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Tooling Application (External Thread)

Thread Types	Metric	Unified	Parallel Pipe	Whitworth	Tapered Pipe	American National Tapered Pipe	30° Trapezoidal	
	M	UN, UNC UNF, UNEF	G (PF)	W	R (PT) (BSPT)	NPT	Tr	
Thread Shape								
Toolholder Shape	Pitch							
	mm	TPI	TPI	TPI	TPI	TPI	mm	
 KTN J22 (KTN-JCT) J23	Full Profile	0.5~5.0 (0.5~3.0) 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	0.5~5.0 (0.5~3.0) J16	48~5 (48~8) J16	28~11 (28~11) J18	40~5 (40~8) J18	28~11 (28~11) J18	-	2.0~5.0 (2.0~3.0) J20
 KTNS J24 S-KTN Sleeve Holder J25	Full Profile	0.5~3.0 J6	24~8 J8	19~11 J10	16~11 J10	28~11 J12	18.0~11.5 J14	-
	Partial Profile	0.5~3.0 J16	48~8 J16	28~11 J18	40~8 J18	28~11 J18	-	2.0~3.0 J20
 KTT J41	Full Profile	1.0~2.0 J40	-	-	-	-	-	-
	Partial Profile	0.5~3.5 J40	56~8 J40	28~11 J40	24~7 J40	28~11 J40	-	-
 KTTX J39 S-KTTX J39	Partial Profile	0.5~2.0 J38	56~14 J38	28~11 J38	24~11 J38	28~11 J38	-	-
	Partial Profile	0.2~1.5 J28	64~18 J28	28~19 J28	40~16 J28	28~19 J28	-	-
 KTKF J29 (Goose-neck holder / Y-axis holder)	Partial Profile	0.2~1.5 J28	64~18 J28	28~19 J28	40~16 J28	28~19 J28	-	-
	Partial Profile	0.7~4.0 J34	44~5 J34	-	-	-	-	-
 KKC J35	Partial Profile	0.7~4.0 J34	44~5 J34	-	-	-	-	-

Tooling Application (Internal Thread)

Thread Types	Metric	Unified	Parallel Pipe	Whitworth	Tapered Pipe	American National Tapered Pipe	30° Trapezoidal	
	M	UN, UNC UNF, UNEF	G (PF) Rp (PS)	W	Rc (PT) (BSPT)	NPT	Tr	
Thread Shape								
Toolholder Shape	Pitch	mm	TPI	TPI	TPI	TPI	mm	
 Ezt J44	Partial Profile	0.5~1.75 J44	36~16 J44	28~19 J44	24~18 J44	28~19 J44	18~14 J44	-
 Vnt J48	Partial Profile	0.75~1.5 J48	28~18 J48	-	-	-	-	-
 Sin J26	Full Profile	0.5~5.0 J7	24~8 J9	19~11 J11	16~11 J11	28~11 J13	18~11.5 J15	-
	Partial Profile	0.5~5.0 J17	48~5 J17	28~11 J19	40~5 J19	28~11 J19	-	2.0~5.0 J21
 Cin J27	Full Profile	1.0~5.0 J7	24~8 J9	19~11 J11	16~11 J11	28~11 J13	18~11.5 J15	-
	Partial Profile	0.5~5.0 J17	48~5 J17	28~11 J19	40~5 J19	28~11 J19	-	2.0~5.0 J21
 Kitg J43	Partial Profile	0.5~3.0 J42	48~8 J42	28~11 J42	24~8 J42	28~11 J42	-	-
 Stwp J51	Partial Profile	0.75~3.5 J50	28~8 J50	-	-	-	-	-
 A-KKc J36	Partial Profile	2.50~3.5 J34	44~5 J34	-	-	-	-	-

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

Threading insert with molded chipbreaker

TQ Chipbreaker

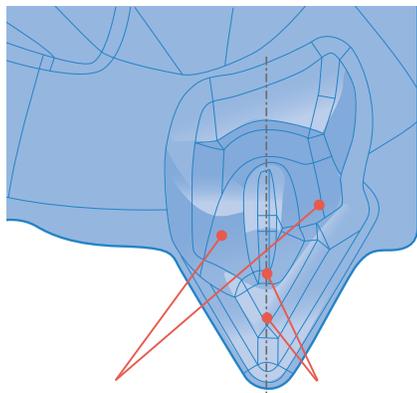
Advanced Productivity with Chip Control Improvements
Prolonged Tool Life with Newly Added Grades

1 Stable Chip Control

Stable Chip Control with Asymmetrical Chipbreaker Design

Chipbreaker Geometry

Stable chip control regardless of cutting direction

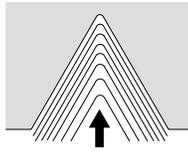


For radial infeed
Asymmetric dot design controls chip-flow direction

For flank infeed /
Modified flank infeed
Breaks chips easily with shallow breaker depth

Chip Control Comparison (Internal Evaluation)

Radial Infeed

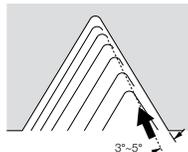


TQ Chipbreaker



Competitor A

Flank Compound Infeed



TQ Chipbreaker



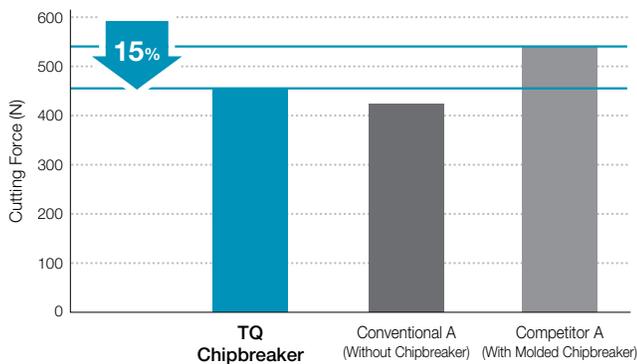
Competitor A

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

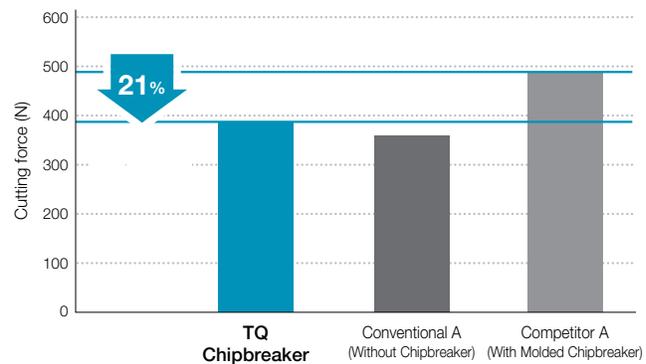
Strong Edge and Low Cutting Forces

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)



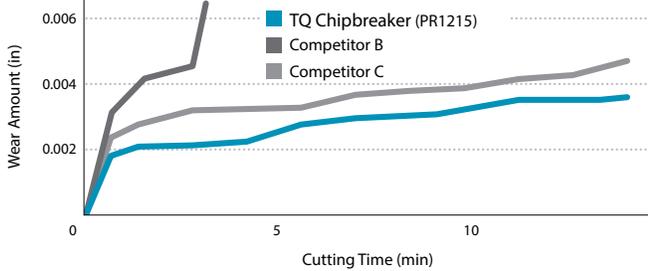
Cutting Conditions: $V_c = 490$ sfm, Adjusted Angle 5° , Wet, 16ER150ISO type
Cutting force is average of total passes (6 passes), M35 x TP1.5 Workpiece Material: 4115

3 Improved tool life with new insert grades

For steel machining PR1215
For stainless steel machining PR1515 (First recommendation) PR1535 (Stability focused)

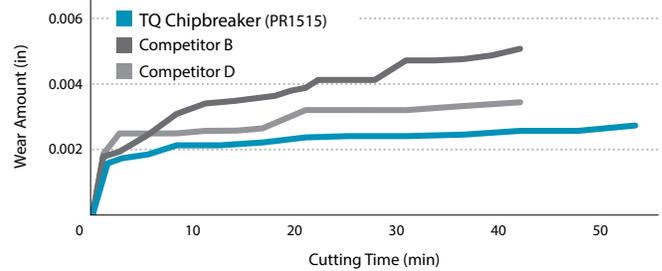
Wear Resistance Comparison (Internal evaluation)

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

“Threading” is added to small parts machining special tool series

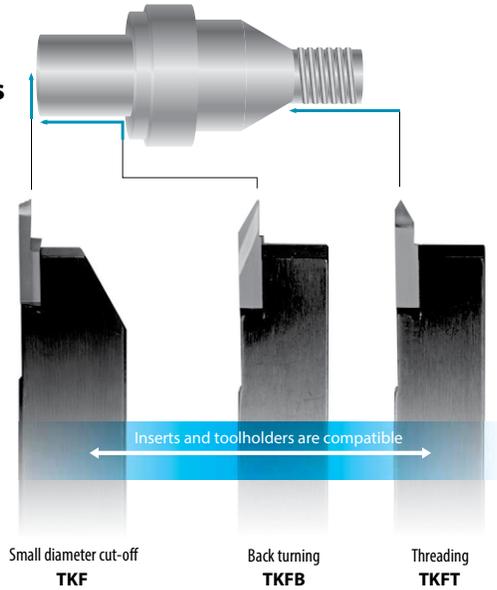
For threading

TKFT



Applicable for various type 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			(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			(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

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

Internal Threading (Metric)

				Carbon Steel / Alloy Steel										P						
				Stainless Steel										M						
				Cast Iron										K						
				Non-Ferrous Metals										N						
Unit	Insert	Part Number	Thread Type	Symbol Thread Type	Pitch (mm)	Profile	Thread Angle PNA (°)	Dimensions (mm)					Carbide					Applicable Toolholder ➔ J26, J27		
								IC	S	D1	RE	PDX	PVD	-	-	TC60	Cermet			
													PR1115	PR1215	PR1515	PR1535	GW15	-	-	
mm		111R 100ISO-TF	Metric	M	1	Full Profile	60	6.35	3.18	3	0.07	0.8	●	●	●	●	●	●	●	SINR...11E SINR...11
		125ISO-TF			1.25						0.08	1.1	●	●	●	●	●	●	●	
		150ISO-TF			1.5						0.11	1.1	●	●	●	●	●	●	●	
		175ISO-TF			1.75						0.12	1.1	●	●	●	●	●	●	●	
		161R 100ISO-TF	Metric	M	1	Full Profile	60	9.525	3.68	4	0.07	0.8	●	●	●	●	●	●	●	SINR...16 CINR...16
		125ISO-TF			1.25						0.08	1.1	●	●	●	●	●	●		
		150ISO-TF			1.5						0.11	1.1	●	●	●	●	●	●		
		175ISO-TF			1.75						0.12	1.1	●	●	●	●	●	●		
		200ISO-TF			2						0.14	1.5	●	●	●	●	●	●		
		250ISO-TF			2.5						0.17	1.5	●	●	●	●	●	●		
		111R 100ISO-TQ	Metric	M	1	Full Profile	60	6.35	3.18	3	0.07	0.8	●	●	●	●	●	●	●	SINR...11E SINR...11
		125ISO-TQ			1.25						0.08	1.1	●	●	●	●	●	●		
		150ISO-TQ			1.5						0.11	1.1	●	●	●	●	●	●		
		175ISO-TQ			1.75						0.12	1.1	●	●	●	●	●	●		
		161R 100ISO-TQ	Metric	M	1	Full Profile	60	9.525	3.68	4	0.07	0.8	●	●	●	●	●	●	●	SINR...16 CINR...16
		125ISO-TQ			1.25						0.08	1.1	●	●	●	●	●	●		
150ISO-TQ		1.5			0.11						1.1	●	●	●	●	●	●			
175ISO-TQ		1.75			0.12						1.1	●	●	●	●	●	●			
200ISO-TQ		2			0.14						1.5	●	●	●	●	●	●			
250ISO-TQ		2.5			0.17						1.5	●	●	●	●	●	●			
	Molded Chipbreaker	111R 050ISO	Metric	M	0.5	Full Profile	60	6.35	3.18	3	0.03	0.55	●	●	●	●	●	●	SINR...11E SINR...11	
		075ISO			0.75						0.05	0.68	●	●	●	●	●			
		100ISO			1						0.07	0.8	●	●	●	●	●			
		125ISO			1.25						0.08	1.1	●	●	●	●	●			
		150ISO			1.5						0.11	1.1	●	●	●	●	●			
		200ISO			2						0.14	0.9	●	●	●	●	●			
	111L 100ISO	1	0.07	0.8	●	●	●	●	●	SINL...11E SINL...11										
	150ISO	1.5	0.11	1.1	●	●	●	●	●											
	161R 100ISO	Metric	M	1	Full Profile	60	9.525	3.68	4		0.07	0.8	●	●	●	●	●	●	SINR...16 CINR...16	
				150ISO							1.5	0.11	1.1	●	●	●	●	●		
200ISO				2						0.14	1.5	●	●	●	●	●				
250ISO				2.5						0.16	1.5	●	●	●	●	●				
300ISO	3	0.19	1.6	●	●	●	●	●												
161L 100ISO	Metric	M	1	Full Profile	60	9.525	3.68	4	0.07	0.8	●	●	●	●	●	●	SINL...16 CINL...16			
			150ISO						1.5	0.11	1.1	●	●	●	●	●				
			200ISO						2	0.14	1.5	●	●	●	●	●				
			221R 350ISO						Metric	M	3.5	Full Profile	60	12.7	4.9	4.85		0.23	2.1	●
400ISO	4	0.26		2.8	●	●	●	●			●									
450ISO	4.5	0.3		2.8	●	●	●	●			●									
500ISO	5	0.34		2.8	●	●	●	●			●									

Right-hand shown

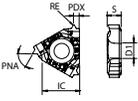
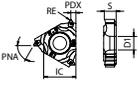
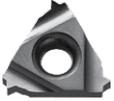
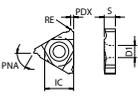
Recommended Cutting Conditions ➔ J52
Depth of Cut & Number of Passes ➔ J53

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

Threading inserts are sold in 5 piece boxes

TC60 (Threading inserts) are sold in 10 piece boxes

Internal Threading (Unified)

		Carbon Steel / Alloy Steel											○	●			P	
		Stainless Steel															●	M
		Cast Iron																K
		Non-Ferrous Metals																N
Unit	Insert	Part Number	Thread Type	Symbol Thread Type	Pitch (TPI)	Profile	Thread Angle PNA (°)	Dimensions (in)					Carbide			Applicable Toolholder J26, J27		
								IC	S	D1	RE	PDX	PVD					
													PR1115	PR1215	PR1515		PR1535	
Inch	 	16IR 08UN-TF	Unified	UN UNF UNEF	8	Full Profile	60	3/8	0.145	0.157	0.0083	0.0709	●	●	●	SINR.-16 CINR.-16		
		10UN-TF			10						0.0067	0.0591	●	●	●			
		12UN-TF			12						0.0055	0.0591	●	●	●			
		13UN-TF			13						0.0051	0.0591	●	●	●			
		14UN-TF			14						0.0047	0.0591	●	●	●			
		16UN-TF			16						0.0039	0.0433	●	●	●			
		18UN-TF			18						0.0035	0.0394	●	●	●			
		20UN-TF			20						0.0031	0.0394	●	●	●			
	24UN-TF	24	0.0024	0.0315	●	●	●											
	  <p>Molded Chipbreaker</p>	16IR 08UN-TQ	Unified	UN UNF UNEF	8	Full Profile	60	3/8	0.145	0.157	0.0083	0.0709	●	●	●	SINR.-16 CINR.-16		
		10UN-TQ			10						0.0067	0.0591	●	●	●			
		12UN-TQ			12						0.0055	0.0591	●	●	●			
		13UN-TQ			13						0.0051	0.0591	●	●	●			
		14UN-TQ			14						0.0047	0.0591	●	●	●			
		16UN-TQ			16						0.0039	0.0433	●	●	●			
		18UN-TQ			18						0.0035	0.0394	●	●	●			
		20UN-TQ			20						0.0031	0.0394	●	●	●			
	24UN-TQ	24	0.0024	0.0315	●	●	●											
	 	22IR 08UN	Unified	UN UNF UNEF	8	Full Profile	60	1/2	0.193	0.191	0.0079	0.0709	●			SINR.-22 CINR.-22		

Right-hand shown

Recommended Cutting Conditions J52
Depth of Cut & Number of Passes J53

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

Threading inserts are sold in 5 piece boxes

TC60 (Threading inserts) are sold in 10 piece boxes

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

External Threading (Parallel Pipe G(PF), Whitworth W)

		Carbon Steel / Alloy Steel											●	●	●	●	P	
		Stainless Steel											●	●	●	●	M	
		Cast Iron											●	●	●	●	K	
		Non-Ferrous Metals											●	●	●	●	N	
Unit	Insert	Part Number	Thread Type	Symbol Thread Type	Pitch (TPI)		Profile	Thread Angle PNA (°)	Dimensions (in)					Carbide				Applicable Toolholder J22~J25
					G(PF)	W			IC	S	D1	RE	PDX	PVD				
														PR1115 PR1215 PR1515 PR1535				
Inch		16ER 11W-TF	Parallel Pipe Whitworth	G(PF) W	11	11	Full Profile	55	3/8	0.145	0.157	0.0118	0.0591	●	●	●	●	KTNR...-16 KTNR...-16F KTNR...-16JCT KTNSR...-16 S...-KTNL16
		14W-TF			14	14						0.0091	0.0591	●	●	●	●	
		16W-TF			-	16						0.0075	0.0433	●	●	●	●	
		19W-TF			19	-						0.0063	0.0394	●	●	●	●	
		16ER 11W-TQ	Parallel Pipe Whitworth	G(PF) W	11	11	Full Profile	55	3/8	0.145	0.157	0.0118	0.0591	●	●	●	●	KTNR...-16 KTNR...-16F KTNR...-16JCT KTNSR...-16 S...-KTNL16
		14W-TQ			14	14						0.0091	0.0591	●	●	●	●	
		16W-TQ			-	16						0.0075	0.0433	●	●	●	●	
		19W-TQ			19	-						0.0063	0.0394	●	●	●	●	

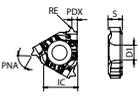
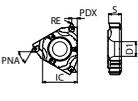
Right-hand shown

Recommended Cutting Conditions J52
Depth of Cut & Number of Passes J54

Threading inserts are sold in 5 piece boxes

TC60 (Threading inserts) are sold in 10 piece boxes

Internal Threading (Parallel Pipe G(PF), Whitworth W)

		Carbon Steel / Alloy Steel										○	●	●	●	P			
		Stainless Steel														M			
		Cast Iron														K			
		Non-Ferrous Metals														N			
Unit	Insert	Part Number	Thread Type	Symbol Thread Type	Pitch (TPI)		Profile	Thread Angle PNA (°)	Dimensions (in)					Carbide				Applicable Toolholder J26, J27	
					G(PF)	W			IC	S	D1	RE	PDX	PVD					
														PR1115 PR1215 PR1515 PR1535					
Inch			16IR 11W-TF	G(PF)	11	11	Full Profile	55	3/8	0.145	0.157	0.0118	0.0591	●	●	SINR..-16 CINR..-16			
			14W-TF	W	14	14						0.0091	0.0591	●	●				
			16W-TF	-	16	-						0.0075	0.0433	●	●				
			19W-TF	-	19	-						0.0063	0.0394	●	●				
			16IR 11W-TQ	G(PF)	11	11	Full Profile	55	3/8	0.145	0.157	0.0118	0.0591	●	●				
			14W-TQ	W	14	14						0.0091	0.0591	●	●				
			16W-TQ	-	16	-						0.0075	0.0433	●	●				
			19W-TQ	-	19	-						0.0063	0.0394	●	●				

No wiper effect is expected when threading the internal whitworth screw using 16IROOW insert. Right-hand shown

Recommended Cutting Conditions J52
Depth of Cut & Number of Passes J54

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

Threading inserts are sold in 5 piece boxes

TC60 (Threading inserts) are sold in 10 piece boxes

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

External Threading (Tapered Pipe R(PT)(BSPT))

		Carbon Steel / Alloy Steel											○	●	△	P		
		Stainless Steel														●	M	
		Cast Iron														●	K	
		Non-Ferrous Metals														●	N	
Unit	Insert	Part Number	Thread Type	Symbol Thread Type	Pitch (TPI)	Profile	Thread Angle PNA (°)	Dimensions (in)					Carbide					Applicable Toolholder Ⓢ J22~J25
								IC	S	D1	RE	PDX	PVD	-				
Inch		16ER 11BSPT-TF 14BSPT-TF 19BSPT-TF 28BSPT-TF	Tapered Pipe	R,(PT) (BSPT)	11 14 19 28	Full Profile	55	3/8	0.145	0.157	0.0114 0.0087 0.0063 0.0039	0.0630 0.0630 0.0394 0.0315	●	●	●	●	●	KTNR...-16 KTNR...-16F KTNR...-16JCT KTNSR...-16 S...-KTNL16
		16ER 11BSPT-TQ 14BSPT-TQ 19BSPT-TQ 28BSPT-TQ	Tapered Pipe	R,(PT) (BSPT)	11 14 19 28	Full Profile	55	3/8	0.145	0.157	0.0114 0.0087 0.0063 0.0039	0.0630 0.0630 0.0394 0.0315	●	●	●	●	KTNR...-16 KTNR...-16F KTNR...-16JCT KTNSR...-16 S...-KTNL16	
		16ER 11BSPT 14BSPT 19BSPT 28BSPT	Tapered Pipe	R,(PT) (BSPT)	11 14 19 28	Full Profile	55	3/8	0.145	0.157	0.0114 0.0087 0.0063 0.0039	0.0630 0.0630 0.0394 0.0315	●	●	●	●		

Right-hand shown

Recommended Cutting Conditions Ⓢ J52
Depth of Cut & Number of Passes Ⓢ J54

Threading inserts are sold in 5 piece boxes

TC60 (Threading inserts) are sold in 10 piece boxes

Internal Threading (Tapered Pipe Rc(PT)(BSPT))

		Carbon Steel / Alloy Steel											P					
		Stainless Steel											M					
		Cast Iron											K					
		Non-Ferrous Metals											N					
Unit	Insert	Part Number	Thread Type	Symbol Thread Type	Pitch (TPI)	Profile	Thread Angle PNA (°)	Dimensions (in)					Carbide					Applicable Toolholder J26, J27
								IC	S	D1	RE	PDX	PVT115	PVT215	PVT315	PVT535	GMT5	
Inch		11R 14BSPT-TF	Tapered Pipe	Rc(PT) (BSPT)	14	Full Profile	55	1/4	0.125	0.118	0.0087	0.0382	●	●	SINR..-11E SINR..-11			
		19BSPT-TF			19						0.0063	0.0307	●	●				
		28BSPT-TF			28						0.0039	0.0236	●	●				
		16R 11BSPT-TF	Tapered Pipe	Rc(PT) (BSPT)	11	Full Profile	55	3/8	0.145	0.157	0.0114	0.0591	●	●	SINR..-16 CINR..-16			
		14BSPT-TF			14						0.0087	0.0382	●	●				
		Molded Chipbreaker	11R 14BSPT-TQ	Tapered Pipe	Rc(PT) (BSPT)	14	Full Profile	55	1/4	0.125	0.118	0.0087	0.0382	●	●	SINR..-11E SINR..-11		
			19BSPT-TQ			19						0.0063	0.0307	●	●			
			28BSPT-TQ			28						0.0039	0.0236	●	●			
		Molded Chipbreaker	16R 11BSPT-TQ	Tapered Pipe	Rc(PT) (BSPT)	11	Full Profile	55	3/8	0.145	0.157	0.0114	0.0591	●	●	SINR..-16 CINR..-16		
			14BSPT-TQ			14						0.0087	0.0382	●	●			
		11R 14BSPT	Tapered Pipe	Rc(PT) (BSPT)	14	Full Profile	55	1/4	0.125	0.118	0.0087	0.0382	●	●	SINR..-11E SINR..-11			
		19BSPT			19						0.0063	0.0307	●	●				
		28BSPT			28						0.0039	0.0236	●	●				
		16R 11BSPT	Tapered Pipe	Rc(PT) (BSPT)	11	Full Profile	55	3/8	0.145	0.157	0.0114	0.0591	●	●	SINR..-16 CINR..-16			
		14BSPT			14						0.0087	0.0382	●	●				

Right-hand shown

Recommended Cutting Conditions J52
Depth of Cut & Number of Passes J54

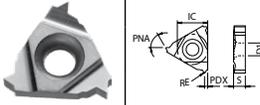
INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Threading inserts are sold in 5 piece boxes

TC60 (Threading inserts) are sold in 10 piece boxes

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

External Threading (American National Tapered Pipe NPT)

		Carbon Steel / Alloy Steel											●	P	
		Stainless Steel											●	M	
		Cast Iron											●	K	
		Non-Ferrous Metals											●	N	
Unit	Insert	Part Number	Thread Type	Symbol Thread Type	Pitch (TPI)	Profile	Thread Angle PNA (°)	Dimensions (in)					Carbide		Applicable Toolholder ➡ J22~J25
								IC	S	D1	RE	PDX	PVD	-	
Inch		16ER 11.5NPT	American National Tapered Pipe	NPT	11.5	Full Profile	60	3/8	0.145	0.157	0.0024	0.0591	●	●	KTNR...-16 KTNR...-16F KTNR...-16JCT KTNSR...-16 S...-KTNL16
		14NPT			14						0.0020	0.0591	●	●	
		18NPT			18						0.0016	0.0354	●	●	

Right-hand shown

Recommended Cutting Conditions ➡ J52
Depth of Cut & Number of Passes ➡ J54

Threading inserts are sold in 5 piece boxes

TC60 (Threading inserts) are sold in 10 piece boxes

Internal Threading (American National Tapered Pipe NPT)

Unit	Insert	Part Number	Thread Type	Symbol Thread Type	Pitch (TPI)	Profile	Thread Angle PNA (°)	Dimensions (in)					Carbide		Applicable Toolholder J26, J27			
								IC	S	D1	RE	PDX	PVD	-				
Inch		16IR 11.5NPT	American National Tapered Pipe	NPT	11.5	Full Profile	60	3/8	0.145	0.157	0.0024	0.0591	●	●	SINR...-16 CINR...-16			
		14NPT			14						0.0020	0.0591	●	●				
		18NPT			18						0.0016	0.0354	●	●				

Right-hand shown

Recommended Cutting Conditions J52
Depth of Cut & Number of Passes J54

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

Threading inserts are sold in 5 piece boxes

TC60 (Threading inserts) are sold in 10 piece boxes

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Internal Threading (60° Partial Profile / Metric, Unified)

Insert		Part Number		Thread Type		Symbol Thread Type		Pitch				Profile	Thread Angle PNA (°)	Dimensions (in)					Coatings			Applicable Toolholder J26, J27		
								Metric (mm)		Unified (TPI)				IC	S	D1	RE	PDX	PVD	- GW15	- TC60			
								min.	max.	min.	max.													
								Unit	Unit	Unit	Unit			Unit	Unit	Unit	Unit							
		06IR 60005		Metric Unified	M UN/UNF	mm	0.75	1.25	Inch	28	20	Partial Profile	60	5/32	0.075	0.091	0.0020	0.0236	●			SINR...06E		
		08IR 60007					1	1.75		20	16			3/16	0.094	0.091	0.0028	0.0315	●			SINR...08E		
		11IR 60005	A60				0.75	1.5		32	16			1/4	0.125	0.118	0.0020	0.0394	●	●			SINR...-11E SINR...-11	
		16IR 6001	A60 AG60 G60				0.5	1.5		48	16						0.0008	0.0394	●	●			SINR...-16 CINR...-16	
							1.5	2.5		16	10			3/8	0.145	0.157	0.0039	0.0591	●	●	△			SINR...-16 CINR...-16
							0.5	1.5		48	16						0.0008	0.0394	●	●			SINR...-16 CINR...-16	
							0.5	3		48	8						0.0008	0.0669	●	●			SINR...-16 CINR...-16	
							1.75	3		14	8						0.0043	0.0669	●	●			SINR...-16 CINR...-16	
							3.5	5		7	5			1/2	0.193	0.191	0.0087	0.0984	●	●			SINR...-22 CINR...-22	

Right-hand shown

Recommended Cutting Conditions J52
Depth of Cut & Number of Passes J55, J56, J58

Corner-R(RE) Selection for Partial Profiling Inserts

	External Threading	Internal Threading	Metric, Unified Thread
Metric Unified	RE ≤ 0.1443TP	RE ≤ 0.0720TP	Corner-R(RE) for Internal Threading is almost half of that of External
Parallel Pipe (Whitworth) Tapered Pipe	(For both external and Internal thread) RE ≤ 0.1373TP		Parallel Pipe, Tapered Pipe, Whitworth thread Same Corner-R(RE) for both External and Internal Threading

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

Threading inserts are sold in 5 piece boxes

TC60 (Threading inserts) are sold in 10 piece boxes

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

External Threading (55° Partial Profile / G, R, W)

		Carbon Steel / Alloy Steel												○	●	△	P			
		Stainless Steel															M			
		Cast Iron															K			
		Non-Ferrous Metals															N			
Unit	Insert	Part Number	Thread Type	Symbol Thread Type	Pitch				Profile	Thread Angle PNA (°)	Dimensions (in)					Carbide				Applicable Toolholder ➡ J22~J25
					G(PF), R(PT) (TPI)		W (TPI)				IC	S	D1	RE	PDX	PVD				
					min.	max.	min.	max.								PR1115	PR1215	PR1515	PR1535		GW15
Inch		16ER A55-TF	Parallel / Tapered Pipe Whitworth	G(PF) R(PT) W	28	19	40	16	Partial Profile	55	3/8	0.145	0.157	0.0024	0.0394	●	●	●	●	KTNR...-16 KTNR...-16F KTNR...-16JCT KTNSR...-16 S...-KTNL16
		AG55-TF			28	11	40	8						0.0024	0.0630	●	●	●	●	
		G55-TF			14	11	14	8						0.0087	0.0630	●	●	●	●	
	 Molded Chipbreaker	16ER A55-TQ	Parallel / Tapered Pipe Whitworth	G(PF) R(PT) W	28	19	40	16	Partial Profile	55	3/8	0.145	0.157	0.0024	0.0394	●	●	●	KTNR...-16 KTNR...-16F KTNR...-16JCT KTNSR...-16 S...-KTNL16	
		AG55-TQ			28	11	40	8						0.0024	0.0630	●	●	●		●
		G55-TQ			14	11	14	8						0.0087	0.0630	●	●	●		●
	16ER A55 AG55 G55	Parallel / Tapered Pipe Whitworth	G(PF) R(PT) W	28	19	40	16	Partial Profile	55	3/8	0.145	0.157	0.0024	0.0394	●	●	●	KTNR...-22		
	22ER N55			14	11	14	8						0.0024	0.0669	●	●	●		●	
					-	-	7	5		55	1/2	0.193	0.191	0.0189	0.0984	●	●	●		

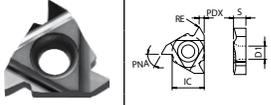
Right-hand shown

Recommended Cutting Conditions ➡ J52
Depth of Cut & Number of Passes ➡ J56~J58

Threading inserts are sold in 5 piece boxes

TC60 (Threading inserts) are sold in 10 piece boxes

Internal Threading (55° Partial Profile / G, Rc, W)

		Carbon Steel / Alloy Steel										●	P															
		Stainless Steel										●	M															
		Cast Iron										●	K															
		Non-Ferrous Metals										●	N															
Unit	Insert	Part Number	Thread Type	Symbol Thread Type	Pitch				Profile	Thread Angle PNA (°)	Dimensions (in)					Carbide		Applicable Toolholder J26, J27										
					G(PF), Rc(PT) (TPI)		W (TPI)				IC	S	D1	RE	PDX	PVD	-											
					min.	max.	min.	max.											PR1115	GW15								
Inch		06IR 5501	Parallel / Tapered Pipe Whitworth	G(PF) Rc(PT) W	28		24		Partial Profile	55	5/32	0.075	0.091	0.0039	0.0236	●	-	SINR..-06E										
		08IR 5501			28	19	24	20										55	3/16	0.094	0.091	0.0039	0.0315	●	SINR..-08E			
		11IR A55			28	19	40	16										55	1/4	0.125	0.118	0.0024	0.0433	● ●	SINR..-11E SINR..-11			
		16IR A55			28	19	40	16										55	3/8	0.145	0.157	0.0024	0.0394	● ●	SINR..-16 CINR..-16			
		AG55			28	11	40	8																		0.0024	0.0669	● ●
		G55			14	11	14	8																		0.0087	0.0669	● ●
22IR N55	-	-	7	5	55	1/2	0.193	0.191	0.0185	0.0984	● ●	SINR..-22 CINR..-22																

Right-hand shown

Recommended Cutting Conditions J52
Depth of Cut & Number of Passes J56~J58

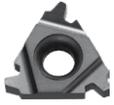
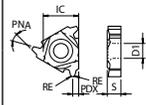
INSERT GRADES	A
TURNING INSERTS	B
CBN / PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Threading inserts are sold in 5 piece boxes

TC60 (Threading inserts) are sold in 10 piece boxes

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

External Threading (30° Trapezoidal Tr)

		Carbon Steel / Alloy Steel											●	P	
		Stainless Steel											●	M	
		Cast Iron											●	K	
		Non-Ferrous Metals											●	N	
Unit	Insert	Part Number	Thread Type	Symbol Thread Type	Pitch (mm)	Profile	Thread Angle PNA (°)	Dimensions (mm)					PVD	Carbide	Applicable Toolholder ➡ J22~J25
								IC	S	D1	RE	PDX			
mm	 	16ER 200TR	30° type (Trapezoidal)	Tr	2	Partial Profile	30	9.525	3.68	4	0.2	1.6	●	KTNR...-16 KTNR...-16F KTNR...-16JCT KTNSR...-16 S...-KTNL16	
		300TR	3										●		
	22ER 400TR	30° type (Trapezoidal)	Tr	4	Partial Profile	30	12.7	4.9	4.85	0.2	2.5	●			
	500TR	5										●			

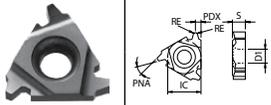
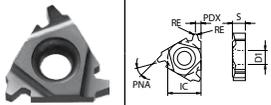
Right-hand shown

Recommended Cutting Conditions ➡ J52
Depth of Cut & Number of Passes ➡ J57

Threading inserts are sold in 5 piece boxes

TC60 (Threading inserts) are sold in 10 piece boxes

Internal Threading (30° Trapezoidal Tr)

		Carbon Steel / Alloy Steel											●	P
		Stainless Steel											●	M
		Cast Iron											●	K
		Non-Ferrous Metals											●	N
Unit	Insert	Part Number	Thread Type	Symbol Thread Type	Pitch (mm)	Profile	Thread Angle PNA (°)	Dimensions (mm)					Carbide	Applicable Toolholder ➡ J26, J27
								IC	S	D1	RE	PDX		
mm		16R 200TR	30° type (Trapezoidal)	Tr	2	Partial Profile	30	9.525	3.68	4	0.2	1.6	●	SINR..-16 CINR..-16
		300TR			3									
mm		22R 400TR	30° type (Trapezoidal)	Tr	4	Partial Profile	30	12.7	4.9	4.85	0.2	2.5	●	SINR...-22 CINR...-22
		500TR			5									

Right-hand shown

Recommended Cutting Conditions ➡ J52
Depth of Cut & Number of Passes ➡ J57

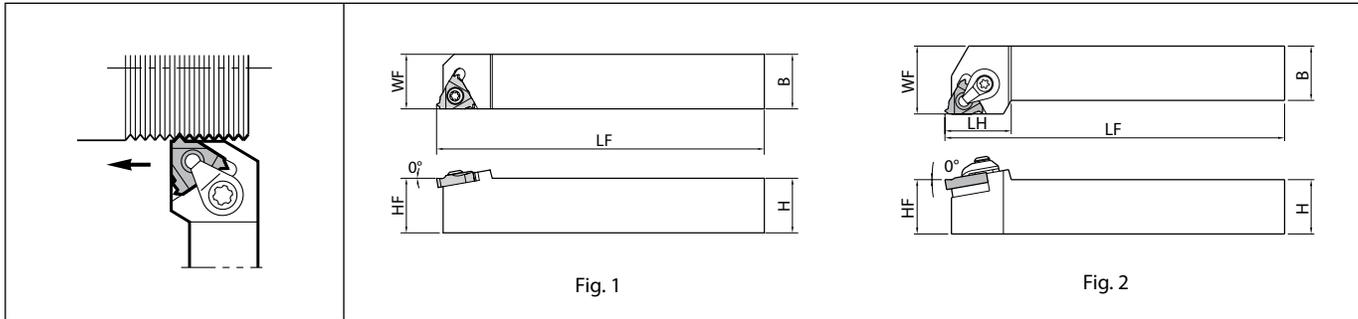
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TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Threading inserts are sold in 5 piece boxes

TC60 (Threading inserts) are sold in 10 piece boxes

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KTN (External Threading)



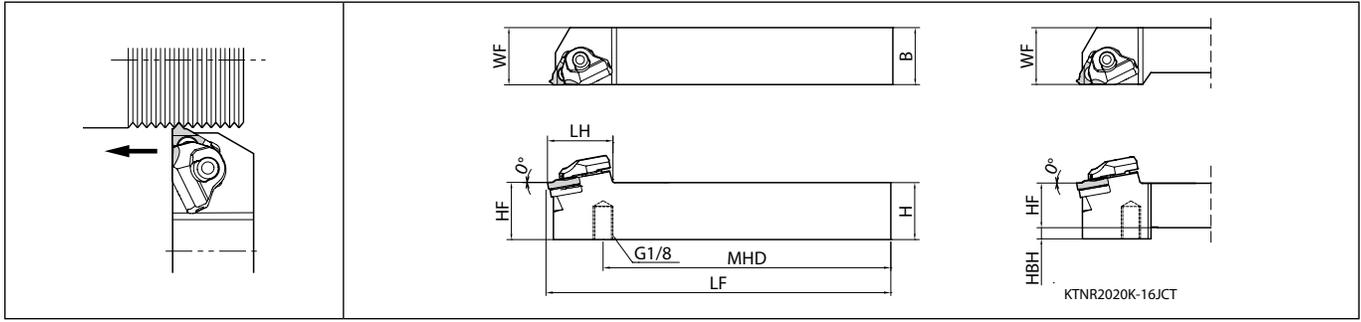
Right-hand shown | Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Unit	Part Number	Std. Item		Dimensions						Fig.	Applicable Inserts J6, J8, J10 J12, J14, J16 J18, J20
		R	L	H	B	LH	HF	LF	WF		
Inch	KTNR 12-3	●		0.750	0.750	0.870	0.750	5.00	0.875	2	16E% ...
	16-3	●		1.000	1.000		1.000	6.00	1.250		
mm	KTNR% 1216JX-16F	●	●	12	16	-	12	120	16	1	16E% ...
	1616H-16	●	●	16		25	16	100	20	2	
	1616JX-16F	●	●		-		120	16	1		
	2020H-16	●			25		100	25	2		
	2020JX-16F	●	●	20	20	-	20	120	20	1	
	2020K-16	●	●			25		125	25	2	
	2525M-16	●	●	25	25	25	150	30			
KTNR 2525M-22	●		25	25	29	25	150		2	22ER...	
3225P-22	●		32	25	34	32	170	32			

Unit	Part Number	Spare Parts							
		Clamp Set	Clamp Set	Screw	Shim Screw	Shim	Wrench	Wrench	Wrench
Inch	KTNR% 12-3		-	-	SP3X8	TN-32	-	FT-15	-
	16-3		-	-	SP3X8	TN-32	-	FT-15	-
mm	KTNR% 1216JX-16F	-		SB-3.5TR	-	-	-	FT-15	LTW-15S
	1616H-16	CPS-5S		-	SP3X8	TN-32	-	FT-15	-
	1616JX-16F	-		SB-3.5TR	-	-	-	FT-15	LTW-15S
	2020H-16	CPS-5S		-	SP3X8	TN-32	-	FT-15	-
	2020JX-16F	-		SB-3.5TR	-	-	-	FT-15	LTW-15S
2020K-16	-	-	-	-	-	-	-	-	
2525M-16	CPS-5S	-	SP3X8	TN-32	-	FT-15	-	-	
KTNR 2525M-22	-	CPS-6S	-	SP3X8	TN-43	LW-3	-	-	
3225P-22	-	CPS-6S	-	SP3X8	TN-43	LW-3	-	-	

KTN-JCT (External Threading, Coolant-Through Toolholders)



Right-hand shown | Right-hand Insert for Right-hand Toolholder. | Pressure Resistance : ~15MPa

Toolholder Dimensions

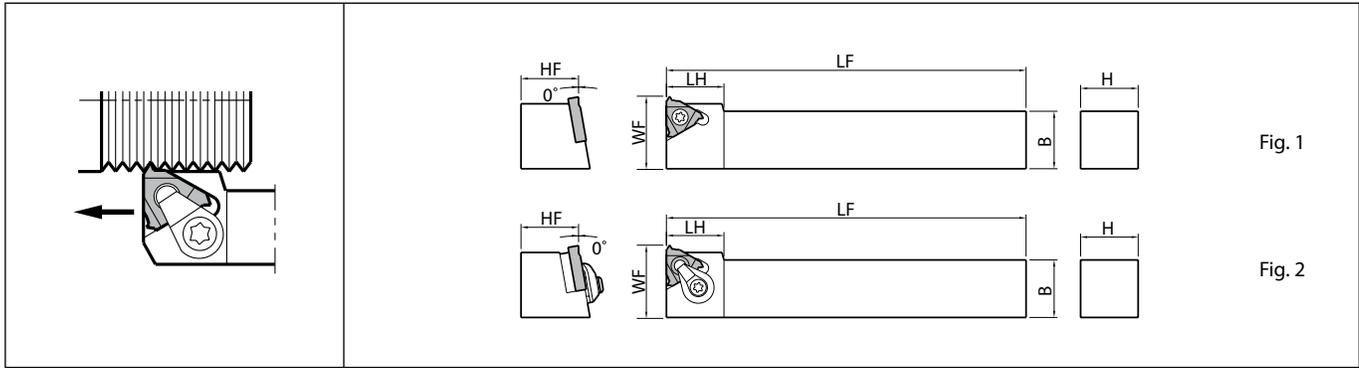
Unit	Part Number	Std. Item	Dimensions								Coolant Hole	Spare Parts					Applicable Inserts ● J6, J8, J10 ● J12, J14, J16 ● J18, J20
			R	H	B	LH	MHD	HF	HBH	LF		WF	Clamp Set	Pipe Connection (w/*O-Ring)	Shim Screw	Shim		Wrench
Inch	KTNR 12-16JCT 16-16JCT	●	0.75	0.75	1.122	4.042	0.750	0.234	5.000	0.875	Yes	CPS-5S-R-JCT	FP-12	SP3X8	TN-32	FT-15	16ER...
		●	1	1	1.122	5.042	1.000	-	6.000	1.000							
mm	KTNR 2020K-16JCT 2525M-16JCT	●	20	20	33.3	100.7	20	5	125	25	Yes	CPS-5S-R-JCT	FP-12	SP3X8	TN-32	FT-15	16ER...
		●	25	25	-	125.7	25	-	150								

Please see page D13 for piping parts of coolant-through holders.

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

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

KTNS (External Threading)

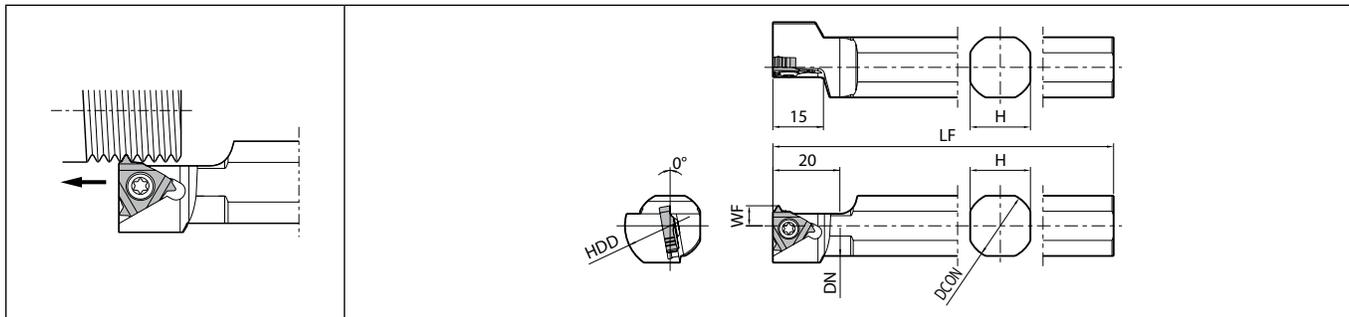


Right-hand shown | Right-hand Insert for Right-hand Toolholder.

Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions					Fig.	Spare Parts					Applicable Inserts ● J6, J8, J10 J12, J14, J16 J18, J20		
			R	H	B	LH	HF		LF	WF	Clamp Set	Screw	Shim Screw		Shim	Wrench
mm	KTNSR 1010H-16	●	10	10	16	10	100	16	1	-	SB-3.5TR	-	-	FT-15	16ER...	
	1212K-16	●	12	12	18	12	18									
	1616K-16	●	16	16	16	125	22	2	CPS-5S	-	SP3X8	TN-32				
	2020K-16	●	20	20	20	20	27.4									

S-KTN (External Threading)



Left-hand shown | Right-hand Insert for Left-hand Toolholder.

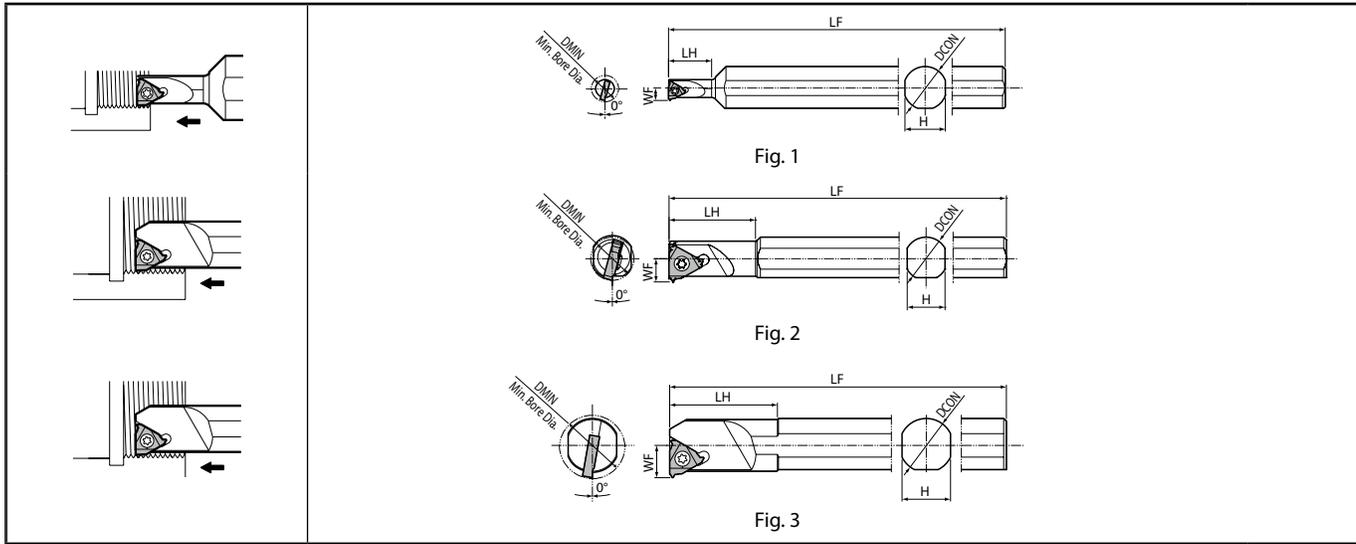
Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions						Spare Parts		Applicable Inserts ● J6, J8, J10 ● J12, J14, J16 ● J18, J20	
			L	DCON	H	DN	HDD	LF	WF			
Inch	S19K- KTNL16	●	0.750	0.669	0.709	1.063	4.724	0.236	SB-3.5TR	LTW-15S	16ER...	
	S25K- KTNL16	●	1.000	0.906	0.945	1.260		0.394				
mm	S16F- KTNL16	●	16	15	15	27	85	6	SB-3.5TR	LTW-15S	16ER...	
	S20K- KTNL16	●	20	18	19		120					
	S22K- KTNL16	●	22	20	21							
	S25.0H- KTNL16	●	25	23	24		32					100	10

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
 Contact your local Kyocera sales engineer to upgrade old products to new technology

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

S...SIN / SIN (Internal Threading)

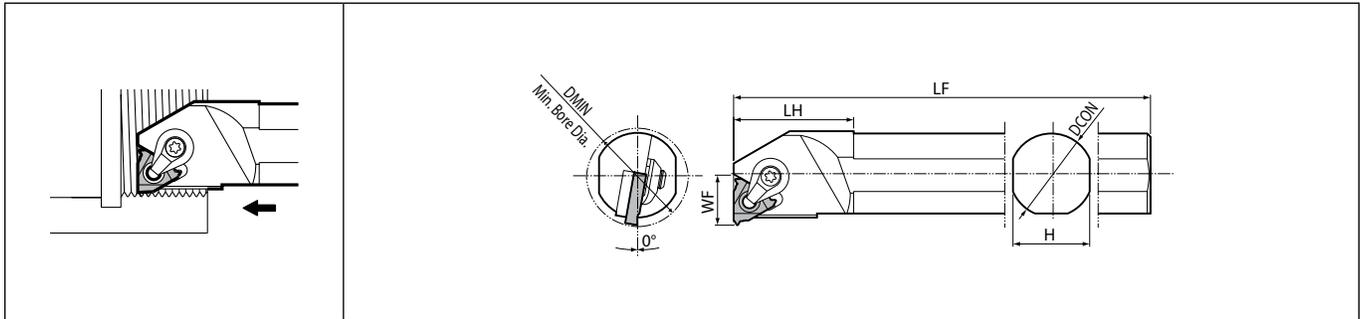


Right-hand shown | Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Unit	Part Number	Std. Item		Dimensions						Fig.	Spare Parts			Applicable Inserts ● J7, J9, J11 J13, J15, J17 J19, J21
		R	L	DMIN	DCON	H	LH	LF	WF		Screw	Wrench	Wrench	
Inch	S10M- SINR-2	●		0.590	0.625	0.560	1.180	5.910	0.295	1	SB-2TR	-	FT-6	111% ...
	S10M- SINR-3	●		0.790		0.584	1.460		0.369	3	SB-3.5TR	FT-15	-	161% ...
	S12X- SINR-3	●		0.940	0.750	0.710	1.570		7.09	0.456				
mm	SINR 0612S-06E	●		6.4	12	11	10	100	3.8	1	SB-2040TR	-	FT-6	06IR...
	SINR 0816S-08E	●		7.8	16	15	16	125	4	1	SB-2050TR	-	FT-6	08IR...
	SIN% 1216S-11E	● ●	12	16	14	25	150	6.3	1	SB-2TR	-	FT-8	111% ...	
		● ●	15			30		7.5						
	SIN% 1616S-16	● ●	16	16	14	32	150	8.6	2	SB-3.5TR	FT-15	-	161% ...	
		● ●	20			37		10						
		● ●	24			20		18						40	180	12
SINR 2420S-22	●		24	20	18	40	180	13.5	3	SB-4085TR	FT-15	-	22IR...	

CIN (Internal Threading)



Right-hand shown | Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Unit	Part Number	Std. Item		Dimensions							Spare Parts						Applicable Inserts J7, J9, J11 J13, J15, J17 J19, J21
		R	L	DMIN	DCON	H	LH	LF	WF	Clamp Set	Clamp Set	Shim Screw	Shim	Wrench	Wrench		
mm	CIN% 3025S-16	●	●	30	25	23	36	200	15		-	SP3X8	TN-32	-	FT-15	161%L...	
	3732S-16	●		37	32	30	45	250	18.5								
	CINR 3025S-22	●		30	25	23	40	200	16.5	-	CPS-6S	SP3X8	TN-43	LW-3	-	22IR...	
	3732S-22	●		37	32	30	45	250	20								

Guide for internal threading

For internal threading, pay extra attention to “stabilizing bore dia.” and “chip evacuation”.

1. “Stabilizing bore dia.”

Because small pitch Internal Threading has small corner-R (RE), there is variation in the bore dia. which may greatly influence the tool life of an insert. In order to eliminate the variation in the bore dia., “0” Cutting (zero cutting) should be performed as the zero pass, before the first pass in threading. The bore dia. is cut with the specified dimension, and the first pass of threading becomes stable.

2. “Chip evacuation”

If machining process is continued when chips are tangled with a toolholder and other parts of the machine, it may cause damages to the insert.

Therefore, please ensure that there are no tangled chips in the machine by the following method.

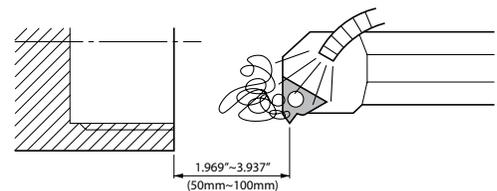
<When processing the first workpiece>

Set the program with the “single block”

Keep the threading starting point 1.969”~3.937” (50mm~100mm) away from the side of workpiece, and confirm that coolant is flushing down the chips for each pass.

<When processing the second workpiece and later>

Ensure that chips are not tangled; then, start the continuous run.



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

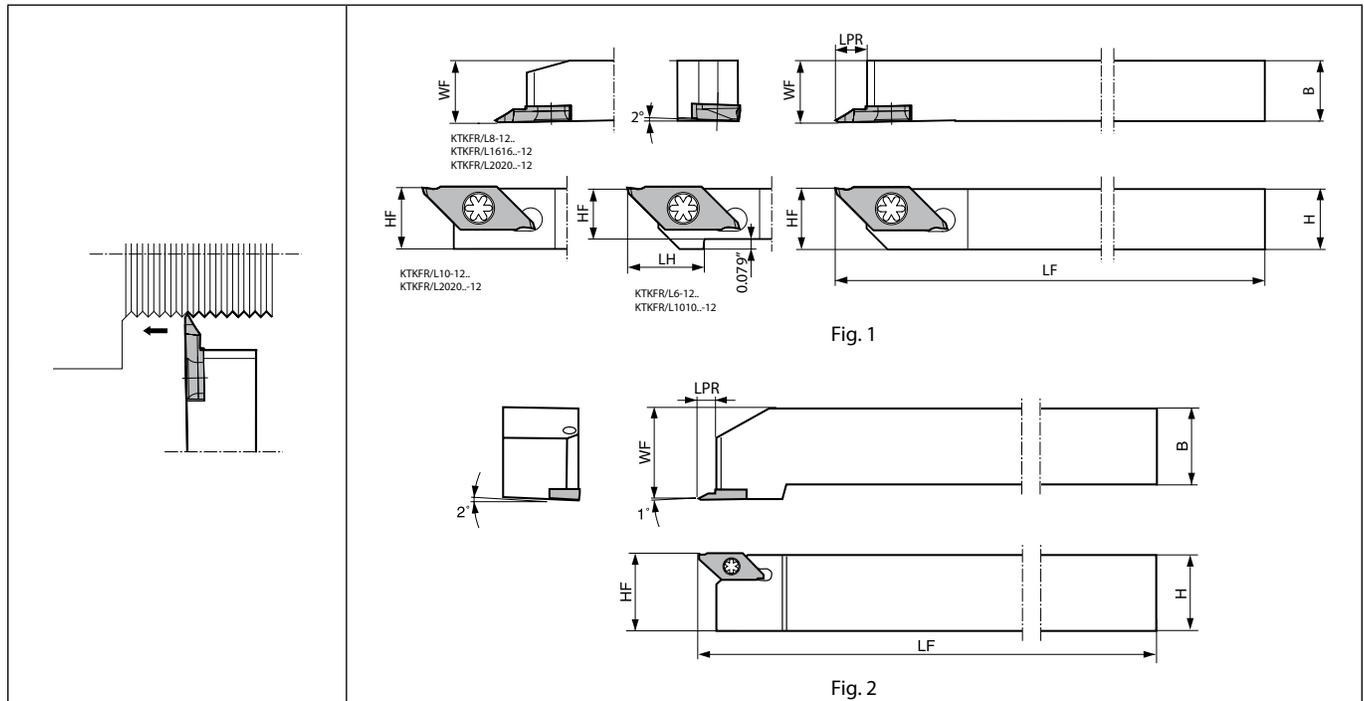
TKFT (External Threading)

		Carbon Steel / Alloy Steel										○	○	●	P											
		Stainless Steel										○	●	○	M											
		Cast Iron												●	K											
		Non-Ferrous Metals												●	N											
Insert	Part Number	Thread Type	Symbol Thread Type	Pitch				Profile	Thread Angle PNA (°)	Dimensions (in)						Carbide			Applicable Toolholder J29~J31							
				M (mm)		UN, G, R, W (TPI)				CW	S	D1	RE	W1	PDX	PDX1	PVD	-								
				min.	max.	min.	max.													PR1225	PR1535	PR1725	KW10			
 Right-hand shown	TKFT12 RA6000	Metric Unified	M UN	mm	Inch	0.2	0.6	64	48	Partial Profile	60	0.098	0.343	0.205	Max. 0.002 or Flat	0.118	0.016	0.083	●	●	●	KTKFR...12(-Y)				
	TKFT12 RB6000					0.5	1.25					48	24	0.098	0.343	0.205	0.002	0.118	0.031	0.067	●		●	●		
	TKFT12 RA6000S					Parallel/Tapered Pipe Whitworth	G, R, W					-	-	40	16	0.098	0.343	0.205	0.002	0.118	0.031		0.067	●	●	●
	TKFT12 RB6000S											0.067	0.031	●	●	●										
	TKFT12 RN6001	Metric Unified	M UN			1	1.5	24	18			0.098	0.343	0.205	0.004	0.118	0.049	0.049	●	●	●		●			
	TKFT12 LA6000					Parallel/Tapered Pipe Whitworth	G, R, W	-	-			40	16	0.098	0.343	0.205	0.002	0.118	0.067	0.031	●		●	●		
	TKFT12 LB6000							0.2	0.6			64	48	0.098	0.343	0.205	Max. 0.002 or Flat	0.118	0.083	0.016	0.083		●	●	●	
	TKFT12 LA6000S							Metric Unified	M UN			0.5	1.25	48	24	0.098	0.343	0.205	0.002	0.118	0.067		0.031	●	●	●
	TKFT12 LB6000S											0.031	0.067	●	●	●										
	TKFT12 LN6001					Parallel/Tapered Pipe Whitworth	G, R, W	1	1.5			24	18	0.098	0.343	0.205	0.004	0.118	0.049	0.049	●		●	●	●	
TKFT12 LA5500S	0.067	0.031	●	●	●																					
TKFT12 LB5500S	0.031	0.067	●	●	●																					

Photo shows Right-hand

Recommended Cutting Conditions J33
 Depth of Cut & Number of Passes J33

KTKF (External Threading)



Right-hand shown | Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Unit	Part Number	Std. Item		Dimensions						Fig.	Spare Parts		Applicable Inserts ➔ J28	
		R	L	H	B	LH	LPR	HF	LF		WF	Screw		Wrench
Inch	KTKF% 6-12JX	●	●	0.375	0.375	0.590	0.236	0.375	4.750	0.375	1	SB-4590TRWN	FT-10	TKFT12%...
	8-12JX	●	●	0.500	0.500	-		0.500		0.500				
	10-12JX	●	●	0.625	0.625	-		0.625		0.625				
mm	KTKF% 1010JX-12	●	●	10	10	15	6	10	120	10	1	SB-4590TRWN	FT-10	TKFT12%...
	1212F-12	●	●	12	12	-		12	85	12				
	1212JX-12	●	●					12	120	16				
	1616JX-12	●	●	16	16	-		16	120	16				
	2020JX-12	●	●	20	20	-		20	150	20				
	2525M-12	●	●	25	25	-		25	150	30					2	TKFT12R...

LPR shows the distance from the toolholder to the cutting edge.
See Page H16 for internal coolant type (coolant-through holders)

Threading Inserts Identification System (Ref. to Table 1)

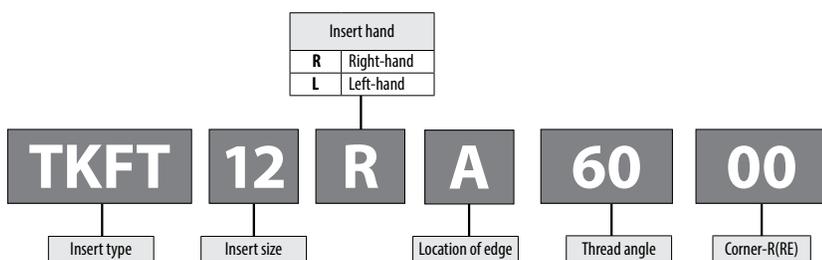


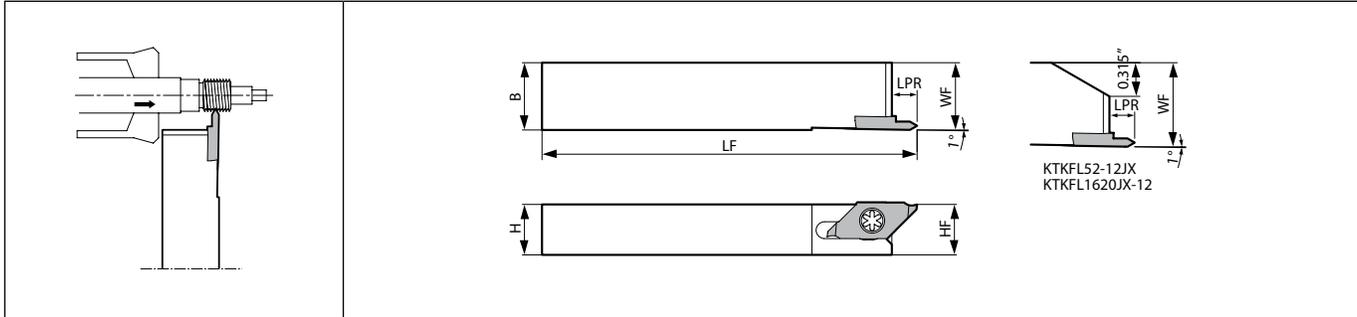
Table 1

Right-hand insert		
A type 	B type 	N type
TKFT12RA..	TKFT12RB..	TKFT12RN..
Left-hand insert		
A type 	B type 	N type
TKFT12LA..	TKFT12LB..	TKFT12LN..

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

INSERT GRADES A
TURNING INSERTS B
CBN/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

KTKF (External Threading, Goose-Neck Toolholder)



Left-hand shown | Left-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

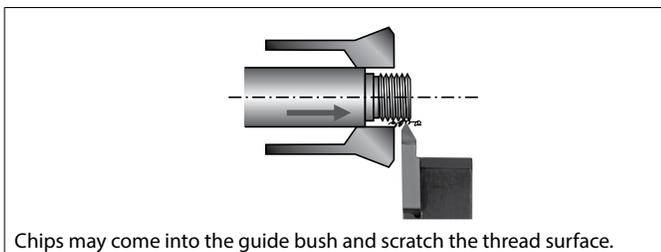
Unit	Part Number	Std. Item	Dimensions						Spare Parts		Applicable Inserts ● J28	
			L	H	B	LPR	HF	LF	WF	Screw		Wrench
												
Inch	KTKFL 52-12JX 62.5-12JX	●	0.500 0.625	0.625 0.750	0.236	0.500 0.625	4.750	0.625 0.750	SB-4590TRWN	FT-10	TKFT12L...	
mm	KTKFL 1216JX-12 1620JX-12	●	12 16	16 20		6	12 16	120	16 20	SB-4590TRWN	FT-10	TKFT12L...

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

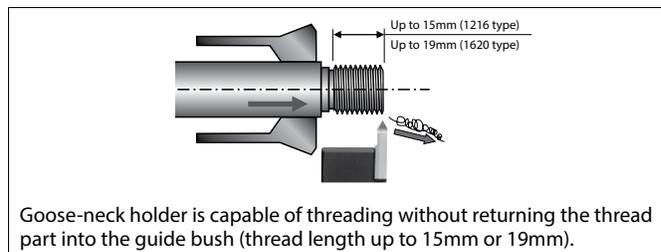
Swiss Tool Small Parts Machining (Guide Bush System)

Goose-neck holder is applicable to automatic lathes where toolholder does not move in the longitudinal direction (Z-axis direction).

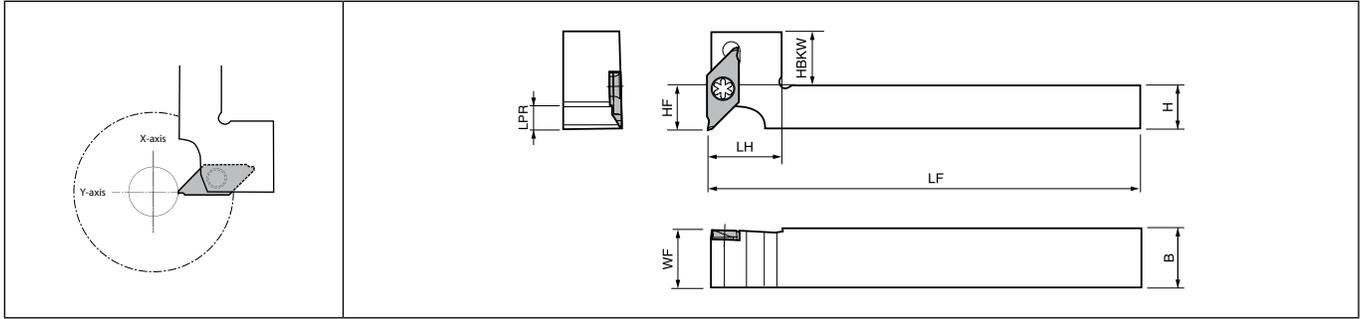
Conventional tool



Goose-neck holder



KTKF-Y (External Threading, Y-Axis Toolholder)



Right-hand shown | Right-hand Insert for Right-hand Toolholder.

Toolholder Dimensions

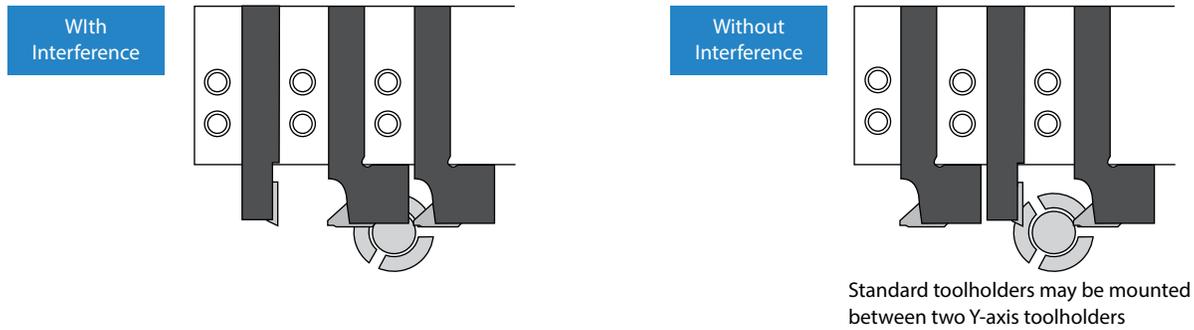
Unit	Part Number	Std. Item	Dimensions								Spare Parts		Applicable Inserts ➔ J28	
			R	H	B	LH	HF	LPR	HBKW	LF	WF	Screw		Wrench
mm	KTKFR 1216JX-12-Y 1616JX-12-Y	●	12	16	20	12	6	15	120	16	SB-4590TRWN	FT-10	TKFT12R...	

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

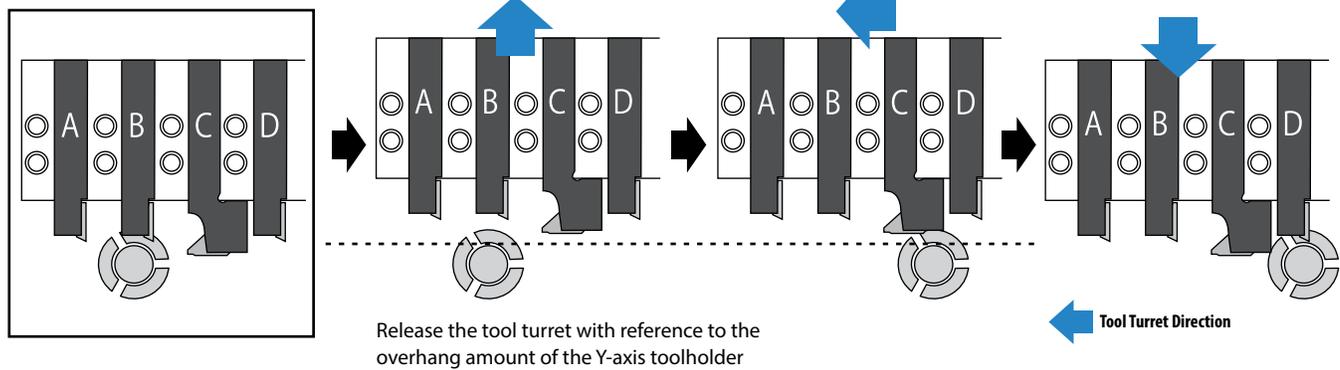
INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Precautions for Using Y-Axis Toolholders

Do not use Y-axis toolholders side-by-side to prevent interference (Only two Y-axis holders can be used at the same time)



When changing the tool, set the retracted position with reference to the cutting edge of the Y-axis holder (When exchanging from tool B to D)



Note that using other toolholder styles together will result in different outside diameters

(Unit: mm)

Y-axis Toolholder Overhang	Examples	Overhang Amount : L			
		Available Outside Cutting Dia. (Ø)	20	22	25
20		A	Without Restriction	Without Restriction	Without Restriction
		B	13.0	13.0	13.0
		C	Without Restriction	Without Restriction	Without Restriction
25		A	38.0	58.0	Without Restriction
		B	14.9	13.6	13.0
		C	45.0	60.0	Without Restriction

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades			
	MEGACOAT NANO PLUS	MEGACOAT NANO	MEGACOAT	Carbide
	PR1725	PR1535	PR1225	KW10
Carbon Steel	Vc = 230~560 sfm			-
	First D.O.C. (Radial): under 0.0079" (0.2mm)			
Alloy Steel	Vc = 230~560 sfm			-
	First D.O.C. (Radial): under 0.0079" (0.2mm)			
Stainless Steel	Vc = 200~330 sfm			-
	First D.O.C. (Radial): under 0.0079" (0.2mm)			
Cast Iron	-			Vc = 330 sfm
	-			First D.O.C. (Radial): under 0.0079" (0.2mm)
Aluminum	-			Vc = 490~1310 sfm
	-			First D.O.C. (Radial): under 0.0079" (0.2mm)
Brass	-			Vc = 490~980 sfm
	-			First D.O.C. (Radial): under 0.0079" (0.2mm)

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

Depth of Cut & Number of Passes

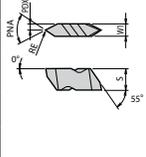
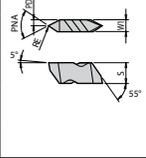
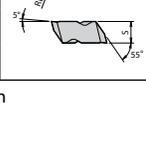
TKFT 60° / 55° Partial Profile

(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	2	3	4	5	6	7	8	9	10	11	12			
						Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
Metric	External Threading	TKFT 12R/L A/B6000	Max 0.05 Flat	0.15	4	0.06	0.04	0.03	0.02											
				0.19	4	0.07	0.06	0.04	0.02											
				0.23	4	0.08	0.07	0.06	0.02											
				0.27	5	0.08	0.07	0.06	0.04	0.02										
				0.30	5	0.10	0.08	0.06	0.04	0.02										
				0.34	6	0.10	0.08	0.06	0.04	0.04	0.02									
		0.50mm	TKFT 12R/L A/B6000	Max 0.05 Flat	0.38	6	0.10	0.10	0.07	0.05	0.04	0.02								
			12R/L A/B60005	0.05	0.33	5	0.10	0.10	0.07	0.04	0.02									
		0.60mm	TKFT 12R/L A/B6000	Max 0.05 Flat	0.45	7	0.10	0.10	0.08	0.06	0.05	0.04	0.02							
			12R/L A/B60005	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							
		0.75mm			0.05	0.52	7	0.10	0.10	0.10	0.08	0.07	0.05	0.02						
		0.80mm			0.05	0.56	7	0.10	0.10	0.10	0.10	0.08	0.06	0.02						
		1.00mm	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	0.10	0.06	0.03	0.02							
	0.05			0.90	9	0.20	0.18	0.13	0.10	0.10	0.07	0.05	0.05	0.02						
1.25mm	TKFT 12R/L A/B60005 12R/L N6001		0.10	0.85	8	0.20	0.18	0.13	0.10	0.10	0.07	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					
1.50mm	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					
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	TKFT 12R/L A/B55005	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			

- INSERT GRADES **A**
- TURNING INSERTS **B**
- CBN/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**

KCT / KCTP / KCTK (External/Internal Threading)

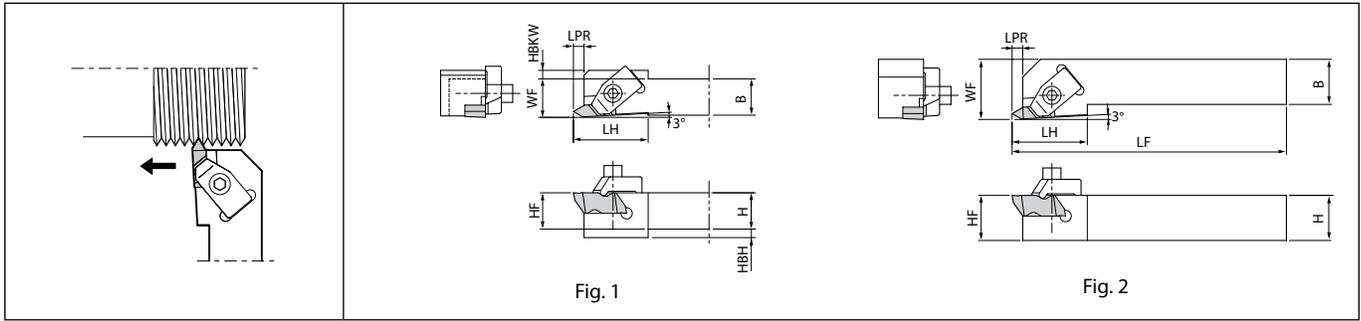
Insert		Part Number		Thread Type	Symbol Thread Type	Pitch								Profile	Thread Angle PNA (°)	Dimensions (in)				Carbide	Applicable Toolholder J35~J36	
						Metric (mm)				Unified (TPI)						S	W1	RE	PDX			
						External		Internal		External		Internal										
						min.	max.	min.	max.	min.	max.	min.	max.									
		KCT 2R	Metric Unified	M UN	mm	0.75	3	1.25	3.5	Inch	36	8	20	7	Partial Profile	60	0.219	0.150	0.004	0.075	△	KKCR...-2, A...KKCL2
																	0.344	0.195	0.007	0.098	●	KKCR...-3, A...KKCL3
																	0.453	0.255	0.008	0.128	●	KKCR...-4, A...KKCL4
		KCT 2L	Metric Unified	M UN		0.75	3	1.25	3.5		36	8	20	7	Partial Profile	60	0.219	0.150	0.004	0.075	●	KKCL...-2, A...KKCR2
																	0.344	0.195	0.007	0.098	●	KKCL...-3, A...KKCR3
																	0.453	0.255	0.008	0.128	●	KKCL...-4, A...KKCR4
		KCTP 2R	Metric Unified	M UN	mm	0.75	3	1.25	3.5	Inch	36	8	20	7	Partial Profile	60	0.219	0.150	0.004	0.075	●	KKCR...-2, A...KKCL2
																	0.344	0.195	0.007	0.098	●	KKCR...-3, A...KKCL3
																	0.459	0.255	0.008	0.128	△	KKCR...-4, A...KKCL4
		KCTP 2L	Metric Unified	M UN		0.75	3	1.25	3.5		36	8	20	7	Partial Profile	60	0.219	0.150	0.004	0.075	●	KKCL...-2, A...KKCR2
																	0.344	0.195	0.007	0.098	●	KKCL...-3, A...KKCR3
																	0.459	0.255	0.008	0.128	△	KKCL...-4, A...KKCR4
		KCTK 2R	Metric Unified	M UN	mm	0.5	1.75	1	2	Inch	44	14	24	12	Partial Profile	60	0.219	0.150	0.003	0.110	●	KKCR...-2, A...KKCL2
																	0.344	0.195	0.003	0.141	●	KKCR...-3, A...KKCL3
		KCTK 2L	Metric Unified	M UN		0.5	1.75	1	2		44	14	24	12	Partial Profile	60	0.219	0.150	0.003	0.110	●	KKCL...-2, A...KKCR2
0.344	0.195																0.003	0.141	●	KKCL...-3, A...KKCR3		

Right-hand shown

Recommended Cutting Conditions J37
Cera-Notch Conversion Table R35

KC.. Threading inserts are sold in 10 piece boxes

KKC (External Threading)



Right-hand shown | Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Unit	Part Number	Std. Item		Dimensions									Fig.	Spare Parts			Applicable Inserts ➔ J34									
		R	L	H	B	LH	LPR	HBH	HBKW	HF	LF	WF		Clamp	Clamp Bolt	Wrench										
Inch	KKC% 6-2CF	●	●	0.375	0.375	0.750	0.138	-	-	0.125	0.125	0.375	5.00	0.385	1	CKC-2%	SKC-2	(7/64 hex)	KCT2% KCTP2% KCTK2%							
	8-2X	●		0.500	0.500					0.500	3.50	0.750	2													
	8-2DF	●								0.625	6.00	0.635	1													
	10-2DF	●	●	0.625	0.625					0.625	6.00	0.635	1													
	12-2B	●	●	0.750	0.750					0.750	4.50	1.000	2													
	12-2C	●								5.00																
	16-2C	●	●	1.000	1.000					1.000	5.00	1.250	2													
	16-2D	●	●							6.00																
	Inch	KKC% 12-3B	●	●	0.750					0.750	1.250	0.210	-	-	0.750					4.50	1.000	2	CKC-3%	SKC-3	(LW-156)	KCT3% KCTP3% KCTK3%
		12-3C	●	●											5.00											
16-3C		●	●	1.000	1.000	1.000	5.00	1.250																		
16-3D		●	●	1.250	1.250	1.250	6.00	1.500																		
20-3D		●	●																							
Inch	KKC% 16-4D	●	●	1.000	1.000	1.380	0.294	-	-	1.000	6.00	1.250	2	CKC-3%	SKC-3	(LW-156)	KCT4% KCTP4%									
	20-4D	●		1.250	1.250					1.250		1.500														
mm	KKCR 1212M-2-150F	●		12	12	19.05	3.5	-	-	12	150	12.25	1	CKC-2R	SKC-2	(7/64 hex)	KCT2% , KCTP2% KCTK2%									

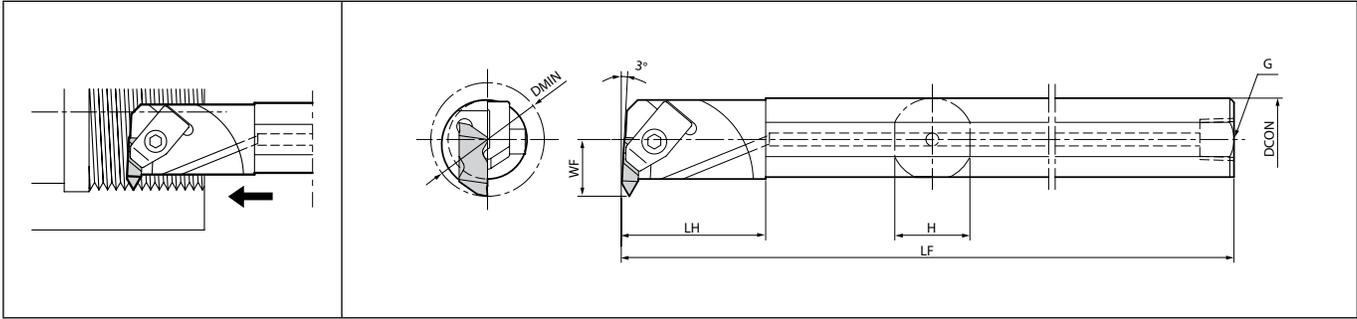
LPR shows the distance from the toolholder to the cutting edge.

CKC-○R for Right-hand toolholder and CKC-○L for Left-hand toolholder

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

Toolholders also available for Grooving ➔ G65

A-KKC (Internal Threading)



Right-hand shown | Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Unit	Part Number	Std. Item		Dimensions							Spare Parts			Applicable Inserts ➔ J34
		R	L	DMIN	DCON	H	LH	LF	WF	G	Clamp	Clamp Bolt	Wrench	
Inch	A10M- KKCR-2	●		1.000	0.625	0.596	1.153	6.00	0.500	1/8-27 NPT	CKC-2L	SKC-2	(7/64Hex)	KCT2 3/4 KCTP2 3/4 KCTK2 3/4
	A10S- KKCR-2	●						10.00						
	A12R- KKCR-2	●		1.125	0.750	0.728	1.171	8.00						
	A12S- KKCR-2	●						10.00						
	A16T- KKCR-2	●	●	1.375	1.000	0.910	1.100	12.00	0.688	1/8-27 NPT	CKC-2 3/4			
	A16X- KKCR-3	●		1.375	1.000	0.910	1.750	9.00	0.688	1/8-27 NPT	CKC-3 3/4	SKC-3	(LW-156)	KCT3 3/4 KCTP3 3/4 KCTK3 3/4
	A16T- KKCR-3	●	●					12.00						
	A20U- KKCR-3	●		1.750	1.250	1.138	1.750	14.00	0.875	1/4-18 NPT	CKC-3 3/4	SKC-3	(LW-156)	
	A24U- KKCR-3	●	●					1.000						
	A28U- KKCR-4	●		2.500	1.750	1.593	1.750	14.00	1.250	1/4-18 NPT	CKC-3 3/4	SKC-3	(LW-156)	KCT4 3/4 KCTP4 3/4

CKC-○L for Right-hand toolholder and CKC-○R for Left-hand toolholder
Spare Parts in parentheses () are not included with toolholder. Please order separately.

Toolholders also available for Grooving ➔ G94

Recommended Cutting Conditions

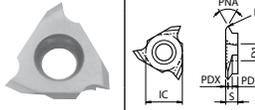
Workpiece Material	Insert Grade	Initial D.O.C. (Radial)
	Vc (sfm)	
	MEGACOAT	
	PR1215	
Carbon Steel	★ 300~550	0.012" Max
Alloy Steel	★ 300~500	0.012" Max
Stainless Steel	★ 200~300	0.010" Max
Cast Iron	★ 150~350	0.012" Max
Heat-Resistant Alloy	★ 25~150	0.010" Max

★ : 1st Recommendation

- Coolant is recommended.
- For stainless steel threading, please set smaller initial D.O.C. and two or three more passes than threading for carbon steel.

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

TTX (External Threading)

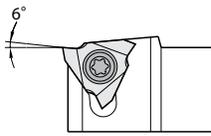
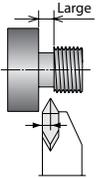
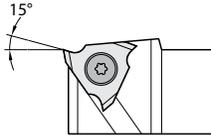
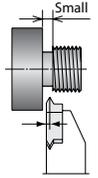
		Carbon Steel / Alloy Steel										●	○	○	P						
		Stainless Steel										●	○		M						
		Cast Iron												●	K						
		Non-Ferrous Metals												●	N						
Insert	Part Number	Thread Type	Symbol Thread Type	Pitch				Profile	Thread Angle PNA (°)	Dimensions (in)						Carbide			Applicable Toolholder J39		
				M (mm) G, R (TPI)		UN, W (TPI)				IC	S	D1	RE	PDX	PDX1	PVD	-	-			
				min.	max.	min.	max.													PR1115	PR930	KW10	TC60
	TTX32R 6000	Metric Unified	M UN	mm	0.5	1	56	32	Partial Profile	60	3/8	1/8	0.173	0	0.024	0.044				●	KTTXR...-16 S...KTTXL16
	TTX32R 6000S				0.5	1	48	32		60	3/8	1/8	0.173	0.002	0.024	0.044	●	●	●		
	TTX32R 6001				1	2	28	14		60	3/8	1/8	0.173	0.004	0.043	0.064	●	●	●		
	TTX32R 6000S				0.5		56	48		60	3/8	1/8	0.173	0	0.012	0.044	●	●	●		
	TTX32R 60005S				0.5		48			60	3/8	1/8	0.173	0.002	0.012	0.044	●	●	●		
	TTX32R 5501	Parallel/Tapered Pipe	G R W	Inch	28	19	24	20	55	3/8	1/8	0.173	0.004	0.030	0.040	●	●	●			
	TTX32R 5501S	Whitworth			19	11	20	11	55	3/8	1/8	0.173	0.006	0.047	0.057	●	●	●			

Right-hand shown

Recommended Cutting Conditions **J52**
Depth of Cut & Number of Passes **J60**

THREADING

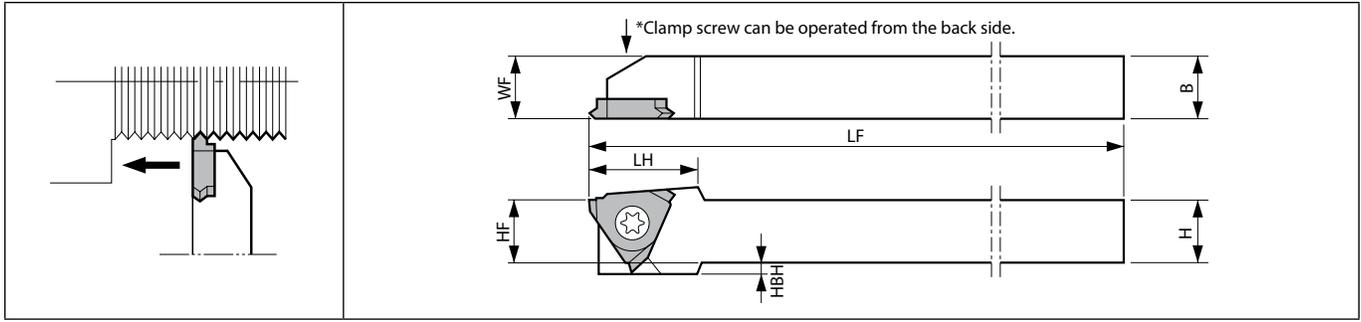
TT and TTX Advantages

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

KW10 / TC60 (Threading inserts) are sold in 10 piece boxes

KTTX (External Threading)

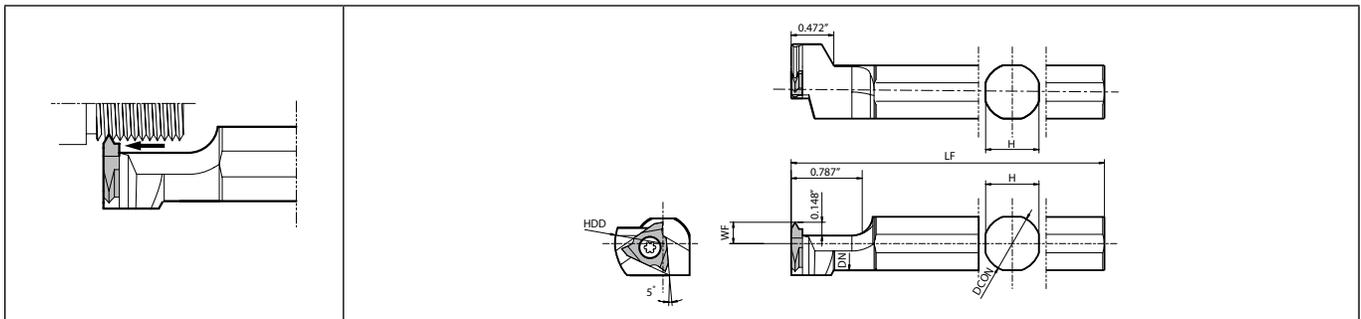


Toolholder Dimensions

Thread to shoulder | Right-hand shown | Right-hand Insert for Right-hand Toolholder.

Unit	Part Number	Std. Item	Dimensions						Spare Parts		Applicable Inserts ➔ J38	
			R	H	B	LH	HF	HBH	LF	WF		Screw	Wrench
Inch	KTTXR 6-3JXF	●	0.375	0.375	0.693	0.375	0.079	4.750	0.383	SB-4070TRW	FT-8	TTX32R...
	8-3JXF	●	0.500	0.500		0.500	-		0.508			
	10-3JXF	●	0.625	0.625		0.625	-		0.633			
mm	KTTXR 1010JX-16F	●	10	10	17.6	10	2	120	10	SB-4070TRW	FT-8	TTX32R...
	1212F-16F	●	12	12		12	-	85	12			
	1212JX-16F	●	12	12		12	-	120	16			
	1616JX-16F	●	16	16		16	-	125	20			
	2020K-16F	●	20	20		20	-	125	20			

S-KTTX (External Threading)



Toolholder Dimensions

Thread to shoulder | Left-hand shown | Right-hand Insert for Left-hand Toolholder.

Unit	Part Number	Std. Item	Dimensions						Spare Parts		Applicable Inserts ➔ J38
			L	DCON	H	DN	HDD	LF	WF	Screw		Wrench
Inch	S15F- KTTXL16	●	0.625	0.591	0.575	1.063	3.346	0.236	SB-4070TRW	FT-8	TTX32R...
	S19G- KTTXL16	●	0.750	0.669	0.693	1.063	3.543	0.236			
	S19K- KTTXL16	●					4.724				
	S25K- KTTXL16	●					4.724					0.394
mm	S12F- KTTXL16	●	12	11	11	27	80	6	SB-4070TRW	FT-8	TTX32R...
	S14H- KTTXL16	●	14	13	13		100				
	S16F- KTTXL16	●	16	15	14.6		85				
	S20G- KTTXL16	●	20	18	18.6		90				
	S20K- KTTXL16	●					120				
	S25.0H- KTTXL16	●					25					23	23.6	32	100	10

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

TT (External Threading)

Insert		Part Number		Thread Type		Symbol Thread Type		Pitch				Profile		Thread Angle PNA (°)		Dimensions (in)					Carbide			Applicable Toolholder J41
								M (mm) G, PT (TPI)		UN, W (TPI)						IC	S	D1	RE	PDX	PVD	-	Cermet	
								min.	max.	min.	max.													
		Metric Unified	M UN	mm	0.5	2.5	56	10	60	Partial Profile	60	3/8	1/8	0.173	0	●	○	○	KTTR...-16					
					1										0.004	●	○	○						
					1.5										0.012	●	○	○						
					2.5										0.012	●	○	○						
					0.5										0	●	○	○						
					1										0.004	●	○	○						
					1.5										0.012	●	○	○						
					1.5										0.012	●	○	○						
		Parallel/Tapered Pipe		G PT W	Inch	28	11	24	10	55	Partial Profile	55	3/8	1/8	0.173	0.004	●	○	○	KTTR...-16				
						14										0.008	●	○	○					
						28										0.004	●	○	○					
						14										0.008	●	○	○					
		Whitworth		W	Inch	28	11	24	10	55	Partial Profile	55	3/8	1/8	0.173	0.004	●	○	○	KTTR...-16				
						14										0.008	●	○	○					
28	0.004					●										○	○							
14	0.008					●										○	○							
Metric Unified		M UN	mm	1	3.5	24	8	60	Partial Profile	60	1/2	3/16	0.217	0.004	●	○	○	KTTR...-22						
				1.5										0.008	●	○	○							
				2.5										0.012	●	○	○							
				3										0.016	●	○	○							
				1										0.004	●	○	○							
				1.5										0.008	●	○	○							
				2.5										0.012	●	○	○							
				3										0.016	●	○	○							
Parallel/Tapered Pipe		G PT W	Inch	28	11	24	7	55	Partial Profile	55	1/2	3/16	0.217	0.004	●	○	○	KTTR...-22						
				14										0.008	●	○	○							
				11										0.012	●	○	○							
				11										0.012	●	○	○							
Whitworth		W	Inch	28	11	24	7	55	Partial Profile	55	1/2	3/16	0.217	0.004	●	○	○	KTTR...-22						
				14										0.008	●	○	○							
Metric		M	mm	1	-	-	-	60	Full Profile	60	1/2	3/16	0.217	0.005	●	○	○	KTTR...-22						
				1.25										0.006	●	○	○							
				1.5										0.007	●	○	○							
				2										0.010	●	○	○							

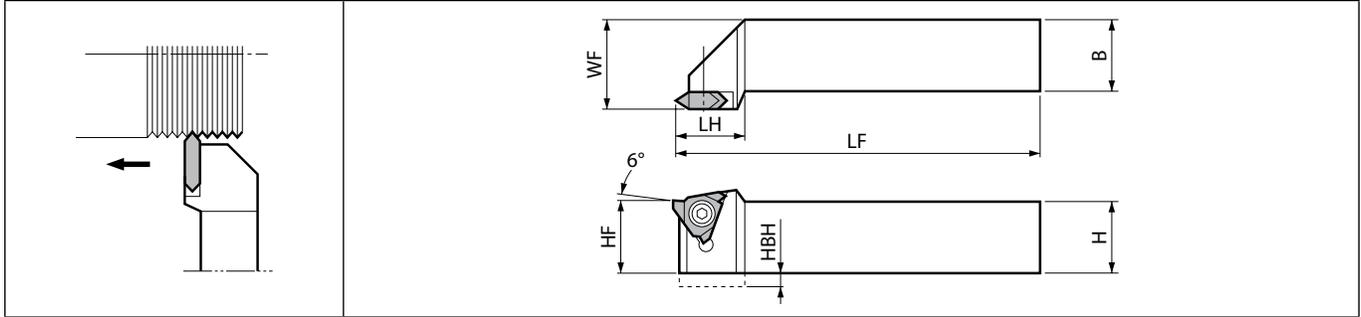
Right-hand shown

Recommended Cutting Conditions J52
Depth of Cut & Number of Passes J59, J60

PR930 / PR1115 (Threading inserts) are sold in 5 piece boxes

KW10 / TC60 (Threading inserts) are sold in 10 piece boxes

KTT (External Threading)



Right-hand shown | Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

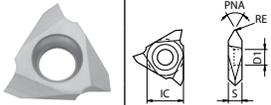
Toolholder Dimensions

Unit	Part Number	Std. Item		Dimensions							Spare Parts					Applicable Inserts J40
		R	L	H	B	LH	HF	HBH	LF	WF	Screw	Screw	Wrench	Wrench	Wrench	
mm	KTT% 1010F-16	●	●	10	10	18	10	4	80	12	SB-4070TRS				FT-10	TT32%...
	1212H-16	●	●	12	12		12	2	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							
	KTT% 2020K-22	●	●	20	20	25	20	-	125	25	-	GS-50	LW-3	-	-		TT43%...
2525M-22	●	●	25	25	25			150	30						TT43ER...M	

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
 Contact your local Kyocera sales engineer to upgrade old products to new technology

- INSERT GRADES **A**
- TURNING INSERTS **B**
- CBN/PCD INSERTS **C**
- TURNING HOLDERS **D**
- SMALL TOOLS **E**
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- CUT-OFF **H**
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- DRILLING **K**
- MILLING **M**
- QUICK CHANGE TOOLING **N**
- SPARE PARTS **P**
- TECHNICAL **R**
- INDEX **T**

TT (Internal Threading)

Insert		Part Number		Thread Type		Symbol Thread Type		Pitch				Profile	Thread Angle PNA (°)	Dimensions (in)				Carbide			Applicable Toolholder J43		
								M(mm) G, PT (TPI)		UN, W (TPI)				IC	S	D1	RE	PVD	-	-			
								Unit	min.	max.	Unit											min.	max.
	Metric Unified	M UN	mm	0.5	2.5	48	10	Partial Profile	60	3/8	1/8	0.173	0	●	●	●	KITGL...-16						
				1.5	16								0.004	●	●	●							
		G PT W	Inch	0.5	2.5	48	10						0	●	●	●		●	KITGR...-16				
				1.5	16								0.004	●	●	●		△					
	Parallel/Tapered Pipe	G PT W	Inch	28	11	24	10	55	0.004	●	●	●	KITGL...-16										
				-	-	16	18		0.008	●	●	●											
	Whitworth	G PT W	Inch	28	11	24	10		0.004	●	●	●		KITGR...-16									
				-	-	16	18		0.008	●	●	●											
	Metric Unified	M UN	mm	1.5	3	16	10	60	0.004	●	●	●	KITGL...-22										
				3	8				0.008	●	●	●											
		G PT W	Inch	1.5	3	16	10		0.004	●	●	●		KITGR...-22									
				3	8				0.008	●	●	●											
	Parallel/Tapered Pipe	G PT W	Inch	28	11	24	8	55	0.004	●	●	●	KITGL...-22										
				14	11	16	11		0.008	●	●	●											
Whitworth	G PT W	Inch	28	11	24	8	0.012		●	●	●	KITGR...-22											
			14	11	16	11	0.004		●	●	●												

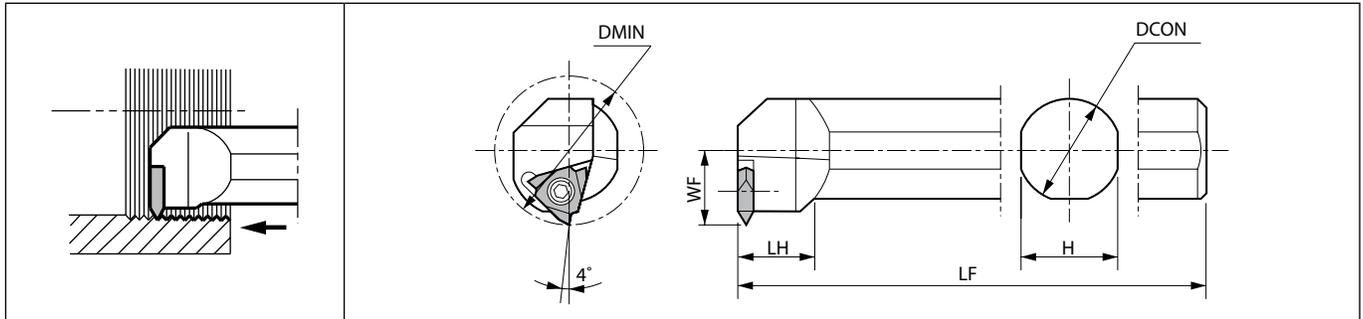
Right-hand shown

Recommended Cutting Conditions J52
Depth of Cut & Number of Passes J59, J60

PR930 / PR1115 (Threading inserts) are sold in 5 piece boxes

KW10 / TC60 (Threading inserts) are sold in 10 piece boxes

KITG (Internal Threading)



Right-hand shown | Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

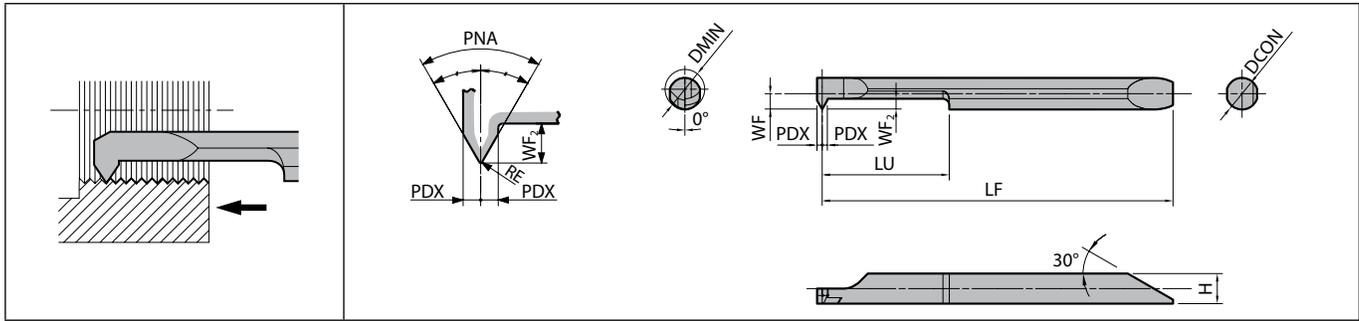
Unit	Part Number	Std. Item		Dimensions						Spare Parts				Applicable Inserts ➔ J42
		R	L	DMIN	DCON	H	LH	LF	WF	Screw	Screw	Wrench	Wrench	
mm	KITG% 3525T-16	●	●	35	25	23	18	220	17.5	SB-4TR	-	-	FT-15	TT32 ¹ /r...
	KITG% 4532T-22	●	●	45	32	30	20	250	22.5	-	GS-50	LW-3	-	TT43 ¹ /r...

Max. available Pitch : KITG% 3525T-16---TP 2.5mm or 10TPI, KITG% 4532T-22---TP 3.0mm or 8TPI.

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

EZT (Internal Threading)



Right-hand shown

Dimensions

Part Number	No. of edges	Dimensions (mm)									Tolerance (mm)		Carbide		Applicable Thread						
		DMIN	DCON	H	LF	LU	WF	WF ₂	PDX	RE	Thread Angle PNA (°)	RE min.	RE max.	PVD	GW05	Metric		Unified		American National Tapered Pipe	
																Nominal Thread	Pitch (mm)	Nominal Thread	Pitch (TPI)	Nominal Thread	Pitch (TPI)
EZTR 030025-60-002	1	3	2.5	2.3	34.5	6	1.19	1	0.5	60°	0.01	0.01	●	●	M4 and over (Fine Thread: M3.5 and over)	0.35~0.8	No.8-32UNC No.8-36UNF and over	36~32	-	-	
035030-60-002		3.5	3	2.8	38.4	8.4	1.44	1.2	0.6				●	●	M4.5 and over (Fine Thread: M4.5 and over)	0.5~1.0	No.10-24UNC No.8-36UNF and over	36~24	-	-	
040035-60-004		4	3.5	3.3	41.4	10.4	1.69	0.4	0.65				●	●	M5 and over (Fine Thread: M6 and over)	0.75~1.25	No.12-24UNC No.12-28UNF and over	28~20	-	-	
050040-60-004		5	4	3.8	44.35	15.35	1.94	1.3	0.8				●	●	M7 and over (Fine Thread: M6 and over)	0.75~1.5	1/4-20UNC 1/4-28UNF and over	28~18	-	-	
060050-60-004		6	5	4.8	52.4	19.2	2.44	1.6	1				●	●	M8 and over (Fine Thread: M7 and over)	0.75~1.5	5/16-18UNC 5/16-24UNF and over	24~16	1/4NPT 3/8NPT	18	
070060-60-004		7	6	5.8	60.2	24	2.94	2	1				●	●	M9 and over (Fine Thread: M8 and over)	0.75~1.75	3/8-16UNC 3/8-24UNF and over	24~16	1/4NPT and over	18,14	
															Whitworth		Parallel Pipe / Tapered Pipe				
EZTR 060050-55-008	1	6	5	4.8	52.4	19.2	2.44	1.6	0.8	55°	0.015	0.015	●	●	W10 TPI24 and over	24~20	G1/16 and over R1/16 and over	28	-	-	
080070-55-008		8	7	6.8	63.2	24	3.44	2	1				●	●	W11 TPI20 and over	20~18	G1/8 and over R1/8 and over	28,19	-	-	

For American National Tapered Pipe (NPT), use EZTR...-60-004. J47

Applicable sleeves J45
Recommended Cutting Conditions J46
Depth of Cut & Number of Passes J46~J47

EZ bars are sold in 1 piece boxes

Applicable Sleeves

Sleeve Part Number				EZ Bar Part Number		Applicable Machine Manufacturer
EZH-CT (Adjustable Overhang Length / with Coolant Hole) F40~F41	EZH-HP (Adjustable Overhang Length) F42~F43	EZH-ST F44~F45	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
CBN/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

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

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.

★ : 1st Recommendation

Depth of Cut & 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

Depth of Cut & 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	0.001	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	0.001	0.001	0.001	0.001

Depth of Cut & 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	

Application of Parallel Pipe and Tapered Pipe Thread

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

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

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

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

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.

Depth of Cut & 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 1/8 NPT	27	No Tools Available			
1/4 NPT 3/8 NPT	18	EZH Sleeve	EZTR060050-60-004 EZTR070060-60-004	-	
1/2 NPT 3/4 NPT	14	EZH Sleeve	EZTR070060-60-004	-	
1/2 NPT 3/4 NPT	14	SINR1616S-16 SINR2016S-16	-	16IR14NPT 16IR14NPT	

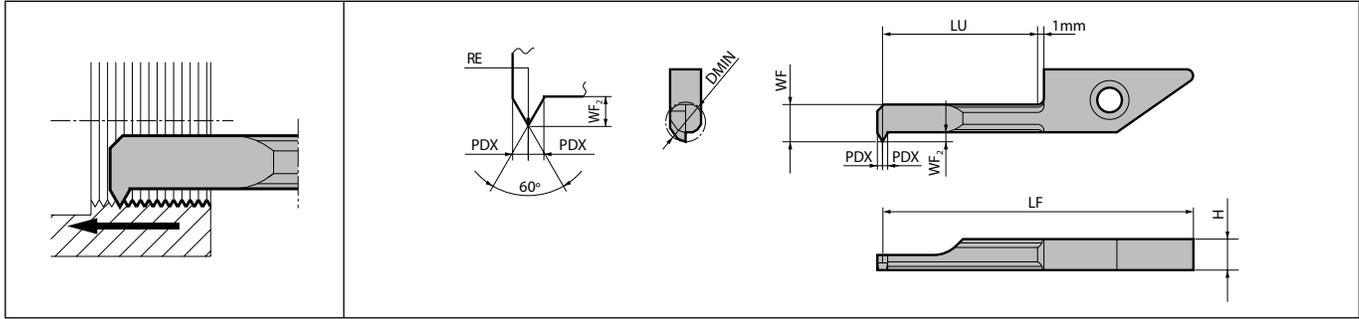
Application of NPTF Thread
NPTF is the thread for sealing pipes without using any sealing material.
Thread symbol is similar to NPT but the Tolerance is different from that of NPT and the above inserts are not applicable to NPTF.

Depth of Cut & 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	0.001	0.001	0.001	

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

VNT (Internal Threading)



Right-hand shown

Dimensions

Part Number	No. of edges	Dimensions (mm)									Tolerance (mm)		Carbide			Applicable Thread				Applicable Toolholder ➔ F50~F53
		DMIN	H	LF	LU	WF	WF ₂	PDX	RE	RE min.	RE max.	PVD			Metric		Unified			
												PR1225	PR930	KW10	Nominal Thread	Pitch (mm)	Nominal Thread	Pitch (TPI)		
																			-	
VNTR 045-11	1	4.5	3.9	30.2	10.4	3.6	1.3	0.6	0.05	0.02	0	●	●	●	M6 and over	0.75~1.25	1/4-20UNC, 1/4-28UNF and over	28~20		
060-11		6		30	10.2	4.6	1.6	0.8				●	●	●	M8 and over	0.75~1.50	5/16-18UNC, 5/16-24UNF and over	24~18		

Recommended Cutting Conditions ➔ J49
Depth of Cut & Number of Passes ➔ J49

Swiss IQ bars are sold in 5 piece boxes

Recommended Cutting Conditions

Workpiece material	Recommended insert grades (Vc: sfm)		
	MEGACOAT	PVD coated carbide	Carbide
	PR1225	PR930	KW10
Carbon Steel	★ 100~160	☆ 100~160	-
Stainless Steel	★ 100~160	☆ 100~160	-
Non-Ferrous Metals	-	-	★ 100~160

<Note>

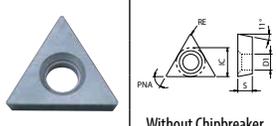
- 1) The standard cutting speed is Vc=100~160 sfm. The table feed may not follow the expected conditions when machining small diameter workpieces at high speeds.
- 2) Coolant is recommended.

Depth of Cut & Number of Passes (Metric: M)

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

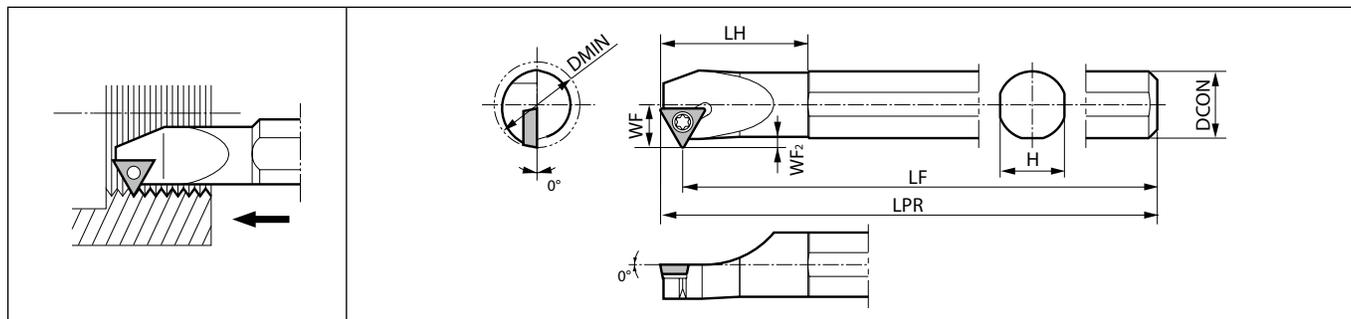
INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

TPGB (Internal Threading)

Insert		Part Number		Material										Profile		Thread Type		Symbol Thread Type		Carbide				Cermet		Applicable Toolholder J51		
				Carbon Steel / Alloy Steel																P								
				Stainless Steel																M								
				Cast Iron																K								
Non-Ferrous Metals										N																		
No. of edges		Dimensions (in)				Angle (°)		Pitch				Unit		Unit		Profile		Thread Type		Symbol Thread Type		Carbide				Cermet		Applicable Toolholder J51
		IC	S	D1	RE	AN	PNA	M (mm)		UN (TPI)																		
								min.	max.	min.	max.																	
No. of edges		IC	S	D1	RE	AN	PNA	M (mm)		UN (TPI)		Profile		Thread Type		Symbol Thread Type		Carbide				Cermet		Applicable Toolholder J51				
No. of edges								min.		max.		min.		max.		Profile		Thread Type		Carbide					Cermet			
 <p>Without Chipbreaker</p>	TPGB 21502	3	1/4	3/32	0.138	0.002	11	60	0.75	1.5	28	16	Partial Profile	Metric Unified	M UN	KW10	PV720	PV730	TM60	TN620STWP% -2		...STWP% 11-12(E)			
	TPGB 22013	3	1/4	1/8	0.130	0.004	11	60	0.75	3.5	28	11									...	...	...STWP% 11-16(E)	...STWP% 11-20(E)	
	2202	3	1/4	1/8	0.130	0.004	11	60	1.5	3.5	16	8									...	...	...STWP% 11-20(E)	...	
	2205	3	1/4	1/8	0.130	0.008	11	60	3	3.5	8	8									...	...	...STWP% 11-25(E)	...	

Recommended Cutting Conditions J52
Depth of Cut & Number of Passes J61

S-STWP (Internal Threading)



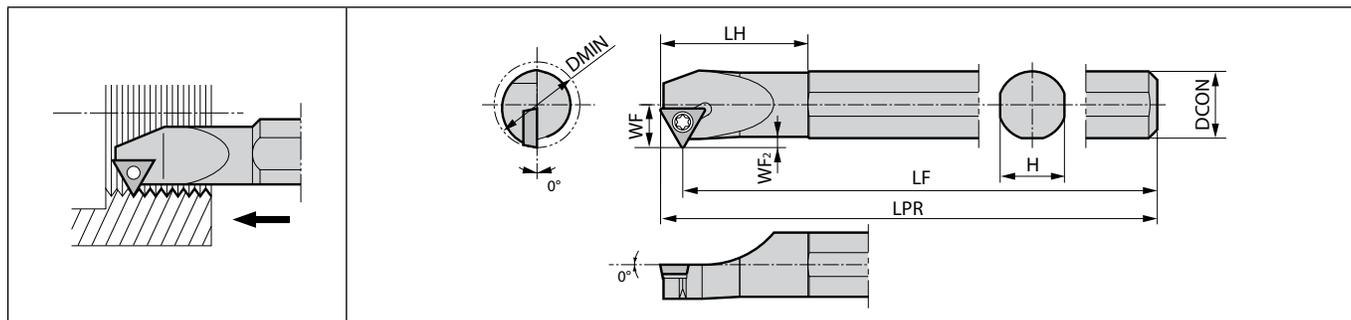
This toolholder is also available for boring. | Right-hand shown

Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions								GAMO (°)	Coolant Hole	Available Pitch (TPI / mm)	Spare Parts		Applicable Inserts ➔ J50		
			R	DMIN	DCON	H	LH	LPR	LF	WF				WF ₂	Screw		Wrench	
Inch	S06M- STWPR-2	●	0.476	0.375	0.340	0.910	6.00	5.783	0.238	0.050	0	No	14-32 TPI	SB-3STR	FT-10	TPGB215..		
	S12R- STWPR-2	●	0.970	0.750	0.720	1.600	8.00	7.783	0.485	0.110			8-32 TPI					
mm	S10M- STWPR11-12	●	12	10	9.2	23	150	144.5	6	1	0	No	≤ 1.5	SB-3STR	FT-10	TPGB215..		
	S12M- STWPR11-16	●	16	12	11	30			8	1.5			≤ 2					
	S16Q- STWPR11-20	●	20	16	15	35			180	174.5			10				2	≤ 3
	S20R- STWPR11-25	●	25	20	19	40			200	194.5			12.5				2.5	≤ 3.5	SB-3TR	TPGB22..

WF₂ : shows the Max. available D.O.C.

S-STWP-E (Internal Threading, Excellent Bar)



This toolholder is also available for boring. | Right-hand shown

Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions										GAMO (°)	Coolant Hole	Pitch max (mm)	Spare Parts		Applicable Inserts ➔ J50	
			R	L	DMIN	DCON	H	LH	LPR	LF	WF	WF ₂				Screw	Wrench		
mm	S10M- STWP% 11-12E	●	●	12	10	9.2	23	150	144.5	6	1	0	No	1.5	SB-3STR	FT-10	TPGB215..		
	S12M- STWP% 11-16E	●	●	16	12	11	30			8	1.5			2					
	S16R- STWP% 11-20E	●	●	20	16	15	35			200	194.5			10				2	3
	S20X- STWP% 11-25E	●	●	25	20	19	40			220	214.5			12.5				2.5	3.5	SB-3TR	TPGB22..

WF₂ : shows the Max. available D.O.C.

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

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 O6IR / O8IR 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)
	MEGACOAT		
	PR1215		
Carbon Steel	★ 300-550		0.012" Max
Alloy Steel	★ 300-500		0.012" Max
Stainless Steel	★ 200-300		0.010" Max
Cast Iron	★ 150-350		0.012" Max
Heat-Resistant Alloy	★ 25-150		0.010" Max

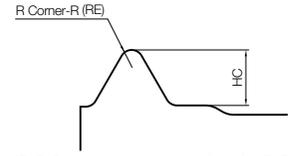
★ : 1st Recommendation ☆ : 2nd Recommendation

- 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.

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.



11 / 16 / 22 (Full Profile)

Thread Type	Pitch / TPI mm / TPI	Part Number	HC (mm)	Total D.O.C.	No. of Passes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
						Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Metric	External Thread	16ER 100ISO-TF/TQ	1.00mm	0.64	0.72	5	0.23	0.19	0.15	0.10	0.05																
			1.25mm	0.80	0.88	6	0.26	0.21	0.16	0.12	0.08	0.05															
		1.50mm	0.95	1.03	6	0.26	0.24	0.21	0.16	0.11	0.05																
		1.75mm	1.11	1.19	8	0.26	0.22	0.19	0.16	0.13	0.10	0.08	0.05														
		2.00mm	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	1.57	1.65	12	0.26	0.23	0.21	0.18	0.14	0.12	0.12	0.10	0.10	0.10	0.08	0.06	0.05									
		3.00mm	1.87	1.95	14	0.26	0.24	0.22	0.21	0.18	0.14	0.12	0.10	0.10	0.10	0.10	0.08	0.08	0.05	0.02							
		0.50mm	16E5 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	0.10	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	0.10	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	0.15	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	0.14	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			
	Metric	Internal Thread	11IR 100ISO-TF/TQ	1.00mm	0.60	0.68	5	0.20	0.18	0.15	0.11	0.04															
				1.25mm	0.74	0.82	7	0.20	0.18	0.14	0.12	0.08	0.06	0.04													
			1.50mm	0.88	0.96	8	0.24	0.18	0.14	0.10	0.10	0.08	0.07	0.05													
			1.75mm	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	11IS 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											
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	0.10	0.07	0.05	0.05	0.02							
1.00mm		16IR 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	0.10	0.07	0.05	0.05	0.02							
3.00mm		22IR 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	0.10	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		External Thread	16ER 24UN-TF/TQ	0.0264	0.0295	5	0.009	0.008	0.006	0.004	0.002																
				20TPI	0.0315	0.0346	6	0.009	0.008	0.006	0.005	0.004	0.002														
			18TPI	0.0350	0.0382	6	0.010	0.009	0.007	0.006	0.004	0.002															
			16TPI	0.0398	0.0429	7	0.010	0.009	0.007	0.006	0.005	0.004	0.002														
			14TPI	0.0453	0.0484	8	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.002													
			13TPI	0.0488	0.0520	9	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.003	0.002												
	12TPI		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											
	10TPI		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	0.002	0.002										
	8TPI		0.0780	0.0811	14	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.002							
	24TPI		16ER 24UN	0.0264	0.0295	5	0.009	0.008	0.006	0.004	0.002																
	20TPI	20UN	0.0315	0.0346	6	0.009	0.008	0.006	0.005	0.004	0.002																
	18TPI	18UN	0.0350	0.0382	6	0.010	0.009	0.007	0.006	0.004	0.002																
	16TPI	16UN	0.0398	0.0429	7	0.010	0.009	0.007	0.006	0.005	0.004	0.002															
	14TPI	14UN	0.0453	0.0484	8	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.002														
	12TPI	12UN	0.0528	0.0559	11	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.003	0.002	0.002												
	8TPI	22ER 08UN	0.0780	0.0811	15	0.012	0.010	0.009	0.008	0.006	0.006	0.006	0.006	0.005	0.004	0.004	0.004	0.003	0.002	0.002	0.001						
	24TPI	16IR 24UN-TF/TQ	0.0244	0.0276	5	0.009	0.008	0.006	0.004	0.002																	
	20TPI	20UN-TF/TQ	0.0295	0.0327	6	0.009	0.008	0.006	0.005	0.003	0.002																
	18TPI	18UN-TF/TQ	0.0327	0.0358	6	0.009	0.008	0.007	0.006	0.004	0.002																
	16TPI	16UN-TF/TQ	0.0370	0.0402	7	0.009	0.008	0.007	0.006	0.004	0.004	0.002															
	14TPI	14UN-TF/TQ	0.0421	0.0453	8	0.																					

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	0.004	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	0.005	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	0.008	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	0.004	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	0.005	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	0.003	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	0.003	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	0.005	0.004	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	0.003	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	0.003	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	0.005	0.004	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	0.005	0.004	0.003	0.002								
		11 TPI	11BSPT-TF/TQ	0.0583	0.0614	12	0.010	0.009	0.007	0.006	0.006	0.005	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	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												
		14 TPI	14BSPT-TF/TQ	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002								
		11 TPI	11IR 28BSPT	0.0228	0.0248	5	0.008	0.006	0.005	0.004	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	0.005	0.004	0.003	0.002								
		11 TPI	11IR 28BSPT	0.0228	0.0248	5	0.008	0.006	0.005	0.004	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	0.002	0.001					
		14 TPI	14NPT	0.0575	0.0606	15	0.008	0.007	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002	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	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.002	0.002	0.001	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	0.002	0.001					
		14 TPI	14NPT	0.0575	0.0606	15	0.008	0.007	0.006	0.006	0.005	0.005	0.005	0.004	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	0.006	0.005	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	0.10	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	0.13	0.12	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	0.10	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				
	Internal Thread	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											

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		Part Number	RE	Total D.O.C.	No. of Passes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
	mm / TPI						Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Metric	External Thread	3.50mm		22ER N60	0.48	2.17	15	0.27	0.25	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.06	0.05					
		4.00mm				2.55	17	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.16	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.06	0.05			
		4.50mm				2.93	18	0.30	0.28	0.26	0.25	0.24	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.06	0.05		
		5.00mm				3.31	19	0.30	0.28	0.27	0.26	0.25	0.24	0.23	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.06	0.05
		0.75mm	061R 60005			0.05	0.44	10	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.03										
	Internal Thread	1.00mm	061R 60005	0.05	0.60	12	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.03										
			081R 60007	0.07	0.58	12	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.04	0.04	0.04	0.04	0.03	0.03									
		1.25mm	061R 60005	0.05	0.76	14	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	0.03								
			081R 60007	0.07	0.74	14	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	0.03								
		1.50mm	081R 60007	0.07	0.90	17	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				
		1.75mm	60007	0.07	1.07	19	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	0.04	0.03		
		0.50mm	111R A60	0.02	0.30	5	0.08	0.07	0.06	0.05	0.04																	
		1.00mm			0.63	6	0.16	0.14	0.12	0.10	0.07	0.04																
		1.50mm			0.95	9	0.18	0.16	0.13	0.12	0.10	0.08	0.08	0.06	0.04													
		Unified (inch)	External Thread	48 TPI	16ER A60-TF AG60-TF	0.0024	0.0138	5	0.004	0.003	0.003	0.002	0.002															
				24 TPI	16ER A60-TF AG60-TF	0.0024	0.0295	7	0.007	0.006	0.005	0.004	0.003	0.003	0.002													
				20 TPI	16ER A60-TF AG60-TF	0.0024	0.0358	8	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002												
				18 TPI	16ER A60-TF AG60-TF	0.0024	0.0398	8	0.008	0.007	0.006	0.006	0.005	0.003	0.003	0.002												
				16 TPI	16ER A60-TF AG60-TF	0.0024	0.0453	10	0.009	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002										
14 TPI	16ER G60-TF AG60-TF			0.0087	0.0453	9	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.002												
13 TPI	16ER G60-TF AG60-TF			0.0087	0.0496	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002												
12 TPI	16ER G60-TF AG60-TF			0.0087	0.0543	10	0.010	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002												
10 TPI	16ER G60-TF AG60-TF			0.0087	0.0673	12	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002										
9 TPI	16ER G60-TF AG60-TF			0.0087	0.0756	13	0.011	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002											
8 TPI	16ER G60-TF AG60-TF			0.0087	0.0819	14	0.011	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002											
48 TPI	16ER A60 AG60			0.0024	0.0138	5	0.004	0.003	0.003	0.002	0.002																	
24 TPI	16ER A60 AG60			0.0024	0.0295	7	0.007	0.006	0.005	0.004	0.003	0.003	0.002															
20 TPI	16ER A60 AG60			0.0024	0.0358	8	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002														
18 TPI	16ER A60 AG60			0.0024	0.0398	8	0.008	0.007	0.006	0.006	0.005	0.003	0.003	0.002														
16 TPI	16ER A60 AG60			0.0024	0.0453	10	0.009	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002												
14 TPI	16ER G60 AG60			0.0087	0.0453	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002	0.002												
13 TPI	16ER G60 AG60			0.0087	0.0496	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002												
12 TPI	16ER G60 AG60			0.0087	0.0543	10	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002											
10 TPI	16ER G60 AG60	0.0087	0.0673	12	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002												
9 TPI	16ER G60 AG60	0.0087	0.0756	13	0.011	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002													
8 TPI	16ER G60 AG60	0.0087	0.0819	14	0.011	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002													
Internal Thread	22ER N60	0.0189	0.0894	15	0.011	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002									
			0.1075	18	0.011	0.010	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.002								
		0.1327	19	0.012	0.011	0.011	0.010	0.010	0.010	0.010	0.010	0.009	0.009	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.002	0.002	0.002	0.002		
		0.0220	0.0213	12	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									
		0.0220	0.0252	12	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									
		0.0220	0.0303	14	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								
		0.0228	0.0295	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	0.002	0.002	0.001	0.001							

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

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	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
						Pass	Pass																	
Whitworth External Thread	24 TPI	16ER A55 AG55	0.0024	0.0311	7	0.007	0.006	0.006	0.004	0.003	0.003	0.002												
			0.0024	0.0311	7	0.007	0.006	0.006	0.004	0.003	0.003	0.002												
	20 TPI	16ER A55 AG55	0.0024	0.0378	8	0.008	0.007	0.006	0.005	0.004	0.003	0.003	0.002											
			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 AG55	0.0024	0.0421	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.003	0.002										
			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 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								
			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	0.002							
	14 TPI	16ER G55 AG55	0.0087	0.0472	9	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002	0.002	0.002								
			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	0.002							
	12 TPI	16ER G55 AG55	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	0.002	0.002							
			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	0.002						
	11 TPI	16ER G55 AG55	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						
			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	0.002	0.001					
	10 TPI	16ER G55 AG55	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	0.002	0.003	0.002				
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	0.003	0.002	0.002	0.003	0.002					
9 TPI	16ER G55 AG55	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	0.004	0.004	0.004	0.003	0.002				
		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	0.004	0.004	0.003	0.002				
8 TPI	16ER G55 AG55	0.0087	0.0902	15	0.011	0.010	0.009	0.009	0.008	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.003	0.002				
		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	0.004	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	0.004	0.004	0.003					
		0.0185	0.1150	18	0.012	0.011	0.010	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002			
6 TPI	22ER N55	0.0185	0.1150	18	0.012	0.011	0.010	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002			
		0.0185	0.1417	21	0.012	0.011	0.011	0.010	0.010	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.002	
5 TPI	22ER N55	0.0185	0.1417	21	0.012	0.011	0.011	0.010	0.010	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.002	
		0.0185	0.002	0.002																				
Whitworth Internal Thread	28 TPI	061R 5501 081R 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	0.002	0.001	0.001						
			0.0039	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	0.002	0.001	0.001			
	24 TPI	111R A55	0.0024	0.0283	7	0.006	0.006	0.005	0.004	0.003	0.003	0.002												
			0.0024	0.0343	8	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002											
	20 TPI	111R A55	0.0024	0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002											
			0.0024	0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002											
	18 TPI	161R A55 AG55	0.0024	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002										
			0.0024	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002										
	16 TPI	161R A55 AG55	0.0024	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002										
			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	161R G55 AG55	0.0087	0.0417	8	0.008	0.008	0.007	0.006	0.005	0.004	0.003	0.002											
			0.0024	0.0500	11	0.008	0.007	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002							
	12 TPI	161R G55 AG55	0.0087	0.0504	9	0.009	0.008	0.008	0.007	0.006	0.005	0.004	0.003	0.002										
			0.0024	0.0583	11	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.002	0.002	0.002							
	11 TPI	161R G55 AG55	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									
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	0.002							
10 TPI	161R G55 AG55	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										
		0.0024	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	0.002	0.001						
9 TPI	161R G55 AG55	0.0087	0.0705	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002										
		0.0024	0.0783	14	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002	0.002	0.001						
8 TPI	161R G55 AG55	0.0087	0.0807	14	0.009	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002									
		0.0024	0.0886	15	0.011	0.01	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002	0.001						
7 TPI	221R N55	0.0185	0.0823	14	0.009	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002									
		0.0185	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	0.004	0.003	0.002	0.002				
6 TPI	221R N55	0.0185	0.0823	14	0.009	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002									
		0.0185	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	0.003	0.002	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	0.10	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	161R 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	161R 300TR	-	1.75	14	0.24	0.20	0.18	0.16	0.15	0.14	0.12	0.11	0.10	0.10	0.10	0.07	0.05	0.03					
	4.00mm	221R 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	221R 500TR	-	2.73																				

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	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		
	mm S TPI																				
Metric (60°)	External Thread	1.00mm 16ER 6001	0.10	0.66	5	0.20	0.18	0.12	0.09	0.05											
		1.25mm 16ER 6001	0.10	0.85	6	0.23	0.20	0.14	0.12	0.07	0.05										
		1.50mm 16ER 6001	0.10	1.04	8	0.23	0.21	0.19	0.15	0.11	0.06	0.05	0.04								
		1.50mm 16ER 6002	0.20	0.94	7	0.23	0.20	0.18	0.14	0.10	0.05	0.04									
		1.75mm 16ER 6001	0.10	1.23	9	0.25	0.22	0.20	0.17	0.14	0.09	0.07	0.05	0.04							
		1.75mm 16ER 6002	0.20	1.13	8	0.25	0.22	0.20	0.16	0.14	0.07	0.05	0.04								
		2.00mm 16ER 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					
	2.00mm 16ER 6002	0.20	1.32	10	0.25	0.22	0.20	0.16	0.14	0.12	0.10	0.08	0.07	0.04	0.04						
	2.50mm 16ER 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				
	2.50mm 16ER 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					
	Internal Thread	0.75mm 11IR 60005	0.05	0.44	5	0.14	0.12	0.10	0.06	0.02											
		1.00mm 11IR 60005	0.05	0.60	6	0.18	0.15	0.10	0.08	0.05	0.04										
		1.25mm 11IR 60005	0.05	0.76	7	0.18	0.15	0.12	0.10	0.10	0.07	0.04									
		1.50mm 11IR 60005	0.05	0.92	9	0.18	0.16	0.12	0.10	0.10	0.08	0.08	0.06	0.04							
1.50mm 16IR 6001		0.10	0.87	8	0.18	0.16	0.12	0.10	0.10	0.08	0.08	0.05									
1.75mm 16IR 6001		0.10	1.04	9	0.20	0.18	0.15	0.12	0.12	0.10	0.08	0.05	0.04								
2.00mm 16IR 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						
Parallel Pipe / Tapered Pipe (55°)	External Thread	28TPI 16ER 5501	0.0039	0.0240	5	0.008	0.006	0.005	0.003	0.002											
		19TPI 16ER 5501	0.0039	0.0374	7	0.009	0.008	0.006	0.006	0.004	0.003	0.002									
		14TPI 16ER 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						
		14TPI 16ER 5502	0.0079	0.0480	9	0.009	0.008	0.007	0.006	0.004	0.004	0.004	0.003	0.002							
		11TPI 16ER 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	
		11TPI 16ER 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	0.002	0.001			
		28TPI 11IR 55005	0.0020	0.0264	7	0.007	0.006	0.005	0.003	0.002	0.002	0.001									
	Internal Thread	28TPI 16IR 5501	0.0039	0.0240	6	0.007	0.006	0.005	0.003	0.002	0.001										
		19TPI 11IR 55005	0.0020	0.0398	8	0.008	0.007	0.006	0.006	0.005	0.003	0.003	0.002								
		19TPI 16IR 5501	0.0039	0.0374	7	0.008	0.007	0.006	0.006	0.005	0.004	0.002									
		14TPI 11IR 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					
		14TPI 16IR 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						
		14TPI 16IR 5502	0.0079	0.0480	9	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002							
		11TPI 16IR 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				
Whitworth (55°)	External Thread	24TPI 16ER 5501	0.0039	0.0287	6	0.009	0.007	0.005	0.004	0.003	0.002										
		20TPI 16ER 5501	0.0039	0.0354	6	0.009	0.007	0.007	0.006	0.005	0.002										
		18TPI 16ER 5501	0.0039	0.0398	7	0.009	0.008	0.007	0.006	0.004	0.003	0.002									
		16TPI 16ER 5501	0.0039	0.0453	9	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002							
		16TPI 16ER 5502	0.0079	0.0409	8	0.009	0.008	0.006	0.006	0.004	0.003	0.003	0.002	0.002							
		14TPI 16ER 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						
		14TPI 16ER 5502	0.0079	0.0480	9	0.009	0.008	0.007	0.006	0.004	0.004	0.004	0.003	0.002							
	Internal Thread	12TPI 16ER 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				
		12TPI 16ER 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					
		11TPI 16ER 5501	0.0039	0.0681	12	0.010	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002					
		11TPI 16ER 5502	0.0079	0.0638	11	0.010	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002						
		10TPI 16ER 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		
		10TPI 16ER 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			
		9TPI 16ER 5502	0.0079	0.0799	14	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.001			
Whitworth (55°)	External Thread	24TPI 11IR 55005	0.0020	0.0280	7	0.007	0.006	0.005	0.004	0.003	0.002	0.001									
		24TPI 16IR 5501	0.0039	0.0256	6	0.007	0.006	0.005	0.004	0.003	0.001										
		20TPI 11IR 55005	0.0020	0.0343	8	0.007	0.006	0.006	0.005	0.004	0.002	0.002	0.002								
		20TPI 16IR 5501	0.0039	0.0319	7	0.007	0.006	0.006	0.005	0.004	0.002	0.002									
		18TPI 11IR 55005	0.0020	0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002								
		18TPI 16IR 5501	0.0039	0.0358	7	0.008	0.007	0.006	0.006	0.004	0.003	0.002									
		16TPI 11IR 55005	0.0020	0.0429	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.002	0.002							
	Internal Thread	16TPI 16IR 5501	0.0039	0.0409	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002								
		16TPI 16IR 5502	0.0079	0.0362	7	0.008	0.007	0.006	0.006	0.004	0.003	0.002									
		14TPI 11IR 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						
		14TPI 16IR 5501	0.0039	0.0472	9	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		14TPI 16IR 5502	0.0079	0.0425	8	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.002								
		12TPI 16IR 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						
		12TPI 16IR 5502	0.0079	0.0512	9	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
11TPI 16IR 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							
11TPI 16IR 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>
- 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.

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	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
						Pass	Pass	Pass	Pass	Pass	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									
			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	0.07	0.05	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									
			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	0.08	0.07	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								
			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					
			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						
			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					
	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								
	3.00mm	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								
		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					
		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	0.08	0.02						
	3.50mm	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							
		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			
		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				
	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													
	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								
			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	0.001						
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	0.001								
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									
Internal Thread		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												
		14 TPI TT32/43% 5501	0.0039	0.0528	10	0.008	0.007	0.007	0.006	0.006	0.006	0.004	0.004	0.003	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										
		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	0.001							
	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	0.001									
Whitworth (55°)	External Thread	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	0.002	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											
	Internal Thread	12 TPI TT32/43% 5501	0.0039	0.0622	12	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.001								
		5502	0.0079	0.0575	11	0.010	0.008	0.007	0.006	0.006	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	0.001							
		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	0.001								
		5503	0.0118	0.0591	11	0.010	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.001									
		10 TPI TT32/43% 5501	0.0039	0.0756	14	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.002	0.001							
	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	0.002	0.001								
	External Thread	9 TPI TT43% 5503	0.0118	0.0661	12	0.010	0.009	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.002	0.001								
		5501	0.0039	0.0843	14	0.010	0.009	0.009	0.008	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001					
		5502	0.0079	0.0799	13	0.010	0.009	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001						
		5503	0.0118	0.0752	12	0.012	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.001							
8 TPI TT43% 5501		0.0039	0.0957	15	0.011	0.010	0.009	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001						
5502		0.0079	0.0909	14	0.011	0.010	0.009	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001						
5503	0.0118	0.0862	13	0.012	0.011	0.010	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.002	0.001								
5504	0.0157	0.0819	12	0.012</																				

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	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		
	mm / TPI																					
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	0.001									
		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	0.005	0.004	0.003	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	0.006	0.005	0.004	0.002	0.001					
	9 TPI	5502	0.0079	0.072	0.472	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.002	0.001					
		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						
	8 TPI	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	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
	mm / TPI																
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	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	
	mm / TPI																	
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															
			6000S	0.05	0.33	5	0.10	0.10	0.07	0.04	0.02							
		0.70mm	TTX32R 6000	0.00	0.53	7	0.10	0.10	0.10	0.08	0.07	0.06	0.02					
			6000S	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				
	6000S		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					
		6000S	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					
		6000S	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							
6001		0.10	0.85	7	0.25	0.20	0.13	0.10	0.10	0.05	0.02							
1.25mm																		
1.50mm																		
1.75mm	TTX32R 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																		
Parallel Pipe (55°)	External Thread	28 TPI	TTX32R 5501	0.0039	0.0240	5	0.008	0.007	0.006	0.002	0.001							
			5501S	0.0059	0.0354	7	0.008	0.007	0.006	0.006	0.005	0.003	0.001					
		19 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		
			5501S	0.0059	0.0657	12	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	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		
			5501S	0.0059	0.0657	12	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.001
	Whitworth (55°)	External Thread	24 TPI	TTX32R 5501	0.0039	0.0287	6	0.008	0.007	0.006	0.005	0.002	0.001					
				5501	0.0039	0.0354	7	0.008	0.007	0.006	0.006	0.005	0.003	0.001				
			20 TPI	TTX32R 5501S	0.0059	0.0331	7	0.008	0.007	0.006	0.005	0.004	0.002	0.001				
				5501S	0.0059	0.0374	8	0.008	0.007	0.006	0.006	0.005	0.004	0.002	0.001			
			16 TPI	TTX32R 5501S	0.0059	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.002	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	
12 TPI																		
11 TPI																		

<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	6000	0.5~1.0	56~32	-	-
		0.5~1.0	48~32	-	-
		1.0~2.0	28~14	-	-
TTX32R 6000S	6000S	0.5	56~48	-	-
		0.5	48	-	-
TTX32R 5501	5501	-	-	28~19	24~20
		-	-	19~11	20~14

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	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17				
						Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Metric (60°)	Internal Thread	0.75mm	TPGB 21501 2201	0.05	0.44	5	0.15	0.12	0.10	0.05	0.02															
							0.15	0.12	0.10	0.05	0.02															
		0.80mm	TPGB 21501 2201	0.05	0.47	5	0.15	0.14	0.10	0.06	0.02															
							0.15	0.14	0.10	0.06	0.02															
		1.00mm	TPGB 21501 2201	0.05	0.60	6	0.18	0.14	0.12	0.10	0.04	0.02														
							0.18	0.14	0.12	0.10	0.04	0.02														
		1.25mm	TPGB 21501 2201	0.05	0.76	7	0.18	0.16	0.14	0.12	0.10	0.04	0.02													
							0.18	0.16	0.14	0.12	0.10	0.04	0.02													
		1.50mm	TPGB 21501 2201	0.05	0.92	8	0.20	0.18	0.16	0.14	0.10	0.08	0.04	0.02												
							0.20	0.18	0.16	0.14	0.10	0.08	0.04	0.02												
			TPGB 21501 2202	0.10	0.87	8	0.20	0.18	0.16	0.14	0.08	0.05	0.04	0.02												
							0.20	0.18	0.16	0.14	0.08	0.05	0.04	0.02												
		1.75mm	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											
							0.20	0.18	0.16	0.13	0.12	0.10	0.08	0.05	0.02											
		2.00mm	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									
							0.20	0.18	0.16	0.13	0.13	0.12	0.10	0.08	0.05	0.03	0.02									
		2.50mm	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							
							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							
		3.00mm	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					
							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					
							0.20	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			
		3.50mm	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	0.07	0.05	0.02			
							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				
							0.20	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		

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

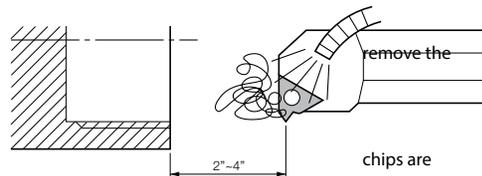
If the threading cycle continues with chips tangled on the holder or in the part it may damage the insert. We suggest starting each thread pass at least 2" from the part to allow room for the coolant to remove chips from the tool on each pass.

< 1 When running the first part of a setup >

Run the program in single block to make sure coolant can 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 removed from the tool before going into production.



Applicable Toolholders and 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 S○○□-KTNL16	16ERA55-TF/TQ	-	SINR0612S-06E (EZT J44)	06IR5501	-	6.56	0.12	
1/8	G 1/8 (PF 1/8)			16ERAG55-TF/TQ 16ERA55 16ERAG55				-	-		8.57
2/8	G 1/4 (PF 1/4)	19	KTNR○○○○○□-16 KTNSR○○○○○□-16 S○○□-KTNL16	16ERA55-TF/TQ	16ER19W-TF/TQ 16ER19W	SINR0816S-08E (EZT J44)	08IR5501	-	11.45	0.18	
3/8	G 3/8 (PF 3/8)			16ERAG55-TF/TQ 16ERA55 16ERAG55				-	SINR1216S-11E (EZT J44)		11IRA55 11IR55005	-	14.95
4/8	G 1/2 (PF 1/2)	14	KTNR○○○○○□-16 KTNSR○○○○○□-16 S○○□-KTNL16	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		-	20.59		
6/8	G 3/4 (PF 3/4)					SINR2016S-16		16IRAG55 16IRG55 16IR5501 16IR5502	16IR14W-TF/TQ 16IR14W		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 S○○□-KTNL16	16ERAG55-TF/TQ 16ERG55-TF/TQ 16ERAG55 16ERG55	16ER11W-TF/TQ 16ER11W	SINR2420S-16	16IRAG55 16IRG55 16IR5501 16IR5502	16IR11W-TF/TQ	30.29	0.32	
9/8	G 1 1/8 (PF 1 1/8)					CINR3025S-16		16IR11W	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		Min. Bore Dia. (mm)	
				Partial Profile	Full Profile		Partial Profile	Full Profile		
-	R 1/16, Rc 1/16 (-)	28	KTNR○○○○○□-16 KTNSR○○○○○□-16 S○○□-KTNL16	16ERA55-TF/TQ	16ER28BSPT-TF/TQ 16ER28BSPT	SINR0612S-06E (EZT J44)	06IR5501	-	0.12	
1/8	R 1/8, Rc 1/8 (PT 1/8)	28		(16ERAG55-TF/TQ) (16ERA55) (16ERAG55)				-	-	
2/8	R 1/4, Rc 1/4 (PT 1/4)	19	KTNR○○○○○□-16 KTNSR○○○○○□-16 S○○□-KTNL16	16ERA55-TF/TQ	16ER19BSPT-TF/TQ 16ER19BSPT	SINR0816S-08E (EZT J44)	08IR5501	-	0.18	
3/8	R 3/8, Rc 3/8 (PT 3/8)	19		(16ERAG55-TF/TQ) (16ERA55) (16ERAG55)				-	SINR1216S-11E (EZT J44)	(11IRA55) (11IR55005)	11IR19BSPT-TF/TQ 11IR19BSPT
4/8	R 1/2, Rc 1/2 (PT 1/2)	14	KTNR○○○○○□-16 KTNSR○○○○○□-16 S○○□-KTNL16	16ERAG55-TF/TQ	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		(16ERG55-TF/TQ) (16ERAG55) (16ERG55)		-		SINR1616S-16		-	16IR14BSPT-TF/TQ 16IR14BSPT
8/8	R 1, Rc 1 (PT 1)	11	KTNR○○○○○□-16 KTNSR○○○○○□-16 S○○□-KTNL16	16ERAG55-TF/TQ	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.										

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 S○○□-KTNL16	-	16ER18NPT	EZH Sleeve (EZT  J44)	EZTR060050-60-004 EZTR070060-60-004	-
1/2 NPT 3/4 NPT	14	KTNR○○○○○□-16 KTNSR○○○○○□-16 S○○□-KTNL16	-	16ER14NPT	EZH Sleeve (EZT  J44)	EZTR070060-60-004	-
1/2 NPT 3/4 NPT	14	KTNR○○○○○□-16 KTNSR○○○○○□-16 S○○□-KTNL16	-	16ER14NPT	SINR1616S-16 SINR2016S-16	-	16IR14NPT
1 NPT 1 1/4 NPT 1 1/2 NPT 2 NPT	11.5	KTNR○○○○○□-16 KTNSR○○○○○□-16 S○○□-KTNL16	-	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			
Tr 22X3	3	KTNR○○○○○□-16 KTNSR○○○○○□-16 S○○□-KTNL16	16ER200TR	-	SINR1616S-16	16IR200TR	-	16.00 18.00			
Tr 24X3 Tr 26X3	3				SINR2016S-16		-	19.00			
Tr 28X3 Tr 30X3 Tr 32X3 Tr 34X3 Tr 36X3 Tr 38X3 Tr 40X3	3				16ER300TR	-	SINR2420S-16	16IR300TR	-	21.00 23.00	
Tr 42X3 Tr 44X3 Tr 46X3 Tr 48X3 Tr 50X3 Tr 52X3 Tr 55X3 Tr 60X3 Tr 65X3	3				CINR3732S-16	16IR300TR	-	SINR3025S-16	16IR300TR	-	25.00 27.00 29.00
Tr 70X3 Tr 75X3 Tr 80X3 Tr 90X3 Tr 95X3 Tr 100X3 Tr 105X3 Tr 110X3	4							22ER400TR	-	CINR3732S-22	22IR400TR	-	31.00 33.00 35.00 37.00

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.

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

Metric Coarse Thread : M

Nominal Thread	Pitch (mm)	Internal Threading			Min. Bore Dia. (mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
M1	0.25 0.50	No Tools Available	-	-	0.73
M4			EZTR030025-60-002	-	2.46
M5			EZTR040035-60-004	-	3.24
M6	1.00	-	VNTR045-11	-	4.13
M7	1.00	-	EZTR050040-60-004	-	4.92
M8	1.25	-	VNTR045-11	-	5.92
			EZTR060050-60-004	-	
			VNTR060-11	-	
M9	1.25	-	SINR0612S-06E	06IR60005	6.65
			SINR0612S-06E	06IR60005	
M10	1.50	SINR0816S-08E	08IR60007	-	7.65
M11	1.50	SINR0816S-08E	08IR60007	-	8.38
M12	1.75	SINR0816S-08E	08IR60007	-	9.38
M16	2.00	SINR1216S-11E	-	11IR200ISO	10.11
M18	2.50	No Tools Available			13.84
M20	2.50	SINR1616S-16	Table 5	16IR250ISO-00	15.29
M22	2.50	SINR2016S-16	Table 4	16IR300ISO-00	17.29
M24	3.00	SINR2420S-22	22IR60	22IR350ISO	19.29
M27	3.00	CINR3025S-22		22IR400ISO	20.75
M30	3.5	CINR3732S-22		22IR450ISO	23.75
M33	3.5	CINR3732S-22	22IR500ISO	26.21	
M36	4.0	CINR3732S-22	22IR500ISO	29.21	
M39	4.0	CINR3732S-22	22IR500ISO	31.67	
M42	4.5	CINR3732S-22	22IR500ISO	34.67	
M45	4.5	CINR3732S-22	22IR500ISO	37.13	
M48	5.0	CINR3732S-22	22IR500ISO	40.13	
M52	5.0	CINR3732S-22	22IR500ISO	42.59	
M56	5.5	* Threading of M56 and over is not available due to too large pitch size.			46.59

Metric Fine Thread : M

Part 1

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

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

Metric Fine Thread : M

Part 2

Nominal Thread	Pitch (mm)	Internal Threading			Min. Bore Dia. (mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
M12.0x1.50	1.50	SINR0816S-08E	08IR60007	-	10.38
M12.0x1.25	1.25			-	10.65
M12.0x1.00	1.00			-	10.92
M14.0x1.50	1.50	SINR1216S-11E	11IRA60 11IR60005	11IR150ISO-□□	12.38
M14.0x1.25	1.25			11IR125ISO-□□	12.65
M14.0x1.00	1.00			11IR100ISO-□□	12.92
M15.0x1.50	1.50	SINR1216S-11E	11IRA60 11IR60005	11IR150ISO-□□	13.38
M15.0x1.00	1.00			11IR100ISO-□□	13.92
M16.0x1.50	1.50	SINR1216S-11E	11IRA60 11IR60005	11IR150ISO-□□	14.38
M16.0x1.00	1.00			11IR100ISO-□□	14.92
M17.0x1.50	1.50	SINR1516S-11E	11IRA60 11IR60005	11IR150ISO-□□	15.38
M17.0x1.00	1.00			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		Table 3	16IR100ISO-□□	16.92
M20.0x2.00	2.00	SINR1616S-16	Table 1	16IR200ISO-□□	17.84
M20.0x1.50	1.50		Table 2	16IR150ISO-□□	18.38
M20.0x1.00	1.00	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		Table 3	16IR100ISO-□□	20.92
M24.0x2.00	2.00	SINR2016S-16	Table 1	16IR200ISO-□□	21.84
M24.0x1.50	1.50		Table 2	16IR150ISO-□□	22.38
M24.0x1.00	1.00	Table 3	16IR100ISO-□□	22.92	
M25.0x2.00	2.00	SINR2016S-16	Table 1	16IR200ISO-□□	22.84
M25.0x1.50	1.50		Table 2	16IR150ISO-□□	23.38
M25.0x1.00	1.00	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
			Table 2	16IR150ISO-□□	25.38
M27.0x1.50	1.50	Table 3	16IR100ISO-□□	25.92	
M28.0x2.00	2.00	SINR2420S-16	Table 1	16IR200ISO-□□	25.84
M28.0x1.50	1.50		Table 2	16IR150ISO-□□	26.38
M28.0x1.00	1.00		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		Table 2	16IR150ISO-□□	28.38
M30.0x1.00	1.00	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
			SINR2420S-22	-	22IR300ISO
M33x3.0	3.0	SINR2420S-16	Table 4	16IR300ISO-□□	29.75
M33x2.0	2.0	CINR3025S-16	Table 1	16IR200ISO-□□	30.84
			Table 2	16IR150ISO-□□	31.38
M33x1.5	1.5	CINR3025S-16	Table 2	16IR150ISO-□□	33.38
M35x1.5	1.5	CINR3025S-22	-	22IR300ISO	32.75
			CINR3025S-16	Table 4		16IR300ISO-□□
M36x3.0	3.0	CINR3025S-16	Table 4	16IR300ISO-□□	33.84
			Table 1	16IR200ISO-□□	
M36x2.0	2.0	CINR3025S-16	Table 1	16IR200ISO-□□	34.38
M36x1.5	1.5	CINR3025S-16	Table 2	16IR150ISO-□□	36.38
M38x1.5	1.5	CINR3025S-16	Table 2	16IR150ISO-□□	36.38
			CINR3025S-22	-		22IR300ISO
M39x3.0	3.0	CINR3025S-16	Table 4	16IR300ISO-□□	35.75
			Table 1	16IR200ISO-□□	
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-16	-	22IR300ISO	36.75
			Table 4	16IR300ISO-□□	
M40x2.0	2.0	CINR3732S-16	Table 1	16IR200ISO-□□	37.84
M40x1.5	1.5	CINR3732S-16	Table 2	16IR150ISO-□□	38.38
M42x4.0	4.0	CINR3732S-22	22IRN60	22IR400ISO	37.67
			-	22IR300ISO	
M42x3.0	3.0	CINR3732S-16	Table 4	16IR300ISO-□□	38.75
			Table 1	16IR200ISO-□□	
M42x2.0	2.0	CINR3732S-16	Table 1	16IR200ISO-□□	39.84
M42x1.5	1.5	CINR3732S-16	Table 2	16IR150ISO-□□	40.38
M45x4.0	4.0	* 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

Applicable Toolholders and Inserts (Internal Thread)

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	No Tools Available			10.58
9/16-12 UNC	12	No Tools Available			12.00
5/8-11 UNC	11	No Tools Available			13.38
3/4-10 UNC	10	SINR1616S-16	16IRG60	16IR10UN(-□□)	16.30
7/8-9 UNC	9	SINR2016S-16	16IRAG60	-	19.17
1-8 UNC	8		16IR08UN(-□□)	21.96	
1 1/8-7 UNC	7	SINR2420S-22	22IRN60	-	24.65
1 1/4-7 UNC	6	CINR3025S-22			27.82
1 3/8-6 UNC	6	CINR3025S-22			30.34
1 1/2-6 UNC	5	CINR3732S-22			33.52
1 3/4-5 UNC	5				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 Extra Fine Thread : UNEF

Nominal Thread	TPI	Internal Threading			Min. Bore Dia. (mm)	
		Toolholder	Insert			
			Partial Profile	Full Profile		
12-32UNEF	32	-	EZTR035030-60-002	-	4.63	
1/4-32UNEF					5.49	
5/16-32UNEF					7.08	
3/8-32UNEF					8.67	
7/16-28UNEF	28	SINR0612S-06E	06IR6000S	-	10.13	
1/2-28UNEF					11.72	
9/16-24UNEF	24	SINR1216S-11E	11IRA60 11IR6000S	-	13.14	
5/8-24UNEF					14.73	
11/16-24UNEF					SINR1516S-11	16IR24UN(-□□)	16.32
3/4-20UNEF	20	SINR1616S-16	16IRA60 16IRAG60	16IR20UN(-□□)	17.68	
13/16-20UNEF					19.26	
7/8-20UNEF		SINR2016S-16			20.85	
15/16-20UNEF		22.44				
1-20UNEF		24.03				
1 1/16-18UNEF	18	SINR2416S-16	16IRA60 16IRAG60	16IR18UN(-□□)	25.46	
1 1/8-18UNEF					27.05	
1 3/16-18UNEF					28.63	
1 1/4-18UNEF					30.22	
1 5/16-18UNEF					31.81	
1 3/8-18UNEF		CINR3025S-16			-	33.40
1 7/16-18UNEF						34.98
1 1/2-18UNEF						36.57
1 9/16-18UNEF						38.16
1 5/8-18UNEF						39.75
1 11/16-18UNEF	CINR3732S-16		41.33			

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	06IR6000S	-	
3/8-24 UNF	24	-	EZTR070060-60-004	-	8.38
		SINR0612S-06E	06IR6000S	-	
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		11IR6000S	11IRA60	11IR6000S	14.35
3/4-16 UNF	16	SINR1516S-11	11IRA60	-	17.33
			11IR6000S		
7/8-14 UNF	14	SINR1616S-16		16IR16UN(-□□)	20.26
	14	SINR2016S-16		16IR14UN(-□□)	20.26
1-12 UNF	12	SINR2016S-16	16IRAG60		23.10
1 1/8-12 UNF	12	SINR2420S-16	16IRG60		26.28
1 1/4-12 UNF	12		16IR6001	16IR12UN(-□□)	29.46
1 3/8-12 UNF	12	CINR3025S-16			32.63
1 1/2-12 UNF	12				36.81

INSERT GRADES	A
TURNING INSERTS	B
CBN/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

Applicable Toolholders and Inserts (Internal Thread)

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		-	-	7.73
W 7/16	14	No Tools Available	-	-	9.06
W 1/2	12		-	-	10.30
W 9/16	12		-	-	11.89
W 5/8	11	SINR1616S-16	16IRAG55	-	13.26
W 3/4	10			-	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				-	30.13
W 1 1/2	6	CINR3025S-22	22IRN55	-	33.30
W 1 5/8				-	35.52
W 1 3/4				-	38.69
W 1 7/8	4 1/2	No Tools Available	-	-	41.23
W 2			-	44.41	
W 2 1/4			-	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			-	-	8.80
W10.5 TPI 24			EZTRO60050-55-008	-	9.30
W9.5 TPI 20	20	SINR0816S-08E	08IR5501	-	8.06
W10 TPI 20			-	-	8.56
W10.5 TPI 20			-	-	9.06
W11 TPI 20			-	-	9.56
W11.5 TPI 20			-	-	10.06
W12 TPI 20			EZTRO60050-55-008	-	10.56
W12.5 TPI 20			EZTRO80070-55-008	-	11.06
W13 TPI 20	20	SINR1216S-11E	11IRA55	-	11.56
W13.5 TPI 20			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	-	12.40
W14.5 TPI 18			11IR55005	-	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	-	12.20
W14.5 TPI 16			11IR55005	-	12.70
W15 TPI 16			-	-	13.20
W17 TPI 16	16	SINR1516S-11E	-	-	15.20
W18 TPI 16			-	-	16.20
W19 TPI 16	16	SINR1616S-16	16IRAG55	(16IR16W- ⁰⁹)	17.20
W20 TPI 16			16IRG55	-	18.20
W20 TPI 16			16IR5501	-	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	(16IR14W- ⁰⁹)	18.94
W22 TPI 14			16IRG55	(16IR14W)	19.94
W23 TPI 14	14	SINR2016S-16	16IR5501	-	20.94
W24 TPI 14			16IR5502	-	21.94
W25 TPI 14			-	-	22.94
W26 TPI 14			-	-	23.94
W19 TPI 12	12	SINR1616S-16	-	-	16.60
W20 TPI 12			-	-	17.60
W21 TPI 12			-	-	18.60
W22 TPI 12			-	-	19.60
W28 TPI 12	12	SINR2420S-16	16IRAG55	-	25.60
W30 TPI 12			16IRG55	-	27.60
W32 TPI 12	12	CINR3025S-16	16IR5501	-	29.60
W34 TPI 12			16IR5502	-	31.60
W35 TPI 12			-	-	32.60
W36 TPI 12			-	-	33.60
W38 TPI 12			-	-	35.60
W40 TPI 12			-	-	37.60
W42 TPI 12			-	-	39.60
W44 TPI 12	12	CINR3732S-16	-	-	41.60
W45 TPI 12			-	-	42.60
W46 TPI 12			-	-	43.60
W48 TPI 12			-	-	45.60
W50 TPI 12			-	-	47.60
.			-	-	.
.			-	-	.
W23 TPI 10	10	SINR2016S-16	-	-	20.12
W24 TPI 10			-	-	21.12
W25 TPI 10			-	-	22.12
W26 TPI 10			-	-	23.12
W28 TPI 9	9	SINR2420S-16	16IRAG55	-	24.80
W30 TPI 9			16IRG55	-	26.80
W32 TPI 9			-	-	28.80
W34 TPI 8	8	CINR3025S-16	-	-	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
.	-	-	-	-	67.20
W75 TPI 5	5	CINR3732S-22	22IRN55	-	69.24
.			-	-	.
W105 TPI 5			-	-	99.24
W110 TPI 4	4	No Tools Available	-	-	102.8
.			-	-	.
.			-	-	.

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

		External Threading														
Left-hand Thread	<table border="1"> <tr><td>Toolholder</td><td>Left-Hand</td></tr> <tr><td>Insert</td><td>Left-Hand</td></tr> <tr><td>The direction of spindle revolution</td><td>M04</td></tr> </table>	Toolholder	Left-Hand	Insert	Left-Hand	The direction of spindle revolution	M04		<table border="1"> <tr><td>Toolholder</td><td>Right-Hand</td></tr> <tr><td>Insert</td><td>Right-Hand</td></tr> <tr><td>The direction of spindle revolution</td><td>M03</td></tr> </table>	Toolholder	Right-Hand	Insert	Right-Hand	The direction of spindle revolution	M03	
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These tables are based on KTN / KTNS / KTT / KTTX Toolholder.

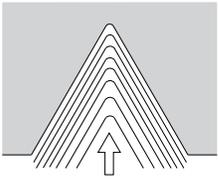
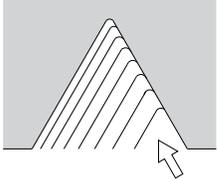
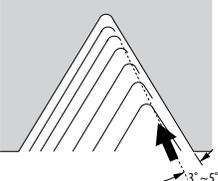
Internal Threading (R-hand Thread / L-hand Thread)

		Internal Threading															
Left-hand Thread		<table border="1"> <tr><td>Toolholder</td><td>Left-Hand</td></tr> <tr><td>Insert</td><td>Left-Hand</td></tr> <tr><td>The direction of spindle revolution</td><td>M04</td></tr> </table>	Toolholder	Left-Hand	Insert	Left-Hand	The direction of spindle revolution	M04	Right-hand Thread		<table border="1"> <tr><td>Toolholder</td><td>Right-Hand</td></tr> <tr><td>Insert</td><td>Right-Hand</td></tr> <tr><td>The direction of spindle revolution</td><td>M03</td></tr> </table>	Toolholder	Right-Hand	Insert	Right-Hand	The direction of spindle revolution	M03
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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 workpiece diameter "D" (Pitch dia.) And the lead "L" (In case of single-start thread, it is the same as pitch "TP"). By 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.

$$\tan \beta = \frac{L}{\pi D} = \frac{nTP}{\pi D}$$

β : Lead angle D: Pitch dia. n: Number of thread TP: Pitch
L: Lead (In case of single-start thread, it is equal to TP. In case of n-start thread, it is equal to n x TP)

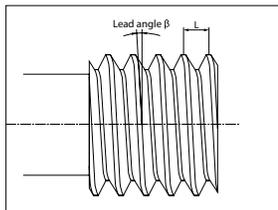


Fig. 1

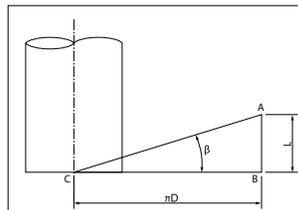


Fig. 2

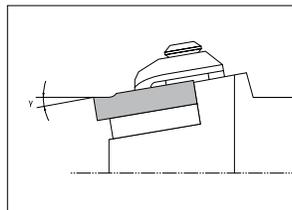


Fig. 3

Relief angle of thread

Against this lead angle, the threading insert requires side relief angle α . Negative type threading insert has no relief angle. When installing the negative type insert in the toolholder, the edge inclination angle γ (Fig. 3) is set, and at the same time front relief angle as well as side relief angle are generated to the insert. Side relief angle is described by the following formula. (Fig. 4)

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

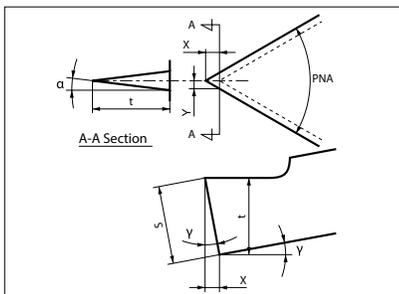


Fig. 4

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°
S: 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'

Ref. to Table 1 for the side relief angle depending on the insert type.

However, the side relief angle is set for 1° in the traveling direction by the toolholder itself, so that the actual side relief angle becomes $\alpha + 1^\circ$.

