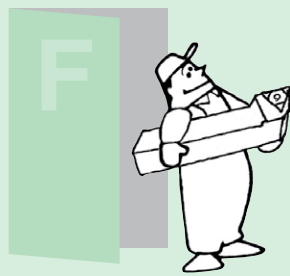


Threading Tools

F47 to F69

F



F

Threading Tools

Grooving

Cut-Off

Threading

| | | |
|-----------------|---------------------------------|--|
| Threading Tools | External and Internal Threading | SEC-Threading Tool Series Selection Guide F48 |
| | | Basics of Threads F51 |
| | External Threading | SSTE/SSTI Type F52 |
| | | SSTE/SSTI Type Threading Process Guide F58 |
| | | STH Type (Small Pitch) F60 |
| | | GME-TH Type (Large Pitch) F61 |
| | | LTE Type (General Purpose) F62 |
| | Internal Threading | STE Type (General Purpose) F63 |
| | | THE Type (General Purpose) F64 |
| | | THE Type (SEC-MINI Tool Holder) F64 |
| | | STI Type (General Purpose) F65 |
| | | STHI Type (General Purpose) F66 |
| | | THI Type (General Purpose) F66 |
| | | SEC-Threading Tool Threading Process Guide F68 |

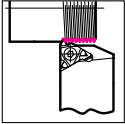
Stock Indications and Symbols

- mark: Standard stocked item
- mark: To be replaced by a new item featured on the same page
- ▲ mark: To be replaced by new item
(Please confirm stock availability)

- * mark: Semi-standard stock (Please confirm stock availability)
- mark: Stock or planned stock (Please confirm stock availability)
- No mark: Made-to-order item
- mark: We cannot produce

Selection Guide

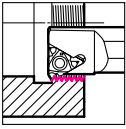
External Threading



| Application | General Industrial | | | | Pipe Coupling for Gas, Water, and Water Faucets | | Pipe Threads for Steam, Gas, and Water Supply Pipes | | Aeronautic Equipment |
|--------------------------------|----------------------------|--------------------------------------|--|---|---|-----------------------|---|--------------------|--|
| Thread Shape | | | | | | | | | |
| Type | 60° General Purpose Thread | 55° General Purpose Thread Whitworth | 60° Metric Thread | 60° Unified Thread | 55° Parallel Thread for Pipes Whitworth | 60° US NPT | 55° BSPT Tapered for Pipes | 60° US NPTF | 60° UNJ |
| Symbol | M UNC/UNF | W | M | UNC/UNF | G/Rp/W | NPT | R/Rc | NPTF | UNJ |
| Pitch | mm TPI | TPI | mm | TPI | TPI | TPI | TPI | TPI | TPI |
| Wiper Edge | None | None | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| SSTE Type →F52 | 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 →F62 | 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 →F63 | 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 →F64 | 0.80 to 3.00 24 to 10 | 24 to 10 | 0.80, 1.00, 1.25 1.50, 1.75, 2.00 2.50 | — | 28, 19 | — | — | — | — |
| GME-TH Type →F61 | 3.00 to 6.00 11 to 4.5 | — | — | — | — | — | — | — | — |
| STH Type →F60 | 0.20 to 1.50 48 to 16 | — | — | — | — | — | — | — | — |

Selection Guide


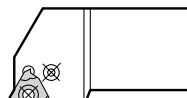
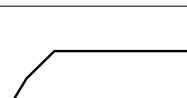
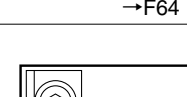
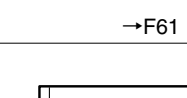
Internal Threading



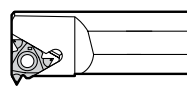


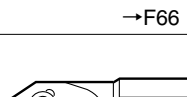
| Application | General Industrial | | | | Pipe Coupling for Gas, Water, and Water Faucets | Pipe Threads for Steam, Gas, and Water Supply Pipes | | Aeronautic Equipment | |
|----------------|-------------------------|--------------|--|---|---|---|--------------|-----------------------|--|
| | Thread Shape | Thread Shape | Thread Shape | Thread Shape | Thread Shape | Thread Shape | Thread Shape | Thread Shape | |
| Type | | | | | | | | | |
| Symbol | M UNC/UNF | W | M | UNC/UNF | G/Rp/W | NPT | R/Rc | NPTF | UNJ |
| Pitch | mm TPI | TPI | mm | TPI | TPI | TPI | TPI | TPI | TPI |
| Wiper Edge | None | None | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| SSTI Type →F52 | 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 →F65 | 1.00 to 3.00 24 to 8 | — | 1.00, 1.25, 1.50 1.75, 2.00, 2.50 3.00 | — | — | — | — | — | — |
| STHI Type →F66 | 0.40 to 1.00 | — | — | — | — | — | — | — | — |
| THI Type →F66 | 0.80 to 2.50 | — | 1.50, 2.00 | — | — | — | — | — | — |

SEC- Threading Tools Product Range

External Threading Tools

| Type | Appearance | Structure | | | | Characteristics | Applicable Thread Symbol | |
|----------------|---|-----------|----------|------------|-------------|--|--------------------------|---|
| | | Screw-on | Clamp-on | Lever Lock | Drawing Pin | | M | W |
| SSTE |  →F52 | ● | | | | <ul style="list-style-type: none"> Flat-mounted 3-cornered insert. Polished cutting edge flank produces superior surface finish with sharp cutting edge Stable chip evacuation through use of a 3-D moulded breaker Large lineup of inserts with wiper edge | M | W |
| | | | | | | UNC/UNF | G/Rp/W | |
| | | | | | | NPT | R/Rc | |
| | | | | | | NPTF | UNJ | |
| LTE/STE |  →F62/F63 | ● | ● | | | <ul style="list-style-type: none"> Lineup of lever lock holders with strong clamping force (shank size □25 to 32mm) and screw-on type holders (shank size □12 to 16mm) 3-cornered, M-Class flat-mounted insert makes threading economical Cermet grades available Stable chip evacuation with incorporated chipbreaker | M | W |
| | | | | | | UNC/UNF | G/Rp/W | |
| | | | | | | NPT | R/Rc | |
| | | | | | | NPTF | UNJ | |
| THE |  →F64 | ● | | ● | | <ul style="list-style-type: none"> 3-cornered, G-Class inserts tangentially mounted with sharp cutting edges □20mm and □25mm are strong drawing pin type, and □12mm and □16mm are screw-on type Lineup of cermet grades for inserts without wiper edge | M | W |
| | | | | | | UNC/UNF | G/Rp/W | |
| | | | | | | NPT | R/Rc | |
| | | | | | | NPTF | UNJ | |
| GME-TH |  →F61 | | ● | | | <ul style="list-style-type: none"> 2-cornered insert for large-pitch threading of 3 - 6mm Lineup of 11 - 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 |  →F60 | | | ● | | <ul style="list-style-type: none"> For a small lathe with shank size of □20mm or less 2-cornered, tangentially-mounted insert makes space-saving threading possible Applicable also for back-turning threading with bar feeder Applicable also for small pitch (min. 0.2mm) threading | M | W |
| | | | | | | UNC/UNF | G/Rp/W | |
| | | | | | | NPT | R/Rc | |
| | | | | | | NPTF | UNJ | |

Internal Threading Tools

| Type | Appearance | Structure | | | | Characteristics | Applicable Thread Symbol | |
|-------------|---|-----------|----------|------------|-------------|--|--------------------------|---|
| | | Screw-on | Clamp-on | Lever Lock | Drawing Pin | | M | W |
| SSTI |  →F52 | ● | | | | <ul style="list-style-type: none"> Flat-mounted 3-cornered insert. Polished cutting edge flank produces superior surface finish with sharp cutting edge Stable chip evacuation through use of a 3-D moulded breaker Large lineup of inserts with wiper edge | M | W |
| | | | | | | UNC/UNF | G/Rp/W | |
| | | | | | | NPT | R/Rc | |
| | | | | | | NPTF | UNJ | |
| STI |  →F65 | ● | | | | <ul style="list-style-type: none"> 3-cornered, M-Class flat-mounted insert makes threading economical Stable chip evacuation with incorporated chipbreaker Cermet grades available | M | W |
| | | | | | | UNC/UNF | G/Rp/W | |
| | | | | | | NPT | R/Rc | |
| | | | | | | NPTF | UNJ | |
| STHI |  →F66 | ● | | | | <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 | M | W |
| | | | | | | UNC/UNF | G/Rp/W | |
| | | | | | | NPT | R/Rc | |
| | | | | | | NPTF | UNJ | |
| THI |  →F66 | | ● | | | <ul style="list-style-type: none"> 3-cornered, G-Class inserts with sharp edges | M | W |
| | | | | | | UNC/UNF | G/Rp/W | |
| | | | | | | NPT | R/Rc | |
| | | | | | | NPTF | UNJ | |

Basics of Threads

Parts of a Thread

Male **Female** **Lead Angle**

Pitch Diameter (d) : Diameter of imaginary cylinder that passes through thread at point where groove and ridge widths are equal
 Pitch (P) : Distance between two ridges adjacent to each other
 Lead (l) : Distance a screw thread advances 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 at a pitch diameter with a plane perpendicular to the axis

Lead Angle Calculation

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

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

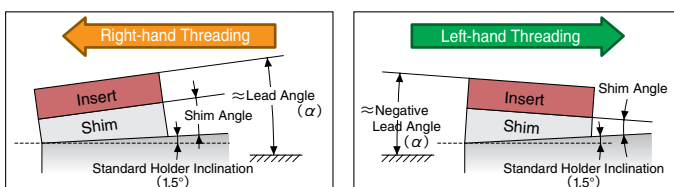
Main Thread Types and Basic Profile

| Application | Symbol | Basic Profile | Application | Symbol | Basic Profile | Application | Symbol | Basic Profile | Application | Symbol | Basic Profile |
|------------------|--------------------------------------|---------------|---------------------------------|--|---------------|----------------------|---|---------------|----------------------|--|---------------|
| Metric Thread | M | | Parallel Pipe Thread | Female G(PF) Male G(PF) | | Taper Pipe Thread | Female Rc(PT) (BSPT) Male R(PT) (BSPT) | | Unified Thread | UN UNC UNF UNEF | |
| Whitworth Thread | W BSW BSP | | Thread for Aeronautic Equipment | UNJ | | US Taper Pipe Thread | NPT | | US Taper Pipe Thread | NPTF | |

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

| | External Diameter (Spindle Rotation Forward) | Internal Diameter (Spindle Rotation Forward) | External Diameter (Spindle Rotation Backward) |
|----------------------|--|--|---|
| Right-hand Threading | | | |
| Left-hand Threading | | | |

Threading Method and Angle of Insert

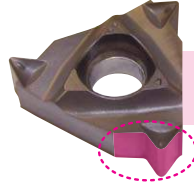


SSTE/SSTI Type



Characteristics

- Large-scale addition of high precision wiper edge inserts for threading. Catering to a wide range of application requirements from general industries and pipes to aerospace components.
- Stable chip evacuation through use of a 3-D moulded breaker.
- Flank faces of the cutting edges are polished to achieve high quality threads.



Polished flank faces around the cutting edge achieve high quality threads.

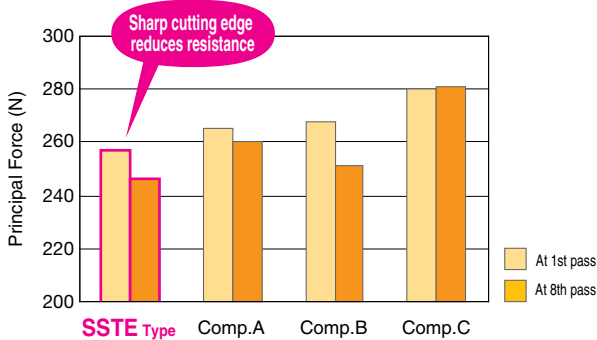
Product Range

| Application | Type | Wiper Edge | External/Internal | Pitch | | Insert Cat. No. (Ex.) |
|---|---|------------|-------------------|------------|--------------------|-----------------------|
| | | | | Pitch (mm) | TPI (Threads/Inch) | |
| General Industries | 60° General Purpose Thread | None | External | 0.5 - 3.0 | 48 to 8 | 16ER A60-CB |
| | | | Internal | 0.5 - 3.0 | 48 to 8 | 16IR A60-CB |
| | External | | | 48 to 8 | 16ER A55-CB | |
| | Internal | | | 48 to 8 | 16IR A55-CB | |
| | 60° ISO Metric Thread | External | 0.75 - 3.0 | | | 16ER 075ISO-CB |
| | | Internal | 0.75 - 3.0 | | | 16IR 075ISO-CB |
| | Unified Thread 60° | External | | | | 16ER 32UN-CB |
| | | Internal | | | | 16IR 32UN-CB |
| Pipe Coupling for Gas, Water, and Water Faucets | 55° Parallel Thread for Pipes/Whitworth | Yes | External | | | 16ER 36W-CB |
| | Internal | | | | 16IR 28W-CB | |
| 60° US NPT | External | | | | | 16ER 27NPT-CB |
| | Internal | | | | | 16IR 27NPT-CB |
| Pipe Threads for Steam, Gas, and Water Supply Pipes | 55° Tapered for Pipes/BSPT | External | | | 16ER 28BSPT-CB | |
| | | Internal | | | 16IR 28BSPT-CB | |
| | 60° US NPTF | External | | | | 16ER 27NPTF-CB |
| | | Internal | | | | 16IR 27NPTF-CB |
| Aerospace Components | UNJ 60° | External | | | 16ER 32UNJ-CB | |
| | | Internal | | | 16IR 32UNJ-CB | |

Threading Tools

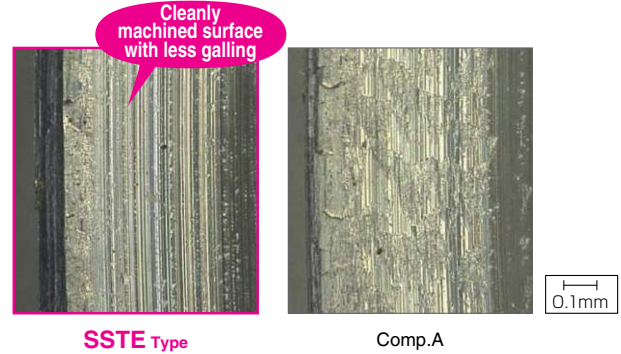
Application Examples

Cutting Resistance Comparison



Work Material: S45C M30×1.5
Cutting Conditions: $v_c=150\text{m/min}$ Wet 8 passes Threading Method: Radial Infeed

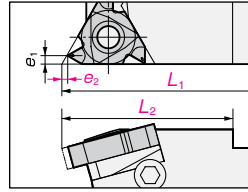
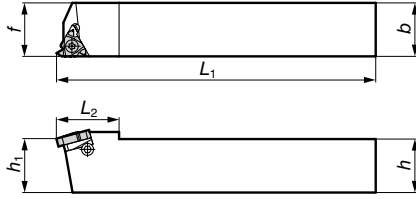
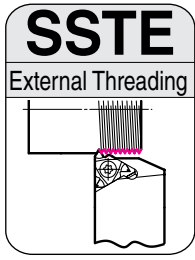
Machined Surface Comparison



Work Material: S45C M30×1.5
Cutting Conditions: $v_c=150\text{m/min}$ Wet 8 passes Threading Method: Radial Infeed

SEC-Threading Tools SSTE/SSTI Type

External



The values for dimensions L_1 and L_2 below are only for reference. The actual values are the values below minus the e_2 value for the corresponding insert on page F54.

■ Holders

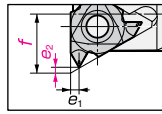
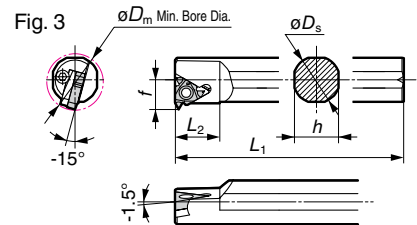
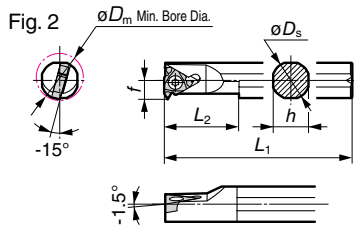
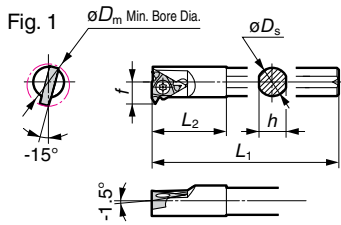
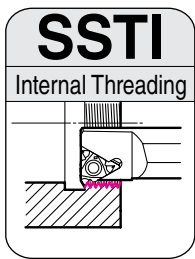
| Cat. No. | Stock | Dimensions (mm) | | | | | |
|---------------|-------|-----------------|-----|-------|-------|-----|-------|
| | | h | b | L_1 | L_2 | f | h_1 |
| SSTE R1616H16 | ● | 16 | 16 | 100 | 20.5 | 16 | 16 |
| SSTE R2020K16 | ● | 20 | 20 | 125 | 30.0 | 20 | 20 |
| SSTE R2525M16 | ● | 25 | 25 | 150 | 30.0 | 25 | 25 |

■ Spare Parts

| Screw | Recommended Tightening Torque (N·m) | Shim Stopper Screw | Shim | Spanner |
|-----------|-------------------------------------|--------------------|------|---------|
| BFTX0312N | 2.0 | BX0304* 1 | YE3 | TRX10 |

* 1 The spanner for shim stopper screws is sold separately.

Internal



The values for dimension f below are only for reference. The actual values are the values below minus the e_2 value for the corresponding insert on page F55.

■ Holders

| Cat. No. | Stock | Dimensions (mm) | | | | | | Fig. | Min. Bore Dia. * 2 |
|------------------|-------|-----------------|------|-------|-------|------|--------|------|--------------------|
| | | $øD_s$ | h | L_1 | L_2 | f | $øD_m$ | | |
| SSTI R1812M16* 3 | ● | 12 | 11.0 | 150 | 32.0 | 10.2 | 1 | 18 | |
| SSTI R2016M16* 3 | ● | 16 | 15.0 | 150 | 63.5 | 9.2 | 2 | 20 | |
| SSTI R2420Q16 | ● | 20 | 18.0 | 180 | 19.0 | 13.5 | | 24 | |
| SSTI R3125S16 | ● | 25 | 23.0 | 250 | 14.3 | 16.5 | 3 | 31 | |
| SSTI R3732S16 | ● | 32 | 30.0 | 250 | 14.3 | 20.0 | | 37 | |

Note * The values in red have been changed from those in the 2013-2014 General Catalog.

■ Spare Parts

| Screw | Recommended Tightening Torque (N·m) | Shim Stopper Screw | Shim | Spanner |
|------------|-------------------------------------|--------------------|------|---------|
| BFTX03085N | 2.0 | — | — | — |
| BFTX0312N | 2.0 | BX0304* 1 | YI3 | TRX10 |

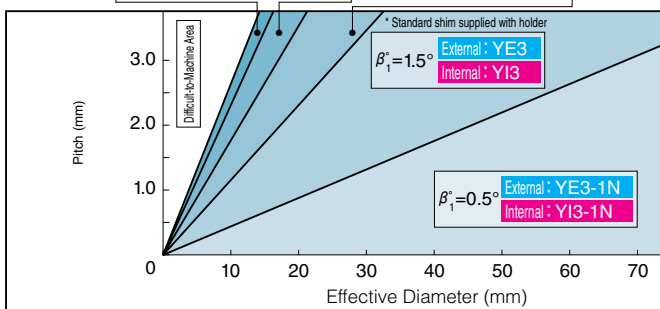
* 1 The spanner for shim stopper screws is sold separately. * 2 The minimum bore diameter is the diameter of the prepared hole. * 3 Left-hand threads are not available.

■ Shim Selection Criteria

| Application | Recommended Lead Angle (β) | External | | Internal | |
|-------------------|------------------------------------|----------|-------|----------|-------|
| | | 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 | ● |

* Standard shim supplied with holder

| | | | | | |
|-----------------------|--------------------------------------|-----------------------|--------------------------------------|-----------------------|--------------------------------------|
| $\beta_1 = 4.5^\circ$ | External: YE3-3P Internal: YI3-3P | $\beta_1 = 3.5^\circ$ | External: YE3-2P Internal: YI3-2P | $\beta_1 = 2.5^\circ$ | External: YE3-1P Internal: YI3-1P |
|-----------------------|--------------------------------------|-----------------------|--------------------------------------|-----------------------|--------------------------------------|



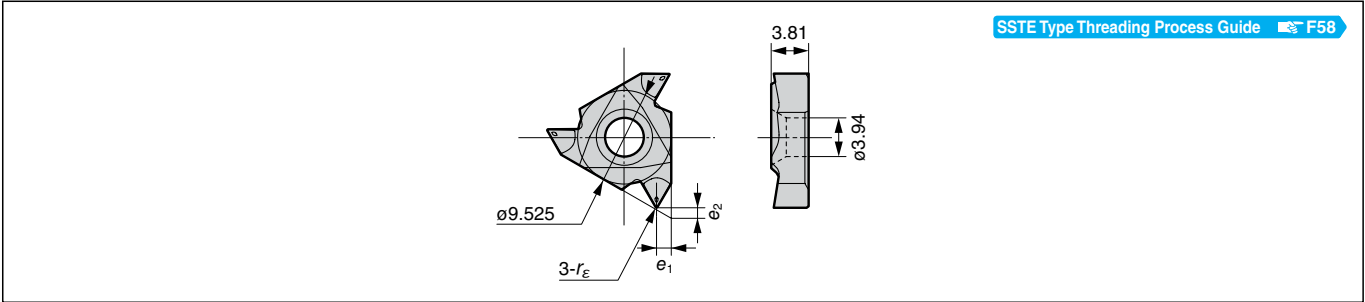
■ Holder Identification Code

(Ex.) **S S T E R 25 25 M 16**

| ① Series | ③ Feed Direction | ④ Shank Height Threading Dia. | ⑤ Shank Width Diameter | ⑥ Total Length Symbol | ⑦ Insert Size |
|---------------------|------------------------------------|--|---|--|-------------------------------------|
| SST Type | Symbol: R (Right Hand) | Symbol (mm): Shank Height: 16, 16 External: 20, 20 Internal: 25, 25 | Symbol (mm): Shank Width: 16, 16 External: 20, 20 Internal: 25, 25 | Symbol (mm): H: 100 K: 125 M: 150 Q: 180 S: 250 | Symbol: 16 Inserted Order: 9,525 |
| ② External/Internal | Symbol: E (External), I (Internal) | Symbol (mm): Shank Height: 18, 18 Internal: 20, 20 External: 24, 24 Internal: 31, 31 External: 37, 37 | Symbol (mm): Shank Width: 12, 12 Internal: 16, 16 External: 20, 20 Internal: 25, 25 External: 32, 32 | | |

Details on Shim Selection F56

Inserts (External Threading)



SSTE Type Threading Process Guide F58

60°/55° General Purpose Thread (Non-Wiper Insert)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./Pack |
|--------------|--------------|--------|-----------|---------|-----------------|----------------|----------------|-----------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 60° | 16ER A60-CB | ● | 0.5 - 1.5 | 16 - 48 | 0.8 | 0.6 | 0.09 | 5 |
| | 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 |
| | 16ER AG55-CB | ● | — | 8 - 48 | 1.5 | 1.1 | 0.08 | |
| | 16ER G55-CB | ● | — | 8 - 14 | 1.5 | 1.1 | 0.22 | |

60° US NPT (Wiper Edge)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./Pack |
|--------------|-----------------|--------|-------|------|-----------------|----------------|----------------|-----------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 60° | 16ER 27NPT-CB | ● | — | 27 | 0.8 | 0.6 | 0.06 | 5 |
| | 16ER 18NPT-CB | ● | — | 18 | 0.8 | 0.6 | 0.06 | |
| | 16ER 14NPT-CB | ● | — | 14 | 1.5 | 1.0 | 0.08 | |
| | 16ER 11.5NPT-CB | ● | — | 11.5 | 1.5 | 1.0 | 0.08 | |
| | 16ER 08NPT-CB | ● | — | 8 | 1.5 | 1.1 | 0.13 | |

55° Tapered for Pipes/BSPT (Wiper Edge)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./Pack |
|--------------|----------------|--------|-------|-----|-----------------|----------------|----------------|-----------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 55° | 16ER 28BSPT-CB | ● | — | 28 | 0.8 | 0.6 | 0.13 | 5 |
| | 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 | 0.32 | |

60° US NPTF (Wiper Edge)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./Pack |
|--------------|------------------|--------|-------|------|-----------------|----------------|----------------|-----------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 60° | 16ER 27NPTF-CB | ● | — | 27 | 0.8 | 0.6 | 0.06 | 5 |
| | 16ER 18NPTF-CB | ● | — | 18 | 0.8 | 0.6 | 0.06 | |
| | 16ER 14NPTF-CB | ● | — | 14 | 1.5 | 1.0 | 0.13 | |
| | 16ER 11.5NPTF-CB | ● | — | 11.5 | 1.5 | 1.0 | 0.12 | |

60° UNJ (Wiper Edge)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./Pack |
|--------------|---------------|--------|-------|-----|-----------------|----------------|----------------|-----------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 60° | 16ER 32UNJ-CB | ● | — | 32 | 0.5 | 1.0 | 0.13 | 5 |
| | 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 | |

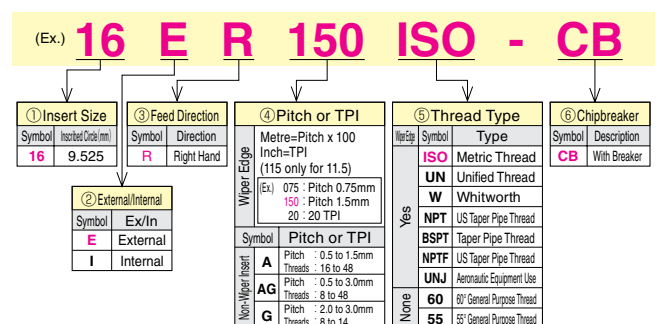
60° Unified Thread (Wiper Edge)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./Pack |
|--------------|--------------|--------|-------|-----|-----------------|----------------|----------------|-----------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 60° | 16ER 32UN-CB | ● | — | 32 | 0.5 | 1.0 | 0.10 | 5 |
| | 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 | | |

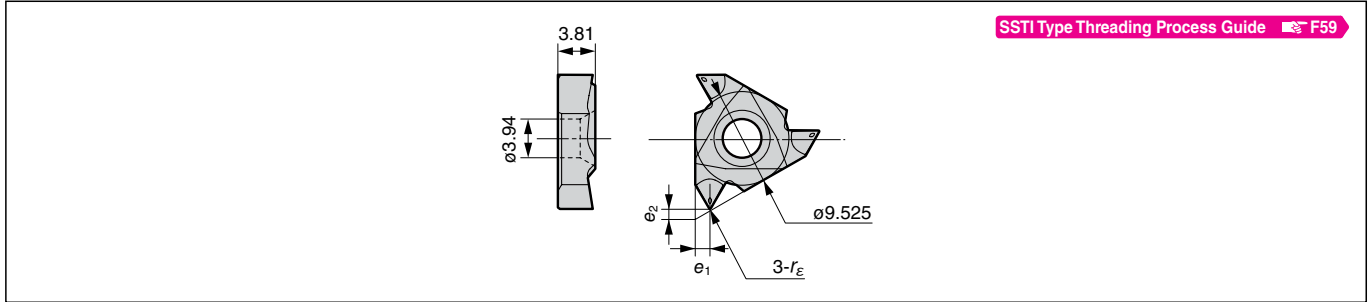
55° Parallel Thread for Pipes/Whitworth (Wiper Edge)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./Pack |
|--------------|-------------|--------|-------|-----|-----------------|----------------|----------------|-----------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 55° | 16ER 36W-CB | ● | — | 36 | 0.5 | 1.0 | 0.10 | 5 |
| | 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 Code



Inserts (Internal Threading)



SSTI Type Threading Process Guide F59

60°/55° General Purpose Thread (Non-Wiper Insert)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./ Pack |
|--------------|--------------|--------|-----------|---------|-----------------|----------------|----------------|------------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 60° | 16IR A60-CB | ● | 0.5 - 1.5 | 16 - 48 | 0.8 | 0.5 | 0.09 | 5 |
| | 16IR AG60-CB | ● | 0.5 - 3.0 | 8 - 48 | 1.5 | 1.1 | 0.10 | |
| | 16IR G60-CB | ● | 2.0 - 3.0 | 8 - 14 | 1.5 | 1.1 | 0.18 | |
| 55° | 16IR A55-CB | ● | — | 16 - 48 | 0.8 | 0.5 | 0.05 | 5 |
| | 16IR AG55-CB | ● | — | 8 - 48 | 1.5 | 1.1 | 0.08 | |
| | 16IR G55-CB | ● | — | 8 - 14 | 1.5 | 1.1 | 0.20 | |

60° US NPT (Wiper Edge)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./ Pack |
|--------------|----------------|--------|-------|------|-----------------|----------------|----------------|------------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 60° | 16IR 27NPT-CB | ● | — | 27 | 0.8 | 0.6 | 0.06 | 5 |
| | 16IR 18NPT-CB | ● | — | 18 | 0.8 | 0.6 | 0.06 | |
| | 16IR 14NPT-CB | ● | — | 14 | 1.5 | 1.1 | 0.08 | |
| | 16IR 115NPT-CB | ● | — | 11.5 | 1.5 | 1.0 | 0.08 | |
| | 16IR 08NPT-CB | ● | — | 8 | 1.5 | 1.0 | 0.13 | |

60° ISO Metric Threads (Wiper Edge)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./ Pack |
|--------------|-----------------|--------|-------|-----|-----------------|----------------|----------------|------------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 60° | 16IR 075 ISO-CB | ● | 0.75 | — | 0.5 | 0.9 | 0.04 | 5 |
| | 16IR 100 ISO-CB | ● | 1.00 | — | 0.8 | 0.6 | 0.06 | |
| | 16IR 125 ISO-CB | ● | 1.25 | — | 0.8 | 0.6 | 0.07 | |
| | 16IR 150 ISO-CB | ● | 1.50 | — | 0.8 | 0.6 | 0.09 | |
| | 16IR 175 ISO-CB | ● | 1.75 | — | 1.5 | 1.0 | 0.10 | |
| | 16IR 200 ISO-CB | ● | 2.00 | — | 1.5 | 1.1 | 0.13 | |
| | 16IR 250 ISO-CB | ● | 2.50 | — | 1.5 | 1.1 | 0.15 | |
| | 16IR 300 ISO-CB | ● | 3.00 | — | 1.5 | 1.1 | 0.19 | |

55° Tapered for Pipes/BSPT (Wiper Edge)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./ Pack |
|--------------|----------------|--------|-------|-----|-----------------|----------------|----------------|------------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 55° | 16IR 28BSPT-CB | ● | — | 28 | 0.8 | 0.6 | 0.13 | 5 |
| | 16IR 19BSPT-CB | ● | — | 19 | 0.8 | 0.6 | 0.18 | |

60° US NPTF (Wiper Edge)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./ Pack |
|--------------|-----------------|--------|-------|------|-----------------|----------------|----------------|------------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 60° | 16IR 27NPTF-CB | ● | — | 27 | 0.8 | 0.6 | 0.06 | 5 |
| | 16IR 18NPTF-CB | ● | — | 18 | 0.8 | 0.6 | 0.08 | |
| | 16IR 14NPTF-CB | ● | — | 14 | 1.5 | 1.0 | 0.13 | |
| | 16IR 115NPTF-CB | ● | — | 11.5 | 1.5 | 1.0 | 0.08 | |
| | 16IR 08NPTF-CB | ● | — | 8 | 1.5 | 1.1 | 0.13 | |

60° Unified Thread (Wiper Edge)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./ Pack |
|--------------|--------------|--------|-------|-----|-----------------|----------------|----------------|------------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 60° | 16IR 32UN-CB | ● | — | 32 | 0.5 | 0.9 | 0.04 | 5 |
| | 16IR 28UN-CB | ● | — | 28 | 0.8 | 0.6 | 0.06 | |
| | 16IR 24UN-CB | ● | — | 24 | 0.8 | 0.7 | 0.06 | |
| | 16IR 20UN-CB | ● | — | 20 | 0.8 | 0.6 | 0.08 | |
| | 16IR 18UN-CB | ● | — | 18 | 0.8 | 0.6 | 0.08 | |
| | 16IR 16UN-CB | ● | — | 16 | 0.8 | 0.7 | 0.09 | |
| | 16IR 14UN-CB | ● | — | 14 | 1.5 | 1.1 | 0.13 | |
| | 16IR 13UN-CB | ● | — | 13 | 1.5 | 1.1 | 0.11 | |
| | 16IR 12UN-CB | ● | — | 12 | 1.5 | 1.1 | 0.13 | |
| | 16IR 10UN-CB | ● | — | 10 | 1.5 | 1.1 | 0.16 | |
| | 16IR 08UN-CB | ● | — | 8 | 1.5 | 1.1 | 0.20 | |

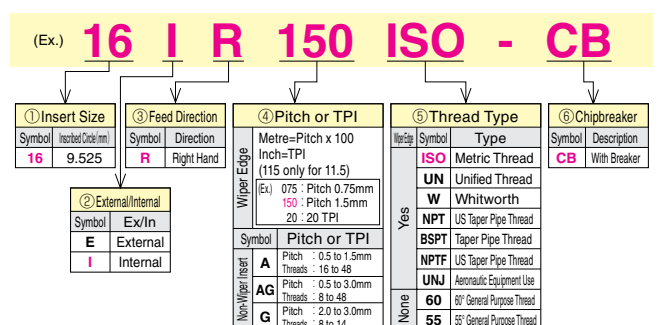
60° UNJ (Wiper Edge)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./ Pack |
|--------------|---------------|--------|-------|-----|-----------------|----------------|----------------|------------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 60° | 16IR 32UNJ-CB | ● | — | 32 | 0.5 | 0.9 | 0.04 | 5 |
| | 16IR 28UNJ-CB | ● | — | 28 | 0.8 | 0.6 | 0.05 | |
| | 16IR 24UNJ-CB | ● | — | 24 | 0.8 | 0.6 | 0.06 | |
| | 16IR 20UNJ-CB | ● | — | 20 | 0.8 | 0.6 | 0.06 | |
| | 16IR 18UNJ-CB | ● | — | 18 | 0.8 | 0.6 | 0.06 | |
| | 16IR 16UNJ-CB | ● | — | 16 | 0.8 | 0.6 | 0.09 | |
| | 16IR 14UNJ-CB | ● | — | 14 | 1.5 | 1.1 | 0.09 | |
| | 16IR 12UNJ-CB | ● | — | 12 | 1.5 | 1.1 | 0.11 | |
| | 16IR 10UNJ-CB | ● | — | 10 | 1.5 | 1.1 | 0.15 | |

55° Parallel Thread for Pipes/Whitworth (Wiper Edge)

| Thread Angle | Cat. No. | Stock | Pitch | | Dimensions (mm) | | | Pcs./ Pack |
|--------------|-------------|--------|-------|-----|-----------------|----------------|----------------|------------|
| | | AC530U | mm | TPI | e ₁ | e ₂ | r _E | |
| 55° | 16IR 28W-CB | ● | — | 28 | 0.8 | 0.6 | 0.12 | 5 |
| | 16IR 24W-CB | ● | — | 24 | 0.8 | 0.6 | 0.15 | |
| | 16IR 20W-CB | ● | — | 20 | 0.8 | 0.6 | 0.18 | |
| | 16IR 19W-CB | ● | — | 19 | 0.8 | 0.6 | 0.18 | |

Insert Identification Code



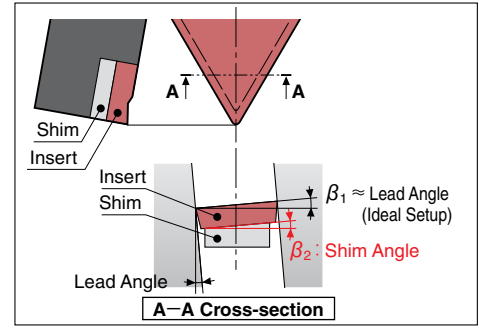
SSTE / SSTI Type

Shim Selection

If a thread pitch is large or a pitch diameter is small, a thread lead angle becomes large and the effective clearance angle on the leading edge becomes small.

Ideally, threading inserts should be mounted so that the clearance angles on both right and left sides become equal.

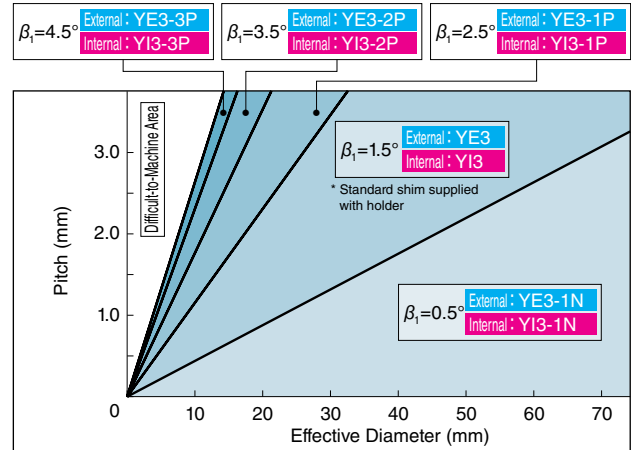
For this reason, it is necessary to select an appropriate shim for the thread pitch and pitch diameter by consulting the table below.



Shim Selection Procedure

- (1) Choose either one from [RH/LH Thread] in the table.
- (2) See the rows below [Pitch] to find a pitch for a thread to produce.
- (3) Find the cell that shows a diameter of the thread in the column below [Effective Diameter].
- (4) Confirm a Cat. No. in the [Shim] row shown above the cell found in (3). If the shim that is already in use has a different catalogue number, replace it with an appropriate one.

(Example)When machining an M16x2.0 external right-hand thread, the effective diameter is 14.701mm. In the table below, find [2.0] mm for a pitch and then follow this row rightward to the cell of effective diameter of [11.4-17.4] mm. The cell where the row of [External] meets the column of pitch diameter [11.4 - 17.4] mm shows [YE3-1P]. It is the right shim for machining this thread.



Pitch (mm)

| RH/LH Thread | Right-hand Thread | | | | | 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 (β₁) | 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)

| RH/LH Thread | Right-hand Thread | | | | | 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 (β₁) | 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 a shim for a lead angle of β₁=1.5° (SSTE Type: YE3, SSTI Type: YI3). Shims for lead angles of β₁=-1.5°, -0.5°, 0.5°, 2.5°, 3.5°, and 4.5° are sold separately.
 * Shims are unnecessary for SSTI R1812M16 and SSTI R2016M16. (The holders are already provided with the standard holder inclination of 1.5°.)

Shim Replacement

| | | | |
|--|---|---|---|
| <p>1</p> <p>Shim Shim Stopper Screw</p> | <p>2</p> | <p>3</p> | <p>4</p> <p>Recommended Tightening Torque 1.0 to 1.5N•m</p> |
| <p>Remove the insert to expose the shim.</p> | <p>Loosen the shim stopper screw by one to two turns.</p> | <p>Remove the shim and attach the different shim that matches the lead angle.</p> | <p>Tighten the shim stopper screw. (Recommended Tightening Torque 1.0 - 1.5N•m)</p> |

Wiper Edge

| Without Wiper Edge | With Wiper Edge |
|--|--|
| <p>Work Material</p> <p>Insert (Without Wiper Edge)</p> | <p>Work Material</p> <p>Machining Allowance</p> <p>Wiper Edge</p> <p>Insert (With Wiper Edge)</p> |
| <ul style="list-style-type: none"> Performs threading without machining thread ridges (Machined surface from the previous process is left unworked.) Enables machining of threads with different widths with the same insert Workpiece needs to be machined up to the major (or minor) diameter in a process prior to threading. Fine burrs are easily formed on edges of ridges | <ul style="list-style-type: none"> Enables machining works into shapes compliant with thread standards Enables thread machining only for those compliant with certain standards or those with determined pitches Needs to keep machining allowance of 0.1mm per side due to the use of wiper edge for thread ridge finishing. Edges of ridges chip |

Infeed Method

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

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

Work Material: SUS316 M30x1.5 Cutting Conditions: $v_c=60\text{mm/min}$ Wet 8 passes

| ● Impact of Infeed Method on Chip Shapes | |
|--|--|
| <p>Modified Flank Infeed</p> <p>Leading Edge</p> <p>Trailing Edge</p> <p>Feed dir.</p> <p>50mm</p> <p>Reduced curl diameters ensure smooth, stable chip control</p> | <p>Radial Infeed</p> <p>Feed dir.</p> <p>50mm</p> <p>Large curl diameters cause unstable chip control</p> |

Threading Process Guide

SSTE Type Threading Process Guide

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 |
|------------------------|------|------|------|------|------|------|------|------|
| Total 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 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Total 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 them depending on conditions. However, the max. depth of cut should be kept 0.5mm or less. When using an insert with 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 v_c (m/min) | 75 to 150 | 75 to 135 | 60 to 120 | 90 to 180 | 75 to 135 | 24 to 90 |

SSTI Type Threading Process Guide

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 |
|-------------------------|------|------|------|------|------|------|------|------|
| Total 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 |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Total 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 them depending on conditions. However, the max. depth of cut should be kept 0.5mm or less. When using an insert with wiper edge, add machining allowance to the total depth of cut.

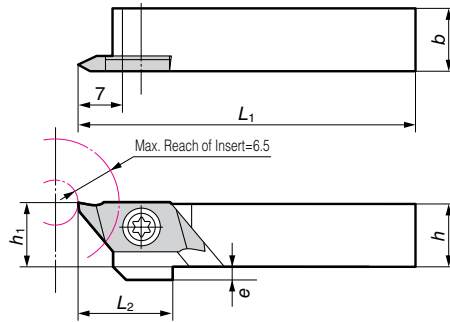
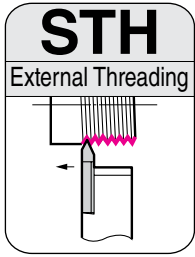
Recommended Cutting Conditions

| 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 v_c (m/min) | 75 to 150 | 75 ~ 135 | 60 to 120 | 90 to 180 | 75 to 135 | 24 to 90 |

STH Type

External Threading

- Metric Threads
- Whitworth Threads



■ Holders

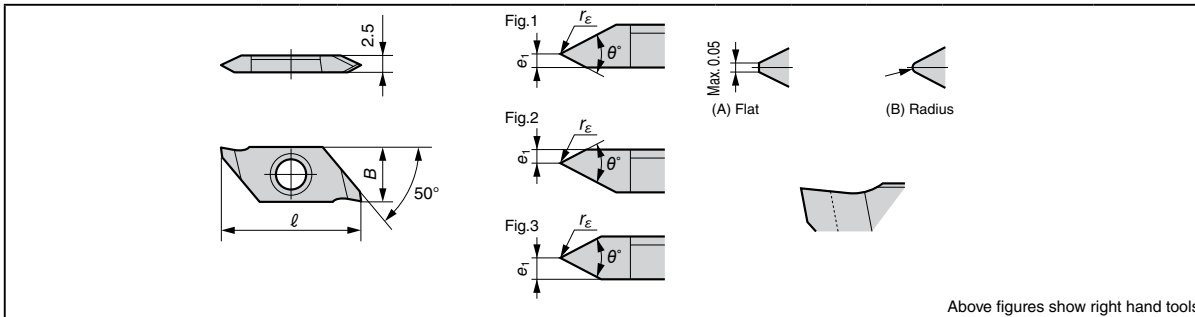
Above figures show right hand tools.

| Cat. No. | Stock | | Dimensions (mm) | | | | | | Applicable Insert | Clamp Screw | Spanners |
|--------------|-------|---|-----------------|----|----------------|----------------|---|----------------|-------------------|-------------|----------|
| | R | L | h | b | L ₁ | h ₁ | e | L ₂ | | | |
| STH R/L0810 | ● | ● | 8 | 10 | 120 | 8 | 4 | 15 | TH R/L Type | BFTX0410NTW | RT08 |
| STH R/L1010 | ● | ● | 10 | 10 | 120 | 10 | 2 | 15 | | | |
| STH R/L1212F | ● | ● | 12 | 12 | 85 | 12 | — | 15 | | | |
| STH R/L1212 | ● | ● | 12 | 12 | 120 | 12 | — | 15 | | | |
| STH R/L1616H | ● | ● | 16 | 16 | 100 | 16 | — | 15 | | | |
| STH R/L1616 | ● | ● | 16 | 16 | 120 | 16 | — | 15 | | | |
| STH R/L2020 | ● | ● | 20 | 20 | 80 | 20 | — | 15 | | BFTX0410NT | LT25NT |

■ Spare Parts

| | |
|-------------|----------|
| | |
| Clamp Screw | Spanners |

■ Inserts



Above figures show right hand tools.

| Cat. No. | Coated Carbide | | Pitch | | Dimensions (mm) | | | | | Fig. | Cutting Edge Shape | Applicable Holders |
|----------------|----------------|---|---------------|----------|-----------------|---|----------------|----------------|----|------|--------------------|--------------------|
| | ACZ150 | | mm | TPI | l | B | r _E | e ₁ | θ° | | | |
| | R | L | | | | | | | | | | |
| TH R/L6002075A | ● | ● | 0.20 to 0.75 | — | 20 | 8 | — | 0.40 | 60 | 1 | (A) | STH Type |
| TH R/L6002075B | ● | ● | 0.20 to 0.75 | — | 20 | 8 | — | 0.40 | 60 | 2 | (A) | |
| TH R/L6005125A | ● | ● | 0.50 to 1.25 | — | 20 | 8 | 0.05 | 0.80 | 60 | 1 | (B) | |
| TH R/L6005125B | ● | ● | 0.50 to 1.25 | — | 20 | 8 | 0.05 | 0.80 | 60 | 2 | (B) | |
| TH R/L601015N | ● | ● | 1.00 to 1.50 | — | 20 | 8 | 0.10 | 1.25 | 60 | 3 | (B) | |
| TH R/L550515A | ● | ● | 0.529 to 1.58 | 48 to 16 | 20 | 8 | 0.05 | 0.80 | 55 | 1 | (B) | |
| TH R/L550515B | ● | ● | 0.529 to 1.58 | 48 to 16 | 20 | 8 | 0.05 | 0.80 | 55 | 2 | (B) | |

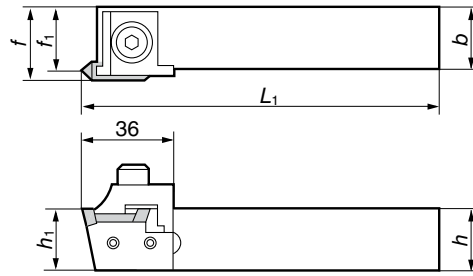
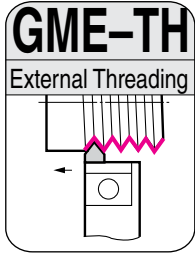
■ Holder/Insert Combination

| Direction | Right Hand | | Left Hand | |
|------------------------|--|--|---|-------------------|
| | Guide Bush Side | Back Turning Side | Guide Bush Side | Back Turning Side |
| Cutting Edge Position | | | | |
| Threading Illustration | | | | |
| Toolholder | 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 |
| Characteristics | Often used in common tooling for a work that has a thread at its top end. In this type of tooling a necking width indicated with an arrow can be reduced since a cutting edge point is placed closer to the guide bush side. | Usually used when a thread is located in the middle or at the back-end of a work. In this type of tooling a necking width indicated with an arrow can be reduced since a cutting edge point is placed closer to the back turning side. | When a left hand holder is used, a sufficient cutting distance can be kept since the cutting edge point separates from the guide bush. For left hand holder, the meanings of A Type and B Type for the right hand holder are switched with each other. (B means the guide bush side while A means the back turning side.) | |

GME-TH Type

External Threading

- Metric Threads
- Whitworth Threads



Spare Parts

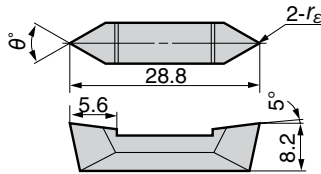
| Clamp | Support | Cap Screw | Spanner |
|---------|---------|------------------------------------|----------------------------------|
| GTC R/L | GT R/L | BX0414 (Support) BX0820 (Clamp) | LH030 (Support) LH060 (Clamp) |

Holders

Above figures show right hand tools.

| Cat. No. | Stock | | Dimensions (mm) | | | | | | Clamp | Support | Cap Screw | Spanner |
|-----------------------|-------|---|-----------------|----|----------------|------|----------------|----------------|---------|---------|------------------------------------|----------------------------------|
| | R | L | h | b | L ₁ | f | f ₁ | h ₁ | | | | |
| GME R/L2525TH | | | 25 | 25 | 114.7 | 29.3 | 26.4 | 25 | GTC R/L | GT R/L | BX0414 (Support) BX0820 (Clamp) | LH030 (Support) LH060 (Clamp) |
| GME R/L2525THL | | | 25 | 25 | 150.0 | 29.3 | 26.4 | 25 | | | | |
| GME R/L3232TH | | | 32 | 32 | 170.0 | 36.3 | 33.4 | 32 | | | | |

Inserts



| Cat. No. | Carbide | | | Pitch | | Included Angle ^θ | r _E |
|---------------|---------|-----|------|--------|-----------|-----------------------------|----------------|
| | ST20E | A30 | G10E | mm | TPI | | |
| MTG 40 | | | | 3 to 4 | — | 60 | 0.3 |
| MTG 50 | | | | 5 | — | 60 | 0.4 |
| MTG 60 | | | | 6 | — | 60 | 0.5 |
| MWG 40 | | | | — | 11 to 9.0 | 55 | 0.3 |
| MWG 50 | | | | — | 8 to 6.0 | 55 | 0.4 |
| MWG 60 | | | | — | 5 to 4.5 | 55 | 0.6 |

These inserts can be used with GME-TH Type holders only.

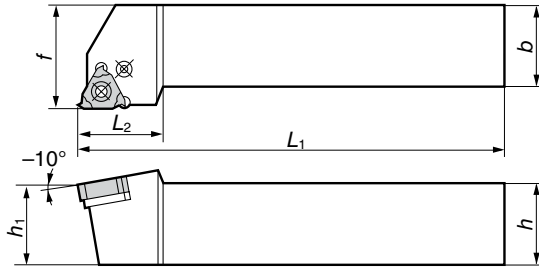
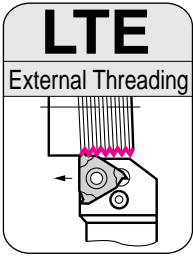
Recommended Cutting Conditions

| 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 |

LTE Type

External Threading

- Metric Threads
- Whitworth Threads
- Unified Threads
- Pipe Tapered Threads



Spare Parts

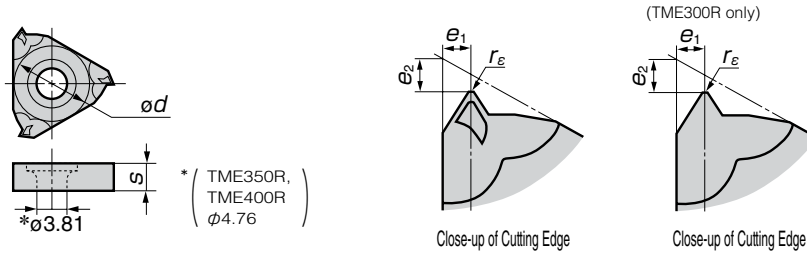
| | | | | |
|-------|--------|----------|------|-------|
| | | | | |
| LCL3S | LCS3TE | LSTE31-0 | LSP3 | LH025 |
| LCL4S | LCS4 | LSTE42-0 | LSP4 | LH030 |

■ Holders

| Cat. No. | Stock | Dimensions (mm) | | | | | |
|--------------|-------|-----------------|----|----------------|----|----------------|----------------|
| | | h | b | L ₁ | f | h ₁ | L ₂ |
| LTE R2020 | ● | 20 | 20 | 125 | 25 | 20 | 25 |
| LTE R2525 | ● | 25 | 25 | 150 | 32 | 25 | 25 |
| LTE R2525M22 | ● | 25 | 25 | 150 | 32 | 25 | 28 |
| LTE R3232P22 | ● | 32 | 32 | 170 | 40 | 32 | 28 |

Refer to F69 for shim selection

■ Inserts



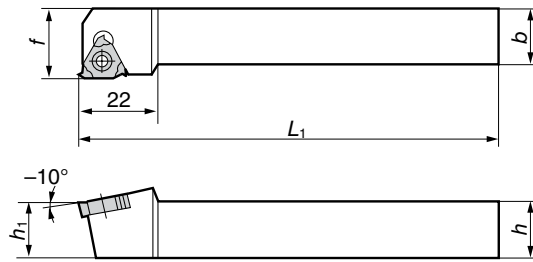
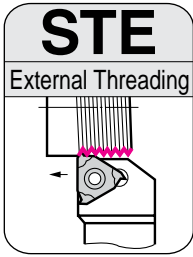
| Types | Cat. No. | Reference Cat. No. | Pitch | | Stock | | | | Dimensions (mm) | | | | | Wiper Edge | Applicable Holders |
|--------------------------|-----------|--------------------|-------|----------|-------|--------|--------|-------|-----------------|----------------|----------------|-------|------|------------|------------------------------|
| | | | mm | TPI | AC225 | T1500A | T1200A | T130A | r _ε | e ₁ | e ₂ | ød | s | | |
| 60° Metric Thread | TME 100R | 16ER 100ISO-TE | 1.00 | — | ▲ | ● | ▲ | ● | 0.13 | 0.8 | 1.2 | 9.525 | 3.65 | Yes | LTE R2020 LTE R2525 |
| | TME 125R | 16ER 125ISO-TE | 1.25 | — | ▲ | ● | ▲ | ● | 0.17 | 0.8 | 1.2 | 9.525 | 3.65 | Yes | |
| | TME 150R | 16ER 150ISO-TE | 1.50 | — | ▲ | ● | ▲ | ● | 0.20 | 1.0 | 1.2 | 9.525 | 3.65 | Yes | |
| | TME 175R | 16ER 175ISO-TE | 1.75 | — | ▲ | ● | ▲ | ● | 0.24 | 1.2 | 1.2 | 9.525 | 3.65 | Yes | |
| | TME 200R | 16ER 200ISO-TE | 2.00 | — | ▲ | ● | ▲ | ● | 0.27 | 1.4 | 1.2 | 9.525 | 3.65 | Yes | |
| | TME 250R | 16ER 250ISO-TE | 2.50 | — | ▲ | ● | ▲ | ● | 0.35 | 1.4 | 1.2 | 9.525 | 3.65 | Yes | |
| | TME 300R | 16ER 300ISO-TE | 3.00 | — | ▲ | ● | ▲ | ● | 0.42 | 1.8 | 1.2 | 9.525 | 3.65 | Yes | LTE R2525M22 LTE R3232P22 |
| | TME 350R | 22ER 350ISO-TE | 3.50 | — | ▲ | ● | ▲ | ● | 0.49 | 2.5 | 1.7 | 12.70 | 4.60 | Yes | |
| | TME 400R | 22ER 400ISO-TE | 4.00 | — | ▲ | ● | ▲ | ● | 0.56 | 2.5 | 1.7 | 12.70 | 4.60 | Yes | |
| 55° Whitworth Thread | TWE 1410R | 16ER 141055-TE | — | 14 to 10 | ▲ | ● | ▲ | ● | 0.23 | 1.4 | 1.2 | 9.525 | 3.65 | No | LTE R2020 LTE R2525 |
| | TWE 2416R | 16ER 241655-TE | — | 24 to 16 | ▲ | ● | ▲ | ● | 0.13 | 1.1 | 1.2 | 9.525 | 3.65 | No | |
| 60° Unified Thread Screw | TUE 24R | 16ER 24UN-TE | — | 24 | ▲ | ● | ▲ | ● | 0.14 | 0.8 | 1.2 | 9.525 | 3.65 | Yes | |
| | TUE 20R | 16ER 20UN-TE | — | 20 | ▲ | ● | ▲ | ● | 0.17 | 0.8 | 1.2 | 9.525 | 3.65 | Yes | |
| | TUE 18R | 16ER 18UN-TE | — | 18 | ▲ | ● | ▲ | ● | 0.19 | 1.0 | 1.2 | 9.525 | 3.65 | Yes | |
| | TUE 16R | 16ER 16UN-TE | — | 16 | ▲ | ● | ▲ | ● | 0.22 | 1.2 | 1.2 | 9.525 | 3.65 | Yes | |
| | TUE 14R | 16ER 14UN-TE | — | 14 | ▲ | ● | ▲ | ● | 0.25 | 1.2 | 1.2 | 9.525 | 3.65 | Yes | |
| | TUE 12R | 16ER 12UN-TE | — | 12 | ▲ | ● | ▲ | ● | 0.30 | 1.4 | 1.2 | 9.525 | 3.65 | Yes | |
| 55° Pipe Tapered Thread | TPE 28R | 16ER 28BSPT-TE | — | 28 | ▲ | ● | ▲ | ● | 0.11 | 0.9 | 0.7 | 9.525 | 3.65 | Yes | |
| | TPE 19R | 16ER 19BSPT-TE | — | 19 | ▲ | ● | ▲ | ● | 0.17 | 0.9 | 0.7 | 9.525 | 3.65 | Yes | |
| | TPE 14R | 16ER 14BSPT-TE | — | 14 | ▲ | ● | ▲ | ● | 0.24 | 1.6 | 1.2 | 9.525 | 3.65 | Yes | |
| | TPE 11R | 16ER 11BSPT-TE | — | 11 | ▲ | ● | ▲ | ● | 0.31 | 1.6 | 1.2 | 9.525 | 3.65 | Yes | |

Use these inserts with LTE Type/STE Type holders.

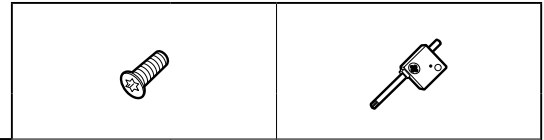
STE Type

External Threading

- Metric Threads
- Whitworth Threads
- Unified Threads
- Pipe Tapered Threads



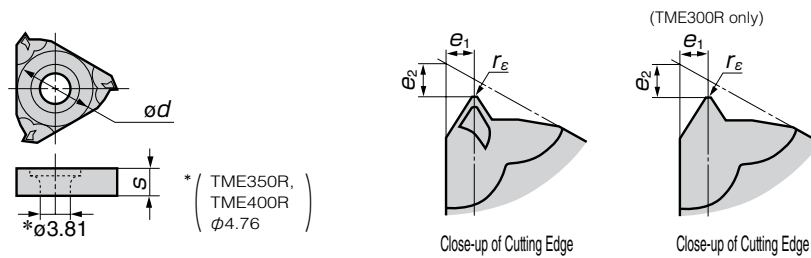
Spare Parts



Holdings

| Cat. No. | Stock | Dimensions (mm) | | | | | Screw | Recommended Tightening Torque (N·m) | Spanner |
|-----------|-------|-----------------|----|----------------|----|----------------|-----------|-------------------------------------|---------|
| | | h | b | L ₁ | f | h ₁ | | | |
| STE R1212 | ● | 12 | 12 | 100 | 16 | 12 | BFTX03508 | 2.0 | TRX10 |
| STE R1616 | ● | 16 | 16 | 100 | 20 | 16 | | | |

Inserts



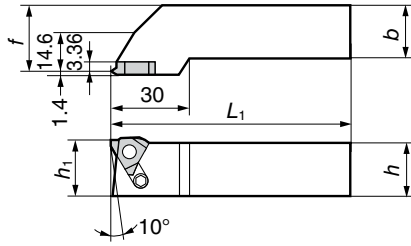
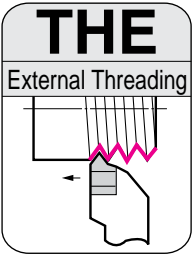
| Types | Cat. No. | Reference Cat. No. | Pitch | | Stock | | | | Dimensions (mm) | | | | | Wiper Edge | Applicable Holders |
|--------------------------|-----------|--------------------|--------------|----------|-------|--------|--------|-------|-----------------|----------------|----------------|-------|------|------------|------------------------|
| | | | mm | TPI | AC225 | T1500A | T1200A | T130A | r _ε | e ₁ | e ₂ | ød | s | | |
| 60° Metric Thread | TME 100R | 16ER 100ISO-TE | 1.00 | — | ▲ | ● | ▲ | ● | 0.13 | 0.8 | 1.2 | 9.525 | 3.65 | Yes | STE R1212 STE R1616 |
| | TME 125R | 16ER 125ISO-TE | 1.25 | — | ▲ | ● | ▲ | ● | 0.17 | 0.8 | 1.2 | 9.525 | 3.65 | Yes | |
| | TME 150R | 16ER 150ISO-TE | 1.50 | — | ▲ | ● | ▲ | ● | 0.20 | 1.0 | 1.2 | 9.525 | 3.65 | Yes | |
| | TME 175R | 16ER 175ISO-TE | 1.75 | — | ▲ | ● | ▲ | ● | 0.24 | 1.2 | 1.2 | 9.525 | 3.65 | Yes | |
| | TME 200R | 16ER 200ISO-TE | 2.00 | — | ▲ | ● | ▲ | ● | 0.27 | 1.4 | 1.2 | 9.525 | 3.65 | Yes | |
| | TME 250R | 16ER 250ISO-TE | 2.50 | — | ▲ | ● | ▲ | ● | 0.35 | 1.4 | 1.2 | 9.525 | 3.65 | Yes | |
| | TME 300R | 16ER 300ISO-TE | 3.00 | — | ▲ | ● | ▲ | ● | 0.42 | 1.8 | 1.2 | 9.525 | 3.65 | Yes | |
| | TME 1020R | 16ER 102060-TE | 1.00 to 2.00 | 24 to 12 | ▲ | ● | ▲ | ● | 0.13 | 1.1 | 1.2 | 9.525 | 3.65 | No | |
| | TME 1530R | 16ER 153060-TE | 1.50 to 3.00 | 16 to 8 | ▲ | ● | ▲ | ● | 0.20 | 1.6 | 1.0 | 9.525 | 3.65 | No | |
| 55° Whitworth Thread | TWE 1410R | 16ER 141055-TE | — | 14 to 10 | ▲ | ● | ▲ | | 0.23 | 1.4 | 1.2 | 9.525 | 3.65 | No | |
| | TWE 2416R | 16ER 241655-TE | — | 24 to 16 | ▲ | ● | ▲ | | 0.13 | 1.1 | 1.2 | 9.525 | 3.65 | No | |
| 60° Unified Thread Screw | TUE 24R | 16ER 24UN-TE | — | 24 | | ● | ▲ | | 0.14 | 0.8 | 1.2 | 9.525 | 3.65 | Yes | |
| | TUE 20R | 16ER 20UN-TE | — | 20 | ▲ | | | | 0.17 | 0.8 | 1.2 | 9.525 | 3.65 | Yes | |
| | TUE 18R | 16ER 18UN-TE | — | 18 | ▲ | | | | 0.19 | 1.0 | 1.2 | 9.525 | 3.65 | Yes | |
| | TUE 16R | 16ER 16UN-TE | — | 16 | ▲ | | | | 0.22 | 1.2 | 1.2 | 9.525 | 3.65 | Yes | |
| | TUE 14R | 16ER 14UN-TE | — | 14 | ▲ | ● | ▲ | | 0.25 | 1.2 | 1.2 | 9.525 | 3.65 | Yes | |
| | TUE 12R | 16ER 12UN-TE | — | 12 | ▲ | | | | 0.30 | 1.4 | 1.2 | 9.525 | 3.65 | Yes | |
| | TUE 08R | 16ER 08UN-TE | — | 8 | ▲ | | | | 0.45 | 1.8 | 1.2 | 9.525 | 3.65 | Yes | |
| 55° Pipe Tapered Thread | TPE 28R | 16ER 28BSPT-TE | — | 28 | ▲ | | | | 0.11 | 0.9 | 0.7 | 9.525 | 3.65 | Yes | |
| | TPE 19R | 16ER 19BSPT-TE | — | 19 | ▲ | ● | ▲ | | 0.17 | 0.9 | 0.7 | 9.525 | 3.65 | Yes | |
| | TPE 14R | 16ER 14BSPT-TE | — | 14 | ▲ | ● | ▲ | | 0.24 | 1.6 | 1.2 | 9.525 | 3.65 | Yes | |
| | TPE 11R | 16ER 11BSPT-TE | — | 11 | ▲ | ● | ▲ | | 0.31 | 1.6 | 1.2 | 9.525 | 3.65 | Yes | |

Use these inserts with LTE Type/STE Type holders.

THE Type

External Threading

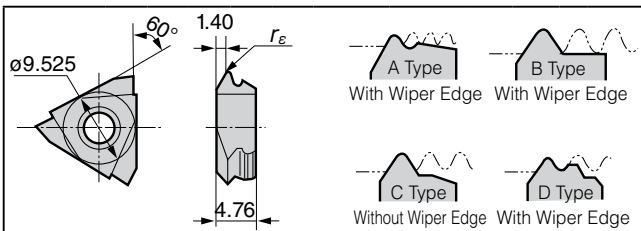
- Metric Threads
- Whitworth Threads
- Pipe Tapered Threads



■ Holders

| Cat. No. | Stock | Dimensions (mm) | | | | |
|-----------------|-------|-----------------|----|----------------|------|----------------|
| | | h | b | L ₁ | f | h ₁ |
| THE R-33 | ● | 20 | 20 | 125 | 25.0 | 20 |
| THE R-44 | ● | 25 | 25 | 150 | 32.2 | 25 |

■ Inserts



| Cat. No. | Stock | | | | | Pitch | | Nose Radius r _E | Included Angle θ° | Edge Type | Applicable Holder |
|-----------------|--------|--------|---------|-------|--------------|----------|------|-------------------------------|----------------------|----------------------|-------------------|
| | Cermet | | Carbide | | | mm | TPI | | | | |
| | T1500A | T1200A | T12A | ST10P | A30 | | | | | | |
| NE R080 | | | ● | ● | 0.80 | — | 0.08 | 60 | A | THE R-33 THE R-44 | |
| 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 | 0.99 | 55 | D | | |
| PTE R19 | | | | | — | 19 | 0.15 | 55 | D | | |

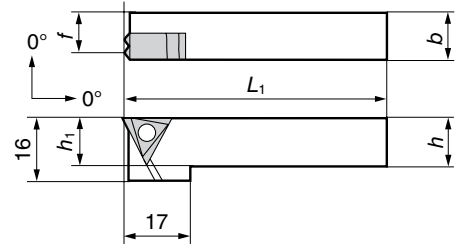
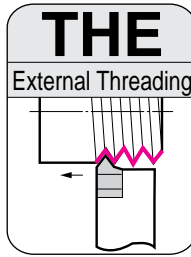
■ Spare Parts

| Applicable Holder | Drawing Pin | Set Screw | Spanner |
|------------------------------------|-------------|-----------|---------|
| THE R-33 THE R-44 | | | |
| | SR124 | BTD0510 | LH025 |

THE Type

SEC-External Holders (Mini Holders)

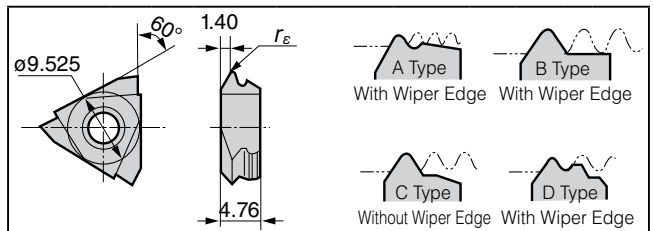
- Metric Threads
- Whitworth Threads
- Pipe Tapered Threads



■ Holders

| Cat. No. | Stock | Dimensions (mm) | | | | |
|---------------------|-------|-----------------|----|----------------|------|----------------|
| | | h | b | L ₁ | f | h ₁ |
| THE R1010-33 | ● | 10 | 10 | 100 | 8.6 | 10 |
| THE R1212-33 | ● | 12 | 12 | 100 | 10.6 | 12 |

■ Inserts



| Cat. No. | Stock | | | | | Pitch | | Nose Radius r _E | Included Angle θ° | Edge Type | Applicable Holder |
|-----------------|--------|--------|---------|-------|--------------|----------|------|-------------------------------|----------------------|------------------------------|-------------------|
| | Cermet | | Carbide | | | mm | TPI | | | | |
| | T1500A | T1200A | T12A | ST10P | A30 | | | | | | |
| NE R080 | | | ● | ● | 0.80 | — | 0.08 | 60 | A | 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 | 0.99 | 55 | D | | |
| PTE R19 | | | | | — | 19 | 0.15 | 55 | D | | |

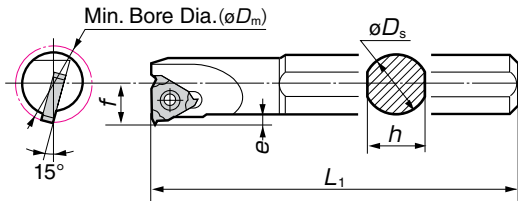
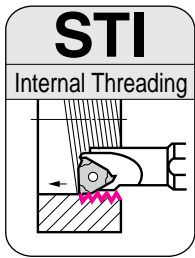
■ Spare Parts

| Applicable Holder | Screw | Spanner |
|--|----------------------|---------|
| THE R1010/1212-33 THE L1010/1212-33 | | |
| | BFX0410R BFX0410L | TH025 |

STI Type

Internal Threading

- Metric Threads
- Unified Threads



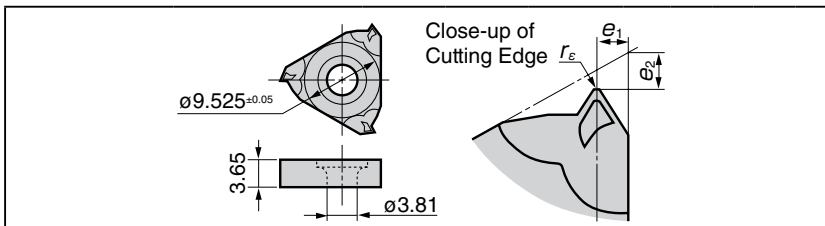
■ Spare Parts

| | |
|-------------------------------------|---------|
| | |
| Screw | Spanner |
| BFTX03508 | TRX10 |
| Recommended Tightening Torque (N·m) | 2.0 |

■ ホルダ

| Cat. No. | Stock | Dimensions (mm) | | | | | |
|----------|-------|-----------------|----|----------------|----|-----|-----------------|
| | | øD _s | h | L ₁ | f | e | øD _m |
| STI R316 | ● | 16 | 15 | 150 | 11 | 3.5 | 20 |
| STI R320 | ● | 20 | 18 | 180 | 14 | 5.0 | 25 |

■ Inserts



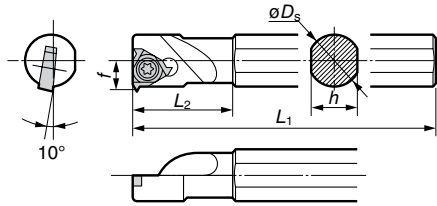
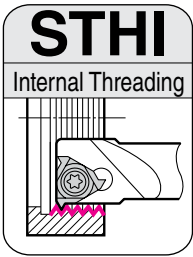
| Cat. No. | Reference Cat. No. | Pitch | | Stock | | | r _ε | Included Angle θ° | e ₁ | e ₂ |
|-----------|--------------------|--------------|----------|----------------|--------|--------|----------------|-------------------|----------------|----------------|
| | | mm | TPI | Coated Carbide | Cermet | | | | | |
| | | | | AC225 | T1500A | T1200A | | | | |
| TMI 100R | 16IR 100ISO-TI | 1.00 | — | ▲ | ● | ▲ | 0.06 | 60 | 0.8 | 1.2 |
| TMI 125R | 16IR 125ISO-TI | 1.25 | — | ▲ | ● | ▲ | 0.07 | 60 | 0.8 | 1.2 |
| TMI 150R | 16IR 150ISO-TI | 1.50 | — | ▲ | ● | ▲ | 0.09 | 60 | 1.0 | 1.2 |
| TMI 175R | 16IR 175ISO-TI | 1.75 | — | ▲ | ● | ▲ | 0.11 | 60 | 1.2 | 1.2 |
| TMI 200R | 16IR 200ISO-TI | 2.00 | — | ▲ | ● | ▲ | 0.12 | 60 | 1.4 | 1.2 |
| TMI 250R | 16IR 250ISO-TI | 2.50 | — | ▲ | ● | ▲ | 0.16 | 60 | 1.4 | 1.2 |
| TMI 300R | 16IR 300ISO-TI | 3.00 | — | ▲ | ● | ▲ | 0.20 | 60 | 1.8 | 1.2 |
| TMI 1020R | 16IR 102060-TI | 1.00 to 2.00 | 24 to 12 | ▲ | ● | ▲ | 0.06 | 60 | 1.0 | 1.2 |
| TMI 1530R | 16IR 153060-TI | 1.50 to 3.00 | 16 to 8 | ▲ | ● | ▲ | 0.09 | 60 | 1.5 | 1.2 |

Use these inserts with STI Type holders.

STHI / THI Type

Internal Threading

• Metric Threads



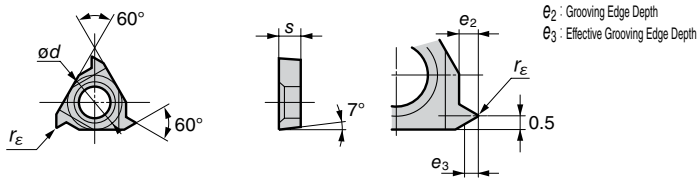
■ Holders

| Cat. No. | Stock | Dimensions (mm) | | | | | Min. Bore (mm) | Applicable Insert |
|----------------|-------|-----------------|-----|-------|-----|-------|----------------|-------------------|
| | | ϕD_s | h | L_1 | f | L_2 | | |
| STHI 06 | ● | 6 | 5.5 | 100 | 3.8 | 13.0 | 8.0 | 06I R041060-HI |
| STHI 08 | ● | 8 | 7.0 | 125 | 4.7 | 17.0 | 10.0 | 08I R041060-HI |
| STHI 10 | ● | 10 | 9.0 | 150 | 6.0 | 20.0 | 12.0 | 09I R041060-HI |

■ Spare Parts

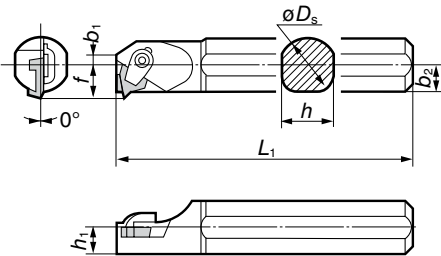
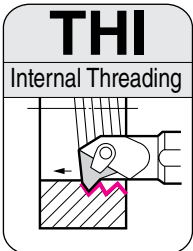
| Screw | Spanner |
|-------------|---------|
| BFTX0204NS | RT06 |
| BFTX0205NS | |
| BFTX02206NT | |

■ Inserts



| Cat. No. | Reference Cat. No. | Coated Carbide ACZ150 | Pitch (mm) | Dimensions (mm) | | | | | Applicable Holder |
|---------------|--------------------|--------------------------|-------------------|-----------------|----------|------|--------------|--------------|-------------------|
| | | | | r_ϵ | ϕd | s | ϵ_2 | ϵ_3 | |
| TI R06 | 06I R041060-HI | ● | 0.4 to 0.5 to 1.0 | 0.03 | 3.97 | 1.59 | 0.7 | 0.5 | STHI06 |
| TI R08 | 08I R041060-HI | ● | 0.4 to 0.5 to 1.0 | 0.03 | 4.76 | 2.38 | 0.7 | 0.5 | STHI08 |
| TI R09 | 09I R041060-HI | ● | 0.4 to 0.5 to 1.0 | 0.03 | 5.56 | 2.38 | 0.7 | 0.5 | STHI10 |

● Use the inserts shown on the left with STHI Type holders.



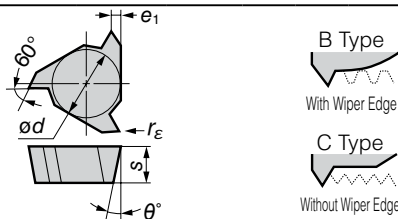
■ Holders

| Cat. No. | Stock | Dimensions (mm) | | | | | | | Min. Bore (mm) | Applicable Insert |
|-----------------|-------|-----------------|-----|-------|------|-------|-------|-------|----------------|-------------------|
| | | ϕD_s | h | L_1 | f | h_1 | b_1 | b_2 | | |
| THI R216 | ● | 16 | 15 | 160 | 9.3 | 7.5 | 4 | 7.5 | $\phi 18$ | NI R2000 |
| THI R320 | ● | 20 | 18 | 160 | 11.7 | 9.0 | 6 | 9.0 | $\phi 22$ | NI R3000 |
| THI R325 | ● | 25 | 23 | 180 | 14.2 | 11.5 | 5 | 11.5 | $\phi 27$ | NI R3000 |

■ Spare Parts

| Clamp | Double Screw | Spanners |
|---------|--------------|----------|
| CCM5BSL | WB5-10 | TH025 |
| | WB5-12 | |
| CCM6BL | WB6-16 | LH030 |

■ Inserts



| Cat. No. | Carbide ST10P | Pitch (mm) | Dimensions (mm) | | | | | Edge Type | Applicable Holder |
|-----------------|------------------|------------|-----------------|------|--------------|--------------|----------------|-----------|----------------------|
| | | | ϕd | s | ϵ_1 | r_ϵ | θ° | | |
| NI R2000 | ● | 0.8 to 1.5 | 6.350 | 3.18 | 0.85 | 0.05 | 12 | C | THI R216 |
| NI R2150 | ● | 1.5 | 6.350 | 3.18 | 0.85 | 0.07 | 12 | B | |
| NI R3000 | ● | 0.8 to 2.5 | 9.525 | 3.18 | 1.35 | 0.05 | 10 | C | THI R320 THI R325 |
| NI R3150 | ● | 1.5 | 9.525 | 3.18 | 0.85 | 0.07 | 10 | B | |
| NI R3200 | ● | 2.0 | 9.525 | 3.18 | 1.10 | 0.11 | 10 | B | |

● Edge honing of inserts can be enlarged for threading using NIR2000 with pitch of 1.5mm or more, and using NIR3000 with pitch of 2.5mm or more. Honing amount should be within threading tolerances.
 ● All inserts are 3-cornered.

Memo

A series of horizontal dashed lines for writing.

Threading Process Guide

SEC-Threading Tool Threading Process Guide

■ Wiper Inserts

| Application | 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° ISO 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 | | | | | | | | | |
| 60° Unified Thread | External | TUE 24R | 16ER 24UN-TE | 24/TPI | 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° Pipe Thread | External | TPE 28R | 16ER 28BSPT-TE | 28/TPI | 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 case of non-wiper inserts for internal threading, number of passes should be increased.

■ Recommended Cutting Speeds

(Units: m/min)

| Work Materials | Grades | AC225 | T1500A / T1200A T130A | A30 | ST10P |
|------------------|-----------------|------------|--------------------------|-----------|----------|
| | P | Soft Steel | 150 - 200 | 100 - 150 | 70 - 120 |
| Low Carbon Steel | | 100 - 170 | 80 - 130 | 70 - 100 | 90 - 150 |
| Alloy Steel | | 90 - 150 | 80 - 120 | 70 - 100 | 80 - 130 |
| M | Stainless Steel | 70 - 140 | — | 70 - 100 | — |

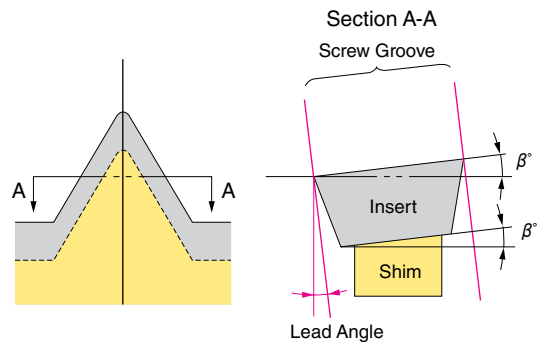
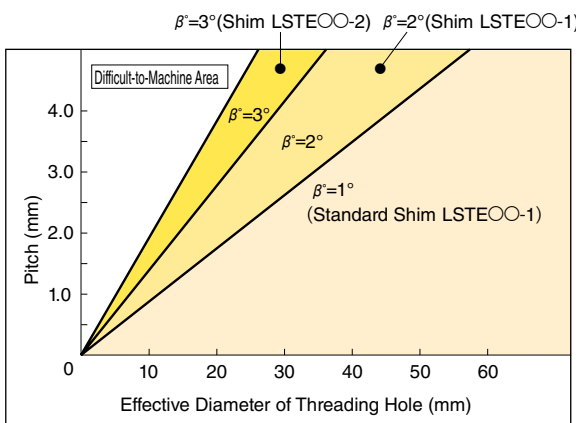
SEC-Threading Tool Threading Process Guide

■ Non-Wiper Inserts

| Application | Cat. No. | Reference Cat. No. | Nose Radius | Pitch | Depth of Cut | No. of Passes | | | | | | | | | | | | | | | | | | | | |
|-----------------------|----------|--------------------|----------------|-------|--------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|--|--|--|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | | | | | |
| 60° ISO 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 | | | | | |
| | Internal | 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 | | | | | | | | | | |
| Internal | | 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 | | | | | | |
| 55° Whitworth Thread | External | TWE 2416R | 16ER 241655-TE | 0.13 | 20/TPI | 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 | | | | | | | | | | | | |
| | | | | | 14/TPI | 1.07 | 8 | 0.20 | 0.17 | 0.15 | 0.14 | 0.13 | 0.12 | 0.09 | 0.07 | | | | | | | | | | | |
| | External | 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 case of non-wiper inserts for internal threading, number of passes should be increased.

■ Shim Selection For LTE Type Holder



Standard Shim for LTE come with $\beta = 1^\circ$
 $\beta = 2^\circ, 3^\circ$ shims are sold separately
 STE and STI Type holders do not come with shims.