MillLine

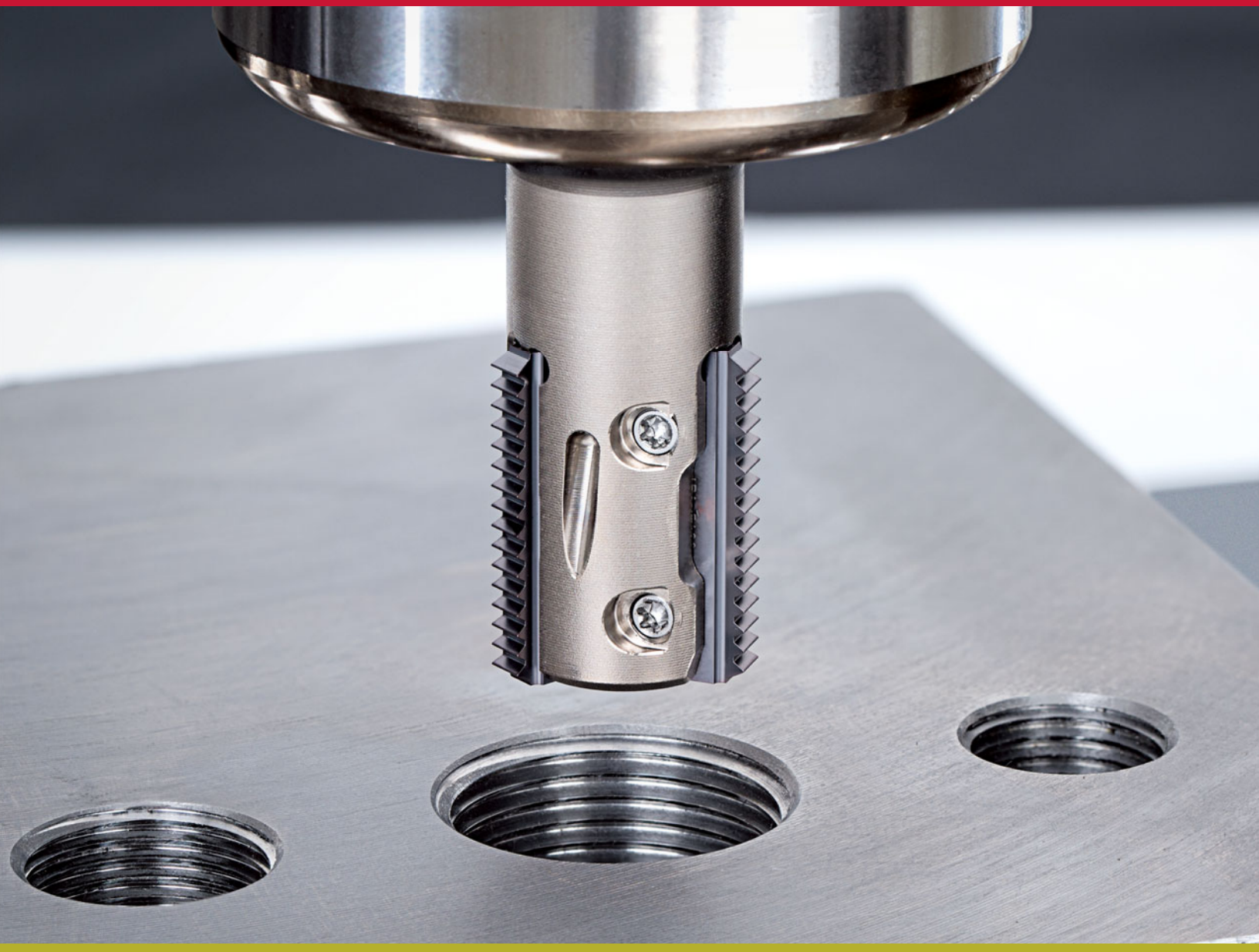
THREADMILLING

www.tungaloy.com/us

Tungaloy Report No. 514-US

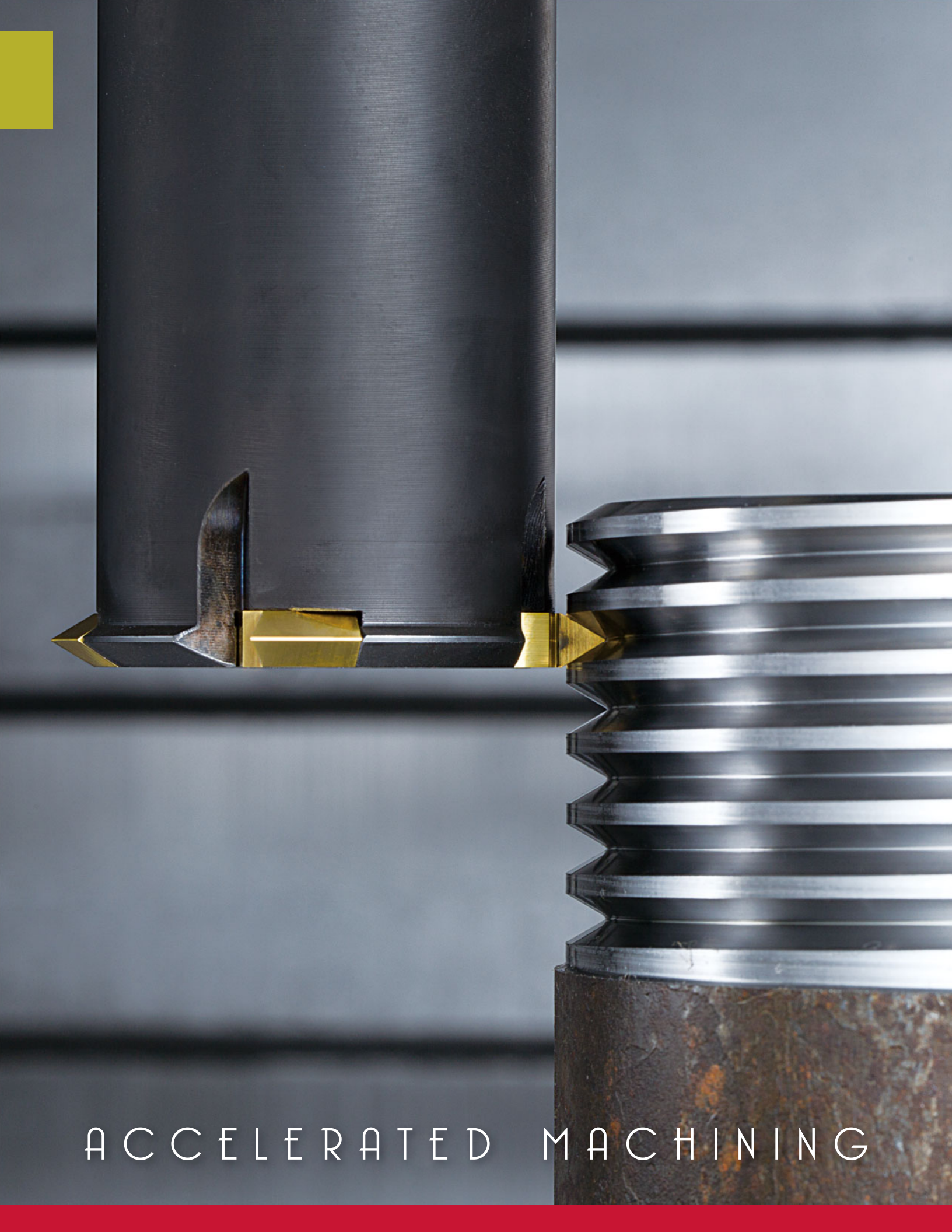
Member IMC Group Tungaloy INDUSTRY 4.0

Now offers indexable ThreadMilling solution



INDUSTRY 4.0

FEED the SPEED!


ACCELERATED MACHINING

MillLine

THREADMILLING

TUNGALOY

Exchangeable inserts cover a wide range of standard taper threads, including R(BSPT external), Rc (BSPT internal), NPT, and NPTF

Thread milling tools

New

Indexable threading mills

p.5

Able to incorporate multiple inserts for various threading diameters and pitches, allowing tool integration and reduced tool cost.

SOLIDTHREAD

p.13

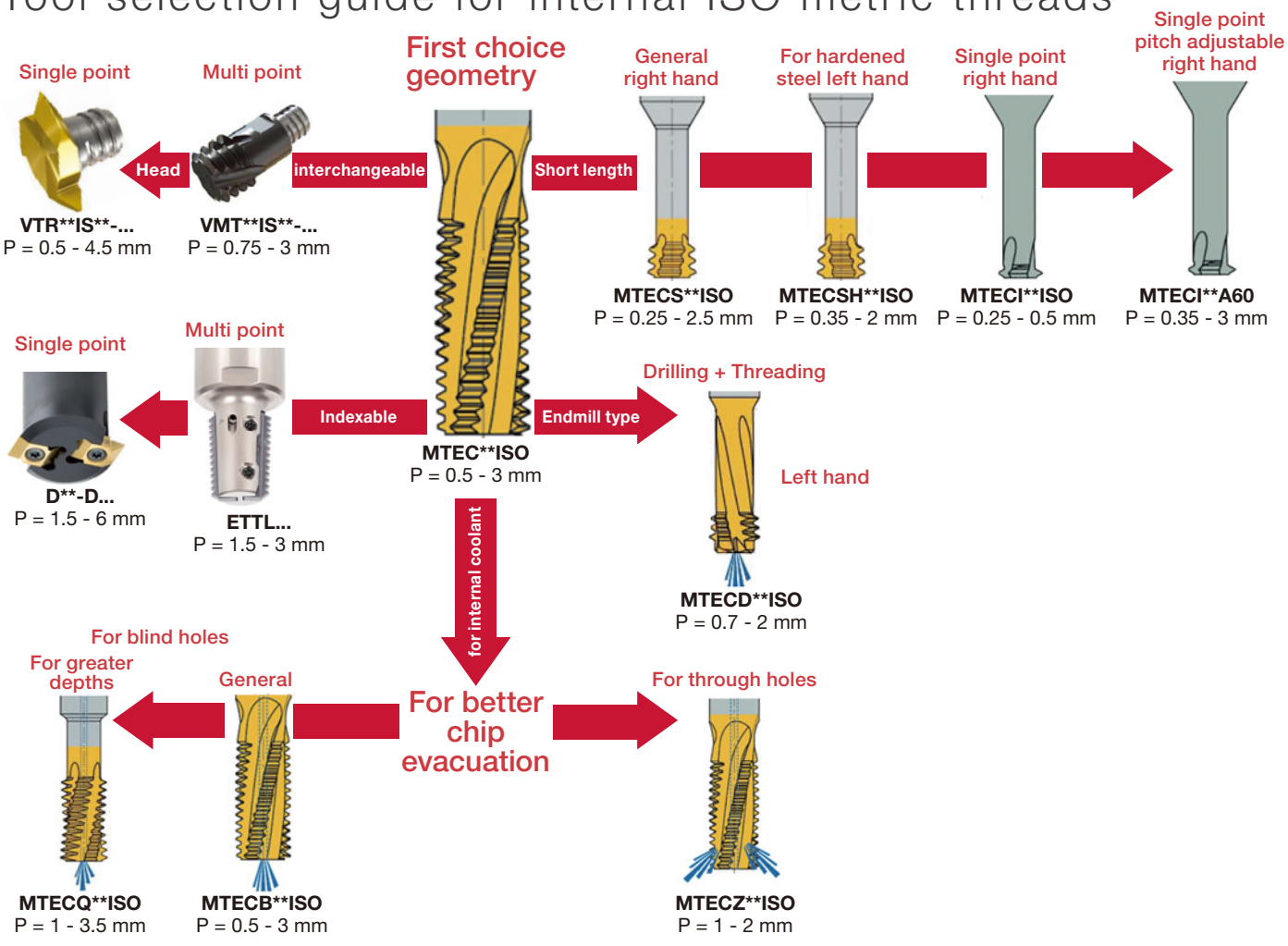
Solid threading tool series for machining small diameters, such as M1x0.25 and 0-80UNF.

TUNGMEISTER

p.30

Head-changeable milling tool for less down-time than a solid tapping tool.

Tool selection guide for internal ISO metric threads



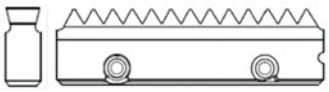
Indexable threading mills

- Various types of threads can be machined with simple insert changes
- Efficient deep hole threading is possible up to 25 mm (0.984") deep

For parallel threads
ISO metric
M

Unified
UN,UNC, UNF,UNEF, UNS

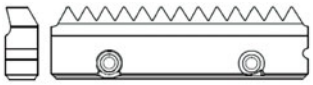
Whitworth (parallel pipe threads)
G, BSP, BSF, PF



Double sided insert

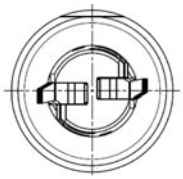
Tapered threads
BSPT
R, Rc, BSPT, PF

NPT
NPTF

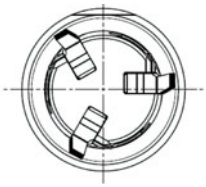


Single sided insert

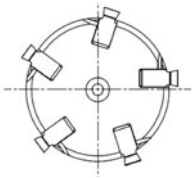
- Multiple-flute tools for increased productivity



2 teeth,
Cutter diameters:
ø0.6693" and ø0.7480"
(ø17 mm and ø19 mm)



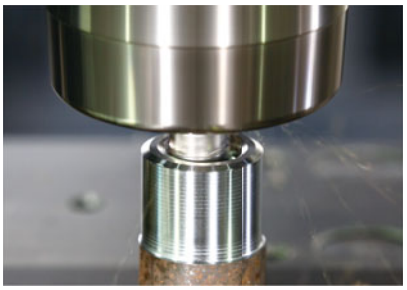
3 teeth,
Cutter diameters:
ø0.8071" and ø0.8661"
(ø20.5 mm and ø22 mm)



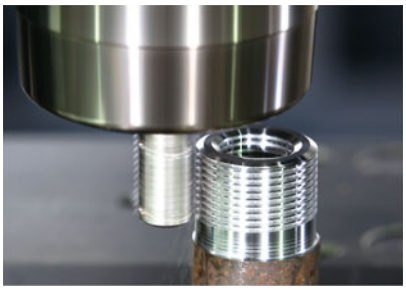
5 teeth,
Cutter diameter:
ø1.1811"
(ø30 mm)

- The same inserts can be used for both internal and external threads when machining Whitworth, BSPT, NPT, or NPTF threads as they have an identical internal and external thread profiles.

Internal threads

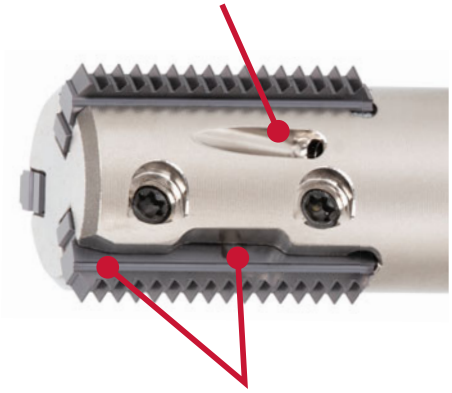


External threads



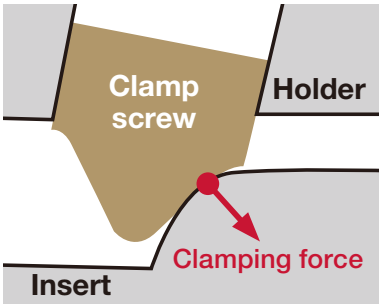
The inserts need to be exchanged for machining internal and external threads of ISO metric or Unified threads due to the thread profiles deviations at the thread bottom.

- Optimized coolant port locations for effective chip evacuation in through holes

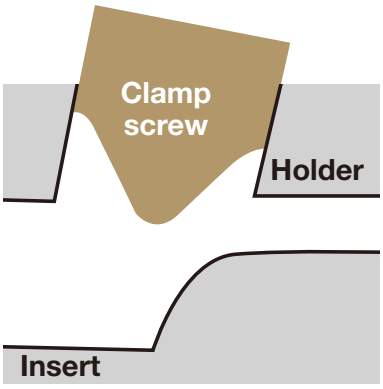


- Chip pocket design is optimized for threading at high feed rates

- Embedded clamping screw design allows for easy and swift insert exchanges



When clamped

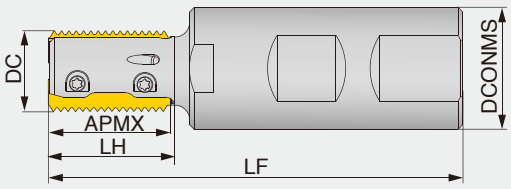


When released

New

Thread milling cutter ETTL

Indexable thread milling cutter, long edge



Metric	DC	APMX	CICT	DCONMS	LH	LF	Oil hole	Insert
ETTL25M017W25.0F026R02 (1)	17	25	2	25	26	85	with	TL25D...
ETTL25M017W25.0F036R02 (1)	17	25	2	25	36	95	with	TL25D...
ETTL25M019W25.0F032R02	19	25	2	25	32	92	with	TL25D...
ETTL25M019W25.0F044R02	19	25	2	25	44	104	with	TL25D...
ETTL25M021W25.0F037R03	20.5	25	3	25	37	96	with	TL25D...
ETTL25M021W25.0F044R03	20.5	25	3	25	44	103	with	TL25D...
ETTL25M022W25.0F043R03	22	25	3	25	43	102	with	TL25D...
ETTL25M022W25.0F055R03	22	25	3	25	55	114	with	TL25D...
ETTL25M030W25.0F055R05	30	25	5	25	55	115	with	TL25D...

(1) Inserts with a thread pitch of ≥ 3 mm or ≥ 8TPI are not mountable.

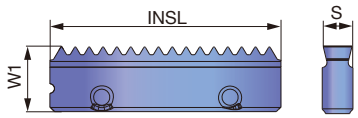
SPARE PARTS

Designation	Clamping screw	Wrench
ETTL25...	SSTM4-3.6P	T-8D

New

INSERTS

TL25D...



P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Thread type	Application	Designation	Pitch (mm)	Threads per inch	Number of threads per edge	Coated AH725	INSL	W1	S
ISO Metric	Internal	TL25DIR1.5ISO	1.5	-	16	●	0.984	0.276	0.122
		TL25DIR2.0ISO	2	-	12	●	0.984	0.276	0.122
		TL25DIR3.0ISO (2)	3	-	8	●	0.984	0.276	0.122
Unified	Internal	TL25DIR20UN	-	20	19	●	0.984	0.276	0.122
		TL25DIR12UN	-	12	11	●	0.984	0.276	0.122
		TL25DIR9UN	-	9	8	●	0.984	0.276	0.122
		TL25DIR8UN (2)	-	8	7	●	0.984	0.276	0.122
Whitworth	Internal and external	TL25DEIR14W	-	14	13	●	0.984	0.276	0.122
		TL25DEIR11W	-	11	10	●	0.984	0.276	0.122

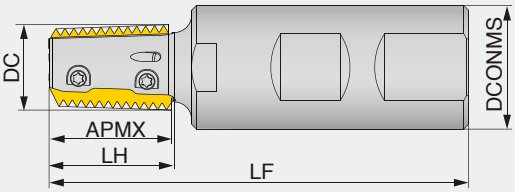
(2) Does not fit the DC 17 mm holder

● : New product

New

Thread milling cutter ETTL-PT

Indexable thread milling cutter, long edge



Metric	DC	APMX	CICT	DCONMS	LH	LF	Oil hole	Insert
ETTL25M017W25.0F026R02-PT	17.47	25	2	25	25.5	85	with	TL25SEIR...
ETTL25M022W25.0F043R03-PT	22.2	25	3	25	43	102	with	TL25SEIR...

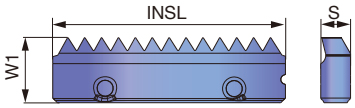
SPARE PARTS

Designation	Clamping screw	Wrench
ETTL...-PT	SSTM4-3.6P	T-8D

New

INSERTS

TL25SEIR...



P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

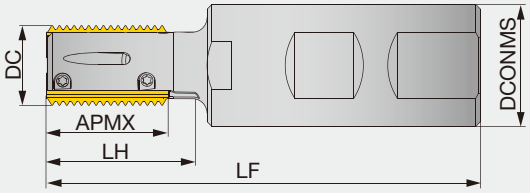
★ : First choice
☆ : Second choice

Thread type	Application	Designation	Pitch (mm)	Threads per inch	Number of threads per edge	Coated AH725	INSL	W1	S
BSPT	Internal and external	TL25SEIR14BSPT	-	14	13	●	0.984	0.276	0.122
		TL25SEIR11BSPT	-	11	10	●	0.984	0.276	0.122
NPT	Internal and external	TL25SEIR14NPT	-	14	13	●	0.984	0.276	0.122
		TL25SEIR11.5NPT	-	11.5	11	●	0.984	0.276	0.122
NPTF	Internal and external	TL25SEIR14NPTF	-	14	13	●	0.984	0.276	0.122

● : New product

Thread milling cutter ETLN

Indexable thread milling cutter, long edge



Metric	DC	APMX	CICT	DCONMS	LH	LF	Oil hole	Insert
ETLN25M017W25.0F026R02 (1)	17	25	2	25	26	85	with	LN25...
ETLN25M017W25.0F036R02 (1)	17	25	2	25	36	95	with	LN25...
ETLN25M019W25.0F032R02	19	25	2	25	32	92	with	LN25...
ETLN25M019W25.0F044R02	19	25	2	25	44	104	with	LN25...
ETLN25M021W25.0F037R03	20.5	25	3	25	37	96	with	LN25...
ETLN25M021W25.0F044R03	20.5	25	3	25	44	103	with	LN25...
ETLN25M022W25.0F043R03	22	25	3	25	43	102	with	LN25...
ETLN25M022W25.0F055R03	22	25	3	25	55	114	with	LN25...
ETLN25M030W25.0F055R05	30	25	5	25	55	115	with	LN25...

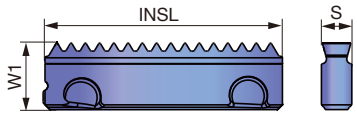
(1) Inserts with a thread pitch of ≥ 3 mm or ≥ 8TPI are not mountable.

SPARE PARTS

Designation	Clamping screw	Wrench
ETLN25...	SSTM-3-3	T-6F

INSERTS

LN25...



P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Thread type	Application	Designation	Pitch (mm)	Threads per inch	Coated AH725	INSL	W1	S
ISO Metric	Internal	LN25DIR1.5ISO	1.5	-	●	0.984	0.276	0.122
		LN25DIR2.0ISO	2	-	●	0.984	0.276	0.122
		LN25DIR3.0ISO (2)	3	-	●	0.984	0.276	0.122
Unified	Internal	LN25DIR20UN	-	20	●	0.984	0.276	0.122
		LN25DIR12UN	-	12	●	0.984	0.276	0.122
		LN25DIR8UN (2)	-	8	●	0.984	0.276	0.122
Whitworth	Internal and external	LN25DEIR14W	-	14	●	0.984	0.276	0.122
		LN25DEIR11W	-	11	●	0.984	0.276	0.122

(2) Does not fit the DC 17 mm holder

● : Line-up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel	AH725	328 - 656	0.004 - 0.012
	High carbon steel	AH725	230 - 492	0.004 - 0.012
	High carbon steel	AH725	230 - 558	0.004 - 0.012
	Cast steel	AH725	230 - 558	0.004 - 0.012
M	Stainless steel	AH725	295 - 459	0.004 - 0.012
K	Cast iron	AH725	197 - 427	0.002 - 0.012
N	Aluminum	AH725	262 - 1312	0.004 - 0.016
S	Heat-resistant alloys	AH725	33 - 98	0.001 - 0.004
	Titanium alloy	AH725	66 - 295	0.001 - 0.004

• Climb milling is recommended.

Insert installation

1. Use airgun or rag to thoroughly clean all the insert pockets free from dust or chips.

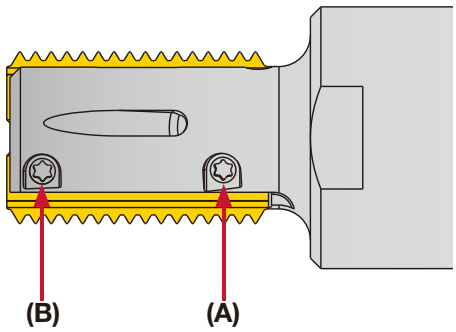
2. Lightly tighten Screw "A" first, then Screw "B" until the insert becomes stationary.

3. Lightly tighten the screws for other insert(s) in the same matter as mentioned in #2 above.

4. Firmly tighten Screw "A", then Screw "B".
Use the recommended torque strengths when tightening the screws.

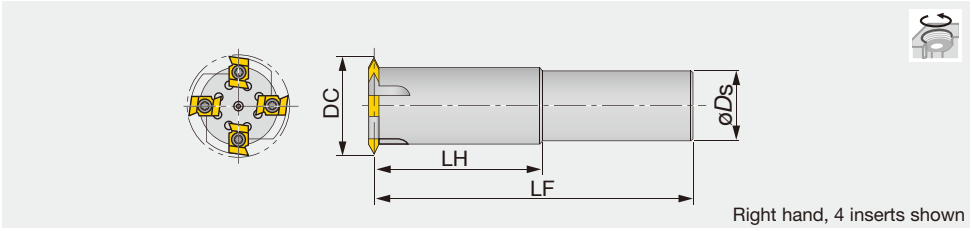
5. Firmly tighten the screws for other insert(s) in the same manner as mentioned in #4 above.

6. Inspect to make sure there is no gap between the insert and the insert seat. Measure the radial runout before use.



Single tooth threading mills

Indexable threading mills



Right hand, 4 inserts shown

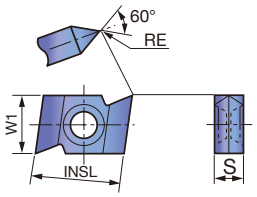
Metric	DC	CICT	øDs	LH	LF	Range of internal thread	Insert
D23-D25-45R	23	1	25	45	115	M28 - M30	T1-R...
D25-D25-45R	25	1	25	45	115	M32 - M42	T1-R...
D38-D32-85R	38	2	32	85	165	M45 - M56	T1-R...
D50-D42-100R	50	4	42	100	190	M58 - M68	T1-R...
D55-D42-100R	55	4	42	100	190	M64 - M85	T2-R...
D60-D42-100R	60	4	42	100	190	M70 - M85	T2-R...
D80-D42-100R	80	6	42	100	190	M90 -	T2-R...

SPARE PARTS

Designation	Clamping screw	Wrench
D23-D25... - D50-D42...	CSTB-4	T-15F
D55-D42... - D80-D42...	CSTB-5	T-20F

INSERTS (Partial profile)

T*-R...



		Coated
		GH330
P	Steel	★
M	Stainless	★
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	RE	Coated GH330	INSL	W1	S
T1-R14	0.006	●	0.567	0.375	0.187
T1-R28	0.011	●	0.567	0.375	0.187
T2-R14	0.006	●	0.701	0.500	0.250
T2-R28	0.011	●	0.701	0.500	0.250

●: Line-up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Mild steels / Unhardened steels < 200HB	GH330	490 - 660	0.012 - 0.016
P	Carbon steels / Alloy steels < 300HB	GH330	490 - 660	0.007 - 0.010
P	Die steels < 50HRC	GH330	100 - 160	0.006 - 0.008
M	Stainless steels < 300HB	GH330	490 - 660	0.002 - 0.005

- Climb milling is recommended.
- When threading a blind hole, use a right hand cutter in right-hand rotation. Cut up from the bottom to prevent chip recutting.
- When machining internal threads from the mouth, use the left-hand cutter in left-hand rotation.

THREADING MILLS AND APPLICABLE THREADS

Cutter dia.	Applicable Thread							Minor diameter of max.pitch thread	
	Thread type	Coarse screw thread	Fine screw thread					Coarse screw thread	Fine screw thread
D23 X 1 tooth T1-type of inserts	M28					2	1.5		25.835
	M30	3.5			3	2	1.5	26.211	
D25 X 1 tooth T1-type of inserts	M32					2	1.5		29.835
	M33	3.5			3	2	1.5	29.211	
	M35						1.5		33.376
	M36	4			3	2	1.5	31.670	
	M38						1.5		36.376
	M39	4			3	2	1.5	34.670	
	M40				3	2	1.5		36.752
	M42	4.5		4	3	2	1.5	37.129	
D38 X 2 teeth T1-type of inserts	M45				3	2	1.5		40.152
	M48			4	3	2	1.5		43.670
	M50				3	2	1.5		46.752
	M52			4	3	2	1.5		47.670
	M55			4	3	2	1.5		50.670
	M56			4	3	2	1.5		51.670
D50 X 4 teeth T1-type of inserts	M58			4	3	2	1.5		53.670
	M60			4	3	2	1.5		55.670
	M62			4	3	2	1.5		57.670
	M64			4	3	2	1.5		59.670
	M65			4	3	2	1.5		60.670
	M68			4	3	2	1.5		63.670
D55 X 4 teeth T2-type of inserts	M64			4	3	2	1.5		59.670
	M65			4	3	2	1.5		60.670
	M68	6		4	3	2	1.5	61.505	
D60 X 4 teeth T2-type of inserts	M70			4	3	2	1.5		63.505
	M72		6	4	3	2	1.5		65.505
	M75			4	3	2	1.5		70.670
	M76		6	4	3	2	1.5		69.505
	M78					2			75.835
	M80		6	4	3	2	1.5		73.505
	M82					2			79.835
	M85		6	4	3	2			78.505
D80 X 6 teeth T2-type of inserts	M90		6	4	3	2			83.505
	M95		6	4	3	2			88.505

(Unit: mm)

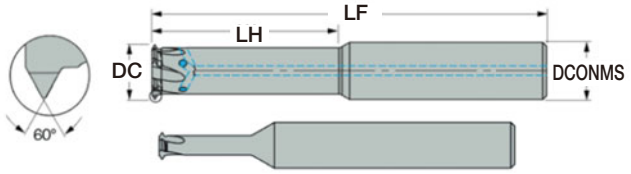
SOLIDTHREAD

Designation System for Solid Carbide Endmills

MTEC□		06	04	C	ISO
ThreadMilling Endmill Carbide	I - Single Point S - Short SH - Short for Hardened steel B - with Coolant Bore Q - with Coolant Bore with long neck Z - with Coolant hole with through hole D - with Drilling (end mill) cutting edge E - for External thread	Shank Dia.	Tool Dia.	No. of Flutes C = 3 flutes D = 4 flutes E = 5 flutes F = 6 flutes	Thread Standard

MTECI-60 (Partial profile)

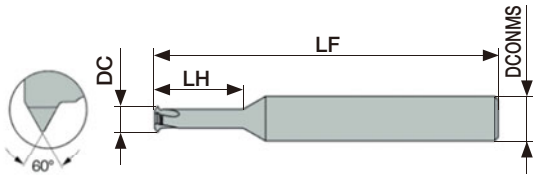
MTECI-A60

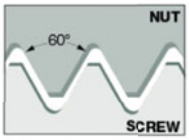


Designation	ISO Metric						Unified							DCONMS (mm)	DC (mm)	NOF	LH (mm)	LF (mm)	Oil hole	Grade
	Pitch (mm)				Application range		TPI				Application range									
	Internal		External		Fine	Coarse	Internal		External		UNC	UNF	UNS							
	min.	max.	min.	max.			min.	max.	min.	max.										
MTECI03019C5A60	0.35	0.6	0.35	0.6	M2.5X0.45	M2.5X0.35, M3X0.35	40	72	40	72	#3-48 #4-40	#3-56 #4-48	-	3	1.9	3	5.2	39	Without	AH710
MTECI06032C9A60	0.5	1.0	0.5	1.0	M4X0.7 M4.5X0.75	M4X0.5	24	48	24	48	#8-32 #10-24	#8-36 #10-32	#10-28	6	3.2	3	9.5	57	Without	AH710
MTECI0604C12A60	0.5	1.0	0.5	1.0	M5X0.8, M6X1.0	M5X0.5, M5.5X0.5 M5X0.75	24	48	24	48	#12-24	#12-28	#10-36 #10-40 #10-48	6	4	3	12.5	58	Without	AH710
MTECI0605D20A60	0.5	0.8	0.4	0.8	≥M6		32	56	32	64	≥M1/4			6	5	4	20	58	With	AH725
MTECI0808D28A60	0.5	0.8	0.4	0.8	≥M9		32	56	32	64	≥M3/8			8	8	4	28	64	With	AH725
MTECI0808D30A60	1.0	1.75	0.8	1.5	≥M10		14	28	16	32	≥M7/16			8	8	4	30	64	With	AH725
MTECI1010D35A60	1.0	1.75	0.8	1.5	≥M12		14	28	16	32	≥M1/2			10	10	4	35	73	With	AH725
MTECI1212E40A60	2.0	3.0	1.75	2.5	≥M16		8	13	10	15	≥M11/16			12	12	5	40	84	With	AH725
MTECI1616E50A60	2.0	3.0	1.75	2.5	≥M20		8	13	10	15	≥M13/16			16	16	5	50	101	With	AH725

ISO metric

MTECI-ISO



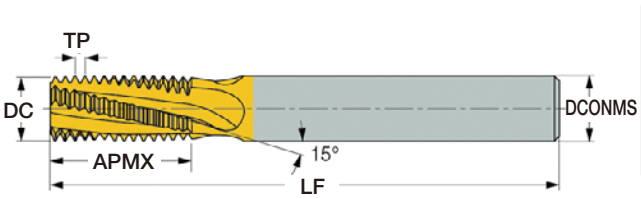


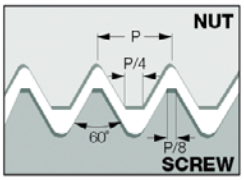
Metric	Pitch	Application range	DCONMS	DC	NOF	LH	LF	Oil hole	Grade
MTECI03007C30.25ISO	0.25	≥M1	6	0.72	3	3.6	39	Without	AH710
MTECI03009C40.25ISO	0.25	≥M1.2	6	0.9	3	4.3	39	Without	AH710
MTECI03011C50.3ISO	0.3	≥M1.4	6	1.05	3	5.0	39	Without	AH710
MTECI03012C60.35ISO	0.35	≥M1.6	6	1.2	3	5.7	39	Without	AH710
MTECI03016C70.4ISO	0.4	≥M2	6	1.55	3	7.1	39	Without	AH710
MTECI03024C100.5ISO	0.5	≥M3	6	2.37	3	10.6	39	Without	AH710

ISO metric

MTEC-ISO

Solid Carbide Internal Threading
Endmills for ISO metric Thread Profile



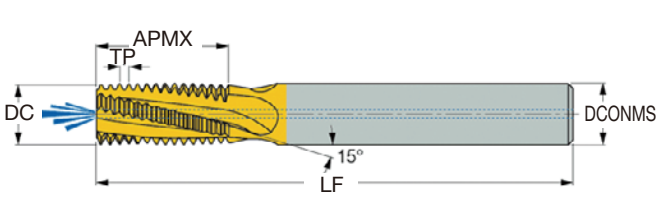


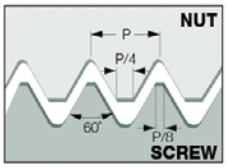
Metric	Pitch	Application range Fine	Application range Coarse	DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
MTEC06022C50.5ISO	0.5	M3	≥M4	6	2.2	3	5.3	58	Without	AH725
MTEC06038C100.5ISO	0.5	-	≥M5	6	3.8	3	10.3	58	Without	AH725
MTEC06031C70.7ISO	0.7	M4	≥M5	6	3.1	3	7.4	58	Without	AH725
MTEC06045C100.75ISO	0.75	-	≥M6	6	4.5	3	10	58	Without	AH725
MTEC06036C90.8ISO	0.8	M5	≥M6	6	3.6	3	9.2	58	Without	AH725
MTEC0606C121.0ISO	1	-	≥M9	6	6	3	12.5	58	Without	AH725
MTEC0808D161.0ISO	1	-	≥M10	8	8	4	16.5	64	Without	AH725
MTEC0604C101.0ISO	1	M6	≥M7	6	4	3	10.5	58	Without	AH725
MTEC0604C141.0ISO	1	M6	≥M7	6	4	3	14.5	58	Without	AH725
MTEC0605C141.25ISO	1.25	M8	≥M10	6	5	3	14.4	58	Without	AH725
MTEC0605C191.25ISO	1.25	M8	≥M10	6	5	3	19.4	58	Without	AH725
MTEC1010D211.5ISO	1.5	-	≥M14	10	10	4	21.8	73	Without	AH725
MTEC1616F331.5ISO	1.5	-	≥M20	16	16	6	33.8	105	Without	AH725
MTEC0807C171.5ISO	1.5	M10	≥M12	8	7	3	17.3	64	Without	AH725
MTEC0807C241.5ISO	1.5	M10	≥M12	8	7	3	24.8	76	Without	AH725
MTEC0808C201.75ISO	1.75	M12	≥M14	8	8	3	20.1	64	Without	AH725
MTEC0808C281.75ISO	1.75	M12	≥M14	8	8	3	28.9	76	Without	AH725
MTEC1212D272.0ISO	2	-	≥M18	12	12	4	27	84	Without	AH725
MTEC2020F412.0ISO	2	-	≥M26	20	20	6	41	105	Without	AH725
MTEC1010C272.0ISO	2	M14	≥M17	10	10	3	27	73	Without	AH725
MTEC1010C392.0ISO	2	M14	≥M17	10	10	3	39	105	Without	AH725
MTEC1414D332.5ISO	2.5	M20	≥M22	14	14	4	33.8	84	Without	AH725
MTEC1414D482.5ISO	2.5	M20	≥M22	14	14	4	48.8	105	Without	AH725
MTEC1616C403.0ISO	3	M24	≥M25	16	16	3	40.5	105	Without	AH725
MTEC1616C583.0ISO	3	M24	≥M25	16	16	3	58.5	120	Without	AH725

ISO metric

MTECB-ISO

Solid Carbide Internal Threading
Endmills with Coolant Holes
for ISO metric Thread Profile

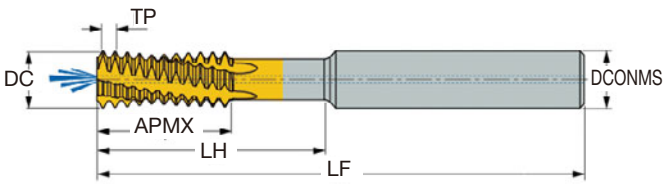


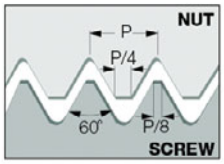


Metric	Pitch	Application range Fine	Application range Coarse	DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
MTECB06038C100.5ISO	0.5	-	≥M5	6	3.8	3	10.3	58	With	AH725
MTECB06031C70.7ISO	0.7	M4	≥M5	6	3.1	3	7.4	58	With	AH725
MTECB06045C100.75ISO	0.75	-	≥M6	6	4.5	3	10.1	58	With	AH725
MTECB1010D240.75ISO	0.75	-	≥M12	10	10	4	24.4	73	With	AH725
MTECB06038C90.8ISO	0.8	M5	≥M6	6	3.8	3	9.2	58	With	AH725
MTECB0606C121.0ISO	1	-	≥M9	6	6	3	12.5	58	With	AH725
MTECB0808D161.0ISO	1	-	≥M10	8	8	4	16.5	64	With	AH725
MTECB1010D241.0ISO	1	-	≥M12	10	10	4	24.5	73	With	AH725
MTECB06046C101.0ISO	1	M6	≥M7	6	4.6	3	10.5	58	With	AH725
MTECB06046C141.0ISO	1	M6	≥M6	6	4.6	3	14.5	58	With	AH725
MTECB0606C141.25ISO	1.25	M8	≥M10	6	6	3	14.4	58	With	AH725
MTECB0606C191.25ISO	1.25	M8	≥M10	6	6	3	19.4	58	With	AH725
MTECB1010D211.5ISO	1.5	-	≥M14	10	10	4	21.8	73	With	AH725
MTECB1616F331.5ISO	1.5	-	≥M20	16	16	6	33.8	105	With	AH725
MTECB1212D261.5ISO	1.5		≥M16	12	12	4	26.3	84	With	AH725
MTECB08078C171.5ISO	1.5	M10	≥M12	8	7.8	3	17	64	With	AH725
MTECB08078C241.5ISO	1.5	M10	≥M12	8	7.8	3	24.8	76	With	AH725
MTECB1009C201.75ISO	1.75	M12	≥M12	10	9	3	20.1	73	With	AH725
MTECB1009C281.75ISO	1.75	M12	≥M12	10	9	3	28.9	73	With	AH725
MTECB1010C272.0ISO	2	M14	≥M15	10	10	3	27	73	With	AH725
MTECB12118D272.0ISO	2	M16	≥M17	12	11.8	4	27	84	With	AH725
MTECB12118D392.0ISO	2	M16	≥M17	12	11.8	4	39	105	With	AH725
MTECB1615E332.5ISO	2.5	M20	≥M22	16	15	5	33.8	105	With	AH725
MTECB1615E482.5ISO	2.5	M20	≥M22	16	15	5	48.8	105	With	AH725
MTECB2018D583.0ISO	3	M24	≥M25	20	18	4	58.5	120	With	AH725

MTECQ-ISO

Solid Carbide Threading Endmills with Internal Coolant Holes and a Reduced Diameter Neck for Deep Internal ISO metric Profile

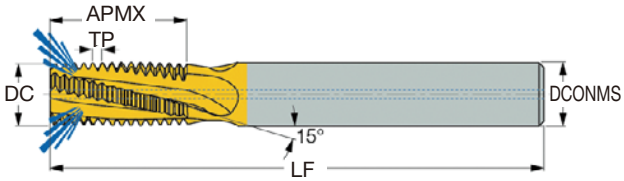


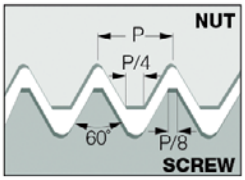


Metric	Pitch	Application range	DCONMS	DC	NOF	APMX	LH	LF	Oil hole	Grade
MTECQ1212D381.0ISO	1	≥M14	12	12	4	21	38	84	With	AH725
MTECQ1010D301.5ISO	1.5	≥M13	10	10	4	18	30	73	With	AH725
MTECQ2020F562.0ISO	2	≥M24	20	20	6	34	56	105	With	AH725
MTECQ2020D453.5ISO	3.5	≥M26	20	20	4	28	45.5	105	With	AH725

MTECZ-ISO

Solid Carbide Internal Threading Endmills with Coolant Holes Located in the Flutes



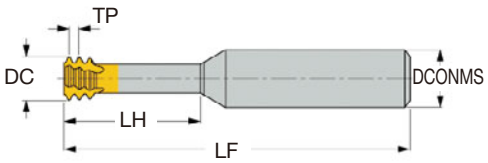


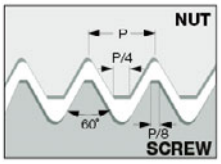
Metric	Pitch	Application range		DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
		Fine	Coarse							
MTECZ0808D161.0ISO	1	-	≥M10	8	8	4	16.5	64	With	AH725
MTECZ06048C101.0ISO	1	M6	≥M7	6	4.8	3	10.5	58	With	AH725
MTECZ0606C141.25ISO	1.25	M8	≥M10	6	6	3	14.4	58	With	AH725
MTECZ0606C191.25ISO	1.25	M8	≥M10	6	6	3	19.4	58	With	AH725
MTECZ1010D211.5ISO	1.5	-	≥M14	10	10	4	21.8	73	With	AH725
MTECZ1212D261.5ISO	1.5	-	≥M16	12	12	4	26.3	84	With	AH725
MTECZ1616E331.5ISO	1.5	-	≥M20	16	16	5	33.8	101	With	AH725
MTECZ08078C171.5ISO	1.5	M10	≥M12	8	7.8	3	17	64	With	AH725
MTECZ1009C281.75ISO	1.75	M12	≥M12	10	9	3	28.9	73	With	AH725
MTECZ1010C272.0ISO	2	M14	≥M15	10	10	3	27	73	With	AH725
MTECZ12118D272.0ISO	2	M16	≥M17	12	11.8	4	27	84	With	AH725

ISO metric

MTECS-ISO

Small Diameter Solid Carbide
Threading Endmills for
Internal ISO metric Profile

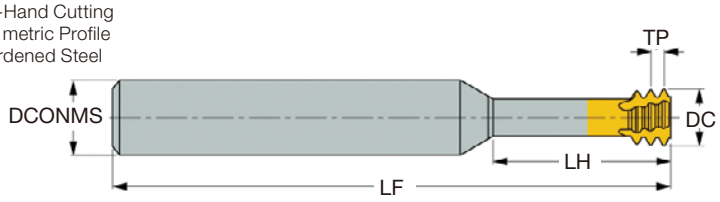


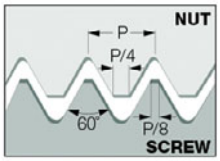


Metric	Pitch	Application range Fine	Application range Coarse	DCONMS	DC	NOF	LH	LF	Oil hole	Grade
MTECS03007C20.25ISO	0.25	≥M1		3	0.72	3	2.5	39	Without	AH725
MTECS03009C30.25ISO	0.25	≥M1.2		3	0.9	3	3	39	Without	AH725
MTECS03011C40.3ISO	0.3	≥M1.4		3	1.05	3	4	39	Without	AH725
MTECS03012C50.35ISO	0.35	≥M1.6		3	1.2	3	4.8	39	Without	AH725
MTECS03016C60.4ISO	0.4	≥M2		3	1.53	3	6	39	Without	AH725
MTECS06016C40.4ISO	0.4	≥M2		6	1.53	3	4.5	58	Without	AH725
MTECS03017C70.45ISO	0.45	≥M2.2		3	1.65	3	7	39	Without	AH725
MTECS06017C50.45ISO	0.45	≥M2.2		6	1.65	3	5	58	Without	AH725
MTECS0602C50.45ISO	0.45	≥M2.5		6	1.95	3	5.5	58	Without	AH725
MTECS0602C70.45ISO	0.45	≥M2.5		6	1.95	3	7.5	58	Without	AH725
MTECS06024C60.5ISO	0.5	≥M3		6	2.37	3	6.5	58	Without	AH725
MTECS06024C90.5ISO	0.5	≥M3		6	2.37	3	9.5	58	Without	AH725
MTECS06024C90.5ISOL	0.5	≥M3		6	2.37	3	9.5	105	Without	AH725
MTECS03024C120.5ISO	0.5	≥M3		3	2.4	3	12.5	39	Without	AH725
MTECS03024C150.5ISO	0.5	≥M3		3	2.4	3	15.5	39	Without	AH725
MTECS06054D200.5ISO	0.5	≥M6		6	5.35	4	20	58	Without	AH725
MTECS06028C100.6ISO	0.6	≥M3.5		6	2.75	3	10.5	58	Without	AH725
MTECS06028C70.6ISO	0.6	≥M3.5		6	2.75	3	7.5	58	Without	AH725
MTECS06031C120.7ISO	0.7	≥M4		6	3.1	3	12.5	58	Without	AH725
MTECS06031C120.7ISOL	0.7	≥M4		6	3.1	3	12.5	105	Without	AH725
MTECS06031C160.7ISO	0.7	≥M4		6	3.1	3	16.7	58	Without	AH725
MTECS06031C90.7ISO	0.7	≥M4		6	3.1	3	9	58	Without	AH725
MTECS0808D250.75ISO	0.75	≥M10		8	8	4	25	64	Without	AH725
MTECS06038C120.8ISO	0.8	≥M5		6	3.8	3	12.5	58	Without	AH725
MTECS06038C160.8ISO	0.8	≥M5		6	3.8	3	16	58	Without	AH725
MTECS06038C160.8ISOL	0.8	≥M5		6	3.8	3	16	105	Without	AH725
MTECS06047C141.0ISO	1	≥M6		6	4.65	3	14	58	Without	AH725
MTECS06047C201.0ISO	1	≥M6		6	4.65	3	20	58	Without	AH725
MTECS06047C201.0ISOL	1	≥M6		6	4.65	3	20	105	Without	AH725
MTECS0606C181.25ISO	1.25	≥M8		6	6	3	18	58	Without	AH725
MTECS0606C241.25ISO	1.25	≥M8		6	6	3	24	58	Without	AH725
MTECS08078C231.5ISO	1.5	≥M10		8	7.8	3	23	64	Without	AH725
MTECS08078C311.5ISO	1.5	≥M10		8	7.8	3	31.5	64	Without	AH725
MTECS1009C261.75ISO	1.75	≥M12		10	9	3	26	73	Without	AH725
MTECS12118D352.0ISO	2	≥M16		12	11.8	4	35	84	Without	AH725
MTECS12118D502.0ISO	2	≥M16		12	11.8	4	50	105	Without	AH725
MTECS1615E432.5ISO	2.5	≥M20		16	15	5	43	100	Without	AH725

MTECSH-ISO

Small Diameter Short Left-Hand Cutting
Solid Carbide Internal ISO metric Profile
Threading Endmills for Hardened Steel



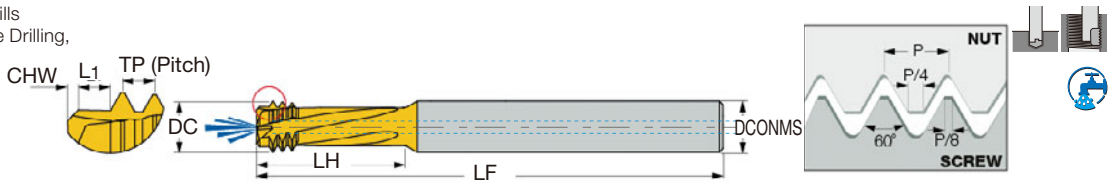


Metric	Pitch	Application range Fine	Application range Coarse	DCONMS	DC	NOF	LH	LF	Oil hole	Grade
MTECSH03012C50.35ISO	0.35	≥M1.6		3	1.2	3	4.8	39	Without	AH750
MTECSH03016C60.4ISO	0.4	≥M2		3	1.55	3	6	39	Without	AH750
MTECSH06016C40.4ISO	0.4	≥M2		6	1.55	3	4.5	58	Without	AH750
MTECSH06017C50.45ISO	0.45	≥M2.2		6	1.65	3	5	58	Without	AH750
MTECSH0602C50.45ISO	0.45	≥M2.5		6	1.95	3	5.5	58	Without	AH750
MTECSH0602C70.45ISO	0.45	≥M2.5		6	1.95	3	7.5	58	Without	AH750
MTECSH06024C60.5ISO	0.5	≥M3		6	2.35	3	6.5	58	Without	AH750
MTECSH06024C90.5ISO	0.5	≥M3		6	2.35	3	9.5	58	Without	AH750
MTECSH06028C70.6ISO	0.6	≥M3.5		6	2.75	3	7.5	58	Without	AH750
MTECSH06031C120.7ISO	0.7	≥M4		6	3.1	3	12.5	58	Without	AH750
MTECSH06038C120.8ISO	0.8	≥M5		6	3.8	3	12.5	58	Without	AH750
MTECSH06047C141.0ISO	1	≥M6		6	4.65	3	14	58	Without	AH750
MTECSH06047C201.0ISO	1	≥M6		6	4.65	3	20	58	Without	AH750
MTECSH0606C181.25ISO	1.25	≥M8		6	5.95	3	18	58	Without	AH750
MTECSH0606C241.25ISO	1.25	≥M8		6	5.95	3	24	58	Without	AH750
MTECSH08078C231.5ISO	1.5	≥M10		8	7.8	3	23	64	Without	AH750
MTECSH1009C261.75ISO	1.75	≥M12		10	9	3	26	73	Without	AH750
MTECSH12118D352.0ISO	2	≥M16		12	11.8	4	35	84	Without	AH750

ISO metric

MTECD-ISO

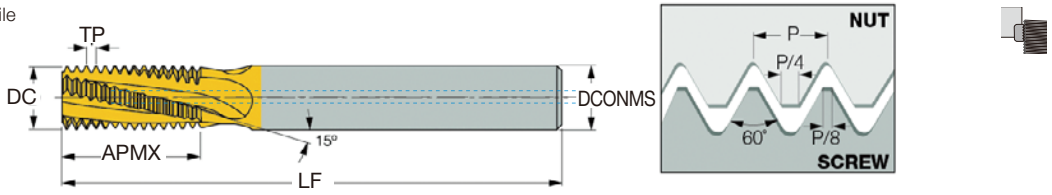
Small Diameter Short Left-Hand Cutting Solid Carbide Endmills for Internal ISO metric Profile Drilling, Threading and Chamfering



Metric	Pitch	Application range	DCONMS	DC	NOF	LH	LF	Ch	L1	Oil hole	Grade
MTECD06032C110.7ISO	0.7	M4	6	3.15	3	11.6	58	0.2	0.7	Without	AH725
MTECD0604C140.8ISO	0.8	M5	6	4	3	14.4	58	0.3	0.8	Without	AH725
MTECD08047C141.0ISO	1	M6-M9	8	4.7	3	14	64	0.4	1	With	AH725
MTECD08061D181.25ISO	1.25	M8-M12	8	6.1	4	18	64	0.5	1.3	With	AH725
MTECD08078D231.5ISO	1.5	M10-M15	8	7.8	4	23	64	0.6	1.5	With	AH725
MTECD1009D261.75ISO	1.75	M12	10	9	4	26	73	0.6	1.8	With	AH725
MTECD12118D352.0ISO	2	M16-M23	12	11.8	4	35	84	0.6	2	With	AH725

MTEC E-ISO

Solid Carbide External Threading Endmills for ISO metric Thread Profile

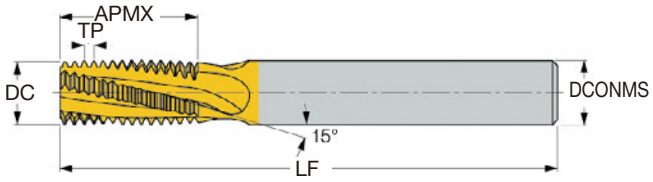


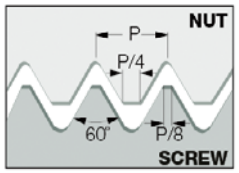
Metric	Pitch	DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
MTECE1010D161.0ISO	1	10	10	4	16.5	73	Without	AH725
MTECE1010D161.25ISO	1.25	10	10	4	16.9	73	Without	AH725
MTECE1010D151.5ISO	1.5	10	10	4	15.8	73	Without	AH725
MTECE1212D201.5ISO	1.5	12	12	4	20.3	84	Without	AH725
MTECE1212D201.75ISO	1.75	12	12	4	20.1	84	Without	AH725
MTECE1212D212.0ISO	2	12	12	4	21	84	Without	AH725

Unified

MTEC-UN

Solid Carbide Threading Endmills
for Internal UN Thread Profile



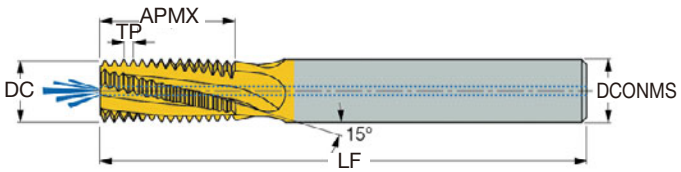


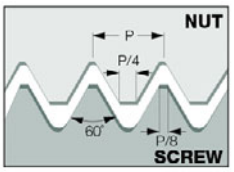
Metric	TPI	Application range			DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
		UNC	UNF	UNEF							
MTEC06032C632UN	32	#8	#10	#12	6	3.2	3	6.8	58	Without	AH725
MTEC0604C1128UN	28	-	7/16-1/2	-	6	4	3	11.3	58	Without	AH725
MTEC0606C1428UN	28	-	-	7/16-1/2	6	6	3	14.5	58	Without	AH725
MTEC0605C1424UN	24	-	5/16	-	6	5	3	14.3	58	Without	AH725
MTEC0807C2124UN	24	-	3/8	9/16-5/8	8	7	3	20	64	Without	AH725
MTEC06045C1220UN	20	1/4	-	-	6	4.5	3	12.1	58	Without	AH725
MTEC0807C2120UN	20	-	7/16-1/2	-	8	7	3	20	64	Without	AH725
MTEC1212E2720UN	20	-	-	3/4-1	12	12	5	27.3	84	Without	AH725
MTEC0605C1418UN	18	5/16	-	-	6	5	3	14.8	58	Without	AH725
MTEC1010D2618UN	18	-	9/16-5/8	1 1/8-1 5/8	10	10	4	26.1	73	Without	AH725
MTEC0606C1616UN	16	3/8	-	-	6	6	3	16.7	58	Without	AH725
MTEC1212D3116UN	16	-	3/4	-	12	12	4	30	84	Without	AH725
MTEC1615E3714UN	14	-	7/8	-	16	15	5	37.2	105	Without	AH725
MTEC0808C2213UN	13	1/2	-	-	8	8	3	22.5	64	Without	AH725
MTEC1010C2612UN	12	9/16	-	-	10	10	3	26.5	73	Without	AH725
MTEC1616E4112UN	12	-	1-1 1/2	-	16	16	5	41.3	105	Without	AH725
MTEC1010C2811UN	11	5/8	-	-	10	10	3	28.9	73	Without	AH725
MTEC1212C3410UN	10	3/4	-	-	12	12	3	34.3	84	Without	AH725
MTEC1615C389UN	9	7/8	-	-	16	15	3	38.1	105	Without	AH725
MTEC1616C428UN	8	1	-	-	16	16	3	42.9	105	Without	AH725

Unified

MTECB-UN

Solid Carbide Threading Endmills with Coolant Holes for Internal UN Thread Profile

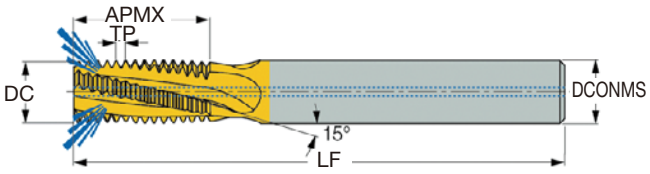


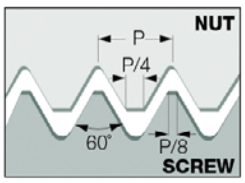


Metric	TPI	Application range			DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
		UNC	UNF	UNEF							
MTECB06032C632UN	32	#8	#10	#12	6	3.2	3	6.8	58	With	AH725
MTECB0606C1432UN	32	-	-	7/16-1/2	6	6	3	16	58	With	AH725
MTECB0605C1128UN	28	-	1/4	-	6	5	3	11.3	58	With	AH725
MTECB08066C1424UN	24	-	5/16	-	8	6.6	3	14.3	64	With	AH725
MTECB0808D2124UN	24	-	-	9/16-5/8	8	8	4	20.6	64	With	AH725
MTECB0808C2120UN	20	-	7/16	-	8	8	3	21	64	With	AH725
MTECB1010D2220UN	20	-	1/2	-	10	10	4	22.3	73	With	AH725
MTECB06056C1418UN	18	5/16	-	-	6	5.6	3	14.8	58	With	AH725
MTECB12113D2618UN	18	-	9/16-5/8	1 1/8-1 5/8	12	11.3	4	26.1	84	With	AH725
MTECB08067C1616UN	16	3/8	-	-	8	6.7	3	16.7	64	With	AH725
MTECB1212D3116UN	16	-	3/4	-	12	12	4	31	84	With	AH725
MTECB1616E3714UN	14	-	7/8	-	16	16	5	37.2	105	With	AH725
MTECB10092C2213UN	13	1/2	-	-	10	9.2	3	22.5	73	With	AH725
MTECB12114C2811UN	11	5/8	-	-	12	11.4	3	28.9	84	With	AH725
MTECB16144D3410UN	10	3/4	-	-	16	14.4	4	34.3	105	With	AH725
MTECB20195D428UN	8	1	-	-	20	19.5	4	42.9	105	With	AH725

MTECZ-UN

Solid Carbide Threading Endmills with Coolant Holes Located in the Flutes for Internal UN Thread Profile

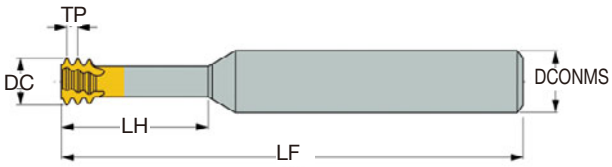


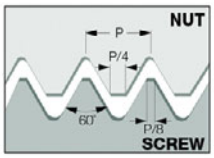


Metric	TPI	Application range			DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
		UNC	UNF	UNEF							
MTECZ1010D2220UN	20	-	1/2	-	10	10	4	22.3	73	With	AH725
MTECZ12113D2618UN	18	-	9/16-5/8	1 1/8-1 5/8	12	11.3	4	26.1	84	With	AH725
MTECZ08067C1616UN	16	3/8	-	-	8	6.7	3	16.7	64	With	AH725
MTECZ16144D3410UN	10	3/4	-	-	16	14.4	4	34.3	101	With	AH725

MTECS-UN

Small Diameter Solid Carbide UN
Profile Threading Endmills for Steel



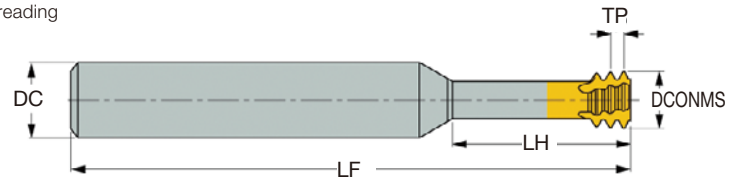


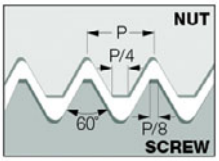
Metric	TPI	Application range UNC	Application range UNF	DCONMS	DC	NOF	LH	LF	Oil hole	Grade
MTECS03012C880UN	80	-	#0	3	1.15	3	8	39	Without	AH725
MTECS03015C672UN	72	-	#1	3	1.45	3	6	39	Without	AH725
MTECS06016C656UN	56	#2	#3	6	1.65	3	6.6	58	Without	AH725
MTECS06016C456UN	56	#2	#3	6	1.65	3	4.4	58	Without	AH725
MTECS06019C548UN	48	#3	#4	6	1.9	3	5.2	58	Without	AH725
MTECS03021C1240UN	40	#4	-	3	2.1	3	12	39	Without	AH725
MTECS06021C840UN	40	#4	-	6	2.1	3	8	58	Without	AH725
MTECS06024C940UN	40	#5	#6	6	2.45	3	9.6	58	Without	AH725
MTECS06021C640UN	40	#4	-	6	2.1	3	6.3	58	Without	AH725
MTECS06033C936UN	36	-	#8	6	3.3	3	9	58	Without	AH725
MTECS06025C732UN	32	#6	-	6	2.55	3	7.1	58	Without	AH725
MTECS06025C1032UN	32	#6	-	6	2.55	3	10.5	58	Without	AH725
MTECS06032C932UN	32	#8	#10	6	3.2	3	9.5	58	Without	AH725
MTECS06032C1232UN	32	#8	#10	6	3.2	3	12.5	58	Without	AH725
MTECS06037C1032UN	32	-	#10	6	3.7	3	10.5	58	Without	AH725
MTECS06037C1532UN	32	-	#10	6	3.7	3	15	58	Without	AH725
MTECS0605C1428UN	28	-	1/4	6	5	3	14.5	58	Without	AH725
MTECS0605C1928UN	28	-	1/4	6	5	3	19	58	Without	AH725
MTECS08066C1724UN	24	-	5/16	8	6.6	3	17	64	Without	AH725
MTECS08066C2424UN	24	-	5/16	8	6.6	3	24	64	Without	AH725
MTECS06047C1420UN	20	1/4	-	6	4.75	3	14	58	Without	AH725
MTECS06047C1920UN	20	1/4	-	6	4.75	3	19	58	Without	AH725
MTECS06047C1920UN-L	20	1/4	-	6	4.75	3	19	105	Without	AH725
MTECS0808C2520UN	20	-	7/16	8	8	3	25	64	Without	AH725
MTECS0606C1718UN	18	5/16	-	6	6	3	17	58	Without	AH725
MTECS0606C2318UN	18	5/16	-	6	6	3	23	58	Without	AH725
MTECS1212D3518UN	18	-	5/8	12	12	4	35	84	Without	AH725
MTECS08067C2216UN	16	3/8	-	8	6.7	3	22	64	Without	AH725
MTECS08067C3016UN	16	3/8	-	8	6.7	3	30.2	64	Without	AH725
MTECS08077C2514UN	14	7/16	-	8	7.7	3	25	64	Without	AH725
MTECS10092C2713UN	13	1/2	-	10	9.2	3	27.5	73	Without	AH725
MTECS12114C3411UN	11	5/8	-	12	11.4	3	34.5	84	Without	AH725
MTECS12114C5011UN	11	5/8	-	12	11.4	3	50	105	Without	AH725

Unified

MTECSH-UN

Small Diameter Short Left-Hand Cutting
Solid Carbide UN Profile Threading
Endmills for Hardened Steel

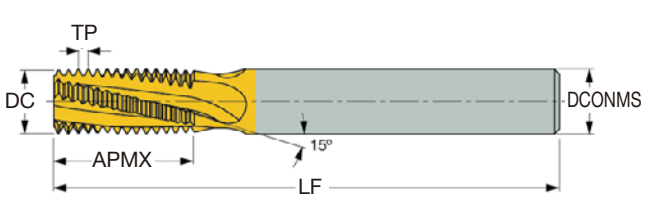




Metric	TPI	Application range UNC	Application range UNF	DCONMS	DC	NOF	LH	LF	Oil hole	Grade
MTECSH06012C480UN	80	-	#0	6	1.15	3	4	58	Without	AH725
MTECSH06016C656UN	56	#2	#3	6	1.65	3	6.6	58	Without	AH725
MTECSH06019C548UN	48	#3	#4	6	1.9	3	5.2	58	Without	AH725
MTECSH06021C640UN	40	#4	-	6	2.1	3	6.3	58	Without	AH725
MTECSH06024C740UN	40	#5	#6	6	2.45	3	7	58	Without	AH725
MTECSH06021C840UN	40	#4	-	6	2.1	3	8	58	Without	AH725
MTECSH06024C940UN	40	#5	#6	6	2.45	3	9.6	58	Without	AH725
MTECSH06025C1032UN	32	#6	-	6	2.55	3	10.5	58	Without	AH725
MTECSH06032C932UN	32	#8	-	6	3.2	3	9.5	58	Without	AH725
MTECSH06037C1032UN	32	-	#10	6	3.7	3	10.5	58	Without	AH725
MTECSH06037C1532UN	32	-	#10	6	3.7	3	15	58	Without	AH725
MTECSH06042C1128UN	28	-	#12	6	4.2	3	11	58	Without	AH725
MTECSH0605C1428UN	28	-	1/4	6	5	3	14.5	58	Without	AH725
MTECSH06035C1024UN	24	#10-#12	-	6	3.5	3	10.6	58	Without	AH725
MTECSH08066C1724UN	24	-	5/16	8	6.6	3	17	64	Without	AH725
MTECSH08066C2424UN	24	-	5/16	8	6.6	3	24	64	Without	AH725
MTECSH06047C1920UN	20	1/4	-	6	4.75	3	19	58	Without	AH725
MTECSH0808C2520UN	20	-	7/16	8	8	3	25	64	Without	AH725
MTECSH0606C1718UN	18	5/16	-	6	6	3	17	58	Without	AH725
MTECSH0606C2318UN	18	5/16	-	6	6	3	23	58	Without	AH725
MTECSH08067C2216UN	16	3/8	-	8	6.7	3	22	64	Without	AH725
MTECSH08077C2514UN	14	7/16	-	8	7.7	3	25	64	Without	AH725
MTECSH10092C2713UN	13	1/2	-	10	9.2	3	27.5	73	Without	AH725
MTECSH12114C3411UN	11	5/8	-	12	11.4	3	34.5	84	Without	AH725

MTEC E-UN

Solid Carbide Threading Endmills with
UN Form for External Threading

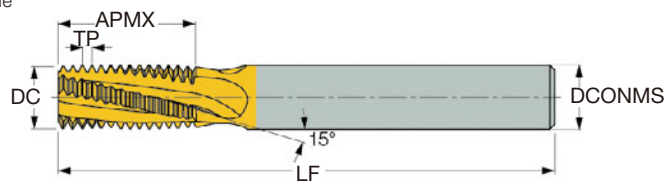


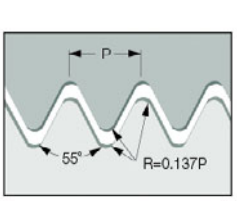
Metric	TPI	DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
MTECE1010D1624UN	24	10	10	4	16.4	73	Without	AH725
MTECE1212E2120UN	20	12	12	5	21	84	Without	AH725

Whitworth

MTEC-W

Solid Carbide Threading Endmills for Internal or External BSP Thread Profile

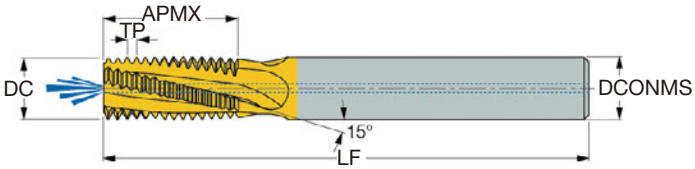


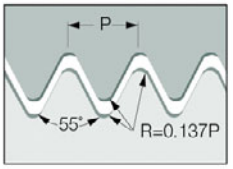


Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
MTEC0606C928W	28	1/8	6	6	3	9.5	58	Without	AH725
MTEC0808C1419W	19	1/4-3/8	8	8	3	14	64	Without	AH725
MTEC1212D1914W	14	1/2-7/8	12	12	4	19.3	84	Without	AH725
MTEC1212D2614W	14	1/2-7/8	12	12	4	26.3	84	Without	AH725
MTEC1212C2411W	11	1-1 1/2	12	12	3	24.2	84	Without	AH725
MTEC1616D3811W	11	1-3	16	16	4	38.1	105	Without	AH725

MTECB-W

Solid Carbide Internal or External Threading Endmills with Coolant Holes for BSP Thread Profile

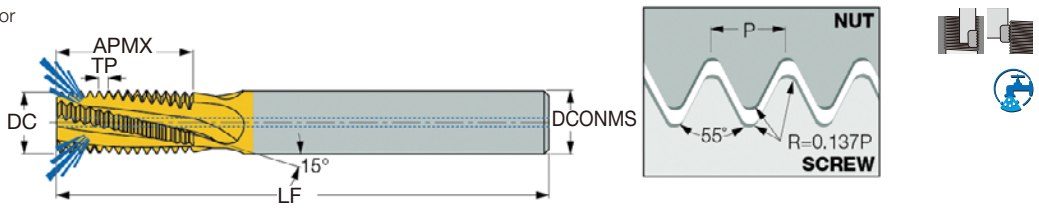




Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
MTECB08078C1428W	28	1/8	8	7.8	3	14.1	64	With	AH725
MTECB1010D1619W	19	1/4-3/8	10	10	4	16.7	73	With	AH725
MTECB1616E2614W	14	1/2-7/8	16	16	5	26.3	105	With	AH725
MTECB1616D3811W	11	≥1	16	16	4	38.1	105	With	AH725
MTECB2020E4711W	11	≥1	20	20	5	47.3	105	With	AH725

MTECZ-W

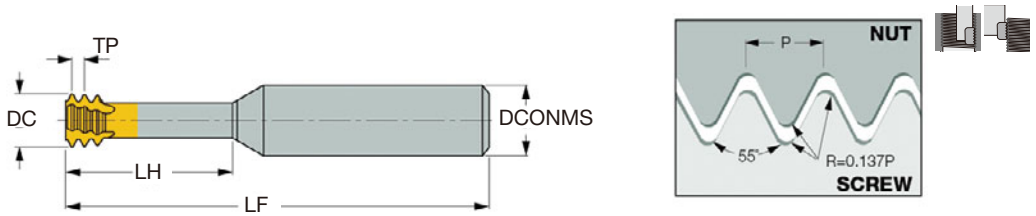
Solid Carbide Threading Endmills with Coolant Holes Located in the Flutes for Internal or External BSF/BSP Thread



Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
MTECZ08078C1428W	28	1/8	8	7.8	3	14.1	64	With	AH725
MTECZ1010D1619W	19	1/4-3/8	10	10	4	16.7	73	With	AH725
MTECZ1616E2614W	14	1/2-7/8	16	16	5	26.3	101	With	AH725

MTECS-W

Short Solid Carbide Threading Endmills for Internal or External BSP and BSF Thread Profiles

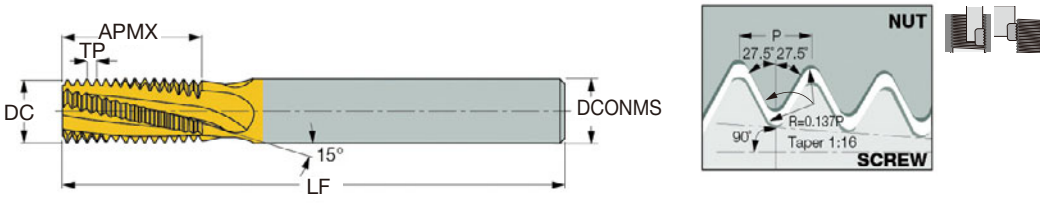


Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
MTECS08078C1928W	28	1/8	8	7.8	3	19.5	64	Without	AH725
MTECS1010D3019W	19	1/4-3/8	10	10	4	30	73	Without	AH725
MTECS1212D3714W	14	1/2-7/8	12	12	4	37	84	Without	AH725

BSPT

MTEC-BSPT

Solid Carbide Threading Endmills for External or Internal BSPT Thread Profile

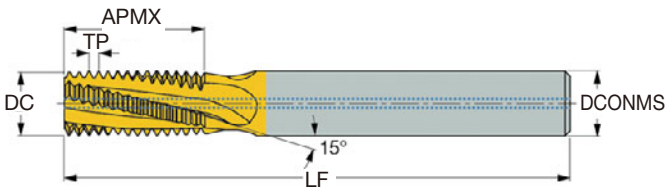


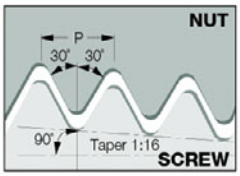
Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
MTEC0606C928BSPT	28	1/8	6	6	3	9.5	58	Without	AH725
MTEC0808C1419BSPT	19	1/4-3/8	8	8	3	14	64	Without	AH725
MTEC1212D1914BSPT	14	1/2-7/8	12	12	4	19.1	84	Without	AH725
MTEC1616D2811BSPT	11	1-2	16	16	4	28.9	105	Without	AH725

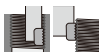
NPT

MTEC-NPT

Solid Carbide Threading Endmill
without Coolant Holes for
Internal or External NPT Threads



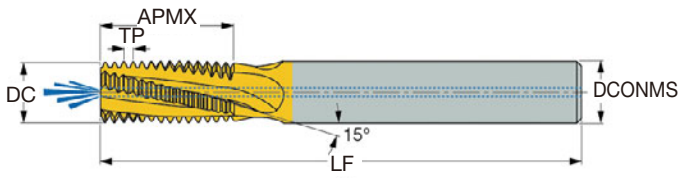


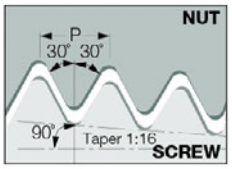


Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
MTEC0606C927NPT	27	1/16-1/8	6	6	3	9.9	58	Without	AH725
MTEC0808C1418NPT	18	1/4-3/8	8	8	3	14.8	64	Without	AH725
MTEC1212D2014NPT	14	1/2-3/4	12	12	4	20.9	84	Without	AH725
MTEC1616D2711.5NPT	11.5	1-2	16	16	4	27.6	105	Without	AH725
MTEC2020D398NPT	8	≥2 1/2	20	20	4	39.7	105	Without	AH725

MTECB-NPT

Solid Carbide Threading Endmill
with a Coolant Hole
Internal or External NPT Threads



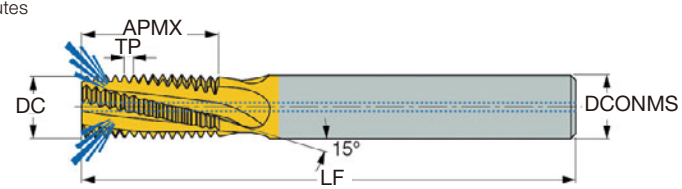


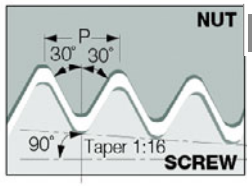
Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
MTECB08076C1027NPT	27	1/8	8	7.6	3	10.8	64	With	AH725
MTECB1010D1618NPT	18	1/4-3/8	10	10	4	16.2	73	With	AH725
MTECB16155D2214NPT	14	1/2-3/4	16	15.5	4	22.7	105	With	AH725

NPTF

MTECZ-NPTF

Solid Carbide Threading Endmill
with Coolant Holes located in the Flutes
Internal or External NPT Threads



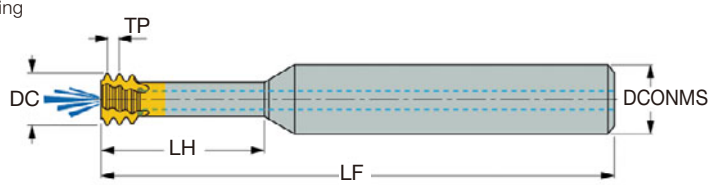


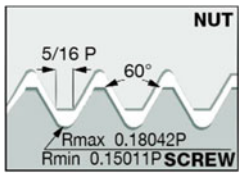
Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Oil hole	Grade
MTECZ08076C1027NPTF	27	1/8	8	7.6	3	10.8	64	With	AH725
MTECZ1010D1618NPTF	18	1/4-3/8	10	10	4	16.2	73	With	AH725

MJ

MTECS-MJ

Small Diameter Short Solid Carbide
Internal MJ-Type Profile Threading
Endmills



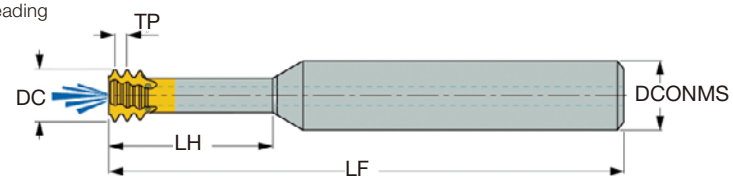


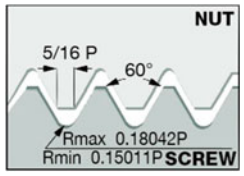
Metric	Pitch	Application range	DCONMS	DC	NOF	LH	LF	Oil hole	Grade
MTECS06032C100.7MJ	0.7	4	6	3.2	3	10	58	Without	AH725
MTECS06039C120.8MJ	0.8	5	6	3.9	3	12.5	58	Without	AH725
MTECS06048C151.0MJ	1	6	6	4.8	3	15	58	Without	AH725
MTECS08061C201.25MJ	1.25	8	8	6.1	3	20	64	With	AH725
MTECS0808C251.5MJ	1.5	10	8	8	3	25	64	With	AH725
MTECS10092C301.75MJ	1.75	12	10	9.2	3	30	73	With	AH725
MTECS1010C352.0MJ	2	14, 16	10	10	3	35	73	With	AH725

UNJ

MTECS-UNJ

Small Diameter Short Solid Carbide
Internal UNJ-Type Profile Threading
Endmills





Metric	TPI	Application range UNJC	Application range UNJF	DCONMS	DC	NOF	LH	LF	Oil hole	Grade
MTECS06033C1032UNJ	32	8	10	6	3.3	3	10.5	58	Without	AH725
MTECS08051C1628UNJ	28	-	1/4	8	5.1	3	16	64	With	AH725
MTECS08067C2024UNJ	24	-	5/16, 3/8	8	6.7	3	20	64	With	AH725
MTECS06049C1620UNJ	20	1/4	-	6	4.9	3	16	58	Without	AH725
MTECS0808C2820UNJ	20	-	7/16	8	8	3	28	64	With	AH725
MTECS08061C2018UNJ	18	5/16	9/16	8	6.15	3	20	64	With	AH725
MTECS08069C2416UNJ	16	3/8	-	8	6.9	3	24	64	With	AH725
MTECS10094C2713UNJ	13	1/2	-	10	9.4	3	27.5	73	With	AH725

TUNGMEISTER

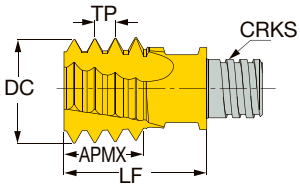
Designation System for TungMeister

VMT	100	L06	IS	15	-	4	S05
TungMeister ThreadMilling VMT : Full profile VTR : Partial profile	Tool Dia. x10	Cutting Length	Thread Profile ISO UN W	Pitch x10 TPI		No. of Flutes	Connection Size

ISO metric

VMT***IS

Carbide Milling Heads with a Threaded Connection for Internal ISO Metric Thread

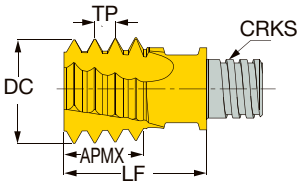


Metric	Pitch	Application range Fine	Application range Coarse	DC	NOF	APMX	LF	CRKS	Grade	Wrench
VMT100L06IS07-4S05	0.75	-	≥M12	10	4	6	12.8	S05	AH725	KEYV-S05
VMT100L06IS10-4S05	1	-	≥M12	10	4	6	12.8	S05	AH725	KEYV-S05
VMT100L06IS15-4S05	1.5	-	≥M14	10	4	6	12.8	S05	AH725	KEYV-S05
VMT120L09IS15-4S06	1.5	-	≥M16	12	4	9	14.3	S06	AH725	KEYV-T25
VMT120L10IS20-4S06	2	M16	≥M17	12	4	10	14.3	S06	AH725	KEYV-T25
VMT160L12IS15-6S08	1.5	-	≥M20	16	6	12	19	S08	AH725	KEYV-T30L
VMT160L12IS20-5S08	2	-	≥M19	16	5	12	19	S08	AH725	KEYV-T30L
VMT150L13IS25-5S08	2.5	M20	≥M22	15.4	5	12.5	19	S08	AH725	KEYV-T30L
VMT160L12IS30-3S08	3	M24	≥M25	16	3	12	19	S08	AH725	KEYV-T30L

Unified

VMT***UN

Carbide Milling Heads with a Threaded Connection for Internal UN Thread Profile

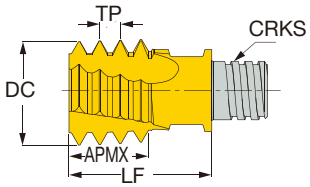


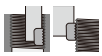
Metric	TPI	Application range UNC	Application range UNF	Application range UNFF	DC	NOF	APMX	LF	CRKS	Grade	Wrench
VMT100L06UN24-4S05	24	-	-	9/16-5/8	10	4	5.3	12.8	S05	AH725	KEYV-S05
VMT100L06UN20-4S05	20	-	1/2	-	10	4	5.1	12.8	S05	AH725	KEYV-S05
VMT120L10UN16-4S06	16	-	3/4	-	12	4	9	14.3	S06	AH725	KEYV-T25
VMT120L10UN14-4S06	14	-	7/8	-	12	4	9	14.3	S06	AH725	KEYV-T25
VMT160L13UN12-5S08	12	-	1-1 1/2	-	16	5	12.7	19	S08	AH725	KEYV-T30L
VMT150L13UN10-4S08	10	3/4	-	-	15.4	4	12.7	19	S08	AH725	KEYV-T30L
VMT160L11UN09-3S08	9	7/8	-	-	16	3	11.3	19	S08	AH725	KEYV-T30L
VMT160L13UN08-3S08	8	1	-	-	16	3	12.7	20	S08	AH725	KEYV-S08

Whitworth

VMT***W

Carbide Milling Heads with a Threaded Connection for Internal and External 55° BSP Thread Profile



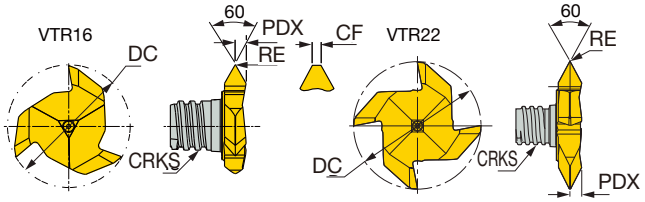


Metric	TPI	Application range	DC	NOF	APMX	LF	CRKS	Grade	Wrench
VMT100L06W19-4S05	19	1/4 - 3/8	10	4	5.3	12.8	S05	AH725	KEYV-S05
VMT160L12W14-4S08	14	1/2 - 7/8	16	4	12.7	19	S08	AH725	KEYV-T30L
VMT160L11W11-4S08	11	≥1	16	4	11.6	19	S08	AH725	KEYV-T30L

60° partial profile

VTR***IS

Interchangeable Solid Carbide Milling Head with Threaded Connection for Internal or External 60° Partial Profile Thread Milling

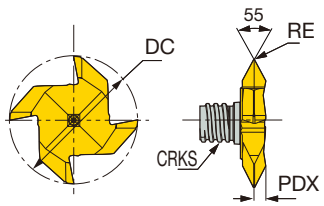


Metric	Pitch		Smallest Possible thread	DC	RE	CF	PDX	NOF	CRKS	Grade	Wrench
	P min	P max									
VTR160L12IS05-3S06	0.5	2	M20	15.7	-	0.05	1.4	3	S06	GH130	KEYV-177
VTR160L12IS15-3S06	1.5	2	M22	15.7	0.05	-	1.4	3	S06	GH130	KEYV-177
VTR220L28IS30-4S08	3	4.5	M36	21.7	0.2	-	2.8	4	S08	GH130	KEYV-217

55° partial profile

VTR***W

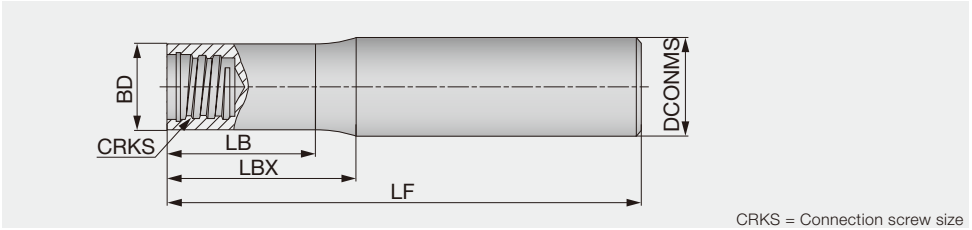
Interchangeable Solid Carbide Milling Head with Threaded Connection for Internal or External 55° Partial Profile Thread Milling



Metric	TPI		Smallest Possible thread	DC	RE	PDX	NOF	CRKS	Grade	Wrench
	TPI max	TPI min								
VTR220L24W14-4S08	14	11	3/4	21.7	0.2	2.4	4	S08	GH130	KEYV-217

VSS...

TungMeister, straight neck and cylindrical shank

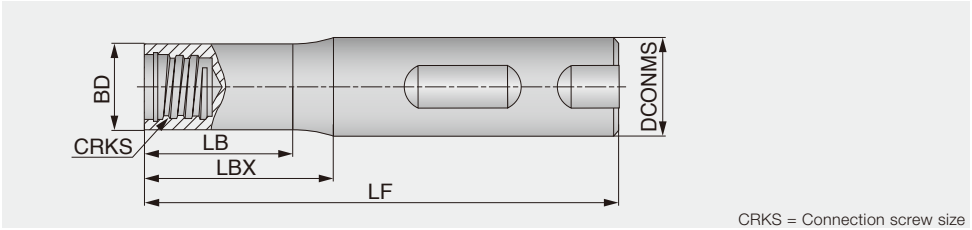


CRKS = Connection screw size

Inch	DCONMS	BD	LF	LBX	LB	CRKS	Type	Material
VSS031L250S05US	0.312	0.300	2.500	0.590	0.510	S05	CYLINDRICAL	STEEL
VSS037L300S06US	0.375	0.364	3.000	0.590	0.510	S06	CYLINDRICAL	STEEL
VSS050L350S08US	0.500	0.480	3.540	0.630	0.530	S08	CYLINDRICAL	STEEL
VSS062L400S10US	0.625	0.598	4.000	0.780	0.680	S10	CYLINDRICAL	STEEL
VSS075L500S12US	0.750	0.720	5.000	1.000	0.880	S12	CYLINDRICAL	STEEL
VSS031L300S05UC	0.312	0.300	3.000	1.000	0.950	S05	CYLINDRICAL	CARBIDE
VSS031L350S05UC	0.312	0.300	3.500	1.500	1.450	S05	CYLINDRICAL	CARBIDE
VSS031L400S05UC	0.312	0.300	4.000	2.000	1.950	S05	CYLINDRICAL	CARBIDE
VSS037L400S06UC	0.375	0.364	4.000	1.250	1.200	S06	CYLINDRICAL	CARBIDE
VSS037L475S06UC	0.375	0.364	4.750	2.000	1.950	S06	CYLINDRICAL	CARBIDE
VSS050L400S08UC	0.500	0.480	4.000	1.500	1.400	S08	CYLINDRICAL	CARBIDE
VSS050L550S08UC	0.500	0.480	5.500	2.500	2.450	S08	CYLINDRICAL	CARBIDE
VSS062L325S10UC	0.625	0.600	3.250	1.250	1.180	S10	CYLINDRICAL	CARBIDE
VSS062L450S10UC	0.625	0.600	4.500	2.500	2.430	S10	CYLINDRICAL	CARBIDE
VSS062L550S10UC	0.625	0.600	5.500	3.500	3.430	S10	CYLINDRICAL	CARBIDE
VSS062L700S10UC	0.625	0.600	7.000	5.000	4.930	S10	CYLINDRICAL	CARBIDE
VSS075L400S12UC	0.750	0.720	4.000	1.500	1.430	S12	CYLINDRICAL	CARBIDE
VSS075L550S12UC	0.750	0.720	5.500	3.000	2.930	S12	CYLINDRICAL	CARBIDE
VSS075L800S12UC	0.750	0.720	8.000	4.500	4.430	S12	CYLINDRICAL	CARBIDE
VSS031L300S05UW	0.312	0.299	3.000	1.000	0.978	S05	CYLINDRICAL	TUNGSTEN
VSS031L450S05UW	0.312	0.299	4.500	2.000	1.978	S05	CYLINDRICAL	TUNGSTEN
VSS037L355S06UW	0.375	0.364	3.550	0.750	0.680	S06	CYLINDRICAL	TUNGSTEN
VSS050L425S08UW	0.500	0.480	4.250	0.630	0.530	S08	CYLINDRICAL	TUNGSTEN
VSS100L537S15US	1.000	0.957	5.375	1.375	1.313	S15	CYLINDRICAL	STEEL
VSS100L475S15UC	1.000	0.957	4.750	2.375	2.313	S15	CYLINDRICAL	CARBIDE
VSS100L675S15UC	1.000	0.957	6.750	4.000	3.938	S15	CYLINDRICAL	CARBIDE
VSS100L1000S15UC	1.000	0.957	10.000	6.000	5.938	S15	CYLINDRICAL	CARBIDE

VSSD**W...

TungMeister, straight neck and weldon shank

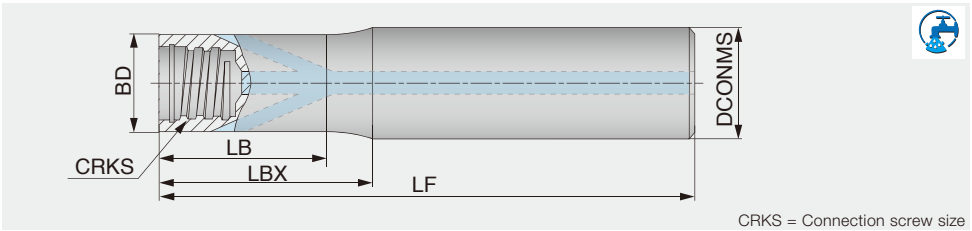


CRKS = Connection screw size

Inch	DCONMS	BD	LF	LBX	LB	CRKS	Type	Material
VSS050L218W05US	0.500	0.299	2.185	0.150	-	S05	WELDON	STEEL
VSS062L258W06US	0.625	0.366	2.580	0.236	-	S06	WELDON	STEEL
VSS062L258W08US	0.625	0.480	2.580	0.157	-	S08	WELDON	STEEL
VSS075L275W10US	0.750	0.598	2.750	0.157	-	S10	WELDON	STEEL
VSS100L300W12US	1.000	0.720	3.000	0.283	-	S12	WELDON	STEEL

VSSD**-W-A

TungMeister, straight shank and neck with coolant hole

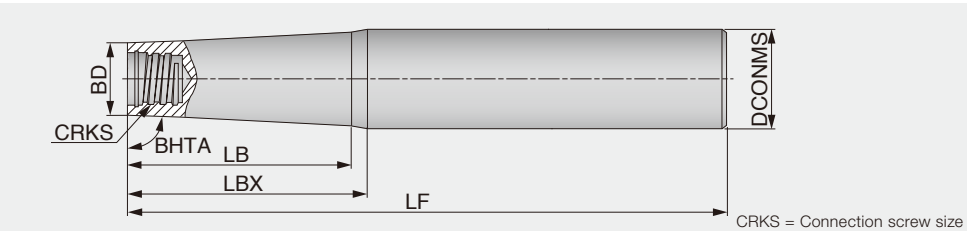


CRKS = Connection screw size

Metric	DCONMS	BD	LF	LBX	LB	CRKS	Material
VSSD10L070S06-W-A	10	9.6	70	20	19	S06	TUNGSTEN
VSSD10L090S06-W-A	10	9.6	90	40	39	S06	TUNGSTEN
VSSD10L110S06-W-A	10	9.6	110	60	59	S06	TUNGSTEN
VSSD12L070S08-W-A	12	11.5	70	20	19	S08	TUNGSTEN
VSSD12L090S08-W-A	12	11.5	90	40	39	S08	TUNGSTEN
VSSD12L110S08-W-A	12	11.5	110	60	59	S08	TUNGSTEN
VSSD12L130S08-W-A	12	11.5	130	80	79	S08	TUNGSTEN
VSSD16L070S10-W-A	16	15.2	70	20	18.5	S10	TUNGSTEN
VSSD16L090S10-W-A	16	15.2	90	40	36.5	S10	TUNGSTEN
VSSD16L110S10-W-A	16	15.2	110	60	58.5	S10	TUNGSTEN
VSSD16L130S10-W-A	16	15.2	130	80	78.5	S10	TUNGSTEN
VSSD20L090S12-W-A	20	18.3	90	40	37	S12	TUNGSTEN
VSSD20L130S12-W-A	20	18.3	130	80	77	S12	TUNGSTEN

VTSD...

TungMeister, straight shank and taper neck

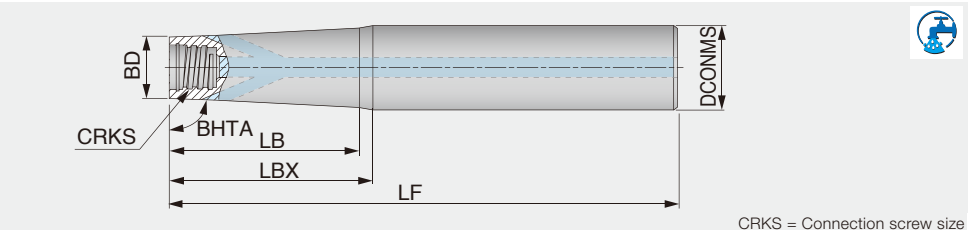


CRKS = Connection screw size

Metric	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Material
VTSD12L080S05-S	85	12	7.6	80	25	-	S05	STEEL
VTSD12L100S05-S	89	12	7.6	100	35	31	S05	STEEL
VTSD12L110S05-C	89	12	7.6	110	60	58	S05	CARBIDE
VTSD12L130S05-C	89	12	7.6	130	80	79	S05	CARBIDE
VTSD16L125S06-S	85	16	9.6	125	34	31.6	S06	STEEL
VTSD16L130S08-C	89	16	11.5	130	80	78.8	S08	CARBIDE
VTSD16L140S08-S	85	16	11.5	140	22	19.3	S08	STEEL
VTSD16L150S05-C	89	16	7.6	150	100	96	S05	CARBIDE
VTSD16L150S06-C	89	16	9.6	150	100	98	S06	CARBIDE
VTSD16L150S08-C	89	16	11.5	150	100	-	S08	CARBIDE
VTSD16L160S06-S	89	16	9.6	160	55	45.9	S06	STEEL
VTSD16L170S06-C	89	16	9.6	170	120	119	S06	CARBIDE
VTSD20L140S10-S	85	20	15.2	140	27.5	-	S10	STEEL
VTSD20L170S08-C	89	20	11.5	170	120	117	S08	CARBIDE
VTSD20L170S08-S	89	20	11.5	170	80	68.6	S08	STEEL
VTSD20L170S10-C	89	20	15.2	170	120	-	S10	CARBIDE
VTSD20L190S10-C	89	20	15.2	190	140	-	S10	CARBIDE
VTSD20L190S10-S	89	20	15.2	190	80	73	S10	STEEL
VTSD20L210S10-C	89	20	15.2	210	160	-	S10	CARBIDE
VTSD25L160S12-S	85	25	18.3	160	40	-	S12	STEEL
VTSD25L170S10-S	85	25	15.2	170	56	-	S10	STEEL
VTSD25L180S12-C	89	25	18.3	180	120	-	S12	CARBIDE
VTSD25L210S12-S	89	25	18.3	210	100	91	S12	STEEL
VTSD25L250S12-C	89	25	18.3	250	140	-	S12	CARBIDE
VTSD32L155S15-S	85	32	23.9	155	45	40	S15	STEEL
VTSD32L190S12-S	85	32	18.3	190	80	-	S12	STEEL
VTSD32L220S15-S	85	32	23.9	220	100	-	S15	STEEL
VTSD32L250S15-C	89	32	23.9	250	150	-	S15	CARBIDE
VTSD32L300S15-C	89	32	23.9	300	200	-	S15	CARBIDE

VTSD**-W-A

TungMeister, straight shank and taper neck with coolant hole

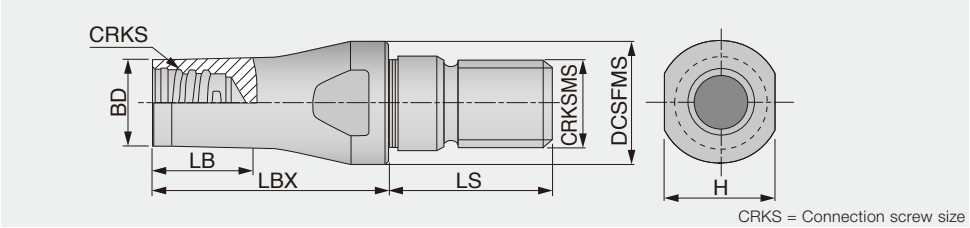


CRKS = Connection screw size

Metric	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Material
VTSD12L110S06-W-A	89	12	9.6	110	60	59	S06	TUNGSTEN
VTSD16L170S06-W-A	89	16	9.6	170	120	116	S06	TUNGSTEN

VAD**-M...

TungFlex conversion adaptor with TungMeister



CRKS = Connection screw size

Metric	BD	DCFSMS	LBX	LS	LB	CRKS	M	T
VAD130L016S08-S-M8	11.7	13	16	17.5	6	S08	M8	11
VAD130L025S08-S-M8	11.7	13	25	17.5	20	S08	M8	11
VAD180L020S08-S-M10	11.7	18	20	20	12	S08	M10	13
VAD180L025S08-S-M10	11.7	18	25	20	15	S08	M10	11
VAD210L020S08-S-M12	11.7	21	20	20	10	S08	M12	12.75
VAD210L025S08-S-M12	11.7	21	25	20	13	S08	M12	12.75

Wrench

Appearance	Designation	Connection screw size	Torque (lb·ft)
	KEYV-S05	S05	5.16
	KEYV-S06	S06	7.38
	KEYV-S08	S08	11.06
	KEYV-S10	S10	20.65
	KEYV-S12	S12	20.65
	KEYV-W20	S15	29.50
	KEYV-177	S06	7.38
	KEYV-217	S08	11.06
	KEYV-T40L	S08 / S10	11.06
	KEYV-T20	S05	5.16
		S06	7.38
	KEYV-T25	S06	7.38
	KEYV-T30L	S08	11.06
	KEYV-T50L	S08	20.65
		S10	

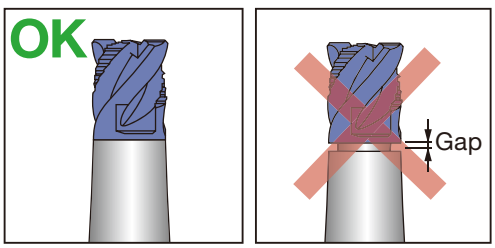
Note: Optional parts

Torque wrenches

Appearance		Description	Connection	TM Head description	Torque (lb·ft)
Handle		TORQUEWRENCH5-50NM9x12	-	-	-
Open wrenches for cylindrical heads		TM-WRENCH-6-05	S05	VMT…S05	5.16
		TM-WRENCH-8-06	S06	-	7.38
		TM-WRENCH-10-08	S08	-	11.06
		TM-WRENCH-13-10	S10	-	20.65
		TM-WRENCH-16-12	S12	-	20.65
		TM-WRENCH-20-15	S15	-	29.50
Open wrenches for 2 flute heads		TM-WRENCH-4E-05	S05	-	5.16
		TM-WRENCH-5E-06	S06	-	7.38
		TM-WRENCH-7E-08	S08	-	11.06
		TM-WRENCH-8E-10	S10	-	20.65
		TM-WRENCH-9E-12	S12	-	20.65
90° adaptor for Torx bits		INSERT-TOOL-9X12MM	-	-	-
Torx bits sockets		BIT-SOCKET-T20-DRIVE	S05, S06	-	5.16, 7.38
		BIT-SOCKET-T25-DRIVE	S06	VMT…S06	7.38
		BIT-SOCKET-T30-DRIVE	S08	VMT…S08	11.06
		BIT-SOCKET-T40-DRIVE	S08, S10	-	11.06, 20.65
		BIT-SOCKET-T50-DRIVE	S08, S10	-	11.06, 20.65

CAUTIONARY POINTS IN USE

· The cutting heads specified by Tungaloy must be used. Avoid using alternate heads that are not Tungaloy products as this will damage the shank and can cause severe accident or injury.
· Before setting the head, clean the connection screw with an air blast or a cloth to remove chips and other foreign matter that may remain.
· Do not apply lubricant to the connection screw.
· Please use the correct wrench with the correct cutting head. Tighten the head slowly until the face of the head contacts the shank. (Please refer to the picture shown on the right.) Re-tightening or over-tightening is not required. Excessive tightening may cause the cutting head to break.
· Do not apply excessive force or a hammer when tightening or exchanging the cutting heads.



MEMO

STANDARD CUTTING CONDITIONS

ISO	Material		Condition	Tensile strength (kpsi)	Hardness HB
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	61	125
		≥ 0.25 %C	Annealed	94	190
		< 0.55 %C	Quenched and tempered	123	250
		≥ 0.55 %C	Annealed	109	220
			Quenched and tempered	145	300
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	87	200
			Quenched and tempered	135	275
				145	300
				174	350
	High alloyed steel, cast steel, and tool steel		Annealed	99	200
			Quenched and tempered	160	325
	Stainless steel and cast steel		Ferritic/martensitic	99	200
			Martensitic	119	240
M	Stainless steel		Annealed	87	180
K	Cast iron nodular (GGG)		Ferritic/martensitic		180
			Pearlitic		260
	Grey cast iron (GG)		Ferritic		160
			Pearlitic		250
	Malleable cast iron		Ferritic		130
			Pearlitic		230
N	Aluminum- wrought alloy		Not cureable		60
			Cured		100
	Aluminum-cast, alloyed	≤ 12% Si	Not cureable		75
			Cured		90
		> 12% Si	High temperature		130
	Copper alloys	> 1% Pb	Free cutting		110
			Brass		90
			Electrolitic copper		100
	Non-metallic		Duroplastics, fiber plastics		
			Hard rubber		
S	High temp. alloys	Fe based	Annealed		200
			Cured		280
		Ni or Co based	Annealed		250
			Cured		350
			Cast		320
	Titanium Ti alloys			RM 400	
			Alpha+beta alloys cured	RM 1050	
H	Hardened steel		Hardened		55 HRC
			Hardened		60 HRC
	Chilled cast iron		Cast		400
	Cast iron		Hardened		55 HRC

Cutting speed *Vc* (sfm)	Tool dia. (mm)											
	Feed: *f* (ipr)											
AH725	ø2	ø3	ø4	ø6	ø8	ø10	ø12	ø14	ø16	ø20	ø25	ø30
328 - 820	0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
262 - 689	0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
213 - 558												
361 - 591	0.0008	0.0012	0.0012	0.0020	0.0024	0.0028	0.0031	0.0035	0.0039	0.0047	0.0059	0.0071
312 - 525	0.0008	0.0012	0.0012	0.0020	0.0024	0.0028	0.0031	0.0035	0.0039	0.0047	0.0059	0.0071
295 - 525	0.0008	0.0008	0.0012	0.0012	0.0016	0.0020	0.0020	0.0024	0.0028	0.0031	0.0039	0.0043
213 - 656	0.0008	0.0008	0.0012	0.0012	0.0016	0.0020	0.0020	0.0024	0.0028	0.0031	0.0039	0.0043
230 - 689	0.0008	0.0008	0.0012	0.0012	0.0016	0.0020	0.0020	0.0024	0.0028	0.0031	0.0039	0.0043
312 - 525	0.0008	0.0008	0.0012	0.0012	0.0016	0.0020	0.0020	0.0024	0.0028	0.0031	0.0039	0.0043
427 - 558	0.0008	0.0008	0.0012	0.0012	0.0016	0.0020	0.0020	0.0024	0.0028	0.0031	0.0039	0.0043
246 - 328	0.0008	0.0008	0.0012	0.0012	0.0016	0.0020	0.0020	0.0024	0.0028	0.0031	0.0039	0.0043
361 - 558	0.0008	0.0008	0.0012	0.0012	0.0016	0.0020	0.0020	0.0024	0.0028	0.0031	0.0039	0.0043
230 - 509	0.0008	0.0008	0.0012	0.0012	0.0016	0.0020	0.0020	0.0024	0.0028	0.0031	0.0039	0.0043
279 - 328	0.0008	0.0008	0.0012	0.0012	0.0016	0.0020	0.0020	0.0024	0.0028	0.0031	0.0039	0.0043
394 - 525	0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
246 - 525	0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
230 - 492	0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
361 - 459	0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
394 - 525	0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
361 - 459	0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0083	0.0059	0.0071	0.0083
525 - 984	0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
492 - 1148	0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
328 - 820	0.0008	0.0008	0.0012	0.0012	0.0016	0.0020	0.0020	0.0024	0.0028	0.0031	0.0039	0.0047
328 - 1312	0.0020	0.0024	0.0028	0.0035	0.0039	0.0043	0.0047	0.0051	0.0059	0.0071	0.0087	0.0098
66 - 262	0.0008	0.0008	0.0008	0.0012	0.0012	0.0012	0.0012	0.0016	0.0016	0.0016	0.0020	0.0020
66 - 262	0.0008	0.0008	0.0008	0.0012	0.0012	0.0012	0.0012	0.0016	0.0016	0.0016	0.0020	0.0020
180 - 213												
148 - 180												
295 - 344												
180 - 213												

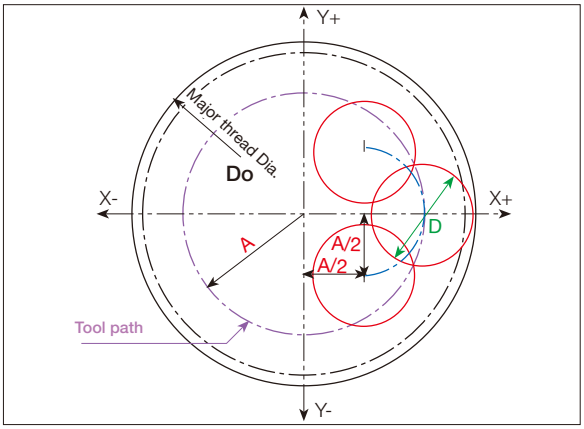
With long edge, reduce feed rate to 40%.

Thread Milling CNC Program for Internal Thread

Right-hand thread (climb milling) from bottom up.
Program is based on tool center.
This method of programming needs no tool radius compensation value, other than an offset for wear

$$A = \frac{Do - D\ 2}{2}$$

A = Radius of tool path
Do = Major thread diameter
D = Cutting diameter



General Program

G90	G00 G54 G43 H1X0 Y0 Z10 S (n : Number of revolutions)
G00	Z-(to thread depth)
G01	G91 G41 D1 X (A/2) Y-(A/2) Z0 F (Center of tool)
G03	X(A/2) Y(A/2) R (A/2) Z(1/8 pitch) F (Cutting edge)
G03	X0 Y0 I -(A) J0 Z (pitch)
G03	X-(A/2) Y(A/2) R (A/2) Z(1/8 pitch)
G01	G40 X -(A/2) Y-(A/2) Z0
G90	X0 Y0 Z0

F(Center of tool) = n x *f* x z

$$F(\text{Cutting edge}) = \frac{Do - D}{Do} \times n \times f \times z$$

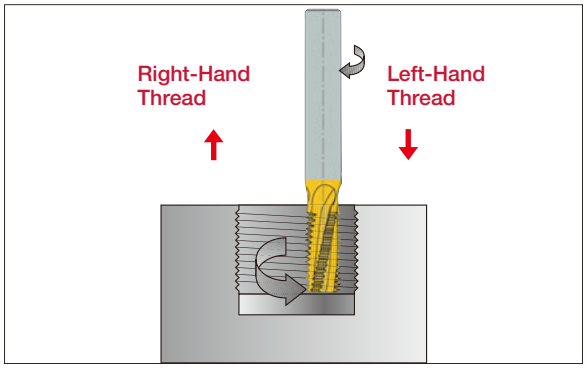
n : Number of revolutions
f : rev / tooth
z : Number of edge

Internal Thread

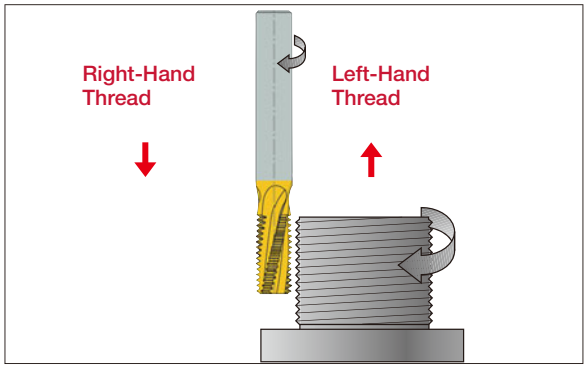
Example: M20x2.0 **IN-RH** (Thread depth 20 mm)
Tool : **MTEC1010C27 2.0ISO**
(Cutting dia. 10 mm)
A=(**Do**-**D**)/2=(20-10)/2=5
A/2=2.5
(Tool compensation of radius=0)

G90	**G**0 **G**54 **G**43 **G**17 **H**1**X**0 **Y**0 **Z**10 **S**4000
G0	**Z**-20
G01	**G**91 **G**41 **D**1**X** 2.5 **Y**-2.5 **Z**0 **F**840
G03	**X**2.5 **Y**2.5 **R**2.5 **Z**0.25 F420
G03	**X**0 **Y**0 **I**-5.0 **J**0 **Z**2.0
G03	**X**-2.5 **Y**2.5 **R**2.5 **Z**0.25
G01	**G**40 **X**-2.5 **Y**-2.5 **Z**0
G90	**G**0 **X**0 **Y**0 **Z**0
M30	
%	

Internal Thread



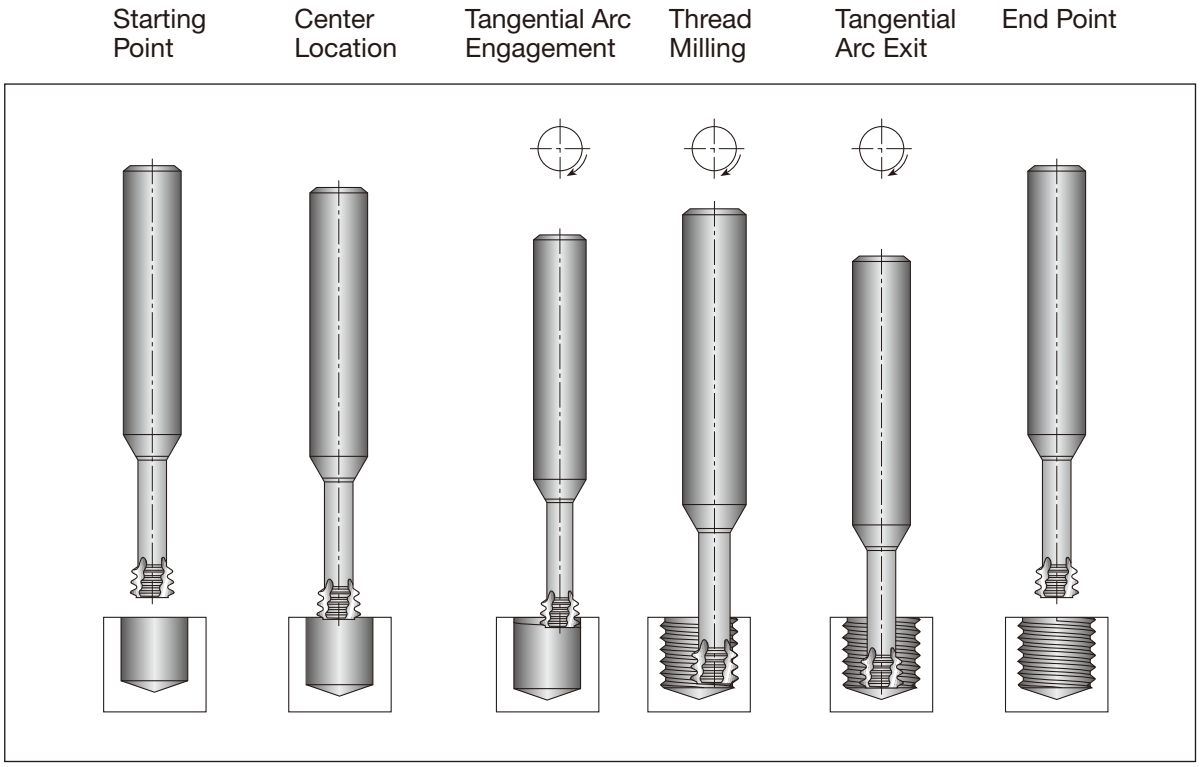
External Thread



A thread milling operation is applicable for thread cutting in non-symmetrical parts utilizing the advantage of helical interpolation programs on modern machining centers.

MTECS
Small Diameter, Short type

Thread Milling - Recommended Procedure



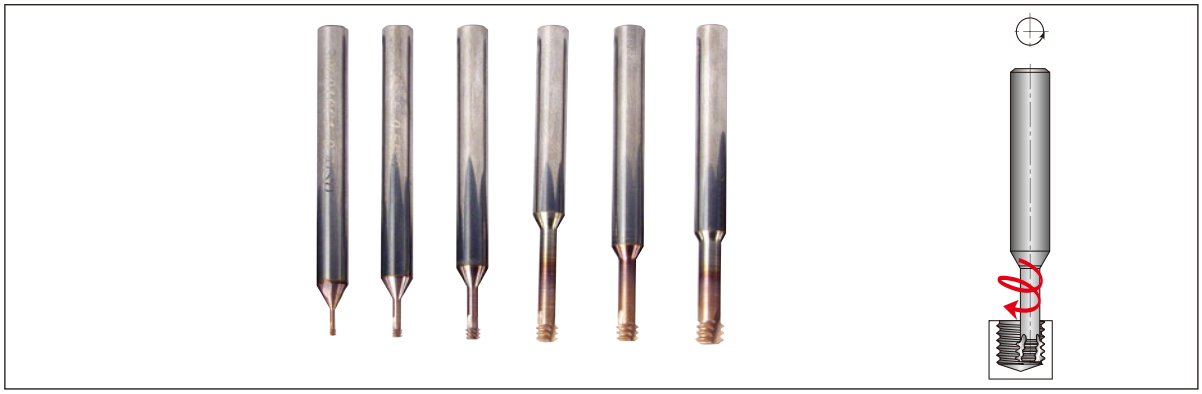
STANDARD CUTTING CONDITIONS

ISO	Material	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)												
			ø1.5 mm	ø2 mm	ø3 mm	ø4 mm	ø5 mm	ø6 mm	ø7 mm	ø8 mm	ø9 mm	ø10 mm	ø12 mm	ø14 mm	ø15 mm
P	Low & medium carbon steels	197 - 394	0.0020	0.0020	0.0028	0.0035	0.0043	0.0051	0.0055	0.0059	0.0063	0.0063	0.0067	0.0071	0.0071
	High carbon steels	197 - 295	0.0016	0.0020	0.0024	0.0031	0.0035	0.0039	0.0047	0.0051	0.0055	0.0055	0.0063	0.0067	0.0071
	Alloy steels, treated steels	164 - 262	0.0016	0.0016	0.0020	0.0020	0.0024	0.0028	0.0028	0.0031	0.0035	0.0039	0.0047	0.0051	0.0055
	Cast steels	230 - 295	0.0016	0.0016	0.0020	0.0020	0.0024	0.0028	0.0028	0.0031	0.0035	0.0039	0.0047	0.0051	0.0055
M	Stainless steels	197 - 295	0.0012	0.0012	0.0016	0.0020	0.0024	0.0024	0.0028	0.0031	0.0035	0.0039	0.0043	0.0047	0.0051
S	Nickel alloys, titanium alloys	66 - 131	0.0012	0.0012	0.0016	0.0016	0.0020	0.0024	0.0024	0.0024	0.0028	0.0028	0.0028	0.0031	0.0031
K	Cast iron	131 - 262	0.0020	0.0020	0.0028	0.0035	0.0043	0.0051	0.0055	0.0059	0.0063	0.0063	0.0067	0.0071	0.0071
N	Aluminum	262 - 492	0.0020	0.0020	0.0028	0.0035	0.0043	0.0051	0.0055	0.0059	0.0063	0.0063	0.0067	0.0071	0.0071
	Synthetics, duroplastics, thermoplastics	164 - 656	0.0039	0.0043	0.0047	0.0055	0.0063	0.0071	0.0075	0.0075	0.0075	0.0075	0.0075	0.0079	0.0079

MTECS
Small Diameter, Short type

SolidThread MTECS is used for the production of small internal threads. These thread mills feature a short 3-tooth cutting zone with 3 flutes and a released neck between the cutting zone and the shank.

This unique tool design offers very precise profiles and a high performance AH725 submicron carbide grade with PVD titanium aluminum nitride coating.
The very short profile exerts a low force which minimizes tool bending. This facilitates parallel and high thread precision for the entire length.



Compared to taps, the **SOLIDTHREAD** is more accurate, thread machining is substantially faster and there is no danger of a broken tap being stuck in the hole.

SolidThread vs. Tap

Criteria	Thread mill	Taps
Thread surface quality	High	Medium
Thread geometry	Very accurate	Medium
Thread tolerance	4H, 5H, 6H with std. cutter	6H with standard tap, 4H with special tap
Machining time	Shorter or same as tap	Short
Machining load	Very low	High
Range of thread diameters	Wide range of diameters	Specific tap for each thread size
Right-/Left-hand threading	Same cutter	Specific tap for right- and left-hand
Geometric shape	Full profile	Partial profile

Features

- Minimum thread size of MTECS: **M1x0.25** (0.75 mm pre hole diameter) up to M20x2.50
- 2xD and 3xD threading lengths
- High cutting speeds
- Short cycle time
- Low cutting forces due to the short contact profile resulting in accurate and parallel thread
- Prevents oval threads near thin walls
- No more dealing with broken taps
- Reliable threading in blind holes
- Excellent performance on hardened steel, high temperature alloys and titanium

Check our site and our App to get more info!

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