M39x1.5	1.5	CINR3732S-16	Table 2	16IR150ISO-□□	37.38
M40x3.0	3.0	CINR3025S-22	-	22IR300ISO	36.75
		CINR3025S-16	Table 4	16IR300ISO-□□	
M40x2.0	2.0	CINR3732S-16	Table 1	16IR200ISO-□□	37.84
M40x1.5	1.5		Table 2	16IR150ISO-□□	38.38
M42x4.0	4.0	CINR3732S-22	22IRN60	22IR400ISO	37.67
M42x3.0	3.0		-	22IR300ISO	38.75
M42x2.0	2.0	CINR3732S-16	Table 4	16IR300ISO-□□	39.84
			Table 1	16IR200ISO-□□	
M42x1.5	1.5		Table 2	16IR150ISO-□□	40.38
M45x4.0 • • •	5.5	* Threading of M45 and over can be machined by the same tool for M42. (P=4.0, 3.0, 2.0, 1.5)		-	40.67 • • •

Table 1 (P=2.0mm)

16IRG60 16IRAG60 16IR6001

Table 2 (P=1.5mm)

16IRA60 16IRAG60 16IR6001

Table 3 (P=1.0mm)

16IRA60 16IRAG60

Table 4 (P=3.0mm)

16IRG60 16IRAG60

Table 5 (P=2.5mm)

16IRG60 16IRAG60 16IR6001 16IR60015
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Metric Fine Thread : M

Part 1

Nominal Thread	Pitch (mm)	Toolholder	Internal Threading Insert		Min. Bore Dia.(mm)
			Partial Profile	Full Profile	
M1.0x0.20 • • • M3.0x0.35	0.20 0.35	No Tools Available	-	-	0.78 • • • 4.96
M3.5x0.35	0.35		EZTR030025-60-002	-	5.19
M4.5x0.50	0.50		EZTR035030-60-002	-	5.19
M5.0x0.50	0.50		EZTR040035-60-004	-	-
M6.0x0.75	0.75	-	VNTR045-11	-	5.19
M7.0x0.75	0.75	-	EZTR050040-60-004	-	6.20
		-	VNTR045-11	-	
		-	EZTR060050-60-004	-	
M8.0x1.00	1.00	-	VNTR060-11	-	6.92
		SINR0612S-06E	06IR60005	-	
		-	EZTR060050-60-004	-	
M8.0x0.75	0.75	-	VNTR060-11	-	7.19
		SINR0612S-06E	06IR60005	-	
		-	EZTR070060-60-004	-	
M9.0x1.00	1.00	-	VNTR060-11	-	7.92
		SINR0612S-06E	06IR60005	-	
		SINR0816S-08E	08IR60007	-	
M9.0x0.75	0.75	-	EZTR070060-60-004	-	8.19
		-	VNTR060-11	-	
		SINR0612S-06E	06IR60005	-	
M10.0x1.25	1.25	-	VNTR060-11	-	8.65
		SINR0816S-08E	08IR60007	-	
		-	EZTR060050-60-004	-	
M10.0x1.00	1.00	-	VNTR060-11	-	8.92
		SINR0816S-08E	08IR60007	-	
		-	EZTR060050-60-004	-	
M10.0x0.75	0.75	-	VNTR060-11	-	9.19
		SINR0612S-06E	06IR60005	-	
		-	EZTR060050-60-004	-	
M11.0x1.00	1.00	-	VNTR060-11	-	9.92
		SINR0816S-08E	08IR60007	-	
		-	EZTR060050-60-004	-	
M11.0x0.75	0.75	-	VNTR060-11	-	10.19
		SINR0612S-06E	06IR60005	-	
		-	EZTR060050-60-004	-	

• Above shows the usage example of applicable Toolholders / Inserts.

APPLICABLE TOOLHOLDERS & INSERTS (INTERNAL)

Unified Coarse Thread : UNC

Nominal Thread	TPI	Internal Threading			Min. Bore Dia.(mm)	
		Toolholder	Insert			
			Partial Profile	Full Profile		
2-56 UNC • • •	56	No Tools Available	-	-	1.69 • • •	
6-32 UNC	32					2.65
8-32 UNC	32		-	EZTR030025-60-002	-	3.31
10-24 UNC	24	-	EZTR035030-60-002	-	3.68	
1/4-20 UNC	20	-	EZTR050040-60-004	-	4.98	
		-	VNTR045-11			
5/16-18 UNC	18	-	EZTR060050-60-004	-	6.41	
		-	VNTR060-11			
3/8-16 UNC	16	-	EZTR070060-60-004	-	7.81	
		-	HPTR07507-60-005	-		
7/16-14 UNC	14	No Tools Available			9.15	
1/2-13 UNC	13				10.58	
9/16-12 UNC	12				12.00	
5/8-11 UNC	11				13.38	
3/4-10 UNC	10	SINR1616S-16	16IRG60	16IR10UN-□□	16.30	
7/8- 9 UNC	9			-	19.17	
1-8 UNC	8	SINR2016S-16	16IRAG60	16IR08UN-□□	21.96	
1 1/8- 7 UNC	7	SINR2420S-22	22IRN60	-	24.65	
1 1/4- 7 UNC					27.82	
1 3/8- 6 UNC	6	CINR3025S-22			30.34	
1 1/2- 6 UNC					33.52	
1 3/4- 5 UNC	5	CINR3732S-22			38.95	
1 3/4- 5 UNC	5	CINR3732S-22			38.95	
2-4 1/2 UNC • • •	4 1/2	* 2-4 1/2 UNC and over cannot be machined, because no inserts are available for the TPI.			44.69 • • •	

Unified Fine Thread : UNF

Nominal Thread	TPI	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
0-80 UNF	80	No Tools Available	-	-	1.18
•					•
•					•
•					•
6-40 UNF	40				2.82
8-36 UNF	36	-	EZTR030025-60-002	-	3.4
10-32 UNF	32	-	EZTR030025-60-002	-	3.97
1/4-28 UNF	28	-	EZTR050040-60-004	-	5.37
		-	VNTR045-11	-	
5/16-24 UNF	24	-	VNTR060-11	-	6.79
		SINR0612S-06E	06IR60005	-	
3/8-24 UNF	24	-	EZTR070060-60-004	-	8.38
		SINR0612S-06E	06IR60005	-	
7/16-20 UNF	20	SINR0816S-08E	08IR60007	-	9.74
1/2-20 UNF	20				11.33
9/16-18 UNF	18	SINR1216S-11E	11IRA60	-	12.76
5/8-18 UNF	18		11IR60005	-	14.35
3/4-16 UNF	16	SINR1516S-11	11IRA60	-	17.33
			11IR60005	-	
7/8-14 UNF	14	SINR1616S-16		16IR16UN-(□□)	20.26
		SINR2016S-16		16IR14UN-(□□)	
1-12 UNF	12	SINR2016S-16	16IRAG60		23.10
1 1/8-12 UNF	12	SINR2420S-16	16IRG60	16IR12UN-(□□)	26.28
1 1/4-12 UNF	12		16IR6001		29.46
1 3/8-12 UNF	12	CINR3025S-16			32.63
1 1/2-12 UNF	12				36.81

Whitworth Coarse Thread : W

Nominal Thread	TPI	Internal Threading			Min. Bore Dia.(mm)	
		Toolholder	Insert			
			Partial Profile	Full Profile		
W 1/4	20	No Tools Available	-	-	4.91	
W 5/16	18				6.34	
W 3/8	16		No Tools Available			7.73
W 7/16	14					9.06
W 1/2	12	10.30				
W 9/16	12	11.89				
W 5/8	11				13.26	
W 3/4	10	SINR1616S-16	16IRAG55	-	16.17	
W 7/8	9				19.03	
W 1	8	SINR2016S-16	16IRG55	-	21.08	
W 1 1/8	7	SINR2420S-22	22IRN55	-	24.47	
W 1 1/4					27.64	
W 1 3/8	6	CINR3025S-22	22IRN55	-	30.13	
W 1 1/2					33.30	
W 1 5/8	5				35.52	
W 1 3/4	5	CINR3732S-22	22IRN55	-	38.69	
W 1 7/8	4 1/2	No Tools Available			41.23	
W 2					44.41	
W 2 1/4					4	49.96

• Above shows the usage example of applicable Toolholders / Inserts.

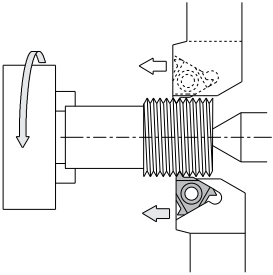
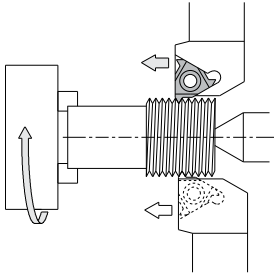
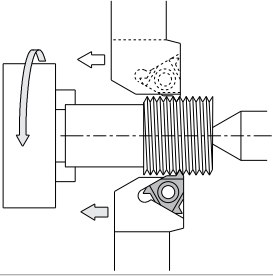
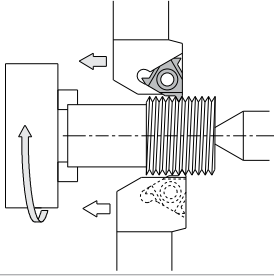
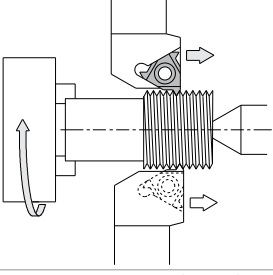
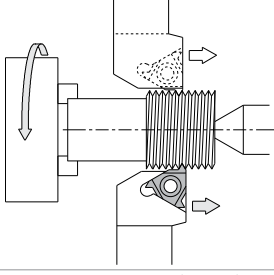
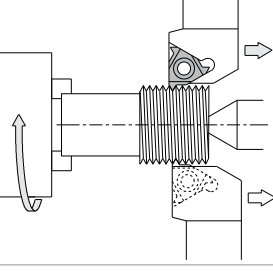
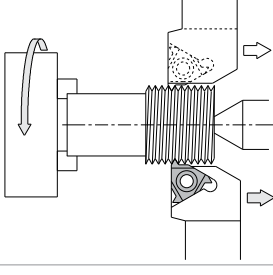
Whitworth Fine Thread : W

Nominal Thread	TPI	Internal Threading			Min. Bore Dia.(mm)	
		Toolholder	Insert			
			Partial Profile	Full Profile		
W9.5 TPI 24	24	SINR0816S-08E	08IR5501	-	8.30	
W10 TPI 24		-	EZTR060050-55-008		8.80	
W10.5 TPI 24					9.30	
W9.5 TPI 20	20	SINR0816S-08E	08IR5501	-	8.06	
W10 TPI 20		-	EZTR060050-55-008 EZTR080070-55-008		8.56	
W10.5 TPI 20					9.06	
W11 TPI 20					9.56	
W11.5 TPI 20					10.06	
W12 TPI 20					10.56	
W12.5 TPI 20					11.06	
W13 TPI 20					11.56	
W13.5 TPI 20	20	SINR1216S-11E	11IRA55 11IR55005	-	12.06	
W11 TPI 18	18	No Tools Available			9.40	
W11.5 TPI 18					9.90	
W12 TPI 18					10.40	
W12.5 TPI 18					10.90	
W14 TPI 18	18	SINR1216S-11E	11IRA55 11IR55005	-	12.40	
W14.5 TPI 18					12.90	
W15 TPI 18					13.40	
W16 TPI 18					14.40	
W13 TPI 16	16	No Tools Available			11.20	
W13.5 TPI 16					11.70	
W14 TPI 16	16	SINR1216S-11E	11IRA55 11IR55005	-	12.20	
W14.5 TPI 16					12.70	
W15 TPI 16					13.20	
W17 TPI 16		SINR1516S-11E			15.20	
W18 TPI 16	16	SINR1616S-16	16IRAG55 16IRG55 16IR5501 16IR5502	(16IR16W-□□)	16.20	
W19 TPI 16					17.20	
W20 TPI 16					18.20	
W16 TPI 14	14	SINR1216S-11E	11IRA55	-	13.94	
W17 TPI 14			11IR55005		14.94	
W18 TPI 14	14	SINR1516S-11			15.94	
W21 TPI 14	14	SINR1616S-16	16IRAG55 16IRG55 16IR5501 16IR5502	(16IR14W-□□) (16IR14W)	18.94	
W22 TPI 14						19.94
W23 TPI 14	14	SINR2016S-16	16IRAG55 16IRG55 16IR5501 16IR5502	(16IR14W-□□) (16IR14W)	20.94	
W24 TPI 14						21.94
W25 TPI 14						22.94
W26 TPI 14						23.94
W19 TPI 12	12	SINR1616S-16	16IRAG55 16IRG55 16IR5501 16IR5502	-	16.60	
W20 TPI 12						17.60
W21 TPI 12						18.60
W22 TPI 12						19.60
W28 TPI 12	12	SINR2420S-16	16IRAG55 16IRG55 16IR5501 16IR5502	-	25.60	
W30 TPI 12						27.60
W32 TPI 12	12	CINR3025S-16	16IRAG55 16IRG55 16IR5501 16IR5502	-	29.60	
W34 TPI 12						31.60
W35 TPI 12						32.60
W36 TPI 12						33.60
W38 TPI 12					35.60	
W40 TPI 12	12	CINR3732S-16	16IRAG55 16IRG55 16IR5501 16IR5502	-	37.60	
W42 TPI 12						39.60
W44 TPI 12						41.60
W45 TPI 12						42.60
W46 TPI 12					43.60	
W48 TPI 12	12	Hereafter, 12 TPI Whitworth Fine Thread can be machined by the same tool as above.			45.60	
W50 TPI 12					47.60	
• • •					• • •	
W23 TPI 10	10	SINR2016S-16	16IRAG55 16IRG55	-	20.12	
W24 TPI 10						21.12
W25 TPI 10						22.12
W26 TPI 10					23.12	
W28 TPI 9	9	SINR2420S-16	16IRAG55 16IRG55	-	24.80	
W30 TPI 9						26.80
W32 TPI 9					28.80	
W34 TPI 8	8	CINR3025S-16	16IRAG55 16IRG55	-	30.40	
W35 TPI 8					31.40	
W36 TPI 8					32.40	
W38 TPI 8					34.40	
W40 TPI 8					36.40	
W42 TPI 8					38.40	
W44 TPI 7	7	CINR3732S-22	22IRN55	-	39.89	
W45 TPI 7					40.89	
W46 TPI 7					41.89	
W48 TPI 7					43.89	
W50 TPI 7					45.89	
W52 TPI 7					47.89	
W55 TPI 6	6	CINR3732S-22	22IRN55	-	50.20	
W58 TPI 6					53.20	
W60 TPI 6					55.20	
W62 TPI 6					57.20	
•					•	
W72 TPI 6	5	CINR3732S-22	22IRN55	-	67.20	
W75 TPI 5					69.24	
• • •						• • •
W105 TPI 5	4	No Tools Available			99.24	
W110 TPI 4					102.8	
• • •					• • •	

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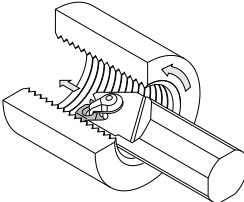
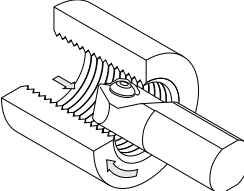
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External Threading (R-hand Thread / L-hand Thread)

External Threading			
Right-Hand Thread		Left-Hand Thread	
Toolholder	(R) R-hand	Toolholder	(L) L-hand
Insert	(R) R-hand	Insert	(L) L-hand
The direction of spindle revolution	M03	The direction of spindle revolution	M04
			
Toolholder	(L) L-hand	Toolholder	(R) R-hand
Insert	(L) L-hand	Insert	(R) R-hand
The direction of spindle revolution	M03	The direction of spindle revolution	M04
			
Toolholder	(R) R-hand	Toolholder	(L) L-hand
Insert	(R) R-hand	Insert	(L) L-hand
The direction of spindle revolution	M04	The direction of spindle revolution	M03
			
Toolholder	(L) L-hand	Toolholder	(R) R-hand
Insert	(L) L-hand	Insert	(R) R-hand
The direction of spindle revolution	M04	The direction of spindle revolution	M03
			

※ These tables are based on KTN / KTNS / KTT / KTTX Toolholder.

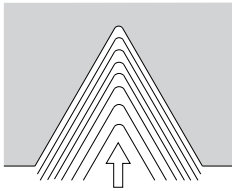
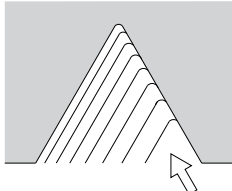
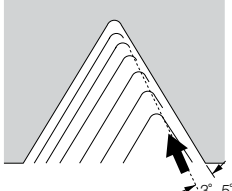
Internal Threading (R-hand Thread / L-hand Thread)

Internal Threading				
Right-Hand Thread		Left-Hand Thread		
	Toolholder	(R) R-hand	Toolholder	(L) L-hand
	Insert	(R) R-hand	Insert	(L) L-hand
	The direction of spindle revolution	M03	The direction of spindle revolution	M04
	Toolholder	(L) L-hand	Toolholder	(R) R-hand
	Insert	(L) L-hand	Insert	(R) R-hand
	The direction of spindle revolution	M04	The direction of spindle revolution	M03

※ These tables are based on SIN / CIN type Toolholder.

For KITG type (for large internal threading), Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

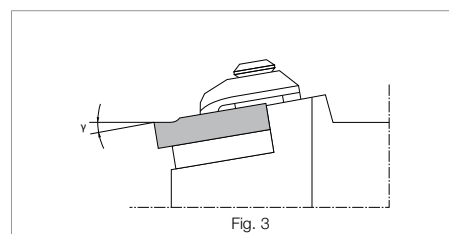
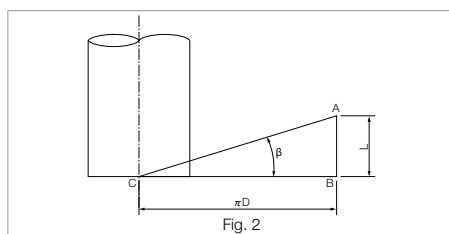
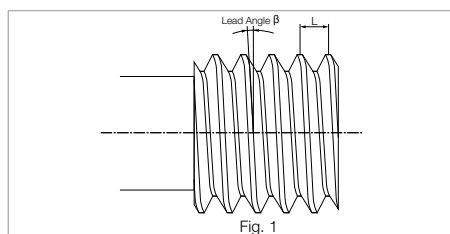
Infeed Methods

Infeed Methods	Features
 <p>Radial Infeed</p>	<ul style="list-style-type: none"> The cutting edge moves toward the center of the workpiece every pass. Suitable for relatively small pitch size threading. V-shape chips are generated and chip control may be difficult depending on workpiece material. Chips prevent coolant from reaching tool tip causing poor tool life.
 <p>Flank Infeed</p>	<ul style="list-style-type: none"> Used for large pitch size threading. No DOC on right side of the figure causes insert wear and on materials that work harden will cause hardening of this surface. Chips flow to one side.
 <p>Flank Compound Infeed</p>	<ul style="list-style-type: none"> Recommended method to reduce work hardening and improve insert life. 3-5 degrees for steel and up to 12 degrees for stainless materials. Chips flow to one side allowing coolant to reach insert tip. This method is recommended to threading by 2-thread insert.

Lead Angle of Thread

Thread's Lead Angle β as shown in Fig. 1 decides from the Work Diameter (Pitch Dia.) "D" and Lead "L" (in case of Single-start Thread, it is the same as Pitch "P"). Rolling a right-angled Triangle around a Cylinder and the Angle ACB in Fig. 2 becomes the Lead Angle β . The Calculation Formula is shown as follows.

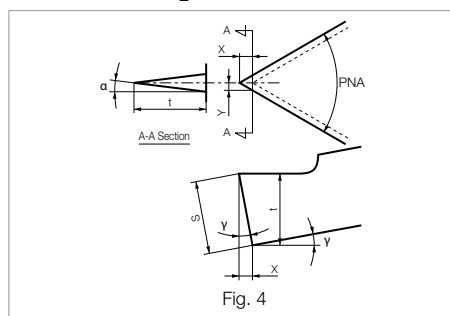
$$\tan \beta = \frac{L}{\pi D} = \frac{nTP}{\pi D} \quad \left[\begin{array}{l} \beta: \text{Lead Angle } D: \text{Pitch Dia. } n: \text{Number of Thread (such as double-start thread) } P: \text{Pitch} \\ L: \text{Lead (In case of single-start thread, it is equal to P. In case of n-start thread, it is equal to } n \times P) \end{array} \right]$$



Relief Angle of Thread

Against this Lead Angle, the Threading Insert needs Side Relief Angle α . TNN type Threading Insert is a negative Insert and it does not prepare the Relief Angle originally. But when installing the Insert on the Toolholder, the Edge Inclination Angle γ is prepared as shown in Fig. 3, and it generates both the front Relief Angle and the Side Relief Angle α . This Side Relief Angle is obtained by the Formula as follows. (See Fig. 4)

$$\tan \alpha = \tan \gamma \times \tan \left(\frac{\theta}{2} \right)$$



Symbol	e.g.)
α : Side Relief Angle	
γ : Inclination Angle after Installing Insert	External Insert : 10° Internal Insert : 15°
PNA: Insert's Thread Angle	Metric : 60° Tapered Pipe : 55° 30° Trapezoidal : 30°
T: Insert Thickness	

$$\begin{cases} X = S \cdot \sin \gamma \\ Y = X \cdot \tan (\theta/2) = t \cdot \tan \alpha \\ t = S \cdot \cos \gamma \end{cases}$$

Table 1

Inserts	Side Relief Angle α	
	External	Internal
60° Thread (M, UN, NPT)	5° 49'	8° 47'
55° Thread (W, G, PT)	5° 14'	7° 56'
30° Trapezoidal (Tr)	2° 43'	5° 7'

See table 1 for the Side Relief Angle depending on the insert. However, the Side Relief Angle for 1° is set by the toolholder itself, and the actual Side Relief Angle becomes $\alpha + 1^\circ$.

Thread Types & Basic Profile / Applicable Toolholders & Inserts

Thread Type	Basic Profile	Symbol (Previous Symbol)	Thread Type	Applicable Insert	Applicable Toolholder
Metric		M e.g.) M30	External Thread	○○E%○○○ISO(-TF/TQ) ○○ER60(-TF/TQ) 16ER60○○	KTN%○○○○□-○○ KTN\$R○○○○□-16
			Internal Thread	○○I%○○○ISO(-TF/TQ) ○○IR□□60 ○○IR60○○(○)	SIN%○○○○S-○○(E) CIN%○○○○S-○○
Unified		UN UNC UNF UNEF e.g.) 3/4 -16 UNF	External Thread	○○E%○○○UN(-TF/TQ) ○○ER□□60(-TF/TQ) 16ER60○○	KTN\$R○○○○□-16 KTN\$R○○○○□-16F, S○○□-KTTXL16
			Internal Thread	○○I%○○○UN(-TF/TQ) ○○IR□□60 ○○IR60○○(○)	SIN\$R○○○○S-○○(E) CIN\$R○○○○S-○○
Parallel Pipe		External Threading: G(PF) Internal Threading: G(PF) Rp(PS) e.g.) G3/4 (PF3/4)	External Thread	○○E%○○○W(-TF/TQ) ○○ER□□55 16ER55○○	KTN\$R○○○○□-16 KTN\$R○○○○□-16F, S○○□-KTTXL16
			Internal Thread	○○I%○○○W(-TF/TQ) ○○IR□□55 ○○IR55○○(○)	SIN\$R○○○○S-○○(E) CIN\$R○○○○S-○○
Whitworth		W e.g.) W3/8	External Thread	○○E%○○○W(-TF/TQ) ○○ER□□55 16ER55○○	KTN\$R○○○○□-16 KTN\$R○○○○□-16F, S○○□-KTTXL16
			Internal Thread	○○I%○○○W(-TF/TQ) ○○IR□□55 ○○IR55○○(○)	SIN\$R○○○○S-○○(E) CIN\$R○○○○S-○○
Tapered Pipe		External Threading: R(PT) (BSPT) Internal Threading: Rc(PT) (BSPT) e.g.) R1/2 (PT1/2)	External Thread	16ER○○BSPT(-TF/TQ) T○○%55○○* TTX32R55○○*	KTN\$R○○○○□-16 KTN\$R○○○○□-16F, S○○□-KTTXL16
			Internal Thread	○○I%○○○BSPT(-TF/TQ) T○○%55○○*	SIN\$R○○○○S-○○(E) CIN\$R○○○○S-○○
American National Pipe		NPT e.g.) 3/8 -18 NPT	External Thread	16ER○○(○)NPT	KTN\$R○○○○□-16
			Internal Thread	16IRO○○(○)NPT	SIN\$R○○○○S-○○ CIN\$R○○○○S-○○
30° Trapezoidal		Tr e.g.) Tr 26x3	External Thread	○○ER○○○TR	KTN\$R○○○○□-16
			Internal Thread	○○IRO○○TR	SIN\$R○○○○S-○○ CIN\$R○○○○S-○○

• Above shows the usage example of applicable Toolholders / Inserts.

*...For the case when the thread root's corner-R(RE) can be smaller than the standard.