

Threading Tools

F89 to F111

F

Grooving
Tools

L

Grooving

Cut-off

Threading

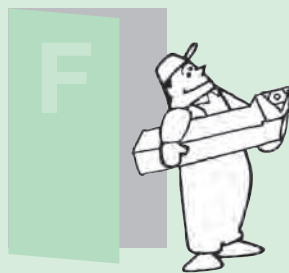
External

Face

Internal

Necking

CBN



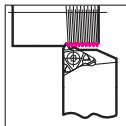
Threading Tools	For External/Internal Diameters	SEC-Threading Tool Series Selection Guide F90		
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Threading Tool Guidelines for Depth of				
Cut and No. of Passes F110				

Stock Markings and Symbols

- mark: Standard stocked item
- mark: To be replaced with the new item featured on the same page
- ▲ mark: To be replaced by a new product, made to order, or discontinued (please confirm stock availability).
- * mark: Semi-standard stock (please confirm stock availability)
- mark: Stock or planned stock (please confirm stock availability)
- Blank: Made-to-order item
- mark: Not available

Selection Guide

External Threading



Grooving Tools
F

Grooving

Cut-off

Threading







External

Face

Internal

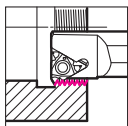
Necking





CBN

Applications Thread Ridge Shape	General Industrial Use				Pipe Coupling for Gas, Water and Water Faucets		Pipe Threads for Steam, Gas and Water Supply Pipes		For Aerospace Equipment
	Internal Thread 60° Pitch External Thread	Internal Thread 55° Pitch External Thread	Internal Thread 60° Pitch External Thread	Internal Thread 60° Pitch External Thread	Internal Thread 55° Pitch External Thread	Internal Thread 60° Pitch External Thread	Internal Thread 55° Pitch External Thread	Internal Thread 60° Pitch External Thread	Internal Thread 60° Pitch External Thread
Type	60° General-purpose Thread	55° General-purpose Thread (Whitworth)	60° ISO Metric Thread	60° Unified Thread	55° Parallel Thread for Pipe/Whitworth	60° American NPT	55° Taper Thread for Pipe BSPT	60° American NPTF	UNJ 60°
Symbol	M UNC/UNF	W	M	UNC/UNF	G/Rp/W	NPT	R/Rc	NPTF	UNJ
Pitch	mm Threads/Inch	Threads/Inch	mm	Threads/Inch	Threads/Inch	Threads/Inch	Threads/Inch	Threads/Inch	Threads/Inch
Wiper Flat	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
 SSTE Type →F94	0.50 to 3.00 48 to 8	48 to 8	0.75, 1.00, 1.25 1.50, 1.75, 2.00 2.50, 3.00	32, 28, 24 20, 18, 16 14, 13, 12 10, 8	36, 32, 28 24, 20, 19 18, 16, 14 12, 11, 10 8	27, 18, 14 11.5, 8	28, 19 14, 11	27, 18, 14 11.5	32, 28, 24 20, 18, 16 14, 12, 10
 LTE Type →F104	1.00 to 3.00 24 to 8	24 to 10	1.00, 1.25, 1.50 1.75, 2.00, 2.50 3.00, 3.50, 4.00	24, 20, 18 16, 14, 12 8	—	—	28, 19 14, 11	—	—
 STE Type →F105	1.00 to 3.00 24 to 8	24 to 10	1.00, 1.25, 1.50 1.75, 2.00, 2.50 3.00	24, 20, 18 16, 14, 12 8	—	—	28, 19 14, 11	—	—
 THE Type →F106	0.80 to 3.00	24 to 10	0.80, 1.00, 1.25 1.50, 1.75, 2.00 2.50	—	28, 19	—	—	—	—
 GME-TH Type →F103	3.00 to 6.00	11 to 4.5	—	—	—	—	—	—	—
 STH Type →F102	0.20 to 1.50	48 to 16	—	—	—	—	—	—	—

Selection Guide

Internal Threading



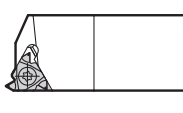
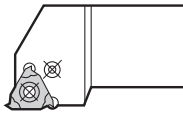
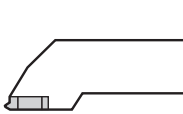
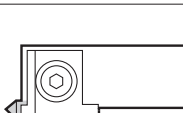

Applications Thread Ridge Shape Type	General Industrial Use				Pipe Coupling for Gas, Water and Water Faucets	Pipe Threads for Steam, Gas and Water Supply Pipes	For Aerospace Equipment		
	Internal Thread External Thread	Internal Thread External Thread	Internal Thread External Thread	Internal Thread External Thread	Internal Thread External Thread	Internal Thread External Thread	Internal Thread External Thread	Internal Thread External Thread	Internal Thread External Thread
Symbol	M UNC/UNF	W	M	UNC/UNF	G/Rp/W	NPT	R/Rc	NPTF	UNJ
Pitch	mm Threads/Inch	Threads/Inch	mm	Threads/Inch	Threads/Inch	Threads/Inch	Threads/Inch	Threads/Inch	Threads/Inch
Wiper Flat	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
 SSTI Type →F94	0.50 to 3.00 48 to 8	48 to 8	0.75, 1.00, 1.25 1.50, 1.75, 2.00 2.50, 3.00	32, 28, 24 20, 18, 16 14, 13, 12 10, 8	28, 24 20, 19	27, 18, 14 11.5, 8	28, 19	27, 18, 14 11.5, 8	32, 28, 24 20, 18, 16 14, 12, 10
 STI Type →F107	1.00 to 3.00 24 to 8	—	1.00, 1.25, 1.50 1.75, 2.00, 2.50 3.00	—	—	—	—	—	—
 STHI Type →F108	0.40 to 1.00	—	—	—	—	—	—	—	—
 THI Type →F109	0.80 to 2.50	—	1.50, 2.00	—	—	—	—	—	—

Grooving Tools

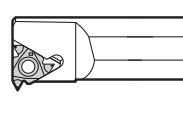
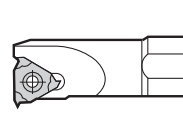
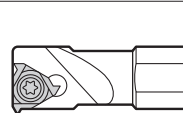

 Grooving
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Product Range

External Threading Tools

Series	Appearance	Structure				Features	Applicable Thread Symbol	
		Screw-on	Clamp-on	Lever Lock	Drawing Pin		M	W
SSTE	 →F94	●				<ul style="list-style-type: none"> Adopts a flat 3-corner insert. Ground cutting edge flank produces superior machined surface with sharp cutting edge. Stable chip control through use of a 3D molded chipbreaker. Large lineup of inserts with a wiper flat 	M	W
LTE/STE	 →F104, F105	●		●		<ul style="list-style-type: none"> Range of lever lock holders with strong clamping force (25 to 32mm square) and screw-on type holders (12 to 16mm square). M-Class flat-mounted 3-corner insert is economical Range of cermet grades Stable chip control with incorporated chipbreaker 	M	W
THE	 →F106	●			●	<ul style="list-style-type: none"> 3-corner vertically-mounted G-class insert with excellent sharpness The 20mm and 25mm square shanks are the strong drawing pin type, and the 12mm and 16mm square shanks are the screw-on type. Range of cermet grades for inserts without a wiper flat 	M	W
GME-TH	 →F103		●			<ul style="list-style-type: none"> 2-corner type insert adopted for large-pitch threading of 3 to 6mm Range of 11 to 4.5 TPI tools for 55° apex angle Strong clamping through use of clamp plate 	M	W
STH	 →F102		●			<ul style="list-style-type: none"> For small lathes 20mm square or less 2-corner vertically-mounted insert enables space-saving threading Can also be used for back-turning threading with bar feeder Can also be used for small-pitch (min. 0.2mm) threading 	M	W

Internal Threading Tools

Series	Appearance	Structure				Features	Min. Bore Dia. (mm)	Applicable Thread Symbol	
		Screw-on	Clamp-on	Lever Lock	Drawing Pin			M	W
SSTI	 →F94	●				<ul style="list-style-type: none"> Adopts a flat 3-corner insert. Ground cutting edge flank produces superior machined surface with sharp cutting edge. Stable chip control through use of a 3D molded chipbreaker. Large lineup of inserts with a wiper flat 	ø18	M	W
STI	 →F107	●				<ul style="list-style-type: none"> M-Class flat-mounted 3-corner insert is economical Stable chip control with incorporated chipbreaker. Range of cermet grades 	ø20	M	W
STHI	 →F108	●				<ul style="list-style-type: none"> Applicable for small diameter (internal dia. of min. ø8mm), small pitch (0.4 - 1.0mm) threading Perfect for small product machining 	ø8	M	W
THI	 →F109		●			<ul style="list-style-type: none"> G-Class 3-corner insert with good sharpness 	ø18	M	W

Note: The minimum bore diameter is the diameter of the prepared hole.

M : 60° ISO General-purpose Metric Thread

W : 55° General-purpose Thread (Whitworth)

UNC/UNF : 60° Unified Thread

G/Rp/W : 55° Parallel Thread for Pipe

NPT : 60° American NPT

R/Rc : 55° Taper Thread for Pipe BSPT

NPTF : 60° American NPTF

UNJ : 60° UNJ

Basics of Threads

Parts of a Screw

External Thread
 Thread root, Included Angle, Thread Ridge, Root Diameter, Effective Diameter (d), External, Pitch (P)

Internal Thread
 Internal, Effective Diameter (d), Root Diameter

Lead Angle
 Conical helix, Lead Angle (α°), Lead (l), Length of one turn, Lead (d)

Lead Angle Calculation

Effective Diameter (d) : Diameter of imaginary cylinder that passes through the thread at the point where the groove and ridge widths are equal
 Pitch (P) : Distance between two ridges adjacent to each other
 Lead (l) : Distance the screw thread moves axially in one turn
 (On a single threaded screw, the lead and pitch are identical.)
 Lead Angle (α°) : Angle made by the conical helix of the thread ridge at a pitch diameter with a plane perpendicular to the axis

$$\tan \alpha^\circ = \frac{l}{\pi \times d} = \frac{n \times P}{\pi \times d}$$

α° : Lead Angle
 l : Lead
 n : No. of Threads
 P : Pitch
 d : Effective Screw Diameter

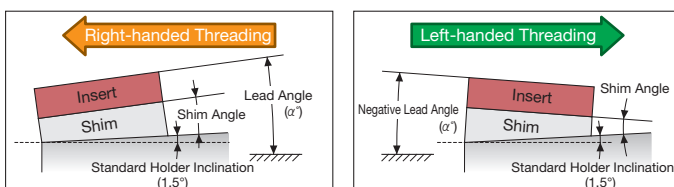
Main Screw Types and Standard Thread Patterns

Applications	Symbol	Basic Profile	Applications	Symbol	Basic Profile	Applications	Symbol	Basic Profile	Applications	Symbol	Basic Profile
Metric Thread	M	Internal Thread: 60° External Thread: 1/8P	Parallel Thread for Pipe	G(PF) Rp(PS) G(PF)	Internal Thread: 55° External Thread: R0.137P	Taper Thread for Pipe	Rc(PT) (BSPT) R(PT) (BSPT)	Internal Thread: 27.5°/27.5° External Thread: 90°, 1°47', R0.137P	Unified Thread	UN UNC UNF UNEF	Internal Thread: 60° External Thread: 1/8P
Whitworth Thread	W BSW BSP	Internal Thread: 55° External Thread: R0.137P	Thread for Aerospace Instruments	UNJ	Internal Thread: 60° External Thread: R	American Taper Thread for Pipe	NPT	Internal Thread: 30°/30° External Thread: 90°, 1°47'	American Taper Thread for Pipe	NPTF	Internal Thread: 30°/30° External Thread: 90°, 1°47'

Tool Holder and Insert Selection Guide (SSTE Type/SSTI Type)

	External Threads (Normal Spindle Rotation)	Internal Threads (Normal Spindle Rotation)	External Threads (Reverse Spindle Rotation)
Right-handed Threads	External Holder (SSTE Type) External Diameter Insert (16ER Type) Shim (YE3-3P/YE3-2P / YE3-1P/YE3/YE3-1N)	Internal Holder (SSTI Type) Internal Diameter Insert (16IR Type) Shim (Y13-3P/Y13-2P / Y13-1P/Y13/Y13-1N)	External Holder (SSTE Type) External Diameter Insert (16ER Type) Shim (YE3-3P/YE3-2P / YE3-1P/YE3/YE3-1N)
Left-handed Threads	External Holder (SSTE Type) External Diameter Insert (16ER Type) Shim (YE3-2N/YE3-3N)	Internal Holder (SSTI Type) Internal Diameter Insert (16IR Type) Shim (Y13-2N/Y13-3N)	External Holder (SSTE Type) External Diameter Insert (16ER Type) Shim (YE3-2N/YE3-3N)

Threading Method and Insert Angle

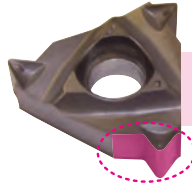


SSTE Type / SSTI Type



Features

- High-precision inserts with wiper flat for threading, supporting a wide range of applications from general industrial machinery to pipes and aerospace devices
- Stable chip control through use of a 3D molded chipbreaker.
- Ground cutting edge flank for improved cutting edge sharpness, resulting in high quality threads



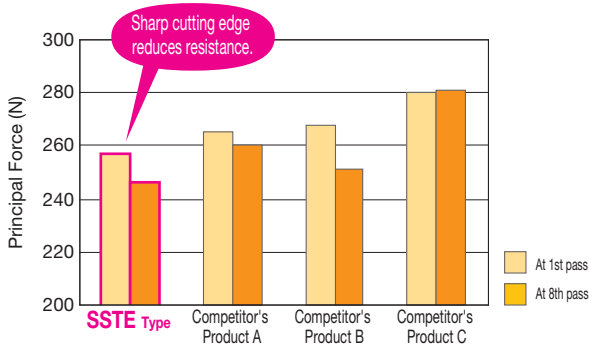
Ground flanks around cutting edge

Product Range

Applications	Type	Wiper Flat	External/Internal	Pitch		Insert Cat. No. Example:
				Pitch (mm)	TPI (Threads/Inch)	
General Industrial Use	60° General-purpose Thread	No	External	0.5 ————— 3.0	48 to 8	16ER A60-CB
			Internal	0.5 ————— 3.0	48 to 8	16IR A60-CB
	55° General-purpose Thread		External	—————	48 to 8	16ER A55-CB
			Internal	—————	48 to 8	16IR A55-CB
	60° ISO Metric Thread		External	0.75 1.0 1.25 1.5 1.75 2.0 2.5 3.0		16ER 075ISO-CB
			Internal	0.75 1.0 1.25 1.5 1.75 2.0 2.5 3.0		16IR 075ISO-CB
	60° Unified Thread		External			16ER 32UN-CB
			Internal			16IR 32UN-CB
Pipe Coupling for Gas, Water and Water Faucets	55° Parallel Thread for Pipe/Whitworth	Yes	External			16ER 36W-CB
	Internal				16IR 28W-CB	
60° American NPT	External				16ER 27NPT-CB	
	Internal				16IR 27NPT-CB	
Steam, Gas and Water Supply Pipes	55° Taper Thread for Pipe BSPT		External			16ER 28BSPT-CB
	Internal				16IR 28BSPT-CB	
60° American NPTF	External				16ER 27NPTF-CB	
	Internal				16IR 27NPTF-CB	
For Aerospace Equipment	UNJ 60°	External			16ER 32UNJ-CB	
		Internal			16IR 32UNJ-CB	

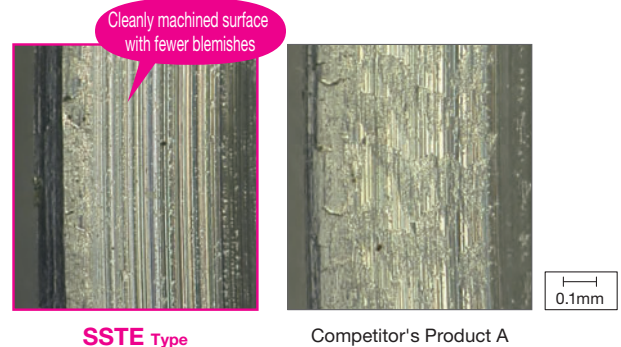
Application Examples

Comparison of Cutting Force



Work Material: S45C, M30×1.5
Cutting Conditions: $v_c=150\text{m/min}$ Wet 8 passes Thread infeed method: Radial infeed

Machined Surface Comparison



Work Material: S45C, M30×1.5
Cutting Conditions: $v_c=150\text{m/min}$ Wet 8 passes Thread infeed method: Radial infeed

SSTE Type / SSTI Type

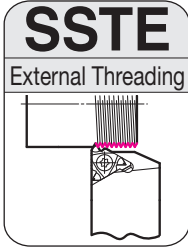
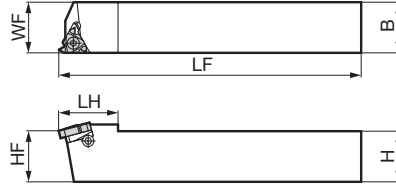
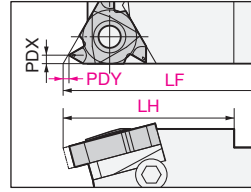


Fig 1



Screw-on for External Diameter

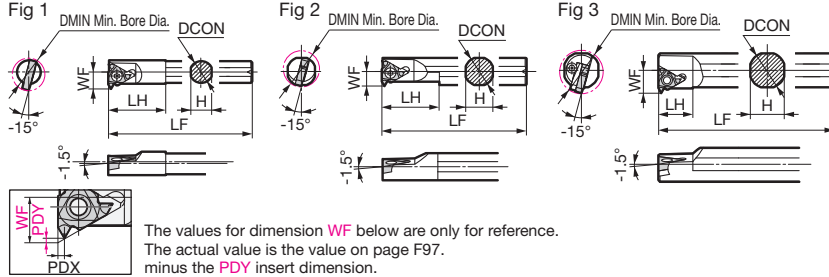
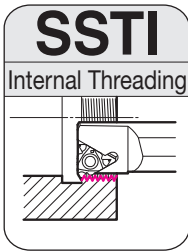


The values for dimensions LF and LH below are only for reference. The actual value is the value below minus the PDY value for the corresponding insert on F96.

Holder

Cat. No.	Stock	Height H	Width B	Overall Length LF	Head LH	Cutting Edge Distance WF	Cutting Edge Height HF	Fig	Parts					
									Screw	Shim Screw	Flat Washer	Shim	Wrench	
SSTE R1616H16	●	16	16	100	20.5	16	16	1	BFTX0312N	2.0	BX0304 ^{*1}	PW3	YE3	TRX10
SSTE R2020K16	●	20	20	125	30.0	20	20	1						
SSTE R2525M16	●	25	25	150	30.0	25	25	1						

*1 Shim screw wrench is sold separately.



The values for dimension WF below are only for reference. The actual value is the value on page F97, minus the PDY insert dimension.

Screw-on for Internal Diameter

Holder

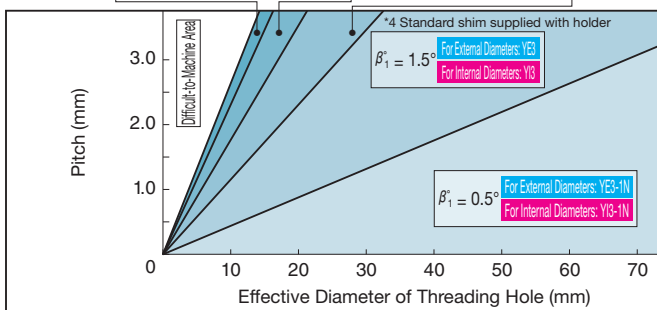
Cat. No.	Stock	Diameter DCON	Height H	Overall Length LF	Head LH	Cutting Edge Distance WF	Min. Bore Dia. DMIN ^{*2}	Fig	Parts					
									Screw	Shim Screw	Flat Washer	Shim	Wrench	
SSTI R1812M16 ^{*3}	●	12	11.0	150	32.0	10.2	18	1	BFTX03085N	2.0	-	-	-	TRX10
SSTI R2016M16 ^{*3}	●	16	15.0	150	63.5	9.2	20	2						
SSTI R2420Q16	●	20	18.0	180	19.0	13.5	24	3						
SSTI R3125S16	●	25	23.0	250	14.3	16.5	31	3	BFTX0312N	2.0	BX0304 ^{*1}	PW3	YI3	TRX10
SSTI R3732S16	●	32	30.0	250	14.3	20.0	37	3						

*1 Shim screw wrench is sold separately. *2 The minimum bore diameter is the diameter of the prepared hole. *3 Left-hand threads are not available.

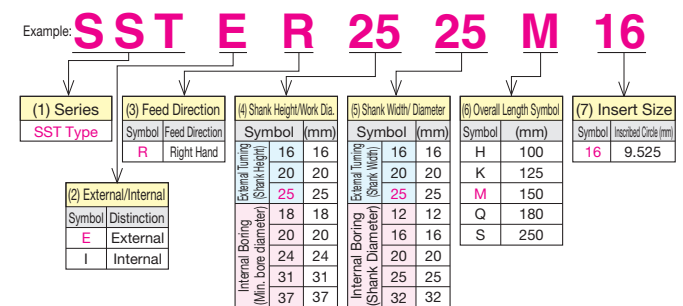
Shim and Selection Criteria

Applications	Recommended Lead Angle (β ₁)	External Turning		Internal Boring	
		Cat. No.	Stock	Cat. No.	Stock
Right-hand Thread	4.5°	YE3-3P	●	YI3-3P	●
	3.5°	YE3-2P	●	YI3-2P	●
	2.5°	YE3-1P	●	YI3-1P	●
	1.5°	YE3 ^{*4}	●	YI3 ^{*4}	●
	0.5°	YE3-1N	●	YI3-1N	●
Left-hand Thread	-0.5°	YE3-2N	●	YI3-2N	●
	-1.5°	YE3-3N	●	YI3-3N	●

*4 Standard shim supplied with holder.



Holder Identification Code



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SSTE Type / SSTI Type

SSTE Type Guidelines for Depth of Cut and No. of Passes **F100**



Fig 1

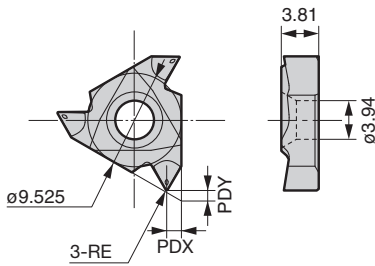
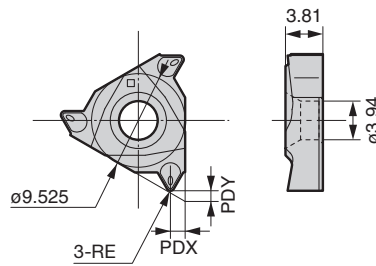


Fig 2



(Coated Carbide)

Grooving Tools

Cut-off

Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN

60°/55° General-purpose Threads (Without Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch					
60°	16ER A60-CB	●	0.5-1.5	16-48	0.8	0.6	0.09	5	1
	16ER AG60-CB	●	0.5-3.0	8-48	1.5	1.1	0.10		
	16ER G60-CB	●	2.0-3.0	8-14	1.5	1.1	0.20		
55°	16ER A55-CB	●	—	16-48	0.8	0.5	0.05	5	1
	16ER AG55-CB	●	—	8-48	1.5	1.1	0.08		
	16ER G55-CB	●	—	8-14	1.5	1.1	0.22		

60° American NPT (With Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch					
60°	16ER 27NPT-CB	●	—	27	0.8	0.6	0.06	5	2
	16ER 18NPT-CB	●	—	18	0.8	0.6	0.06		
	16ER 14NPT-CB	●	—	14	1.5	1.0	0.08		
	16ER 115NPT-CB	●	—	11.5	1.5	1.0	0.08		
	16ER 08NPT-CB	●	—	8	1.5	1.1	0.13		

60° ISO Metric Thread (With Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch					
60°	16ER 075 ISO-CB	●	0.75	—	0.5	1.0	0.09	5	2
	16ER 100 ISO-CB	●	1.00	—	0.8	0.6	0.14		
	16ER 125 ISO-CB	●	1.25	—	0.8	0.7	0.15		
	16ER 150 ISO-CB	●	1.50	—	0.8	0.7	0.20		
	16ER 175 ISO-CB	●	1.75	—	1.5	1.0	0.23		
	16ER 200 ISO-CB	●	2.00	—	1.5	1.1	0.26		
	16ER 250 ISO-CB	●	2.50	—	1.5	1.2	0.33		
	16ER 300 ISO-CB	●	3.00	—	1.5	1.1	0.41		

55° Taper Thread for Pipe/BSPT (With Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch					
55°	16ER 28BSPT-CB	●	—	28	0.8	0.6	0.13	5	2
	16ER 19BSPT-CB	●	—	19	0.8	0.6	0.18		
	16ER 14BSPT-CB	●	—	14	1.5	1.3	0.25		
	16ER 11BSPT-CB	●	—	11	1.5	1.0	0.31		

60° American NPTF (With Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch					
60°	16ER 27NPTF-CB	●	—	27	0.8	0.6	0.06	5	2
	16ER 18NPTF-CB	●	—	18	0.8	0.6	0.06		
	16ER 14NPTF-CB	●	—	14	1.5	1.0	0.13		
	16ER 115NPTF-CB	●	—	11.5	1.5	1.0	0.12		

60° Unified Thread (With Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch					
60°	16ER 32UN-CB	●	—	32	0.5	1.0	0.10	5	2
	16ER 28UN-CB	●	—	28	0.8	0.7	0.11		
	16ER 24UN-CB	●	—	24	0.8	0.7	0.13		
	16ER 20UN-CB	●	—	20	0.8	0.7	0.16		
	16ER 18UN-CB	●	—	18	0.8	0.7	0.18		
	16ER 16UN-CB	●	—	16	0.8	0.8	0.20		
	16ER 14UN-CB	●	—	14	1.5	1.2	0.23		
	16ER 13UN-CB	●	—	13	1.5	1.1	0.26		
	16ER 12UN-CB	●	—	12	1.5	1.0	0.27		
	16ER 10UN-CB	●	—	10	1.5	1.2	0.33		
	16ER 08UN-CB	●	—	8	1.5	1.2	0.42		

60° UNJ (With Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch					
60°	16ER 32UNJ-CB	●	—	32	0.5	1.0	0.13	5	2
	16ER 28UNJ-CB	●	—	28	0.8	0.6	0.15		
	16ER 24UNJ-CB	●	—	24	0.8	0.6	0.18		
	16ER 20UNJ-CB	●	—	20	0.8	0.7	0.21		
	16ER 18UNJ-CB	●	—	18	0.8	0.6	0.23		
	16ER 16UNJ-CB	●	—	16	0.8	0.6	0.25		
	16ER 14UNJ-CB	●	—	14	1.5	1.1	0.29		
	16ER 12UNJ-CB	●	—	12	1.5	1.1	0.34		
	16ER 10UNJ-CB	●	—	10	1.5	1.1	0.40		

55° Parallel Thread for Pipe/Whitworth (With Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch					
55°	16ER 36W-CB	●	—	36	0.5	1.0	0.10	5	2
	16ER 32W-CB	●	—	32	0.5	1.0	0.11		
	16ER 28W-CB	●	—	28	0.8	0.6	0.12		
	16ER 24W-CB	●	—	24	0.8	0.6	0.15		
	16ER 20W-CB	●	—	20	0.8	0.6	0.18		
	16ER 19W-CB	●	—	19	0.8	0.6	0.18		
	16ER 18W-CB	●	—	18	0.8	0.6	0.19		
	16ER 16W-CB	●	—	16	0.8	0.6	0.22		
	16ER 14W-CB	●	—	14	1.5	1.0	0.25		
	16ER 12W-CB	●	—	12	1.5	1.1	0.29		
	16ER 11W-CB	●	—	11	1.5	1.1	0.32		
	16ER 10W-CB	●	—	10	1.5	1.1	0.35		
	16ER 08W-CB	●	—	8	1.5	1.1	0.43		

Insert Identification Table

Example: **16 E R 150 ISO - CB**

(1) Insert Size Symbol: 16 Inscribed Circle (mm): 9.525	(2) External/Internal Symbol: E Distinction: External	(3) Feed Direction Symbol: R Feed Direction: Right Hand	(4) Pitch or TPI Metric = Pitch x 100 Inch=TPI (115 only for 11.5) (Example) 075: Pitch 0.75mm 150: Pitch 1.5mm 20: 20TPI	(5) Thread Type Wiper Flat Symbol: ISO, UN, W, NPT, BSPT, NPTF, UNJ Type: Metric Thread, Unified Thread, Whitworth, American Taper Thread for Pipe, Taper Thread for Pipe, American Taper Thread for Pipe, For Aerospace Equipment	(6) Chipbreaker Symbol: CB Description: With Chipbreaker
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For these inserts, only SSTE Type holders can be used.

SSTE Type / SSTI Type



SSTI Type Guidelines for Depth of Cut and No. of Passes **F101**

Fig 1

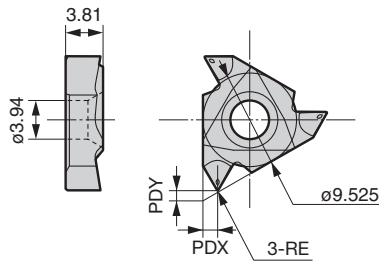
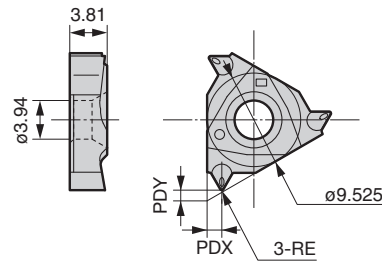


Fig 2



(Coated Carbide)

60°/55° General-purpose Threads (Without Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch	PDX	PDY			
60°	16IR A60-CB	●	0.5-1.5	16 - 48	0.8	0.5	0.09	5	1
	16IR AG60-CB	●	0.5-3.0	8 - 48	1.5	1.1	0.10		1
	16IR G60-CB	●	2.0-3.0	8 - 14	1.5	1.1	0.18		1
55°	16IR A55-CB	●	—	16 - 48	0.8	0.5	0.05	5	1
	16IR AG55-CB	●	—	8 - 48	1.5	1.1	0.08		1
	16IR G55-CB	●	—	8 - 14	1.5	1.1	0.20		1

60° American NPT (With Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch	PDX	PDY			
60°	16IR 27NPT-CB	●	—	27	0.8	0.6	0.06	5	2
	16IR 18NPT-CB	●	—	18	0.8	0.6	0.06		2
	16IR 14NPT-CB	●	—	14	1.5	1.1	0.08		2
	16IR 115NPT-CB	●	—	11.5	1.5	1.0	0.08		2
	16IR 08NPT-CB	●	—	8	1.5	1.0	0.13		2

60° ISO Metric Thread (With Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch	PDX	PDY			
60°	16IR 075 ISO-CB	●	0.75	—	0.5	0.9	0.04	5	2
	16IR 100 ISO-CB	●	1.00	—	0.8	0.6	0.06		2
	16IR 125 ISO-CB	●	1.25	—	0.8	0.6	0.07		2
	16IR 150 ISO-CB	●	1.50	—	0.8	0.6	0.09		2
	16IR 175 ISO-CB	●	1.75	—	1.5	1.0	0.10		2
	16IR 200 ISO-CB	●	2.00	—	1.5	1.1	0.13		2
	16IR 250 ISO-CB	●	2.50	—	1.5	1.1	0.15		2
	16IR 300 ISO-CB	●	3.00	—	1.5	1.1	0.19		2

55° Taper Thread for Pipe/BSPT (With Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch	PDX	PDY			
55°	16IR 28BSPT-CB	●	—	28	0.8	0.6	0.13	5	2
	16IR 19BSPT-CB	●	—	19	0.8	0.6	0.18		2

60° American NPTF (With Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch	PDX	PDY			
60°	16IR 27NPTF-CB	●	—	27	0.8	0.6	0.06	5	2
	16IR 18NPTF-CB	●	—	18	0.8	0.6	0.08		2
	16IR 14NPTF-CB	●	—	14	1.5	1.0	0.13		2
	16IR 115NPTF-CB	●	—	11.5	1.5	1.0	0.08		2
	16IR 08NPTF-CB	●	—	8	1.5	1.1	0.13		2

60° Unified Thread (With Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch	PDX	PDY			
60°	16IR 32UN-CB	●	—	32	0.5	0.9	0.04	5	2
	16IR 28UN-CB	●	—	28	0.8	0.6	0.06		2
	16IR 24UN-CB	●	—	24	0.8	0.7	0.06		2
	16IR 20UN-CB	●	—	20	0.8	0.6	0.08		2
	16IR 18UN-CB	●	—	18	0.8	0.6	0.08		2
	16IR 16UN-CB	●	—	16	0.8	0.7	0.09		2
	16IR 14UN-CB	●	—	14	1.5	1.1	0.13		2
	16IR 13UN-CB	●	—	13	1.5	1.1	0.11		2
	16IR 12UN-CB	●	—	12	1.5	1.1	0.13		2
	16IR 10UN-CB	●	—	10	1.5	1.1	0.15		2
	16IR 08UN-CB	●	—	8	1.5	1.1	0.20		2

60° UNJ (With Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch	PDX	PDY			
60°	16IR 32UNJ-CB	●	—	32	0.5	0.9	0.04	5	2
	16IR 28UNJ-CB	●	—	28	0.8	0.6	0.05		2
	16IR 24UNJ-CB	●	—	24	0.8	0.6	0.06		2
	16IR 20UNJ-CB	●	—	20	0.8	0.6	0.06		2
	16IR 18UNJ-CB	●	—	18	0.8	0.6	0.06		2
	16IR 16UNJ-CB	●	—	16	0.8	0.6	0.09		2
	16IR 14UNJ-CB	●	—	14	1.5	1.1	0.09		2
	16IR 12UNJ-CB	●	—	12	1.5	1.1	0.11		2
	16IR 10UNJ-CB	●	—	10	1.5	1.1	0.15		2

55° Parallel Thread for Pipe/Whitworth (With Wiper Flat) Dimensions (mm)

Included Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius RE	Pcs/Pack	Fig
			mm	Threads/inch	PDX	PDY			
55°	16IR 28W-CB	●	—	28	0.8	0.6	0.12	5	2
	16IR 24W-CB	●	—	24	0.8	0.6	0.14		2
	16IR 20W-CB	●	—	20	0.8	0.6	0.18		2
	16IR 19W-CB	●	—	19	0.8	0.6	0.18		2

Insert Identification Table

Example: **16 I R 150 ISO - CB**

(1) Insert Size Symbol: Inscribed Circle (mm) 16 9.525	(2) External/Internal Symbol: Distinction I Internal	(3) Feed Direction Symbol: Feed Direction R Right Hand	(4) Pitch or TPI Metric = Pitch x 100 Inch=TPI (115 only for 11.5) [Example] 075: Pitch 0.75mm 150: Pitch 1.5mm 20: 20TPI	(5) Thread Type Wiper Flat Symbol Type ISO Metric Thread UN Unified Thread W Whitworth NPT American Taper Thread for Pipe BSPT Taper Thread for Pipe NPTF American Taper Thread for Pipe UNJ For Aerospace Equipment	(6) Chipbreaker Symbol: Description CB With Chipbreaker
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Additional details for (4) and (5):

Symbol	Pitch/TPI
A	Pitch: 0.5 to 1.5mm TPI: 16 to 48
AG	Pitch: 0.5 to 3.0mm TPI: 8 to 48
G	Pitch: 2.0 to 3.0mm TPI: 8 to 14

Symbol	Type
UN	Unified Thread
W	Whitworth
NPT	American Taper Thread for Pipe
BSPT	Taper Thread for Pipe
NPTF	American Taper Thread for Pipe
UNJ	For Aerospace Equipment
60	60° General-purpose Thread
55	55° General-purpose Thread

For these inserts, only SSTE Type holders can be used.

Grooving Tools



Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN

SSTE Type / SSTI Type

Grooving Tools

F

Grooving

Cut-off

Threading

External

Face

Internal

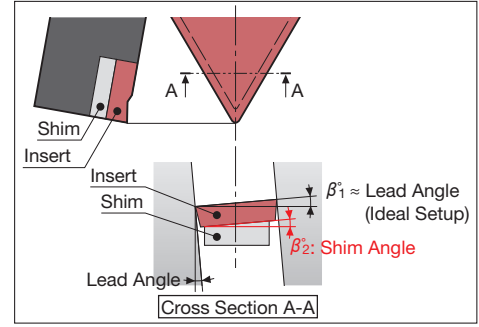
Necking

CBN

Shim Selection

If the pitch is large or thread diameter is small, the lead angle of the thread becomes larger and the effective relief angle of the leading edge becomes smaller. It is ideal to set the threading insert so that both right and left relief angles are equal.

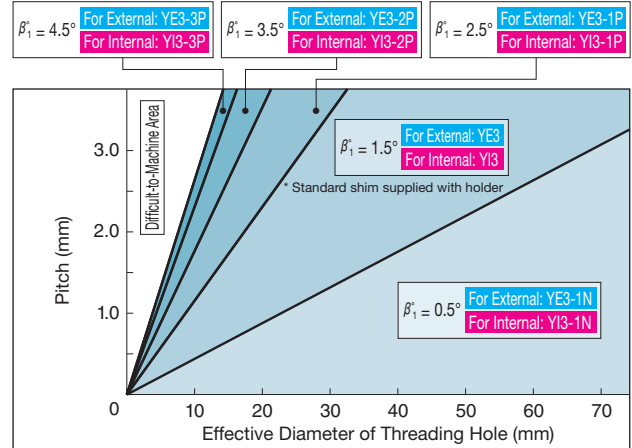
Therefore, it is necessary to select an appropriate shim based on the thread pitch and effective diameter using the table below.



Shim Selection Procedure

- (1) Choose from [Right-Hand Thread / Left-Hand Thread] in the table.
- (2) Locate the required threading "pitch".
- (3) Locate the cell with the required "Effective Diameter" range.
- (4) Confirm the part no. at the "Shim" row above the corresponding "Effective Diameter" cell located previously. If the shim part no. is different from the one currently in use, change to the correct one.

Example: When machining an M16x2.0 external right-hand thread, the pitch diameter is 14.701mm.
 In the table below, locate [2.0]mm under the "Pitch" column and then move along the row to the right to locate the required "Effective Diameter" range [11.4 - 17.4]mm.
 As such, the correct shim should be [YE3-1P], shown in the corresponding cell under the "External" row below.



Pitch (mm)

Right-hand/Left-hand Thread	For Right-hand Thread					For Left-hand Thread		
Lead Angle	4.5°	3.5°	2.5°	1.5°	0.5°	-0.5°	-1.5°	
Shim	External	YE3-3P	YE3-2P	YE3-1P	YE3*	YE3-1N	YE3-2N	YE3-3N
	Internal	YI3-3P	YI3-2P	YI3-1P	YI3*	YI3-1N	YI3-2N	YI3-3N
Shim Angle (β_2)	3°	2°	1°	0°	-1°	-2°	-3°	
Pitch (mm)	Effective Diameter (mm)							
0.5	1.9 - 2.2	2.2 - 2.8	2.8 - 4.3	4.3 - 11.4	> 11.4	> 11.4	11.4 - 4.3	
0.75	2.8 - 3.3	3.3 - 4.3	4.3 - 6.5	6.5 - 17.1	> 17.1	> 17.1	17.1 - 6.5	
1.0	3.8 - 4.3	4.3 - 5.7	5.7 - 8.7	8.7 - 22.8	> 22.8	> 22.8	22.8 - 8.7	
1.25	4.7 - 5.4	5.4 - 7.1	7.1 - 10.9	10.9 - 28.5	> 28.5	> 28.5	28.5 - 10.9	
1.5	5.7 - 6.5	6.5 - 8.5	8.5 - 13.0	13.0 - 34.2	> 34.2	> 34.2	34.2 - 13.0	
1.75	6.6 - 7.6	7.6 - 10.0	10.0 - 15.2	15.2 - 39.9	> 39.9	> 39.9	39.9 - 15.2	
2.0	7.6 - 8.7	8.7 - 11.4	11.4 - 17.4	17.4 - 45.6	> 45.6	> 45.6	45.6 - 17.4	
2.5	9.5 - 10.8	10.8 - 14.2	14.2 - 21.7	21.7 - 57.0	> 57.0	> 57.0	57.0 - 21.7	
3.0	11.4 - 13.0	13.0 - 17.1	17.1 - 26.0	26.0 - 68.4	> 68.4	> 68.4	68.4 - 26.0	

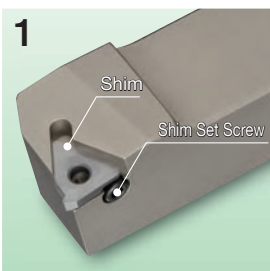
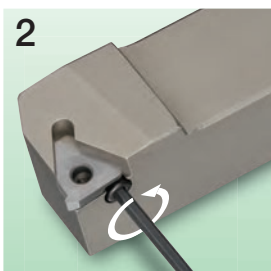
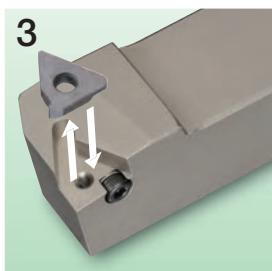

TPI (threads/inch)

Right-hand/Left-hand Thread	For Right-hand Thread					For Left-hand Thread		
Lead Angle	4.5°	3.5°	2.5°	1.5°	0.5°	-0.5°	-1.5°	
Shim	External	YE3-3P	YE3-2P	YE3-1P	YE3*	YE3-1N	YE3-2N	YE3-3N
	Internal	YI3-3P	YI3-2P	YI3-1P	YI3*	YI3-1N	YI3-2N	YI3-3N
Shim Angle (β_2)	3°	2°	1°	0°	-1°	-2°	-3°	
TPI (Threads/Inch)	Effective Diameter (mm)							
32	3.0 - 3.3	3.3 - 4.6	4.6 - 6.9	6.9 - 18.0	> 18.0	> 18.0	18.0 - 6.9	
28	3.0 - 3.8	3.8 - 5.1	5.1 - 7.9	7.9 - 20.8	> 20.8	> 20.8	20.8 - 7.9	
27	3.6 - 4.1	4.1 - 5.3	5.3 - 8.1	8.1 - 21.3	> 21.3	> 21.3	21.3 - 8.1	
24	4.1 - 4.6	4.6 - 6.1	6.1 - 9.1	9.1 - 24.4	> 24.4	> 24.4	24.4 - 9.1	
20	4.8 - 5.6	5.6 - 7.1	7.1 - 10.9	10.9 - 29.0	> 29.0	> 29.0	29.0 - 10.9	
18	5.3 - 6.1	6.1 - 8.1	8.1 - 12.4	12.4 - 32.5	> 32.5	> 32.5	32.5 - 12.4	
16	5.8 - 6.9	6.9 - 8.9	8.9 - 13.7	13.7 - 35.8	> 35.8	> 35.8	35.8 - 13.7	
14	6.9 - 7.9	7.9 - 10.2	10.2 - 15.7	15.7 - 41.1	> 41.1	> 41.1	41.1 - 15.7	
13	7.4 - 8.4	8.4 - 11.2	11.2 - 17.0	17.0 - 44.7	> 44.7	> 44.7	44.7 - 17.0	
12	8.1 - 9.1	9.1 - 12.2	12.2 - 18.5	18.5 - 48.8	> 48.8	> 48.8	48.8 - 18.5	
11.5	8.4 - 9.7	9.7 - 12.4	12.4 - 19.3	19.3 - 50.3	> 50.3	> 50.3	50.3 - 19.3	
11	8.9 - 9.9	9.9 - 13.2	13.2 - 20.1	20.1 - 52.6	> 52.6	> 52.6	52.6 - 20.1	
10	9.7 - 10.9	10.9 - 14.5	14.5 - 22.1	22.1 - 57.9	> 57.9	> 57.9	57.9 - 22.1	
9	10.7 - 12.2	12.2 - 16.0	16.0 - 24.4	24.4 - 64.3	> 64.3	> 64.3	64.3 - 24.4	
8	11.9 - 13.7	13.7 - 18.0	18.0 - 27.7	27.7 - 72.4	> 72.4	> 72.4	72.4 - 27.7	

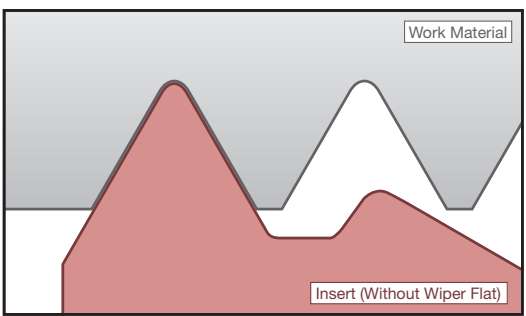
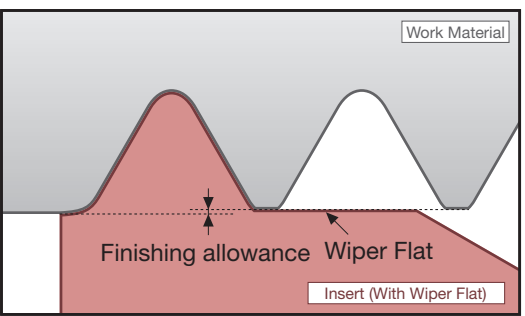
* SSTE Type/SSTI Type holders are shipped with shims for a lead angle of $\beta_1 = 1.5^\circ$ (SSTE Type: **YE3**, SSTI Type: **YI3**).
 Shims for lead angles of $\beta_1 = -1.5^\circ, -0.5^\circ, 0.5^\circ, 2.5^\circ, 3.5^\circ$, and 4.5° are sold separately.
 * Shims are not needed for SSTI R1812M16 and SSTI R2016M16. (The holders are already provided with the standard holder inclination of 1.5° .)

SSTE Type / SSTI Type

■ Shim Replacement

 <p>1</p>	 <p>2</p>	 <p>3</p>	 <p>4</p>
Remove the insert to expose the shim.	Loosen the shim set screw by one to two turns.	Remove the shim and attach a different shim that matches the lead.	Tighten the shim set screw. (Recommended Tightening Torque 1.0 to 1.5N·m)

■ Wiper Flat

Without Wiper Flat	With Wiper Flat
	
<ul style="list-style-type: none"> • Performs threading without machining thread ridges (the machined surface from the previous process is left unworked.) • Enables machining of threads with different pitch widths with the same insert • Finishing of the internal (or external) diameter is required before the threading process. • Fine burrs are easily formed on edges of ridges. 	<ul style="list-style-type: none"> • Enables machining of workpieces into shapes compliant with thread standards • Only specific thread specifications and pitch can be machined • In order to finish a thread with the wiper flat, a finishing allowance of 0.1mm on each side is required. • Edges of ridges can be rounded off.

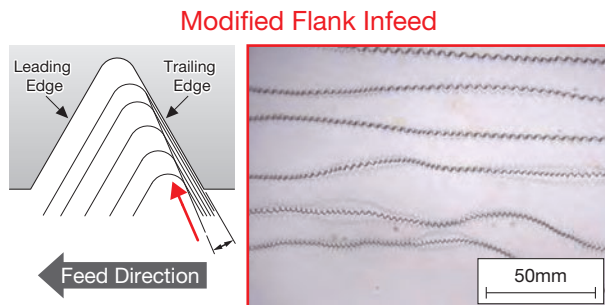
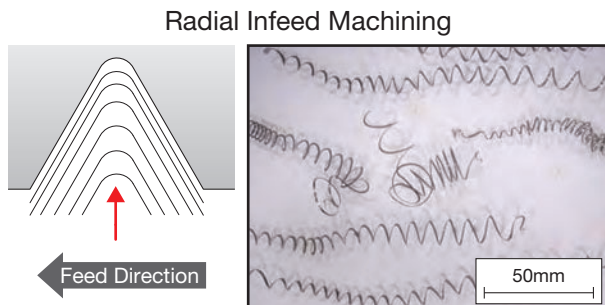
■ Infeed Method

The modified flank infeed is recommended for the SSTE Type/SSTI Type.

This infeed method, which features reduced chip curl diameters and stable chip control, can also decrease chipping on trailing edges that often occurs in radial infeed machining. (1° is recommended for the modification angle.)

● Impact of Infeed Method on Chip Shapes

Work Material: SUS316, M30 x 1.5 Cutting Conditions: $v_c = 60\text{mm/min}$ Wet, 8 Passes

<p>Modified Flank Infeed</p>  <p>Reduced curl diameters ensure smooth, stable chip control (performance)</p>	<p>Radial Infeed Machining</p>  <p>Large curl diameters cause unstable chip control.</p>
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Guide to Depth of Cut and No. of Passes

SSTE Type Guidelines for Depth of Cut

External Metric Threads (Depth of cut per pass: mm)

Pitch (mm)	0.75	1.00	1.25	1.50	1.75	2.00	2.50	3.00
Overall Depth of Cut (mm)	0.48	0.64	0.80	0.92	1.10	1.26	1.57	1.87
No. of Passes	4	5	7	8	10	12	14	16
1	0.24	0.25	0.25	0.28	0.28	0.30	0.38	0.40
2	0.12	0.15	0.15	0.15	0.15	0.16	0.19	0.22
3	0.07	0.11	0.12	0.12	0.12	0.13	0.15	0.15
4	0.05	0.08	0.09	0.10	0.10	0.10	0.10	0.13
5		0.05	0.08	0.09	0.10	0.09	0.10	0.12
6			0.06	0.07	0.09	0.09	0.09	0.10
7			0.05	0.06	0.08	0.08	0.09	0.10
8				0.05	0.07	0.07	0.08	0.09
9					0.06	0.07	0.08	0.09
10					0.05	0.06	0.07	0.08
11						0.06	0.07	0.08
12						0.05	0.06	0.07
13							0.06	0.07
14							0.05	0.06
15								0.06
16								0.05

External Unified Threads (Depth of cut per pass: mm)

Threads/Inch	32	28	24	20	18	16	14	13	12	11	10	9	8
Overall Depth of Cut (mm)	0.50	0.57	0.67	0.80	0.89	1.00	1.15	1.23	1.34	1.46	1.60	1.78	2.00
No. of Passes	4	4	5	7	8	10	11	12	12	14	14	16	16
1	0.24	0.25	0.25	0.26	0.26	0.28	0.28	0.30	0.30	0.30	0.38	0.38	0.40
2	0.14	0.17	0.19	0.15	0.15	0.15	0.15	0.18	0.18	0.18	0.20	0.20	0.25
3	0.07	0.10	0.12	0.10	0.12	0.10	0.12	0.13	0.13	0.13	0.15	0.13	0.19
4	0.05	0.05	0.06	0.09	0.10	0.09	0.10	0.10	0.12	0.12	0.12	0.12	0.16
5			0.05	0.08	0.08	0.08	0.10	0.08	0.11	0.11	0.10	0.11	0.14
6				0.07	0.07	0.07	0.09	0.08	0.10	0.10	0.09	0.10	0.12
7				0.05	0.06	0.07	0.08	0.07	0.09	0.08	0.09	0.10	0.11
8					0.05	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.10
9						0.05	0.06	0.06	0.07	0.07	0.08	0.09	0.09
10						0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08
11							0.05	0.05	0.05	0.06	0.07	0.08	0.07
12								0.05	0.05	0.06	0.06	0.07	0.07
13										0.05	0.06	0.07	0.06
14										0.05	0.05	0.06	0.06
15												0.05	0.05
16												0.05	0.05

No. of passes and depths of cut in the table above are general guidelines only. Increase or decrease depending on conditions. However, the maximum depth of cut should be kept to 0.5mm or less.

When using an insert with a wiper flat, add machining allowance to the total depth of cut.

Recommended Cutting Conditions

Work Material	P Carbon Steel	P Alloy Steel (up to 330HB)	M Stainless Steel	K Grey Cast Iron (up to 330HB)	K Ductile Cast Iron	S Titanium Alloy
Cutting Speed v_c (m/min)	75 to 150	75 to 135	60 to 120	90 to 180	75 to 135	24 to 90

Guide to Depth of Cut and No. of Passes

Grooving
Tools

Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN

SSTI Type Guidelines for Depth of Cut

Internal Metric Threads (Depth of cut per pass: mm)

Pitch (mm)	0.75	1.00	1.25	1.50	1.75	2.00	2.50	3.00
Overall Depth of Cut (mm)	0.49	0.58	0.74	0.89	1.04	1.18	1.47	1.76
No. of Passes	4	5	8	10	11	12	14	16
1	0.20	0.22	0.22	0.25	0.25	0.25	0.30	0.30
2	0.12	0.14	0.14	0.12	0.17	0.18	0.19	0.20
3	0.12	0.10	0.09	0.08	0.10	0.12	0.15	0.17
4	0.05	0.07	0.07	0.08	0.08	0.10	0.12	0.14
5		0.05	0.06	0.07	0.08	0.09	0.10	0.12
6			0.06	0.07	0.07	0.08	0.09	0.11
7			0.05	0.06	0.07	0.07	0.08	0.10
8			0.05	0.06	0.06	0.07	0.08	0.10
9				0.05	0.06	0.06	0.07	0.08
10				0.05	0.05	0.06	0.07	0.08
11					0.05	0.05	0.06	0.07
12						0.05	0.06	0.07
13							0.05	0.06
14							0.05	0.06
15								0.05
16								0.05

Internal Unified Threads (Depth of cut per pass: mm)

Threads/Inch	32	28	24	20	18	16	14	13	12	11	10	9	8
Overall Depth of Cut (mm)	0.43	0.49	0.57	0.69	0.76	0.86	0.98	1.06	1.15	1.25	1.37	1.53	1.72
No. of Passes	4	4	5	7	8	10	11	12	12	14	14	16	16
1	0.20	0.20	0.20	0.22	0.22	0.22	0.25	0.25	0.27	0.27	0.27	0.30	0.30
2	0.10	0.16	0.16	0.12	0.13	0.13	0.15	0.15	0.16	0.16	0.18	0.18	0.22
3	0.08	0.08	0.09	0.09	0.10	0.08	0.10	0.10	0.12	0.12	0.16	0.16	0.18
4	0.05	0.05	0.07	0.08	0.08	0.08	0.08	0.08	0.10	0.10	0.12	0.11	0.15
5			0.05	0.07	0.07	0.07	0.07	0.08	0.09	0.08	0.10	0.09	0.12
6				0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.09	0.09	0.11
7				0.05	0.05	0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.10
8					0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.08	0.09
9						0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.08
10						0.04	0.05	0.05	0.05	0.06	0.06	0.07	0.07
11							0.04	0.05	0.05	0.05	0.05	0.06	0.06
12								0.04	0.04	0.05	0.05	0.06	0.06
13										0.04	0.04	0.05	0.05
14										0.04	0.04	0.05	0.05
15												0.04	0.04
16												0.04	0.04

No. of passes and depths of cut in the table above are general guidelines only. Increase or decrease depending on conditions. However, the maximum depth of cut should be kept to 0.5mm or less.

When using an insert with a wiper flat, add machining allowance to the total depth of cut.

Recommended Cutting Conditions

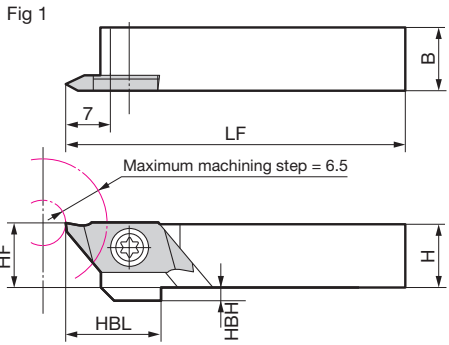
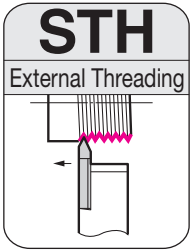
Work Material	P Carbon Steel	P Alloy Steel (up to 330HB)	M Stainless Steel	K Grey Cast Iron (up to 330HB)	K Ductile Cast Iron	S Titanium Alloy
Cutting Speed v_c (m/min)	75 to 150	75 to 135	60 to 120	90 to 180	75 to 135	24 to 90

STH Type



Screw-on for External Diameter

M Metric Thread
W Whitworth Thread



Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Height HF	Step HBH	Bottom Offset HBL	Applicable Insert	Fig	Screw	Wrench
	R	L									H	B
STH R/L0810	●	●	8	10	120	8	4	15	TH R/L Type	1	BFTX0410NTW	RT08
STH R/L1010	●	●	10	10	120	10	2	15		1		
STH R/L1212F	●	●	12	12	85	12	—	15		1		
STH R/L1212	●	●	12	12	120	12	—	15		1		
STH R/L1616H	●	●	16	16	100	16	—	15		1		
STH R/L1616	●	●	16	16	120	16	—	15		1		
STH R/L2020	●	●	20	20	80	20	—	15		1	BFTX0410NT	LT25NT

Insert (Coated Carbide)

Dimensions (mm)

Cat. No.	ACZ150		Pitch		Overall Length L	Height W1	Corner Radius RE	X Direction PDX	Included Angle PNA	Cutting Edge Shape	Applicable Holders	Fig	Dimensions (mm)	
	R	L	mm	Threads/Inch									RE	PDX
TH R/L6002075A	●	●	0.20 to 0.75	—	20	8	—	0.40	60	(A)	STH Type	1	2.5	Max. 0.05
TH R/L6002075B	●	●	0.20 to 0.75	—	20	8	—	0.40	60	(A)		2		
TH R/L6005125A	●	●	0.50 to 1.25	—	20	8	0.05	0.80	60	(B)		1		
TH R/L6005125B	●	●	0.50 to 1.25	—	20	8	0.05	0.80	60	(B)		2	50°	L
TH R/L601015N	●	●	1.00 to 1.50	—	20	8	0.10	1.25	60	(B)		3		
TH R/L550515A	●	●	0.529 to 1.58	48 to 16	20	8	0.05	0.80	55	(B)		1	Figure shows right hand (R) tool.	
TH R/L550515B	●	●	0.529 to 1.58	48 to 16	20	8	0.05	0.80	55	(B)		2		

Holder/Insert Combinations

Recommended Cutting Conditions **A24**

Feed Direction	Right Hand		Left Hand	
	Guide Bush Side	Back Turning Side	Guide Bush Side	Back Turning Side
Application				
Holder	STH R (Right Hand)	STH R (Right Hand)	STH L (Left Hand)	STH L (Left Hand)
Insert	TH R...A	TH R...B	TH L...B	TH L...A
Features	It is often used in common tooling for workpieces that have a thread at their top end. In this type of tooling, the necking width indicated with the arrow can be reduced since the cutting edge point is placed closer to the guide bush side.	Often used when a thread is at the middle of the workpiece or at the rear. In this type of tooling, the necking width indicated with the arrow can be reduced since the cutting edge point is placed closer to the back turning side.	With a left hand holder used, a sufficient cutting distance can be kept since the cutting edge position is separate from the guide bush.	For the left-hand holder, the selection of A type and B type is the reverse of the right-hand holder. (B indicates the guide bush side while A indicates the back turning side.)

Grooving Tools

T

Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN

GME-TH Type

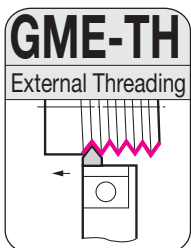


Fig 1

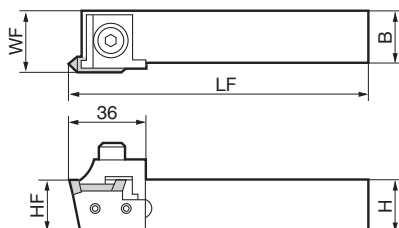


Figure shows right hand (R) tool.

For large external pitch
Clamp-on

- M** Metric Thread
- W** Whitworth Thread

Holder

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Fig	Parts				Dimensions (mm)	
	R	L							Clamp Plate	Support	Cap Screw	Wrench		
GME R/L2525TH			25	25	114.7	29.3	25	1						
GME R/L2525THL			25	25	150.0	29.3	25	1	GTC R/L	GT R/L	BX0414 (For Support) BX0820 (For Clamp Plate)	LH030 (For Support) LH060 (For Clamp Plate)		
GME R/L3232TH			32	32	170.0	36.3	32	1						

Inserts (□ Cemented Carbide)

Cat. No.	ST20E	A30	G10E	Pitch		Thread Ridge PNA	Corner Radius RE	Fig	Fig 1
				mm	Threads/Inch				
MTG 40				3 to 4	—	60	0.3	1	
MTG 50				5	—	60	0.4	1	
MTG 60				6	—	60	0.5	1	
MWG 40				—	11 to 9.0	55	0.3	1	
MWG 50				—	8 to 6.0	55	0.4	1	
MWG 60				—	5 to 4.5	55	0.6	1	

Recommended Cutting Conditions

Work Material	P Carbon Steel	P Alloy Steel	M Stainless Steel
Cutting Speed v_c (m/min)	70 to 120	70 to 100	70 to 100

Grooving Tools



Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN

SEC-External Threading Tool Holders LTE Type



Screw-on / Lever Lock for External Diameter

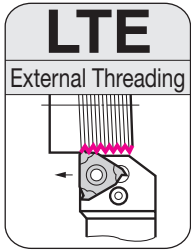
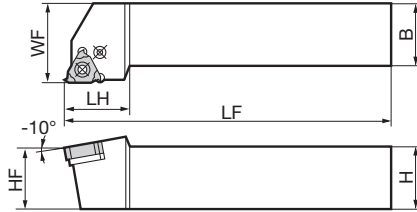


Fig 1



- M** Metric Thread
- W** Whitworth Thread
- UNC/UNF** Unified Thread
- R/Rc** Taper Thread for Pipe

Holder

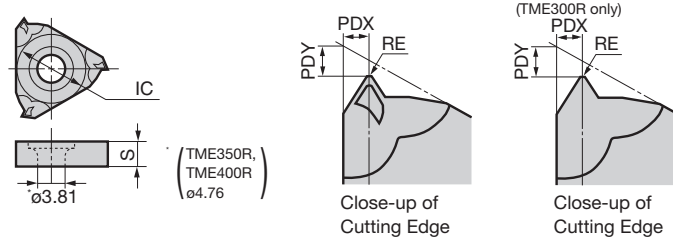
Parts

Dimensions (mm)

Cat. No.	Stock	Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Fig	Parts				
									Lever Pin	Bolt	Shim	Shim Retainer	Wrench
LTE R2020	●	20	20	125	25	20	25	1	LCL3S	LCS3TE	LSTE31-0	LSP3	LH025
LTE R2525	●	25	25	150	32	25	25	1	LCL3S	LCS3TE	LSTE31-0	LSP3	LH025
LTE R2525M22	●	25	25	150	32	25	28	1	LCL4S	LCS4	LSTE42-0	LSP4	LH030
LTE R3232P22	●	32	32	170	40	32	28	1	LCL4S	LCS4	LSTE42-0	LSP4	LH030

Refer to F101 for shim selection.

Fig 1



Inserts (Cermet)

Dimensions (mm)

Type	Cat. No.	Reference Cat. No.	Pitch		T1500A	T130A	Corner Radius RE	X Direction PDX	Y Direction PDY	Inscribed Circle IC	Thickness S	Wiper Flat	Applicable Holders	Fig
			mm	Threads/Inch										
60° Metric Thread	TME 100R	16ER100ISO-TE	1.00	—	●	●	0.11	0.8	1.2	9.525	3.65	Yes	LTE R2020 LTE R2525	1
	TME 125R	16ER125ISO-TE	1.25	—	●	●	0.15	0.8	1.2	9.525	3.65	Yes		1
	TME 150R	16ER150ISO-TE	1.50	—	●	●	0.19	1.0	1.2	9.525	3.65	Yes		1
	TME 175R	16ER175ISO-TE	1.75	—	●	●	0.22	1.2	1.2	9.525	3.65	Yes		1
	TME 200R	16ER200ISO-TE	2.00	—	●	●	0.26	1.4	1.2	9.525	3.65	Yes		1
	TME 250R	16ER250ISO-TE	2.50	—	●	●	0.33	1.4	1.2	9.525	3.65	Yes		1
	TME 300R	16ER300ISO-TE	3.00	—	●	●	0.40	1.8	1.2	9.525	3.65	Yes	1	
	TME 350R	22ER350ISO-TE	3.50	—	●	●	0.47	2.5	1.7	12.70	4.60	Yes	LTE R2525M22	1
	TME 400R	22ER400ISO-TE	4.00	—	●	●	0.54	2.5	1.7	12.70	4.60	Yes	LTE R3232P22	1
55° Whitworth Thread	TME 1020R	16ER102060-TE	1.00 to 2.00	24 to 12	●	●	0.11	1.1	1.2	9.525	3.65	No	LTE R2020 LTE R2525	1
	TME 1530R	16ER153060-TE	1.50 to 3.00	16 to 8	●	●	0.19	1.6	1.0	9.525	3.65	No		1
60° Unified Thread	TWE 1410R	16ER141055-TE	—	14 to 10	●	●	0.21	1.4	1.2	9.525	3.65	No	LTE R2020 LTE R2525	1
	TWE 2416R	16ER241655-TE	—	24 to 16	●	●	0.11	1.1	1.2	9.525	3.65	No		1
	TUE 24R	16ER24UN-TE	—	24	●	●	0.12	0.8	1.2	9.525	3.65	Yes		1
	TUE 20R	16ER20UN-TE	—	20	●	●	0.15	0.8	1.2	9.525	3.65	Yes		1
	TUE 18R	16ER18UN-TE	—	18	●	●	0.17	1.0	1.2	9.525	3.65	Yes		1
	TUE 16R	16ER16UN-TE	—	16	●	●	0.20	1.2	1.2	9.525	3.65	Yes		1
	TUE 14R	16ER14UN-TE	—	14	●	●	0.23	1.2	1.2	9.525	3.65	Yes		1
	TUE 12R	16ER12UN-TE	—	12	●	●	0.28	1.4	1.2	9.525	3.65	Yes		1
55° Taper Thread for Pipe	TUE 08R	16ER08UN-TE	—	8	●	●	0.43	1.8	1.2	9.525	3.65	Yes	1	
	TPE 28R	16ER28BSPT-TE	—	28	●	●	0.09	0.9	0.7	9.525	3.65	Yes	1	
	TPE 19R	16ER19BSPT-TE	—	19	●	●	0.15	0.9	0.7	9.525	3.65	Yes	1	
	TPE 14R	16ER14BSPT-TE	—	14	●	●	0.22	1.6	1.2	9.525	3.65	Yes	1	
TPE 11R	16ER11BSPT-TE	—	11	●	●	0.29	1.6	1.2	9.525	3.65	Yes	1		

For these inserts, only LTE/STE Type holders can be used.

SEC-External Threading Tool Holders STE Type



Screw-on / Lever Lock for External Diameter

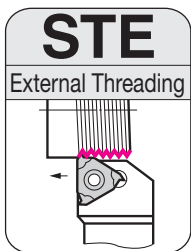
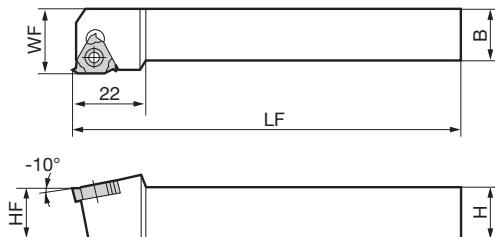


Fig 1



- M** Metric Thread
- W** Whitworth Thread
- UNC/UNF** Unified Thread
- R/Rc** Taper Thread for Pipe

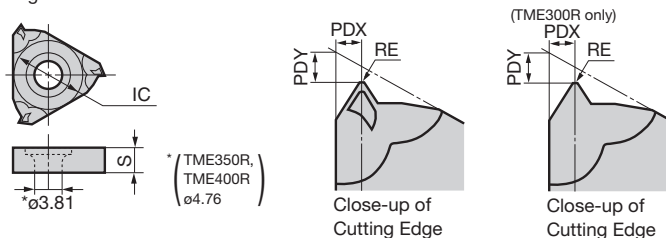
Holder

Parts

Dimensions (mm)

Cat. No.	Stock	Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Fig	Screw		Wrench
STE R1212	●	12	12	100	16	12	1	BFTX03508	2.0	TRX10
STE R1616	●	16	16	100	20	16	1			

Fig 1



Inserts (Cermet)

Dimensions (mm)

Type	Cat. No.	Reference Cat. No.	Pitch		T1500A	T130A	Corner Radius RE	X Direction PDX	Y Direction PDY	Inscribed Circle IC	Thickness S	Wiper Flat	Applicable Holders	Fig
			mm	Threads/Inch										
60° Metric Thread	TME 100R	16ER100ISO-TE	1.00	—	●	●	0.11	0.8	1.2	9.525	3.65	Yes	STE R1212 STE R1616	1
	TME 125R	16ER125ISO-TE	1.25	—	●	●	0.15	0.8	1.2	9.525	3.65	Yes		1
	TME 150R	16ER150ISO-TE	1.50	—	●	●	0.19	1.0	1.2	9.525	3.65	Yes		1
	TME 175R	16ER175ISO-TE	1.75	—	●	●	0.22	1.2	1.2	9.525	3.65	Yes		1
	TME 200R	16ER200ISO-TE	2.00	—	●	●	0.26	1.4	1.2	9.525	3.65	Yes		1
	TME 250R	16ER250ISO-TE	2.50	—	●	●	0.33	1.4	1.2	9.525	3.65	Yes		1
	TME 300R	16ER300ISO-TE	3.00	—	●	●	0.40	1.8	1.2	9.525	3.65	Yes		1
	TME 1020R	16ER102060-TE	1.00 to 2.00	24 to 12	●	●	0.11	1.1	1.2	9.525	3.65	No		1
TME 1530R	16ER153060-TE	1.50 to 3.00	16 to 8	●	●	0.19	1.6	1.0	9.525	3.65	No	1		
55° Whitworth Thread	TWE 1410R	16ER141055-TE	—	14 to 10	●		0.21	1.4	1.2	9.525	3.65	No		1
	TWE 2416R	16ER241655-TE	—	24 to 16	●		0.11	1.1	1.2	9.525	3.65	No		1
60° Unified Thread	TUE 24R	16ER24UN-TE	—	24	●		0.12	0.8	1.2	9.525	3.65	Yes		1
	TUE 20R	16ER20UN-TE	—	20			0.15	0.8	1.2	9.525	3.65	Yes		1
	TUE 18R	16ER18UN-TE	—	18			0.17	1.0	1.2	9.525	3.65	Yes		1
	TUE 16R	16ER16UN-TE	—	16	●		0.20	1.2	1.2	9.525	3.65	Yes		1
	TUE 14R	16ER14UN-TE	—	14	●		0.23	1.2	1.2	9.525	3.65	Yes		1
	TUE 12R	16ER12UN-TE	—	12	●		0.28	1.4	1.2	9.525	3.65	Yes	1	
	TUE 08R	16ER08UN-TE	—	8			0.43	1.8	1.2	9.525	3.65	Yes	1	
55° Taper Thread for Pipe	TPE 28R	16ER28BSPT-TE	—	28			0.09	0.9	0.7	9.525	3.65	Yes	1	
	TPE 19R	16ER19BSPT-TE	—	19	●		0.15	0.9	0.7	9.525	3.65	Yes	1	
	TPE 14R	16ER14BSPT-TE	—	14	●		0.22	1.6	1.2	9.525	3.65	Yes	1	
	TPE 11R	16ER11BSPT-TE	—	11	●		0.29	1.6	1.2	9.525	3.65	Yes	1	

For these inserts, only LTE/STE Type holders can be used.

THE Type

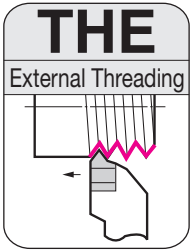
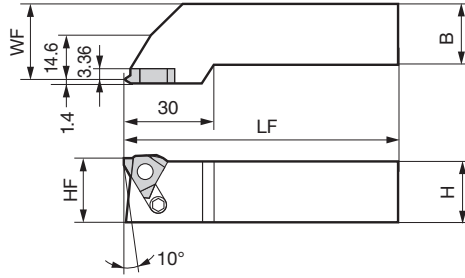


Fig 1



Screw-on / Drawing Pin for External Diameter

- M** Metric Thread
- W** Whitworth Thread
- R/Rc** Taper Thread for Pipe

Grooving Tools

F

Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN

Holder

Parts

Dimensions (mm)

Cat. No.	Stock	Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Fig	Dimensions (mm)		
								Drawing Pin	Set Screw	Wrench
THE R-33	●	20	20	125	25.0	20	1			
THE R-44	●	25	25	150	32.2	25	1	SR124	BTD0510	LH025

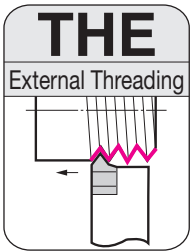
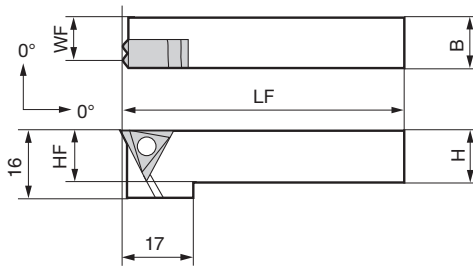


Fig 1



Screw-on / Drawing Pin for SEC-External Diameter (Mini Holders)

- M** Metric Thread
- W** Whitworth Thread
- R/Rc** Taper Thread for Pipe

Holder

Parts

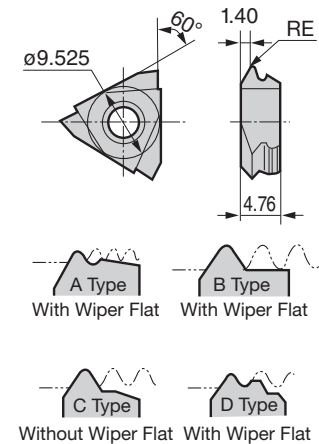
Dimensions (mm)

Cat. No.	Stock	Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Fig	Dimensions (mm)	
								Screw	Wrench
THE R1010-33	●	10	10	100	8.6	10	1		
THE R1212-33	●	12	12	100	10.6	12	1	BFX0410R	TH025

Inserts (Cermet / Cemented Carbide)

Dimensions (mm)

Cat. No.	T1500A	ST10P	A30	Pitch		Corner Radius RE	Included Angle PNA	Blade Type	Applicable Holders
				mm	Threads/Inch				
				NE R080	●	●	●	0.80	0.80
NE R100	●	●	●	1.00	1.00	0.11	60	A	
NE R125	●	●	●	1.25	1.25	0.15	60	B	
NE R150	●	●	●	1.50	1.50	0.18	60	B	
NE R175	●	●	●	1.75	1.75	0.22	60	B	
NE R200	●	●	●	2.00	2.00	0.25	60	B	
NE R250	●	●	●	2.50	2.50	0.33	60	B	
NE R0815	●	●	●	0.80 to 1.50	—	0.08	60	C	
NE R1530	●	●	●	1.50 to 3.00	—	0.18	60	C	
WE R1410	●	●	●	—	14 to 10	0.21	55	C	
WE R2416	●	●	●	—	24 to 16	0.11	55	C	
PTE R28	●	●	●	—	28	0.09	55	D	
PTE R19	●	●	●	—	19	0.15	55	D	



Internal Threading Tools STI Type



Screw-on
for Internal Diameter

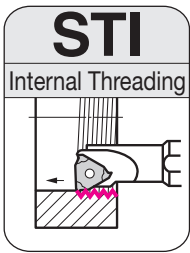
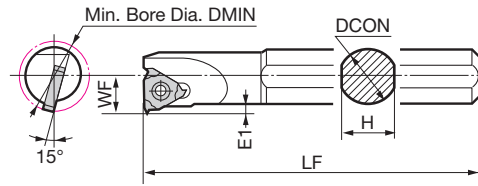


Fig 1



M Metric Thread
UNC/UNF Unified Thread

Holder

Parts

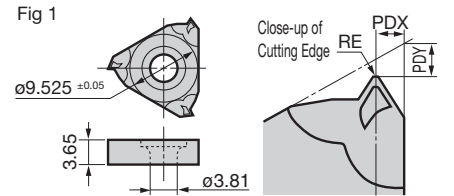
Dimensions (mm)

Cat. No.	Stock	Diameter		Overall Length	Cutting Edge Distance	Cutting Edge Distance	Min. Bore Dia.	Fig	Screw		Wrench
		DCON	H						LF	WF	
STI R316	●	16	15	150	11	3.5	20	1	BFTX03508	2.0	TRX10
STI R320	●	20	18	180	14	5.0	25	1			

Inserts (Cermet)

Dimensions (mm)

Cat. No.	Reference Cat. No.	Pitch		T1500A	Corner Radius	Included Angle	X Direction	Y Direction	Fig
		mm	Threads/Inch						
TMI 100R	16IR100ISO-TI	1.00	—	●	0.04	60	0.8	1.2	1
TMI 125R	16IR125ISO-TI	1.25	—	●	0.05	60	0.8	1.2	1
TMI 150R	16IR150ISO-TI	1.50	—	●	0.07	60	1.0	1.2	1
TMI 175R	16IR175ISO-TI	1.75	—	●	0.09	60	1.2	1.2	1
TMI 200R	16IR200ISO-TI	2.00	—	●	0.10	60	1.4	1.2	1
TMI 250R	16IR250ISO-TI	2.50	—	●	0.14	60	1.4	1.2	1
TMI 300R	16IR300ISO-TI	3.00	—	●	0.18	60	1.8	1.2	1
TMI 1020R	16IR102060-TI	1.00 to 2.00	24 to 12	●	0.04	60	1.0	1.2	1
TMI 1530R	16IR153060-TI	1.50 to 3.00	16 to 8	●	0.07	60	1.5	1.2	1



For these inserts, only STI Type holders can be used.

Grooving Tools

F

Grooving

Cut-off

Threading

External

Face

Internal

Necking

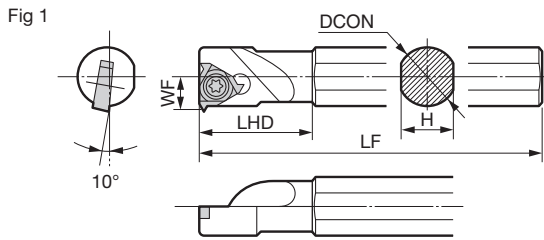
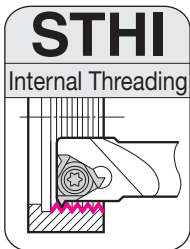
CBN

STHI Type



Screw-on
for Internal Diameter

M Metric Thread



Grooving Tools

Holder

Parts

Cat. No.	Stock	Diameter DCON	Height H	Overall Length LF	Cutting Edge Distance WF	Head LHD	Min. Bore Dia.	Applicable Insert	Fig	Dimensions (mm)	
										Screw	Wrench
STHI 06	●	6	5.5	100	3.8	13.0	8.0	TI R06	1	BFTX0204NS	RT06
STHI 08	●	8	7.0	125	4.7	17.0	10.0	TI R08	1	BFTX0205NS	
STHI 10	●	10	9.0	150	6.0	20.0	12.0	TI R09	1	BFTX02206NT	

Insert (Coated Carbide)

Dimensions (mm)

Cat. No.	Reference Cat. No.	Pitch (mm)	Corner Radius RE	Inscribed Circle IC	Thickness S	Cutting Edge Distance E1	Maximum Depth of Cut CDX	Applicable Holders	Fig	Dimensions (mm)	
										ACZ150	Fig 1
TI R06	06IR041060-HI	● 0.4 to 0.5 to 1.0	0.03	3.97	1.59	0.7	0.5	STHI06	1		
TI R08	08IR041060-HI	● 0.4 to 0.5 to 1.0	0.03	4.76	2.38	0.7	0.5	STHI08	1		
TI R09	09IR041060-HI	● 0.4 to 0.5 to 1.0	0.03	5.56	2.38	0.7	0.5	STHI10	1		

- For these inserts, only STHI Type holders can be used.
- Recommended pitch is 0.5mm.

Recommended Cutting Conditions **A24**

Grooving
Cut-off
Threading
External
Face
Internal
Necking
CBN

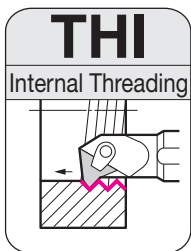
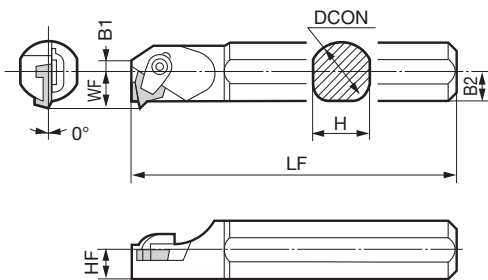


Fig 1



Clamp-on
for Internal Diameter

M Metric Thread

Holder

Parts

Dimensions (mm)

Cat. No.	Stock	Diameter DCON	Height H	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Width B1	Width B2	Min. Bore Diameter	Applicable Insert	Fig	Dimensions (mm)		
												Clamp Plate	Double Screw	Wrench
THI R216	●	16	15	160	9.3	7.5	4	7.5	ø18	NI R2000	1	CCM5BSL	WB5-10	TH025
THI R320	●	20	18	160	11.7	9.0	6	9.0	ø22	NI R3000	1		WB5-12	TH025
THI R325	●	25	23	180	14.2	11.5	5	11.5	ø27	NI R3000	1	CCM6BL	WB6-16	LH030

Inserts (□Cemented Carbide)

Dimensions (mm)

Cat. No.	STOP	Pitch (mm)	Inscribed Circle IC	Thickness S	X Direction PDX	Corner Radius RE	Main Blade Relief Angle AN	Blade Type	Applicable Holders	Fig	Dimensions (mm)	
											Fig 1	With Wiper Flat
NI R2000	●	0.8 to 1.5	6.350	3.18	0.85	0.05	12	C	THI R216	1	Fig 1	B Type
NI R2150	●	1.5	6.350	3.18	0.85	0.07	12	B	THI R216	1		With Wiper Flat
NI R3000	●	0.8 to 2.5	9.525	3.18	1.35	0.05	10	C	THI R320	1		C Type
NI R3150	●	1.5	9.525	3.18	0.85	0.07	10	B	THI R320	1		Without Wiper Flat
NI R3200	●	2.0	9.525	3.18	1.10	0.11	10	B	THI R325	1		

- The cutting edge honing of the inserts can be enlarged for threading at a pitch of 1.5mm or more with the NIR2000 and a pitch of 2.5mm or more with the NIR3000. The honing amount must be within the threading tolerance.
- Inserts use 3 corners.

Grooving
Tools



Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN

Guide to Depth of Cut and No. of Passes

Threading Tool Depth of Cut Guide

■ With Wiper Flat

Applications	Cat. No.	Reference Cat. No.	Pitch	Depth of Cut	No. of Passes	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
60° Metric Thread	External																				
	TME 100R	16ER 100ISO-TE	1.00mm	0.68	5	0.20	0.16	0.14	0.11	0.07											
	TME 125R	16ER 125ISO-TE	1.25	0.83	6	0.20	0.18	0.15	0.12	0.11	0.07										
	TME 150R	16ER 150ISO-TE	1.50	0.96	7	0.22	0.18	0.14	0.13	0.12	0.10	0.07									
	TME 175R	16ER 175ISO-TE	1.75	1.12	8	0.22	0.19	0.16	0.14	0.13	0.12	0.09	0.07								
	TME 200R	16ER 200ISO-TE	2.00	1.25	8	0.25	0.21	0.18	0.16	0.15	0.13	0.10	0.07								
	TME 250R	16ER 250ISO-TE	2.50	1.55	10	0.27	0.24	0.20	0.18	0.16	0.13	0.11	0.10	0.09	0.07						
	TME 300R	16ER 300ISO-TE	3.00	1.85	12	0.28	0.25	0.20	0.19	0.17	0.15	0.13	0.12	0.10	0.10	0.09	0.07				
	TME 350R	22ER 350ISO-TE	3.50	2.25	13	0.30	0.27	0.24	0.22	0.20	0.18	0.16	0.15	0.14	0.12	0.11	0.09	0.07			
	TME 400R	22ER 400ISO-TE	4.00	2.57	14	0.35	0.32	0.29	0.26	0.23	0.20	0.17	0.15	0.14	0.12	0.10	0.09	0.08	0.07		
	Internal																				
	TMI 100R	16IR 100ISO-TI	1.00mm	0.63	5	0.18	0.16	0.12	0.10	0.07											
	TMI 125R	16IR 125ISO-TI	1.25	0.77	6	0.18	0.16	0.14	0.12	0.10	0.07										
	TMI 150R	16IR 150ISO-TI	1.50	0.90	7	0.20	0.16	0.14	0.13	0.11	0.09	0.07									
TMI 175R	16IR 175ISO-TI	1.75	1.03	8	0.20	0.18	0.15	0.14	0.11	0.10	0.08	0.07									
TMI 200R	16IR 200ISO-TI	2.00	1.18	8	0.22	0.19	0.17	0.15	0.14	0.13	0.11	0.07									
TMI 250R	16IR 250ISO-TI	2.50	1.44	10	0.25	0.22	0.19	0.16	0.14	0.12	0.10	0.10	0.09	0.07							
TMI 300R	16IR 300ISO-TI	3.00	1.70	12	0.27	0.24	0.20	0.17	0.14	0.12	0.12	0.10	0.10	0.09	0.08	0.07					
60° Unified Thread																					
External																					
TUE 24R	16ER 24UN-TE	24TPI	0.72	5	0.20	0.18	0.15	0.12	0.07												
TUE 20R	16ER 20UN-TE	20	0.85	6	0.21	0.18	0.16	0.13	0.10	0.07											
TUE 18R	16ER 18UN-TE	18	0.95	6	0.22	0.20	0.18	0.16	0.12	0.07											
TUE 16R	16ER 16UN-TE	16	1.05	7	0.22	0.20	0.17	0.15	0.13	0.11	0.07										
TUE 14R	16ER 14UN-TE	14	1.20	8	0.22	0.20	0.18	0.16	0.14	0.12	0.11	0.07									
TUE 12R	16ER 12UN-TE	12	1.38	9	0.25	0.22	0.19	0.17	0.15	0.13	0.11	0.09	0.07								
TUE 08R	16ER 08UN-TE	8	2.05	12	0.28	0.25	0.23	0.21	0.19	0.17	0.15	0.14	0.13	0.12	0.11	0.07					
55° Taper Thread for Pipe																					
External																					
TPE 28R	16ER 28BSPT-TE	28TPI	0.62	5	0.18	0.15	0.13	0.10	0.06												
TPE 19R	16ER 19BSPT-TE	19	0.92	6	0.22	0.20	0.17	0.15	0.11	0.07											
TPE 14R	16ER 14BSPT-TE	14	1.04	7	0.22	0.20	0.17	0.15	0.13	0.10	0.07										
TPE 11R	16ER 11BSPT-TE	11	1.50	9	0.25	0.22	0.21	0.19	0.17	0.15	0.13	0.11	0.07								

* When pitch becomes smaller, decrease the cutting speed. In the case of inserts for internal threading without wiper flat, the number of passes should be increased.

■ Recommended Cutting Speeds

(Units: m/min)

Tool Grade		T1500A / T130A	A30	ST10P
P	Mild Steel	100 - 150	70 - 120	120 - 180
	Low-carbon Steel	80 - 130	70 - 100	90 - 150
	Alloy Steel	80 - 120	70 - 100	80 - 130
M	Stainless Steel	—	70 - 100	—

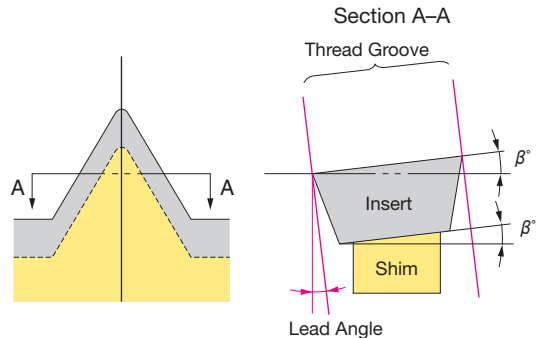
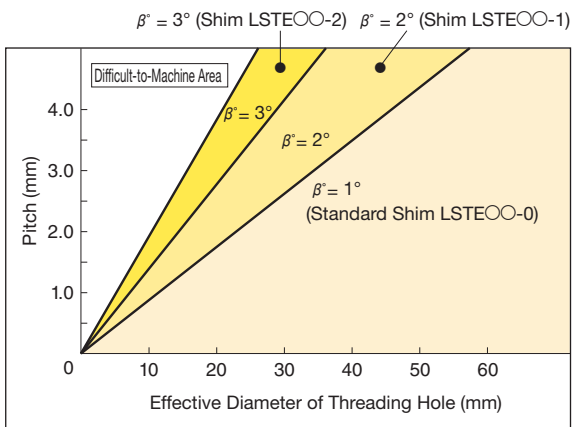
Threading Tool Depth of Cut Guide

Without Wiper Flat

Applications	Cat. No.	Reference Cat. No.	Corner Radius	Pitch	Depth of Cut	No. of Passes	1	2	3	4	5	6	7	8	9	10	11	12	13	14				
60° Metric Thread	External	TME 1020R	16ER 102060-TE	0.13	1.00mm	0.65	5	0.20	0.16	0.12	0.10	0.07												
					1.25	0.84	6	0.20	0.18	0.16	0.13	0.10	0.07											
					1.50	1.03	7	0.22	0.20	0.17	0.15	0.12	0.10	0.07										
					1.75	1.22	8	0.22	0.21	0.18	0.16	0.15	0.13	0.10	0.07									
					2.00	1.41	10	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.10	0.09	0.07							
	Internal	TME 1530R	16ER 153060-TE	0.20	1.50mm	0.95	7	0.22	0.17	0.14	0.13	0.12	0.10	0.07										
					1.75	1.14	8	0.22	0.18	0.16	0.15	0.14	0.12	0.10	0.07									
					2.00	1.33	9	0.25	0.20	0.18	0.16	0.15	0.13	0.10	0.09	0.07								
					2.50	1.71	12	0.25	0.22	0.19	0.17	0.15	0.14	0.13	0.12	0.10	0.09	0.08	0.07					
					3.00	2.09	14	0.25	0.22	0.20	0.20	0.18	0.17	0.15	0.14	0.14	0.10	0.10	0.09	0.08	0.07			
	55° Whitworth Thread	External	TWE 2416R	16ER 241655-TE	0.13	20TPI	0.80	6	0.20	0.17	0.15	0.12	0.09	0.07										
						19	0.84	6	0.20	0.18	0.16	0.13	0.10	0.07										
18						0.90	7	0.20	0.18	0.15	0.12	0.10	0.08	0.07										
16						1.03	7	0.22	0.20	0.17	0.15	0.12	0.10	0.07										
14TPI						1.07	8	0.20	0.17	0.15	0.14	0.13	0.12	0.09	0.07									
Internal		TWE 1410R	16ER 141055-TE	0.23	12	1.29	9	0.22	0.20	0.17	0.15	0.14	0.13	0.12	0.09	0.07								
					11	1.43	10	0.22	0.21	0.18	0.16	0.14	0.13	0.12	0.11	0.09	0.07							
					10	1.60	11	0.22	0.21	0.18	0.17	0.16	0.14	0.13	0.12	0.11	0.09	0.07						

* When pitch becomes smaller, decrease the cutting speed. In the case of inserts for internal threading without wiper flat, the number of passes should be increased.

Shim Selection for External Threading Tool LTE Type Holder



Standard shim that comes with LTE has β = 1°. β = 2°, 3° shims are sold separately. STE and STI Type holders do not come with shims.

Grooving Tools



Grooving

Cut-off

Threading

External

Face

Internal

Necking

CBN

