

Threading Tool



Threading Tool - Content structure

- Products are listed by product series and thread shape to be machined.
- Inserts and toolholders in the catalog are our standard stock items.

How to use the page

Method ① Select the screw shape described at the left end of each page, jump to the page on the left index, and choose a designation you need **⑤** in the dimension table **⑥**. Applicable toolholders are shown in **⑦**.

Method ② Select the series name on **E003** and check the details on the product page.

Method ③ Select an item from Quick Guide on **E004-E007**.

② TUNGTHREAD INSERT

60° thread angle

Right hand (R) for internal threading. Right hand (R) for external threading.

③ **Applicable toolholder**

Grade	External		Internal	
	Coated	Uncoated	Coated	Uncoated
11	16	11	11	11
16	CERL™16, JSER™16, JF™SEL16, B-SER™16, BC-SER™16		TERL™16, SNRL™16, TCR™16, CNRL™16	
22	CERL™22		SNRL™22, TCR™22, CNRL™22	
27	CERL™27		CNRL™27	

④ **Partial-profile insert**

Pitch	TPI	Designation	External insert		Internal insert	
			Coated	Uncoated	Coated	Uncoated
0.5-1.5	48-16	AH725 T313V TH10			11RAG0	11RAG0
0.5-1.5	48-16	HERAG60	●	●	11RAG0	11RAG0
0.5-1.5	48-16	16ELAG60	●	●	16RAG60	16RAG60
0.5-3	48-8	16ERAG60	●	●	16RAG60	16RAG60
1.75-3	14-8	16RAG60	●	●	16RAG60	16RAG60
1.75-3	14-8	16ELG60	●	●	16RAG60	16RAG60
3.5-5	7-5	22ERN60	●	●	22RN60	22RN60
3.5-5	7-5	22ELRN60	●	●	22RN60	22RN60
4-6	6-4	27ERZ60	●	●	27RN60	27RN60

⑤ **Partial-profile insert with chipbreaker**

Pitch	TPI	Designation	External insert		Internal insert	
			Coated	Uncoated	Coated	Uncoated
0.5-1.5	48-16	AH725 NS9530			11RAG0-B	11RAG0-M
0.5-1.5	48-16	HERAG0-B	●	●	11RAG0-B	11RAG0-M
0.5-1.5	48-16	16ERAG0-B	●	●	16RAG0-B	16RAG0-M
0.5-3	48-8	16ERAG0-B	●	●	16RAG0-B	16RAG0-M
1.75-3	14-8	16ERAG0-B	●	●	16RAG0-B	16RAG0-M
1.75-3	14-8	16RAG0-M	●	●	16RAG0-B	16RAG0-M
3.5-5	7-5	22ERN0-B	●	●	22RN0-B	22RN0-M

⑥ **Applicable pitch and the number of threads**

⑦ **Applicable toolholder**

⑧ **Spare parts**

Designation	Chipbreaker	Shim	Changing block	Reference
B-SER™16			CSTB-3.5	T-15F
B-CERL™16/16	CSP16	A16-1		T-15F

⑨ **Reference pages: Inserts → E010, E014, E016 - E027, Standard cutting conditions → E050**

② TUNGTHREAD B-S/CERL

External threading toolholder for Swiss lathes

③ **Applicable toolholder**

⑤ **Designation**

Designation	H	B	LF	LH	HF	WF	INSERT
B-SER10H16	20	10	100	15	10	16	16ER...
B-SER12K16	24	12	125	18	12	18	16ER...
B-CERL16M16	32	16	150	24	16	22	16ER...

⑧ **Spare parts**

Designation	Chipbreaker	Shim	Changing block	Reference
B-SER™16			CSTB-3.5	T-15F
B-CERL™16M16	CSP16	A16-1		T-15F

② TUNGTHREAD JS-SEL16

External threading toolholder for Swiss lathes

⑤ **Designation**

Designation	DCON	H	LF	LH	WF	INSERT
JS15F-SEL16	16	15	85	25	11	16ER...
JS19Q-SEL16	19.05	18	90	30	12.5	16ER...
JS19M-SEL16	19.05	18	100	30	12.5	16ER...
JS20Q-SEL16	20	19	90	30	13	16ER...
JS20K-SEL16	20	19	120	30	13	16ER...
JS24Q-SEL16	25	24	100	30	15.5	16ER...
JS25K-SEL16	25.4	24	100	30	15.7	16ER...

⑧ **Spare parts**

Designation	Chipbreaker	Shim	Changing block	Reference
JS™-SEL16			CSTB-3.5	T-15F

⑨ **Reference pages: Inserts → E010, E014, E016 - E027, Standard cutting conditions → E050**

- ① : Screw shape
- ② : Series name
- ③ : Drawing of thread, threading insert, threading toolholder
- ④ : Applicable pitch and the number of threads
- ⑤ : Designation (for external, for internal)
- ⑥ : Dimension table (conforming to ISO13399)
- ⑦ : Applicable toolholder
- ⑧ : Spare parts
- ⑨ : Reference page

When ordering

- Please specify the designation and quantity for threading toolholders.
e.g. **TSNR0020R22 ... 1** (one threading toolholder per package)
- Please specify the designation, grade, and quantity for threading inserts.
e.g. **16IR175ISO AH725 ... 5** (five threading inserts per package)

Main products

Thread form

60° E010

55° E014

M (Metric) E016

UN (Unified) E018

W (Whitworth) E020

BSPT (R, PT) E021

NPT E022

NPTF E023

TR (Metric, 30° Trapezoidal) E024

Round (DIN405) E024

UNJ E025

MJ E025

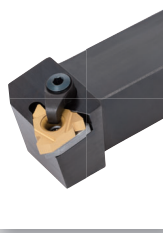
ACME (29° Trapezoidal) E026

STUB ACME (29° Trapezoidal) E027

API Round E028

API Buttress E029

API Rotary Shoulder Connection E031

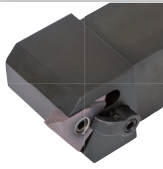


TUNGTHREAD

Lay down insert, toolholder

Standard items cover a wide variety of threading inserts. Standard tool series with double-clamp system for excellent insert stability in machining API-standard threads.

E004 - E007,
E010 - E041,
E050



On edge insert, toolholder

ACME and STUB ACME inserts can be used for the range of 16 to 3TPI with 2 types of toolholders. The special full-profile insert realizes both the fine adjustment of thread height and the minimum burr on the crest.

E004 - E007,
E026 - E030,
E039 - E040



Chaser

Threading tool with multiple cutting edges for highly efficient machining of API-standard round, buttress, and NPT.

E005 - E007,
E023,
E028 - E031,
E041



TETRAMCUT

Standard tool with 4 corners for threading on Swiss lathes. In small diameter threading using the center of the tool post on general NC lathes, interference with the center is less likely occur.

E004 - E008,
E011,
E042 - E043,
E050



DUOJUST

Standard tool suitable for all types of threading on Swiss lathes. The incomplete thread part from the workpiece face to the thread groove can be the shortest thanks to the excellent accessibility to the workpiece face.

E004 - E009,
E011,
E043 - E044,
E051



TUNG-CLAMP

Tool with high clamp rigidity that firmly holds the insert with a clamp. Grooving insert and threading insert can be used with the same toolholder.

E004 - E008,
E012,
E045 - E046,
E050



J-SERIES

Tool series with 3-cornered inserts. Subselection for threading on Swiss lathes. Standard tool also suitable for radial Swiss lathes.

E004,
E012 - E013,
E015,
E046 - E047



TINYMINI TURN

Internal threading tool suitable for the minimum machining diameter $\phi 4$. All tools have oil holes that can supply coolant from the cutting edge.

E006, E048,
E051

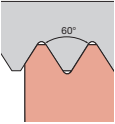
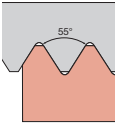
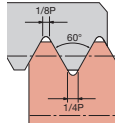
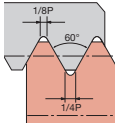
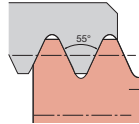
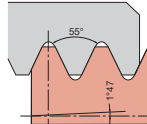
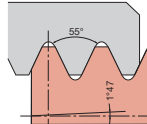
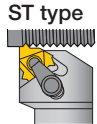
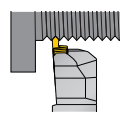
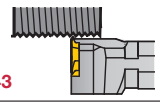
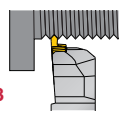
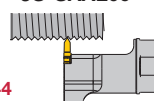
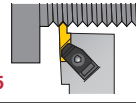
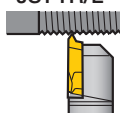
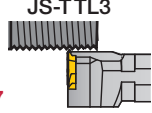
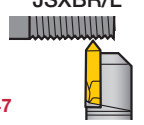



Other tool

TT type

E004 - E006,
E013, E015,
E048 - E049

Applicable tool for each external thread type

Applicable tool for each external thread type	General purpose		General purpose		Pipe		
	National taper pipe		Full profile				
	60°	55°	ISO metric	Unified	Whitworth	Parallel pipe thread	Taper pipe thread
Thread type			M	UNC, UNF UNEF	BSW, BSF W	G BSP, PF	R, PT, BSPT
Thread form							
Tool type							
ST type  E032	0.5 ~ 6 mm 48 ~ 4TPI E010	0.5 ~ 5 mm 48 ~ 5TPI E014	0.5 ~ 6 mm E016	32 ~ 5TPI E018	28 ~ 5TPI E020	28 ~ 11TPI E021	
TETRAMCUT STCR/L-18  E042	0.4 ~ 3 mm 64 ~ 8TPI E011	—	—	—	—	—	
TETRAMCUT JS-STCL18  E043	0.4 ~ 3 mm 64 ~ 8TPI E011	—	—	—	—	—	
DUOJUST JSXXR/L  E043	0.2 ~ 1.5 mm 127 ~ 16TPI E011	—	—	—	—	—	
DUOJUST JS-SXXL09  E044	0.2 ~ 1.5 mm 127 ~ 16TPI E011	—	—	—	—	—	
TUNET-CLAMP  E045	1.27 ~ 4.23 mm 20 ~ 6TPI E012	—	—	—	—	—	
JSTTR/L  E046	0.5 ~ 1 mm 48 ~ 25TPI E012	0.5 ~ 1 mm 48 ~ 25TPI E015	—	—	—	—	
JS-TTL3  E047	0.5 ~ 1 mm 48 ~ 25TPI E012	0.5 ~ 1 mm 48 ~ 25TPI E015	—	—	—	—	
JSXBR/L  E047	0.5 ~ 1 mm 48 ~ 25TPI E013	—	—	—	—	—	
TT-R/L  E048	~ 3 mm ~ 8TPI E013	~ 3 mm ~ 8TPI E015	—	—	—	—	

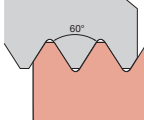
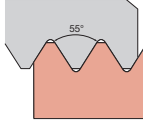
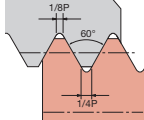
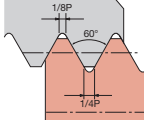
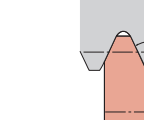
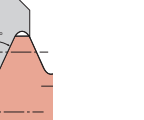
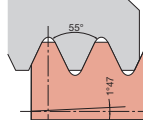
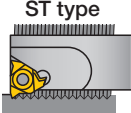
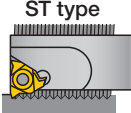
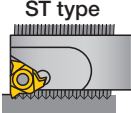
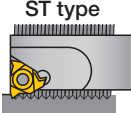
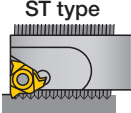
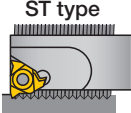
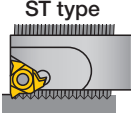
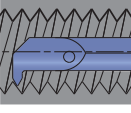
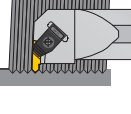
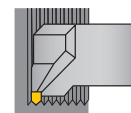
Please see the page E*** for the product details.

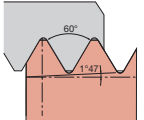
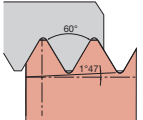
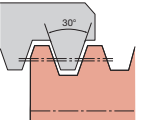
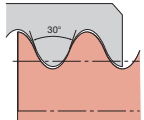
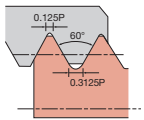
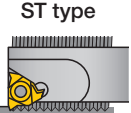
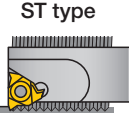
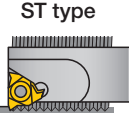
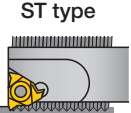
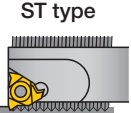
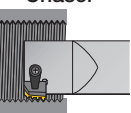
Applicable tool for each external thread type	Pipe		Machine parts		Aerospace
Thread type	Full profile				
	National taper pipe		30° Trapezoidal	Round DIN405	UNJ
	NPT	NPTF	TR	Rd	UNJC, UNJF
Thread form					
Tool type					
E032	27 ~ 8TPI E022	27 ~ 8TPI E023	1.5 ~ 6 mm E024	8TPI, 6TPI E024	32 ~ 8TPI E025
Chaser 	11.5TPI, 8TPI E041	—	—	—	—
E041	E023				

Applicable tool for each external thread type	Energy					Machine parts, Pipe	
Thread type	Full profile						
	API Tubing & Casing		API Rotary Shoulder Connection			ACME	STUB ACME
	Round	Buttress	V-0.038R	V-0.040	V-0.050		
Thread form							
Tool type							
E032	10TPI, 8TPI E027	5TPI (0.75TPF) E029	—	—	—	12 ~ 5TPI E026	—
Lay down (Single side) 	—	5TPI (0.75TPF) 5TPI (1TPF) E029	—	—	—	—	—
Lay down (Double side) 	—	—	4TPI (2TPF) 4TPI (3TPF) E031	5TPI (3TPF) E031	4TPI (2TPF) 4TPI (3TPF) E031	—	—
On edge 	10TPI, 8TPI E028	5TPI (0.75TPF) 5TPI (1TPF) E030	—	—	—	16 ~ 3TPI E026	16 ~ 3TPI E027
Chaser 	10TPI, 8TPI E041	5TPI (0.75TPF) E030	—	—	—	—	—
E041	E028	E030					

Please see the page E*** for the product details.

Applicable tool for each internal thread type

Applicable tool for each external thread type	General purpose		General purpose		Pipe		
Thread type	National taper pipe		Full profile				
	60°	55°	ISO metric	Unified	Whitworth	Parallel pipe thread	Taper pipe thread
	-	-	M	UNC, UNF UNEF	BSW, BSF W	G, Rp BSP, PF, PS	Rc, PT, BSPT
Thread form							
Tool type							
E035	E010 0.5 ~ 6 mm 48 ~ 4TPI	E014 0.5 ~ 5 mm 48 ~ 5TPI	E016 0.5 ~ 6 mm	E018 32 ~ 5TPI	E020 28 ~ 5TPI		E021 19 ~ 11TPI
TINYTURN 	E048 0.5 ~ 1.5 mm 48 ~ 16TPI	---	---	---	---	---	---
TUNG-CLAMP 	E045 1.27 ~ 4.23 mm 20 ~ 6TPI	---	---	---	---	---	---
TT-R/L 	E048 ~ 3 mm ~ 8TPI	E015 ~ 3 mm ~ 8TPI	---	---	---	---	---

Applicable tool for each external thread type	Pipe		Machine parts		Aerospace
Thread type	Full profile				
	National taper pipe		30° Trapezoidal (DIN103)	Round (DIN405)	MJ
	NPT	NPTF	TR	Rd	MJ
Thread form					
Tool type					
E035	E022 27 ~ 8TPI	E023 14 ~ 8TPI	E024 1.5 ~ 5 mm	E024 6TPI	E025 1.0mm
Chaser 	E041 11.5TPI, 8TPI	---	---	---	---

Please see the page E*** for the product details.

Applicable tool for each external thread type	Energy					Machine parts, Pipe	
Thread type	Full profile						
	API Tubing & Casing		API Rotary Shoulder Connection			ACME	STUB ACME
	Round	Buttress	V-0.038R	V-0.040	V-0.050		
Thread form							
Tool type							
ST type E035	10TPI, 8TPI E027	5TPI (0.75TPF) E029	—	—	—	12 ~ 5TPI E026	—
Lay down (Single side) E038	—	5TPI (0.75TPF) 5TPI (1TPF) E029	—	—	—	—	—
Lay down (Double side) E039	—	—	4TPI (2TPF) 4TPI (3TPF) E031	5TPI (3TPF) E031	4TPI (2TPF) 4TPI (3TPF) E031	—	—
On edge E040	10TPI, 8TPI E028	5TPI (0.75TPF) 5TPI (1TPF) E030	—	—	—	—	—
Chaser E041	10TPI, 8TPI E028	5TPI (0.75TPF) E030	—	—	—	—	—

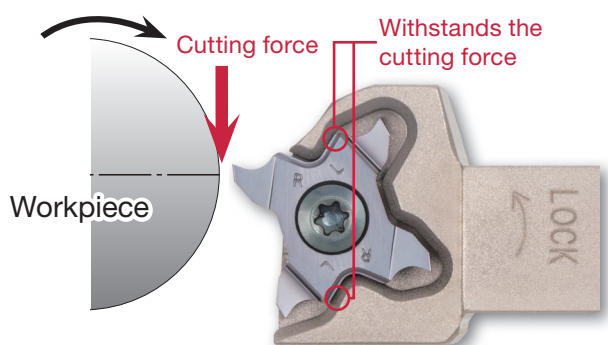
Please see the page E*** for the product details.

TETRAMCUT



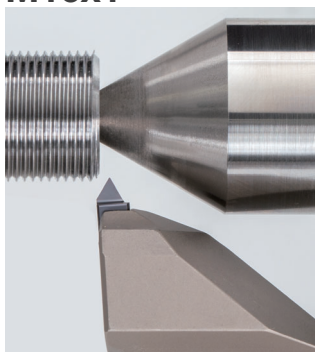
Unique clamping system

The unique pocket design provides accurate indexing repeatability of the cutting edge height.



No tool interference with the lathe center when machining small parts

TETRAMCUT M16x1



Insert: TCT18R-60N-020

Conventional M24x1



Insert: 16ER10ISO

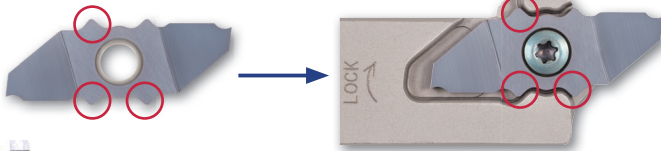
Reference pages: Inserts → [E011](#), Toolholders → [E042 - E043](#), Standard cutting conditions → [E050](#)



Unique clamping system for highly rigid clamping

The unused cutting edge is always protected due to the innovative clamping system. Even if the first cutting edge is chipped, the other unused cutting edge can be used because the insert is clamped in the center.

Insert is secured at 3 points



Excellent accessibility to the workpiece face

Utilizing various tools minimizes the incomplete thread part.



	Insert shape		
	60A	60B	60N
Right hand			
Left hand			



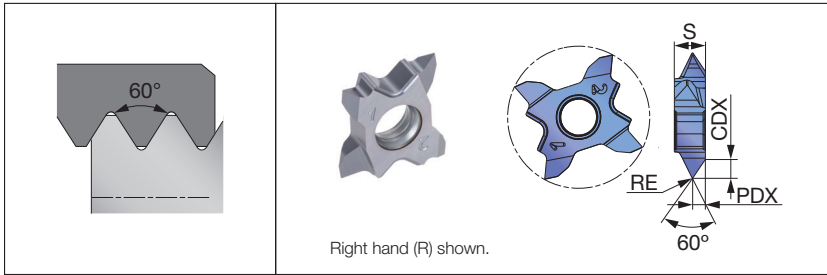
Insert designation	Cutting edge geometry (mm)	PDX (mm)	Pitch (mm)										
			0.2	0.25	0.35	0.4	0.5	0.6	0.8	1	1.25	1.5	
JXTG12FR-60A-000	0.05 (flat)	0.25	Applicable area										
JXTG12FL-60A-000													
JXTG12FR-60B-000	0.05 (flat)	2.25	Applicable area										
JXTG12FL-60B-000													
JXTG12FR-60A-005	R0.05	0.6	Applicable area										
JXTG12FL-60A-005													
JXTG12FR-60B-005	R0.05	1.9	Applicable area										
JXTG12FL-60B-005													
JXTG12FR-60N-010	R0.1	1.25	Applicable area										
JXTG12FL-60N-010			Applicable area										

127 72 52 32 16

Threads per inch (TPI)

Reference pages: Inserts → E011, Toolholders → E043 - E044, Standard cutting conditions → E051

60° thread angle



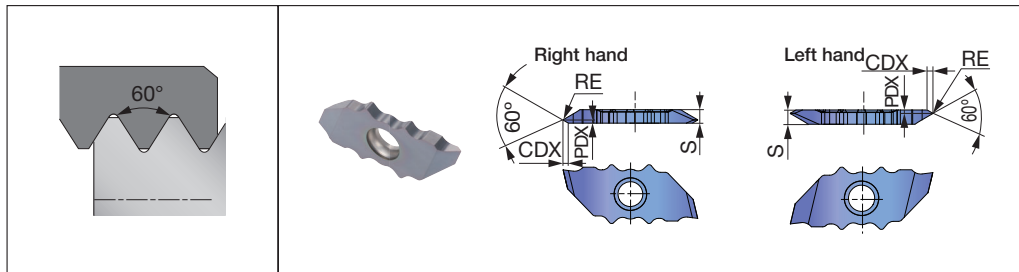
Applicable toolholder

External
STCR/L**18
STCR/L**18-CHP
JS**-STCL18

Partial-profile insert

Pitch	TPI	Hand of cut	External insert						
			Designation	Grade		PDX	CDX	RE	S
				Coated					
				SH725	AH725				
0.4 - 1	25 - 64	R	TCT18FR-60A-005	●		0.6	0.99	0.05	4
1 - 2	25 - 12	R	TCT18FR-60A-010	●		1	1.63	0.1	4
0.8 - 3	8 - 32	R/L	TCT18R/L-60N-010		●	1.6	2.67	0.1	4
1.5 - 3	8 - 16	R/L	TCT18R/L-60N-020		●	1.6	2.57	0.2	4

60° thread angle



Applicable toolholder

External
JSXXR/L**09
JSXXR/L**09-CHP
JS**-SXXL09

Partial-profile insert

Insert size	Pitch	TPI	Hand of cut	External insert						
				Designation	Grade		PDX	CDX	RE	S
					Coated					
					R	L				
12	0.2 - 0.4	64 - 127	R/L	JXTG12FR/L-60A-000	●	●	0.25	0.4	0.05 max flat	2.5
12	0.2 - 0.4	64 - 127	R/L	JXTG12FR/L-60B-000	●	●	2.25	0.4	0.05 max flat	2.5
12	0.4 - 1	25 - 64	R/L	JXTG12FR/L-60A-005	●	●	0.6	0.99	0.05	2.5
12	0.4 - 1	25 - 64	R/L	JXTG12FR/L-60B-005	●	●	1.9	0.99	0.05	2.5
12	1 - 1.5	16 - 25	R/L	JXTG12FR/L-60N-010	●	●	1.25	2.07	0.1	2.5

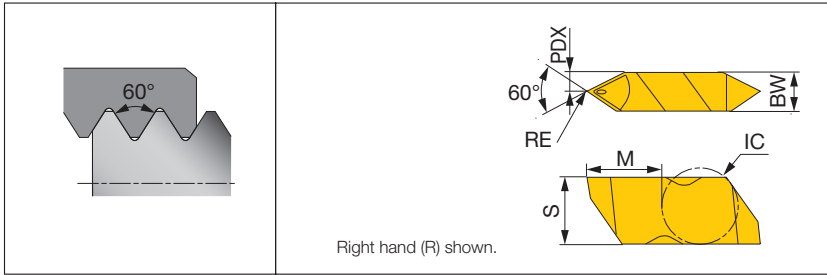
	Type A	Type B	Type N
Right hand			
Left hand			

Reference pages: TetraMini-Cut : Toolholders → [E042 - E043](#),
 Standard cutting conditions → [E050, L043 - L058](#)
 DuoJust-cut : Toolholders → [E043 - E044](#),
 Standard cutting conditions → [E051, L043 - L058](#)

● : Line up / 5 pieces per package



60° thread angle



Applicable toolholder

External	Internal
FLASR/L-1616M3	A**M-FLER/L3
FLSR/L-**M3	HS**-FLER3W

Thread form

60°

55°

M

(Metric)

UN

(Unified)

W

(Whitworth)

BSPT

(R, PT)

NPT

NPTF

TR

(Metric, 30° Trapezoidal)

Round

(DIN405)

UNJ

MJ

ACME

(29° Trapezoidal)

STUB

ACME

(29° Trapezoidal)

API

Round

API

Buttress

API

Rotary

Shoulder

Connection

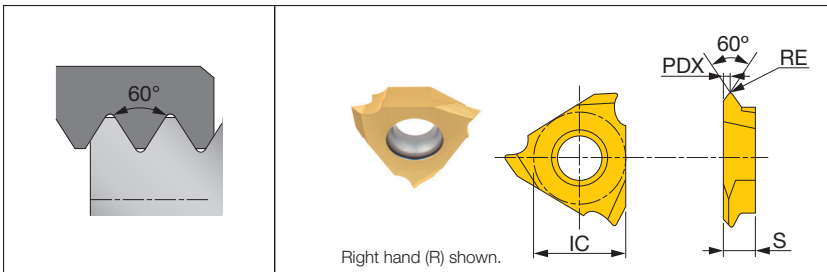
Partial-profile insert for external and internal threads

TPI	Hand of cut	External Pitch	Internal Pitch	Designation	Grade		IC	PDX	BW	RE	S	M
					Coated	AH725						
6 - 20	R/L	1.27 - 4.23	2.11 - 5.08	FLT-3R/L-HCB	●		9.525	2.49	4.95	0.17	8.74	10.16
11 - 20	R/L	2.31 - 4.23	3.175 - 5.08	FLT-3R/LC-HCB	●		9.525	2.49	4.95	0.35	8.74	10.16
6 - 20	R/L	1.27 - 4.23	2.11 - 5.08	FLT-3R/L-CB	●		9.525	2.49	4.95	0.17	8.74	10.16

J-SERIES

INSERT

60° thread angle



Applicable toolholder

External
JSTTR/L**3
JS**-TTL3

Partial-profile insert

Pitch	TPI	Hand of cut	Designation	External insert										IC	PDX	S	RE
				Grade													
				Coated				Cermet		Uncoated							
				SH725		J740		NS9530		TH10							
				R	L	R	L	R	L	R	L						
0.5 - 1	25 - 48	R/L	JTTR/L3005F	●	●	●		●		●		9.525	0.9	3.18	0.05		
0.5 - 1	25 - 48	R/L	JTTR/L3010F	●	●	●		●		●		9.525	0.9	3.18	0.1		

Reference pages: TungT-Clamp : Toolholders → **E045 - E046**,

Standard cutting conditions → **E050, L043 - L058**

J-Series : Toolholders → **E046 - E047**

● : Line up

60° thread angle



Applicable toolholder

External
JSXBR**K8
JSXBR**K8-C

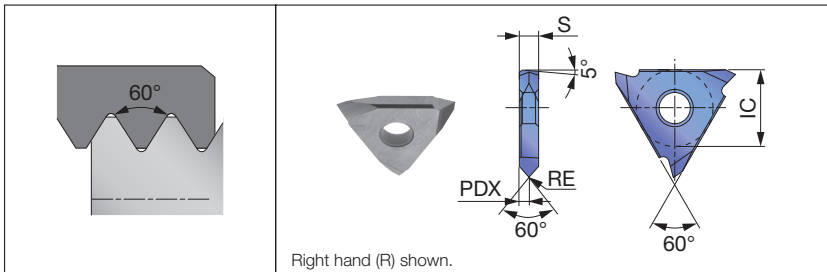
Partial-profile insert

Pitch	TPI	Hand of cut	External insert					
			Designation	Grade		IC	S	RE
				Coated J740	Uncoated TH10			
0.5 - 1	25 - 48	R	JXT1R6000F	●	●	8	3.97	0.03
0.5 - 1	25 - 48	R	JXT2R6000F	●	●	8	3.97	0.03

TUNGTHREAD

INSERT

TT type / 60° thread angle



Applicable toolholder

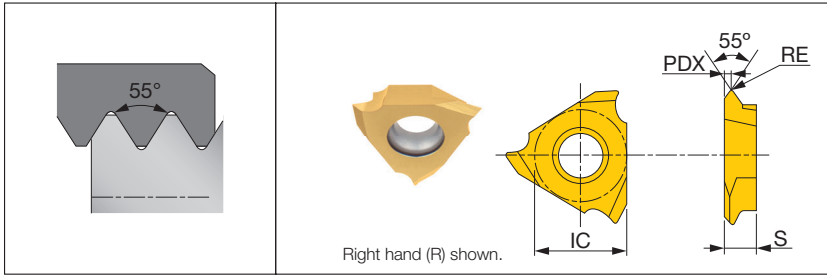
External	Internal
TT-****RE/LI	TT-2525RI

Partial-profile insert for external and internal threads

Pitch	TPI	Hand of cut	Designation	Grade		IC	PDX	S	RE
				Cermet NS9530	Uncoated TH10				
				≤ 3	≥ 8				
≤ 3	≥ 8	L	TTL42M-005	●	●	12.7	1.6	3.2	0.05



55° thread angle (General purpose)



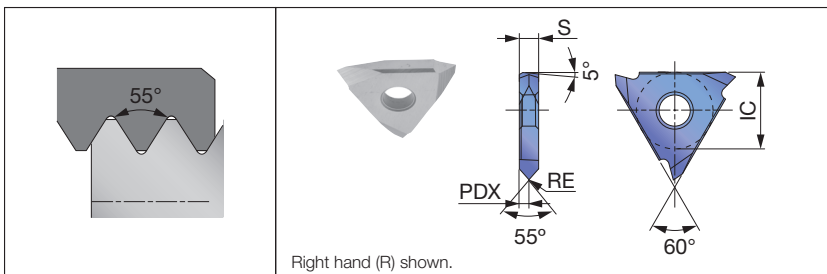
Applicable toolholder

External
JSTTR/L**3
JS**-TTL3

Partial-profile insert

Pitch	TPI	Hand of cut	External insert								
			Designation	Grade				IC	PDX	S	RE
				Coated		Uncoated					
				SH725	J740	R	L				
0.5 - 1	25 - 48	R/L	JTTR/L3005F-55	●	●	9.525	0.6	3.18	0.05		

TT type / 55° thread angle (General purpose)



Applicable toolholder

External	Internal
TT-****RE/LI	TT-2525RI

Partial-profile insert for external and internal threads

Pitch	TPI	Hand of cut	Designation	Grade		IC	PDX	S	RE
				Cermet	Uncoated				
				NS9530	TH10				
≤ 3	≥ 8	R	TTR42W-005	●	●	12.7	1.6	3.2	0.05
≤ 3	≥ 8	L	TTL42W-005	●	●	12.7	1.6	3.2	0.05



Insert size	Pitch	TPI	Hand of cut	External insert								Internal insert							
				Designation	Grade			IC	PDX	PDY	RE	Designation	Grade			IC	PDX	PDY	RE
					Coated		Uncoated						Coated		Uncoated				
					AH725	T313V	TH10						AH725	T313V	TH10				
22	3.5	R	22ER35ISO	●	●		12.7	2.5	1.7	0.44	22IR35ISO	●	●		12.7	2.5	1.7	0.25	
22	4	R	22ER40ISO	●	●		12.7	2.5	1.7	0.5	22IR40ISO	●	●		12.7	2.5	1.7	0.28	
22	4.5	R	22ER45ISO	●			12.7	2.5	1.7	0.56	22IR45ISO	●			12.7	2.5	1.7	0.32	
22	5	R	22ER50ISO	●	●		12.7	2.5	1.7	0.63	22IR50ISO	●	●		12.7	2.5	1.7	0.35	
27	6	R	27ER60ISO	●	●		15.875	3.2	2.2	0.75	27IR60ISO	●	●		15.875	3.2	2.2	0.42	

Full-profile insert with chipbreaker

Insert size	Pitch	TPI	Hand of cut	External insert								Internal insert							
				Designation	Grade			IC	PDX	PDY	RE	Designation	Grade			IC	PDX	PDY	RE
					Coated		Cermet						Coated		Cermet				
					AH725	AH8015	NS9530						AH725	AH8015	NS9530				
11	0.5	R																	
11	0.5	R																	
11	0.75	R																	
11	0.75	R																	
11	1	R																	
11	1	R																	
11	1.25	R																	
11	1.25	R																	
11	1.5	R																	
11	1.5	R																	
11	1.75	R																	
11	1.75	R																	
11	2	R																	
11	2	R																	
16	0.5	R	16ER05ISO-M			●	9.525	0.5	1.2	0.06									
16	0.75	R	16ER075ISO-B	●*			9.525	0.6	0.6	0.08									
16	0.75	R	16ER075ISO-M			●	9.525	0.5	1.2	0.09									
16	1	R	16ER10ISO-B	●*			9.525	0.7	0.7	0.11	16IR10ISO-B	●*			9.525	0.7	0.6	0.05	
16	1	R	16ER10ISO-M	●		●	9.525	0.9	0.7	0.13	16IR10ISO-M		●	●	9.525	0.9	0.7	0.08	
16	1.25	R	16ER125ISO-B	●*			9.525	0.9	0.8	0.14	16IR125ISO-B	●*			9.525	0.9	0.8	0.07	
16	1.25	R	16ER125ISO-M		●	●	9.525	0.9	0.7	0.16	16IR125ISO-M		●	●	9.525	0.9	0.7	0.1	
16	1.5	R	16ER15ISO-B	●*			9.525	1	0.8	0.19	16IR15ISO-B	●*			9.525	1	0.8	0.08	
16	1.5	R	16ER15ISO-M	●	●	●	9.525	0.9	0.7	0.19	16IR15ISO-M	●	●	●	9.525	0.9	0.7	0.12	
16	1.75	R	16ER175ISO-B	●*			9.525	1.2	0.9	0.2	16IR175ISO-B	●*			9.525	1.2	0.9	0.10	
16	1.75	R	16ER175ISO-M			●	9.525	1.6	1.2	0.22	16IR175ISO-M		●	●	9.525	1.6	1.2	0.14	
16	2	R	16ER20ISO-B	●*			9.525	1.3	1	0.24	16IR20ISO-B	●*			9.525	1.3	1	0.11	
16	2	R	16ER20ISO-M	●		●	9.525	1.6	1.2	0.25	16IR20ISO-M		●	●	9.525	1.6	1.2	0.14	
16	2.5	R	16ER25ISO-B	●*			9.525	1.5	1.1	0.3	16IR25ISO-B	●*			9.525	1.5	1.1	0.14	
16	2.5	R	16ER25ISO-M			●	9.525	1.6	1.2	0.31	16IR25ISO-M		●	●	9.525	1.6	1.2	0.18	
16	3	R	16ER30ISO-B	●*			9.525	1.6	1.2	0.38	16IR30ISO-B	●*			9.525	1.5	1.1	0.18	
16	3	R	16ER30ISO-M			●	9.525	1.6	1.2	0.38	16IR30ISO-M		●	●	9.525	1.6	1.2	0.21	
22	3.5	R	22ER35ISO-B	●			12.7	2.3	1.6	0.48									
22	4	R	22ER40ISO-B	●			12.7	2.3	1.6	0.52									

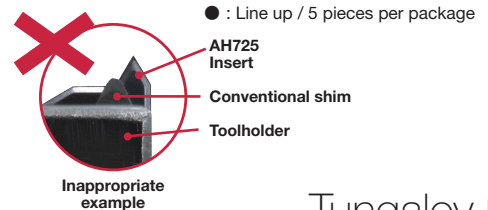
Note: The adjustment of the cutting edge position will be needed as the dimensions of t and r3 are different from other inserts.

highlighted item requires changing shims.

When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page **E052**.

Reference pages: Toolholders → **E032 - E037**,

Standard cutting conditions → **E050, L043 - L058**



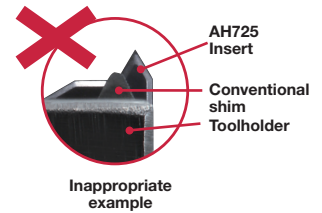
Full-profile insert with chipbreaker

Insert size	Pitch	TPI	Hand of cut	External insert							Internal insert							
				Designation	Grade		IC	PDX	PDY	RE	Designation	Grade		IC	PDX	PDY	RE	
					Coated	Cermet						Coated	Cermet					
					AH725	NS9530						AH725	NS9530					
16	24	R	16ER24UN-B	●*		9.525	0.8	0.7	0.11									
16	24	R	16ER24UN-M		●	9.525	0.9	0.7	0.13									
16	20	R	16ER20UN-B	●*		9.525	0.9	0.8	0.14	16IR20UN-B	●*		9.525	0.9	0.8	0.06		
16	20	R	16ER20UN-M		●	9.525	0.9	0.7	0.16	16IR20UN-M		●	9.525	0.9	0.7	0.09		
16	18	R	16ER18UN-B	●*		9.525	1	0.8	0.15	16IR18UN-B	●*		9.525	1	0.8	0.08		
16	18	R	16ER18UN-M		●	9.525	0.9	0.7	0.18	16IR18UN-M		●	9.525	0.9	0.7	0.1		
16	16	R	16ER16UN-B	●*		9.525	1.1	0.9	0.19	16IR16UN-B	●*		9.525	1.1	0.9	0.09		
16	16	R	16ER16UN-M		●	9.525	0.9	0.7	0.2	16IR16UN-M		●	9.525	0.9	0.7	0.11		
16	14	R	16ER14UN-B	●*		9.525	1.2	1	0.22	16IR14UN-B	●*		9.525	1.2	0.9	0.11		
16	14	R	16ER14UN-M		●	9.525	1.6	1.2	0.23	16IR14UN-M		●	9.525	1.6	1.2	0.13		
16	13	R	16ER13UN-B	●*		9.525	1.3	1	0.24									
16	12	R	16ER12UN-B	●*		9.525	1.4	1.1	0.25	16IR12UN-B	●*		9.525	1.4	1.1	0.12		
16	12	R	16ER12UN-M		●	9.525	1.6	1.2	0.27	16IR12UN-M		●	9.525	1.6	1.2	0.15		
16	8	R	16ER8UN-B	●*		9.525	1.6	1.2	0.41	16IR8UN-B	●*		9.525	1.5	1.1	0.19		
16	8	R	16ER8UN-M		●	9.525	1.6	1.2	0.4	16IR8UN-M		●	9.525	1.6	1.2	0.22		

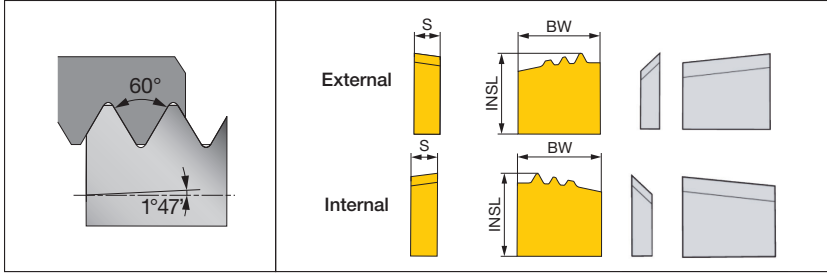
Note: The adjustment of the cutting edge position will be needed as the dimensions of t and r3 are different from other inserts.

highlighted item requires changing shims.

When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page **E052**.



NPT (for Pipe)



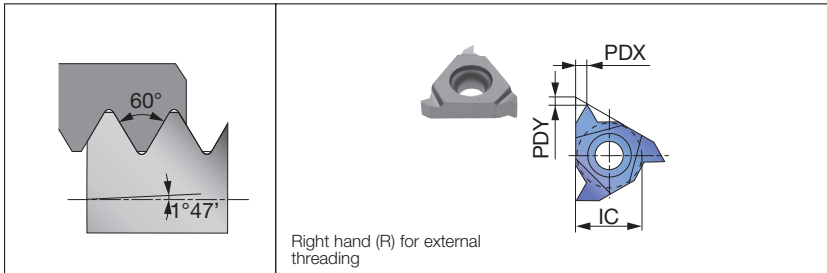
Applicable toolholder

External	Internal
CLVOR-**M...	SI-CLHOR...

Full-profile insert (chaser)

Pitch (Reference)	TPI	Taper		External insert					Internal insert						
				Designation	Grade	BW	INSL	S	Breakerpiece	Designation	Grade	BW	INSL	S	Breakerpiece
					Coated						Coated				
					AH725						AH725				
(2.209)	11.5	1/16	0.75	CR-11.5NPT-4E	●	16	15.7	5.2	CR-8R / 10R-3E / 4E-CB	CR-11.5NPT-4I	●	16	15.7	5.2	CR-8R / 10R-3I / 4I-CB
(3.175)	8	1/16	0.75	CR-8NPT-4E	●	16	15.7	5.2	CR-8R / 10R-3E / 4E-CB	CR-8NPT-4I	●	16	15.7	5.2	CR-8R / 10R-3I / 4I-CB

NPTF (for Pipe)



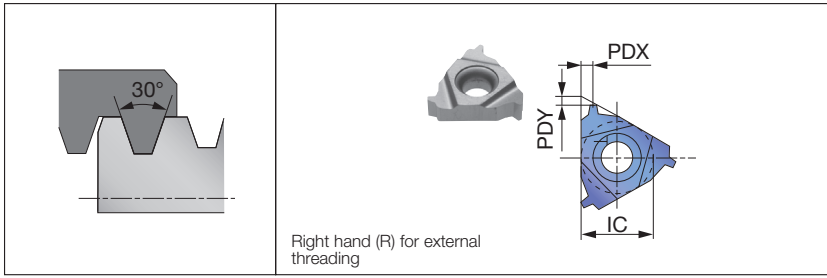
Applicable toolholder

Insert size	External	Internal
16	CER/L**16... JSER**16 JSE**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...

Full-profile insert

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert					Internal insert						
				Designation	Grade	IC	PDX	PDY	RE	Designation	Grade	IC	PDX	PDY	RE
					Coated						Coated				
					AH725						AH725				
16 (0.941)	27	R	16ER27NPTF	●	9.525	0.5	1.2	-							
16 (1.411)	18	R	16ER18NPTF	●	9.525	0.9	0.7	-							
16 (1.814)	14	R	16ER14NPTF	●	9.525	1.6	1.2	-	16IR14NPTF	●	9.525	1.6	1.2	-	
16 (2.209)	11.5	R	16ER11.5NPTF	●	9.525	1.6	1.2	-	16IR11.5NPTF	●	9.525	1.6	1.2	-	
16 (3.175)	8	R	16ER8NPTF	●	9.525	1.6	1.2	-	16IR8NPTF	●	9.525	1.6	1.2	-	

30° Trapezoidal / DIN103 (for Machine parts)



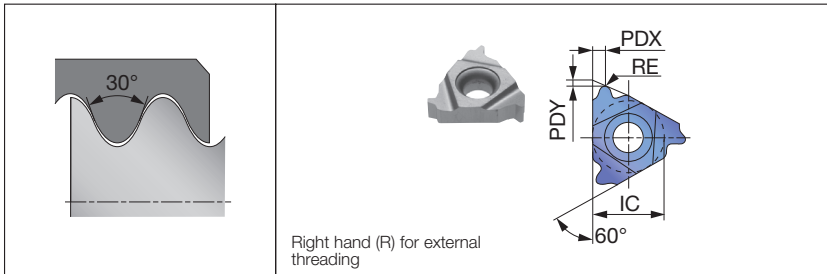
Applicable toolholder

Insert size	External	Internal
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...
27	CER/L**27...	CNR/L**27...

With the special full-profile insert (Please see the page L042)

Insert size	Pitch	TPI	Hand of cut	External insert						Internal insert					
				Designation	Grade		IC	PDX	PDY	Designation	Grade		IC	PDX	PDY
					Coated						Coated				
					AH725	T313V					AH725	T313V			
16	1.5	R	16ER15TR	●		9.525	0.9	0.7	16IR15TR	●		9.525	0.9	0.7	
16	2	R	16ER20TR	●	●	9.525	1.6	1.3	16IR20TR	●	●	9.525	1.6	1.3	
16	3	R	16ER30TR	●	●	9.525	1.6	1.3	16IR30TR	●	●	9.525	1.6	1.3	
22	4	R	22ER40TR	●	●	12.7	2.5	2	22IR40TR	●	●	12.7	2.5	2	
22	5	R	22ER50TR	●	●	12.7	2.5	2	22IR50TR	●	●	12.7	2.5	2	
27	6	R	27ER60TR	●	●	15.875	3.2	2.5							

Round / DIN405 (for Machine parts)



Applicable toolholder

Insert size	External	Internal
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...

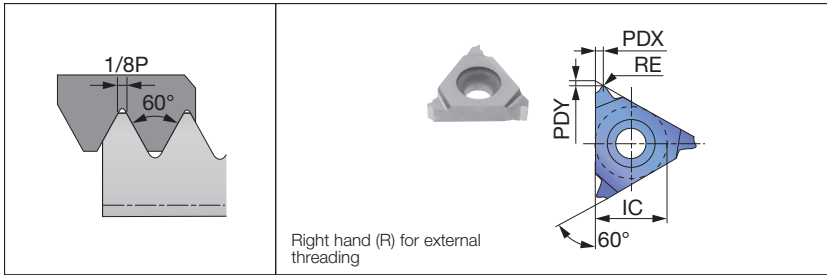
Full-profile insert

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert							Internal insert						
				Designation	Grade		IC	PDX	PDY	RE	Designation	Grade		IC	PDX	PDY	RE
					Coated							Coated					
					AH725							AH725					
16	8	R	16ER8RD-B	●		9.525	1.3	1.4	-								
16	6	R	16ER6RD-B	●		9.525	1.7	1.5	-	16IR6RD-B	●		9.525	1.5	1.4	-	

Reference pages: Toolholders → [E032 - E041](#),
Standard cutting conditions → [E050, L043 - L058](#)

● : Line up / 5 pieces per package

UNJ (for Aerospace industry)



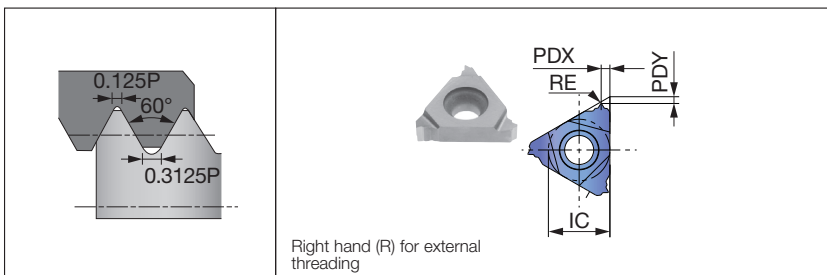
Applicable toolholder

Insert size	External
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16

Full-profile insert

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert						
				Designation	Grade	IC	PDX	PDY	RE	
					Coated					
					AH725					
16	32	R	16ER32UNJ	●	9.525	0.5	1.2	0.13		
16	28	R	16ER28UNJ	●	9.525	0.5	1.2	0.15		
16	24	R	16ER24UNJ	●	9.525	0.9	0.7	0.18		
16	20	R	16ER20UNJ	●	9.525	0.9	0.7	0.21		
16	18	R	16ER18UNJ	●	9.525	0.9	0.7	0.24		
16	16	R	16ER16UNJ	●	9.525	0.9	0.7	0.26		
16	14	R	16ER14UNJ	●	9.525	1.6	1.2	0.3		
16	12	R	16ER12UNJ	●	9.525	1.6	1.2	0.35		
16	10	R	16ER10UNJ	●	9.525	1.6	1.2	0.42		
16	8	R	16ER8UNJ	●	9.525	1.6	1.2	0.53		

MJ (for Aerospace industry)



Applicable toolholder

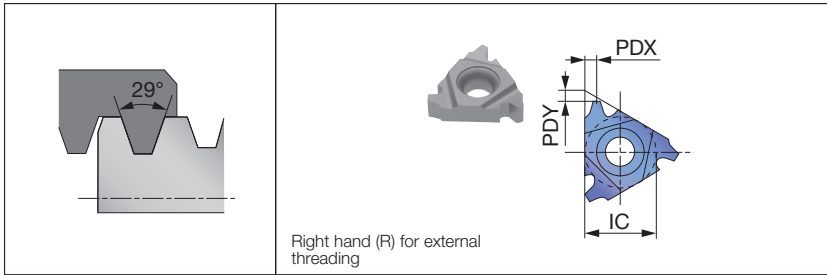
Insert size	External	Internal
11		SNR**11...

Insert size	Pitch	TPI	Hand of cut	Internal insert						
				Designation	Grade	IC	PDX	PDY	RE	
					Coated					
					AH8015					
11	1	R	11IR10MJ	●	6.35	0.9	0.7	0.05		

Reference pages: Toolholders → **E032 - E041**,
Standard cutting conditions → **E050, L043 - L058**

● : Line up / 5 pieces per package

29° Trapezoidal / ACME (for Machine parts, Pipe)



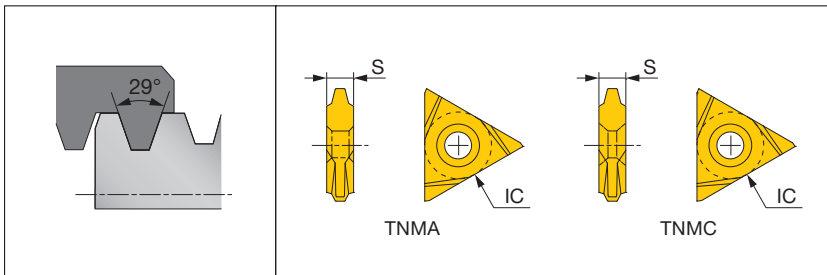
Applicable toolholder

Insert size	External	Internal
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

With the special full-profile insert (Please see the page L042)

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert					Internal insert						
				Designation	Grade		IC	PDX	PDY	Designation	Grade		IC	PDX	PDY
					Coated						Coated				
					AH725	T313V					AH725	T313V			
16 (2.117)	12	R	16ER12ACME	●		9.525	1.6	1.3	16IR12ACME	●		9.525	1.6	1.3	
16 (2.540)	10	R	16ER10ACME	●		9.525	1.6	1.3	16IR10ACME	●		9.525	1.6	1.3	
16 (3.175)	8	R	16ER8ACME	●	●	9.525	1.6	1.3	16IR8ACME	●	●	9.525	1.6	1.3	
22 (4.233)	6	R	22ER6ACME	●	●	12.7	2.5	2	22IR6ACME	●	●	12.7	2.5	2	
22 (5.080)	5	R	22ER5ACME	●	●	12.7	2.5	2	22IR5ACME	●	●	12.7	2.5	2	

29° Trapezoidal / ACME (for Machine parts, Pipe)



Applicable toolholder

External
MTVOR-**M..
STVOR-**M...

On edge

Pitch	TPI	Taper		External insert			
		mm/mm	TPF	Designation	Grade	IC	S
					Coated		
				AH725			
16	-	-	-	TNMA43NT16PEXT-PT	●	12.7	4.8
14	-	-	-	TNMA43NT14PEXT-PT	●	12.7	4.8
12	-	-	-	TNMA43NT12PEXT-PT	●	12.7	4.8
10	-	-	-	TNMA43NT10PEXT-PT	●	12.7	4.8
8	-	-	-	TNMA43NT8PEXT-PT	●	12.7	4.8
6	-	-	-	TNMA43NT6PEXT-PT	●	12.7	4.8
5	-	-	-	TNMA54NT5PEXT-PT	●	15.875	6.4
4	-	-	-	TNMA54NT4PEXT-PT	●	15.875	6.4
3	-	-	-	TNMA54NT3PEXT-PT	●	15.875	6.4
16	-	-	-	TNMC43NT16PEXT-PT	●	12.7	4.8
14	-	-	-	TNMC43NT14PEXT-PT	●	12.7	4.8
12	-	-	-	TNMC43NT12PEXT-PT	●	12.7	4.8
10	-	-	-	TNMC43NT10PEXT-PT	●	12.7	4.8
8	-	-	-	TNMC43NT8PEXT-PT	●	12.7	4.8
6	-	-	-	TNMC43NT6PEXT-PT	●	12.7	4.8
5	-	-	-	TNMC54NT5PEXT-PT	●	15.875	6.4
4	-	-	-	TNMC54NT4PEXT-PT	●	15.875	6.4
3	-	-	-	TNMC54NT3PEXT-PT	●	15.875	6.4

Reference pages: Toolholders → **E032 - E041**,

Standard cutting conditions → **E050, L043 - L058**

● : Line up / 5 pieces per package

29° Trapezoidal/ STUB ACME (for Machine parts, Pipe)

On edge

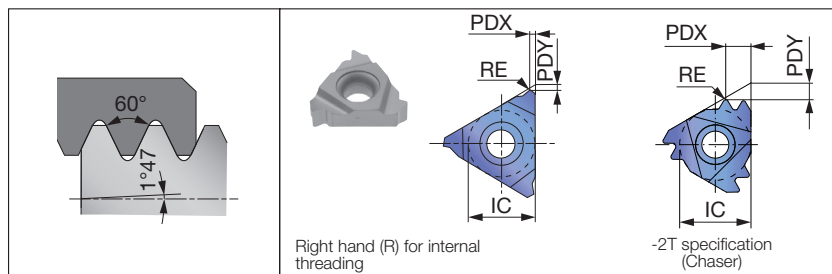
Pitch	TPI	Taper		External insert			
		mm/mm	TPF	Designation	Grade	IC	S
					Coated		
			AH725				
16	-	-	-	TNMA43NT16PSTUBE-PT	●	12.7	4.8
14	-	-	-	TNMA43NT14PSTUBE-PT	●	12.7	4.8
12	-	-	-	TNMA43NT12PSTUBE-PT	●	12.7	4.8
10	-	-	-	TNMA43NT10PSTUBE-PT	●	12.7	4.8
8	-	-	-	TNMA43NT8PSTUBE-PT	●	12.7	4.8
6	-	-	-	TNMA43NT6PSTUBE-PT	●	12.7	4.8
5	-	-	-	TNMA54NT5PSTUBE-PT	●	15.875	6.4
4	-	-	-	TNMA54NT4PSTUBE-PT	●	15.875	6.4
3	-	-	-	TNMA54NT3PSTUBE-PT	●	15.875	6.4
16	-	-	-	TNMC43NT16PSTUBE-PT	●	12.7	4.8
14	-	-	-	TNMC43NT14PSTUBE-PT	●	12.7	4.8
12	-	-	-	TNMC43NT12PSTUBE-PT	●	12.7	4.8
10	-	-	-	TNMC43NT10PSTUBE-PT	●	12.7	4.8
8	-	-	-	TNMC43NT8PSTUBE-PT	●	12.7	4.8
6	-	-	-	TNMC43NT6PSTUBE-PT	●	12.7	4.8
5	-	-	-	TNMC54NT5PSTUBE-PT	●	15.875	6.4
4	-	-	-	TNMC54NT4PSTUBE-PT	●	15.875	6.4
3	-	-	-	TNMC54NT3PSTUBE-PT	●	15.875	6.4

Applicable toolholder

External
MTVOR-**M...
STVOR-**M...

ACME and STUB ACME can cut crest radius. Crest flat of ACME and STUB ACME need to be cut by another tool.

API Round (for Energy)



Applicable toolholder

Insert size	External	Internal
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
		TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Full-profile insert

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert							Internal insert						
				Designation	Grade		IC	PDX	PDY	RE	Designation	Grade		IC	PDX	PDY	RE
					Coated							Coated					
					AH725	T313V						AH725	T313V				
16 (2.54)	10	R	16ER10RAPI	●		9.525	1.6	1.2	0.36	16IR10RAPI	●	●	9.525	1.6	1.2	0.36	
16 (3.175)	8	R	16ER8RAPI	●		9.525	1.6	1.2	0.43	16IR8RAPI	●	●	9.525	1.6	1.2	0.43	
22 (3.175)	8	R								22IR8RAPI-2T	●		12.7	4.5	3	0.43	

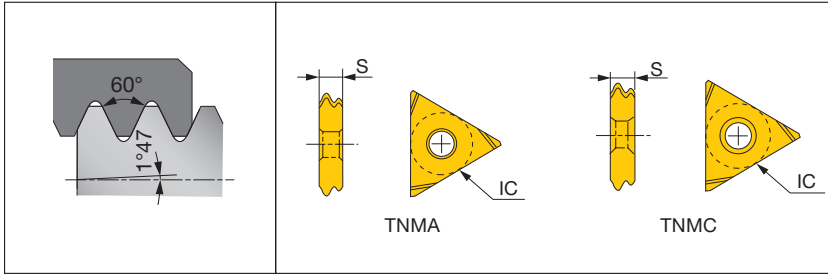
Full-profile insert with chipbreaker

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert							Internal insert						
				Designation	Grade		IC	PDX	PDY	RE	Designation	Grade		IC	PDX	PDY	RE
					Coated							Coated					
					AH725							AH725					
16 (2.54)	10	R	16ER10RD-CB	●		9.525	1.2	1.5	0.36	16IR10RD-CB	●		9.525	1.2	1.5	0.36	
16 (3.175)	8	R	16ER8RD-CB	●		9.525	1.3	1.5	0.43	16IR8RD-CB	●		9.525	1.3	1.5	0.43	

Reference pages: Toolholders → **E032 - E041**,
Standard cutting conditions → **E050, L043 - L058**

● : Line up / 5 pieces per package

API Round (for Energy)

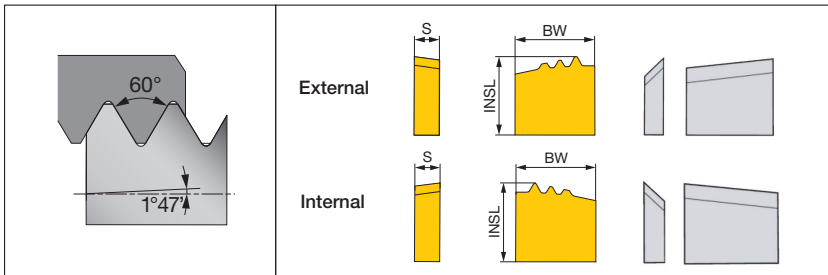


Applicable toolholder

External	External
MTVOR-**M..	HS**-MTHOR...
STVOR-**M...	

On edge

Pitch (Reference)	TPI	Taper		External insert				Internal insert					
		mm/mm	TPF	Designation	Grade		IC	S	Designation	Grade		IC	S
					Coated	AH725				Coated	AH725		
(2.54)	10	1/16	0.75	TNMA4310RDEXT	●		12.7	4.8	TNMA4310RDINT	●		12.7	4.8
(3.175)	8	1/16	0.75	TNMA438RDEXT	●		12.7	4.8	TNMA438RDINT	●		12.7	4.8
(2.54)	10	1/16	0.75	TNMC4310RDEXT	●		12.7	4.8	TNMC4310RDINT	●		12.7	4.8
(3.175)	8	1/16	0.75	TNMC438RDEXT	●		12.7	4.8	TNMC438RDINT	●		12.7	4.8

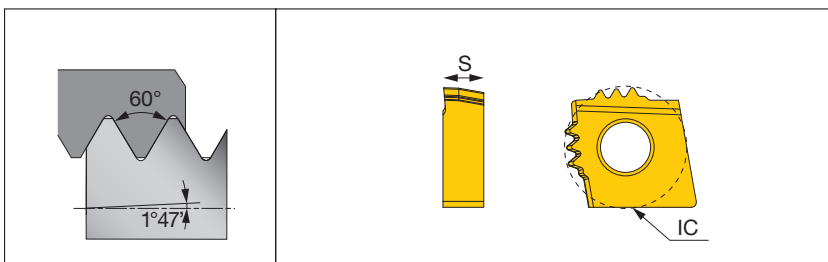


Applicable toolholder

External	Internal
CLVOR-**M...	SI-CLHOR...

Full-profile insert (chaser)

Pitch (Reference)	TPI	Taper		External insert					Internal insert								
		mm/mm	TPF	Designation	Grade		BW	INSL	S	Breakerpiece	Designation	Grade		BW	INSL	S	Breakerpiece
					Coated	AH725						Coated	AH725				
(3.175)	8	1/16	0.75	CR-8R-3E	●		16	15	5.2	CR-8R / 10R-3E / 4E-CB	●		16	15	5.2	CR-8R / 10R-3I / 4I-CB	
(2.54)	10	1/16	0.75	CR-10R-3E	●		16	15.9	5.2	CR-8R / 10R-3E / 4E-CB	●		16	15.9	5.2	CR-8R / 10R-3I / 4I-CB	



Full-profile insert (chaser)

Pitch (Reference)	TPI	Taper		External insert				
		mm/mm	TPF	Designation	Grade		IC	S
					Coated	AH725		
(2.54)	10	1/16	0.75	CNGA-10R-3E	●		19.05	6.4
(3.175)	8	1/16	0.75	CNGA-8R-3E	●		19.05	6.4

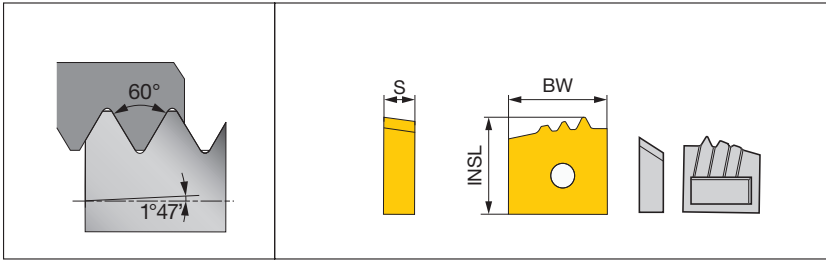
Note: Toolholders need to be customized for these types of inserts.

Reference pages: Toolholders → [E032 - E041](#),
Standard cutting conditions → [E050](#)

● : Line up / 5 pieces per package

API Round (for Energy)

For tool-rotating machines



Full-profile insert (chaser)

Pitch (Reference)	TPI	Taper		External insert					Breakerpiece
		mm/mm	TPF	Designation	Grade	BW	INSL	S	
					Coated AH725				
(3.175)	8	1/16	0.75	CR-8R-3E #1	●	16	14.7	5.2	TD39318R-1-CBW/CAVITY
(3.175)	8	1/16	0.75	CR-8R-3E #2	●	16	14.9	5.2	TD39328R-2-CBW/CAVITY
(3.175)	8	1/16	0.75	CR-8R-3E #3	●	16	15	5.2	TD39338R-3-CBW/CAVITY

Note: Toolholders need to be customized for these types of inserts.

API Buttress (for Energy industry)

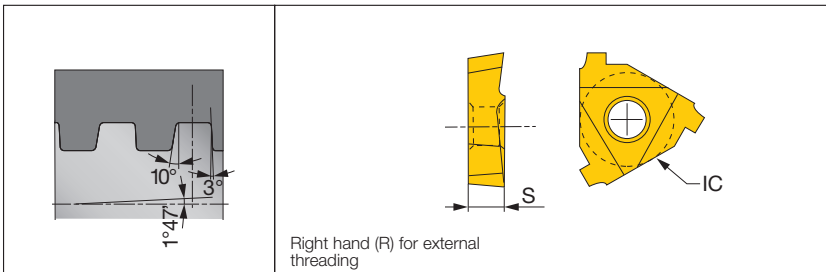


Applicable toolholder

Insert size	External	Internal
22	CER/L**22...	TSNR/L**22... SNR/L**22... TCNR/L**22... CNR/L**22...

Full-profile insert

Insert size	Pitch (Reference)	TPI	Hand of cut	External insert					Internal insert				
				Designation	Grade	IC	PDX	PDY	Designation	Grade	IC	PDX	PDY
					Coated AH725					Coated AH725			
22	(5.08)	5	R	22ER5BAPI	●	12.7	3.72	2.2	22IR5BAPI	●	12.7	3.45	2.2



Applicable toolholder

External	Internal
MTVNR**M5	HS**-LNFR...

Full-profile insert (single side)

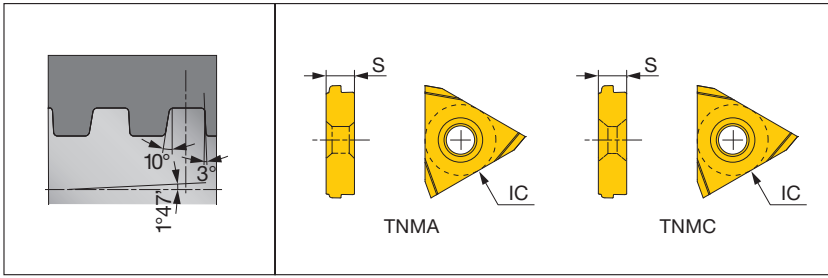
Pitch (Reference)	TPI	Taper		External insert				Internal insert			
		mm/mm	TPF	Designation	Grade	IC	S	Designation	Grade	IC	S
					Coated AH725				Coated AH725		
(5.08)	5	1/16	0.75	L535B75EXT-FC	●	15.875	4.8	L535B75INT-FC	●	15.875	4.8
(5.08)	5	1/12	1	L535B1EXT-FC	●	15.875	4.8	L535B1INT-FC	●	15.875	4.8

Reference pages: Toolholders → **E032 - E041**,

Standard cutting conditions → **E050**

● : Line up / 5 pieces per package

API Buttress (for Energy industry)

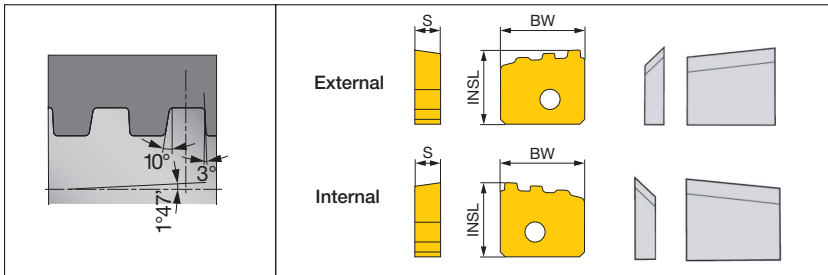


Applicable toolholder

External	External
MTVOR-**M...	HS**-MTHOR...
STVOR-**M...	

On edge

Pitch (Reference)	TPI	Taper		External insert				Internal insert			
		mm/mm	TPF	Designation	Grade	IC	S	Designation	Grade	IC	S
					Coated				Coated		
(5.08)	5	1/12	1	TNMA545B1EXT-FC	●	15.875	6.4	TNMA545B1INT-FC	●	15.875	6.4
(5.08)	5	1/16	0.75	TNMA545B75EXT-FC	●	15.875	6.4	TNMA545B75INT-FC	●	15.875	6.4
(5.08)	5	1/12	1	TNMC545B1EXT-FC	●	15.875	6.4	TNMC545B1INT-FC	●	15.875	6.4
(5.08)	5	1/16	0.75	TNMC545B75EXT-FC	●	15.875	6.4	TNMC545B75INT-FC	●	15.875	6.4

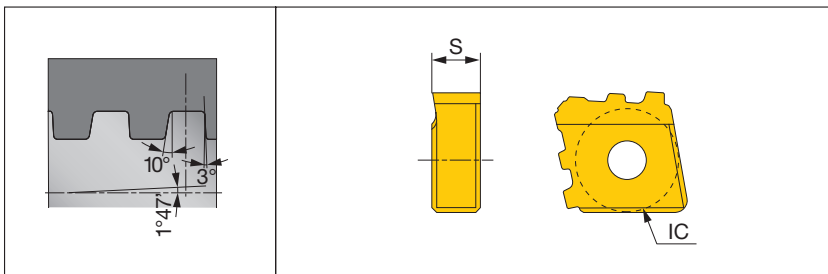


Applicable toolholder

External	Internal
CLVOR-**M...	SI-CLHOR...

Full-profile insert (chaser)

Pitch (Reference)	TPI	Taper		External insert					Internal insert						
		mm/mm	TPF	Designation	Grade	BW	INSL	S	Breakerpiece	Designation	Grade	BW	INSL	S	Breakerpiece
					Coated						Coated				
(5.08)	5	1/16	0.75	CR-5B75-4E	●	20.4	15.9	5.1	CR-5B75 / 5B1-4E-CB	●	16	15.8	5.2	CR-8R / 10R-31 / 4I-CB	



Full-profile insert (chaser)

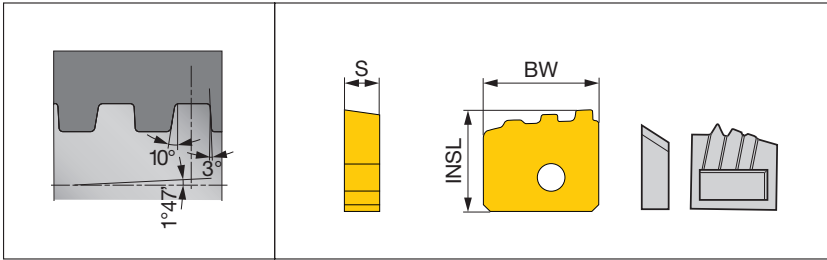
Pitch (Reference)	TPI	Taper		External insert			
		mm/mm	TPF	Designation	Grade	IC	S
					Coated		
(5.08)	5	1/16	0.75	CNGA-5B75-3E	●	19.05	6.4

Note: Toolholders need to be customized for these types of inserts.

Reference pages: Toolholders → [E032 - E041](#),
Standard cutting conditions → [E050](#)

● : Line up / 5 pieces per package

API Buttress (for Energy industry) For tool-rotating machines

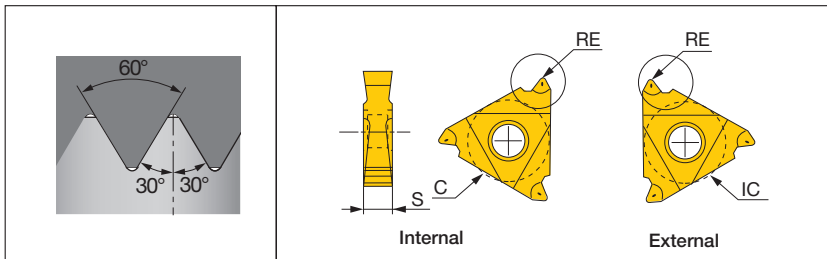


Full-profile insert (chaser)

Pitch (Reference)	TPI	Taper		External insert						
				Designation	Grade	BW	INSL	S	RE	Breakerpiece
					Coated AH725					
(5.08)	5	1/16	0.75	CR-5B75-3E #1	●	17	14.6	5.2	TD46015B75-1-CBW/CAVITY	
(5.08)	5	1/16	0.75	CR-5B75-3E #2	●	17	14.8	5.2	TD46025B75-2-CBW/CAVITY	
(5.08)	5	1/16	0.75	CR-5B75-3E #3	●	17	15	5.2	TD46035B75-3-CBW/CAVITY	

Note: Toolholders need to be customized for these types of inserts.

API Rotary shoulder connection (for Energy industry)



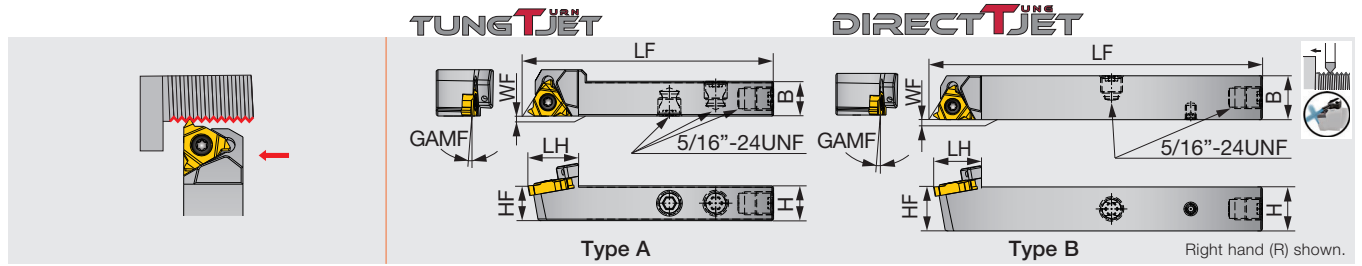
Applicable toolholder

External	Internal
MTVNR-3232M54	HS**-LNFR-54API

Full-profile insert (Double side)

Pitch (Reference)	TPI	Connection	Taper		Designation	Grade	IC	S	RE
			mm/mm	TPF		Coated			
						AH725			
(6.35)	4	V-0.038R	1/6	2	LDS54428FT-CB #1	●	15.875	6.4	0.97
(6.35)	4	V-0.038R	1/4	3	LDS54438FT-CB #2	●	15.875	6.4	0.97
(6.35)	4	V-0.050	1/6	2	LDS54425FT-CB #3	●	15.875	6.4	0.64
(6.35)	4	V-0.050	1/4	3	LDS54435FT-CB #4	●	15.875	6.4	0.64
(5.08)	5	V-0.040	1/4	3	LDS54530FT-CB #5	●	15.875	6.4	0.51

● : Line up / 5 pieces per package



Designation	H	B	LF	LH	HF	WF	GAMF	Type	Insert
JSE2R1212F16-CHP ※	12	12	85	19	12	0	1°	A	16ER...
JSE2R1212X16-CHP	12	12	120	19	12	0	1°	B	16ER...
JSE2R1616X16-CHP	16	16	120	19	16	0	1°	B	16ER...

※ Connection with external coolant tube

SPARE PARTS

Designation	Clamping screw	Wrench
JSE2R**16-CHP	CSTB-3.5	T-15F

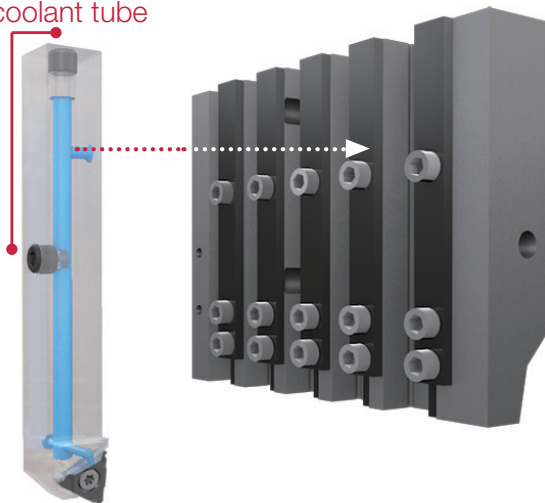
DIRECTTUNG system

No need for coolant tube setup.

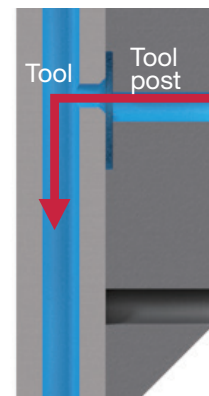
Eliminates chip entanglement on tubes and streamlines tool replacement.

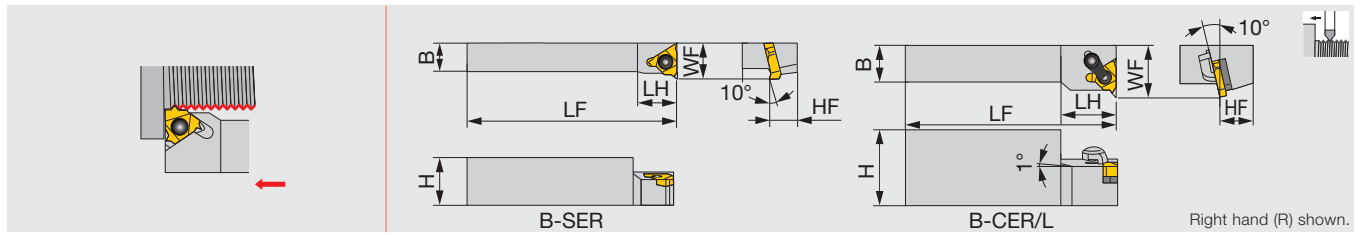
Coolant is supplied from the tool post directly to the tools

Internal thread
Optional connection with external coolant tube



Detailed view of the coolant flow after connection

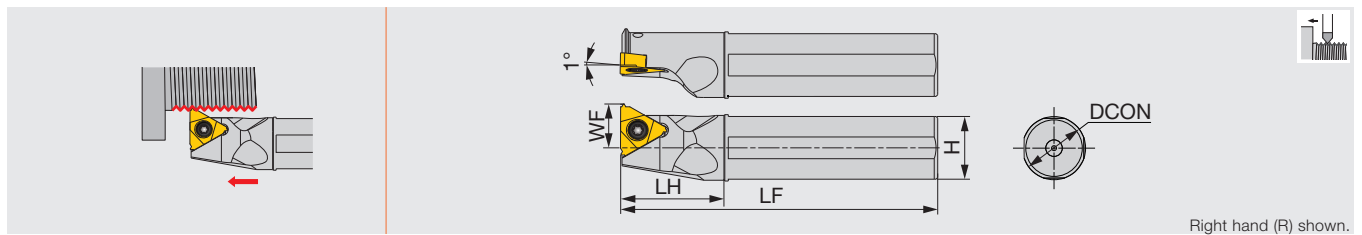




Designation	H	B	LF	LH	HF	WF	Insert
B-SER10H16	20	10	100	15	10	16	16ER...
B-SER12K16	24	12	125	18	12	18	16ER...
B-CER/L16M16	32	16	150	24	16	22	16ER/L...

SPARE PARTS

Designation	Clamp set	Shim set	Clamping screw	Wrench
B-SER**16	-	-	CSTB-3.5	T-15F
B-CER/L16M16	CSP16	A16-1	-	T-15F

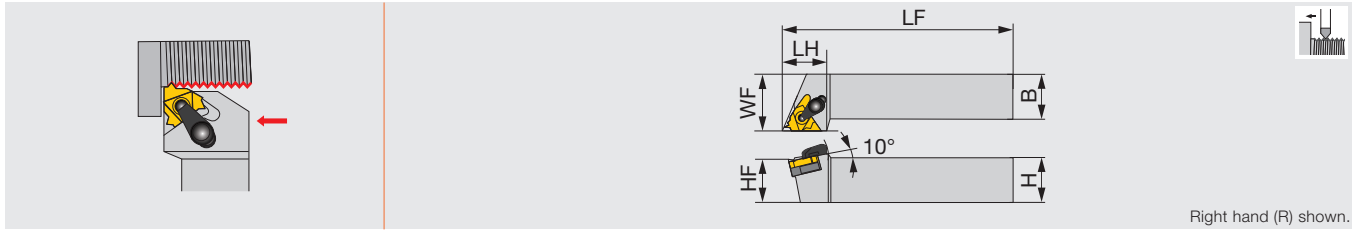


Designation	DCON	H	LF	LH	WF	Insert
JS16F-SEL16	16	15	85	25	11	16ER...
JS19G-SEL16	19.05	18	90	30	12.5	16ER...
JS19X-SEL16	19.05	18	120	30	12.5	16ER...
JS20G-SEL16	20	19	90	30	13	16ER...
JS20X-SEL16	20	19	120	30	13	16ER...
JS25HSEL16	25	24	100	30	15.5	16ER...
JS254X-SEL16	25.4	24	120	30	15.7	16ER...

Note: Use left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
JS***-SEL16	CSTB-3.5	T-15F

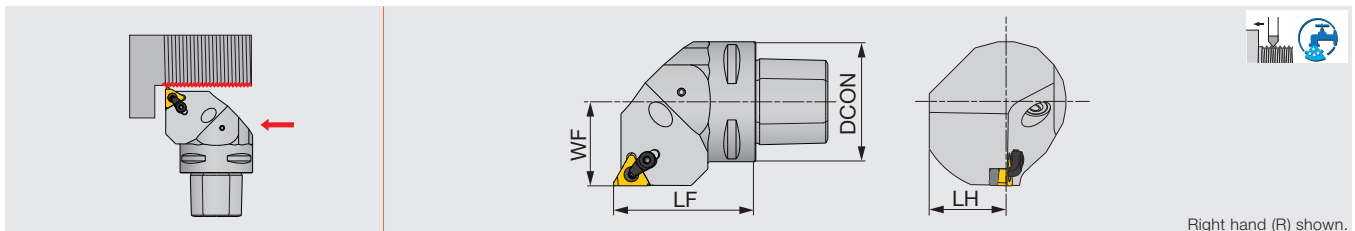


Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	Insert
CER/L1212H16DT	12	12	100	24	12	16	16ER/L...
CER/L1616H16DT	16	16	100	24	16	20	16ER/L...
CER/L2020K16DT	20	20	125	24	20	25	16ER/L...
CER/L2525M16DT	25	25	150	28	25	32	16ER/L...
CER/L2525M22DT	25	25	150	31.3	25	32	22ER/L...
CER3232P16T	32	32	170	32	32	40	16ER...
CER3232P22T	32	32	170	32	32	40	22ER...
CER2525M27T	25	25	150	34	25	32	27ER...
CER3232P27T	32	32	170	34	32	40	27ER...

Note: A clamp set consists of a clamp and a clamping screw. A shim set consists of a shim and a shim screw to secure the shim to the shank. Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand. When using DT type, please remove either the clamp set or the insert clamping screw.

Designation	Clamp set	Clamping screw	Shim screw	Shim	Shim set	Wrench 1	Wrench 2	Wrench 3
CER/L**16DT	CSP16	CSTB-3.5ST	DTS5-3.5	A16-1DT	-	P-3.5	T-15F	-
CER/L2525M22DT	CSP22	CSTB-4ST	DTS6-4	GX22-1DT	-	P-4	T-15F	T-20F
CER3232P16T	CSP16	-	-	-	A16-1	-	T-15F	-
CER3232P22T	CSP22	-	-	-	NXE22-1	-	T-20F	-
CER**27T	CSP27	-	-	-	NXE27-1	P-4	-	-



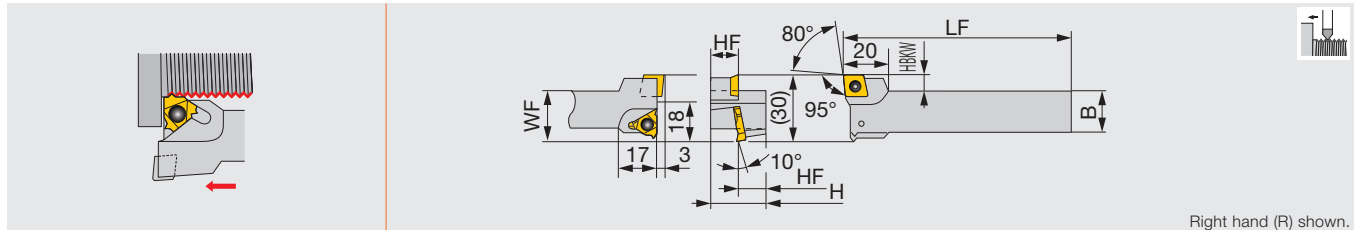
Right hand (R) shown.

Designation	DCON	LF	LH	WF	RE	Insert
C4CER/L27050-16ERN(2)	40	50	25	27	0.8	16ER/L...
C5CER/L35060-16ER(1)	50	60	32	35	0.8	16ER/L...
C5CER/L35060-16ERN(2)	50	60	32	35	0.8	16ER/L...
C6CER/L45065-16ER(1)	63	65	41	45	0.8	16ER/L...
C6CER/L45065-16ERN(2)	63	65	41	45	0.8	16ER/L...

(1) Applicable for 3 MPa coolant (2) Applicable for 7 MPa coolant

Designation	Clamp set	Clamping screw	Coolant parts	Shim screw	Shim	Wrench 1	Wrench 2
C5CE*35060-16ER	CSP16	CSTB-3.5ST	EZ104	DTS5-3.5	A16-1DT	P-3.5	T-15F
C5CE*35060-16ERN	CSP16	CSTB-3.5ST	SATZ-M10X1-M5	DTS5-3.5	A16-1DT	P-3.5	T-15F
C6CE*45065-16ER	CSP16	CSTB-3.5ST	EZ104	DTS5-3.5	A16-1DT	P-3.5	T-15F
C6CE*45065-16ERN	CSP16	CSTB-3.5ST	SATZ-M10X1-M5	DTS5-3.5	A16-1DT	P-3.5	T-15F

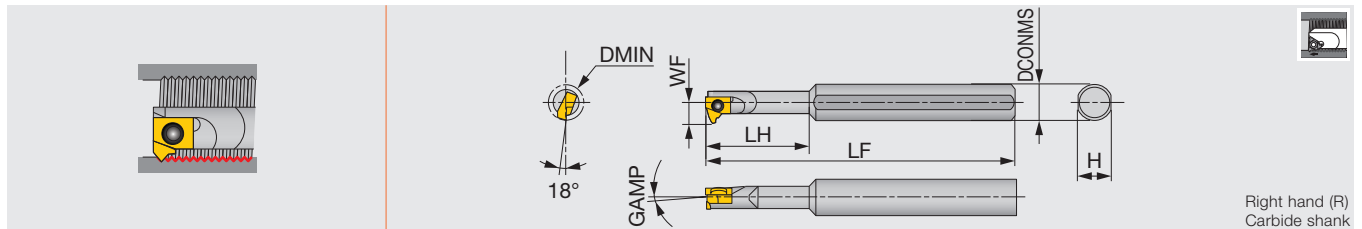
Reference pages: Inserts → **E010, E014, E016 - E027**, Standard cutting conditions → **E050**



Designation	H	B	LF	HF	WF	HBKW	Insert
BC-SER12K16	24	16	125	12	23	7	16ER..., CC*T09T3...

SPARE PARTS

Designation	Clamping screw	Wrench
BC-SER12K16	CSTB-3.5	T-15F



Designation	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	Insert
SNR0006H06-2	Steel	8	8	4.7	100	18	7	2°	6IR...
SNR0006H06-3	Steel	8	8	4.7	100	18	7	3°	6IR...
SNR0008H06-2	Steel	10	8	5.7	100	18	7	2°	6IR...
SNR0008H06-3	Steel	10	8	5.7	100	18	7	3°	6IR...
SNR0006K06SC-2	Carbide	8	8	4.7	125	30	7	2°	6IR...
SNR0006K06SC-3	Carbide	8	8	4.7	125	30	7	3°	6IR...
SNR0008K06SC-2	Carbide	10	8	5.7	125	18	7	2°	6IR...
SNR0008K06SC-3	Carbide	10	8	5.7	125	18	7	3°	6IR...

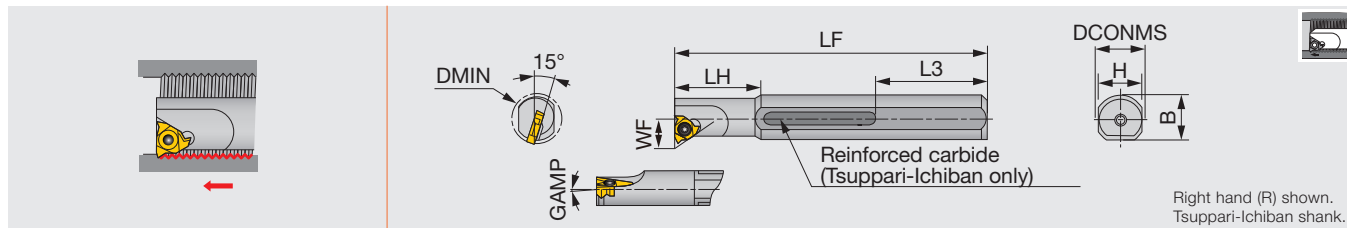
Note: Use right-hand toolholders (R) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
SNR0006H06...	CSTB-2L040	T-6F
SNR0008H06...	CSTB-2L	T-6F
SNR0006K06SC...	CSTB-2L040	T-6F
SNR0008K06SC...	CSTB-2L	T-6F

Reference pages: BC-SER/L: Inserts → **B109** - (CC*T09T3...), **E010**, **E014**, **E016** - **E027** (16ER...),
Standard cutting conditions → **E050**

SNR/L-2/3: Inserts → **E016**, **E020** - **E022**, Standard cutting conditions → **E050**



Designation	Material	DMIN	DCONMS	WF	LF	LH	L3	H	B	GAMP	Insert
TSNR0016Q16	Reinforced	19	16	10.6	180	40	59	15	-	1°	16IR...
TSNR0020R22	Reinforced	24	20	13.9	200	50	49	18	-	1°	22IR...
SNR/L0010K11	Steel	12	16	6.6	125	25	-	15	15.5	1°	11IR/L...
SNR0010K11-2	Steel	12	16	6.6	125	25	-	15	15.5	2°	11IR...
SNR0010K11-3	Steel	12	16	6.6	125	25	-	15	15.5	3°	11IR...
SNR/L0013L11	Steel	15	16	8.2	140	32.5	-	15	15.5	1°	11IR/L...
SNR0013L11-2	Steel	15	16	8.2	140	32.5	-	15	15.5	2°	11IR...
SNR0013L11-3	Steel	15	16	8.2	140	32.5	-	15	15.5	3°	11IR...
SNR/L0016M16	Steel	19	16	10.6	150	40	-	15	15.5	1°	16IR/L...
SNR0016M16-2	Steel	19	16	10.6	150	40	-	15	15.5	2°	16IR...
SNR0016M16-3	Steel	19	16	10.6	150	40	-	15	15.5	3°	16IR...
SNR/L0020Q22	Steel	24	20	13.9	180	50	-	18	19	1°	22IR/L...
SNR0020Q22-2	Steel	24	20	13.9	180	50	-	18	19	2°	22IR...
SNR0020Q22-3	Steel	24	20	13.9	180	50	-	18	19	3°	22IR...
SNR0010M11SC	Carbide	13	10	7.4	150	24	-	9	-	1°	11IR...
SNR0010M11SC-2	Carbide	13	10	7.4	150	24	-	9	-	2°	11IR...
SNR0010M11SC-3	Carbide	13	10	7.4	150	24	-	9	-	3°	11IR...
SNR0012P11SC	Carbide	15	12	8.5	170	28	-	11	-	1°	11IR...
SNR0012P11SC-2	Carbide	15	12	8.5	170	28	-	11	-	2°	11IR...
SNR0012P11SC-3	Carbide	15	12	8.5	170	28	-	11	-	3°	11IR...
SNR/L0016R16SC	Carbide	20	16	11.9	200	35	-	15	-	1°	16IR/L...
SNR0016R16SC-2	Carbide	20	16	11.9	200	35	-	15	-	2°	16IR...

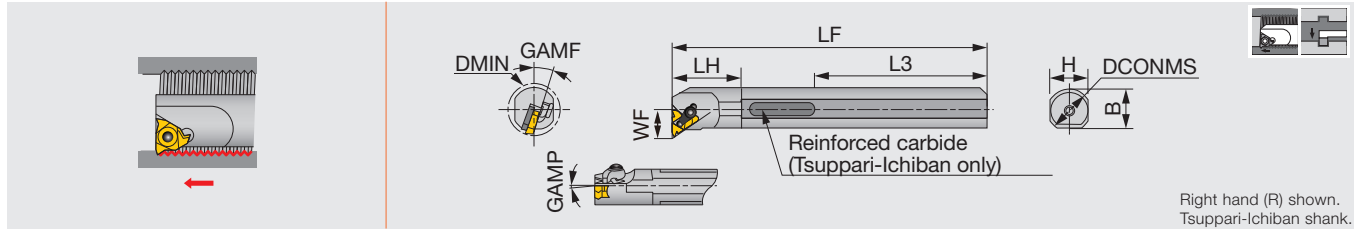
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS



Designation	Clamping screw	Wrench
TSNR0016Q16	CSTB-3.5	T-15F
TSNR0020R22	CSTB-4	T-15F
SNR/L00**11...	CSTB-2.5	T-8F
SNR/L0016M16...	CSTB-3.5	T-15F
SNR/L0020Q22...	CSTB-4	T-15F
SNR00**11SC...	CSTB-2.5	T-8F
SNR/L0016R16SC...	CSTB-3.5	T-15F

Clamp-on internal threading toolholder (alternative clamping of screw-on or clamp-on only for DT type)



Right hand (R) shown.
Tsuppari-Ichiban shank.

Designation	Material	DMIN	DCONMS	WF	LF	LH	L3	H	B	GAMF	GAMP	Insert
TCNR0020R16DT	Reinforced	24	20	14	200	30	49	18	-	15°	1°	16IR...
TCNR0025S16DT	Reinforced	29	25	16.5	250	38	64	23	-	15°	1°	16IR...
TCNR0025S22DT	Reinforced	30	25	18.2	250	38	64	23	-	15°	1°	22IR...
CNR/L0020P16	Steel	24	20	14	170	30	-	18	19	15°	1°	16IR/L...
CNR/L0025R16	Steel	29	25	16.5	200	38	-	23	24	15°	1°	16IR/L...
CNR/L0032S16	Steel	37	32	20.1	250	48	-	30	31	15°	1°	16IR/L...
CNR/L0025R22	Steel	30	25	18.2	200	38	-	23	24	15°	1°	22IR/L...
CNR/L0032S22	Steel	38	32	21.9	250	48	-	30	31	15°	1°	22IR/L...
CNR0040T27	Steel	46	40	26.9	300	60	-	37	38.5	10°	1°	27IR ...

Note: A clamp set consists of a clamp and a clamping screw.

A shim set consists of a shim and a shim screw to secure the shim to the shank.

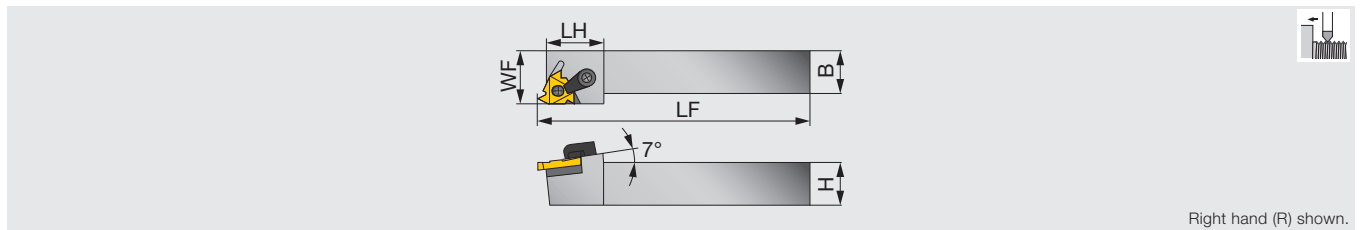
Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand.

When using DT type, please remove either the clamp set or the insert clamping screw.

SPARE PARTS

Designation	Clamp set	Clamping screw	Shim screw	Shim	Shim set R	Shim set L	Wrench 1	Wrench 2	Wrench 3
TCNR002**16DT	CSP16	CSTB-3.5ST	DTS5-3.5	A16-1DT	-	-	P-3.5	T-15F	-
TCNR0025S22DT	CSP22	CSTB-4ST	DTS6-4	GX22-1DT	-	-	P-4	T-15F	T-20F
CNR/L**16	CSP16	-	-	-	A16-1	A16-1	-	T-15F	-
CNR/L**22	CSP22	-	-	-	NXN22-1	NXE22-1	-	T-20F	-
CNR0040T27	CSP27	-	-	-	NXN27-1	NXE27-1	P-4	-	-

External threading toolholder, for single-sided lay down inserts



Right hand (R) shown.

Designation	B	H	LF	LH	WF	Insert
MTVNR-2525M5	25	25	152	39	31.8	L535B**EXT-FC
MTVNR-3232M5	32	32	178	39	38.1	L535B**EXT-FC

SPARE PARTS

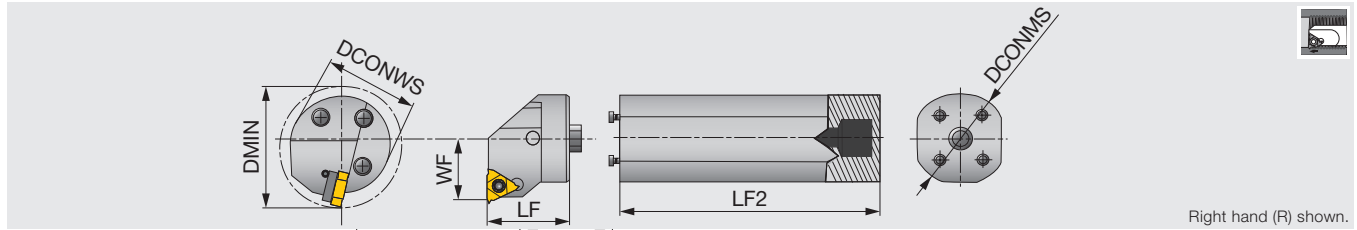
Designation	Shim	Lock pin	Clamp	Clamping screw	Wrench
MTVNR...	LS53NOFORMEXT	NL-58	TC-250	STC-11	1/8HEX



TUNGTHREAD

HS-LNFR/L-53

Head exchangeable internal threading, for single-sided lay down inserts



Designation	DMIN	DCONWS	WF	LF	Insert
HS40-LNFR-53	50	40	28.7	41.3	L535B**INT-FC
HS50-LNFR-53	63	50	32.7	41.3	L535B**INT-FC

SPARE PARTS

Designation	Lock pin	Clamp	Clamping screw	Wrench
HS**-LNFR-53	NL-56	TC-250	STC-11	1/8HEX

Shank

Designation	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

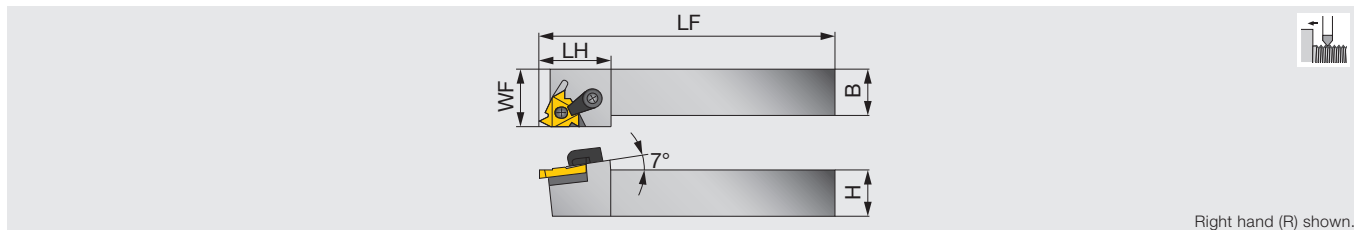
SPARE PARTS

Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

TUNGTHREAD

MTVNR/L-54

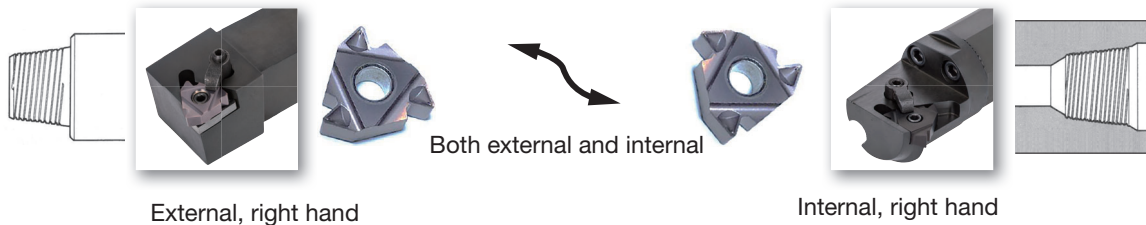
External threading toolholder, for double-sided lay down inserts



Designation	H	B	LF	LH	WF	Insert
MTVNR-3232M54	32	32	178	39	38.1	LDS54**FT-CB#...

SPARE PARTS

Designation	Shim	Lock pin	Clamp	Clamping screw	Wrench
MTVNR-3232M54	LS53NOFORMEXT	NL-58	TC-250	STC-11	1/8HEX

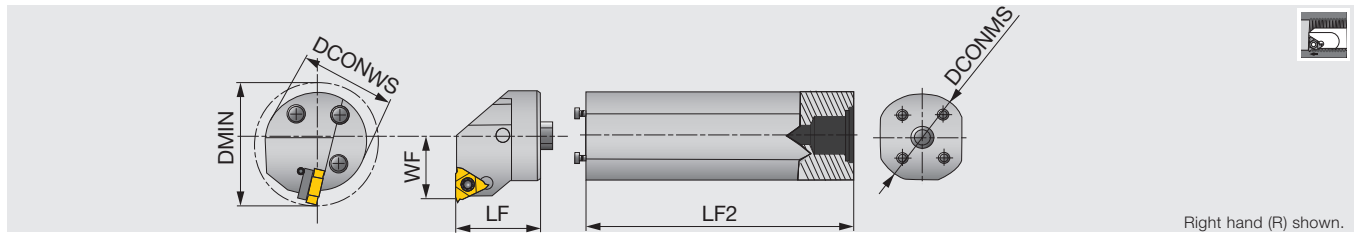


Reference pages: HS-LNFR/L-53: Inserts → **E029**, Standard cutting conditions → **E050**
 MTVNR/L-54: Inserts → **E031**, Standard cutting conditions → **E050**

TUNGTHREAD

HS-LNFR/L-54API

Head exchangeable internal threading toolholder, for double-sided lay down inserts



Designation	DMIN	DCONWS	WF	LF	Insert
HS40-LNFR-54API	50	40	27	32	LDS54**FT-CB#...
HS50-LNFR-54API	63	50	35	40	LDS54**FT-CB#...

SPARE PARTS

Designation	Lock pin	Clamp	Clamping screw	Wrench
HS40-LNFR-54API	H410-1	TC-250	STC-11	1/8HEX
HS50-LNFR-54API	NL-56	TC-250	STC-11	1/8HEX

Shank

Designation	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

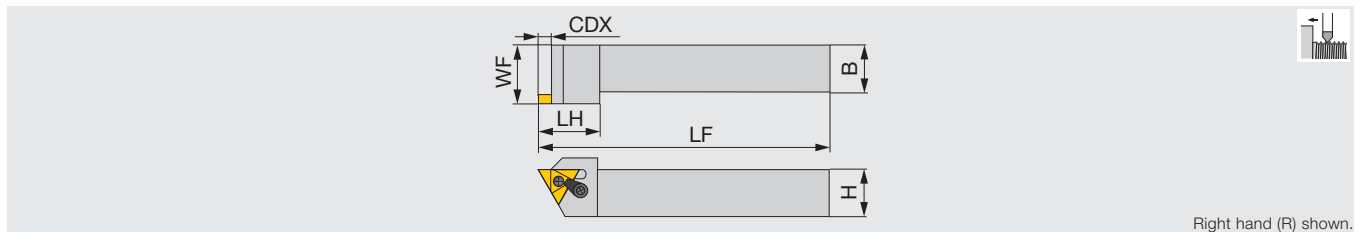
SPARE PARTS

Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

TUNGTHREAD

MTVOR/L

Multi-clamp external threading toolholder, for on edge inserts



Designation	H	B	LF	LH	WF	CDX	Insert
MTVOR-2525M4	25	25	150	31	31.7	5.8	TNM*43...
MTVOR-3232M4	32	32	178	31	38.1	5.8	TNM*43...
MTVOR-2525M5	25	25	150	36	31.7	7.3	TNM*54...
MTVOR-3232M5	32	32	178	36	38.1	7.3	TNM*54...

Note: STVOR/L is recommended for TNMC insert although the insert can be used on multi-clamp (M type) toolholder.

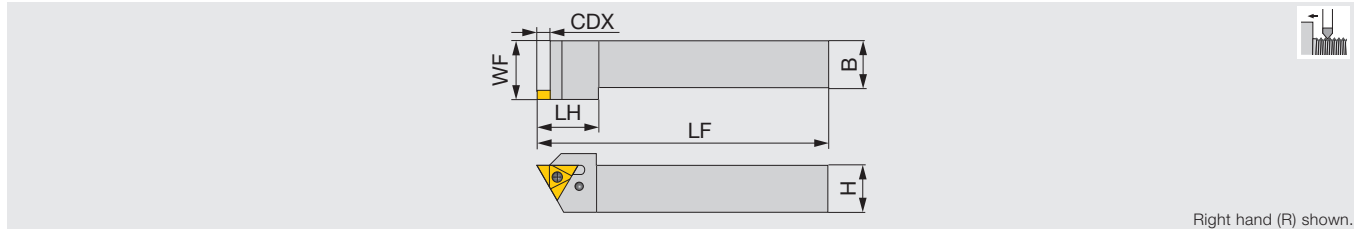
SPARE PARTS

Designation	Lock pin	Clamp	Clamping screw	Wrench
MTVOR-**M4	NL-44	TC-190	STC-5	3/32HEX
MTVOR-**M5	NL-56	TC-250	STC-11	1/8HEX

Reference pages: HS-LNFR/L-54API: Inserts → E031, Standard cutting conditions → E050



Screw-on external threading toolholder, for on edge inserts



Right hand (R) shown.

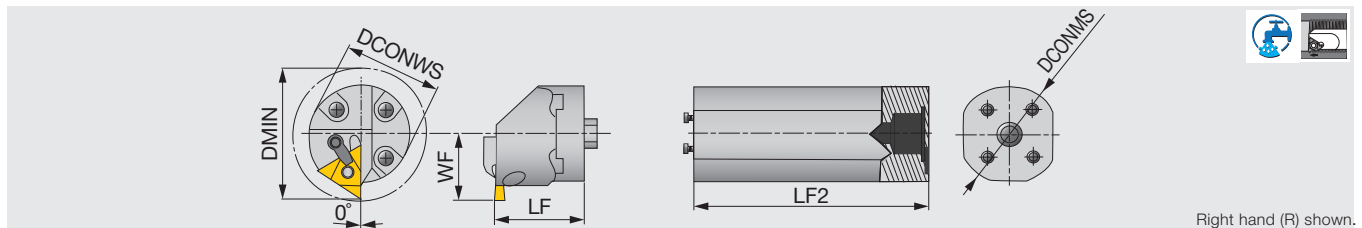
Designation	H	B	LF	LH	WF	CDX	Insert
STVOR-2525M4	25	25	150	31	31.7	5.8	TNMC43...
STVOR-3232M4	32	32	178	31	38.1	5.8	TNMC43...
STVOR-2525M5	25	25	150	36	31.7	7.3	TNMC54...
STVOR-3232M5	32	32	178	36	38.1	7.3	TNMC54...

SPARE PARTS



Designation	Clamping screw	Clamp (Optional parts)	Clamping screw (Optional parts)	Wrench	
STVOR-**M4	SD2	TC-190	STC-9	T-20TORX	3/32HEX
STVOR-**M5	SD3	TC-250	STC-11	T-20TORX	1/8HEX

Multi-clamp internal threading toolholder, for on edge inserts



Right hand (R) shown.

Designation	DMIN	DCONWS	WF	LF	Insert
HS40-MTHOR-4	66.7	40	25.9	32	TNM*43...
HS50-MTHOR-4	73	50	35.9	40	TNM*43...
HS40-MTHOR-5	81.3	40	30.6	32	TNM*54...
HS50-MTHOR-5	82.6	50	35.9	40	TNM*54...

SPARE PARTS



Designation	Lock pin	Clamp	Clamping screw	Wrench	
HS**-MTHOR-4	NL-44	TC-190	STC-5	3/32HEX	
HS**-MTHOR-5	NL-56	TC-250	STC-11	1/8HEX	

Shank

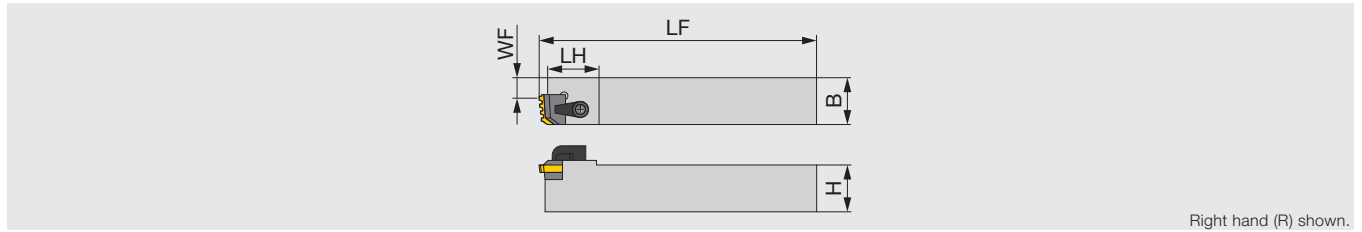
Designation	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

SPARE PARTS



Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

Reference pages: Inserts → [E026 - E028](#), Standard cutting conditions → [E050](#)

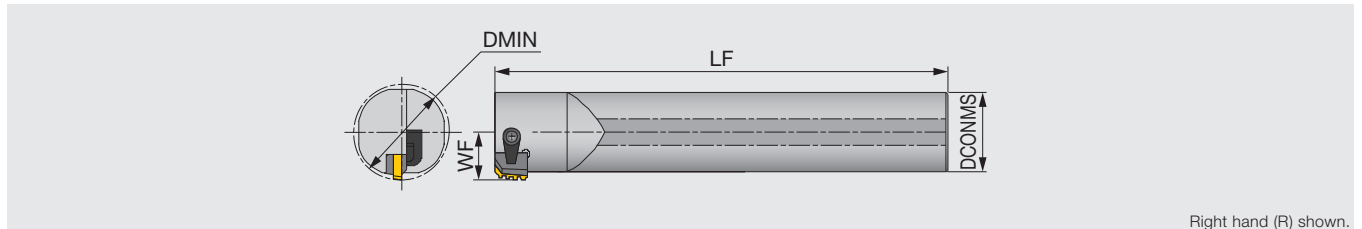


Designation	WF	LF	LH	H	B	Insert
CLVOR-25M6	16.1	177	32	25	25	CR***
CLVOR-32M6	16.1	177	32	32	32	CR***
CLVOR-40M8	29.8	179	32	40	40	CR-5B75-4E

SPARE PARTS



Designation	Shim	Shim screw	Clamp	Clamping screw	Wrench	
CLVOR-25M6	TF1207	SF80	TC-311	STC-4	T-25TORX	5/32HEX
CLVOR-32M6	TF1207	SF85	TC-311	STC-4	T-25TORX	5/32HEX
CLVOR-40M8	TF8132-E	SF60	TC-311	STC-4	T-20TORX	5/32HEX



Designation	DMIN	DCONMS	WF	LF	Insert
SI-CLHOR-40M6	50.8	40	23.16	400	CR-**1

SPARE PARTS

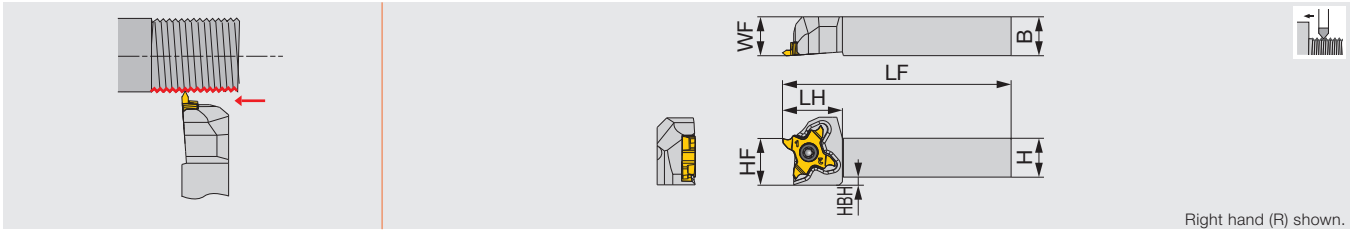


Designation	Clamp	Clamping screw	Wrench
SI-CLHOR-40M6	TC-311	STC-8	5/32HEX

TETRAMCUT

STCR/L-18

External grooving and threading toolholder



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	HBH	Insert
STCR/L1010X18	10	10	120	18.5	10	10	4.5	TC*18...
STCR/L1212F18	12	12	85	18.5	12	12	2.5	TC*18...
STCR/L1212X18	12	12	120	18.5	12	12	2.5	TC*18...
STCR/L1616X18	16	16	120	18.5	16	16	-	TC*18...
STCR/L2020H18	20	20	100	18.5	20	20	-	TC*18...
STCR/L2020X18	20	20	120	23	20	25	-	TC*18...
STCR/L2525Z18	25	25	135	23	25	30	-	TC*18...

Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).

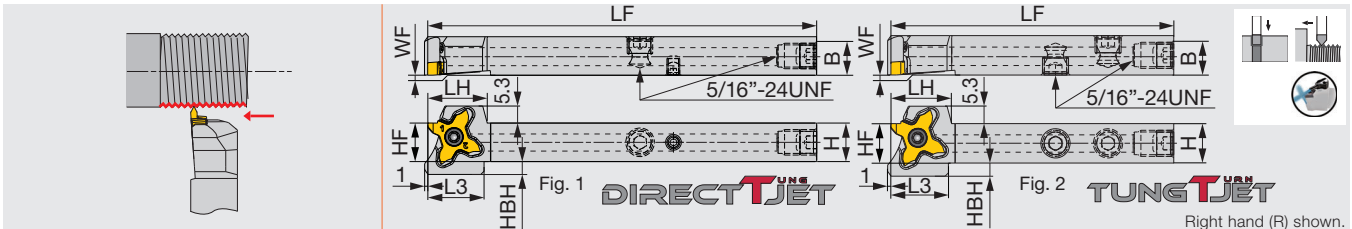
SPARE PARTS

Designation	Clamping screw	Wrench
STCR...	CSTC-4L100DL	T-1008/5
STCL...	CSTC-4L100DR	T-1008/5

TETRAMCUT

TetraMini-Cut STCR/L-18

External grooving and threading toolholder, with high pressure coolant capability



Right hand (R) shown.

Designation	H	B	LF	LH	L3	HF	WF	HBH	Fig.	Insert	Torque*
STCR/L1212F18-CHP	12	12	85	18.5	17.5	12	0/12	4	2	TC*18...	1.2
STCR/L1212X18-CHP	12	12	120	18.5	17.5	12	0/12	4	1	TC*18...	1.2
STCR/L1616X18-CHP	16	16	120	18.5	-	16	0/16	0	1	TC*18...	1.2

This toolholder can be used with threading and grooving inserts.

Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)

SPARE PARTS

Designation	Clamping screw	Wrench
STCL**18-CHP	CSTC-4L100DR	T-1008/5
STCR**18-CHP	CSTC-4L100DL	T-1008/5

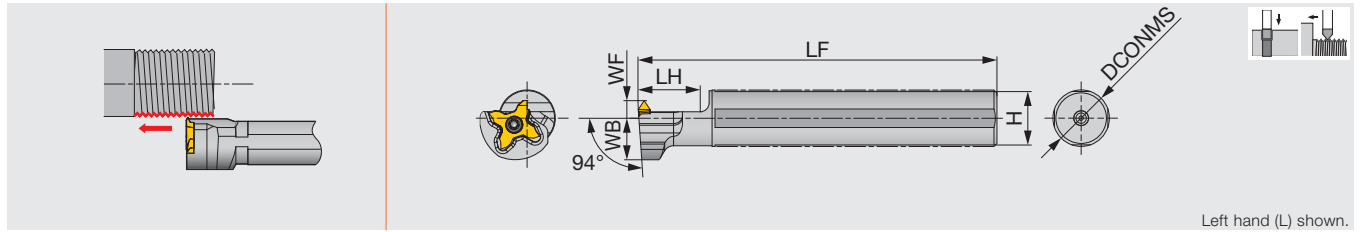
Groove width : 0.33 ~ 3.0 mm
Pitch : 0.8 ~ 3.0 mm

Reference pages: Inserts → **E011**, Standard cutting conditions → **E050**

TETRAMCUT

JS-STCL18

External grooving and threading toolholder with round shank



Left hand (L) shown.

Designation	DCONMS	LF	LH	H	WB	WF	Insert
JS14H-STCL18	14	100	20	13	14	6	TC*18R...
JS159F-STCL18	15.875	85	20	15	14	6	TC*18R...
JS16F-STCL18	16	85	20	15	14	6	TC*18R...
JS19G-STCL18	19.05	90	20	18	14	6	TC*18R...
JS19X-STCL18	19.05	120	20	18	14	6	TC*18R...
JS20G-STCL18	20	90	20	19	14	6	TC*18R...
JS20X-STCL18	20	120	20	19	14	6	TC*18R...
JS22X-STCL18	22	120	20	21	12.25	10	TC*18R...
JS25H-STCL18	25	100	20	24	12.25	10	TC*18R...
JS254X-STCL18	25.4	120	20	24	12.25	10	TC*18R...

Note: Use reft-hand toolholders (L) with right-hand inserts (R).

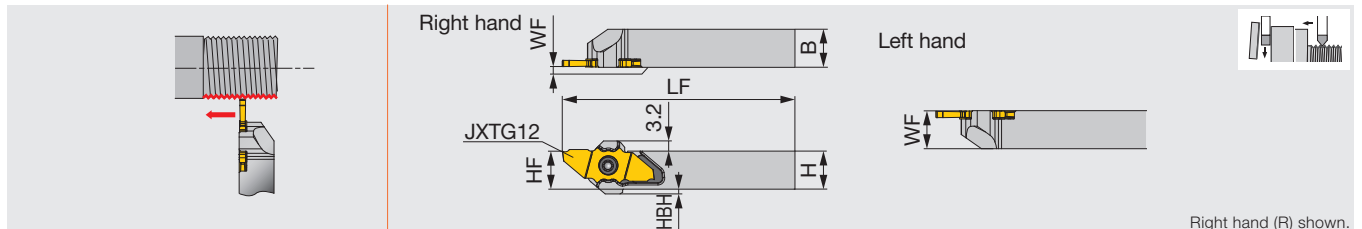
SPARE PARTS

Designation	Clamping screw	Wrench
JS**STCL18	CSTC-4L100DL	T-1008/5

DUOJUST CUT

DuoJust-Cut JSXXR/L

Threading and parting toolholder, for Swiss lathes (DuoJust-Cut)



Right hand (R) shown.

Designation	H	B	WF (R/L)	LF*	HF	HBH	Insert
JSXXR/L1010X09	10	10	0.2 / 9.8	118	10	3	JX...
JSXXR/L1212F09	12	12	0.2 / 9.8	83	12	1.5	JX...
JSXXR/L1212X09	12	12	0.2 / 9.8	118	12	1.5	JX...
JSXXR/L1616X09	16	16	0.2 / 9.8	118	16	0	JX...
JSXXR/L2020H09	20	20	0.2 / 9.8	98	20	0	JX...

*This toolholder can be used with threading and grooving inserts. With parting inserts, the dimension of LF will be different depending on the insert shape.

Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)

SPARE PARTS

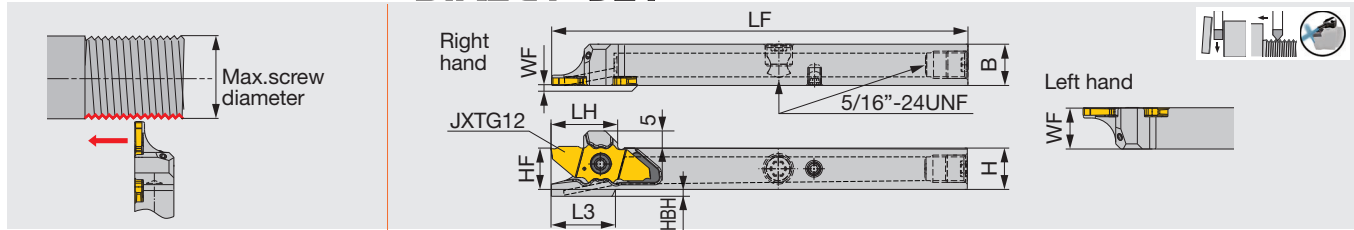
Designation	Clamping screw	Wrench
JSXXR*****	CSTC-4L100DL	T-1008/5
JSXXL*****	CSTC-4L100DR	T-1008/5

Reference pages: Inserts → **E011**, Standard cutting conditions → **E050 - E051**



Parting and threading toolholder, with high pressure coolant capability

DIRECTTUNE



Designation	H	B	WF (R/L)	LF*	HF	HBH	LH*	L3	Insert
JSXXR/L1212X09-CHP	12	12	0.2/11.8	118	12	2	≤ 19.4	18.8	JX**06...,12...,16...
JSXXR/L1616X09-CHP	16	16	0.2/15.8	118	16	2.5	≤ 19.4	18.7	JX**06...,12...,16...

*This toolholder can be used with threading and grooving inserts. With parting inserts, the dimensions of LF and LH will be different depending on the insert shape.
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)

SPARE PARTS

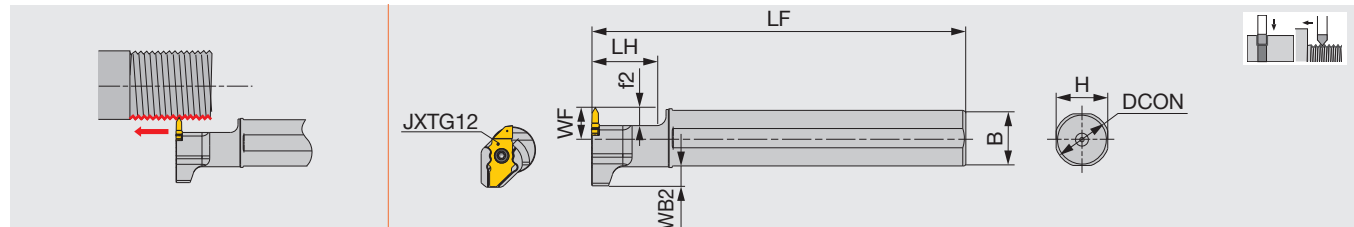
Designation	Clamping screw	Wrench
JSXXR...	CSTC-4L100DL	T-1008/5
JSXXL...	CSTC-4L100DR	T-1008/5

Parting-off widths : 1.0,1.5 mm (Max. parting dia. ø6)
: 1.5,2.0 mm (Max. parting dia. ø12,ø16)
Pitch : 0.2 ~ 1.5 mm

Range of threads machined pitch

Designation	Pitch	Max. screw diameter
JXTG12FR/L-60A-000	0.2 - 0.4	Metric: M26, Unified: 1"
JXTG12FR/L-60B-000	0.2 - 0.4	Metric: M26, Unified: 1"
JXTG12FR/L-60A-005	0.4 - 1	Metric: M24, Unified: 15/16"
JXTG12FR/L-60B-005	0.4 - 1	Metric: M24, Unified: 15/16"
JXTG12FR/L-60N-010	1 - 1.5	Metric: M22, Unified: 7/8"

External threading toolholder, for 2 corner inserts



Designation	DCON	H	B	WB2	LF	LH	WF**	f2**	Insert
JS19G-SXXL09	19.05	18	18	5.9	90	21	10	6	JX*G06,12*R
JS19X-SXXL09	19.05	18	18	5.9	120	21	10	6	JX*G06,12*R
JS20G-SXXL09	20	19	19	5.4	90	21	10	6	JX*G06,12*R
JS20X-SXXL09	20	19	19	5.4	120	21	10	6	JX*G06,12*R
JS22X-SXXL09	22	21	21	4.4	120	21	10	6	JX*G06,12*R
JS25H-SXXL09	25	24	24	2.9	100	21	10	6	JX*G06,12*R
JS254X-SXXL09	25.4	24	24	2.7	120	21	10	6	JX*G06,12*R

* *This toolholder can be used with threading and parting inserts.
** When using JXPG06 insert, f and f2 will be shortened by 2 mm.

SPARE PARTS

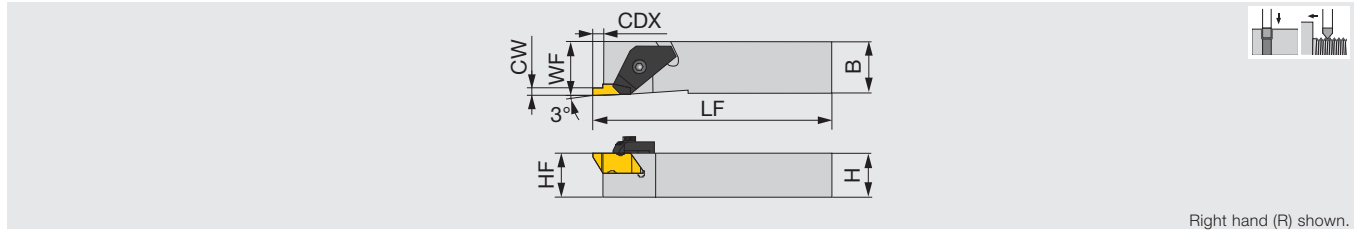
Designation	Clamping screw	Wrench
JS***-SXXL09	CSTC-4L055L	T-1008/5

Reference pages: Inserts → **E011**, Standard cutting conditions → **E051**

TUNGST-CLAMP

FLASR/L

External grooving and threading toolholder, for Swiss lathes



Designation	CW	CDX	HF	H	B	LF	WF	Insert	Torque*
FLASR/L-1616M3	1 - 3	5.31	16	16	16	125	16	FL*-3**R/L...	3

Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)

*Torque: Recommended clamping torque (N-m)

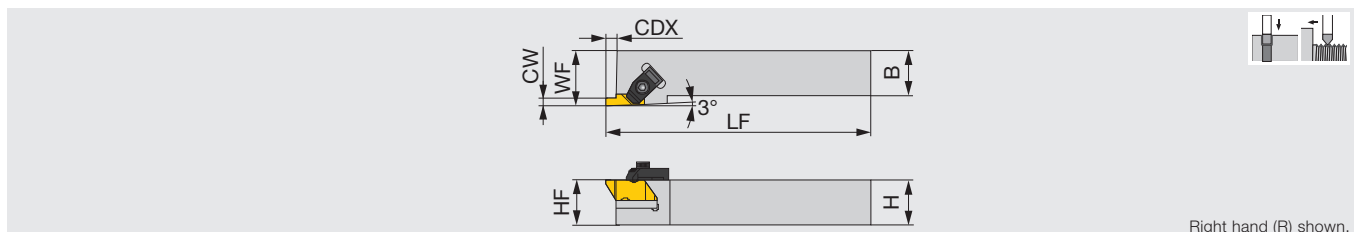
SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLASR-1616M3	TF-184	S-412	5/32HEX
FLASL-1616M3	TF-185	S-412	5/32HEX

TUNGST-CLAMP

FLSR/L

External grooving and threading toolholder



Designation	CW	CDX	HF	H	B	LF	WF	Insert	Torque*
FLSR/L-2020M3	1 - 3	4.5	20	20	20	125	32	FL*-3**R/L...	3
FLSR/L-2525M3	1 - 3	4.5	25	25	25	150	32	FL*-3**R/L...	3

Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)

*Torque: Recommended clamping torque (N-m)

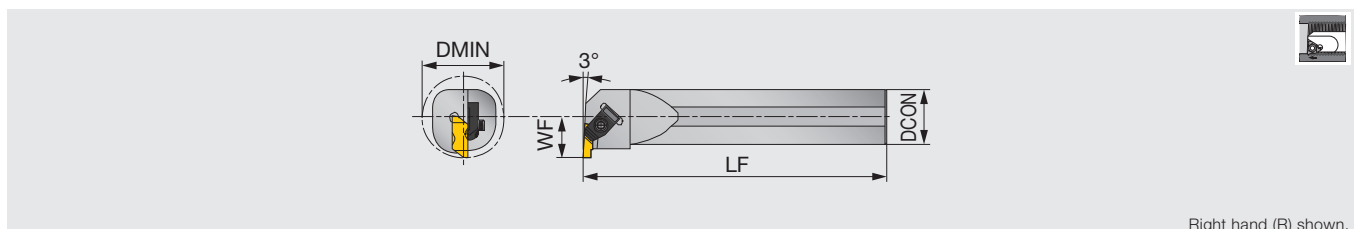
SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLSR-***M3	TF-72	S-412	5/32HEX
FLSL-***M3	TF-73	S-412	5/32HEX

TUNGST-CLAMP

A_M-FLER/L

Internal grooving and threading toolholder



Designation	Pitch	DMIN	DCON	LF	WF	Insert
A25M-FLER/L3	2.11 - 5.08	34.9	25	300	17.7	FL*-3**L/R...
A32M-FLER/L3	2.11 - 5.08	44.5	32	350	22.1	FL*-3**L/R...
A40M-FLER3	2.11 - 5.08	50.8	40	350	24.5	FL*-3**L...

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
A**M-FLER3	TF-73	S-412	5/32HEX
A**M-FLEL3	TF-72	S-412	5/32HEX

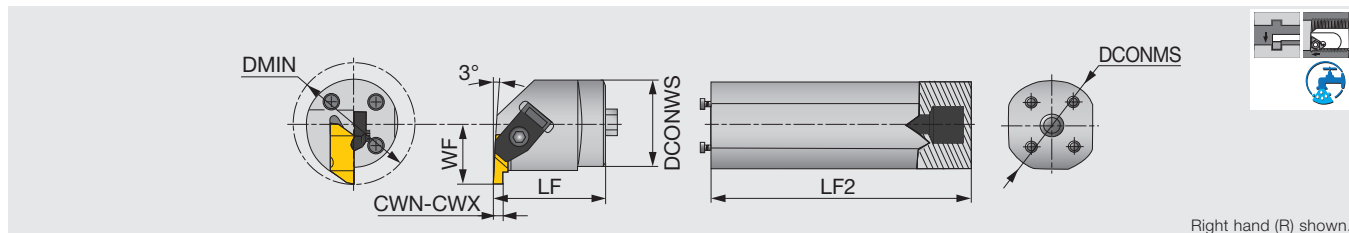
Reference pages: Inserts → **E012**,
Standard cutting conditions → **E050**



TUNGST-CLAMP

HS-FLER/L

Head exchangeable internal grooving and threading toolholder



Designation	CWN	CWX	DMIN	DCONWS	LF	WF	Insert	Torque*
HS40-FLER3W	1	3	56.1	40	40.1	28	FL*-3**L...	3
HS50-FLER3W	1	3	70.1	50	41.9	35	FL*-3**L...	3

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

*Torque: Recommended clamping torque (N·m)

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
HS40-FLER3W	TF-73	S-412	5/32HEX
HS50-FLER3W	TF-73	S-412	5/32HEX

Shank

Designation	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

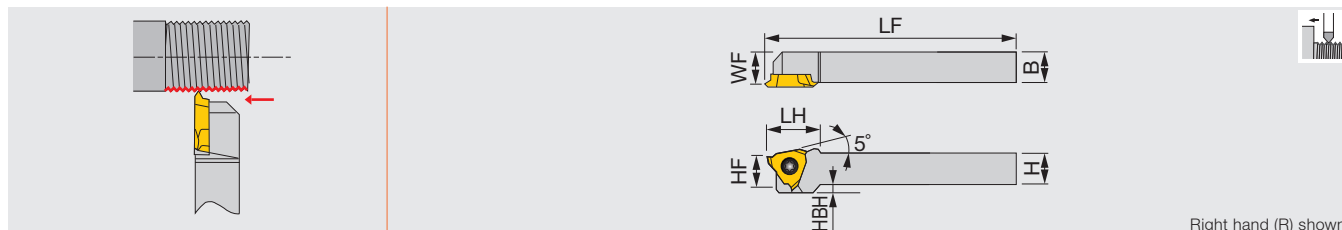
Spare parts

Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

J-SERIES

JSTTR/L

External toolholder for Swiss lathes



Designation	H	B	LF	LH	HF	WF	HBH	Insert
JSTTR/L1010X3	10	10	120	18.5	10	9.5	2	JTTR/L30...
JSTTR/L1212F3	12	12	85	18.5	12	11.5	-	JTTR/L30...
JSTTR/L1212X3	12	12	120	18.5	12	11.5	-	JTTR/L30...
JSTTR/L1616X3	16	16	120	16.5	16	15.5	-	JTTR/L30...

Recommended clamping torque: 1.2 N·m

SPARE PARTS

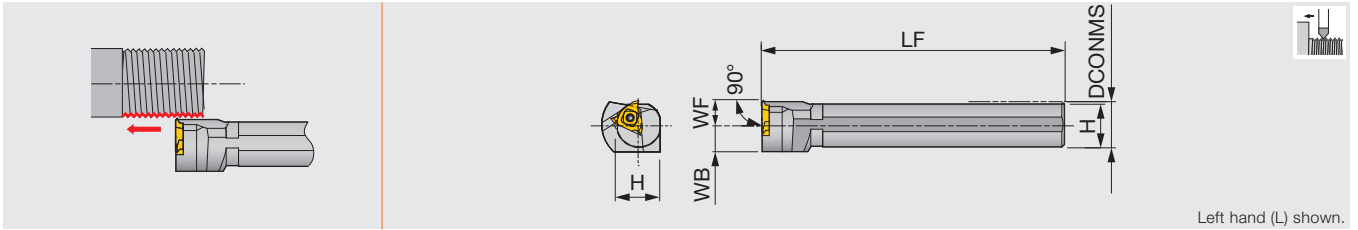
Designation	Clamping screw	Wrench
JSTTR/L...	CSTB-4SD	T-8F

Reference pages: Inserts → **E012 - E013**, Standard cutting conditions → **E050**

J-SERIES

JS-TTL3

External toolholder for Swiss lathes



Left hand (L) shown.

Designation	DCONMS	WF	LF	H	WB	Insert
JS19K-TTL3	19.05	10	125	18	11.5	JTTR30...
JS20K-TTL3	20	10	125	19	11.5	JTTR30...
JS22K-TTL3	22	10	125	21	11.5	JTTR30...
JS25K-TTL3	25.4	10	125	24	12.7	JTTR30...

Recommended clamping torque: 3.5 N·m

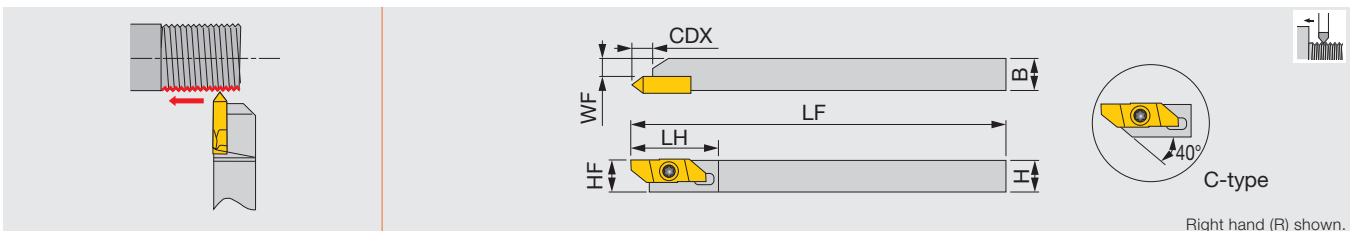
SPARE PARTS

Designation	Clamping screw	Wrench
JS**-TTL3	CSTB-4S	T-15F

J-SERIES

JSXBR/L

External threading toolholder for Swiss lathes



Right hand (R) shown.

Designation	H	B	LF	LH	CDX	HF	WF	Insert
JSXBR1010K8-C	10	10	125	29	6.4	10	5.7	JXT*R...
JSXBR1212K8-C	12	12	125	29	6.4	12	7.7	JXT*R...
JSXBR1616K8	16	16	125	29	6.4	16	11.7	JXT*R...
JSXBR2020K8	20	20	125	29	6.4	20	15.7	JXT*R...
JSXBR2525K8	25	25	125	29	6.4	25	20.7	JXT*R...

- Can be wrenched also from the back with a double-head screw.
- This toolholder can be used for JXB back-turning insert and JXT threading insert.

SPARE PARTS

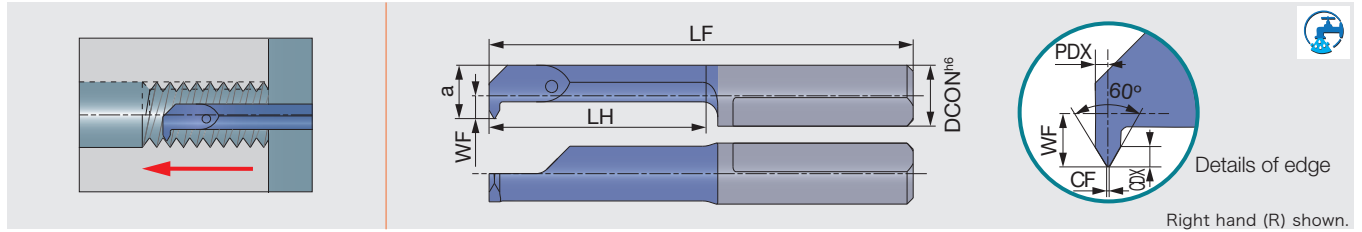
Designation	Clamping screw	Wrench 1	Wrench 2 (Optional parts)
JSXBR...	CSTB-4SD	T-8F	(T-8L)

Reference pages: Inserts → [E012 - E013](#)

TINYM^{INI}TURN

TinyMini-Turn JBIR

Solid boring bar for internal threading



Right hand (R) shown.

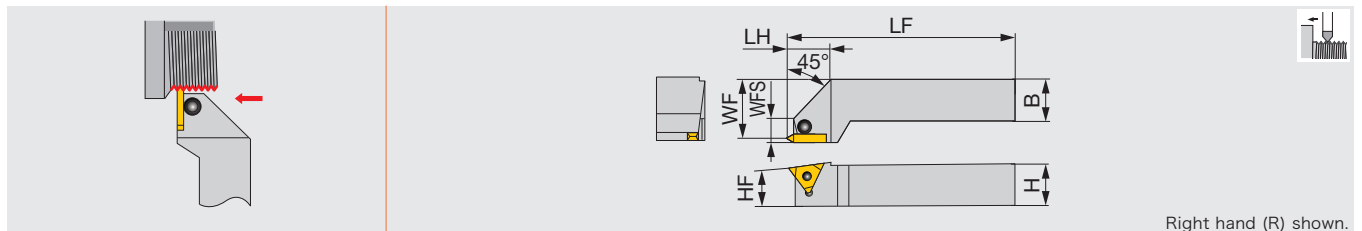
Designation	Grade SH730	Pitch	DMIN	CF ^{0 -0.02}	DCON	WF	a	LF	LH	CDX	PDX
JBIR04140050-D040	●	0.5	4	0.06	4	1.5	3.5	30	14	0.3	0.35
JBIR07140050-D050	●	0.5	5	0.06	7	0.9	4.4	30	14	0.3	0.35
JBIR07140075-D050	●	0.75	5	0.09	7	0.9	4.4	30	14	0.4	0.45
JBIR07140100-D048	●	1.0	4.8	0.12	7	0.9	4.4	30	14	0.6	0.55
JBIR07140100-D060	●	1.0	6	0.12	7	1.8	5.3	30	14	0.6	0.55
JBIR07140125-D060	●	1.25	6	0.15	7	1.8	5.3	30	14	0.7	0.65
JBIR07140150-D060	●	1.5	6	0.18	7	1.8	5.3	30	14	0.8	0.75
JBIR07140150-D070	●	1.5	7	0.18	7	2.8	6.3	30	14	0.8	0.75

● : Line up

TUNGTHREAD

TT-R/LE

TT-type pin-lock external threading toolholder



Right hand (R) shown.

Designation	H	B	LF	LH	HF	WF	WFS	Insert
TT-2525R/LE	25	25	150	25	25	32	15	TTR/L42...

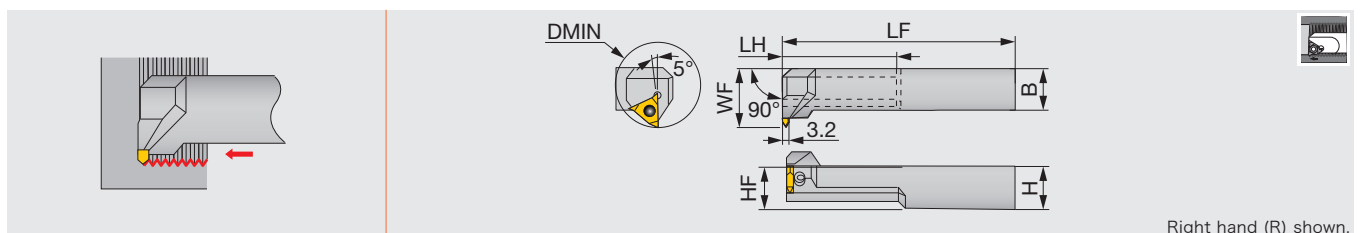
SPARE PARTS

Designation	Clamp	Right-left screw	Wrench
TT-2525R/LE	CP91	DS-6	P-3

TUNGTHREAD

TT-R/LI

TT-type pin-lock internal threading toolholder



Right hand (R) shown.

Designation	DMIN	H	B	LF	LH	HF	WF	Insert
TT-2525RI	50	25	25	200	70	25	35	TTL42...

Note: Use left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamp	Right-left screw	Wrench
TT-2525RI	CP91	DS-6	P-3

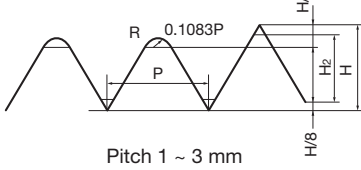
Reference pages: TinyMini-Turn : Inserts → **E012**

Standard cuttings → **E050**

TingThread : Inserts → **E013, E015**

Standard cuttings → **E050**

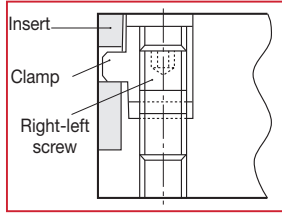
• Relationship between pitch, depth of cut and number of passes for external metric threading



Note: Maximum machinable pitch is 3 mm.

Number of passes	P	1	1.25	1.5	1.75	2	2.5	3
	H ₂	0.6	0.76	0.92	1.09	1.25	1.57	1.9
	H	0.866	1.083	1.299	1.516	1.732	2.165	2.598
1	0.25	0.3	0.3	0.3	0.35	0.4	0.4	
2	0.15	0.2	0.25	0.25	0.25	0.3	0.35	
3	0.1	0.1	0.15	0.2	0.2	0.25	0.28	
4	0.05	0.06	0.1	0.1	0.16	0.2	0.2	
5	0.05	0.06	0.05	0.1	0.1	0.15	0.2	
6		0.06	0.05	0.07	0.07	0.1	0.13	
7			0.02	0.05	0.05	0.07	0.1	
8				0.02	0.02	0.05	0.1	
9					0.02	0.03	0.05	
10						0.02	0.05	
11							0.02	
12							0.02	

Part assembly



Designation system for TT-type insert

Insert

TT	R	42	M	-005
1	1	2	3	4
1 Hand	2 Insert size (mm)	3 Thread type	4 Corner radius (mm)	
R Right L Left	Inscribed circle 12.7 Thickness 3.2	M 60° thread angle W 55° thread angle	Blank 0 -005 0.05	

Toolholder

TT-	20	20	R	E
1	1	2	3	4
1 Shank height (mm)	2 Shank width (mm)	3 Hand	4 External or Internal	
		R Right L Left	E External I Internal	

Designation system for ST-type insert

16	I	R	175	ISO	- B
1	2	3	4	5	6
1 Insert size	2 External or Internal	3 Hand of cut	4 Thread type	5 Thread type	6 Chipbreaker
Symbol I. C. dia (mm) 6 - 11 6.35 16 9.525 22 12.7 27 15.875	E External I Internal	R Right hand L Left hand	Partial-profile inserts A Pitch: 0.5 ~ 1.5 mm TPI: 48 ~ 16 AG Pitch: 0.5 ~ 3 mm TPI: 48 ~ 8 G Pitch: 1.75 ~ 3 mm TPI: 14 ~ 8 N Pitch: 3.5 ~ 5 mm TPI: 7 ~ 5 Z Pitch: 4 ~ 6 mm TPI: 6 ~ 4 Full-profile inserts pitch (mm)×10 or 100 TPI (Thread Per Inch) (Examples) 05: 0.5 mm pitch×10 175: 1.75 mm pitch×100 14: 14 TPI	Partial-profile inserts 60° 60° thread angle 55° 55° thread angle TR 30° trapezoidal ACME 29° trapezoidal Full-profile inserts ISO Metric UN Unified W Whitworth PT Taper pipe NPT National taper pipe NPTF National taper pipe RAPI API round RD API round BAPI API buttress RD Round (DIN405) UNJ UNJ MJ	B With (Basic selection) M With CB With - Without

Note: Please identify new designation system for internal inserts. -i.e. "N" "I"

(Example) Conventional: 16NR15ISO
New: 16IR15ISO

Technical Guide

TUNGTHREAD STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Cutting speed: Vc (m/min)			
			AH725	T313V	NS9530	TH10
P	High carbon steel / Alloy steel S45C, SCM440, etc. C45, 42CrMoS4, etc.	< 200HB	80 - 180	100 - 200	150 - 200	-
		> 200HB	60 - 160	100 - 150	100 - 170	-
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.	-	50 - 130	70 - 130	-	-
K	Cast irons FC250, FC300, etc. 250, 300, etc.	-	-	70 - 150	-	70 - 90
N	Non-ferrous metals	-	-	-	-	100 - 500
S	Heat-resisting alloys Ti-6Al-4V, Inconel718, etc.	-	-	-	-	10 - 40
H	Hard materials	50 ~ 60HRC	-	-	-	10 - 30

TUNG-CLAMP STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Application	Cutting speed Vc (m/min)	Pitch (mm)	Threads per inch (TPI)
P	High carbon steel S45C, etc. C45, etc.	AH725	Threading	80 - 180	Internal 2.11 - 5.08 External 1.27 - 4.23	Internal 5 - 12 External 6 - 20
	Alloy steels SCM440, etc. 42CrMoS4, etc.	AH725	Threading	60 - 160	Internal 2.11 - 5.08 External 1.27 - 4.23	Internal 5 - 12 External 6 - 20
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.	AH725	Threading	50 - 130	Internal 2.11 - 5.08 External 1.27 - 4.23	Internal 5 - 12 External 6 - 20

TETRAMCUT^{NI} STANDARD CUTTING CONDITIONS

TCT18R/L / TCT18FR

ISO	Workpiece material	Priority	Grade	Cutting speed Vc (m/min)	Pitch (mm)	Threads per inch (TPI)
P	Low carbon steels S15C, SS400, etc. C15, St42-1, etc. Carbon steels, Alloy steels S55C, SCM440, etc. C55, 42CrMoS4, etc.	First choice	SH725	60 - 150	0.4 - 2.0	64 - 12
		Fracture resistance	AH725	60 - 150	0.8 - 3.0	32 - 8
		First choice	SH725	60 - 150	0.4 - 2.0	64 - 12
		Fracture resistance	AH725	60 - 150	0.8 - 3.0	32 - 8
M	Prehardened steels NAK80, PX5, etc.	First choice	SH725	60 - 150	0.4 - 2.0	64 - 12
		Fracture resistance	AH725	60 - 150	0.8 - 3.0	32 - 8
K	Stainless steel SUS304, etc. X5CrNi18-9, etc. Grey cast irons FC250, FC300, etc. 250, 300, etc.	First choice	AH725	50 - 100	0.8 - 3.0	32 - 8
		Sharpness	SH725	50 - 100	0.4 - 2.0	64 - 12
S	Ductile cast irons 400-15, 600-3, etc.	First choice	AH725	50 - 100	0.8 - 3.0	32 - 8
		Sharpness	SH725	50 - 100	0.4 - 2.0	64 - 12
		First choice	SH725	30 - 100	0.4 - 2.0	64 - 12
		Fracture resistance	AH725	30 - 100	0.8 - 3.0	32 - 8
S	Titanium alloys Ti-6Al-4V, etc. Heat-resisting alloys Inconel718, etc.	First choice	SH725	30 - 100	0.4 - 2.0	64 - 12
		Fracture resistance	AH725	30 - 100	0.8 - 3.0	32 - 8
		Fracture resistance	AH725	30 - 100	0.8 - 3.0	32 - 8

Reference pages: TungThread : Inserts → **E010, E013 - E031**, Toolholders → **E032 - E041**
 TungT-Clamp : Inserts → **E012**, Toolholders → **E045 - E046**
 TetraMini-Cut: Inserts → **E011**, Toolholders → **E042 - E043**

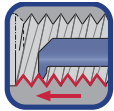
DUOJUST^{UST}

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed Vc (m/min)	Pitch (mm)	Threads per inch (TPI)
P	Low carbon steels S15C, SS400, etc. C15, St42-1, etc.	SH725	50 - 200	0.2 - 1.5	127 - 16
	Carbon steels, Alloy steels S55C, SCM440, etc. C55, 42CrMoS4, etc.	SH725	50 - 200	0.2 - 1.5	127 - 16
	Free cutting steel SUH22, SUH23, etc.	SH725	50 - 200	0.2 - 1.5	127 - 16
M	Stainless steel SUS304, etc. X5CrNi18-9, etc.	SH725	50 - 200	0.2 - 1.5	127 - 16
N	Aluminium alloys A5056, A6061, etc.	SH725	150 - 200	0.2 - 1.5	127 - 16
	Copper alloy C2600, C280C, etc.	SH725	100 - 200	0.2 - 1.5	127 - 16
S	Titanium alloys Ti-6Al-4V, etc.	SH725	30 - 80	0.2 - 1.5	127 - 16
	Heat-resisting alloys Inconel718, etc.	SH725	30 - 80	0.2 - 1.5	127 - 16

TINYM^{INI}TURN

STANDARD CUTTING CONDITIONS



Internal threading

ISO	Workpiece materia	Grade	Cutting speed Vc (m/min)	Number of passes Pitch (mm)				
				0.5	0.75	1	1.25	1.5
P	Low carbon steels S15C, S20C, etc. C15, C20, etc.	SH730	40 - 140	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
	Carbon steels, Alloy steels S55C, SCM440, etc. C55, 42CrMoS4, etc.	SH730	40 - 140	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
	Prehardened steels NAK80, PX5, etc.	SH730	40 - 140	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
M	Stainless steel SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	SH730	40 - 140	8	10	12	15	18
K	Grey cast irons FC250, FCD300, etc. 250, 300, etc.	SH730	30 - 100	7	9	12	14	17
	Ductile cast irons FC450, FCD600, etc. 400-15, 600-3, etc.	SH730	30 - 100	7	9	12	14	17
N	Aluminium alloys, copper alloys Si < 12%	SH730	90 - 200	6	8	10	12	15

Reference pages: DuoJust-Cut : Inserts → **E011**, Toolholders → **E043 - E044**
 TetraMini-Cut: Toolholders → **E048**

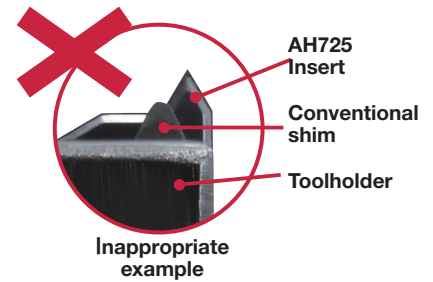
Grade
Insert
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature tool
Milling cutter
Endmill
Drilling tool
Tooling System
User's Guide
Index



Technical Guide

IMPORTANT - Replacement of shim



AH 725 insert has 2 types of shims according to the chipbreaker geometry. Please find an appropriate shim in the table below. When using a wrong shim, the insert seating may become unstable or the tool life may be shortened.



Interchangeable shim (Insert size: 16)

Toolholder screw type	Lead angle	External		Internal	
		① Conventional shim	① Standard (New)	② Conventional shim	② Standard (New)
Dual clamping methods of screw-on and clamp-on	4°	GXE16-4DT	AE16-4DT	GXN16-4DT	AN16-4DT
	3°	GXE16-3DT	AE16-3DT	GXN16-3DT	AN16-3DT
	2°	GXE16-2DT	AE16-2DT	GXN16-2DT	AN16-2DT
	1° (Standard)	GX16-1DT	A16-1DT	GX16-1DT	A16-1DT
	0°	GXE16-0DT	AE16-0DT	GXN16-0DT	AN16-0DT
	-1°	GXE16-99DT	AE16-99DT	GXN16-99DT	AN16-99DT
	-2°	GXE16-98DT	AE16-98DT	GXN16-98DT	AN16-98DT
Clamp-on	4°	GXE16-4	AE16-4	GXN16-4	AN16-4
	3°	GXE16-3	AE16-3	GXN16-3	AN16-3
	2°	GXE16-2	AE16-2	GXN16-2	AN16-2
	1° (Standard)	GXE16-1	A16-1	GXN16-1	A16-1
	0°	GXE16-0	AE16-0	GXN16-0	AN16-0
	-1°	GXE16-99	AE16-99	GXN16-99	AN16-99
	-2°	GXE16-98	AE16-98	GXN16-98	AN16-98

Shim to be replaced (Insert size: 16)

Thread	External		Replacement	Internal		Replacement
	Designation	Grade		Designation	Grade	
ISO			① Conventional shim  ① Standard (New)	16IR15ISO-B	AH725	② Conventional shim  ② Standard (New)
				16IR175ISO-B	AH725	
				16IR20ISO-B	AH725	
55°	16ERAG55-B	AH725		16IRAG55-B	AH725	
				16IRG55-B	AH725	
60°	16ERA60-B	AH725		16IRAG60-B	AH725	
				16IRA60-B	AH725	
UN				16IRG60-B	AH725	
				16IR18UN-B	AH725	
				16IR16UN-B	AH725	
W			16IR14UN-B	AH725		
			16IR16W-B	AH725		
PT			16IR14W-B	AH725		
			16IR14PT-B	AH725		
NPT	16ER8NPT-B	AH725	16IR14NPT-B	AH725		
			16IR115NPT-B	AH725		