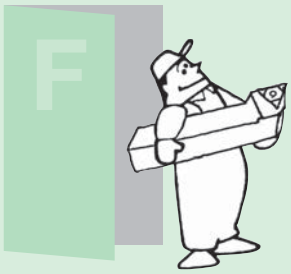
Threading Tools F

F97 to F119

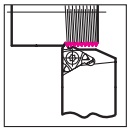


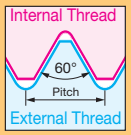
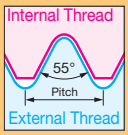
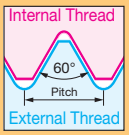
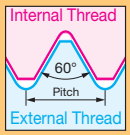
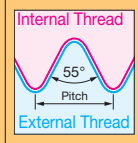
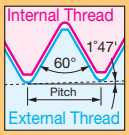
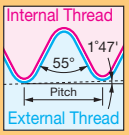
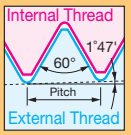
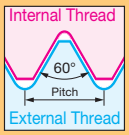
Stock Markings and Symbols

● ● 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

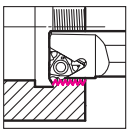
■ External Threading

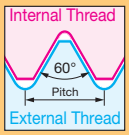
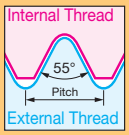
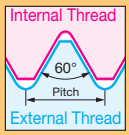
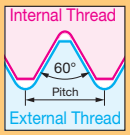
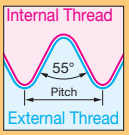
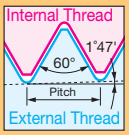
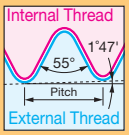
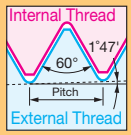
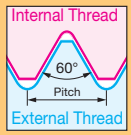


Applications / Thread Ridge Shape / Type	General Industrial Use				Pipe Coupling for Gas, Water and Water Faucets		Pipe Threads for Steam, Gas and Water Supply Pipes		For Aerospace Equipment
									
Type	60° General-purpose Thread	55° General-purpose Thread (Whitworth)	60° ISO Metric Thread	60° Unified 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 Edge	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
 **SSTE** type → F102	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 → F112	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 → F113	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 → F114	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 → F111	3.00 to 6.00	11 to 4.5	–	–	–	–	–	–	–
 **STH** type → F110	0.20 to 1.50	48 to 16	–	–	–	–	–	–	–

Selection Guide

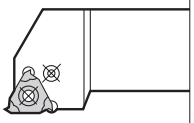
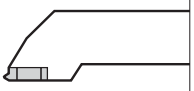
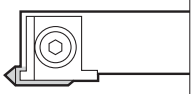
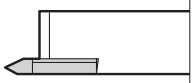
■ Internal Threading



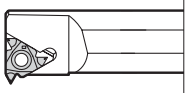
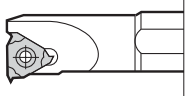
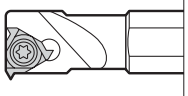
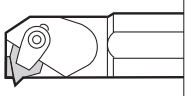
Applications / Thread Ridge Shape / Type	General Industrial Use				Pipe Coupling for Gas, Water and Water Faucets		Pipe Threads for Steam, Gas and Water Supply Pipes		For Aerospace Equipment
									
	60° General-purpose Thread	55° General-purpose Thread (Whitworth)	60° ISO Metric Thread	60° Unified 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 Edge	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
 **SSTI** type → F102	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 → F115	1.00 to 3.00 / 24 to 8	—	1.00, 1.25, 1.50 1.75, 2.00, 2.50 3.00	—	—	—	—	—	—
 **STHI** type → F116	0.40 to 1.00	—	—	—	—	—	—	—	—
 **THI** type → F117	0.80 to 2.50	—	1.50, 2.00	—	—	—	—	—	—

Product Range

■ External Threading Tools

Series	Appearance	Structure: Screw-on	Structure: Clamp-on	Structure: Lever Lock	Structure: Drawing Pin	Features	Applicable Thread Symbol
SSTE	 → F102	●				· Adopts a flat 3-cornered 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 edge	**M** **W** **UNC/UNF** **G/Rp/W** **NPT** **R/Rc** **NPTF** **UNJ**
LTE/ STE	 → F112, F113	●		●		· 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-cornered insert is economical · Range of cermet grades · Stable chip control with incorporated chipbreaker	**M** **W** **UNC/UNF** G/Rp/W NPT **R/Rc** NPTF UNJ
THE	 → F114	●			●	· 3-cornered tangentially-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 edge	**M** **W** UNC/UNF **G/Rp/W** NPT R/Rc NPTF UNJ
GME-TH	 → F111		●			· 2-cornered 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** UNC/UNF G/Rp/W NPT R/Rc NPTF UNJ
STH	 → F110	●				· For small lathes 20mm square or less · 2-cornered tangentially-mounted insert enables space-saving threading · Can also be used for back-turn threading with bar feeder · Can also be used for small-pitch (min. 0.2mm) threading	**M** **W** UNC/UNF G/Rp/W NPT R/Rc NPTF UNJ

■ Internal Threading Tools

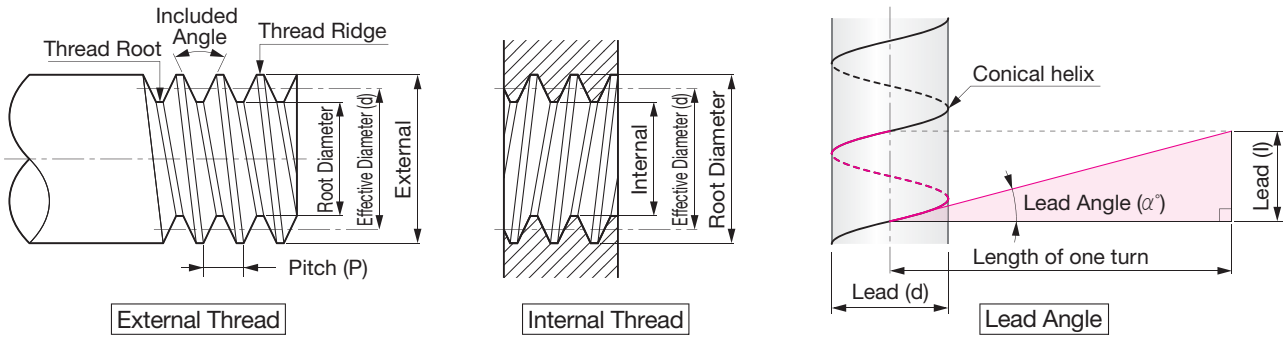
Series	Appearance	Structure: Screw-on	Structure: Clamp-on	Structure: Lever Lock	Structure: Drawing Pin	Features	Min. Bore Dia. (mm)	Applicable Thread Symbol
SSTI	 → F102	●				· Adopts a flat 3-cornered insert. Ground cutting edge flank produces superior machined surface with sharp cutting edge. · Stable chip control through use of a 3D molded chipbreaker. · Large lineup of inserts with a wiper edge	ø18	**M** **W** **UNC/UNF** **G/Rp/W** **NPT** **R/Rc** **NPTF** **UNJ**
STI	 → F115	●				· M-Class flat-mounted 3-cornered insert is economical · Stable chip control with incorporated chipbreaker. · Range of cermet grades	ø20	**M** W **UNC/UNF** G/Rp/W NPT R/Rc NPTF UNJ
STHI	 → F116	●				· Applicable for small diameter (minimum ø8mm), small pitch (0.4 - 1.0mm) threading · Perfect for small product machining	ø8	**M** W UNC/UNF G/Rp/W NPT R/Rc NPTF UNJ
THI	 → F117		●			· G-Class 3-cornered insert with good sharpness	ø18	**M** W UNC/UNF G/Rp/W NPT R/Rc NPTF UNJ

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



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

● Lead Angle Calculation

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

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

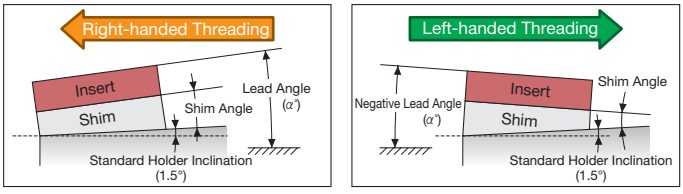
■ Main Screw Types and Standard Thread Patterns

Applications	Symbol	Basic Profile	Applications	Symbol	Basic Profile	Applications	Symbol	Basic Profile	Applications	Symbol	Basic Profile
Metric Thread	M	Internal Thread 1/4P 60° h 1/8P External Thread	Parallel Thread for Pipe	Internal Thread G(PF) Rp(PS) External Thread G(PF)	Internal Thread R0.137P 55° h R0.137P External Thread	Taper Thread for Pipe	Internal Thread Rc(PT) (BSPT) External Thread R(PT) (BSPT)	R0.137P Internal Thread 27.5° 27.5° 90° 1°47' R0.137P External Thread	Unified Thread	UN UNC UNF UNEF	Internal Thread 1/4P 60° h 1/8P External Thread
Whitworth Thread	W BSW BSP	Internal Thread R0.137P 55° h R0.137P External Thread	Thread for Aerospace Instruments	UNJ	Internal Thread 5/16P 60° h R External Thread	American Taper Thread for Pipe	NPT	Internal Thread 30° 30° h 90° 1°47' External Thread	American Taper Thread for Pipe	NPTF	Internal Thread 30° 30° h 90° 1°47' External Thread

■ 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 Threading	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 (YI3-3P/YI3-2P YI3-1P/YI3/YI3-1N)	External Holder (SSTE type) / External Diameter Insert (16ER type) / Shim (YE3-3P/YE3-2P YE3-1P/YE3/YE3-1N)
Left-handed Threading	External Holder (SSTE type) / External Diameter Insert (16ER type) / Shim (YE3-2N/YE3-3N)	Internal Holder (SSTI type) / Internal Diameter Insert (16IR type) / Shim (YI3-2N/YI3-3N)	External Holder (SSTE type) / External Diameter Insert (16ER type) / Shim (YE3-2N/YE3-3N)

■ Threading Method and Insert Angle

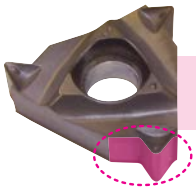


SSTE type/SSTI type

VIDEO OF CUTTING

■ Features

- High-precision inserts with wiper edge 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



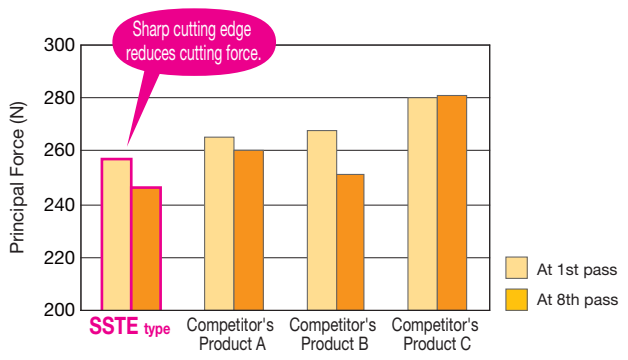
Ground flanks around cutting edge

■ Product Range

Applications	Type	Wiper Edge	External/ Internal	Pitch (mm)	TPI (Threads/Inch) 48 36 32 28 27 24 20 19 18 16 14 13 12 11.5 11 10 8	Insert Cat. No. Example:
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	Yes	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		32 28 24 20 18 16 14 13 12	16ER 32UN-CB
			Internal		32 28 24 20 18 16 14 13 12	16IR 32UN-CB
Pipe Coupling for Gas, Water and Water Faucets	55° Parallel Thread for Pipe/Whitworth		External		36 28 20 19 18 16 14 11	16ER 36W-CB
			Internal		28 20 19 18 16 14 11	16IR 28W-CB
	60° American NPT		External		27 18 14 11.5 8	16ER 27NPT-CB
			Internal		27 18 14 11.5 8	16IR 27NPT-CB
Steam, Gas and Water Supply Pipes	55° Taper Thread for Pipe BSPT		External		28 19 14 11	16ER 28BSPT-CB
			Internal		28 19 14 11	16IR 28BSPT-CB
	60° American NPTF		External		27 18 14 11.5 8	16ER 27NPTF-CB
			Internal		27 18 14 11.5 8	16IR 27NPTF-CB
For Aerospace Equipment	UNJ 60°		External		32 28 24 20 18 16 14 13 12	16ER 32UNJ-CB
			Internal		32 28 24 20 18 16 14 13 12	16IR 32UNJ-CB

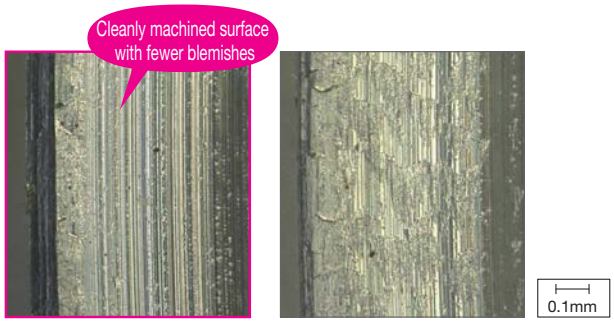
■ Application Examples

● Comparison of Cutting Force



Work Material: S45C M30×1.5
Cutting Conditions: vc=150m/min Wet 8 Passes Thread infeed method: Radial infeed

● Machined Surface Comparison



Work Material: S45C M30×1.5
Cutting Conditions: vc=150m/min Wet 8 Passes Thread infeed method: Radial infeed

SSTE type/SSTI type

External

External Turning
Screw-on

SSTE
External Threading

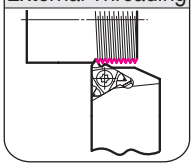
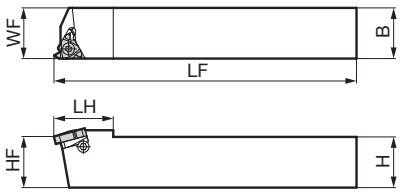
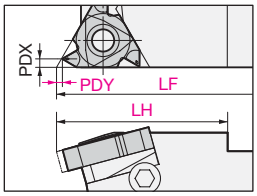


Fig 1





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 F104.

Holder

Parts

Dimensions (mm)

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

*1: Shim screw wrench is sold separately.

Internal

Internal Boring
Screw-on

SSTI
Internal Threading

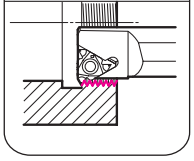


Fig 1

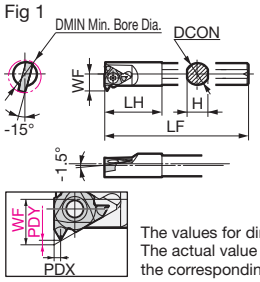


Fig 2

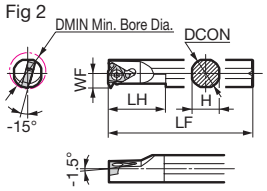
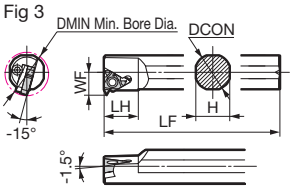


Fig 3



The values for dimension WF below are only for reference.
The actual value is the value below minus the PDY value for the corresponding insert on F105.

Holder

Parts

Dimensions (mm)

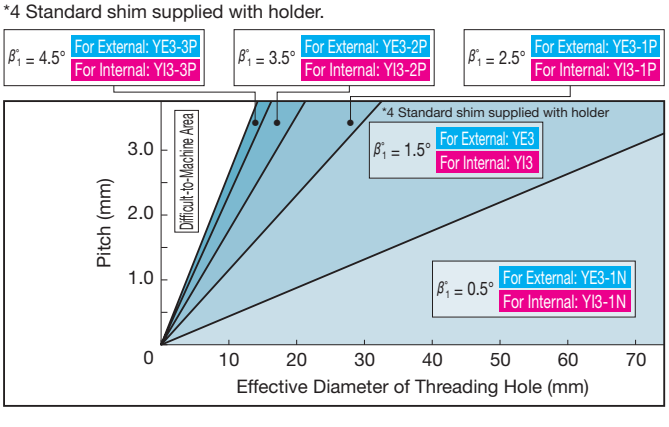
Cat. No.	Stock	Diameter DCON	Height H	Overall Length LF	Head LH	Cutting Edge Distance WF	Min. Bore Dia. DMIN*2	Fig	Flat Head Screw	N·m	Shim Screw	Flat Washer	Shim	Wrench
SSTI R1812M16*3	●	12	11.0	150	32.0	10.2	18	1	BFTX03085N	**2.0**	—	—	—	TRX10
SSTI R2016M16*3	●	16	15.0	150	63.5	9.2	20	2						
SSTI 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	
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 Cat. No.	External Turning Stock	Internal Boring Cat. No.	Internal Boring 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

Example: **S S T E R 25 25 M 16**

(1) Series Code: SST type

(2) External/Internal

Symbol	Distinction
E	External
I	Internal

(3) Feed Direction

Symbol	Feed Direction
R	Right Hand

(4) Shank Height/Work Dia.

Symbol	(mm)	External Holders (Shank Height)	Internal Holders (Min. Bore Diameter)
16	16	●	
20	20	●	●
25	25	●	
18	18		●
20	20		
24	24		
31	31		
37	37		

(5) Shank Width/ Diameter

Symbol	(mm)	External Holders (Shank Width)	Internal Holders (Shank Diameter)
16	16	●	
20	20	●	●
25	25	●	
12	12		●
16	16		
20	20		
25	25		
32	32		

(6) Overall Length Symbol

Symbol	(mm)
H	100
K	125
M	150
Q	180
S	250

(7) Insert Size

Symbol	Inscribed Circle (mm)
16	9.525

Details of Shim Selection F106

(N·m) Recommended Tightening Torque (N·m)

SSTE type/SSTI type

External

SSTE type Guidelines for Depth of Cut and No. of Passes F108

Fig 1

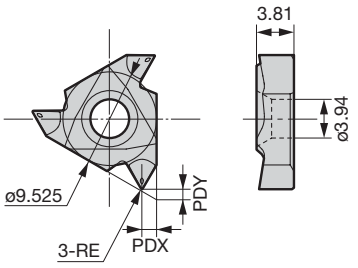
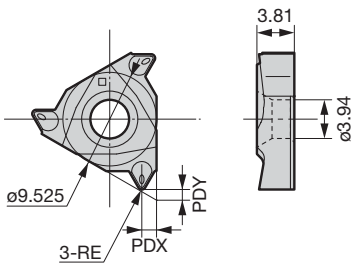


Fig 2



(Coated Carbide)

60°/55° General-purpose Threads (Without Wiper Edge)

Dimensions (mm)

Thread Ridge Angle	Cat. No.	AC530U	Pitch mm	Pitch Threads/Inch	X Direction PDX	Y Direction PDY	Corner Radius RE	Pcs/ Pack	Fig
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		1
	16ER G60-CB	●	2.0-3.0	8 - 14	1.5	1.1	0.20		1
55°	**16ER A55-CB**	●	—	16 - 48	0.8	0.5	0.05		1
	16ER AG55-CB	●	—	8 - 48	1.5	1.1	0.08	5	1
	16ER G55-CB	●	—	8 - 14	1.5	1.1	0.22		1

60° ISO Metric Thread (With Wiper Edge)

Dimensions (mm)

Thread Ridge Angle	Cat. No.	AC530U	Pitch mm	Pitch Threads/Inch	X Direction PDX	Y Direction PDY	Corner Radius RE	Pcs/ Pack	Fig
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		2
	16ER 125 ISO-CB	●	1.25	—	0.8	0.7	0.15		2
	16ER 150 ISO-CB	●	1.50	—	0.8	0.7	0.20		2
	16ER 175 ISO-CB	●	1.75	—	1.5	1.0	0.23		2
	16ER 200 ISO-CB	●	2.00	—	1.5	1.1	0.26		2
	16ER 250 ISO-CB	●	2.50	—	1.5	1.2	0.33		2
	16ER 300 ISO-CB	●	3.00	—	1.5	1.1	0.41		2

60° Unified Thread (With Wiper Edge)

Dimensions (mm)

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

55° Parallel Thread for Pipe/Whitworth (With Wiper Edge)

Dimensions (mm)

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

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

60° American NPT (With Wiper Edge)

Dimensions (mm)

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

55° Taper Thread for Pipe/BSPT (With Wiper Edge)

Dimensions (mm)

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

60° American NPTF (With Wiper Edge)

Dimensions (mm)

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

60° UNJ (With Wiper Edge)

Dimensions (mm)

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

Insert Identification Code

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

(1) Insert Size	
Symbol	Inscribed Circle (mm)
16	9.525

(2) External/Internal	
Symbol	Distinction
E	External
I	Internal

(3) Feed Direction	
Symbol	Feed Direction
R	Right Hand

(4) Pitch or TPI

With Wiper Edge	Metric = Pitch x 100 Inch=TPI (115 only for 11.5) (Example) 075: Pitch 0.75mm 150: Pitch 1.5mm 20: 20TPI

Without Wiper Edge	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

(5) Thread type

Wiper Edge	Symbol	Type
Yes	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
No	60	60° General-purpose Thread
	55	55° General-purpose Thread

(6) Chipbreaker	
Symbol	Description
CB	With Chipbreaker

SSTE type/SSTI type

Internal

SSTI type Guidelines for Depth of Cut and No. of Passes F109

Fig 1

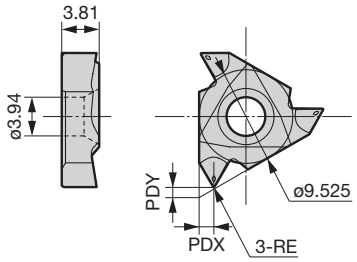
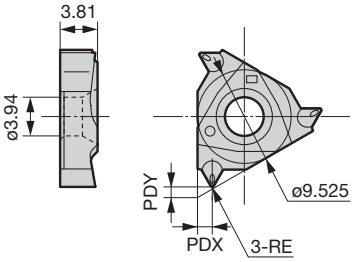


Fig 2



(Coated Carbide)

60°/55° General-purpose Threads (Without Wiper Edge)

Dimensions (mm)

Thread Ridge Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius	Pcs/ Pack	Fig
			mm	Threads/Inch	PDX	PDY	RE		
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° ISO Metric Thread (With Wiper Edge)

Dimensions (mm)

Thread Ridge Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius	Pcs/ Pack	Fig
			mm	Threads/Inch	PDX	PDY	RE		
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

60° Unified Thread (With Wiper Edge)

Dimensions (mm)

Thread Ridge Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius	Pcs/ Pack	Fig
			mm	Threads/Inch	PDX	PDY	RE		
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

55° Parallel Thread for Pipe/Whitworth (With Wiper Edge)

Dimensions (mm)

Thread Ridge Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius	Pcs/ Pack	Fig
			mm	Threads/Inch	PDX	PDY	RE		
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

60° American NPT (With Wiper Edge)

Dimensions (mm)

Thread Ridge Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius	Pcs/ Pack	Fig
			mm	Threads/Inch	PDX	PDY	RE		
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

55° Taper Thread for Pipe/BSPT (With Wiper Edge)

Dimensions (mm)

Thread Ridge Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius	Pcs/ Pack	Fig
			mm	Threads/Inch	PDX	PDY	RE		
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 Edge)

Dimensions (mm)

Thread Ridge Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius	Pcs/ Pack	Fig
			mm	Threads/Inch	PDX	PDY	RE		
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° UNJ (With Wiper Edge)

Dimensions (mm)

Thread Ridge Angle	Cat. No.	AC530U	Pitch		X Direction	Y Direction	Corner Radius	Pcs/ Pack	Fig
			mm	Threads/Inch	PDX	PDY	RE		
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

Insert Identification Code

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

(1) Insert Size

Symbol	Inscribed Circle (mm)
16	9.525

(2) External/Internal

Symbol	Distinction
E	External
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

	Symbol	Pitch/TPI
With Wiper Edge	A	Pitch : 0.5 to 1.5mm TPI : 16 to 48
Without Wiper Edge	AG	Pitch : 0.5 to 3.0mm TPI : 8 to 48
	G	Pitch : 2.0 to 3.0mm TPI : 8 to 14

(5) Thread type

Wiper Edge	Symbol	Type
Yes	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
No	60	60° General-purpose Thread
	55	55° General-purpose Thread

(6) Chipbreaker

Symbol	Description
CB	With Chipbreaker

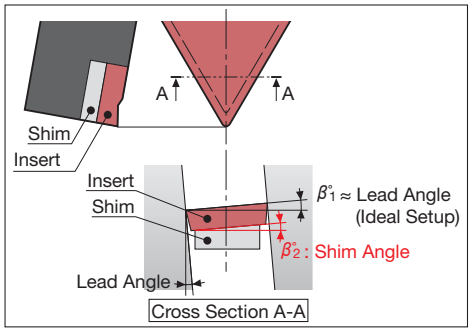
For these inserts, only SSTI type holders can be used.

SSTE type/SSTI type

■ 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.

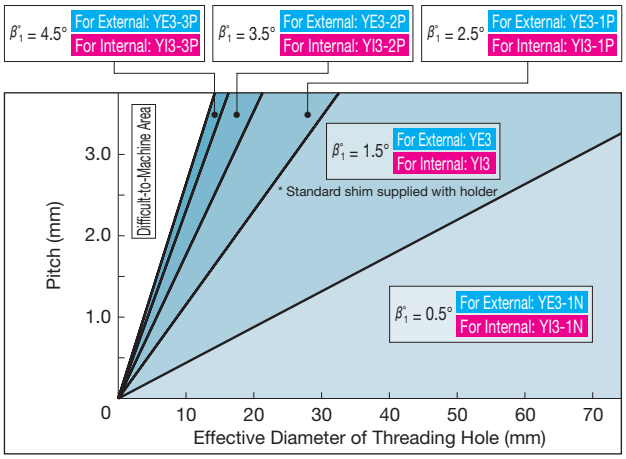
Therefore, it is necessary to select an appropriate shim based on the thread pitch and effective diameter using the table below.



■ 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 turning an M16×2.0 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 Turning	YE3-3P	YE3-2P	YE3-1P	**YE3***	YE3-1N	YE3-2N	YE3-3N
	Internal Boring	YI3-3P	YI3-2P	YI3-1P	**YI3***	YI3-1N	YI3-2N	YI3-3N
	Shim Angle (β'_1)	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)

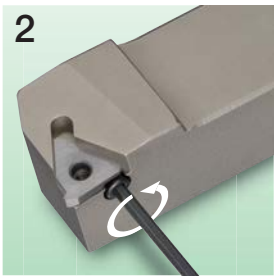
Right-hand/Left-hand Thread		For Right-hand Thread					For Left-hand Thread	
Lead Angle		4.5°	3.5°	2.5°	1.5°	0.5°	-0.5°	-1.5°
Shim	External Turning	YE3-3P	YE3-2P	YE3-1P	**YE3***	YE3-1N	YE3-2N	YE3-3N
	Internal Boring	YI3-3P	YI3-2P	YI3-1P	**YI3***	YI3-1N	YI3-2N	YI3-3N
	Shim Angle (β'_1)	3°	2°	1°	0°	-1°	-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 β'_1 = 1.5° (SSTE type: YE3, SSTI type: YI3).
Shims for lead angles of β'_1 = -1.5°, -0.5°, 0.5°, 2.5°, 3.5°, 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

Remove the insert to expose the shim.

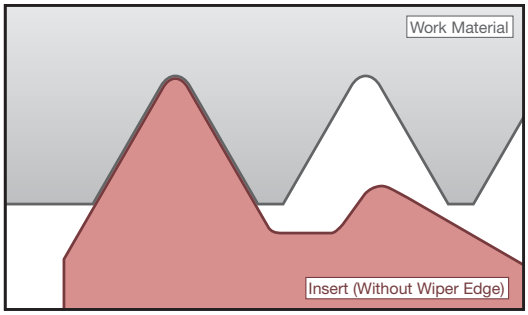
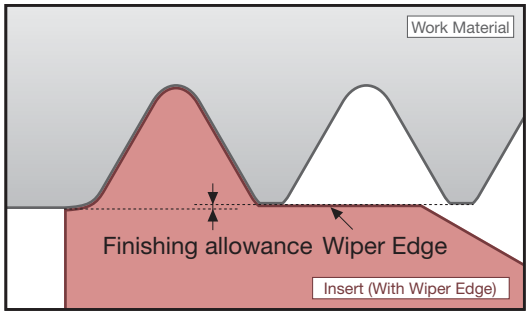


Loosen the shim set screw by one to two turns.

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 Edge

Without Wiper Edge	With Wiper Edge
	
· 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.	· Enables turning 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 edge, a finishing allowance of 0.1mm on each side is required. · Edges of ridges can be rounded off.

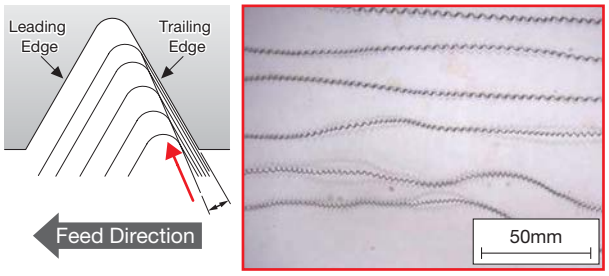
■ Infeed Method

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

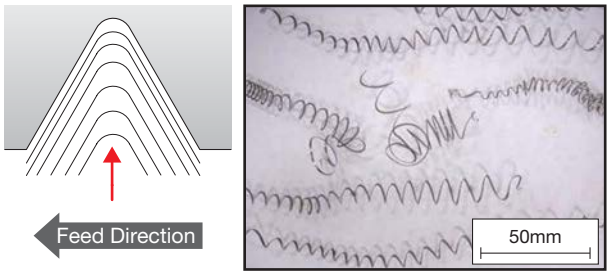
Work Material: SUS316, M30 x 1.5 Cutting Conditions: vc = 60m/min Wet, 8 Passes

Modified Flank Infeed



Reduced curl diameters ensure smooth, stable chip control (performance).

Radial Infeed Machining



Large curl diameters cause unstable chip control.

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 edge, 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 vc (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

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 edge, 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 vc (m/min)	75 to 150	75 to 135	60 to 120	90 to 180	75 to 135	24 to 90

STH series

External

External Turning
Screw-on

M Metric Thread
W Whitworth Thread

SumiSmall

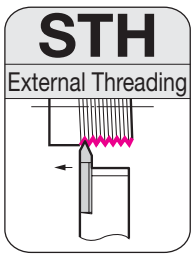


Fig 1

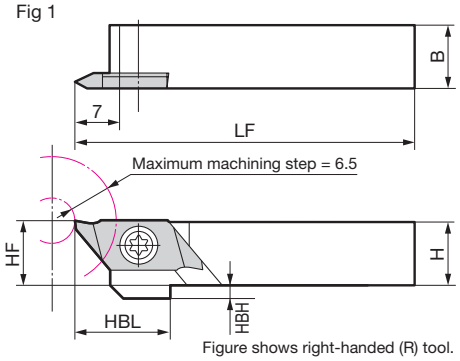


Figure shows right-handed (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock R	Stock L	Height H	Width B	Overall Length LF	Cutting Edge Height HF	Step HBH	Bottom Offset HBL	Applicable Insert	Fig	Flat Head Screw	Wrench
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	BFTX0412NTW	
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 R	ACZ150 L	Pitch mm	Pitch Threads/Inch	Overall Length L	Height W1	Corner Radius RE	X Direction PDX	Included Angle PNA	Cutting Edge Shape	Applicable Holder	Fig
TH R/L6002075A	●	●	0.20 to 0.75	—	20	8	—	0.40	60	(A)	STH type	1
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
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
TH R/L550515B	●	●	0.529 to 1.58	48 to 16	20	8	0.05	0.80	55	(B)		2

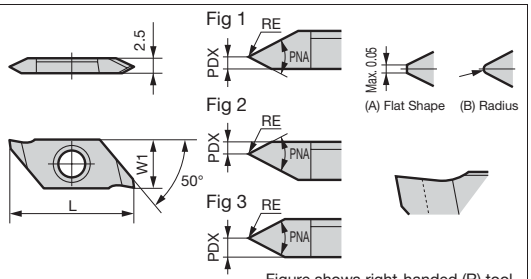
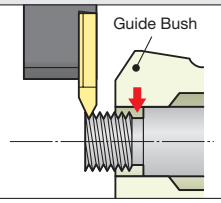
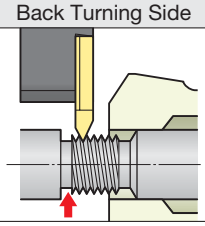
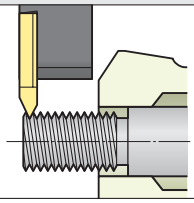
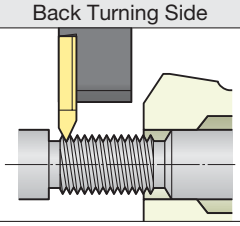


Figure shows right-handed (R) tool.

Recommended Cutting Conditions A24

Holder/Insert Combinations

Feed Direction	Right-handed		Left-handed	
Cutting Edge Position	Guide Bush Side	Back Turning Side	Guide Bush Side	Back Turning Side
Turning Condition				
Holders	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	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.)	

GME-TH series

External

Clamp-on
for Large External Pitch

M Metric Thread
W Whitworth Thread

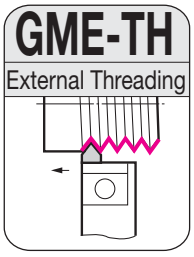


Fig 1

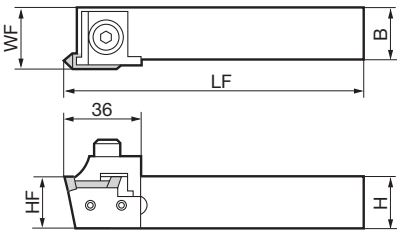


Figure shows right-handed (R) tool.

Holder

Parts

Dimensions (mm)

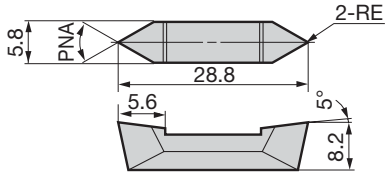
Cat. No.	Stock R	Stock L	Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Fig	Clamp Plate	Support	Cap Screw	Wrench
GME R/L2525TH			25	25	144.7	29.3	25	1	GTC R/L	GT R/L	BX0414 (For Support) BX0820 (For Clamp Plate)	LH030 (For Support) LH060 (For Clamp Plate)
GME R/L2525THL			25	25	150.0	29.3	25	1				
GME R/L3232TH			32	32	170.0	36.3	32	1				

Inserts (Cemented Carbide)

Dimensions (mm)

Cat. No.	ST20E	A30	G10E	Pitch mm	Pitch Threads/Inch	Thread Ridge PNA	Corner Radius RE	Fig
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

Fig 1



Recommended Cutting Conditions

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

Note: The values in red have been changed from those in the 2021-2022 General Catalogue.

SEC-External Threading Tool Holders LTE series

External

External Turning
Screw-on / Lever Lock

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

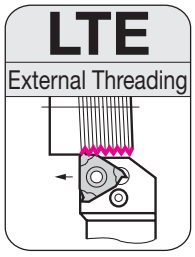
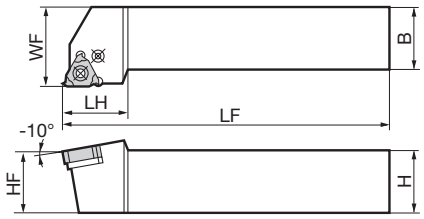


Fig 1



Holder

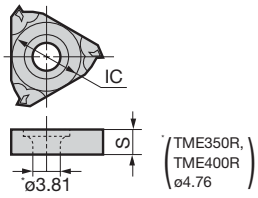
Parts

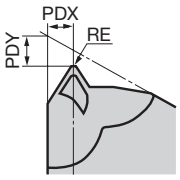
Dimensions (mm)

Cat. No.	Stock	Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Fig	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					
LTE R2525M22	●	25	25	150	32	25	28	1	LCL4S	LCS4	LSTE42-0	LSP4	LH030
LTE R3232P22	●	32	32	170	40	32	28	1					

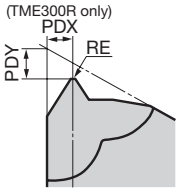
Refer to F119 for shim selection.

Fig 1





Close-up of Cutting Edge



Close-up of Cutting Edge

Inserts (Cermet)

Dimensions (mm)

Type	Cat. No.	Reference Cat. No.	Pitch mm	Pitch Threads/Inch	T1500A	T130A	Corner Radius RE	X Direction PDX	Y Direction PDY	Inscribed Circle IC	Thickness S	Wiper Edge	Applicable Holder	Fig
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
	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	LTE R2020 LTE R2525	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.

SEC-External Threading Tool Holders STE series

External

External Turning
Screw-on / Lever Lock

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

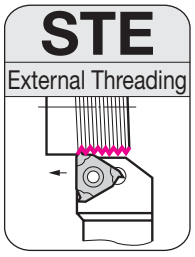
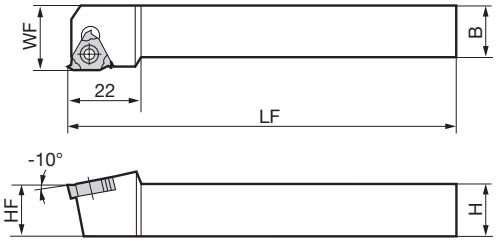


Fig 1



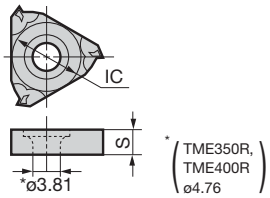
Holder

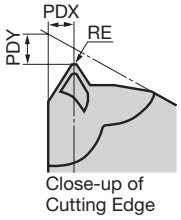
Parts

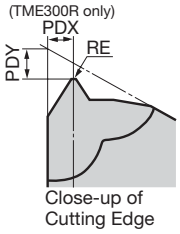
Dimensions (mm)

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

Fig 1







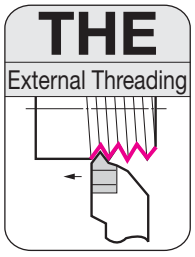
Inserts (Cermet)

Dimensions (mm)

Type	Cat. No.	Reference Cat. No.	Pitch mm	Pitch Threads/Inch	T1500A	T130A	Corner Radius RE	X Direction PDX	Y Direction PDY	Inscribed Circle IC	Thickness S	Wiper Edge	Applicable Holder	Fig
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.

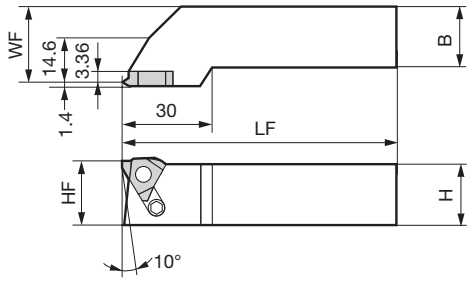
External



External Turning
Screw-on / Drawing Pin

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

Fig 1



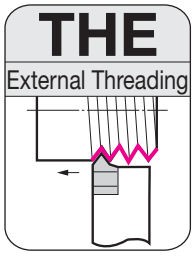
Holder

Parts

Dimensions (mm)

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

External

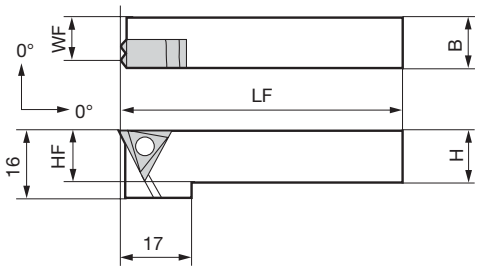


Screw-on / Drawing Pin for SEC-External Diameter (Mini Holders)

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

SumiSmall

Fig 1



Holder

Parts

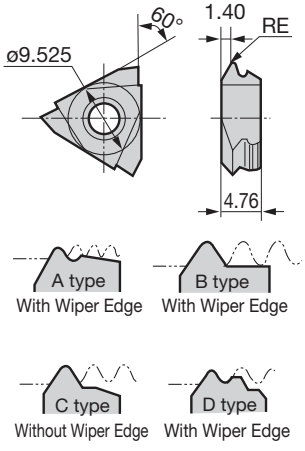
Dimensions (mm)

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

Inserts (Cermet / Cemented Carbide)

Dimensions (mm)

Cat. No.	T1500A	ST10P	A30	Pitch mm	Pitch Threads/Inch	Corner Radius RE	Included Angle PNA	Cutting edge design	Applicable Holder
NE R080		●	●	0.80	—	0.08	60	A	THE R-33 THE R-44 THE R1010-33 THE R1212-33
NE R100		●	●	1.00	—	0.11	60	A	
NE R125		●	●	1.25	—	0.15	60	B	
NE R150		●	●	1.50	—	0.18	60	B	
NE R175		●	●	1.75	—	0.22	60	B	
NE R200		●	●	2.00	—	0.25	60	B	
NE R250		●	●	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 series

Internal

Internal Boring
Screw-on

M Metric Thread
UNC/UNF Unified Thread

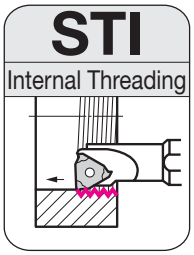
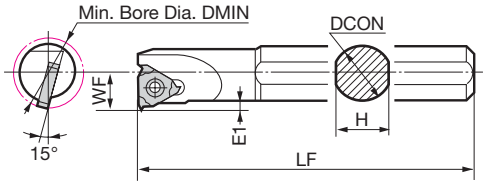


Fig 1



Holder

Parts

Dimensions (mm)

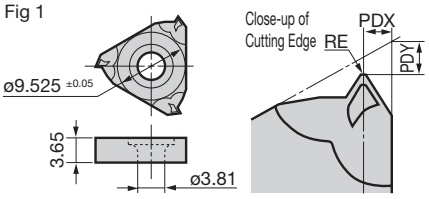
Cat. No.	Stock	Diameter DCON	Height H	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Distance E1	Min. Bore Dia. DMIN	Fig	Flat Head Screw	N·m	Wrench
STI R316	●	16	15	150	11	3.5	20	1	BFTX03508	2.0	TRX10
STI R320	●	20	18	180	14	5.0	25	1			

Inserts (Cermet)

Dimensions (mm)

Cat. No.	Reference Cat. No.	Pitch mm	Pitch Threads/Inch	T1500A	Corner Radius RE	Included Angle PNA	X Direction PDX	Y Direction PDY	Fig
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

Fig 1



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

STHI series

Internal

Internal Boring
Screw-on

M Metric Thread

SumiSmall

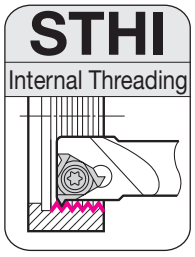
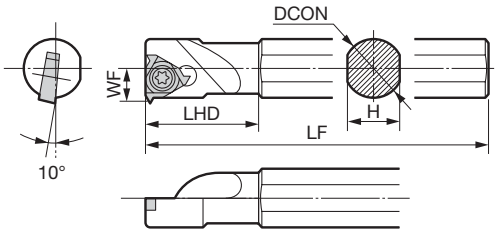


Fig 1



Holder

Parts

Dimensions (mm)

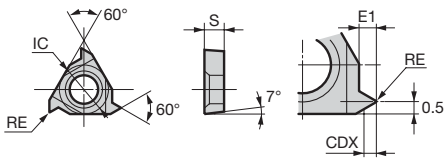
Cat. No.	Stock	Diameter DCON	Height H	Overall Length LF	Cutting Edge Distance WF	Head LHD	Min. Bore Dia.	Applicable Insert	Fig	Flat Head Screw	Wrench
STHI 06	●	6	5.5	100	3.8	13.0	8.0	TI R06	1	BFTX0204NS	RT06
STHI 08	●	8	7.0	125	4.7	17.0	10.0	TI R08	1	BFTX0205NS	
STHI 10	●	10	9.0	150	6.0	20.0	12.0	TI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

Insert (Coated Carbide)

Dimensions (mm)

Cat. No.	Reference Cat. No.	ACZ150	Pitch (mm)	Corner Radius RE	Inscribed Circle IC	Thickness S	Cutting Edge Distance E1	Maximum Depth of Cut CDX	Applicable Holder	Fig
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

Fig 1



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

Recommended Cutting Conditions A24

THI series

Internal

Internal Boring
Clamp-on

M Metric Thread

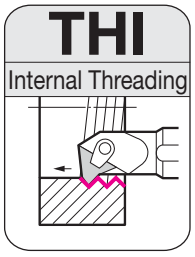
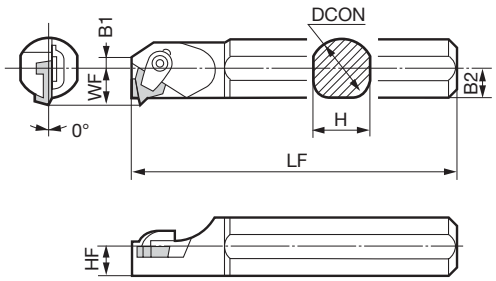


Fig 1



Holder

Parts

Dimensions (mm)

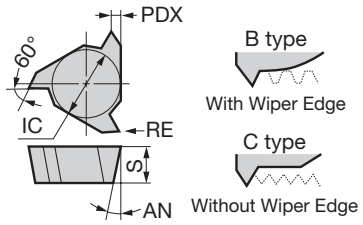
Cat. No.	Stock	Diameter DCON	Height H	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Width B1	Width B2	Min. Pilot Hole Diameter	Applicable Insert	Fig	Clamp Plate	Double Screw	Wrench
THI R216	●	16	15	160	9.3	7.5	4	7.5	ø18	NI R2○○○	1	CCM5BSL	WB5-10	TH025
THI R320	●	20	18	160	11.7	9.0	6	9.0	ø22	NI R3○○○	1		WB5-12	
THI R325	●	25	23	180	14.2	11.5	5	11.5	ø27	NI R3○○○	1	CCM6BL	WB6-16	LH030

Inserts (□ Cemented Carbide)

Dimensions (mm)

Cat. No.	ST10P	Pitch (mm)	Inscribed Circle IC	Thickness S	X Direction PDX	Corner Radius RE	Main Blade Relief Angle AN	Cutting edge design	Applicable Holder	Fig
NI R2000	●	0.8 to 1.5	6.350	3.18	0.85	0.05	12	C	THI R216	1
NI R2150	●	1.5	6.350	3.18	0.85	0.07	12	B		1
NI R3000	●	0.8 to 2.5	9.525	3.18	1.35	0.05	10	C	THI R320	1
NI R3150	●	1.5	9.525	3.18	0.85	0.07	10	B	THI R325	1
NI R3200	●	2.0	9.525	3.18	1.10	0.11	10	B		1

Fig 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.

Guide to Depth of Cut and No. of Passes

Threading Tool Depth of Cut Guide

■ With Wiper Edge

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 Threading	**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 Threading	**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 Threading	**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 Threading	**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 edge, the number of passes should be increased.

■ Recommended Cutting Speeds

(Units: m/min)

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

Guide to Depth of Cut and No. of Passes

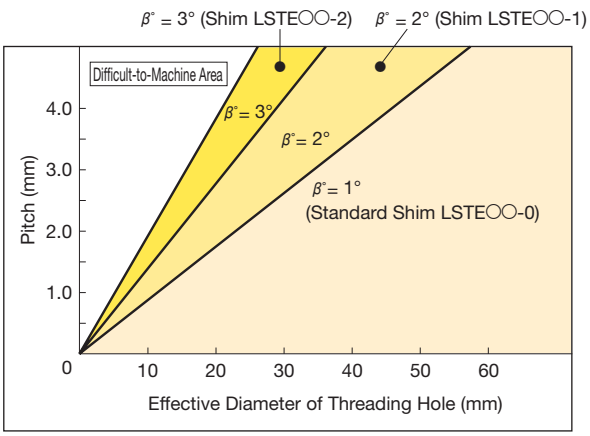
Threading Tool Depth of Cut Guide

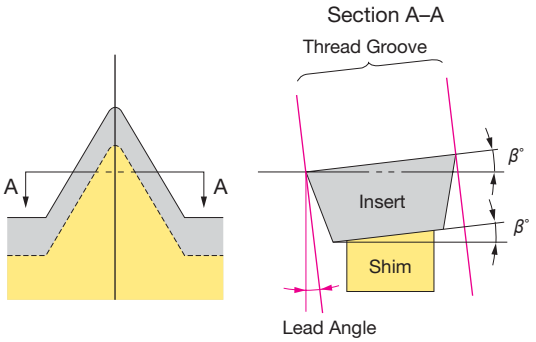
■ Without Wiper Edge

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 Threading	**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				
		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
	Internal Threading	**TMI 1020R**	16IR 102060-TI	0.06	1.00mm	0.59	6	0.16	0.12	0.10	0.08	0.08	0.05								
					1.25	0.75	7	0.16	0.14	0.12	0.10	0.10	0.08	0.05							
					1.50	0.92	8	0.18	0.15	0.14	0.12	0.10	0.10	0.08	0.05						
					1.75	1.08	9	0.18	0.16	0.14	0.13	0.12	0.12	0.10	0.08	0.05					
					2.00	1.24	10	0.20	0.18	0.15	0.14	0.12	0.12	0.10	0.10	0.08	0.05				
		TMI 1530R	16IR 153060-TI	0.09	1.50mm	0.91	8	0.18	0.14	0.14	0.12	0.10	0.10	0.08	0.05						
					1.75	1.07	9	0.18	0.16	0.13	0.13	0.12	0.12	0.10	0.08	0.05					
					2.00	1.23	10	0.20	0.18	0.14	0.14	0.12	0.12	0.10	0.10	0.08	0.05				
					2.50	1.56	12	0.20	0.18	0.16	0.16	0.15	0.13	0.13	0.11	0.11	0.10	0.08	0.05		
					3.00	1.88	14	0.22	0.20	0.18	0.18	0.16	0.16	0.14	0.14	0.10	0.10	0.10	0.08	0.07	0.05
55° Whitworth Thread	External Threading	**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						
		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 edge, 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.