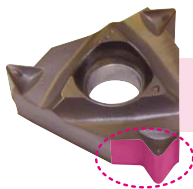


SSTE/SSTI Type



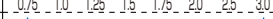
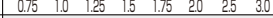
Characteristics

- 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.



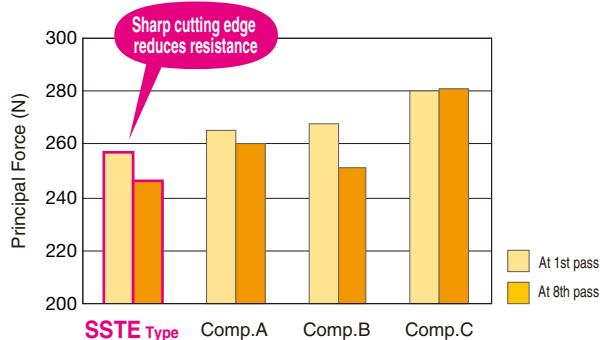
Polished flank faces around the cutting edge achieve high quality threads.

Product Range

Application	Type	Wiper Edge	External/ Internal	Pitch																Insert Cat. No. (Ex.)	
				Pitch (mm)	TPI (Threads/Inch)																
					48	36	32	28	27	24	20	19	18	16	14	13	12	11	10		8
General Industries	60° General Purpose Thread	None	External																	16ER A60-CB	
			Internal																	16IR A60-CB	
	55° General Purpose Thread		External																	16ER A55-CB	
			Internal																	16IR A55-CB	
	60° ISO Metric Thread		External																	16ER 075ISO-CB	
			Internal																	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	

Application Examples

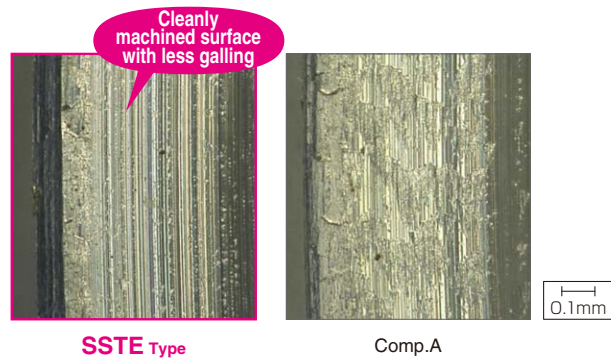
Cutting Resistance Comparison



Work Material: S45C M30×1.5

Cutting Conditions: $v_c=150\text{m/min}$ Wet 8 passes Threading Method: Radial Infeed

Machined Surface Comparison

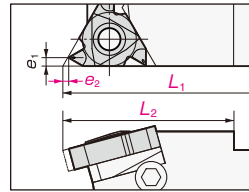
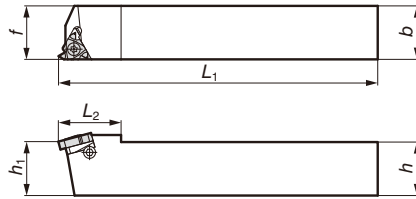
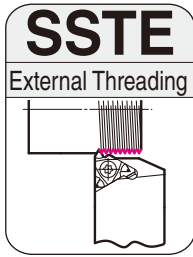


Work Material: S45C M30×1.5

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 can be found by subtracting the θ_2 value for the corresponding insert on page F54.

Holders

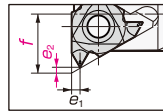
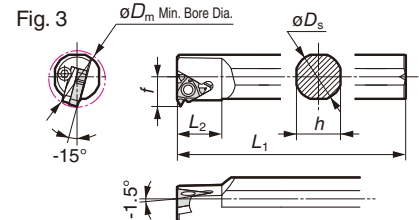
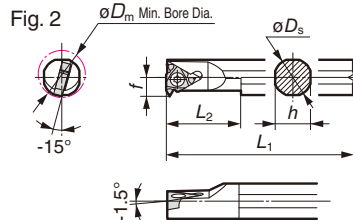
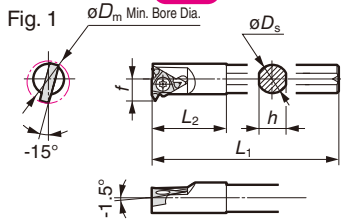
Cat. No.	Stock	Dimensions (mm)					
		h	b	L_1	L_2	f	h_1
SSTE R1616H16	●	16	16	100	20.5	16	16
SSTE R2020K16	●	20	20	125	30.0	20	20
SSTE R2525M16	●	25	25	150	30.0	25	25

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 can be found by subtracting the θ_2 value for the corresponding insert on page F55.

Holders

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

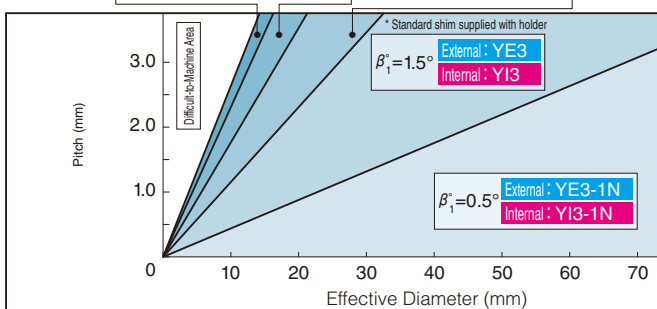
*¹ The spanner for shim stopper screws is sold separately. *² The minimum bore diameter is the diameter of the prepared hole. *³ Left-hand threads are not available.

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

$\beta_i = 4.5^\circ$	External: YE3-3P Internal: YI3-3P	$\beta_i = 3.5^\circ$	External: YE3-2P Internal: YI3-2P	$\beta_i = 2.5^\circ$	External: YE3-1P Internal: YI3-1P
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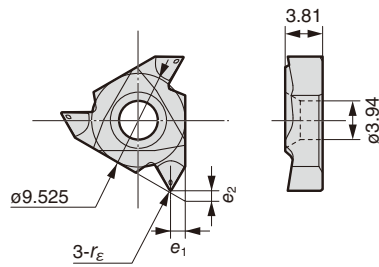
Holder Identification Code

(Ex.) SST 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 Direction	Symbol (mm)	Symbol (mm)	Symbol (mm)	Symbol	Insert Code(mm)
	R Right Hand	16 16 20 20 25 25	16 16 20 20 25 25	H 100 K 125 M 150 Q 180 S 250	16	9.525
② External/Internal		Shank Height (mm)	Shank Width (mm)			
Symbol Ex/In		18 18 20 20 24 24 31 31 37 37	12 12 16 16 20 20 25 25 32 32			
E External I Internal						

Details on Shim Selection F56

SSTE / SSTI Type

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	θ_1	θ_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	θ_1	θ_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	

60° ISO Metric Threads (Wiper Edge)

Thread Angle	Cat. No.	Stock	Pitch		Dimensions (mm)			Pcs./ Pack
		AC530U	mm	TPI	θ_1	θ_2	r_E	
60°	16ER 075 ISO-CB	●	0.75	—	0.5	1.0	0.09	5
	16ER 100 ISO-CB	●	1.00	—	0.8	0.6	0.14	
	16ER 125 ISO-CB	●	1.25	—	0.8	0.7	0.15	
	16ER 150 ISO-CB	●	1.50	—	0.8	0.7	0.20	
	16ER 175 ISO-CB	●	1.75	—	1.5	1.0	0.23	
	16ER 200 ISO-CB	●	2.00	—	1.5	1.1	0.26	
	16ER 250 ISO-CB	●	2.50	—	1.5	1.2	0.33	
	16ER 300 ISO-CB	●	3.00	—	1.5	1.1	0.41	

55° Tapered for Pipes/BSPT (Wiper Edge)

Thread Angle	Cat. No.	Stock	Pitch		Dimensions (mm)			Pcs./ Pack
		AC530U	mm	TPI	θ_1	θ_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	θ_1	θ_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° Unified Thread (Wiper Edge)

Thread Angle	Cat. No.	Stock	Pitch		Dimensions (mm)			Pcs./ Pack
		AC530U	mm	TPI	θ_1	θ_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	

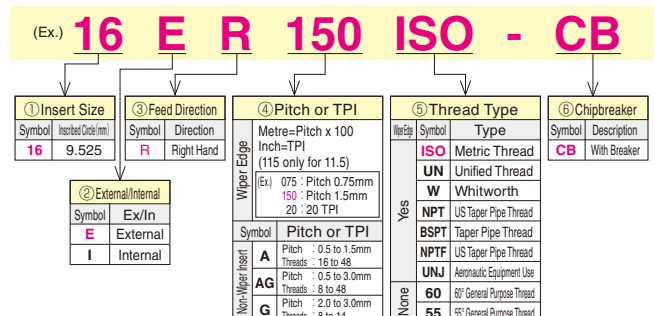
60° UNJ (Wiper Edge)

Thread Angle	Cat. No.	Stock	Pitch		Dimensions (mm)			Pcs./ Pack
		AC530U	mm	TPI	θ_1	θ_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	

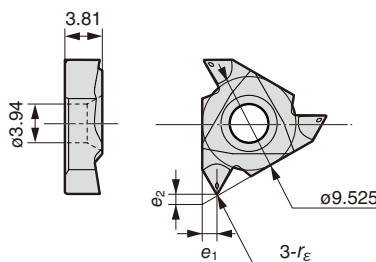
55° Parallel Thread for Pipes / Whitworth (Wiper Edge)

Thread Angle	Cat. No.	Stock	Pitch		Dimensions (mm)			Pcs./ Pack
		AC530U	mm	TPI	θ_1	θ_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° 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	

● 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	

● 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	

● 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	

● 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	

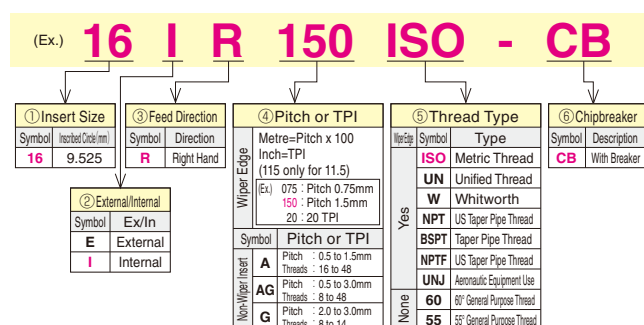
● 60° US NPTF (Wiper Edge)

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° 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	

■ Insert Identification Code

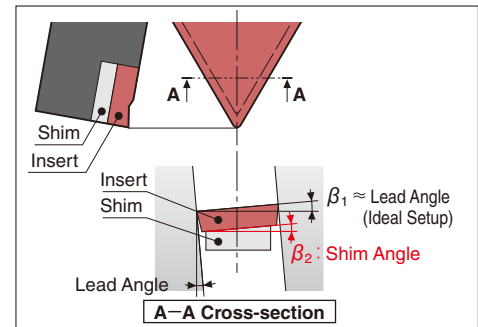


SSTE / SSTI Type

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.

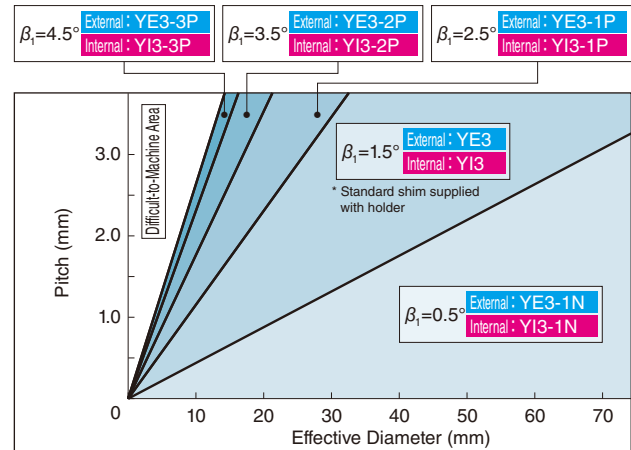
For this reason, it is necessary to select an appropriate shim for the thread pitch and pitch diameter by consulting the table below.



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 M16×2.0 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

Remove the insert to expose the shim.	Loosen the shim stopper screw by one to two turns.	Remove the shim and attach the different shim that matches the lead angle.	Tighten the shim stopper screw. (Recommended Tightening Torque 1.0 - 1.5N·m)

Wiper Edge

Without Wiper Edge	With Wiper Edge
· 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	· 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.)

Impact of Infeed Method on Chip Shapes

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

Modified Flank Infeed	Radial Infeed
Reduced curl diameters ensure smooth, stable chip control	Large curl diameters cause unstable chip control

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

Threading Process Guide

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

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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