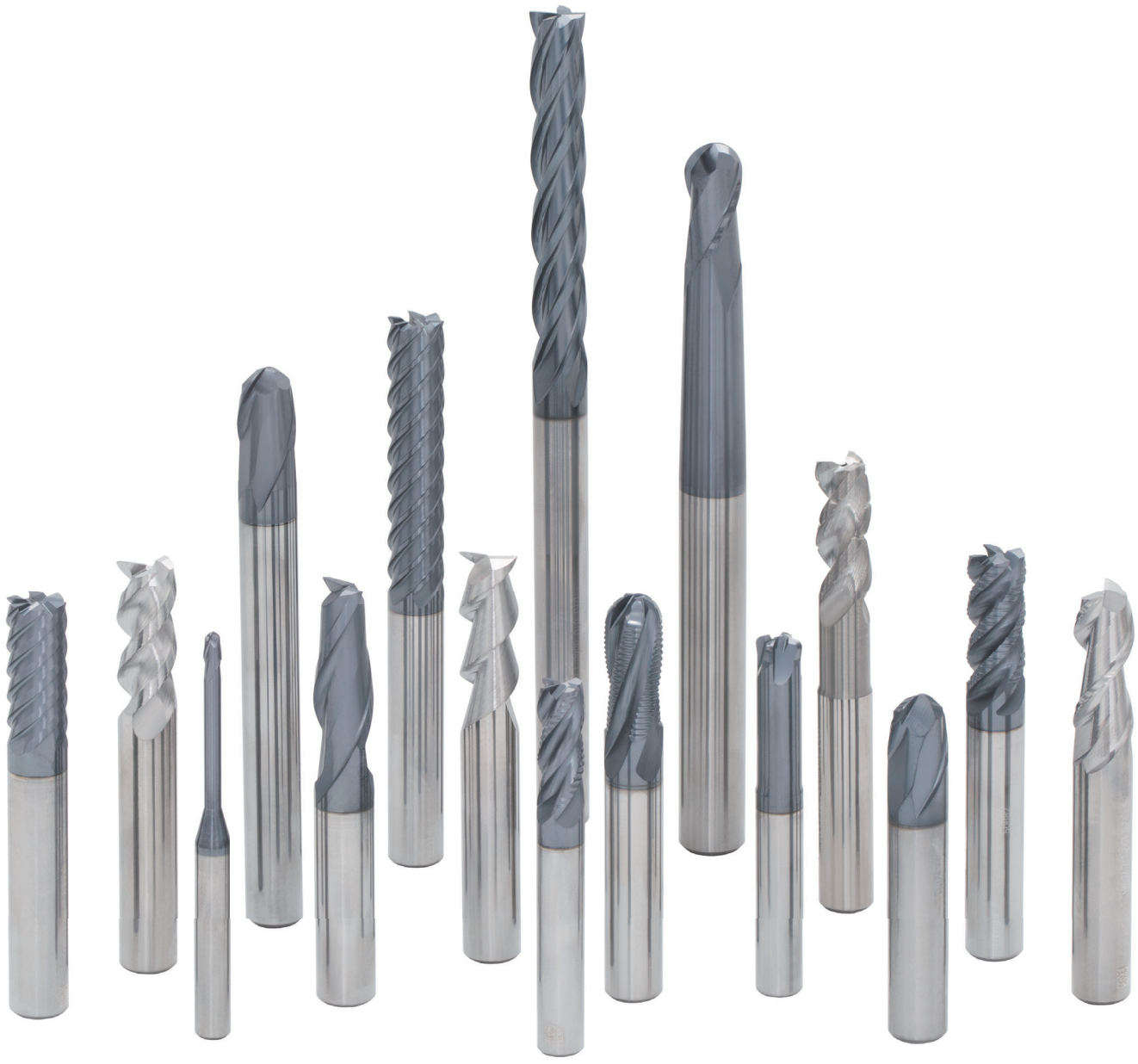
Endmill



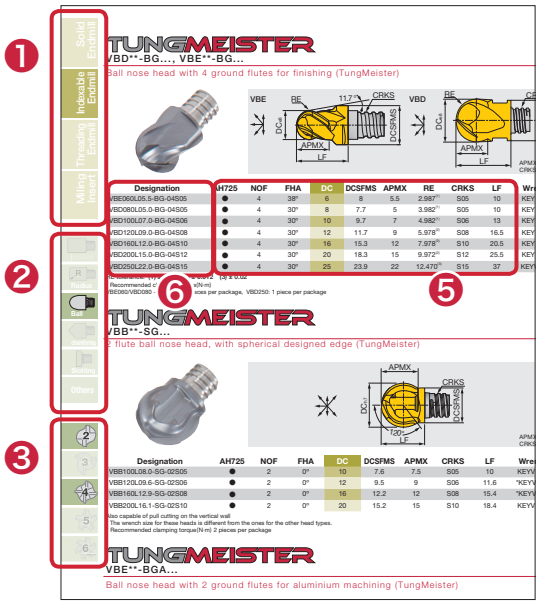
EndMill - Content structure

- Products are listed by application.
- Endmills in the catalog are our standard stock items.

How to use the page

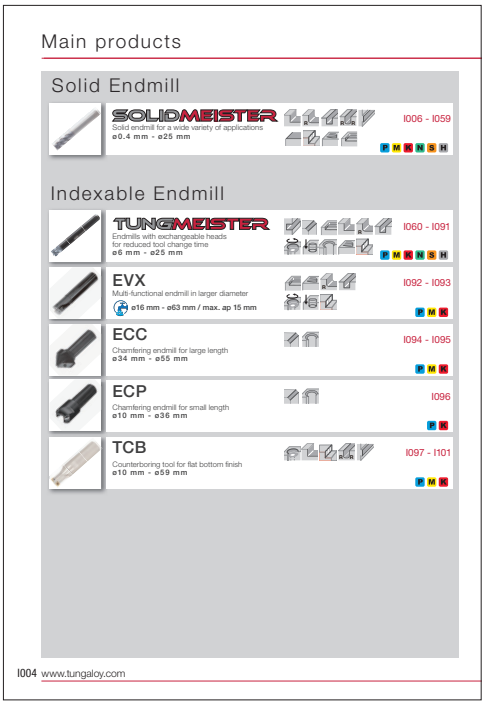
Method 1.

Select the tool type at the index on the right page, choose the application (❶), cutting edge shape (❷), and the number of cutting edges (❸), and check the designation you need (❻) in the dimension table (❺).



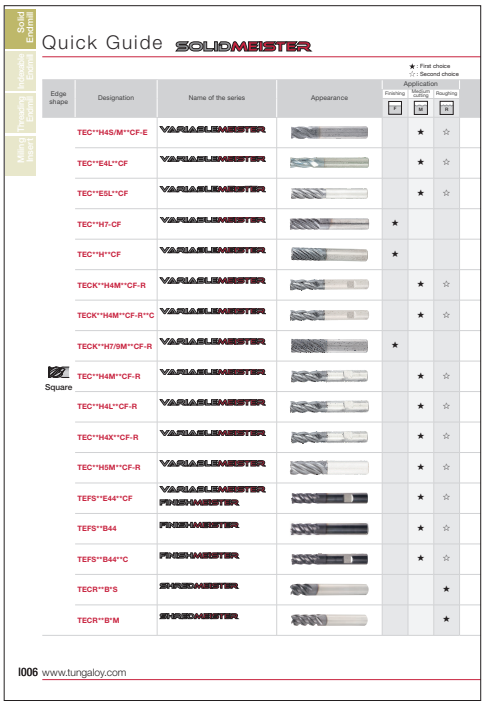
Method 2.

Select the tool series name on I004 – I005 and check the details on the product page.



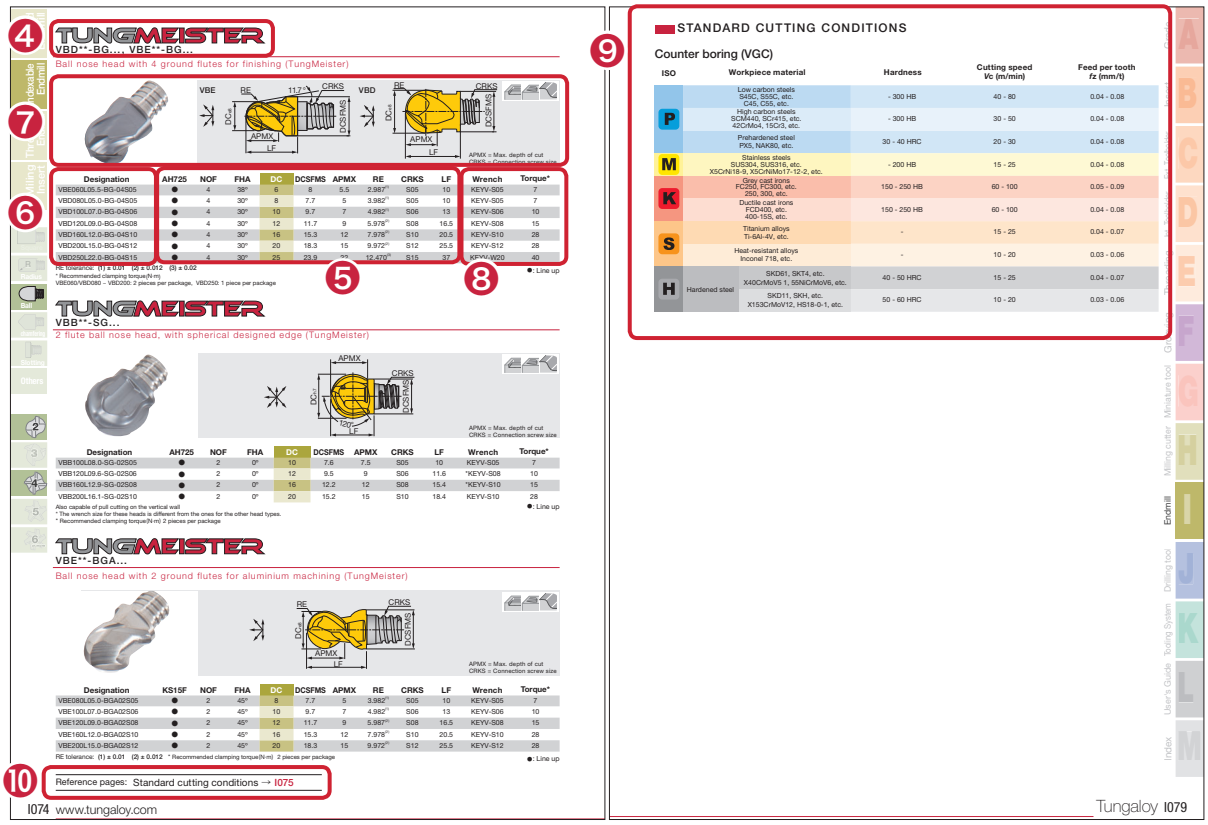
Method 3.

Select the application and the cutting edge shape from Quick Guide on I006-I013 and I060 - I061, and see the details on each page.



Icon

Edge shape	No. of cutting edges	Application		
Square	2	Shoulder milling	Side slotting	Hole enlarging
High feed	3	Deep shoulder milling	Side milling	Holemaking
Ball nose	4	Shoulder milling (with radius)	Pocketing	Counterboring
	5	Face milling	Ramping	Hole chamfering
	6 or more	Slotting	Profiling	Chamfering
		Slotting (with radius)	Plunging	Cutting-off



❶ : Application
❷ : Cutting edge shape
❸ : Number of cutting edges
❹ : Endmill series name
❺ : Dimension table
❻ : Endmill designation
❼ : Dimension drawing (conforming to ISO13399)
❽ : Spare parts
❾ : Standard cutting conditions
❿ : Reference page

Machining accuracy

F	Finishing
M	Medium cutting
R	Roughing
	Coolant hole

Workpiece material

P	Steel
M	Stainless steel
K	Cast iron
N	Non-ferrous metal
S	Superalloy
H	Hard material

When ordering
- Please specify the designation and quantity for solid or brazed endmills.
  e.g. **TEFS100E44-22C10CF72** ... 1 (one solid endmill per package)
- Please specify the designation and quantity for TungMeister heads.
  e.g. **VEE08L05.0R00-3S05** ... 2 (two heads per package)
- Please specify the designation and quantity for TungMeister shanks.
  e.g. **VSSD08L060805-S** ... 1 (one shank per package)

*Wrenches for TungMeister are sold separately.

Main products

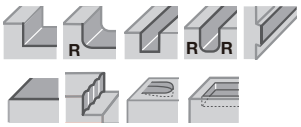
Solid Endmill



SOLIDMEISTER

Solid endmill for a wide variety of applications

ø0.4 mm - ø25 mm



I006 - I059

P M K N S H

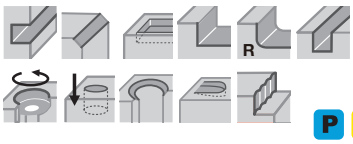
Indexable Endmill



TUNGMEISTER

Endmills with exchangeable heads
for reduced tool change time

ø6 mm - ø25 mm



I060 - I091

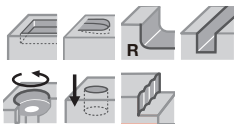
P M K N S H



EVX

Multi-functional endmill in larger diameter

ø16 mm - ø63 mm / max. *ap* 15 mm



I092 - I093

P M K



ECC

Chamfering endmill for large length

ø34 mm - ø55 mm



I094 - I095

P M K



ECP

Chamfering endmill for small length

ø10 mm - ø36 mm



I096

P K



TCB

Counterboring tool for flat bottom finish

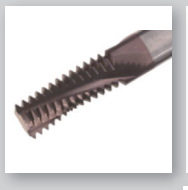
ø10 mm - ø59 mm



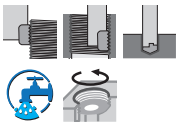
I097 - I101

P M K

Threading Endmill



THREADMILLING



I102

P M K N S H



SOLIDTHREAD

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

I103 - I121



TUNGMEISTER

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

I116 - I119



Indexable thread milling cutter

Many different types of inserts for various threading diameters and pitches, leading to the tool integration and reduced tool cost.

I122 - I127

Quick Guide SOLIDMEISTER

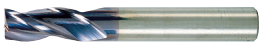
★ : First choice
☆ : Second choice

Edge shape	Designation	Name of the series	Appearance	Application		
				Finishing (F)	Medium cutting (M)	Roughing (R)
Square	TEC**H4S/M**CF-E	VARIABLEMEISTER			★	☆
	TEC**E4L**CF	VARIABLEMEISTER			★	☆
	TEC**E5L**CF	VARIABLEMEISTER			★	☆
	TEC**H7-CF	VARIABLEMEISTER		★		
	TEC**H**CF	VARIABLEMEISTER		★		
	TECK**H4M**CF-R	VARIABLEMEISTER			★	☆
	TECK**H4M**CF-R**C	VARIABLEMEISTER			★	☆
	TECK**H7/9M**CF-R	VARIABLEMEISTER		★		
	TEC**H4M**CF-R	VARIABLEMEISTER			★	☆
	TEC**H4L**CF-R	VARIABLEMEISTER			★	☆
	TEC**H4X**CF-R	VARIABLEMEISTER			★	☆
	TEC**H5M**CF-R	VARIABLEMEISTER			★	☆
	TEFS**E44**CF	VARIABLEMEISTER FINISHMEISTER			★	☆
	TEFS**B44	FINISHMEISTER			★	☆
	TEFS**B44**C	FINISHMEISTER			★	☆
	TECR**B*S	SHREDMEISTER				★
	TECR**B*M	SHREDMEISTER				★

Feature	Edge shape	Tool diameter	No. of cutting edges	ap	Helix angle	Workpiece material						Page
						P	M	K	N	S	H	
All round / Variable helix, Variable pitch	Chamfered / Corner radius	ø6 - ø20	4	1D, 2D	Variable	★	★	★	☆	☆	☆	I017
All round / Variable pitch	Chamfered	ø1 - ø25	4	2D	38	★	★	★	☆	☆	☆	I018
All round / Variable pitch	Chamfered	ø6 - ø20	5	2.5D	38	★	★	★	☆	☆	☆	I018
All round / Variable helix, Variable pitch	Chamfered / Corner radius	ø6 - ø20	7	2D-6D	Variable	★	★	★	☆	☆	★	I019
All round / Variable helix, Variable pitch	Chamfered	ø6 - ø20	6-20	2D	Variable	★	★	★	☆	☆	☆	I020
All round / Variable helix, Variable pitch	Corner radius	ø4 - ø20	4	2D	Variable	★	★	☆	☆	★	☆	I020
All round / Variable helix, Variable pitch	Corner radius	ø6 - ø16	4	2D	Variable	★	★	☆	☆	★	☆	I021
All round / Variable helix, Variable pitch	Corner radius	ø6 - ø20	7, 9	2D	Variable	★	★	☆	☆	★	☆	I021
All round / Variable helix, Variable pitch	Corner radius	ø6 - ø25	4	2D	Variable	★	★	☆	☆	★	☆	I022
All round / Variable helix, Variable pitch	Corner radius	ø1 - ø20	4	2D	Variable	★	★	☆	☆	★	★	I022
All round / Variable helix, Variable pitch	Corner radius	ø6 - ø20	4	2D	Variable	★	★	☆	☆	★	☆	I023
All round / Variable helix, Variable pitch	Corner radius	ø4 - ø20	5	2D	Variable	★	★	☆	☆	★	☆	I023
All round / Variable pitch, Edge combination	Chamfered	ø6 - ø25	4	2D	38	★	☆	★	☆	☆	☆	I025
All round / Edge combination	Chamfered	ø4 - ø25	4	2D	45	★	★	☆	☆	★	☆	I026
All round / Edge combination	Chamfered	ø6 - ø16	4	2D	45	★	★	☆	☆	★	☆	I026
All round / Serrated cutting edge	Chamfered	ø5 - ø20	4, 5, 7	1D	45	★	☆	★	☆	☆	★	I027
All round / Serrated cutting edge	Chamfered / Corner radius	ø5 - ø20	4, 5, 7	2D	45	★	☆	★	☆	☆	★	I027

Quick Guide SOLIDMEISTER

★ : First choice
☆ : Second choice

Edge shape	Designation	Name of the series	Appearance	Application: Finishing (F)	Application: Medium cutting (M)	Application: Roughing (R)
	TECR**B*MF	SHREDMEISTER				★
	TECR**B*L	SHREDMEISTER				★
	TECR**B*X	SHREDMEISTER				★
	TERF**A/E	SHREDMEISTER				★
	TECR**T4M	SHREDMEISTER				★
	TECP**H4L**CFR	SHREDMEISTER VARIABLEMEISTER				★
	TECP**E*L	SHREDMEISTER				★
Square	TEC**B4/6L	SOLIDMEISTER		★		
Square	TEC**B4/6X	SOLIDMEISTER		★		
	TECC**A/B2	SOLIDMEISTER		★	☆	☆
	TECS/TECCS**E3	SOLIDMEISTER		★	☆	☆
	TECC**B/E3	SOLIDMEISTER		★	☆	☆
	TEC**B3	SOLIDMEISTER			★	☆
	TECC**A/B4	SOLIDMEISTER		★	☆	☆
	TEC**B4	SOLIDMEISTER		★	☆	
	TEC**B4**R	SOLIDMEISTER		★	☆	
High feed	TEFF**N4	FEEDMEISTER				★

Feature	Edge shape	Tool diameter	No. of cutting edges	ap	Helix angle	Workpiece material						Page
						P	M	K	N	S	H	
All round / Serrated cutting edge	Chamfered	ø6 - ø25	4, 6	2D	45	★	☆	☆	☆	★	★	I028
All round / Serrated cutting edge	Chamfered	ø6 - ø20	4, 5, 7	3D	45	★	☆	★	☆	☆	★	I028
All round / Serrated cutting edge / Long neck	Chamfered	ø8 - ø16	4, 5	1.5D	45	★	☆	★	☆	☆	★	I028
All round / Serrated cutting edge	Chamfered	ø4 - ø20	3, 4	2D	30/38	★	☆	★	☆	☆	★	I029
All round / Serrated cutting edge	Chamfered	ø6 - ø20	4	2D	20	★	☆	★	☆	☆	★	I029
All round / Chip splitter, Variable helix, Variable pitch	Corner radius	ø6 - ø20	4	2D	Variable	★	☆	★	☆	☆	★	I030
All round / Chip splitter	Chamfered	ø5 - ø20	3, 4	2D	38	★	☆	★	☆	☆	★	I030
All round	Corner radius 0	ø6 - ø20	4, 6	3D, 4D	45	★	★	★	☆	☆	☆	I032
All round	Corner radius 0	ø10 - ø20	4, 6	4D, 5D, 6D	45	★	★	★	☆	☆	☆	I032
All round	Chamfered	ø2 - ø20	2	2D, 3D	30/45	★	★	★	☆	☆	☆	I033
All round	Chamfered	ø2 - ø16	3	1D	38	★	★	★	☆	☆	☆	I033
All round	Chamfered	ø2 - ø20	3	2D, 3D	38/45	★	★	★	☆	☆	☆	I034
All round	Corner radius 0	ø3 - ø18	3	2D, 3D	45	★	★	★	☆	☆	☆	I034
All round	Chamfered	ø2 - ø20	4	2D, 3D	30/45	★	★	★	☆	☆	☆	I035
All round	Corner radius 0	ø2 - ø20	4	2D, 3D	45	★	★	★	☆	☆	☆	I035
All round	Corner radius	ø6 - ø20	4	2D	45	★	★	★	☆	☆	☆	I036
All round / High feed geometry	-	ø6 - ø20	4	0.05D	-	★	★	☆	☆	★	★	I036

Quick Guide SOLIDMEISTER

★ : First choice
☆ : Second choice

Edge shape	Designation	Name of the series	Appearance	Application		
				Finishing F	Medium cutting M	Roughing R
High feed	TCFF**A3	FEEDMEISTER				★
Toroidal	TETR**A2**R	SOLIDMEISTER				★
	TECA**H3**CF-R	VARIABLEMEISTER			★	☆
	TECA**H4**CF-R	VARIABLEMEISTER			★	☆
	TECA**B2	SOLIDMEISTER		★	☆	☆
	TECA**B3	SOLIDMEISTER			★	☆
	TECA**F2	SOLIDMEISTER		★	☆	☆
	TECA**H3**CFR**C	VARIABLEMEISTER			★	☆
	TEAP**H3**CFR**C	VARIABLEMEISTER SHREDMEISTER				★
Square	TERC**E3	SHREDMEISTER				★
	TECR**B3**R	SHREDMEISTER				★
	TEC**A2	SOLIDMEISTER			★	
	TEC**A4	SOLIDMEISTER			★	☆
	TECH**B6	SOLIDMEISTER		★		
	TEC**B6	SOLIDMEISTER		★		
	TEC**D6	SOLIDMEISTER		★		
	TEC**A2**E	ECOMEISTER			★	☆

Feature	Edge shape	Tool diameter	No. of cutting edges	ap	Helix angle	Workpiece material						Page
						P	M	K	N	S	H	
All round / High feed geometry (ceramic)	-	ø4 - ø20	3	0.25-1D	-			☆	☆	★		I037
All round	Corner radius	ø2 - ø10	2	0.5D, 1D	-	★	★	☆	☆	★	★	I038
All round / Variable helix, Variable pitch	Corner radius	ø1 - ø25	3	1.5D, 2D	Variable	☆	☆	☆	★	☆	☆	I038
All round / Variable helix / Relieved neck	Corner radius	ø6 - ø16	4	1.5D, 2D	Variable	☆	☆	☆	★	☆	☆	I040
All round	Corner radius 0	ø4 - ø20	2	2D, 3D	45	☆	☆	☆	★	☆	☆	I040
All round	Corner radius	ø4 - ø20	3	2D, 3D	45	☆	☆	☆	★	☆	☆	I041
All round	Corner radius 0	ø4 - ø25	2	2D	55	☆	☆	☆	★	☆	☆	I041
All round / Variable helix	Corner radius	ø6 - ø25	3	2D	Variable	☆	☆	☆	★	☆	☆	I042
All round / Variable helix, Chip splitter / Long neck	Corner radius	ø10 - ø20	3	1.5D, 2D	Variable	☆	☆	☆	★	☆	☆	I042
All round / Serrated cutting edge	Chamfered	ø6 - ø25	3	2D	38	☆	☆	☆	★	☆	☆	I043
All round / Serrated cutting edge	Corner radius	ø6 - ø20	3	1D	45	☆	☆	☆	★	☆	☆	I043
All round	Corner radius 0	ø0.4 - ø3	2	1.5D	30	★	☆	★	☆	☆	★	I044
All round	Corner radius 0	ø4 - ø20	4	2D	30	★	☆	★	☆	☆	★	I045
All round	Corner radius 0	ø6 - ø20	6	2D	45	★	☆	★	☆	☆	★	I046
All round	Corner radius 0	ø6 - ø25	6	4D	45	★	☆	★	☆	☆	★	I046
All round	Corner radius 0	ø6 - ø20	6	2D	50	★	☆	★	☆	☆	★	I047
All round	Corner radius 0	ø1 - ø20	2	1D, 1.5D, 2D, 3D, 4D	30	★	★	★	☆	☆	☆	I047

Quick Guide SOLIDMEISTER

★ : First choice
☆ : Second choice

Edge shape	Designation	Name of the series	Appearance	Application		
				Finishing F	Medium cutting M	Roughing R
Square	TEC**A/E3**E	ECOMEISTER			★	☆
	TEC**B3**W	ECOMEISTER			★	☆
	TEC**A4**E	ECOMEISTER			★	☆
Ball	TEB**E4L**CF	VARIABLEMEISTER			★	☆
	TEBRF**T3/4	SHREDMEISTER				★
	TEB**A2-**C**M	SOLIDMEISTER		★	☆	
	TEB**A2-**C**H	SOLIDMEISTER		★	☆	
	TEB**A2-**C**M...	SOLIDMEISTER		★	☆	
	TEB**A2-**C**M...	SOLIDMEISTER		★	☆	
	TEB**A2-**C**-...	SOLIDMEISTER		★	☆	
	TEB**A2**E	ECOMEISTER			★	
	TEB**A3	SOLIDMEISTER		★	☆	
	TEB**A4	SOLIDMEISTER		★	☆	

Feature	Edge shape	Tool diameter	No. of cutting edges	ap	Helix angle	Workpiece material						Page
						P	M	K	N	S	H	
All round	Corner radius 0	ø2 - ø16	3	1D, 1.5D, 2D, 3D, 4D	30/38	★	★	★	☆	☆	☆	I048
All round	Corner radius 0	ø2 - ø20	3	1D	45	★	★	★	☆	☆	☆	I049
All round	Corner radius 0	ø2 - ø20	4	2D, 3D, 4D, 5D, 6D, 8D, 10D	30	★	★	★	☆	☆	☆	I050
All round / Variable pitch	R1.5-R8	ø3 - ø16	4	2D	38	★	★	☆	☆	★	★	I052
All round / Serrated cutting edge	R3-R10	ø6 - ø20	3, 4	2D	20	★	★	★	☆	☆	★	I052
All round	R0.2-R1.5	ø0.4 - ø3	2	1.5D	30	★	★	☆	☆	★	★	I053
All round	R0.5-R10	ø1 - ø20	2	1D	30	★	★	☆	☆	★	★	I054
All round	R1.5-R8	ø3 - ø16	2	2D	30	★	★	☆	☆	★	★	I055
All round / Tapered neck	R0.5-R6	ø1 - ø12	2	2D	30	★	★	☆	☆	★	★	I055
All round	R1.5-R8	ø3 - ø16	2	1, 1.5D	30	★	★	☆	☆	★	★	I056
All round	R1-R10	ø2 - ø20	2	1D, 1.5D, 2D, 3D	30	★	★	☆	☆	★	★	I056
All round	R1.5-R6	ø3 - ø12	3	1.5D	30	★	★	☆	☆	★	★	I057
All round	R1.5-R10	ø3 - ø20	4	1D, 1.5D	30	★	★	☆	☆	★	★	I057

Identification System

SOLIDMEISTER Designation system

C	Square endmill
CK	Square endmill for Ti
CA	Square endmill for aluminium
CC	Square endmill with chamfered
CH	Square endmill for finishing
B	Ball nose
FF	High feed
FS	FINISHMEISTER
CP	Chip splitter
CR/RC/RF	Rougher
TR	Tapered & radius
BRF	Ball nose & rougher

② Endmill type

TE	Solid Carbide
TC	Ceramic

① Endmill Code

004	0.4
045	4.5
100	10

③ Cutting diameter (mm)

①	②	③				⑥
TE	C	009	A	2	-	0135
TE	C	100	E	4L	-	22
			④	⑤		⑥

④ Helix angle	
N	0°
C	10°
T	20°
A	30°
E	38°
B	45°
D	50°
F	55°
H	Variable helix

⑤ No. of flutes	
2	2 flutes
3	3 flutes
4	4 flutes
4M	4 flutes & medium length
4L	4 flutes & long length
4X	4 flutes & extra long length
4MF	4 flutes & medium length for hardened steel
44	4 variable pitch flutes

⑥ Effective cutting length (mm)	
006	0.6
0135	1.35
06	6
20	20

AH725

- High thermal and chemical stability.
- High hardness 3500 HV makes higher speeds, machining of harder materials, and dry machining possible. The TiAlN coating can be applied at 800° C.
- Recommended for hardened steel, high-temperature and steel alloys.
- Improves and expedites finishing on dies and molds.
- Longer tool life in high speed machining.

AH750 / AH710

- Excellent for machining hard steel up to 70 HRC and high temperature alloys.
- The small grain size improves cutting edge strength and tends to chip less.

Tolerance

Diameter range	Cutting diameter DC^{e8}	Shank $DCONMS^{h6}$
< 3	-0.014 - 0.028	0 - 0.007
3 - 6	-0.02 - 0.038	0 - 0.008
6 - 10	-0.025 - 0.047	0 - 0.009
10 - 18	-0.032 - 0.059	0 - 0.011
18 - 30	-0.04 - 0.073	0 - 0.013

/04	4
/10 /1.5	10 / 1.5°
/14	14

⑦ Length of neck / Angle neck (mm)

C	Cylindrical
W	Weldon

⑧ Shank type

055	5.5
08	8
4	4

⑨ Shank diameter (mm)

⑦	⑧	⑨		⑩	⑪
/06	C	4	M		E66
/32	C	10	CF-		72

⑩ Workpiece material / Additional feature	
-	General
S	Stainless steel
M	Steel medium hardness ≤ 55 HRC
H	Steel high hardness ≥ 55 HRC
R02A	Aluminium
CF	VARIABLEMEISTER
R16	Corner radius: 1.6

⑪ Overall length / Corner radius	
66	66 mm
180	180 mm
E**	Eco type
M	Medium
R08	Corner radius: 0.8

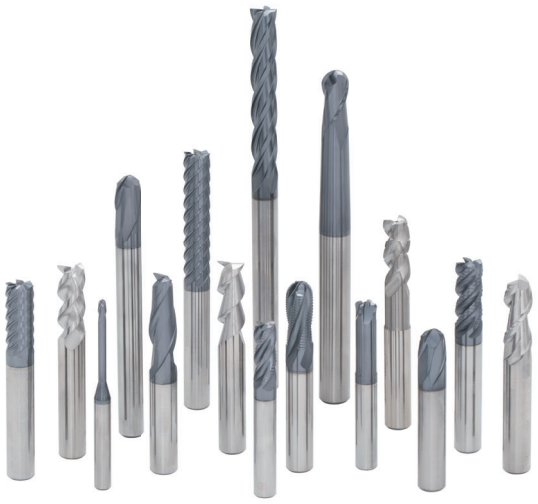
KS15F

- Suited for aluminum alloys and non-ferrous metals.
- Excellent edge sharpness for super mirror surface finish qulaity.

FX510

- Suitable for nickel-based heat-resistnt superalloys.
- SiAlON ceramic grade enables high speed milling.
- Also good for cast iron and specialty graphite materials.

SOLIDMEISTER



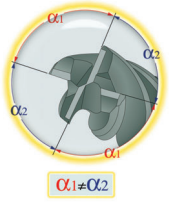
Powerful endmill with excellent performance

VariableMeister

VARIABLEMEISTER



High resistance to chatter
= Machining large cutting width
= Machining large cutting depth / long overhang



High resistance to chatter leading to highly efficient machining

- Suitable for machining large cutting depth and width where chattering is likely to occur.
- Capability of machining with long overhang allows the operations on various parts of workpieces.

Stable, long tool life

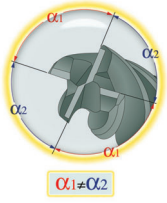
- Impacts on cutting edges are softened due to reduced vibration, resulting in longer, stable tool life.
- The combination of PVD coated grade with high wear resistance and robust substance.

FinishMeister

FINISHMEISTER



Roughing and finishing with one tool
+ Variable pitch design



Tool integration / Shortened tool change time

- Cutting depth at the level of roughing endmills is possible, and a single tool can handle semi-finishing to finishing with the conditions appropriately adjusted.
- A single tool completes the operation which used to require two tools, roughing and square endmills. shortening tool change time.

Hard to chatter, excellent chip control

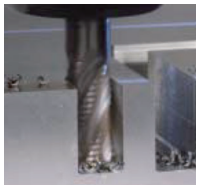
- Variable pitch design increases the resistance to chatter, delivering high efficiency in machining with long overhang and at high cutting speed.
- Serrated cutting edges produce small chips and provide stable machining even in slotting.

ShredMeister

SHREDMEISTER



Effective cutting edge length
= Tool diameter x 2



Significantly reduced time for roughing

- Long cutting edge and the capability of machining large depth of cut lead to highly efficient roughing.
- Unique serrated cutting edges produce small chips and provide high efficiency and stability in deep slotting.

Excellent sharpness and stable machining with long tool life

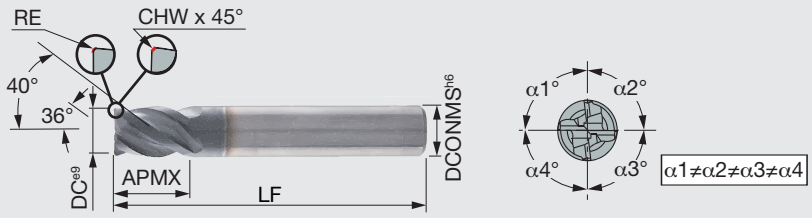
- Chamfer on corner tips that are easy to break is reinforced, providing stable machining even under high cutting conditions.
- The combination of PVD coated grade with high wear resistance and robust substance allows the design with high helix angle, providing excellent sharpness and long tool life.

Reference pages: I017 - I059

VARIABLEMEISTER

TEC**H4S**CF-E

4 flute chatter dampening endmill, variable helix and variable pitch, short type



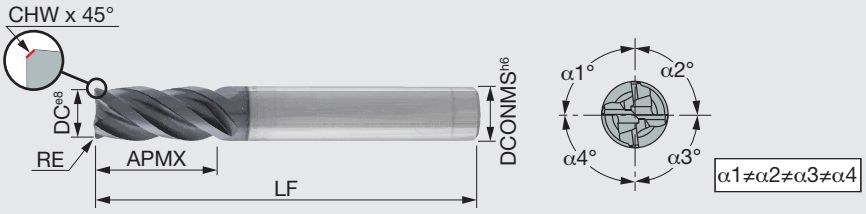
Designation	AH725	DC	DCONMS	NOF	CHW	RE	APMX	LF	Shank
TEC060H4S-06C06CF-E50	●	6	6	4	0.25	-	6	50	Cylindrical
TEC060H4S-06C06CF-R02E50	●	6	6	4	-	0.2	6	50	Cylindrical
TEC060H4S-06W06CF-E50	●	6	6	4	0.25	-	6	50	Weldon
TEC080H4S-08C08CF-E63	●	8	8	4	0.3	-	8	63	Cylindrical
TEC080H4S-08C08CF-R04E63	●	8	8	4	-	0.4	8	63	Cylindrical
TEC080H4S-08W08CF-E63	●	8	8	4	0.3	-	8	63	Weldon
TEC100H4S-10C10CF-E66	●	10	10	4	0.4	-	10	66	Cylindrical
TEC100H4S-10C10CFR.5E66	●	10	10	4	-	0.5	10	66	Cylindrical
TEC100H4S-10W10CF-E66	●	10	10	4	0.4	-	10	66	Weldon
TEC120H4S-12C12CF-E73	●	12	12	4	0.5	-	12	73	Cylindrical
TEC120H4S-12C12CF-R06E73	●	12	12	4	-	0.6	12	73	Cylindrical
TEC120H4S-12W12CF-E73	●	12	12	4	0.5	-	12	73	Weldon
TEC160H4S-16C16CF-E82	●	16	16	4	0.6	-	16	82	Cylindrical
TEC160H4S-16W16CF-E82	●	16	16	4	0.6	-	16	82	Weldon
TEC200H4S-20C20CF-E92	●	20	20	4	0.6	-	20	92	Cylindrical
TEC200H4S-20W20CF-E92	●	20	20	4	0.6	-	20	92	Weldon

●: Line up

VARIABLEMEISTER

TEC**H4M**CF-E

4 flute chatter dampening endmill, variable helix and variable pitch



Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LF	Shank
TEC060H4M-12C06CF-E57	●	6	6	4	0.25	12	57	Cylindrical
TEC060H4M-12W06CF-E57	●	6	6	4	0.25	12	57	Weldon
TEC080H4M-16C08CF-E63	●	8	8	4	0.3	16	63	Cylindrical
TEC080H4M-16W08CF-E63	●	8	8	4	0.3	16	63	Weldon
TEC100H4M-20C10CF-E72	●	10	10	4	0.4	20	72	Cylindrical
TEC100H4M-20W10CF-E72	●	10	10	4	0.4	20	72	Weldon
TEC120H4M-24C12CF-E83	●	12	12	4	0.5	24	83	Cylindrical
TEC120H4M-24W12CF-E83	●	12	12	4	0.5	24	83	Weldon
TEC160H4M-32C16CF-E92	●	16	16	4	0.6	32	92	Cylindrical
TEC160H4M-32W16CF-E92	●	16	16	4	0.6	32	92	Weldon
TEC200H4M-40C20CF-E104	●	20	20	4	0.6	40	104	Cylindrical
TEC200H4M-40W20CF-E104	●	20	20	4	0.6	40	104	Weldon

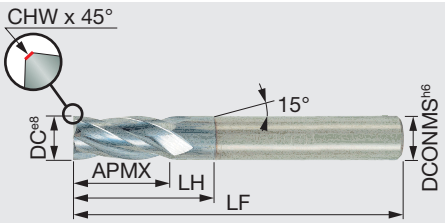
●: Line up

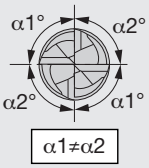
Reference pages: Standard cutting conditions → I024

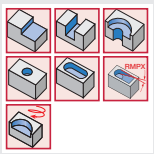
VARIABLEMEISTER

TEC**E4L**CF

4 flute chatter dampening endmill, variable helix and variable pitch, short type







Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF	Shank
TEC010E4L-2/04C04CF50	●	1	4	4	0.04	2.2	4	50	Cylindrical
TEC020E4L-4/06C04CF50	●	2	4	4	0.08	4.3	6.1	50	Cylindrical
TEC030E4L-8/11C06CF-57	●	3	6	4	0.1	8	11	57	Cylindrical
TEC040E4L-10/14C06CF-57	●	4	6	4	0.15	10	14	57	Cylindrical
TEC050E4L-12/17C06CF-57	●	5	6	4	0.18	12	17	57	Cylindrical
TEC060E4L-14/20C06CF-57	●	6	6	4	0.25	14	20	57	Cylindrical
TEC080E4L-18/26C08CFS63	●	8	8	4	-	18	26	63	Cylindrical
TEC080E4L-18/26C08CF-63	●	8	8	4	0.3	18	26	63	Cylindrical
TEC080E4L-18/26W08CF63	●	8	8	4	0.3	18	26	63	Weldon
TEC100E4L-22/32C10CFS72	●	10	10	4	-	22	32	72	Cylindrical
TEC100E4L-22/32C10CF-72	●	10	10	4	0.4	22	32	72	Cylindrical
TEC100E4L-22/32W10CF72	●	10	10	4	0.4	22	32	72	Weldon
TEC120E4L-26/38C12CFS83	●	12	12	4	-	26	38	83	Cylindrical
TEC120E4L-26/38C12CF-83	●	12	12	4	0.5	26	38	83	Cylindrical
TEC120E4L-26/38W12CF83	●	12	12	4	0.5	26	38	83	Weldon
TEC160E4L-34/50C16CF-100	●	16	16	4	0.6	34	50	100	Cylindrical
TEC160E4L-34/50W16CF-100	●	16	16	4	0.6	34	50	100	Weldon
TEC200E4L-42/60C20CF-110	●	20	20	4	0.6	42	60	110	Cylindrical
TEC200E4L-42/60W20CF-110	●	20	20	4	0.6	42	60	110	Weldon
TEC250E4L-50/65C25CF-121	●	25	25	4	0.6	50	65	121	Cylindrical
TEC250E4L-50/65W25CF121	●	25	25	4	0.6	50	65	121	Weldon

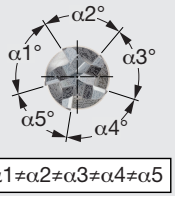
●: Line up

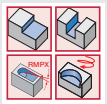
VARIABLEMEISTER

TEC**E5L**CF

4 flute chatter dampening endmill, variable helix and variable pitch







Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LF	Shank
TEC060E5L-15C06CF-57	●	6	6	5	0.2	15	57	Cylindrical
TEC080E5L-20C08CF-63	●	8	8	5	0.25	20	63	Cylindrical
TEC100E5L-25C10CF-72	●	10	10	5	0.3	25	72	Cylindrical
TEC120E5L-30C12CF-83	●	12	12	5	0.4	30	83	Cylindrical
TEC160E5L-40C16CF-100	●	16	16	5	0.5	40	100	Cylindrical
TEC200E5L-50C20CF-125	●	20	20	5	0.5	50	125	Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I024

TEC**H7-CF

7 flute chatter dampening endmill, variable helix and variable pitch, for high speed finishing



Designation	AH710	DC	DCONMS	NOF	RE	CHW	APMX	FHA	LF	Shank
TEC060H7-12C06CF-M57	●	6	6	7	-	-	12	37°	57	Cylindrical
TEC060H7-12C06CF-R02M57	●	6	6	7	0.2	-	12	37°	57	Cylindrical
TEC060H7-18C06CF-M65	●	6	6	7	-	0.2	18	37°	65	Cylindrical
TEC060H7-24C06CF-70	●	6	6	7	-	0.2	24	37°	70	Cylindrical
TEC060H7-36C06CF-90	●	6	6	7	-	0.2	36	37°	90	Cylindrical
TEC080H7-16C08CF-M63	●	8	8	7	-	-	16	37°	63	Cylindrical
TEC080H7-16C08CF-R04M63	●	8	8	7	0.4	-	16	37°	63	Cylindrical
TEC080H7-24C08CF-M90	●	8	8	7	-	0.2	24	37°	90	Cylindrical
TEC080H7-32C08CF-90	●	8	8	7	-	0.2	32	37°	90	Cylindrical
TEC080H7-48C08CF-110	●	8	8	7	-	0.2	48	37°	110	Cylindrical
TEC100H7-20C10CF-M72	●	10	10	7	-	-	20	37°	72	Cylindrical
TEC100H7-20C10CF-R05M72	●	10	10	7	0.5	-	20	37°	72	Cylindrical
TEC100H7-20W10CF-M72	●	10	10	7	-	-	20	37°	72	Weldon
TEC100H7-30C10CF-M100	●	10	10	7	-	0.3	30	37°	100	Cylindrical
TEC100H7-40C10CF-100	●	10	10	7	-	0.3	40	37°	100	Cylindrical
TEC100H7-60C10CF-130	●	10	10	7	-	0.3	60	37°	130	Cylindrical
TEC120H7-24C12CF-M83	●	12	12	7	-	-	24	37°	83	Cylindrical
TEC120H7-24C12CF-R06M83	●	12	12	7	0.6	-	24	37°	83	Cylindrical
TEC120H7-24W12CF-M83	●	12	12	7	-	-	24	37°	83	Weldon
TEC120H7-36C12CF-M110	●	12	12	7	-	0.3	36	37°	110	Cylindrical
TEC120H7-48C12CF-110	●	12	12	7	-	0.3	48	37°	110	Cylindrical
TEC120H7-72C12CF-140	●	12	12	7	-	0.3	72	37°	140	Cylindrical
TEC160H7-32C16CF-M92	●	16	16	7	-	-	32	37°	92	Cylindrical
TEC160H7-32C16CF-R08M92	●	16	16	7	0.8	-	32	37°	92	Cylindrical
TEC160H7-32W16CF-M92	●	16	16	7	-	-	32	37°	92	Weldon
TEC160H7-48C12CF-M131	●	16	16	7	-	0.3	48	37°	131	Cylindrical
TEC160H7-64C16CF-131	●	16	16	7	-	0.3	64	37°	131	Cylindrical
TEC160H7-96C16CF-175	●	16	16	7	-	0.3	96	37°	175	Cylindrical
TEC200H7-40C20CF-M104	●	20	20	7	-	-	40	37°	104	Cylindrical
TEC200H7-40C20CF-R10M104	●	20	20	7	1	-	40	37°	104	Cylindrical
TEC200H7-40W20CF-M104	●	20	20	7	-	-	40	37°	104	Weldon
TEC200H7-60C20CF-M140	●	20	20	7	-	0.4	60	37°	140	Cylindrical
TEC200H7-80C20CF-140	●	20	20	7	-	0.4	80	37°	140	Cylindrical

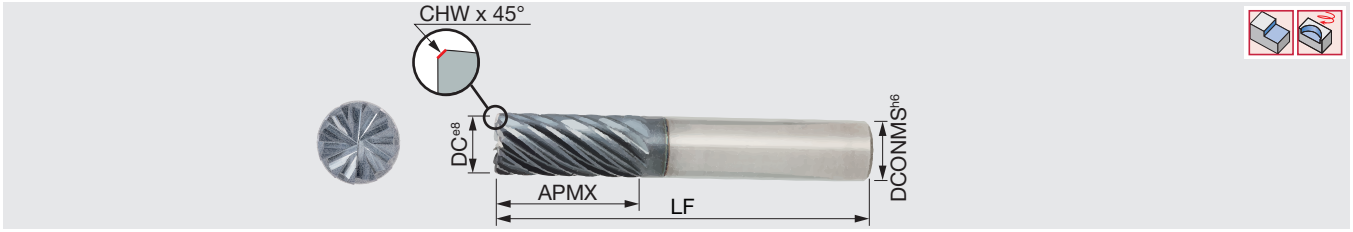
●: Line up

Reference pages: Standard cutting conditions → I024

VARIABLEMEISTER

TEC**H**CF

6-20 flute chatter dampening endmill, variable helix and variable pitch, for high speed finishing



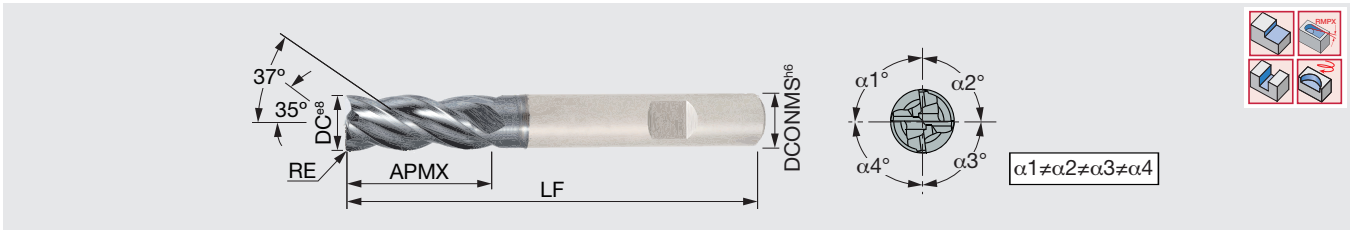
Designation	AH710	DC	DCONMS	NOF	CHW	APMX	LF	Shank
TEC060H6-12C06CF-H57	●	6	6	6	0.2	12	57	Cylindrical
TEC080H8-16C08CF-H63	●	8	8	8	0.2	16	63	Cylindrical
TEC100H10-20C10CF-H72	●	10	10	10	0.3	20	72	Cylindrical
TEC120H12-24C12CF-H83	●	12	12	12	0.3	24	83	Cylindrical
TEC160H16-32C16CF-H92	●	16	16	16	0.3	32	92	Cylindrical
TEC200H20-40C20CFH104	●	20	20	20	0.4	40	104	Cylindrical

●: Line up

VARIABLEMEISTER

TECK**H4M**CF-R

4 flute chatter dampening endmill, variable helix and variable pitch, for titanium machining



Designation	AH725	DC	DCONMS	NOF	RE	APMX	RMPX	LF	Shank
TECK040H4M-08C06CF-R02	●	4	6	4	0.2	8	5°	57	Cylindrical
TECK050H4M-10C06CF-R02	●	5	6	4	0.2	10	5°	57	Cylindrical
TECK060H4M-12C06CF-R02	●	6	6	4	0.2	12	5°	57	Cylindrical
TECK060H4M-12W06CF-R02	●	6	6	4	0.2	12	5°	57	Weldon
TECK080H4M-16C08CF-R04	●	8	8	4	0.4	16	5°	63	Cylindrical
TECK080H4M-16W08CF-R04	●	8	8	4	0.4	16	5°	63	Weldon
TECK100H4M-20C10CF-R05	●	10	10	4	0.5	20	5°	72	Cylindrical
TECK100H4M-20W10CF-R05	●	10	10	4	0.5	20	5°	72	Weldon
TECK120H4M-24C12CF-R06	●	12	12	4	0.6	24	5°	83	Cylindrical
TECK120H4M-24W12CF-R06	●	12	12	4	0.6	24	5°	83	Weldon
TECK160H4M-32C16CF-R08	●	16	16	4	0.8	32	5°	92	Cylindrical
TECK160H4M-32W16CF-R08	●	16	16	4	0.8	32	5°	92	Weldon
TECK200H4M-40C20CF-R10	●	20	20	4	1	40	5°	104	Cylindrical
TECK200H4M-40W20CF-R10	●	20	20	4	1	40	5°	104	Weldon

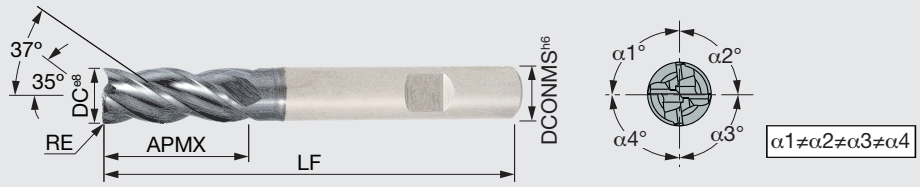
●: Line up

Reference pages: Standard cutting conditions → I024

VARIABLEMEISTER

TECK**H4M**CF-R**C

4 flute chatter dampening endmill, variable helix and variable pitch, for titanium machining



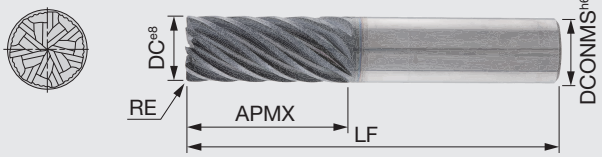
Designation	GH730	DC	DCONMS	NOF	RE	APMX	RMPX	LF	Coolant hole	Shank
TECK060H4M-12C06CF-R02C	●	6	6	4	0.2	12	5°	57	With	Cylindrical
TECK080H4M-16W08CF-R04C	●	8	8	4	0.4	16	5°	63	With	Weldon
TECK100H4M-20W10CF-R05C	●	10	10	4	0.5	20	5°	72	With	Weldon
TECK120H4M-24W12CF-R06C	●	12	12	4	0.6	24	5°	83	With	Weldon
TECK160H4M-32W16CF-R08C	●	16	16	4	0.8	32	5°	92	With	Weldon

●: Line up

VARIABLEMEISTER

TECK**H7/9M**CF-R

7 or 9 flute chatter dampening endmill, variable helix and variable pitch, for titanium machining



Designation	AH725	DC	DCONMS	NOF	RE	APMX	RMPX	LF	Shank
TECK060H7-13C06CF-R02T57	●	6	6	7	0.2	13	5°	57	Cylindrical
TECK060H7-13W06CF-R02T57	●	6	6	7	0.2	13	5°	57	Weldon
TECK080H7-19C08CF-R04T63	●	8	8	7	0.4	19	5°	63	Cylindrical
TECK080H7-19W08CF-R04T63	●	8	8	7	0.4	19	5°	63	Weldon
TECK100H7-22C10CF-R05T72	●	10	10	7	0.5	22	5°	72	Cylindrical
TECK100H7-22W10CF-R05T72	●	10	10	7	0.5	22	5°	72	Weldon
TECK120H7-26C12CF-R06T83	●	12	12	7	0.6	26	5°	83	Cylindrical
TECK120H7-26W12CF-R06T83	●	12	12	7	0.6	26	5°	83	Weldon
TECK160H9-32C16CF-R08T92	●	16	16	9	0.8	32	5°	92	Cylindrical
TECK160H9-32W16CF-R08T92	●	16	16	9	0.8	32	5°	92	Weldon
TECK200H9-38C20CF-R10T104	●	20	20	9	1	38	5°	104	Cylindrical
TECK200H9-38W20CF-R10T104	●	20	20	9	1	38	5°	104	Weldon

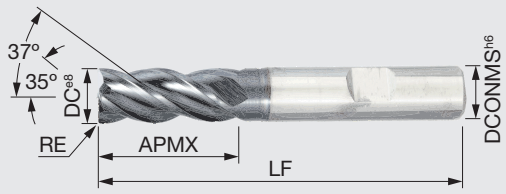
●: Line up

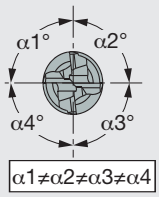
Reference pages: Standard cutting conditions → I024

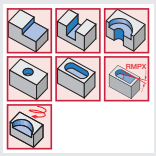
VARIABLEMEISTER

TEC**H4M**CF-R

7 or 9 flute chatter dampening endmill, variable helix and variable pitch, for titanium machining







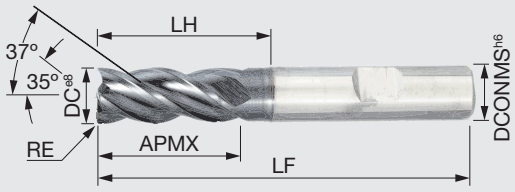
Designation	AH725	DC	DCONMS	NOF	RE	APMX	RMPX	LF	Shank
TEC060H4M-12C06CF-R02-57	●	6	6	4	0.2	12	5°	57	Cylindrical
TEC060H4M-12W06CF-R02-57	●	6	6	4	0.2	12	5°	57	Weldon
TEC080H4M-16C08CF-R04-63	●	8	8	4	0.4	16	5°	63	Cylindrical
TEC080H4M-16W08CF-R04-63	●	8	8	4	0.4	16	5°	63	Weldon
TEC100H4M-20C10CF-R05-72	●	10	10	4	0.5	20	5°	72	Cylindrical
TEC100H4M-20W10CF-R05-72	●	10	10	4	0.5	20	5°	72	Weldon
TEC120H4M-24C12CF-R06-83	●	12	12	4	0.6	24	5°	83	Cylindrical
TEC120H4M-24W12CF-R06-83	●	12	12	4	0.6	24	5°	83	Weldon
TEC140H4M-28C14CFR0.7-83	●	14	14	4	0.7	28	5°	83	Cylindrical
TEC140H4M-28W14CFR0.7-83	●	14	14	4	0.7	28	5°	83	Weldon
TEC160H4M-32C16CF-R08-92	●	16	16	4	0.8	32	5°	92	Cylindrical
TEC160H4M-32W16CF-R08-92	●	16	16	4	0.8	32	5°	92	Weldon
TEC200H4M-40C20CF-R10-104	●	20	20	4	1	40	5°	104	Cylindrical
TEC200H4M-40W20CF-R10-104	●	20	20	4	1	40	5°	104	Weldon
TEC250H4M-50C25CF-R12-121	●	25	25	4	1.2	50	5°	121	Cylindrical
TEC250H4M-50W25CF-R12-121	●	25	25	4	1.2	50	5°	121	Weldon

● : Line up

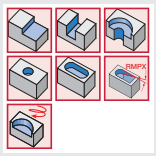
VARIABLEMEISTER

TEC**H4L**CF-R

4 flute chatter dampening endmill, variable helix and variable pitch, long neck type







Designation	AH725	DC	DCONMS	NOF	RE	APMX	RMPX	LH	LF	Shank
TEC010H4L-02/3C4CF-R.05	●	1	4	4	0.1	2	5°	3	50	Cylindrical
TEC020H4L-04/6C4CF-R01	●	2	4	4	0.1	4	5°	6	50	Cylindrical
TEC030H4L-06/9C4CF-R015	●	3	6	4	0.2	6	5°	9	57	Cylindrical
TEC040H4L-08/12C6CF-R02	●	4	6	4	0.2	8	5°	12	57	Cylindrical
TEC050H4L-10/15C6CF-R02	●	5	6	4	0.2	10	5°	15	57	Cylindrical
TEC060H4L-12/20C6CF-R02	●	6	6	4	0.2	12	5°	20	57	Cylindrical
TEC060H4L-12/20W6CF-R02	●	6	6	4	0.2	12	5°	20	57	Weldon
TEC080H4L-16/26C8CF-R04	●	8	8	4	0.4	16	5°	26	63	Cylindrical
TEC100H4L-20/32C10CF-R05	●	10	10	4	0.5	20	5°	32	72	Cylindrical
TEC100H4L-20/32W10CF-R05	●	10	10	4	0.5	20	5°	32	72	Weldon
TEC120H4L-24/38C12CF-R06	●	12	12	4	0.6	24	5°	38	83	Cylindrical
TEC120H4L-24/38W12CF-R06	●	12	12	4	0.6	24	5°	38	83	Weldon
TEC160H4L-32/50C16CF-R08	●	16	16	4	0.8	32	5°	50	100	Cylindrical
TEC160H4L-32/50W16CF-R08	●	16	16	4	0.8	32	5°	50	100	Weldon
TEC200H4L-40/60C20CF-R10	●	20	20	4	1	40	5°	60	110	Cylindrical
TEC200H4L-40/60W20CF-R10		20	20	4	1	40	5°	60	110	Weldon

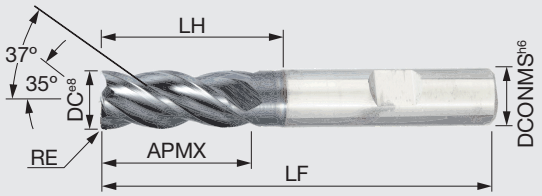
● : Line up

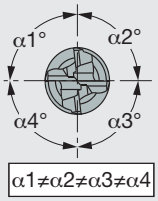
Reference pages: Standard cutting conditions → I024

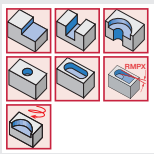
VARIABLEMEISTER

TEC**H4X**CF-R

4 flute chatter dampening endmill, variable helix and variable pitch, extra long neck type







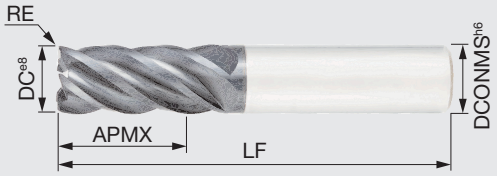
Designation	AH725	DC	DCONMS	NOF	RE	APMX	RMPX	LH	LF	Shank
TEC060H4X-12/25C06CF-R02	●	6	6	4	0.2	12	5°	25	61	Cylindrical
TEC060H4X-12/25W06CF-R02	●	6	6	4	0.2	12	5°	25	61	Weldon
TEC080H4X-16/32C08CF-R04	●	8	8	4	0.4	16	5°	32	68	Cylindrical
TEC080H4X-16/32W08CF-R04	●	8	8	4	0.4	16	5°	32	68	Weldon
TEC100H4X-20/40C10CF-R05	●	10	10	4	0.5	20	5°	40	80	Cylindrical
TEC100H4X-20/40W10CF-R05	●	10	10	4	0.5	20	5°	40	80	Weldon
TEC120H4X-24/50C12CF-R06	●	12	12	4	0.6	24	5°	50	95	Cylindrical
TEC120H4X-24/50W12CF-R06	●	12	12	4	0.6	24	5°	50	95	Weldon
TEC160H4X-32/64C16CF-R08	●	16	16	4	0.8	32	5°	64	115	Cylindrical
TEC160H4X-32/64W16CF-R08	●	16	16	4	0.8	32	5°	64	115	Weldon
TEC200H4X-40/75C20CF-R10	●	20	20	4	1	40	5°	75	125	Cylindrical
TEC200H4X-40/75W20CF-R10	●	20	20	4	1	40	5°	75	125	Weldon

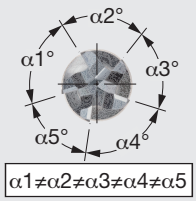
● : Line up

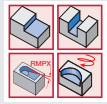
VARIABLEMEISTER

TEC**H5M**CF-R

5 flute chatter dampening endmill, variable helix and variable pitch







Designation	AH725	DC	DCONMS	NOF	RE	APMX	RMPX	LF	Shank
TEC040H5M-09C06CF-R02-57	●	4	6	5	0.2	9	5°	57	Cylindrical
TEC050H5M-11C06CF-R02-57	●	5	6	5	0.2	11	5°	57	Cylindrical
TEC060H5M-13W06CF-R02-57	●	6	6	5	0.2	13	5°	57	Weldon
TEC080H5M-19C08CF-R04-63	●	8	8	5	0.4	19	5°	63	Cylindrical
TEC080H5M-19W08CF-R04-63	●	8	8	5	0.4	19	5°	63	Weldon
TEC100H5M-22C10CF-R05-72	●	10	10	5	0.5	22	5°	72	Cylindrical
TEC100H5M-22W10CF-R05-72	●	10	10	5	0.5	22	5°	72	Weldon
TEC160H5M-32W16CF-R08-92	●	16	16	5	0.8	32	5°	92	Weldon
TEC200H5M-38C20CF-R10-104	●	20	20	5	1	38	5°	104	Cylindrical
TEC200H5M-38W20CF-R10-104	●	20	20	5	1	38	5°	104	Weldon

● : Line up

Reference pages: Standard cutting conditions → I024

VARIABLEMEISTER

STANDARD CUTTING CONDITIONS

Slotting / Roughing (*ae* = 0.4 x D or over)

ISO	Workpiece material	*Vc* (m/min)	*fz* (mm/t)			ap (Slotting)
			ø6 - ø8	ø10 - ø12	ø16 - ø20	
P	Carbon steel	140 - 180	0.03 - 0.045	0.035 - 0.055	0.05 - 0.07	2xD
P	Alloy steel	70 - 150	0.025 - 0.04	0.035 - 0.055	0.05 - 0.07	2xD
M	Stainless steel	60 - 100	0.025 - 0.045	0.035 - 0.05	0.04 - 0.065	1xD
K	Cast iron	80 - 180	0.025 - 0.05	0.035 - 0.065	0.05 - 0.075	2xD
N	Aluminium alloy	300 - 750	0.025 - 0.05	0.035 - 0.065	0.035 - 0.09	2xD
S	Titanium alloy	20 - 50	0.025 - 0.04	0.03 - 0.05	0.035 - 0.085	1xD
H	Hardened steel	20 - 30	0.01 - 0.02	0.02 - 0.04	0.03 - 0.06	0.5xD

Semi-finishing / Shouldering (*ae* = 0.1~0.4 x D)

ISO	Workpiece material	*Vc* (m/min)	*fz* (mm/t)			ap
			ø6 - ø8	ø10 - ø12	ø16 - ø20	
P	Carbon steel	150 - 220	0.035 - 0.075	0.075 - 0.09	0.085 - 0.1	2xD
P	Alloy steel	70 - 160	0.025 - 0.065	0.05 - 0.09	0.055 - 0.09	2xD
M	Stainless steel	80 - 130	0.03 - 0.05	0.04 - 0.06	0.05 - 0.065	2xD
K	Cast iron	130 - 220	0.035 - 0.065	0.05 - 0.075	0.075 - 0.09	2xD
N	Aluminium alloy	350 - 850	0.05 - 0.075	0.075 - 0.1	0.1 - 0.125	2xD
S	Titanium alloy	40 - 60	0.035 - 0.05	0.04 - 0.065	0.06 - 0.1	2xD
H	Hardened steel	30 - 70	0.015 - 0.045	0.03 - 0.05	0.05 - 0.075	2xD

Finishing (feed rate depending on required accuracy) / High feed machining at low depth of cut (*ae* = 0.05~0.1 x D)

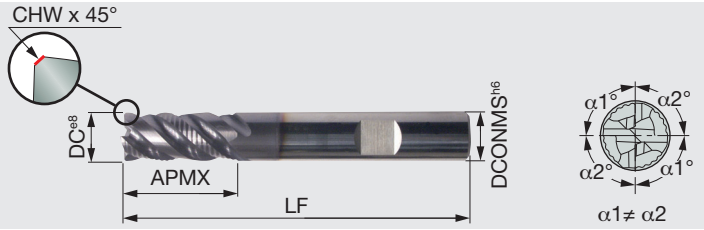
ISO	Workpiece material	*Vc* (m/min)	*fz* (mm/t)			ap
			ø6 - ø8	ø10 - ø12	ø16 - ø20	
P	Carbon steel	170 - 280	0.06 - 0.09	0.085 - 0.1	0.1 - 0.125	apmax
P	Alloy steel	110 - 220	0.06 - 0.09	0.085 - 0.1	0.1 - 0.125	apmax
M	Stainless steel	100 - 160	0.035 - 0.055	0.05 - 0.065	0.055 - 0.075	apmax
K	Cast iron	180 - 280	0.04 - 0.075	0.075 - 0.08	0.08 - 0.1	apmax
N	Aluminium alloy	350 - 900	0.055 - 0.09	0.085 - 0.125	0.125 - 0.18	apmax
S	Titanium alloy	50 - 70	0.04 - 0.065	0.05 - 0.075	0.075 - 0.11	apmax
H	Hardened steel	40 - 80	0.025 - 0.05	0.04 - 0.065	0.06 - 0.08	apmax

- When the depth of cut (ae) is closer to the upper limit, please start with a lower limit value of cutting speed (*Vc*).
- Please set the cutting speed and the feed rate lower for the items with long slot according to how chattering occurs.
- While air blow is recommended, water-soluble coolant will be good for stainless steel, titanium alloy, and heat-resistant alloy.
- When chattering occurs with low rigid machines or settings, reduce cutting speed and feed at an equal rate.
- When chattering occurs with long tool overhang, reduce cutting speed and feed by 20 to 40%.

FINISHMEISTER VARIABLEMEISTER

TEFS**E44**CF

4 flute endmill, 38° helix angle, variable pitch, roughing and finishing combination type



Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LF	Shank
TEFS060E44-14C06CF57	●	6	6	4	0.25	14	57	Cylindrical
TEFS060E44-14W06CF-57	●	6	6	4	0.25	14	57	Weldon
TEFS080E44-18C08CF63	●	8	8	4	0.3	18	63	Cylindrical
TEFS080E44-18W08CF-63	●	8	8	4	0.3	18	63	Weldon
TEFS100E44-22C10CF72	●	10	10	4	0.4	22	72	Cylindrical
TEFS100E44-22W10CF-72	●	10	10	4	0.4	22	72	Weldon
TEFS120E44-26C12CF83	●	12	12	4	0.5	26	83	Cylindrical
TEFS120E44-26W12CF-83	●	12	12	4	0.5	26	83	Weldon
TEFS140E44-30C14CF83	●	14	14	4	0.5	30	83	Cylindrical
TEFS140E44-30W14CF-83	●	14	14	4	0.5	30	83	Weldon
TEFS160E44-34C16CF92	●	16	16	4	0.6	34	92	Cylindrical
TEFS160E44-34W16CF-92	●	16	16	4	0.6	34	92	Weldon
TEFS200E44-42C20CF104	●	20	20	4	0.6	42	104	Cylindrical
TEFS200E44-42W20CF-104	●	20	20	4	0.6	42	104	Weldon
TEFS250E44-52C25CF121	●	25	25	4	0.6	52	121	Cylindrical
TEFS250E44-52W25CF-121	●	25	25	4	0.6	52	121	Weldon

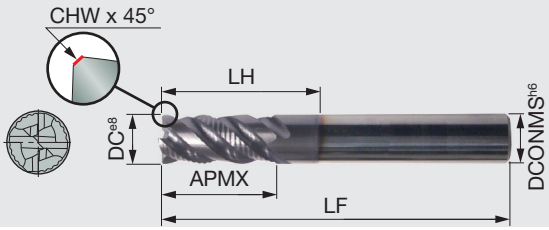
●: Line up

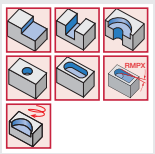
Reference pages: Standard cutting conditions → I031

FINISHMEISTER

TEFS**B44

4 flute endmill, 45° helix angle, roughing and finishing combination type





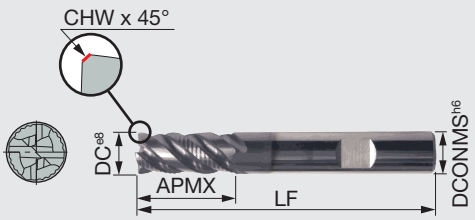
Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF	Shank
TEFS040B44-10C06-57	●	4	6	4	0.12	10	-	57	Cylindrical
TEFS050B44-12C06-57	●	5	6	4	0.18	12	-	57	Cylindrical
TEFS060B44-14/20C06-57	●	6	6	4	0.25	14	20	57	Cylindrical
TEFS060B4414/20W06-57	●	6	6	4	0.25	14	20	57	Weldon
TEFS060B44-14C06-57	●	6	6	4	0.25	14	-	57	Cylindrical
TEFS060B44-14W06-57	●	6	6	4	0.25	14	-	57	Weldon
TEFS080B44-18/26C08-63	●	8	8	4	0.3	18	26	63	Cylindrical
TEFS080B44-18/26W08-63	●	8	8	4	0.3	18	26	63	Weldon
TEFS080B44-18C08-63	●	8	8	4	0.3	18	-	63	Cylindrical
TEFS080B44-18W08-63	●	8	8	4	0.3	18	-	63	Weldon
TEFS100B44-22/32C10-72	●	10	10	4	0.3	22	32	72	Cylindrical
TEFS100B44-22/32W10-72	●	10	10	4	0.3	22	32	72	Weldon
TEFS100B44-22C10-72	●	10	10	4	0.3	22	-	72	Cylindrical
TEFS100B44-22W10-72	●	10	10	4	0.3	22	-	72	Weldon
TEFS120B44-26/38C12-83	●	12	12	4	0.4	26	38	83	Cylindrical
TEFS120B44-26/38W12-83	●	12	12	4	0.4	26	38	83	Weldon
TEFS120B44-26C12-83	●	12	12	4	0.4	26	-	83	Cylindrical
TEFS120B44-26W12-83	●	12	12	4	0.4	26	-	83	Weldon
TEFS140B44-30C14-83	●	14	14	4	0.4	30	-	83	Cylindrical
TEFS140B44-30W14-83	●	14	14	4	0.4	30	-	83	Weldon
TEFS160B44-34/50C16-100	●	16	16	4	0.6	34	50	100	Cylindrical
TEFS160B44-34/50W16-100	●	16	16	4	0.6	34	50	100	Weldon
TEFS160B44-34C16-92	●	16	16	4	0.6	34	-	92	Cylindrical
TEFS160B44-34W16-92	●	16	16	4	0.6	34	-	92	Weldon
TEFS200B44-42/62C20-125	●	20	20	4	0.6	42	62	125	Cylindrical
TEFS200B44-42/62W20-125	●	20	20	4	0.6	42	62	125	Weldon
TEFS200B44-42C20-104	●	20	20	4	0.6	42	-	104	Cylindrical
TEFS200B44-42W20-104	●	20	20	4	0.6	42	-	104	Weldon
TEFS250B44-52C25-121	●	25	25	4	0.6	52	-	121	Cylindrical
TEFS250B44-52W25-121	●	25	25	4	0.6	52	-	121	Weldon

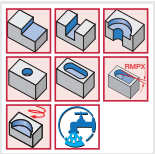
●: Line up

FINISHMEISTER

TEFS**B44**C

4 flute endmill, 45° helix angle, roughing and finishing combination type





Designation	GH730	DC	DCONMS	NOF	CHW	APMX	LF	Coolant hole	Shank
TEFS060B44-14C06-57C	●	6	6	4	0.25	14	57	With	Cylindrical
TEFS080B44-18W08-63C	●	8	8	4	0.3	18	63	With	Cylindrical
TEFS100B44-22W10-72C	●	10	10	4	0.3	22	72	With	Cylindrical
TEFS120B44-26W12-83C	●	12	12	4	0.4	26	83	With	Cylindrical
TEFS160B44-34W16-92C	●	16	16	4	0.6	34	92	With	Cylindrical

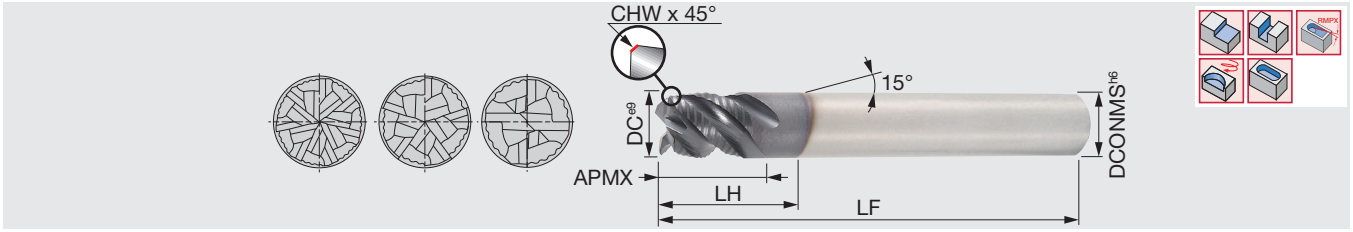
●: Line up

Reference pages: Standard cutting conditions → I031

SHREDMEISTER

TECR**B*S

4-7 flute roughing endmill, 45° helix angle, short type

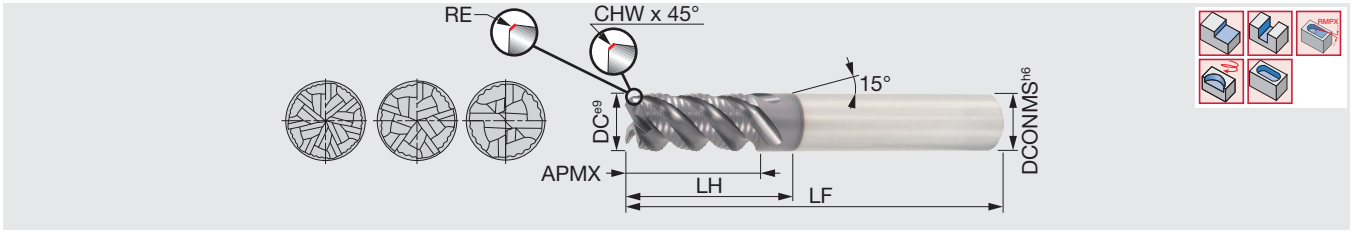


Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF		Shank
TECR050B4S-05W06-57	●	5	6	4	0.2	5	10	57	●	Weldon
TECR060B4S-06W06-57	●	6	6	4	0.25	6	-	57	●	Weldon
TECR080B4S-08W08-63	●	8	8	4	0.25	8	-	63	●	Weldon
TECR100B4S-10W10-72	●	10	10	4	0.3	10	-	72	●	Weldon
TECR120B4S-12W12-83	●	12	12	4	0.35	12	-	83	●	Weldon
TECR160B5S-16W16-92	●	16	16	5	0.4	16	-	92		Weldon
TECR200B7S-20W20-104	●	20	20	7	0.4	20	-	104		Weldon

●: Line up

TECR**B*M

4-7 flute roughing endmill, 45° helix angle



Designation	AH725	DC	DCONMS	NOF	CHW	RE	APMX	LH	LF		Shank
TECR050B4M-10C06-57	●	5	6	4	0.2	-	10	15	57	●	Cylindrical
TECR050B4M-10W06-57	●	5	6	4	0.2	-	10	15	57	●	Weldon
TECR060B4M-12C06-57	●	6	6	4	0.25	-	12	-	57	●	Cylindrical
TECR060B4M-12W06-57	●	6	6	4	0.25	-	12	-	57	●	Weldon
TECR080B4M-16C08-63	●	8	8	4	0.25	-	16	-	63	●	Cylindrical
TECR080B4M-16W08-63	●	8	8	4	0.25	-	16	-	63	●	Weldon
TECR100B4M-20C10-72	●	10	10	4	0.3	-	20	-	72	●	Cylindrical
TECR100B4M-20C10-72R10	●	10	10	4	-	1	20	-	72	●	Cylindrical
TECR100B4M-20W10-72	●	10	10	4	0.3	-	20	-	72	●	Weldon
TECR120B4M-24C12-83	●	12	12	4	0.35	-	24	-	83	●	Cylindrical
TECR120B4M-24C12-83R12	●	12	12	4	-	1.2	24	-	83	●	Cylindrical
TECR120B4M-24W12-83	●	12	12	4	0.35	-	24	-	83	●	Weldon
TECR120B4M-24W12-83R12	●	12	12	4	-	1.2	24	-	83	●	Weldon
TECR160B5M-32C16-92	●	16	16	5	0.4	-	32	-	92		Cylindrical
TECR160B5M-32C16-92R16	●	16	16	5	-	1.6	32	-	92		Cylindrical
TECR160B5M-32W16-92	●	16	16	5	0.4	-	32	-	92		Weldon
TECR160B5M-32W16-92R16	●	16	16	5	-	1.6	32	-	92		Weldon
TECR200B7M-40C20-104	●	20	20	7	0.4	-	40	-	104		Cylindrical
TECR200B7M-40W20-104	●	20	20	7	0.4	-	40	-	104		Weldon

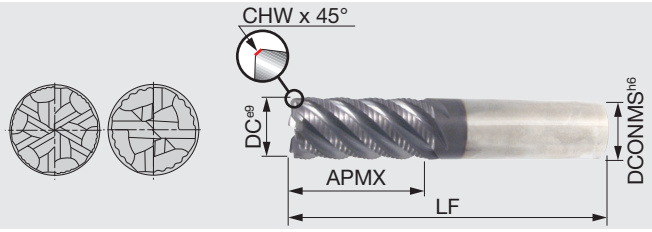
●: Line up

Reference pages: Standard cutting conditions → I031

SHREDMEISTER

TECR**B*MF

4 or 6 flute roughing endmill, 45° helix angle



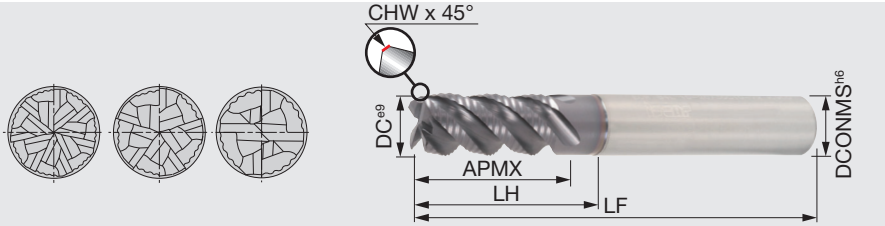
Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LF	Shank
TECR060B4MF-14W06-57	●	6	6	4	0.25	14	57	Weldon
TECR080B4MF-18W08-63	●	8	8	4	0.3	18	63	Weldon
TECR100B4MF-22W10-72	●	10	10	4	0.3	22	72	Weldon
TECR120B4MF-26W12-83	●	12	12	4	0.4	26	83	Weldon
TECR140B4MF-30W14-83	●	14	14	4	0.4	30	83	Weldon
TECR160B6MF-34W16-92	●	16	16	6	0.5	34	92	Weldon
TECR200B6MF-42W20-104	●	20	20	6	0.7	42	104	Weldon
TECR250B6MF-52W25-121	●	25	25	6	0.9	52	121	Weldon

●: Line up

SHREDMEISTER

TECR**B*L

4-7 flute roughing endmill, 45° helix angle, long neck type (3xD)

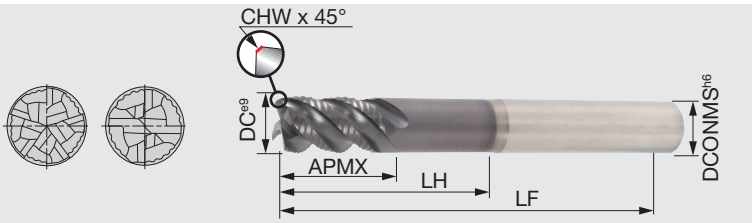


Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF		Shank
TECR060B4L-12/18W06-57	●	6	6	4	0.25	12	18	57	●	Weldon
TECR080B4L-16/24W08-63	●	8	8	4	0.25	16	24	63	●	Weldon
TECR100B4L-20/30W10-72	●	10	10	4	0.3	20	30	72	●	Weldon
TECR120B4L-24/36W12-83	●	12	12	4	0.35	24	36	83	●	Weldon
TECR160B5L-32/48W16-100	●	16	16	5	0.4	32	48	100		Weldon
TECR200B7L-40/60W20-110	●	20	20	7	0.4	40	60	110		Weldon

●: Line up

TECR**B*X

4-5 flute roughing endmill, 45° helix angle, long neck type (4xD)



Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF		Shank
TECR080B4X-12/32W08-68	●	8	8	4	0.25	12	32	68	●	Weldon
TECR100B4X-15/40W10-80	●	10	10	4	0.3	15	40	80	●	Weldon
TECR120B4X-18/48W12-100	●	12	12	4	0.35	18	48	100	●	Weldon
TECR160B5X-24/64W16-115	●	16	16	5	0.4	24	64	115		Weldon

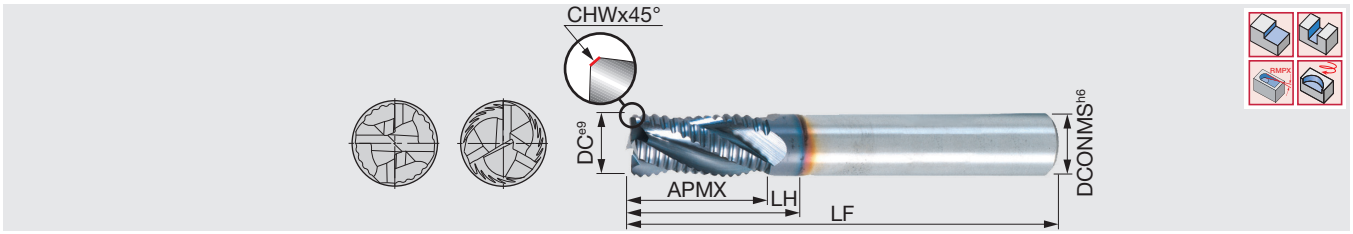
●: Line up

Reference pages: Standard cutting conditions → I031

SHREDMEISTER

TERF**A/E

3-4 flute roughing endmill, 30° or 38 helix angle, for alloy steel and stainless steel

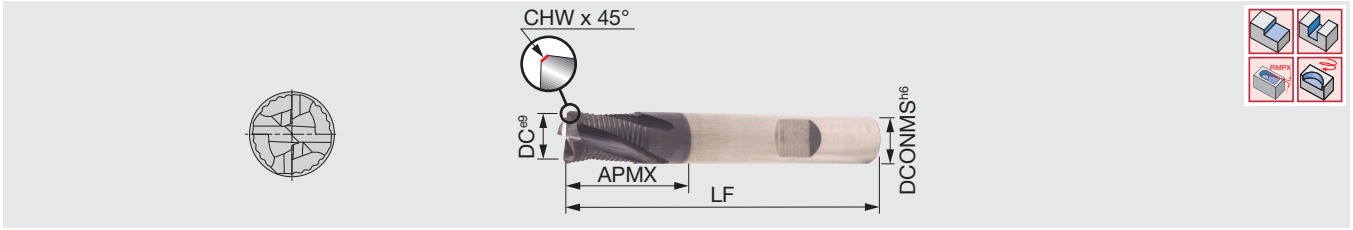


Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF	FHA	Shank
TERF040E3-08C06-57	●	4	6	3	0.25	8	13	57	38°	Cylindrical
TERF050E3-10C06-57	●	5	6	3	0.3	10	17	57	38°	Cylindrical
TERF060E3-13C06-57	●	6	6	3	0.3	13	21	57	38°	Cylindrical
TERF070E3-20C08-63	●	7	8	3	0.3	20	26	63	38°	Cylindrical
TERF080E3-20C08-63	●	8	8	3	0.3	20	28	63	38°	Cylindrical
TERF090A4-22C10-72	●	9	10	4	0.3	22	30	72	30°	Cylindrical
TERF100A4-22C10-72	●	10	10	4	0.3	22	30	72	30°	Cylindrical
TERF110A4-25C12-83	●	11	12	4	0.3	25	32	83	30°	Cylindrical
TERF120A4-25C12-83	●	12	12	4	0.4	25	37	83	30°	Cylindrical
TERF140A4-25C14-83	●	14	14	4	0.5	25	37	83	30°	Cylindrical
TERF160A4-32C16-92	●	16	16	4	0.5	32	44	92	30°	Cylindrical
TERF180A4-32C18-92	●	18	18	4	0.5	32	44	92	30°	Cylindrical
TERF200A4-38C20-104	●	20	20	4	0.6	38	55	104	30°	Cylindrical

●: Line up

TECR**T4M

4 flute roughing endmill, 20° helix angle



Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LF	Shank
TECR060T4M-10W06-57	●	6	6	4	0.3	10	57	Weldon
TECR080T4M-16W08-63	●	8	8	4	0.4	16	63	Weldon
TECR100T4M-20W10-72	●	10	10	4	0.4	20	72	Weldon
TECR120T4M-24W12-83	●	12	12	4	0.4	24	83	Weldon
TECR160T4M-32W16-92	●	16	16	4	0.5	32	92	Weldon
TECR200T4M-40W20-104	●	20	20	4	0.5	40	104	Weldon

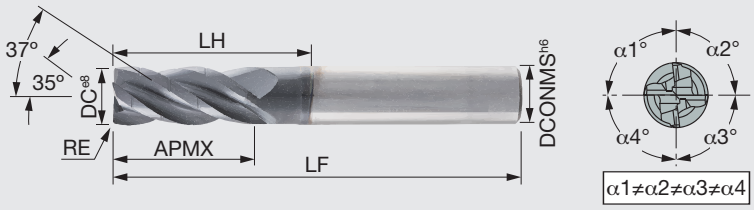
●: Line up

Reference pages: Standard cutting conditions → I031

SHREDMEISTER

TECP**H4L**CFR

4 flute roughing endmill, variable helix and variable pitch, with chip splitter, long overhang



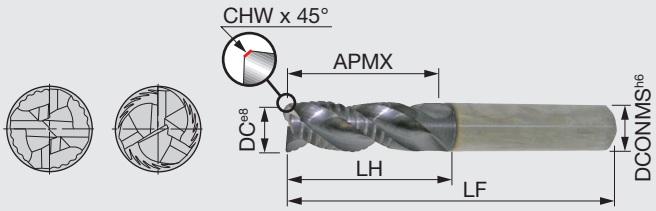
Designation	AH725	DC	DCONMS	NOF	RE	APMX	LH	LF	Shank
TECP060H4L-12/20C6CF-R02	●	6	6	4	0.2	12	20	57	Cylindrical
TECP080H4L-16/26C8CF-R04	●	8	8	4	0.4	16	26	63	Cylindrical
TECP080H4L-16/26W8CF-R04	●	8	8	4	0.4	16	26	63	Weldon
TECP100H4L-20/32C10CF-R05	●	10	10	4	0.5	20	32	72	Cylindrical
TECP100H4L-20/32W10CF-R05	●	10	10	4	0.5	20	32	72	Weldon
TECP120H4L-24/38C12CF-R06	●	12	12	4	0.6	24	38	83	Cylindrical
TECP120H4L-24/38W12CF-R06	●	12	12	4	0.6	24	38	83	Weldon
TECP160H4L-32/50C16CF-R08	●	16	16	4	0.8	32	50	100	Cylindrical
TECP160H4L-32/50W16CF-R08	●	16	16	4	0.8	32	50	100	Weldon
TECP200H4L-40/60C20CF-R10	●	20	20	4	1	40	60	110	Cylindrical
TECP200H4L-40/60W20CF-R10	●	20	20	4	1	40	60	110	Weldon

● : Line up

SHREDMEISTER

TECP**E*L

3 flute roughing endmill, 38° helix angle, with chip splitter



Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF	Shank
TECP050E3L-12/17W06S57	●	5	6	3	0.3	12	17	57	Weldon
TECP060E3L-14/20W06S57	●	6	6	3	0.4	14	20	57	Weldon
TECP080E3L-18/26W08S63	●	8	8	3	0.4	18	26	63	Weldon
TECP100E3L-22/32W10S72	●	10	10	3	0.4	22	32	72	Weldon
TECP120E3L-26/38W12S83	●	12	12	3	0.4	26	38	83	Weldon
TECP140E3L-30/44W14S100	●	14	14	3	0.6	30	44	100	Weldon
TECP160E3L-34/50W16S100	●	16	16	3	0.5	34	50	100	Weldon
TECP200E3L-42/62W20S125	●	20	20	3	0.5	42	62	125	Weldon

4 flute roughing endmill, 38° helix angle, with chip splitter

Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LH	LF	Shank
TECP050E4L-12/17W06S57	●	5	6	4	0.3	12	17	57	Weldon
TECP060E4L-14/20W06S57	●	6	6	4	0.4	14	20	57	Weldon
TECP080E4L-18/26W08S63	●	8	8	4	0.4	18	26	63	Weldon
TECP100E4L-22/32W10S72	●	10	10	4	0.4	22	32	72	Weldon
TECP120E4L-26/38W12S83	●	12	12	4	0.4	26	38	83	Weldon
TECP140E4L-30/44W14S100	●	14	14	4	0.6	30	44	100	Weldon
TECP160E4L-34/50W16S100	●	16	16	4	0.5	34	50	100	Weldon
TECP200E4L-42/62W20S125	●	20	20	4	0.5	42	62	125	Weldon

● : Line up

Reference pages: Standard cutting conditions → I031

FINISHMEISTER SHREDMEISTER

STANDARD CUTTING CONDITIONS

Slotting / Roughing (*ae* = 0.4 x D or over)

ISO	Material	*Vc* (m/min)	*fz* (mm/t)			*ap* (Slotting)
			ø6 - ø8	ø10 - ø12	ø16 - ø20	
P	Carbon steel	140 - 180	0.035 - 0.055	0.045 - 0.07	0.06 - 0.0825	2xD
	Alloy steel	70 - 150	0.03 - 0.045	0.045 - 0.07	0.06 - 0.0825	2xD
M	Stainless steel	60 - 100	0.03 - 0.055	0.045 - 0.06	0.05 - 0.0675	1xD
K	Cast iron	80 - 180	0.03 - 0.06	0.045 - 0.08	0.06 - 0.09	2xD
N	Aluminium alloy	300 - 750	0.03 - 0.06	0.045 - 0.08	0.04 - 0.105	2xD
S	Titanium alloy	20 - 50	0.03 - 0.045	0.04 - 0.06	0.04 - 0.105	1xD
H	Hardened steel	20 - 30	0.015 - 0.025	0.025 - 0.07	0.06 - 0.075	0.5xD

Semi-finishing / Shouldering (*ae* = 0.1~0.4 x D)

ISO	Material	*Vc* (m/min)	*fz* (mm/t)			*ap*
			ø6 - ø8	ø10 - ø12	ø16 - ø20	
P	Carbon steel	150 - 220	0.045 - 0.09	0.09 - 0.11	0.1 - 0.12	2xD
	Alloy steel	70 - 160	0.03 - 0.075	0.06 - 0.1	0.065 - 0.105	2xD
M	Stainless steel	80 - 130	0.035 - 0.06	0.055 - 0.07	0.06 - 0.075	2xD
K	Cast iron	130 - 220	0.045 - 0.075	0.06 - 0.09	0.09 - 0.105	2xD
N	Aluminium alloy	350 - 850	0.06 - 0.09	0.09 - 0.12	0.12 - 0.15	2xD
S	Titanium alloy	40 - 60	0.045 - 0.06	0.055 - 0.07	0.075 - 0.12	2xD
H	Hardened steel	30 - 70	0.02 - 0.055	0.045 - 0.07	0.06 - 0.09	2xD

Finishing (feed rate depending on required accuracy) / High feed machining at small width of cut (*ae* = 0.05~0.1 x D)

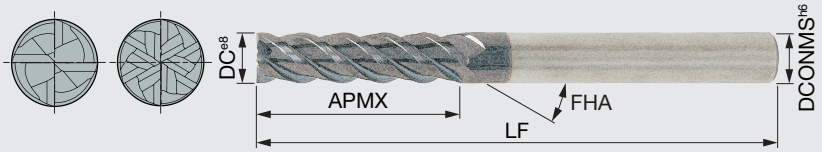
ISO	Material	*Vc* (m/min)	*fz* (mm/t)			*ap*
			ø6 - ø8	ø10 - ø12	ø16 - ø20	
P	Carbon steel	170 - 280	0.075 - 0.11	0.11 - 0.12	0.12 - 0.15	apmax
	Alloy steel	110 - 220	0.075 - 0.11	0.11 - 0.12	0.12 - 0.15	apmax
M	Stainless steel	100 - 160	0.045 - 0.07	0.06 - 0.075	0.065 - 0.09	apmax
K	Cast iron	180 - 280	0.05 - 0.09	0.09 - 0.1	0.09 - 0.12	apmax
N	Aluminium alloy	350 - 900	0.065 - 0.11	0.11 - 0.15	0.15 - 0.22	apmax
S	Titanium alloy	50 - 70	0.055 - 0.075	0.06 - 0.09	0.09 - 0.12	apmax
H	Hardened steel	40 - 80	0.03 - 0.06	0.05 - 0.09	0.075 - 0.105	apmax

- When the depth of cut (ae) is closer to the upper limit, please start with a lower limit value of cutting speed (*Vc*).
- While air blow is recommended, water-soluble coolant will be good for stainless steel, titanium alloy, and heat-resistant alloy.
- When chattering occurs with low rigid machines or settings, reduce cutting speed and feed at an equal rate.
- When chattering occurs with long tool overhang, reduce cutting speed and feed by 20 to 40%.

SOLIDMEISTER

TECL**B4/6L

4 or 6 flute endmill, 45° helix angle, long neck type



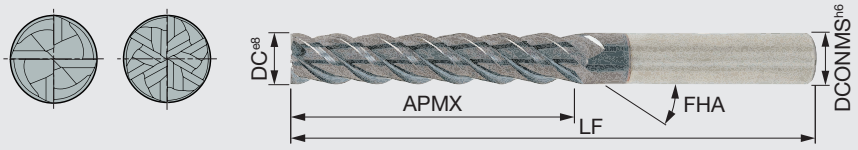
Designation	AH725	DC	DCONMS	NOF	APMX	FHA	LF		Shank
TEC060B4L-24C06-65	●	6	6	4	24	45°	65	●	Cylindrical
TEC060B4L-24W06-65	●	6	6	4	24	45°	65	●	Weldon
TEC080B4L-32C08-79	●	8	8	4	32	45°	79	●	Cylindrical
TEC080B4L-32W08-79	●	8	8	4	32	45°	79	●	Weldon
TEC100B4L-40C10-100	●	10	10	4	40	45°	100	●	Cylindrical
TEC100B4L-40W10-100	●	10	10	4	40	45°	100	●	Weldon
TEC120B4L-48C12-100	●	12	12	4	48	45°	100	●	Cylindrical
TEC120B4L-48W12-100	●	12	12	4	48	45°	100	●	Weldon
TEC140B4L-50C14-100	●	14	14	4	50	45°	100	●	Cylindrical
TEC140B4L-50W14-100	●	14	14	4	50	45°	100	●	Weldon
TEC160B6L-56C16-115	●	16	16	6	56	45°	115		Cylindrical
TEC160B6L-56W16-115	●	16	16	6	56	45°	115		Weldon
TEC200B6L-60C20-125	●	20	20	6	60	45°	125		Cylindrical
TEC200B6L-60W20-125	●	20	20	6	60	45°	125		Weldon

●: Line up

SOLIDMEISTER

TECX**B4/6X

4 or 6 flute endmill, 45° helix angle, extra long neck type



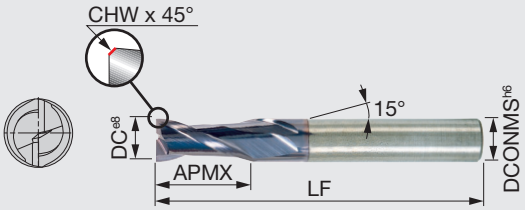
Designation	AH725	DC	DCONMS	NOF	APMX	FHA	LF		Shank
TEC100B4X-60C10-112	●	10	10	4	60	45°	112	●	Cylindrical
TEC100B4X-60W10-112	●	10	10	4	60	45°	112	●	Weldon
TEC120B4X-72C12-150	●	12	12	4	72	45°	150	●	Cylindrical
TEC120B4X-72W12-150	●	12	12	4	72	45°	150	●	Weldon
TEC160B6X-80C16-150	●	16	16	6	80	45°	150		Cylindrical
TEC160B6X-80W16-150	●	16	16	6	80	45°	150		Weldon
TEC200B6X-80C20-150	●	20	20	6	80	45°	150		Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I051

TECC**A/B2

2 flute slotting endmill, 30° or 45° helix angle

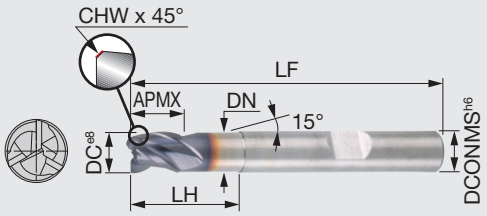


Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LF	FHA	Shank
TECC020B2-07C03-38	●	2	3	2	0.1	7	38	45°	Cylindrical
TECC030A2-10C03-38	●	3	3	2	0.1	10	38	30°	Cylindrical
TECC040A2-12C04-50	●	4	4	2	0.1	12	50	30°	Cylindrical
TECC050A2-14C05-50	●	5	5	2	0.15	14	50	30°	Cylindrical
TECC060A2-16C06-57	●	6	6	2	0.15	16	57	30°	Cylindrical
TECC080A2-20C08-63	●	8	8	2	0.15	20	63	30°	Cylindrical
TECC100A2-22C10-72	●	10	10	2	0.15	22	72	30°	Cylindrical
TECC120A2-25C12-83	●	12	12	2	0.25	25	83	30°	Cylindrical
TECC160A2-32C16-92	●	16	16	2	0.25	32	92	30°	Cylindrical
TECC200A2-38C20-104	●	20	20	2	0.25	38	104	30°	Cylindrical

●: Line up

TECS/TECCS**E3

3 flute slotting endmill, 38° helix angle, short type



Designation	AH725	DC	DCONMS	NOF	CHW	DN	APMX	LH	LF	Shank
TECS020E3-03W06-57	●	2	6	3	0.1	1.9	3	7	57	Weldon
TECS030E3-04W06-57	●	3	6	3	0.1	2.9	4	10	57	Weldon
TECS040E3-05W06-57	●	4	6	3	0.1	3.9	5	12	57	Weldon
TECS050E3-06W06-57	●	5	6	3	0.15	4.9	6	14	57	Weldon
TECCS060E3-07W06-57	●	6	6	3	0.15	5.9	7	16	57	Weldon
TECCS080E3-09W08-63	●	8	8	3	0.15	7.6	9	20	63	Weldon
TECCS100E3-11W10-72	●	10	10	3	0.15	9.5	11	22	72	Weldon
TECCS120E3-12W12-83	●	12	12	3	0.25	11.3	12	25	83	Weldon
TECCS160E3-16W16-92	●	16	16	3	0.25	15.2	16	32	92	Weldon

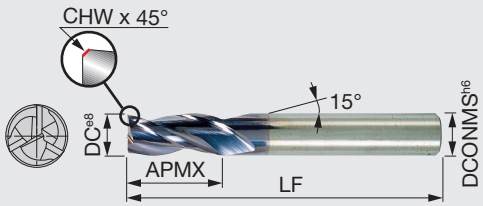
●: Line up

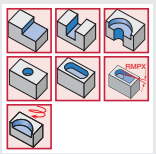
Reference pages: Standard cutting conditions → I051

SOLIDMEISTER

TECC**B/E3

3 flute slotting endmill, 38° or 45° helix angle





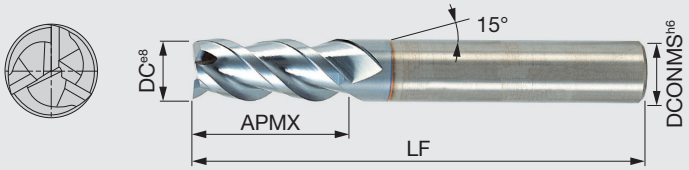
Designation	GH730	AH725	DC	DCONMS	NOF	CHW	APMX	LF	FHA	Shank
TECC020B3-07C03-38	●		2	3	3	0.1	7	38	45°	Cylindrical
TECC030E3-10C03-38	●		3	3	3	0.1	10	38	38°	Cylindrical
TECC040E3-12C04-50		●	4	4	3	0.1	12	50	38°	Cylindrical
TECC050E3-14C05-50		●	5	5	3	0.15	14	50	38°	Cylindrical
TECC060E3-16C06-57		●	6	6	3	0.15	16	57	38°	Cylindrical
TECC080E3-20C08-63		●	8	8	3	0.15	20	63	38°	Cylindrical
TECC100E3-22C10-72		●	10	10	3	0.15	22	72	38°	Cylindrical
TECC120E3-25C12-83		●	12	12	3	0.25	25	83	38°	Cylindrical
TECC160E3-32C16-92		●	16	16	3	0.25	32	92	38°	Cylindrical
TECC200E3-38C20-104		●	20	20	3	0.25	38	104	38°	Cylindrical

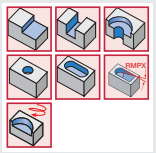
●: Line up

SOLIDMEISTER

TEC**B3

3 flute slotting endmill, 45° helix angle





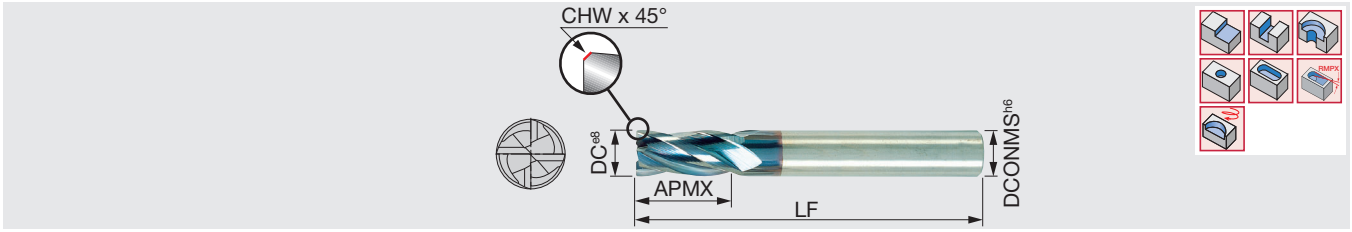
Designation	GH730	AH725	DC	NOF	DCONMS	APMX	LF	Shank
TEC030B3-10C06-57	●		3	3	6	10	57	Cylindrical
TEC040B3-12C06-57	●		4	3	6	12	57	Cylindrical
TEC050B3-14C06-57	●		5	3	6	14	57	Cylindrical
TEC060B3-16C06-57		●	6	3	6	16	57	Cylindrical
TEC070B3-16C07-60	●		7	3	7	16	60	Cylindrical
TEC080B3-20C08-63		●	8	3	8	20	63	Cylindrical
TEC090B3-20C09-67		●	9	3	9	20	67	Cylindrical
TEC100B3-22C10-72		●	10	3	10	22	72	Cylindrical
TEC120B3-25C12-83		●	12	3	12	25	83	Cylindrical
TEC140B3-25C14-75	●		14	3	14	25	75	Cylindrical
TEC180B3-32C18-92		●	18	3	18	32	92	Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I051

TECC**A/B4

4 flute endmill, 30° or 45° helix angle



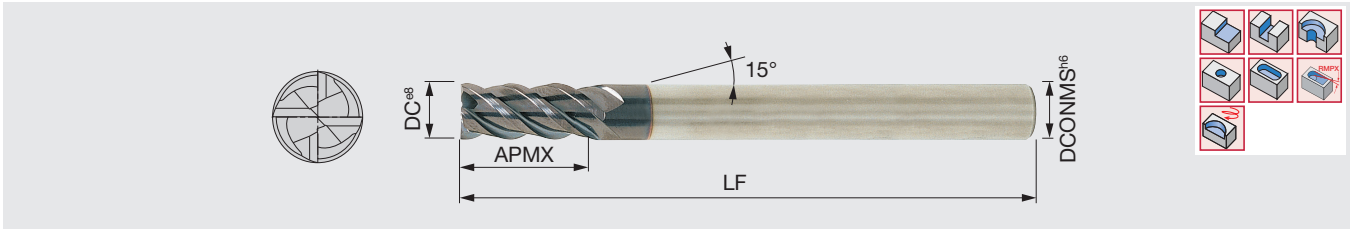
Designation	AH725	DC	DCONMS	NOF	CHW	APMX	LF	FHA	Shank
TECC020B4-07C03-38	●	2	3	4	0.1	7	38	45°	Cylindrical
TECC030A4-10C03-38	●	3	3	4	0.1	10	38	30°	Cylindrical
TECC040A4-12C04-50	●	4	4	4	0.1	12	50	30°	Cylindrical
TECC050A4-14C05-50	●	5	5	4	0.15	14	50	30°	Cylindrical
TECC060A4-16C06-57	●	6	6	4	0.15	16	57	30°	Cylindrical
TECC080A4-20C08-63	●	8	8	4	0.15	20	63	30°	Cylindrical
TECC100A4-22C10-72	●	10	10	4	0.15	22	72	30°	Cylindrical
TECC120A4-25C12-83	●	12	12	4	0.25	25	83	30°	Cylindrical
TECC160A4-32C16-92	●	16	16	4	0.25	32	92	30°	Cylindrical
TECC200A4-38C20-104	●	20	20	4	0.25	38	104	30°	Cylindrical

●: Line up

SOLIDMEISTER

TEC**B4

4 flute endmill, 45° helix angle



Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEC020B4-07C06-57	●	2	6	4	7	57	Cylindrical
TEC030B4-10C06-57	●	3	6	4	10	57	Cylindrical
TEC040B4-12C06-57	●	4	6	4	12	57	Cylindrical
TEC050B4-14C06-57	●	5	6	4	14	57	Cylindrical
TEC060B4-16C06-57	●	6	6	4	16	57	Cylindrical
TEC080B4-20C08-63	●	8	8	4	20	63	Cylindrical
TEC100B4-22C10-72	●	10	10	4	22	72	Cylindrical
TEC120B4-25C12-83	●	12	12	4	25	83	Cylindrical
TEC140B4-25C14-83	●	14	14	4	25	83	Cylindrical
TEC160B4-32C16-92	●	16	16	4	32	92	Cylindrical
TEC180B4-32C18-92	●	18	18	4	32	92	Cylindrical
TEC200B4-38C20-104	●	20	20	4	38	104	Cylindrical

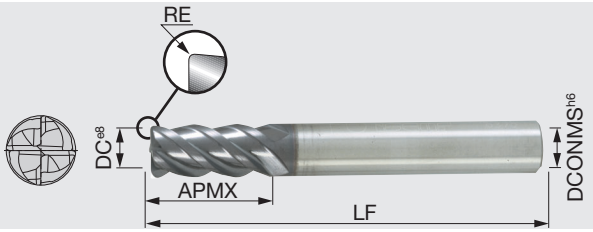
●: Line up

Reference pages: Standard cutting conditions → I051

SOLIDMEISTER

TEC**B4**R

4 flute radius endmill, 45° helix angle



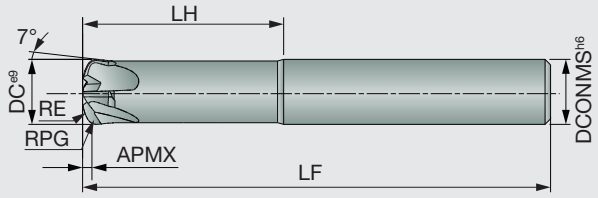
Designation	AH725	DC	DCONMS	NOF	RE	APMX	LF	Shank
TEC060B4-16C06R05-57	●	6	6	4	0.5	16	57	Cylindrical
TEC060B4-16C06R1-57	●	6	6	4	1	16	57	Cylindrical
TEC080B4-20C08R05-63	●	8	8	4	0.5	20	63	Cylindrical
TEC080B4-20C08R1-63	●	8	8	4	1	20	63	Cylindrical
TEC080B4-20C08R15-63	●	8	8	4	1.5	20	63	Cylindrical
TEC080B4-20C08R2-63	●	8	8	4	2	20	63	Cylindrical
TEC100B4-22C10R05-72	●	10	10	4	0.5	22	72	Cylindrical
TEC100B4-22C10R1-72	●	10	10	4	1	22	72	Cylindrical
TEC100B4-22C10R15-72	●	10	10	4	1.5	22	72	Cylindrical
TEC100B4-22C10R2-72	●	10	10	4	2	22	72	Cylindrical
TEC100B4-22C10R3-72	●	10	10	4	3	22	72	Cylindrical
TEC120B4-25C12R05-83	●	12	12	4	0.5	25	83	Cylindrical
TEC120B4-25C12R1-83	●	12	12	4	1	25	83	Cylindrical
TEC120B4-25C12R15-83	●	12	12	4	1.5	25	83	Cylindrical
TEC120B4-25C12R2-83	●	12	12	4	2	25	83	Cylindrical
TEC120B4-25C12R3-83	●	12	12	4	3	25	83	Cylindrical
TEC160B4-32C16R05-92	●	16	16	4	0.5	32	92	Cylindrical
TEC160B4-32C16R1-92	●	16	16	4	1	32	92	Cylindrical
TEC160B4-32C16R2-92	●	16	16	4	2	32	92	Cylindrical
TEC160B4-32C16R3-92	●	16	16	4	3	32	92	Cylindrical
TEC200B4-38C20R05-104	●	20	20	4	0.5	38	104	Cylindrical
TEC200B4-38C20R1-104	●	20	20	4	1	38	104	Cylindrical
TEC200B4-38C20R2-104	●	20	20	4	2	38	104	Cylindrical
TEC200B4-38C20R3-104	●	20	20	4	3	38	104	Cylindrical
TEC200B4-38C20R4-104	●	20	20	4	4	38	104	Cylindrical

●: Line up

FEEDMEISTER

TEFF**N4

4 flute high feed endmill



Designation	AH750	DC	DCONMS	NOF	RPG(1)	RE	APMX	LH	LF	Max. fz (mm/t)
TEFF060N4-030/20C06R10M	●	6	6	4	1.0	5.3	0.3	20	57	0.3
TEFF080N4-035/26C08R13M	●	8	8	4	1.3	7	0.4	26	63	0.4
TEFF100N4-040/30C10R16M	●	10	10	4	1.6	8.8	0.5	30	72	0.5
TEFF120N4-045/34C12R20M	●	12	12	4	2.0	10.6	0.6	34	83	0.5
TEFF160N4-055/42C16R26M	●	16	16	4	2.6	14	0.8	42	92	0.6
TEFF200N4-060/46C20R32M	●	20	20	4	3.2	17.7	1	46	104	0.7

(1) R0 should be used for programming.

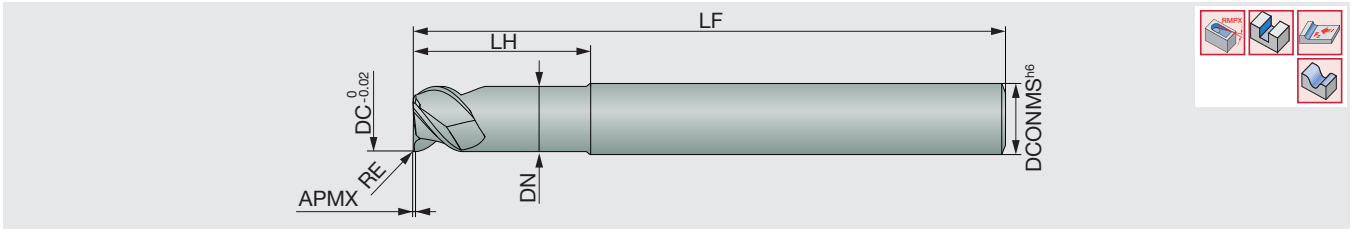
●: Line up

Reference pages: TEC**B4**R: Standard cutting conditions → I051
TEFF**N4: Standard cutting conditions → I037

FEEDMEISTER

TCFF**A3

3 flute high feed endmill



Designation	FX510	DC	DCONMS	NOF	DN	RE	APMX	LH	LF
TCFF060A3-06/15C6-50	●	6	6	3	5.5	0.42	0.25	15	50
TCFF080A3-08/20C8-57	●	8	8	3	7.5	0.56	0.4	20	57
TCFF100A3-08/25C10-65	●	10	10	3	9.5	0.7	0.5	25	65
TCFF120A3-10/30C12-72	●	12	12	3	11.5	1.1	0.6	30	72
TCFF160A3-12/35C16-83	●	16	16	3	15.5	1.9	0.75	35	83
TCFF200A3-15/40C20-93	●	20	20	3	19.5	2.5	1	40	93

●: Line up

Caution:
High speed machining generates heat in the tool and chuck holder.
Thermal expansion of the holder will often lead to tool damage.
Use an air coolant during machining to cool the tool holder.
Milling chucks are recommended for the toolholder to be used.
*Use the above corner radius values for programming.

FEEDMEISTER

STANDARD CUTTING CONDITIONS

Shape machining (roughing) TEFF**N4...

ISO	Workpiece material	*Vc* (m/min)	*fz* (mm/t)		
			ø6 - ø8	ø10 - ø12	ø16 - ø20
P	Carbon steel	140 - 180	0.25 - 0.48	0.35 - 0.67	0.52 - 0.9
P	Alloy steel (30-40HRC)	120 - 130	0.2 - 0.28	0.3 - 0.38	0.43 - 0.57
M	Stainless steel	120	0.25 - 0.3	0.35 - 0.43	0.52 - 0.6
K	Cast iron	160 - 180	0.3 - 0.45	0.45 - 0.6	0.6 - 0.8
H	Hardened steel (-49HRC)	100	0.16 - 0.2	0.25 - 0.33	0.4 - 0.48
H	Hardened steel (50-60HRC)	60 - 80	0.1 - 0.16	0.16 - 0.3	0.2 - 0.45

· Please be aware that the maximum depth of cut (apmax) and the feed (*fz*) will depend on each tool diameter.
· While air blow is recommended, water-soluble coolant will be good for stainless steel, titanium alloy, and heat-resistant alloy.
· When chattering occurs with low rigid machines or settings, reduce cutting speed and feed at an equal rate.
· When chattering occurs with long tool overhang, reduce cutting speed and feed by 20 to 40%.

Shape machining (roughing) TCFF**A3...

ISO	Workpiece material	*Vc* (m/min)	*fz* (mm/t)		
			ø6 - ø8	ø10 - ø12	ø16 - ø20
K	Cast iron	250 - 1000	0.1 - 0.15	0.17 - 0.19	0.23 - 0.25
K	Nodular cast iron	250 - 1000	0.1 - 0.15	0.17 - 0.19	0.23 - 0.25
K	Malleable cast iron	250 - 1000	0.1 - 0.15	0.17 - 0.19	0.23 - 0.25
N	Non-ferrous metal / Graphite	500 - 1500	0.1 - 0.15	0.17 - 0.19	0.23 - 0.25
S	Nickel based alloy	250 - 1000	0.1 - 0.13	0.15 - 0.18	0.20 - 0.22

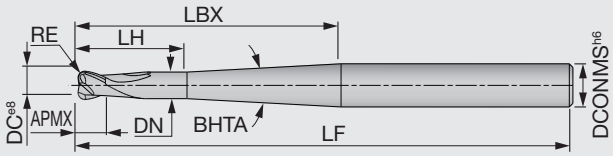
*Dry cutting at the cutting speed more than 250m/min is recommended for machining nickel based alloy.

SOLIDMEISTER

TETR**A2**R

2 flute toroidal endmill





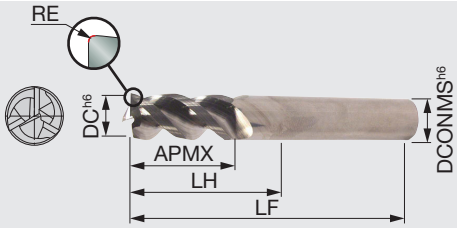
Designation	AH725	DC	DCONMS	NOF	DN	RE	APMX	LH	LBX	BHTA	LF	Shank
TETR020A2-2/08C06R05M80	●	2	6	2	1.9	0.5	2	8	40	3.6°	80	Cylindrical
TETR030A2-2/12C06R05M80	●	3	6	2	2.8	0.5	2	12	40	3.3°	80	Cylindrical
TETR040A2-3/16C06R1M80	●	4	6	2	3.7	1	3	16	40	2.8°	80	Cylindrical
TETR060A2-4/25C08R2M100	●	6	8	2	5.6	2	4	25	66	2.0°	100	Cylindrical

●: Line up

VARIABLEMEISTER

TECA**H3**CF-R

3 flute endmill, 39°-41° variable helix, center cutting edge, for aluminium machining



Designation	KS15F	DC	DCONMS	NOF	RE	APMX	LH	LF	Shank
TECA010H3-04C06CF-R.05	●	1	6	3	0.05	4	6	57	Cylindrical
TECA015H3-04/06C06CF-R01	●	1.5	6	3	0.1	4	6	57	Cylindrical
TECA020H3-05/08C06CF-R01	●	2	6	3	0.1	5	8	57	Cylindrical
TECA025H3-05/08C06CF-R01	●	2.5	6	3	0.1	5	8	57	Cylindrical
TECA030H3-07/12C06CF-R01	●	3	6	3	0.1	7	12	57	Cylindrical
TECA040H3-10/16C06CF-R02	●	4	6	3	0.2	10	16	57	Cylindrical
TECA050H3-12/20C06CF-R02	●	5	6	3	0.2	12	20	57	Cylindrical
TECA060H3-09/18C06CF-R02	●	6	6	3	0.2	9	18	57	Cylindrical
TECA060H3-09/18C06CF-R04	●	6	6	3	0.4	9	18	57	Cylindrical
TECA060H3-09/18C06CF-R08	●	6	6	3	0.8	9	18	57	Cylindrical
TECA060H3-09/30C06CF-R02	●	6	6	3	0.2	9	30	65	Cylindrical
TECA060H3-09/30C06CF-R04	●	6	6	3	0.4	9	30	65	Cylindrical
TECA060H3-09/30C06CF-R08	●	6	6	3	0.8	9	30	65	Cylindrical
TECA060H3-14/24C06CF-R02	●	6	6	3	0.2	14	24	60	Cylindrical
TECA080H3-12/24C08CF-R02	●	8	8	3	0.2	12	24	63	Cylindrical
TECA080H3-12/24C08CF-R04	●	8	8	3	0.4	12	24	63	Cylindrical
TECA080H3-12/24C08CF-R08	●	8	8	3	0.8	12	24	63	Cylindrical
TECA080H3-12/24C08CF-R30	●	8	8	3	3	12	24	63	Cylindrical
TECA080H3-12/40C08CF-R02	●	8	8	3	0.2	12	40	79	Cylindrical
TECA080H3-12/40C08CF-R04	●	8	8	3	0.4	12	40	79	Cylindrical
TECA080H3-12/40C08CF-R08	●	8	8	3	0.8	12	40	79	Cylindrical
TECA080H3-18/32C08CF-R02	●	8	8	3	0.2	18	32	68	Cylindrical
TECA100H3-15/30C10CF-R02	●	10	10	3	0.2	15	30	72	Cylindrical
TECA100H3-15/30C10CF-R04	●	10	10	3	0.4	15	30	72	Cylindrical
TECA100H3-15/30C10CF-R08	●	10	10	3	0.8	15	30	72	Cylindrical
TECA100H3-15/30C10CF-R16	●	10	10	3	1.6	15	30	72	Cylindrical
TECA100H3-15/30C10CF-R30	●	10	10	3	3	15	30	72	Cylindrical
TECA100H3-15/50C10CF-R02	●	10	10	3	0.2	15	50	92	Cylindrical
TECA100H3-15/50C10CF-R04	●	10	10	3	0.4	15	50	92	Cylindrical
TECA100H3-15/50C10CF-R08	●	10	10	3	0.8	15	50	92	Cylindrical
TECA100H3-15/50C10CF-R16	●	10	10	3	1.6	15	50	92	Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I051

Designation	KS15F	DC	DCONMS	NOF	RE	APMX	LH	LF	Shank
TECA100H3-15/50C10CF-R20	●	10	10	3	2	15	50	92	Cylindrical
TECA100H3-15/50C10CF-R30	●	10	10	3	3	15	50	92	Cylindrical
TECA100H3-22/40C10CF-R02	●	10	10	3	0.2	22	40	80	Cylindrical
TECA100H3-22/40C10CF-R30	●	10	10	3	3	22	40	80	Cylindrical
TECA120H3-18/36C12CF-R02	●	12	12	3	0.2	18	36	83	Cylindrical
TECA120H3-18/36C12CF-R04	●	12	12	3	0.4	18	36	83	Cylindrical
TECA120H3-18/36C12CF-R08	●	12	12	3	0.8	18	36	83	Cylindrical
TECA120H3-18/36C12CF-R16	●	12	12	3	1.6	18	36	83	Cylindrical
TECA120H3-18/36C12CF-R20	●	12	12	3	2	18	36	83	Cylindrical
TECA120H3-18/36C12CF-R25	●	12	12	3	2.5	18	36	83	Cylindrical
TECA120H3-18/36C12CF-R30	●	12	12	3	3	18	36	57	Cylindrical
TECA120H3-18/60C12CF-R02	●	12	12	3	0.2	18	60	100	Cylindrical
TECA120H3-18/60C12CF-R04	●	12	12	3	0.4	18	60	100	Cylindrical
TECA120H3-18/60C12CF-R08	●	12	12	3	0.8	18	60	100	Cylindrical
TECA120H3-18/60C12CF-R16	●	12	12	3	1.6	18	60	100	Cylindrical
TECA120H3-18/60C12CF-R20	●	12	12	3	2	18	60	100	Cylindrical
TECA120H3-18/60C12CF-R25	●	12	12	3	2.5	18	60	100	Cylindrical
TECA120H3-18/60C12CF-R30	●	12	12	3	3	18	60	100	Cylindrical
TECA160H3-24/48C16CF-R02	●	16	16	3	0.2	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R04	●	16	16	3	0.4	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R08	●	16	16	3	0.8	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R16	●	16	16	3	1.6	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R20	●	16	16	3	2	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R25	●	16	16	3	2.5	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R30	●	16	16	3	3	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R32	●	16	16	3	3.2	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R40	●	16	16	3	4	24	48	92	Cylindrical
TECA160H3-24/48C16CF-R50	●	16	16	3	5	24	48	92	Cylindrical
TECA160H3-24/80C16CF-R02	●	16	16	3	0.2	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R04	●	16	16	3	0.4	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R08	●	16	16	3	0.8	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R16	●	16	16	3	1.6	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R20	●	16	16	3	2	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R25	●	16	16	3	2.5	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R30	●	16	16	3	3	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R32	●	16	16	3	3.2	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R40	●	16	16	3	4	24	80	128	Cylindrical
TECA160H3-24/80C16CF-R50	●	16	16	3	5	24	80	128	Cylindrical
TECA160H3-34/64C16CF-R02	●	16	16	3	0.2	34	64	115	Cylindrical
TECA200H3-30/100C20CF-R02	●	20	20	3	0.2	30	100	150	Cylindrical
TECA200H3-30/100C20CF-R04	●	20	20	3	0.4	30	100	150	Cylindrical
TECA200H3-30/100C20CF-R08	●	20	20	3	0.8	30	100	150	Cylindrical
TECA200H3-30/100C20CF-R32	●	20	20	3	3.2	30	100	150	Cylindrical
TECA200H3-30/100C20CF-R40	●	20	20	3	4	30	100	150	Cylindrical
TECA200H3-30/100C20CF-R50	●	20	20	3	5	30	100	150	Cylindrical
TECA200H3-30/60C20CF-R02	●	20	20	3	0.2	30	60	110	Cylindrical
TECA200H3-30/60C20CF-R04	●	20	20	3	0.4	30	60	110	Cylindrical
TECA200H3-30/60C20CF-R08	●	20	20	3	0.8	30	60	110	Cylindrical
TECA200H3-30/60C20CF-R16	●	20	20	3	1.6	30	60	110	Cylindrical
TECA200H3-30/60C20CF-R20	●	20	20	3	2	30	60	110	Cylindrical
TECA200H3-30/60C20CF-R32	●	20	20	3	3.2	30	60	110	Cylindrical
TECA200H3-30/60C20CF-R40	●	20	20	3	4	30	60	110	Cylindrical
TECA200H3-30/60C20CF-R50	●	20	20	3	5	30	60	110	Cylindrical
TECA200H3-42/80C20CF-R02	●	20	20	3	0.2	42	80	130	Cylindrical
TECA250H3-38/125C25CF-R02	●	25	25	3	0.2	38	125	185	Cylindrical
TECA250H3-38/125C25CF-R08	●	25	25	3	0.8	38	125	185	Cylindrical
TECA250H3-38/125C25CF-R16	●	25	25	3	1.6	38	125	185	Cylindrical
TECA250H3-38/125C25CF-R20	●	25	25	3	2	38	125	185	Cylindrical
TECA250H3-38/125C25CF-R40	●	25	25	3	4	38	125	185	Cylindrical
TECA250H3-38/125C25CF-R50	●	25	25	3	5	38	125	185	Cylindrical
TECA250H3-38/75C25CF-R02	●	25	25	3	0.2	38	75	130	Cylindrical
TECA250H3-38/75C25CF-R04	●	25	25	3	0.4	38	75	130	Cylindrical
TECA250H3-38/75C25CF-R16	●	25	25	3	1.6	38	75	130	Cylindrical
TECA250H3-38/75C25CF-R20	●	25	25	3	2	38	75	130	Cylindrical
TECA250H3-38/75C25CF-R32	●	25	25	3	3.2	38	75	130	Cylindrical
TECA250H3-38/75C25CF-R50	●	25	25	3	5	38	75	130	Cylindrical
TECA250H3-52/100C25CF-R02	●	25	25	3	0.2	52	100	156	Cylindrical

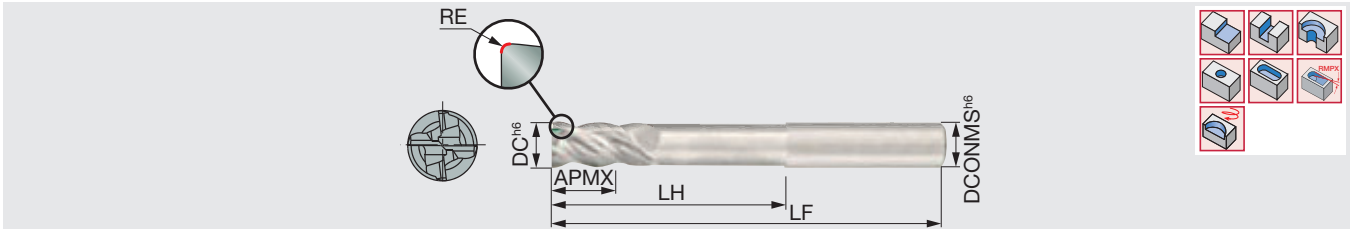
●: Line up

Reference pages: Standard cutting conditions → I051

SOLIDMEISTER VARIABLEMEISTER

TECA**H4**CF-R

4 flute endmill, variable helix and variable pitch, relieved neck type, for aluminium machining (1.5xD, 2xD)

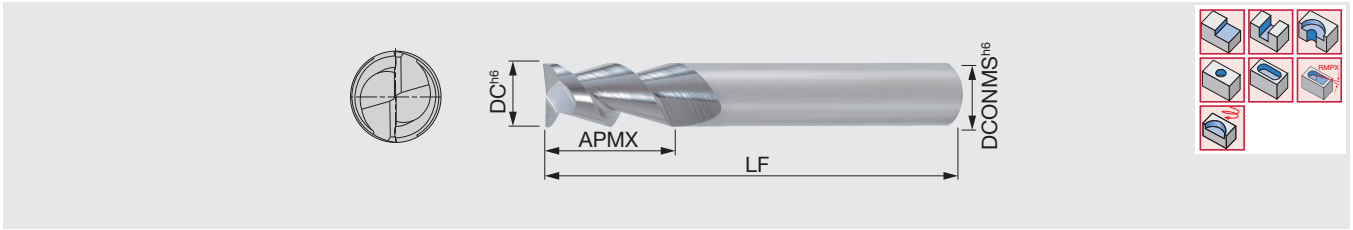


Designation	KS15F	DC	DCONMS	NOF	RE	APMX	LH	LF	Shank
TECA060H4-09/30C06CF-R02	●	6	6	4	0.2	9	30	65	Cylindrical
TECA060H4-12/18C06CF-R02	●	6	6	4	0.2	12	18	57	Cylindrical
TECA080H4-12/40C08CF-R02	●	8	8	4	0.2	12	40	79	Cylindrical
TECA080H4-16/24C08CF-R02	●	8	8	4	0.2	16	24	63	Cylindrical
TECA100H4-15/50C10CF-R02	●	10	10	4	0.2	15	50	92	Cylindrical
TECA100H4-20/30C10CF-R02	●	10	10	4	0.2	20	30	72	Cylindrical
TECA120H4-18/60C12CF-R02	●	12	12	4	0.2	18	60	100	Cylindrical
TECA120H4-24/36C12CF-R02	●	12	12	4	0.2	24	36	83	Cylindrical
TECA160H4-24/80C16CF-R02	●	16	16	4	0.2	24	80	128	Cylindrical
TECA160H4-32/48C16CF-R02	●	16	16	4	0.2	32	48	100	Cylindrical

●: Line up

TECA**B2

2 flute slotting endmill, 45° helix angle, for aluminium machining



Designation	KS15F	DC	DCONMS	NOF	APMX	LF	Shank
TECA040B2-12C06-57	●	4	6	2	12	57	Cylindrical
TECA050B2-14C06-57	●	5	6	2	14	57	Cylindrical
TECA060B2-16C06-57	●	6	6	2	16	57	Cylindrical
TECA080B2-20C08-63	●	8	8	2	20	63	Cylindrical
TECA100B2-22C10-72	●	10	10	2	22	72	Cylindrical
TECA120B2-25C12-83	●	12	12	2	25	83	Cylindrical
TECA160B2-32C16-92	●	16	16	2	32	92	Cylindrical
TECA200B2-38C20-104	●	20	20	2	38	104	Cylindrical

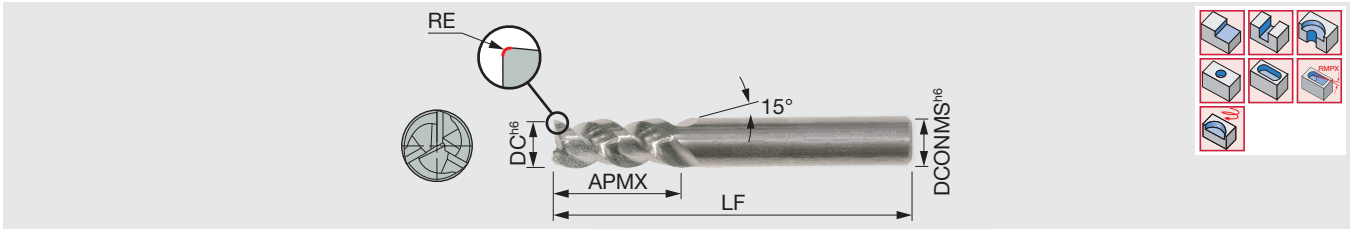
●: Line up

Reference pages: Standard cutting conditions → I051

SOLIDMEISTER

TECA**B3

3 flute endmill, 45° helix angle, for aluminium machining



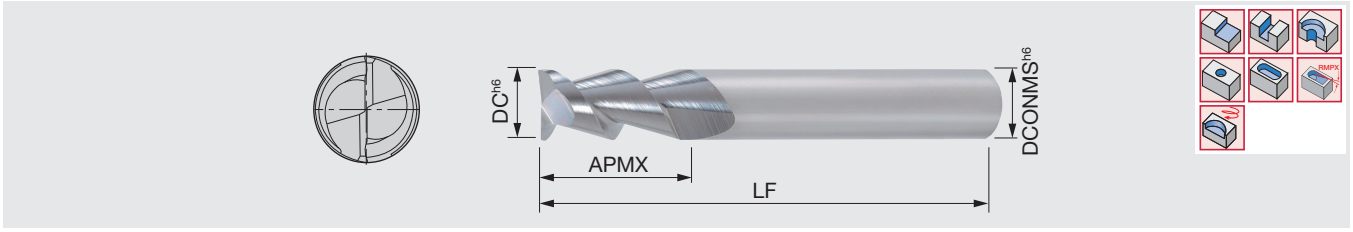
Designation	KS15F	DC	DCONMS	NOF	RE	APMX	LF	Shank
TECA040B3-12C06-57	●	4	6	3	0.1	12	57	Cylindrical
TECA040B3-12W06-57	●	4	6	3	0.1	12	57	Weldon
TECA050B3-14C06-57	●	5	6	3	0.2	14	57	Cylindrical
TECA050B3-14W06-57	●	5	6	3	0.2	14	57	Weldon
TECA060B3-16C06-57	●	6	6	3	0.2	16	57	Cylindrical
TECA060B3-16W06-57	●	6	6	3	0.2	16	57	Weldon
TECA080B3-20C08-63	●	8	8	3	0.2	20	63	Cylindrical
TECA080B3-20C08R30-63	●	8	8	3	3	20	63	Cylindrical
TECA080B3-20W08-63	●	8	8	3	0.2	20	63	Weldon
TECA100B3-22C10-72	●	10	10	3	0.2	22	72	Cylindrical
TECA100B3-22W10-72	●	10	10	3	0.2	22	72	Weldon
TECA100B3-25C10R30-72	●	10	10	3	3	25	72	Cylindrical
TECA100B3-25C10R40-72	●	10	10	3	4	25	72	Cylindrical
TECA120B3-25C12-83	●	12	12	3	0.2	25	83	Cylindrical
TECA120B3-25W12-83	●	12	12	3	0.2	25	83	Weldon
TECA120B3-30C12R30-83	●	12	12	3	3	30	83	Cylindrical
TECA120B3-30C12R40-83	●	12	12	3	4	30	83	Cylindrical
TECA140B3-30C14-83	●	14	14	3	0.2	30	83	Cylindrical
TECA140B3-30W14-83	●	14	14	3	0.2	30	83	Weldon
TECA160B3-32C16-92	●	16	16	3	0.2	32	92	Cylindrical
TECA160B3-32W16-92	●	16	16	3	0.2	32	92	Weldon
TECA200B3-38C20-104	●	20	20	3	0.2	38	104	Cylindrical
TECA200B3-38W20-104	●	20	20	3	0.2	38	104	Weldon

●: Line up

SOLIDMEISTER

TECA**F2

2 flute slotting endmill, 55° helix angle, for aluminium machining



Designation	KS15F	DC	DCONMS	NOF	APMX	LF	Shank
TECA040F2-11C04-50	●	4	4	2	11	50	Cylindrical
TECA060F2-13C06-57	●	6	6	2	13	57	Cylindrical
TECA080F2-20C08-63	●	8	8	2	20	63	Cylindrical
TECA100F2-22C10-72	●	10	10	2	22	72	Cylindrical
TECA120F2-25C12-83	●	12	12	2	25	83	Cylindrical
TECA160F2-32C16-92	●	16	16	2	32	92	Cylindrical
TECA200F2-38C20-104	●	20	20	2	38	104	Cylindrical
TECA250F2-45C25-121	●	25	25	2	45	121	Cylindrical

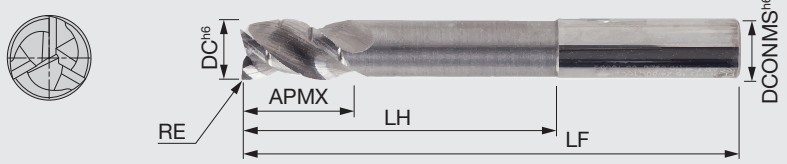
●: Line up

Reference pages: Standard cutting conditions → I051

VARIABLEMEISTER SHREDMEISTER

TEAP**H3**CFR**C

3 flute endmill, variable helix, with chip splitter, relieved neck type, for aluminium machining



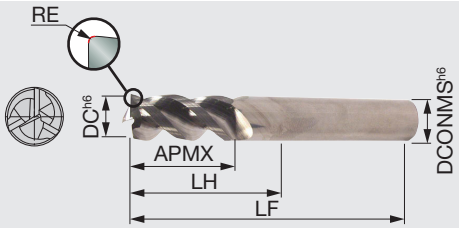
Designation	KS15F	DC	DCONMS	NOF	RE	APMX	LH	LF	Coolant hole	Shank
TEAP100H3-15/50C10CFR02C	●	10	10	3	0.2	15	50	92	With	Cylindrical
TEAP100H3-22/40C10CFR02C	●	10	10	3	0.2	22	40	80	With	Cylindrical
TEAP120H3-18/60C12CFR02C	●	12	12	3	0.2	18	60	100	With	Cylindrical
TEAP120H3-26/48C12CFR02C	●	12	12	3	0.2	26	48	93	With	Cylindrical
TEAP160H3-24/80C16CFR02C	●	16	16	3	0.2	24	80	128	With	Cylindrical
TEAP160H3-34/64C16CFR02C	●	16	16	3	0.2	34	64	115	With	Cylindrical
TEAP200H3-42/80C20CFR02C	●	20	20	3	0.2	42	80	130	With	Cylindrical
TEAP200H3-30/100C20CFR02C	●	20	20	3	0.2	30	100	150	With	Cylindrical

●: Line up

VARIABLEMEISTER

TECA**H3**CFR**C

3 flute endmill, variable helix, center cutting edge, for aluminium machining



Designation	KS15F	DC	DCONMS	NOF	RE	APMX	LH	LF	Coolant hole	Shank
TECA060H3-12/18C06CF-R02C	●	6	6	3	0.2	12	18	57	With	Cylindrical
TECA060H3-12/30C06CF-R02C	●	6	6	3	0.2	12	30	65	With	Cylindrical
TECA080H3-16/24C08CF-R02C	●	8	8	3	0.2	16	24	63	With	Cylindrical
TECA080H3-16/40C08CF-R02C	●	8	8	3	0.2	16	40	79	With	Cylindrical
TECA100H3-20/30C10CF-R02C	●	10	10	3	0.2	20	30	72	With	Cylindrical
TECA100H3-20/50C10CF-R02C	●	10	10	3	0.2	20	50	100	With	Cylindrical
TECA120H3-24/36C12CF-R02C	●	12	12	3	0.2	24	36	83	With	Cylindrical
TECA120H3-24/60C12CF-R02C	●	12	12	3	0.2	24	60	100	With	Cylindrical
TECA160H3-32/48C16CF-R02C	●	16	16	3	0.2	32	48	92	With	Cylindrical
TECA160H3-32/80C16CF-R02C	●	16	16	3	0.2	32	80	128	With	Cylindrical
TECA250H3-50/75C25CF-R02C	●	25	25	3	0.2	50	75	130	With	Cylindrical

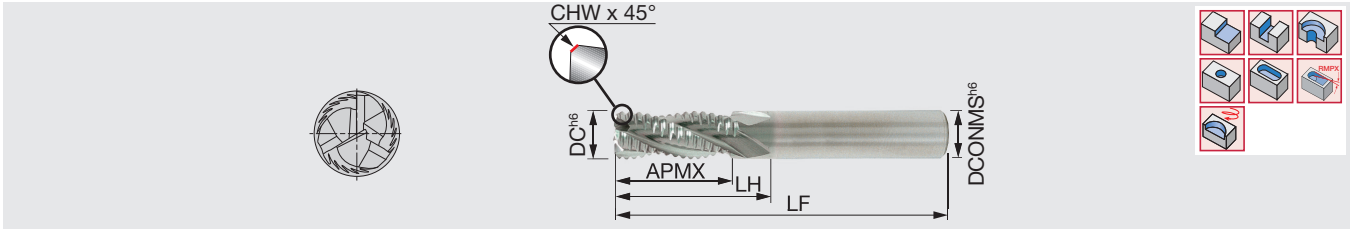
●: Line up

Reference pages: Standard cutting conditions → I051

SHREDMEISTER

TERC**E3

3 flute roughing endmill, 38° helix angle, for aluminium alloy and non-ferrous metal



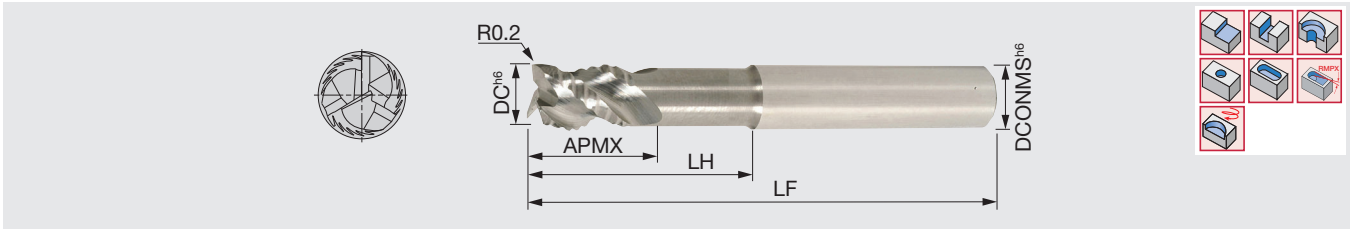
Designation	KS15F	DC	DCONMS	NOF	CHW	APMX	LH	LF	Shank
TERC060E3-13C06-57	●	6	6	3	0.5	13	21	57	Cylindrical
TERC080E3-20C08-63	●	8	8	3	0.5	20	28	63	Cylindrical
TERC100E3-22C10-72	●	10	10	3	0.6	22	30	72	Cylindrical
TERC120E3-25C12-83	●	12	12	3	0.6	25	37	83	Cylindrical
TERC140E3-25C14-83	●	14	14	3	0.6	25	37	83	Cylindrical
TERC160E3-32C16-92	●	16	16	3	0.6	32	44	92	Cylindrical
TERC200E3-38C20-104	●	20	20	3	0.7	38	55	104	Cylindrical
TERC250E3-45C25-121	●	25	25	3	0.7	45	64	121	Cylindrical

●: Line up

SHREDMEISTER

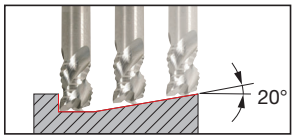
TECR**B3**R

3 flute roughing endmill, 45° helix angle, relieved neck type, for aluminium machining



Designation	KS15F	DC	DCONMS	NOF	APMX	LH	LF	Shank
TECR060B3-09/21C06R02A57	●	6	6	3	9	21	57	Cylindrical
TECR060B3-09/21W06R02A57	●	6	6	3	9	21	57	Weldon
TECR060B3-09/30C06R02A65	●	6	6	3	9	30	65	Cylindrical
TECR060B3-09/30W06R02A65	●	6	6	3	9	30	65	Weldon
TECR080B3-12/27C08R02A63	●	8	8	3	12	27	63	Cylindrical
TECR080B3-12/27W08R02A63	●	8	8	3	12	27	63	Weldon
TECR080B3-12/40C08R02A78	●	8	8	3	12	40	78	Cylindrical
TECR080B3-12/40W08R02A78	●	8	8	3	12	40	78	Weldon
TECR100B3-12/31C10R02A72	●	10	10	3	12	31	72	Cylindrical
TECR100B3-12/31W10R02A72	●	10	10	3	12	31	72	Weldon
TECR100B3-12/50C10R02A100	●	10	10	3	12	50	100	Cylindrical
TECR100B3-12/50W10R02A100	●	10	10	3	12	50	100	Weldon
TECR120B3-12/37C12R02A83	●	12	12	3	12	37	83	Cylindrical
TECR120B3-12/37W12R02A83	●	12	12	3	12	37	83	Weldon
TECR120B3-14/55C12R02A100	●	12	12	3	14	55	100	Cylindrical
TECR120B3-14/55W12R02A100	●	12	12	3	14	55	100	Weldon
TECR160B3-14/43C16R02A92	●	16	16	3	14	43	92	Cylindrical
TECR160B3-14/43W16R02A92	●	16	16	3	14	43	92	Weldon
TECR160B3-18/80C16R02A150	●	16	16	3	18	80	150	Cylindrical
TECR160B3-18/80W16R02A150	●	16	16	3	18	80	150	Weldon
TECR200B3-17/53C20R02A104	●	20	20	3	17	53	104	Cylindrical
TECR200B3-17/53W20R02A104	●	20	20	3	17	53	104	Weldon
TECR200B3-22/80C20R02A150	●	20	20	3	22	80	150	Cylindrical
TECR200B3-22/80W20R02A150	●	20	20	3	22	80	150	Weldon

●: Line up



Rampdown angle

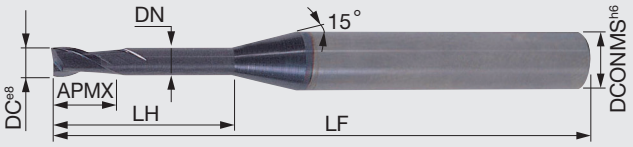
Reference pages: Standard cutting conditions → I051

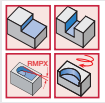
SOLIDMEISTER

TEC**A2

2 flute rib processing endmill, 30° helix angle, for hardened steel up to 55 HRC







Designation	AH750	DC	DCONMS	NOF	DN	APMX	LH	LF	Shank
TEC004A2-006/02C4M45	●	0.4	4	2	0.37	0.6	2	45	Cylindrical
TEC004A2-006/04C4M45	●	0.4	4	2	0.37	0.6	4	45	Cylindrical
TEC005A2-007/02C4M45	●	0.5	4	2	0.45	0.7	2	45	Cylindrical
TEC005A2-007/04C4M45	●	0.5	4	2	0.45	0.7	4	45	Cylindrical
TEC005A2-007/06C4M45	●	0.5	4	2	0.45	0.7	6	45	Cylindrical
TEC006A2-009/02C4M45	●	0.6	4	2	0.55	0.9	2	45	Cylindrical
TEC006A2-009/04C4M45	●	0.6	4	2	0.55	0.9	4	45	Cylindrical
TEC006A2-009/06C4M45	●	0.6	4	2	0.55	0.9	6	45	Cylindrical
TEC007A2-010/02C4M45	●	0.7	4	2	0.65	1	2	45	Cylindrical
TEC008A2-012/04C4M45	●	0.8	4	2	0.75	1.2	4	45	Cylindrical
TEC008A2-012/06C4M45	●	0.8	4	2	0.75	1.2	6	45	Cylindrical
TEC008A2-012/08C4M45	●	0.8	4	2	0.75	1.2	8	45	Cylindrical
TEC009A2-0135/06C4M45	●	0.9	4	2	0.85	1.35	6	45	Cylindrical
TEC009A2-0135/08C4M45	●	0.9	4	2	0.85	1.35	8	45	Cylindrical
TEC009A2-0135/10C4M45	●	0.9	4	2	0.85	1.35	10	45	Cylindrical
TEC010A2-015/04C4M45	●	1	4	2	0.97	1.5	4	45	Cylindrical
TEC010A2-015/06C4M45	●	1	4	2	0.97	1.5	6	45	Cylindrical
TEC010A2-015/08C4M45	●	1	4	2	0.95	1.5	8	45	Cylindrical
TEC010A2-015/10C4M45	●	1	4	2	0.95	1.5	10	45	Cylindrical
TEC010A2-015/12C4M45	●	1	4	2	0.93	1.5	12	45	Cylindrical
TEC010A2-015/16C4M50	●	1	4	2	0.93	1.5	16	50	Cylindrical
TEC012A2-018/06C4M45	●	1.2	4	2	1.17	1.8	6	45	Cylindrical
TEC012A2-018/08C4M45	●	1.2	4	2	1.15	1.8	8	45	Cylindrical
TEC012A2-018/10C4M45	●	1.2	4	2	1.15	1.8	10	45	Cylindrical
TEC012A2-018/16C4M50	●	1.2	4	2	1.13	1.8	16	50	Cylindrical
TEC014A2-021/06C4M45	●	1.4	4	2	1.35	2.1	6	45	Cylindrical
TEC014A2-021/08C4M45	●	1.4	4	2	1.35	2.1	8	45	Cylindrical
TEC014A2-021/10C4M45	●	1.4	4	2	1.35	2.1	10	45	Cylindrical
TEC015A2-023/06C4M45	●	1.5	4	2	1.47	2.3	6	45	Cylindrical
TEC015A2-023/08C4M45	●	1.5	4	2	1.45	2.3	8	45	Cylindrical
TEC015A2-023/10C4M45	●	1.5	4	2	1.45	2.3	10	45	Cylindrical
TEC015A2-023/12C4M45	●	1.5	4	2	1.43	2.3	12	45	Cylindrical
TEC015A2-023/16C4M50	●	1.5	4	2	1.41	2.3	16	50	Cylindrical
TEC015A2-023/18C4M55	●	1.5	4	2	1.41	2.3	18	55	Cylindrical
TEC015A2-023/20C4M55	●	1.5	4	2	1.41	2.3	20	55	Cylindrical
TEC016A2-024/06C4M45	●	1.6	4	2	1.57	2.4	6	45	Cylindrical
TEC016A2-024/08C4M45	●	1.6	4	2	1.55	2.4	8	45	Cylindrical
TEC016A2-024/10C4M45	●	1.6	4	2	1.55	2.4	10	45	Cylindrical
TEC016A2-024/18C4M55	●	1.6	4	2	1.53	2.4	18	55	Cylindrical
TEC016A2-024/20C4M55	●	1.6	4	2	1.53	2.4	20	55	Cylindrical
TEC016A2-024/26C4M60	●	1.6	4	2	1.53	2.4	26	60	Cylindrical
TEC018A2-027/06C4M45	●	1.8	4	2	1.77	2.7	6	45	Cylindrical
TEC018A2-027/08C4M45	●	1.8	4	2	1.75	2.7	8	45	Cylindrical
TEC018A2-027/10C4M45	●	1.8	4	2	1.75	2.7	10	45	Cylindrical
TEC018A2-027/12C4M45	●	1.8	4	2	1.73	2.7	12	45	Cylindrical
TEC020A2-030/06C4M45	●	2	4	2	1.97	3	6	45	Cylindrical
TEC020A2-030/08C4M45	●	2	4	2	1.95	3	8	45	Cylindrical
TEC020A2-030/10C4M45	●	2	4	2	1.95	3	10	45	Cylindrical
TEC020A2-030/12C4M45	●	2	4	2	1.93	3	12	45	Cylindrical
TEC020A2-030/16C4M50	●	2	4	2	1.91	3	16	50	Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I051

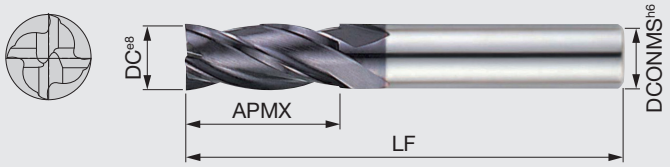
Designation	AH750	DC	DCONMS	NOF	DN	APMX	LH	LF	Shank
TEC020A2-030/20C4M55	●	2	4	2	1.89	3	20	55	Cylindrical
TEC020A2-030/30C4M70	●	2	4	2	1.89	3	30	70	Cylindrical
TEC025A2-037/08C4M45	●	2.5	4	2	2.4	3.7	8	45	Cylindrical
TEC025A2-037/10C4M45	●	2.5	4	2	2.4	3.7	10	45	Cylindrical
TEC025A2-037/12C4M45	●	2.5	4	2	2.4	3.7	12	45	Cylindrical
TEC025A2-037/16C4M55	●	2.5	4	2	2.4	3.7	16	55	Cylindrical
TEC025A2-037/20C4M60	●	2.5	4	2	2.4	3.7	20	60	Cylindrical
TEC025A2-037/30C4M80	●	2.5	4	2	2.4	3.7	30	80	Cylindrical
TEC030A2-045/08C6M45	●	3	6	2	2.85	4.5	8	45	Cylindrical
TEC030A2-045/10C6M45	●	3	6	2	2.85	4.5	10	45	Cylindrical
TEC030A2-045/12C6M45	●	3	6	2	2.85	4.5	12	45	Cylindrical
TEC030A2-045/16C6M55	●	3	6	2	2.85	4.5	16	55	Cylindrical
TEC030A2-045/20C6M60	●	3	6	2	2.85	4.5	20	60	Cylindrical
TEC030A2-045/30C6M70	●	3	6	2	2.85	4.5	30	70	Cylindrical
TEC030A2-045/40C6M90	●	3	6	2	2.85	4.5	40	90	Cylindrical

●: Line up

SOLIDMEISTER

TEC**A4

4 flute endmill, 30° helix angle, for hardened steel up to 65 HRC



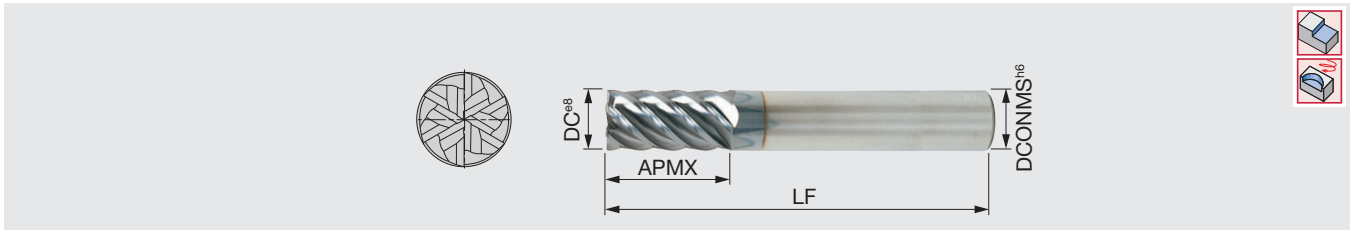
Designation	AH750	DC	DCONMS	NOF	APMX	LF	Shank
TEC040A4-11C06-50	●	4	6	4	11	50	Cylindrical
TEC050A4-13C06-50	●	5	6	4	13	50	Cylindrical
TEC060A4-13C06-50	●	6	6	4	13	50	Cylindrical
TEC070A4-16C08-63	●	7	8	4	16	63	Cylindrical
TEC080A4-19C08-63	●	8	8	4	19	63	Cylindrical
TEC090A4-19C10-72	●	9	10	4	19	72	Cylindrical
TEC100A4-22C10-72	●	10	10	4	22	72	Cylindrical
TEC120A4-26C12-73	●	12	12	4	26	73	Cylindrical
TEC140A4-26C14-83	●	14	14	4	26	83	Cylindrical
TEC160A4-32C16-92	●	16	16	4	32	92	Cylindrical
TEC180A4-32C18-100	●	18	18	4	32	100	Cylindrical
TEC200A4-38C20-104	●	20	20	4	38	104	Cylindrical

●: Line up

Reference pages: Standard cutting conditions → I051

TECH**B6

6 flute endmill, 45° helix angle, for finishing operation



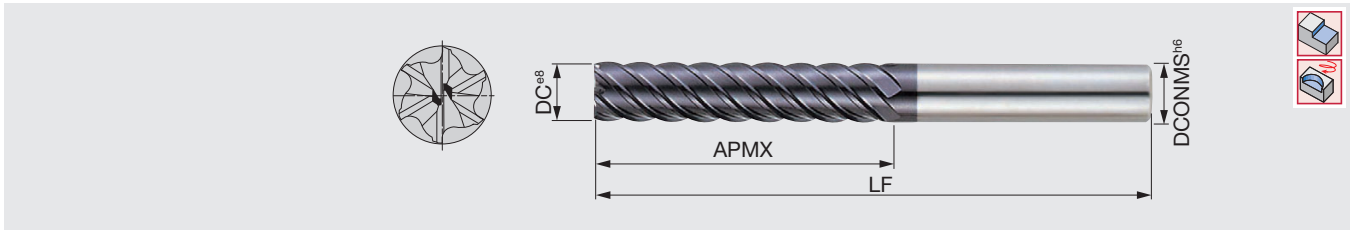
Designation	AH725	AH750	DC	DCONMS	NOF	APMX	LF	Shank
TECH060B6-16C06-57	●	●	6	6	6	16	57	Cylindrical
TECH060B6-16W06-57	●		6	6	6	16	57	Weldon
TECH080B6-20C08-63	●	●	8	8	6	20	63	Cylindrical
TECH080B6-20W08-63	●		8	8	6	20	63	Weldon
TECH100B6-22C10-72	●	●	10	10	6	22	72	Cylindrical
TECH100B6-22W10-72	●		10	10	6	22	72	Weldon
TECH120B6-25C12-83	●	●	12	12	6	25	83	Cylindrical
TECH120B6-25W12-83	●		12	12	6	25	83	Weldon
TECH160B6-32C16-92	●	●	16	16	6	32	92	Cylindrical
TECH160B6-32W16-92	●		16	16	6	32	92	Weldon
TECH200B6-38C20-104	●	●	20	20	6	38	104	Cylindrical
TECH200B6-38W20-104	●		20	20	6	38	104	Weldon

● : Line up

SOLIDMEISTER

TEC**B6

6 flute endmill, 45° helix angle, extra long neck type, for hardened steel up to 65 HRC



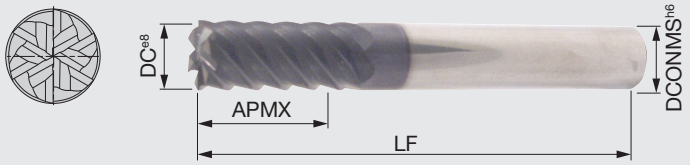
Designation	AH750	DC	DCONMS	NOF	APMX	LF	Shank
TEC060B6-26C06-70	●	6	6	6	26	70	Cylindrical
TEC080B6-36C08-90	●	8	8	6	36	90	Cylindrical
TEC100B6-46C10-100	●	10	10	6	46	100	Cylindrical
TEC120B6-56C12-110	●	12	12	6	56	110	Cylindrical
TEC160B6-66C16-130	●	16	16	6	66	130	Cylindrical
TEC200B6-76C20-140	●	20	20	6	76	140	Cylindrical
TEC250B6-92C25-180	●	25	25	6	92	180	Cylindrical

● : Line up

Reference pages: Standard cutting conditions → I051

TEC**D6

6 flute endmill, 50° helix angle, for hardened steel up to 65 HRC



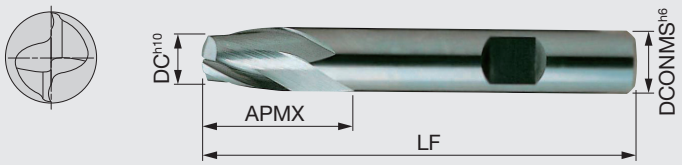
Designation	AH750	DC	DCONMS	NOF	APMX	LF	Shank
TEC060D6-13C06H57	●	6	6	6	13	57	Cylindrical
TEC080D6-20C08H63	●	8	8	6	20	63	Cylindrical
TEC100D6-22C10H72	●	10	10	6	22	72	Cylindrical
TEC120D6-25C12H83	●	12	12	6	25	83	Cylindrical
TEC140D6-30C14H83	●	14	14	6	30	83	Cylindrical
TEC160D6-32C16H92	●	16	16	6	32	92	Cylindrical
TEC200D6-38C20H104	●	20	20	6	38	104	Cylindrical

●: Line up

ECOMEISTER

TEC**A2**E

2 flute endmill, 30° helix angle, short type



Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEC020A2-03W06-E50	●	2	6	2	3	50	Weldon
TEC030A2-04W06-E50	●	3	6	2	4	50	Weldon
TEC040A2-05W06-E54	●	4	6	2	5	54	Weldon
TEC045A2-05W06-E54	●	4.5	6	2	5	54	Weldon
TEC050A2-06W06-E54	●	5	6	2	6	54	Weldon
TEC060A2-07W06-E54	●	6	6	2	7	54	Weldon
TEC080A2-09W08-E58	●	8	8	2	9	58	Weldon
TEC100A2-11W10-E66	●	10	10	2	11	66	Weldon
TEC180A2-18W18-E84	●	18	18	2	18	84	Weldon
TEC200A2-20W20-E92	●	20	20	2	20	92	Weldon

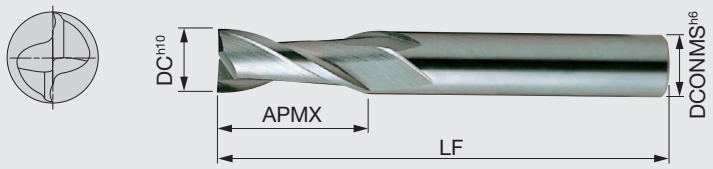
●: Line up

Reference pages: Standard cutting conditions → I051

ECOMEISTER

TEC**A2**E

2 flute endmill, 30° helix angle



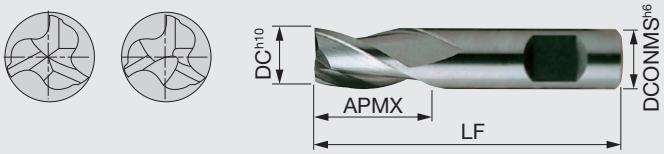
Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEC010A2-03C04-E50	●	1	4	2	3	50	Cylindrical
TEC015A2-045C04-E50	●	1.5	4	2	4.5	50	Cylindrical
TEC020A2-08C02-E32	●	2	2	2	8	32	Cylindrical
TEC025A2-08C025-E32	●	2.5	2.5	2	8	32	Cylindrical
TEC030A2-12C03-E38	●	3	3	2	12	38	Cylindrical
TEC035A2-12C035-E32	●	3.5	3.5	2	12	32	Cylindrical
TEC040A2-12C04-E50	●	4	4	2	12	50	Cylindrical
TEC050A2-14C05-E50	●	5	5	2	14	50	Cylindrical
TEC055A2-16C055-E50	●	5.5	5.5	2	16	50	Cylindrical
TEC060A2-16C06-E50	●	6	6	2	16	50	Cylindrical
TEC070A2-20C07-E60	●	7	7	2	20	60	Cylindrical
TEC080A2-20C08-E63	●	8	8	2	20	63	Cylindrical
TEC090A2-20C09-E60	●	9	9	2	20	60	Cylindrical
TEC100A2-22C10-E72	●	10	10	2	22	72	Cylindrical
TEC120A2-22C12-E73	●	12	12	2	22	73	Cylindrical
TEC140A2-25C14-E75	●	14	14	2	25	75	Cylindrical
TEC160A2-25C16-E92	●	16	16	2	25	92	Cylindrical
TEC200A2-32C20-E100	●	20	20	2	32	100	Cylindrical

● : Line up

ECOMEISTER

TEC**A/E3**E

3 flute endmill, 30° or 38° helix angle, short type



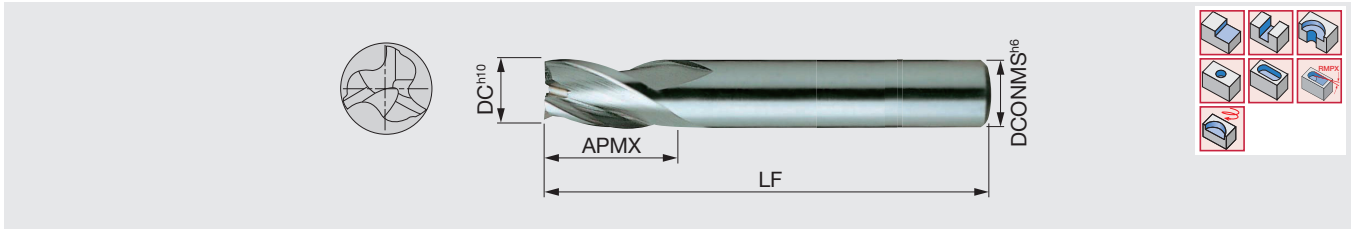
Designation	AH725	DC	DCONMS	NOF	APMX	LF	FHA	Shank
TEC020E3-04C06-E35	●	2	6	3	4	35	38°	Cylindrical
TEC025E3-05C06-E36	●	2.5	6	3	5	36	38°	Cylindrical
TEC030E3-05C06-E36	●	3	6	3	5	36	38°	Cylindrical
TEC035A3-06W06-E37	●	3.5	6	3	6	37	30°	Weldon
TEC040E3-07C06-E39	●	4	6	3	7	39	38°	Cylindrical
TEC045A3-08W06-E38	●	4.5	6	3	8	38	30°	Weldon
TEC050A3-08C06-E39	●	5	6	3	8	39	30°	Cylindrical
TEC055A3-08W06-E39	●	5.5	6	3	8	39	30°	Weldon
TEC060E3-08C06-E39	●	6	6	3	8	39	38°	Cylindrical
TEC070A3-10W08-E42	●	7	8	3	10	42	30°	Weldon
TEC080E3-11C08-E43	●	8	8	3	11	43	38°	Cylindrical
TEC090A3-11W10-E48	●	9	10	3	11	48	30°	Weldon
TEC100E3-13C10-E50	●	10	10	3	13	50	38°	Cylindrical

● : Line up

Reference pages: Standard cutting conditions → I051

TEC**A/E3**E

3 flute endmill, 30° or 38° helix angle



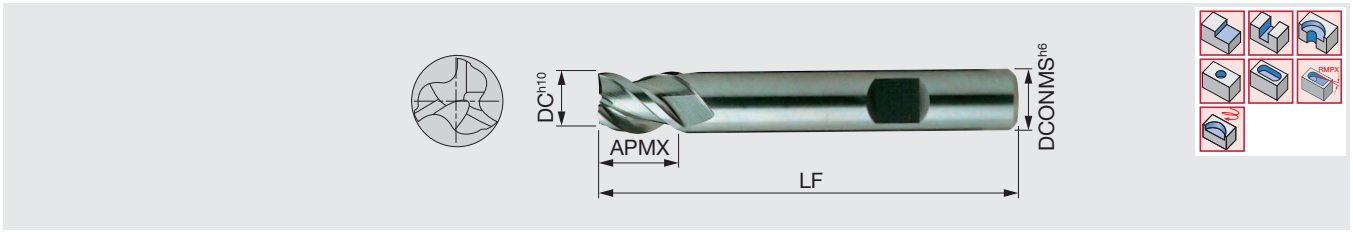
Designation	AH725	DC	DCONMS	NOF	APMX	LF	FHA	Shank
TEC020E3-08C02-E32	●	2	2	3	8	32	38°	Cylindrical
TEC030E3-12C03-E38	●	3	3	3	12	38	38°	Cylindrical
TEC040E3-12C04-E50	●	4	4	3	12	50	38°	Cylindrical
TEC050E3-14C05-E50	●	5	5	3	14	50	38°	Cylindrical
TEC060E3-16C06-E50	●	6	6	3	16	50	38°	Cylindrical
TEC070E3-20C07-E60	●	7	7	3	20	60	38°	Cylindrical
TEC080E3-20C08-E63	●	8	8	3	20	63	38°	Cylindrical
TEC090A3-20C09-E60	●	9	9	3	20	60	30°	Cylindrical
TEC100E3-22C10-E72	●	10	10	3	22	72	38°	Cylindrical
TEC120E3-22C12-E73	●	12	12	3	22	73	38°	Cylindrical
TEC140A3-25C14-E75	●	14	14	3	25	75	30°	Cylindrical
TEC160A3-25C16-E75	●	16	16	3	25	75	30°	Cylindrical

●: Line up

ECOMEISTER

TEC**B3**W

3 flute endmill, 45° helix angle, short type



Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEC020B3-03W06-50	●	2	6	3	3	50	Weldon
TEC030B3-04W06-50	●	3	6	3	4	50	Weldon
TEC040B3-05W06-54	●	4	6	3	5	54	Weldon
TEC050B3-06W06-54	●	5	6	3	6	54	Weldon
TEC060B3-07W06-54	●	6	6	3	7	54	Weldon
TEC080B3-09W08-58	●	8	8	3	9	58	Weldon
TEC100B3-11W10-66	●	10	10	3	11	66	Weldon
TEC120B3-12W12-73	●	12	12	3	12	73	Weldon
TEC140B3-14W14-75	●	14	14	3	14	75	Weldon
TEC160B3-16W16-82	●	16	16	3	16	82	Weldon
TEC200B3-20W20-92	●	20	20	3	20	92	Weldon

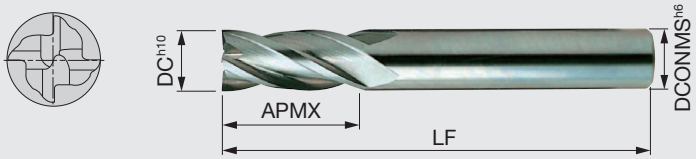
●: Line up

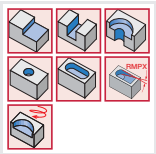
Reference pages: Standard cutting conditions → I051

ECOMEISTER

TEC**A4**E

4 flute endmill, 30° helix angle



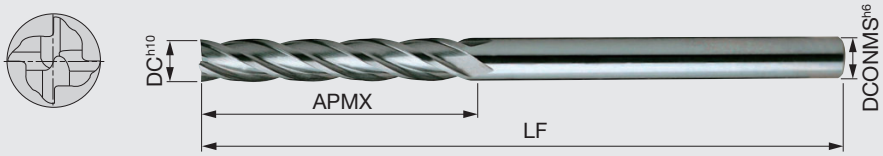


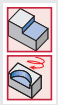
Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEC020A4-08C02-E32	●	2	2	4	8	32	Cylindrical
TEC025A4-08C025-E32	●	2.5	2.5	4	8	32	Cylindrical
TEC030A4-12C03-E38	●	3	3	4	12	38	Cylindrical
TEC040A4-12C04-E50	●	4	4	4	12	50	Cylindrical
TEC050A4-14C05-E50	●	5	5	4	14	50	Cylindrical
TEC055A4-16C055-E50	●	5.5	5.5	4	16	50	Cylindrical
TEC060A4-16C06-E50	●	6	6	4	16	50	Cylindrical
TEC070A4-20C07-E60	●	7	7	4	20	60	Cylindrical
TEC080A4-20C08-E60	●	8	8	4	20	60	Cylindrical
TEC090A4-20C09-E60	●	9	9	4	20	60	Cylindrical
TEC100A4-22C10-E72	●	10	10	4	22	72	Cylindrical
TEC120A4-22C12-E73	●	12	12	4	22	73	Cylindrical
TEC140A4-25C14-E83	●	14	14	4	25	83	Cylindrical
TEC160A4-25C16-E82	●	16	16	4	25	82	Cylindrical
TEC200A4-32C20-E104	●	20	20	4	32	104	Cylindrical

● : Line up

TEC**A4**E

4 flute endmill, 30° helix angle, extra long neck type





Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEC030A4-30C03-E75	●	3	3	4	30	75	Cylindrical
TEC040A4-30C04-E75	●	4	4	4	30	75	Cylindrical
TEC050A4-40C05-E100	●	5	5	4	40	100	Cylindrical
TEC060A4-50C06-E150	●	6	6	4	50	150	Cylindrical
TEC080A4-50C08-E150	●	8	8	4	50	150	Cylindrical
TEC100A4-60C10-E150	●	10	10	4	60	150	Cylindrical
TEC120A4-75C12-E150	●	12	12	4	75	150	Cylindrical
TEC140A4-65C14-E150	●	14	14	4	65	150	Cylindrical
TEC160A4-65C16-E150	●	16	16	4	65	150	Cylindrical
TEC200A4-65C20-E150	●	20	20	4	65	150	Cylindrical

● : Line up

Reference pages: Standard cutting conditions → I051

SOLIDMEISTER
STANDARD CUTTING CONDITIONS

Slotting / Roughing

ISO	Workpiece material	Vc (m/min)	fz (mm/t) ø6 - ø8	fz (mm/t) ø10 - ø12	fz (mm/t) ø16 - ø20	ap (Slotting)
P	Carbon steel	140 - 180	0.025 - 0.035	0.03 - 0.045	0.04 - 0.055	1xD
P	Alloy steel	70 - 150	0.02 - 0.03	0.03 - 0.045	0.04 - 0.055	1xD
M	Stainless steel	60 - 100	0.02 - 0.035	0.03 - 0.04	0.035 - 0.045	0.5xD
K	Cast iron	80 - 180	0.02 - 0.04	0.03 - 0.05	0.04 - 0.06	1xD
N	Aluminium alloy	300 - 750	0.02 - 0.04	0.03 - 0.05	0.03 - 0.07	1xD
S	Titanium alloy	20 - 50	0.02 - 0.03	0.025 - 0.04	0.03 - 0.07	0.25xD
H	Hardened steel	20 - 30	0.01 - 0.015	0.02 - 0.045	0.04 - 0.05	0.2xD

Semi-finishing / Shouldering (ae = 0.1-0.4 x D)

ISO	Workpiece material	Vc (m/min)	fz (mm/t) ø6 - ø8	fz (mm/t) ø10 - ø12	fz (mm/t) ø16 - ø20	ap
P	Carbon steel	150 - 220	0.03 - 0.06	0.06 - 0.07	0.07 - 0.08	2xD
P	Alloy steel	70 - 160	0.02 - 0.05	0.04 - 0.065	0.045 - 0.07	2xD
M	Stainless steel	80 - 130	0.025 - 0.04	0.035 - 0.045	0.04 - 0.05	2xD
K	Cast iron	130 - 220	0.03 - 0.05	0.04 - 0.06	0.06 - 0.07	2xD
N	Aluminium alloy	350 - 850	0.04 - 0.06	0.06 - 0.08	0.08 - 0.1	2xD
S	Titanium alloy	40 - 60	0.03 - 0.04	0.035 - 0.05	0.05 - 0.08	2xD
H	Hardened steel	30 - 70	0.015 - 0.035	0.035 - 0.055	0.045 - 0.06	2xD

Finishing (feed rate depending on required accuracy) / High feed machining at low depth of cut (ae = 0.05-0.1 x D)

ISO	Workpiece material	Vc (m/min)	fz (mm/t) ø6 - ø8	fz (mm/t) ø10 - ø12	fz (mm/t) ø16 - ø20	ap
P	Carbon steel	170 - 280	0.05 - 0.07	0.07 - 0.08	0.08 - 0.1	apmax
P	Alloy steel	110 - 220	0.05 - 0.07	0.07 - 0.08	0.08 - 0.1	apmax
M	Stainless steel	100 - 160	0.03 - 0.045	0.04 - 0.05	0.045 - 0.06	apmax
K	Cast iron	180 - 280	0.035 - 0.06	0.06 - 0.065	0.065 - 0.08	apmax
N	Aluminium alloy	350 - 900	0.045 - 0.07	0.07 - 0.1	0.1 - 0.15	apmax
S	Titanium alloy	50 - 70	0.035 - 0.05	0.04 - 0.06	0.06 - 0.085	apmax
H	Hardened steel	40 - 80	0.02 - 0.04	0.04 - 0.06	0.05 - 0.07	apmax

- When the depth of cut (ae) is closer to the upper limit, please start with a lower limit value of cutting speed (Vc).
- The items with long slot (2xD or over) and the items with 5 cutting edges or more are not suitable for slotting operation.
- When using AH750, reducing cutting speed by 20 to 30% is effective for extending tool life.
- While air blow is recommended, water-soluble coolant will be good for stainless steel, titanium alloy, and heat-resistant alloy.
- When chattering occurs with low rigid machines or settings, reduce cutting speed and feed at an equal rate.
- When chattering occurs with long tool overhang, reduce cutting speed and feed by 20 to 40% (Variable/FinishMeister is recommended for such operations).
- In slotting of high hardened steel, heat-resistant alloy, and some types of stainless steel, start with ap=0.2xD and increase the value gradually while checking the status of the operation.
- In shoulder milling of high hardened steel and heat-resistant alloy, the cutting width should be started at ae=0.05xD and increase the value gradually while checking the status of the operation.
- The items with many cutting edges are good for finishing and high feed machining of small width of cut.
- VariableMeister is suitable for machining large depth of cut.
- Low feed in finishing is recommended for good surface roughness.

VARIABLEMEISTER

TEB**E4L**CF

4 flute chatter dampening ball nose endmill (2xD), 38°helix angle, variable pitch, relieved neck type, for high hardened metal



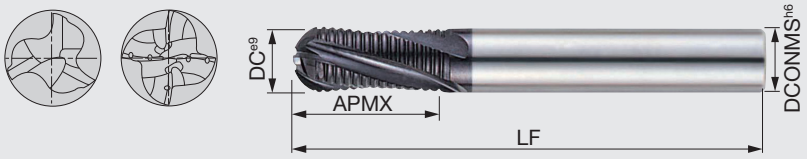
Designation	AH710	DC	DCONMS	NOF	APMX	LH	LF	Shank
TEB030E4L-06/09C06CFH57	●	3	6	4	6	9	57	Cylindrical
TEB040E4L-08/12C06CFH57	●	4	6	4	8	12	57	Cylindrical
TEB050E4L-10/15C06CFH57	●	5	6	4	10	15	57	Cylindrical
TEB060E4L-12/18C06CFH57	●	6	6	4	12	18	57	Cylindrical
TEB080E4L-16/24C08CFH63	●	8	8	4	16	24	63	Cylindrical
TEB100E4L-20/30C10CFH72	●	10	10	4	20	30	72	Cylindrical
TEB120E4L-24/36C12CFH83	●	12	12	4	24	36	83	Cylindrical
TEB160E4L-32/48C16CFH92	●	16	16	4	32	48	92	Cylindrical

●: Line up

SHREDMEISTER

TEBRF**T3/4

3 or 4 flute ball nose roughing endmill, 20° helix angle, long edge type, for hardened steel up to 55 HRC



Designation	AH750	DC	DCONMS	NOF	RE	APMX	LF	Shank
TEBRF060T3-16C06M57	●	6	6	3	3	16	57	Cylindrical
TEBRF080T3-16C08M63	●	8	8	3	4	16	63	Cylindrical
TEBRF100T4-22C10M72	●	10	10	4	5	22	72	Cylindrical
TEBRF120T4-26C12M83	●	12	12	4	6	26	83	Cylindrical
TEBRF140T4-26C14M83	●	14	14	4	7	26	83	Cylindrical
TEBRF160T4-32C16M92	●	16	16	4	8	32	92	Cylindrical
TEBRF180T4-32C18M92	●	18	18	4	9	32	92	Cylindrical
TEBRF200T4-38C20M104	●	20	20	4	10	38	104	Cylindrical

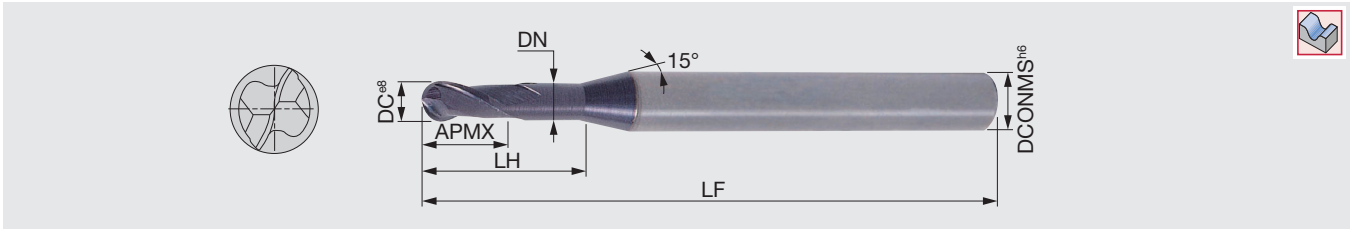
●: Line up

Reference pages: Standard cutting conditions → I059

SOLIDMEISTER

TEB**A2-**C**M

2 flute ball nose rib processing endmill, 30° helix angle, for hardened steel up to 55 HRC



Designation	AH750	DC	DCONMS	NOF	DN	APMX	LH	LF	Shank
TEB004A2-006/02C4M45	●	0.4	4	2	0.36	0.6	2	45	Cylindrical
TEB004A2-006/03C4M45	●	0.4	4	2	0.36	0.6	3	45	Cylindrical
TEB005A2-007/02C4M45	●	0.5	4	2	0.45	0.7	2	45	Cylindrical
TEB005A2-007/04C4M45	●	0.5	4	2	0.45	0.7	4	45	Cylindrical
TEB005A2-007/06C4M45	●	0.5	4	2	0.45	0.7	6	45	Cylindrical
TEB006A2-009/02C4M45	●	0.6	4	2	0.55	0.9	2	45	Cylindrical
TEB006A2-009/04C4M45	●	0.6	4	2	0.55	0.9	4	45	Cylindrical
TEB008A2-012/04C4M45	●	0.8	4	2	0.75	1.2	4	45	Cylindrical
TEB008A2-012/06C4M45	●	0.8	4	2	0.75	1.2	6	45	Cylindrical
TEB010A2-015/04C4M45	●	1	4	2	0.97	1.5	4	45	Cylindrical
TEB010A2-015/06C4M45	●	1	4	2	0.97	1.5	6	45	Cylindrical
TEB010A2-015/08C4M45	●	1	4	2	0.95	1.5	8	45	Cylindrical
TEB010A2-015/10C4M45	●	1	4	2	0.95	1.5	10	45	Cylindrical
TEB010A2-015/12C4M45	●	1	4	2	0.93	1.5	12	45	Cylindrical
TEB010A2-015/16C4M50	●	1	4	2	0.93	1.5	16	50	Cylindrical
TEB012A2-018/08C4M45	●	1.2	4	2	1.17	1.8	8	45	Cylindrical
TEB012A2-018/12C4M45	●	1.2	4	2	1.13	1.8	12	45	Cylindrical
TEB014A2-021/08C4M45	●	1.4	4	2	1.35	2.1	8	45	Cylindrical
TEB014A2-021/16C4M50	●	1.4	4	2	1.31	2.1	16	50	Cylindrical
TEB015A2-023/06C4M45	●	1.5	4	2	1.47	2.3	6	45	Cylindrical
TEB015A2-023/08C4M45	●	1.5	4	2	1.45	2.3	8	45	Cylindrical
TEB015A2-023/10C4M45	●	1.5	4	2	1.45	2.3	10	45	Cylindrical
TEB015A2-023/12C4M45	●	1.5	4	2	1.43	2.3	12	45	Cylindrical
TEB015A2-023/20C4M55	●	1.5	4	2	1.39	2.3	20	55	Cylindrical
TEB016A2-024/08C4M45	●	1.6	4	2	1.55	2.4	8	45	Cylindrical
TEB016A2-024/12C4M45	●	1.6	4	2	1.53	2.4	12	45	Cylindrical
TEB018A2-027/08C4M45	●	1.8	4	2	1.75	2.7	8	45	Cylindrical
TEB018A2-027/12C4M45	●	1.8	4	2	1.73	2.7	12	45	Cylindrical
TEB018A2-027/16C4M50	●	1.8	4	2	1.71	2.7	16	50	Cylindrical
TEB020A2-030/06C4M45	●	2	4	2	1.97	3	6	45	Cylindrical
TEB020A2-030/10C4M45	●	2	4	2	1.93	3	10	45	Cylindrical
TEB020A2-030/12C4M50	●	2	4	2	1.93	3	12	50	Cylindrical
TEB020A2-030/16C4M50	●	2	4	2	1.91	3	16	50	Cylindrical
TEB020A2-030/20C4M55	●	2	4	2	1.89	3	20	55	Cylindrical
TEB020A2-030/30C4M70	●	2	4	2	1.89	3	30	70	Cylindrical
TEB030A2-045/08C6M50	●	3	6	2	2.85	4.5	8	50	Cylindrical
TEB030A2-045/10C6M50	●	3	6	2	2.85	4.5	10	50	Cylindrical
TEB030A2-045/12C6M50	●	3	6	2	2.85	4.5	12	50	Cylindrical
TEB030A2-045/16C6M55	●	3	6	2	2.85	4.5	16	55	Cylindrical
TEB030A2-045/20C6M60	●	3	6	2	2.85	4.5	20	60	Cylindrical
TEB030A2-045/30C6M70	●	3	6	2	2.85	4.5	30	70	Cylindrical
TEB030A2-045/35C6M80	●	3	6	2	2.85	4.5	35	80	Cylindrical

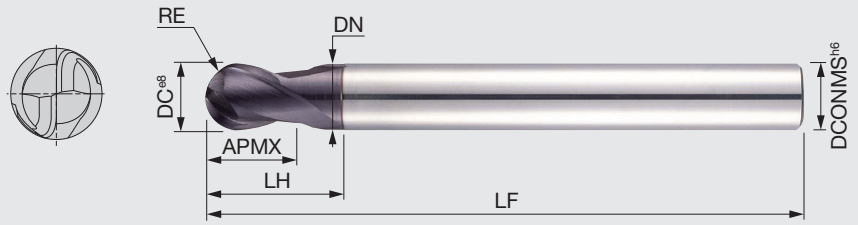
●: Line up

Reference pages: Standard cutting conditions → I059

SOLIDMEISTER

TEB**A2-**C**H

2 flute ball nose endmill, 30° helix angle, short type, for hardened steel with 55 to 70 HRC



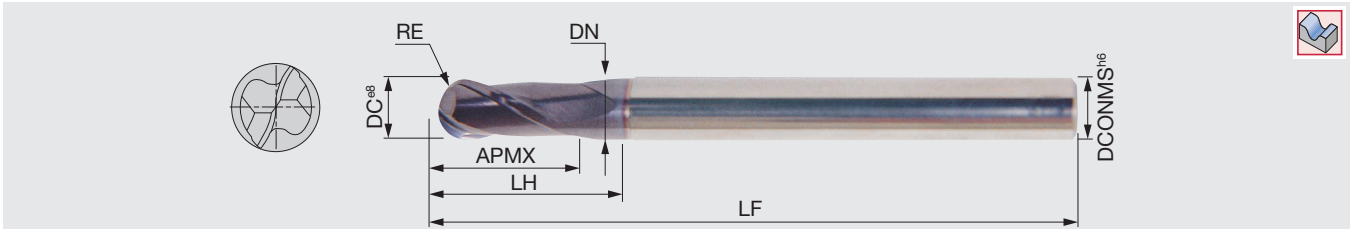
Designation	AH750	DC	DCONMS	NOF	DN	RE±0.01	APMX	LH	LF	Shank
TEB010A2-01/02C04H50	●	1	4	2	0.95	0.5	1	2.2	50	Cylindrical
TEB020A2-02/04C06H50	●	2	6	2	1.9	1	2	4	50	Cylindrical
TEB030A2-03/06C06H60	●	3	6	2	2.9	1.5	3	6	60	Cylindrical
TEB040A2-04/08C06H70	●	4	6	2	3.9	2	4	8	70	Cylindrical
TEB050A2-05/10C06H80	●	5	6	2	4.9	2.5	5	10	80	Cylindrical
TEB060A2-06/12C06H90	●	6	6	2	5.9	3	6	12	90	Cylindrical
TEB080A2-08/16C08H100	●	8	8	2	7.9	4	8	16	100	Cylindrical
TEB100A2-10/20C10H100	●	10	10	2	9.9	5	10	20	100	Cylindrical
TEB120A2-12/24C12H110	●	12	12	2	11.9	6	12	24	110	Cylindrical
TEB200A2-20/40C20H160	●	20	20	2	19.8	10	20	40	160	Cylindrical

● : Line up

Reference pages: Standard cutting conditions → I059

TEB**A2-**C**M...

2 flute ball nose rib processing endmill, 30° helix angle, for hardened steel up to 65 HRC

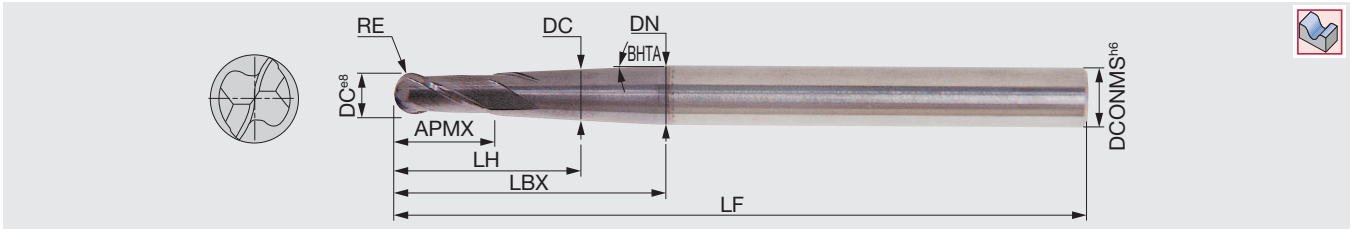


Designation	AH750	DC	DCONMS	NOF	DN	RE	APMX	LH	LF	Shank
TEB030A2-08C03M100	●	3	3	2	-	1.5	8	-	100	Cylindrical
TEB030A2-08C06M70	●	3	6	2	-	1.5	8	-	70	Cylindrical
TEB040A2-08C06M70	●	4	6	2	-	2	8	-	70	Cylindrical
TEB040A2-08C04M100	●	4	4	2	-	2	8	-	100	Cylindrical
TEB050A2-12C06M80	●	5	6	2	-	2.5	12	-	80	Cylindrical
TEB060A2-10C06M120	●	6	6	2	-	3	10	-	120	Cylindrical
TEB060A2-12/22C06M80	●	6	6	2	5.8	3	12	22	80	Cylindrical
TEB080A2-14/27C08M90	●	8	8	2	7.8	4	14	27	90	Cylindrical
TEB100A2-18/31C10M100	●	10	10	2	9.8	5	18	31	100	Cylindrical
TEB120A2-22/35C12M110	●	12	12	2	11.8	6	22	35	110	Cylindrical
TEB160A2-30/50C16M140	●	16	16	2	15.8	8	30	50	140	Cylindrical

●: Line up

TEB**A2-**C**M...

2 flute ball nose endmill, tapered neck type, for hardened steel up to 65 HRC



Designation	AH750	DC	DCONMS	NOF	DN	RE±0.01	APMX	LH	LBX	BHTA	LF	Shank
TEB010A2-02/04/3.0C06M80	●	1	6	2	5	0.5	2	4	42	3°	80	Cylindrical
TEB020A2-04/06/3.0C06M80	●	2	6	2	5.7	1	4	6	41	3°	80	Cylindrical
TEB030A2-06/08/3.0C06M70	●	3	6	2	5.6	1.5	6	8	32	3°	70	Cylindrical
TEB040A2-08/10/1.5C06M90	●	4	6	2	6	2	8	10	49	1.5°	90	Cylindrical
TEB050A2-10/12/1.5C08M110	●	5	8	2	7.6	2.5	10	12	61	1.5°	110	Cylindrical
TEB060A2-12/15/1.5C08M110	●	6	8	2	8	3	12	15	53	1.5°	110	Cylindrical
TEB080A2-14/17/1.5C10M120	●	8	10	2	10	4	14	17	55	1.5°	120	Cylindrical
TEB100A2-18/21/1.5C12M130	●	10	12	2	12	5	18	21	59	1.5°	130	Cylindrical

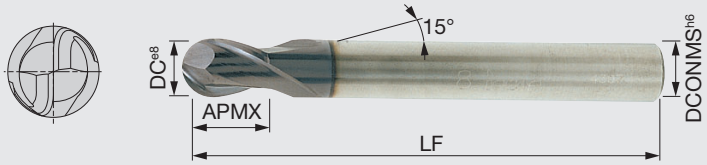
●: Line up

Reference pages: Standard cutting conditions → I059

SOLIDMEISTER

TEB**A2-**C**-...

2 flute ball nose endmill, 30° helix angle, short type



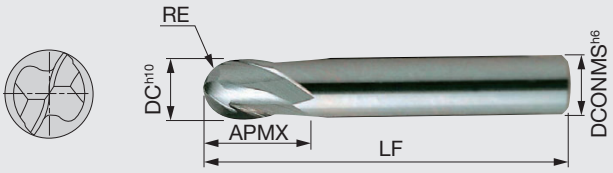
Designation	AH750	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEB030A2-05C06-57	●	●	3	6	2	5	57	Cylindrical
TEB040A2-07C06-57	●	●	4	6	2	7	57	Cylindrical
TEB050A2-08C06-57	●	●	5	6	2	8	57	Cylindrical
TEB060A2-08C06-57	●	●	6	6	2	8	57	Cylindrical
TEB080A2-11C08-63	●	●	8	8	2	11	63	Cylindrical
TEB100A2-13C10-72	●	●	10	10	2	13	72	Cylindrical
TEB120A2-14C12-83	●	●	12	12	2	14	83	Cylindrical
TEB160A2-16C16-92	●	●	16	16	2	16	92	Cylindrical
TEB200A2-20C20-104	●	●	20	20	2	20	104	Cylindrical

● : Line up

ECOMEISTER

TEB**A2**E

2 flute ball nose endmill, 30° helix angle, short type



Designation	AH725	DC	DCONMS	NOF	RE	APMX	LF	Shank
TEB020A2-04C06-E48	●	2	6	2	1	4	48	Cylindrical
TEB020A2-06C03-E38	●	2	3	2	1	6	38	Cylindrical
TEB025A2-04C06-E48	●	2.5	6	2	1.25	4	48	Cylindrical
TEB030A2-04C06-E48	●	3	6	2	1.5	4	48	Cylindrical
TEB040A2-06C06-E50	●	4	6	2	2	6	50	Cylindrical
TEB040A2-08W06-E57	●	4	6	2	2	8	57	Weldon
TEB060A2-07C06-E51	●	6	6	2	3	7	51	Cylindrical
TEB060A2-10W06-E57	●	6	6	2	3	10	57	Weldon
TEB080A2-09C08-E63	●	8	8	2	4	9	63	Cylindrical
TEB100A2-10C10-E66	●	10	10	2	5	10	66	Cylindrical
TEB120A2-14C12-E71	●	12	12	2	6	14	71	Cylindrical
TEB200A2-20C20-E82	●	20	20	2	10	20	82	Cylindrical

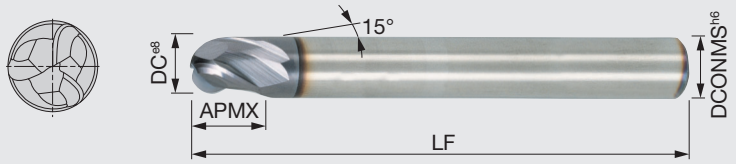
● : Line up

Reference pages: Standard cutting conditions → I059

SOLIDMEISTER

TEB**A3

3 flute ball nose endmill, 30° helix angle, short type



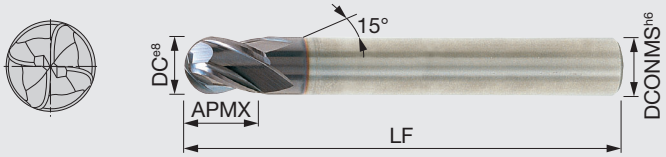
Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEB030A3-05C06-57	●	3	6	3	5	57	Cylindrical
TEB040A3-07C06-57	●	4	6	3	7	57	Cylindrical
TEB050A3-08C06-57	●	5	6	3	8	57	Cylindrical
TEB060A3-08C06-57	●	6	6	3	8	57	Cylindrical
TEB080A3-11C08-63	●	8	8	3	11	63	Cylindrical
TEB100A3-13C10-72	●	10	10	3	13	72	Cylindrical
TEB120A3-14C12-83	●	12	12	3	14	83	Cylindrical

●: Line up

SOLIDMEISTER

TEB**A4

4 flute ball nose endmill, 30° helix angle, short type



Designation	AH725	DC	DCONMS	NOF	APMX	LF	Shank
TEB030A4-05C06-57	●	3	6	4	5	57	Cylindrical
TEB040A4-07C06-50	●	4	6	4	7	50	Cylindrical
TEB050A4-08C06-57	●	5	6	4	8	57	Cylindrical
TEB060A4-08C06-57	●	6	6	4	8	57	Cylindrical
TEB080A4-11C08-63	●	8	8	4	11	63	Cylindrical
TEB100A4-13C10-72	●	10	10	4	13	72	Cylindrical
TEB120A4-14C12-83	●	12	12	4	14	83	Cylindrical
TEB200A4-20C20-104	●	20	20	4	20	104	Cylindrical

●: Line up

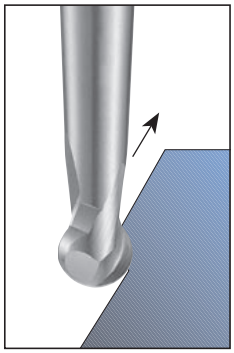
Reference pages: Standard cutting conditions → I059

Ball Nose Characteristics

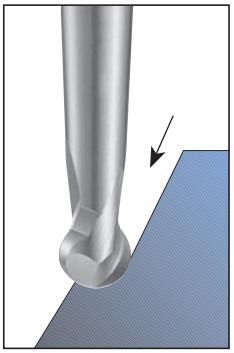
- Die & mold making, turbine manufacturing and aircraft industry, etc.
- Useful for intricate-shaped surfaces.
- Profiling of up to 70 HRC high hardened steels and alloy steels, nickel based alloys, titanium alloys.
- Ultra-fine grain carbide which increases both toughness and hardness.
- Suitable for dry and high speed cutting.
- Special sphere shaped tool geometry provides increased tool life and enables higher speed and feed operations.

Milling Features

- Operating angle 208º - 212º
- Excellent surface roughness and high milling process.
- Enables milling with high speed and feed in back milling mode.



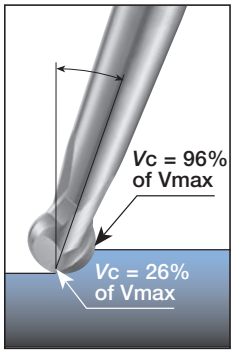
Favorable Back Milling ✓



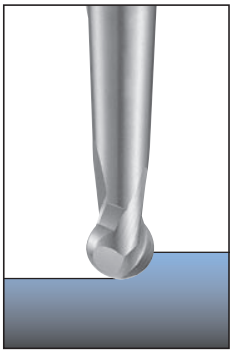
Unfavorable Drilling

Operating Recommendations

- It is recommended to machine with the tool inclined at a 15º angle. This technique eliminates cutting at nearly zero speed at the tool axis. Cutting is more efficient, and tool life substantially improves.
- Decreased cutting force.
- Excellent surface roughness and brightness.



Favorable Profiling ✓



Unfavorable Profiling

STANDARD CUTTING CONDITIONS - Ball nose type

Shape machining (Roughing to semi-finishing)

ISO	Workpiece material	Vc (m/min)	fz (mm/t) ø3 - ø6	fz (mm/t) ø8 - ø12	fz (mm/t) ø16 - ø20	ap
P	Carbon steel	125 - 200	0.02 - 0.055	0.04 - 0.08	0.06 - 0.11	0.05 - 0.12xD
P	Alloy steel (30 - 40HRC)	100 - 150	0.01 - 0.035	0.03 - 0.05	0.045 - 0.06	0.04 - 0.1xD
M	Stainless steel	110	0.015 - 0.03	0.03 - 0.04	0.05 - 0.06	0.05 - 0.1xD
K	Cast iron	150 - 180	0.03 - 0.06	0.06 - 0.09	0.09 - 0.12	0.08 - 0.15xD
H	Hardened steel (- 49HRC)	70 - 80	0.008 - 0.02	0.025 - 0.03	0.03 - 0.04	0.04 - 0.08xD
H	Hardened steel (50 - 60HRC)	30 - 40	0.005 - 0.008	0.007 - 0.013	0.009 - 0.02	0.03 - 0.06xD

Finishing

ISO	Workpiece material	Vc (m/min)	fz (mm/t) ø6 - ø8	fz (mm/t) ø10 - ø12	fz (mm/t) ø16 - ø20	ap
P	Carbon steel	170 - 280	0.017 - 0.046	0.034 - 0.068	0.051 - 0.094	0.02xD
P	Alloy steel (30 - 40HRC)	120 - 165	0.008 - 0.03	0.025 - 0.043	0.038 - 0.051	0.01xD
M	Stainless steel	150	0.012 - 0.026	0.025 - 0.034	0.042 - 0.051	0.01xD
K	Cast iron	200 - 220	0.025 - 0.051	0.051 - 0.077	0.076 - 0.102	0.03xD
H	Hardened steel (- 49HRC)	100	0.007 - 0.017	0.021 - 0.026	0.025 - 0.034	0.01xD
H	Hardened steel (50 - 60HRC)	40 - 50	0.004 - 0.007	0.006 - 0.011	0.007 - 0.017	0.01xD

· When using AH750, reducing cutting speed by 20 to 30% is effective for extending tool life.
· While air blow is recommended, water-soluble coolant will be good for stainless steel, titanium alloy, and heat-resistant alloy.
· When chattering occurs with low rigid machines or settings, reduce cutting speed and feed at an equal rate.
· When chattering occurs with long tool overhang, reduce cutting speed and feed by 20 to 40% (VariableMeister is recommended for such operations).

GRADE PRIORITIES FOR SOLID CARBIDE ENDMILLS

In most cases the best performance can be attained without using coolant for specific grades. However, it should be noted that if for any reason coolant must be used, it could possibly affect tool life and sometimes cause insert failure, due to thermal shock.

Material Groups	ISO P Steel	ISO H Hard Materials	ISO M Stainless	ISO S Superalloys	ISO K Cast Iron	ISO N Non-ferrous
	Harder AH750 ■ AH725 Tougher	Harder ■ AH750 AH725 Tougher	Harder ■ AH725 Tougher	Harder AH750 ■ AH725 KS15F Tougher	Harder AH750 ■ AH725 Tougher	Harder AH725 ■ KS15F Tougher

■ First choise

Quick Guide TUNGMEISTER

★ : First choice
☆ : Second choice

Edge shape	Appearance	Appearance	Application	Feature	Edge shape	No. of cutting edges	Tool diameter	Slot width	CRKS	Helix angle	Workpiece material						Page
											P	M	K	N	S	H	
Square	VEH***		Semi-finishing	All round / Variable helix, Variable pitch	Corner radius	4	ø8 - ø20	-	S05 - S12	不等	★	★	★	☆	★	☆	I064
	VEE**-03...		Finishing	All round	Corner radius 0	3	ø8 - ø12	-	S05 - S08	45	★	★	★	☆	★	☆	I064
	VEE**-04..., VED**-04...		Finishing	All round	Corner radius	4	ø6 - ø20	-	S05 - S12	30/45	★	★	★	☆	★	☆	I065
	VEE**-03...		Finishing	For key way / All round	Corner radius	3	ø7.7 - ø19.7	-	S05 - S12	38	★	★	★	☆	★	☆	I065
	VEE**I...		Finishing	All round / Variable pitch	Corner radius / Chamfered	4	ø8 - ø25	-	S05 - S15	38	★	★	★	☆	★	☆	I066
	VEE**R...		Roughing	All round / Serrated cutting edge	Chamfered	4, 5, 6	ø8 - ø25	-	S05 - S15	45	★	★	★	☆	★	☆	I066
	VEE**C...		Semi-finishing	All round / Edge combination	Chamfered	4	ø8 - ø25	-	S05 - S15	45	★	★	★	☆	★	☆	I067
	VEE**A02...		Finishing	All round	Corner radius	2	ø10 - ø12	-	S06 - S08	45			☆	★			I067
	VEE**A03...		Finishing	All round	Corner radius	3	ø8 - ø20	-	S05 - S12	45			☆	★			I068
	VED**-06..., VEE**-06...		Finishing	All round	Corner radius / Chamfered	6	ø8 - ø12	-	S05 - S08	30/45/50	☆	☆	☆		★	★	I068
	VED**-08/10..., VEE**-08/10...		Finishing	All round	Corner radius / Chamfered	8, 10	ø16 - ø25	-	S10 - S15	30/50	☆	☆	☆		★	★	I069
Radius	VRB**-02.../ VRC**-02...		Finishing	All round	Corner radius	2	ø10 - ø20	-	S06 - S12	0/15	★	★	★	☆	★	☆	I069
	VRD**-06...		Finishing	All round	Corner radius	6	ø8 - ø16	-	S05 - S10	30	★	★	★	☆	★	☆	I070
High feed	VFX**-02...		Roughing	All round/ High feed	High feed	2	ø10 - ø20	-	S06 - S12	-	★	★	★	☆	★	★	I072
	VFX**-04...		Roughing	All round/ High feed	High feed	4	ø12, ø16	-	S08, S10	-	★	★	★	☆	★	★	I072
Ball	VBB**-BM...		Roughing	All round	Ball	2	ø8 - ø16	-	S05 - S10	0	★	★	★	☆	★	☆	I073
	VBB**-BG...		Semi-finishing	All round	Ball	2	ø8 - ø16	-	S05 - S10	0	★	★	★	☆	★	☆	I073
	VBD**-BG...		Finishing	All round	Ball	2	ø8 - ø16	-	S05 - S10	30	★	★	★	☆	★	☆	I073
	VBD**-BG.../ VBE**-BG...		Finishing	All round	Ball	4	ø6 - ø25	-	S05 - S15	30/38	★	★	★	☆	★	☆	I074
	VBB**-SG...		Finishing	All round / Sphere	Ball	2	ø10 - ø20	-	S05 - S15	0	★	★	★	☆	★	☆	I074

★ : First choice
☆ : Second choice

Edge shape	Appearance	Appearance	Application	Feature	Edge shape	No. of cutting edges	Tool diameter	Slot width	CRKS	Helix angle	Workpiece material						Page
											P	M	K	N	S	H	
Ball	VBE**-BGA...		Finishing	All round	Ball	2	ø8 - ø20	-	S05 - S12	45			☆	★			I074
Spot drilling and chamfering	VCP**-02...		Finishing	For chamfering / 30°, 45°, 60°	Chamfered (with center cutting edge)	2	ø8 - ø16.5	-	S05 - S10	0	★	★	★	☆	★	☆	I076
Chamfering	VCA**-04/06...		Finishing	For chamfering / 45°	Chamfered (without center cutting edge)	4, 6	ø10 - ø20	-	S06 - S12	0	★	★	★	☆	★	☆	I080
	VCW**-02...		Finishing	For chamfering / with back chamfering edge	Chamfered (with center cutting edge)	2	ø11.8	-	S06	0	★	★	★	☆	★	☆	I080
	VCR**-02...		Finishing	For chamfering / R chamfering	Chamfered (without center cutting edge)	2	ø8 - ø20	-	S05 - S12	0	★	★	★	☆	★	☆	I080
Spot drilling	VDP**-02...		Finishing	For Spot drilling	Holemaking	2	ø3.28 - ø6.46	-	S05 - S10	0	★	★	★	☆	★	☆	I076
Counter-boring	VGC**-02...		Finishing	For Counterboring	Corner radius	2	ø7.8 - ø16	-	S05 - S10	10	★	★	★	☆	★	☆	I078
	VST**-3...		Finishing	For slotting	Corner radius	3	ø15.7 - ø17.7	1.2-3.17	S06	0	★	★	★	☆	★	☆	I082
	VST**-4/6...		Finishing	For slotting	Corner radius	4, 6	ø21.7 - ø27.7	0.76-10	S08, S10	0	★	★	★	☆	☆	☆	I083
Threading	VTB**-06...		Finishing	For slotting	Corner radius	6	ø13.5 - ø25	2-8	S05 - S10	0	★	★	★	☆	★	☆	I084
	VTB** C15-06...		Finishing	For slottingt	Chamfered	6	ø13.5	2	S05	0	★	★	★	☆	★	☆	I084
Chamfering	VST**A45...		Finishing	For chamfering / 45°	Chamfered	3, 4	ø17.7 - ø21.7	3.4-5.5	S06, S08	0	★	★	★	☆	★	☆	I083
Threading	VMT***IS / UN / W		Finishing	Threading	Full profile	3~6	ø10 - ø16	-	S05, S06 S08	-	★	★	★	☆	★	☆	I116 - I117
Threading	VTR***IS / W		Finishing	Threading	Partial profile	3, 4	ø15.7 - ø21.7	-	S06, S08	-	★	★	★	☆	★	☆	I117

TUNGMEISTER



Choose the best head-shank combination **for more efficiency!** Minimize setup time while **maximizing productivity!**

1 Wide range of cutting heads

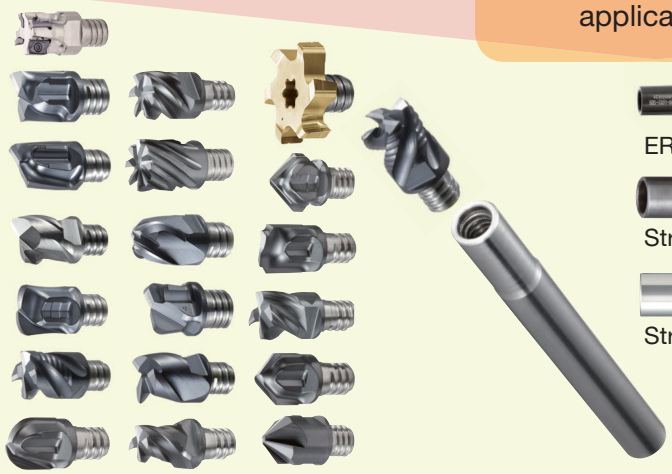
23 kinds of cutting heads are available. The head exchange is easy and highly accurate with the precision thread.

Flexible combinations

TungMeister can be applied to all kinds of endmill machining applications.

2 Three kinds of shank material

Users can choose the most suitable combination according to the machining parameters, length and rigidity required.





ER collet



Adaptor for TungFlex



Straight shank & neck



Straight shank & taper neck



Straight shank & neck (carbide)



Straight (for grooving)

Steel: For general purpose
Carbide: For highly accurate machining due to excellent rigidity
Tungsten: Reduced chattering due to high vibration damping capacity

Reduces tool changeover times drastically!!

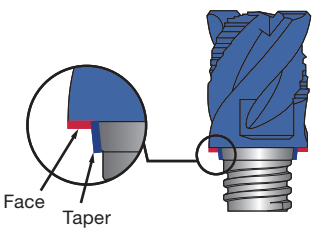
- Machine downtime is decreased considerably.
- Enables users to only change cutting head, simplifying set-ups.

Increases productivity by 90%

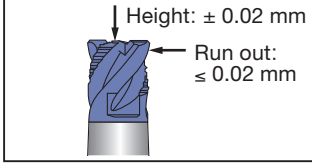


Highly accurate repeatability

- Accuracy can be maintained by touching the taper and face.
- Repeatability is guaranteed and is not a concern for machine operators.



■Head exchange accuracy



Reference pages: I064 - I091

TUNGMEISTER
DESIGNATION SYSTEM

V	SS	D10	L070	S	06	-	W	-	A
①	②	③	④	⑤	⑥		⑦		⑧

Shank

① Series	
V	TungMeister

② Shank type	
SS	Straight neck
TS	Taper neck
SC	Slotting
ST	for T-Slotting
AD	TungFlex adapter
ER	ER collet holder

③ Shank diameter (mm)	
D08	ø8
D10	ø10
D12	ø12
D16	ø16
D20	ø20
D25	ø25
D32	ø32
VSC, VAD type	
100	ø10
120	ø12
130	ø13
180	ø18
210	ø21
VER type	
11	Collet size
16	Collet size

④ Length (mm)	
L070	70

⑤ Shape of shank	
S	Cylindrical
W	Weldon

⑥ Connection screw size	
05	S05
06	S06
08	S08
10	S10
12	S12
15	S15

⑦ Shank material	
S	Steel
C	Carbide
W	Tungsten

⑧ Additional feature	
A	with coolant hole
M	Thread size (TungFlex adapters)

Head

- Square endmill

V	E	E	080	L05.0	R00	-	03	S05
①	②	③	④	⑤	⑥	⑦	⑧	⑨

- Ball nose endmill

V	B	D	200	L15.0	-	BG	-	04	S12
①	②	③	④	⑤		⑥	⑦	⑧	⑨

① Series	
V	TungMeister

② Cutting edge	
E	Square
B	Ball nose
R	Radius
FX	for high feed
CA	for chamfering
CP	Spot drilling
CW	for chamfering (front and back)
CR	for R chamfering
GC	for counter boring
DP	for center drilling
S	for slotting
T	for T-slot milling
MT	Threading (full profile)
TR	Threading (partial profile)

③ Helix angle / Rake face	
B	0°
C	15°
D	30°
E	38° - 50°
F	60°
T	Land
H	Variable helix

④ Diameter (mm)	
060	ø6
200	ø20

⑤ Cutting edge length (mm)	
Length	
L07.0	7
L15.0	15
Groove width	
W1.50	1.5
W1.57	1.57
W10.0	10

⑥ Corner shape / Angle	
Nose radius	
R00	Sharp edge
R005	R0.05
R01	R0.1
R05	R0.5
R10	R1.0
Chamfer type	
C15	0.15 x 45°
C30	0.3 x 45°
C60	0.6 x 45°
Chamfering head	
A30	30°
A60	60°
R chamfering head	
R10	R1.0
R16	R1.6
Ball nose	
SG	Sphere / high precision
BM	Ball / general purpose
BG	Ball / high precision
Threading	
IS**	ISO metric, pitch**
UN**	Unified, **TPI
W**	Whitworth, pitch**

⑦ Additional feature	
I	Variable pitch
A	for aluminium
R	for roughing
C	Roughing + finishing

⑧ The number of flutes	
General purpose	
02	2
06	6
Grooving head VST type	
03	3
04	4

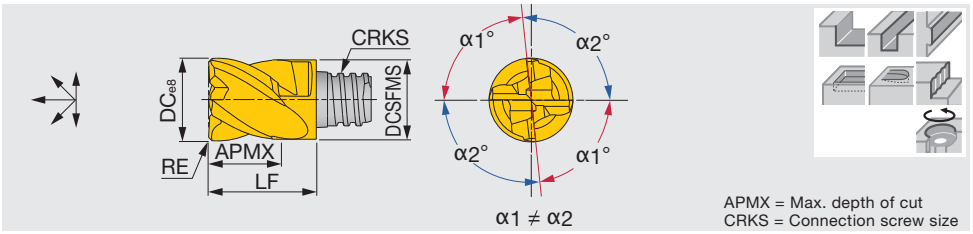
⑨ Connection screw size	
S05	S05
S06	S06
S08	S08
S10	S10
S12	S12
S15	S15

TUNGMEISTER

VEH...

4 flute square head, for general purpose (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEH080L05.0R05I04S05	●	4	35 - 39	8	7.7	5	0.5	S05	10	KEYV-S05	7
VEH080L05.0R10I04S05	●	4	35 - 39	8	7.7	5	1	S05	10	KEYV-S05	7
VEH100L07.0R05I04S06	●	4	35 - 39	10	9.7	7	0.5	S06	13	KEYV-S06	10
VEH100L07.0R10I04S06	●	4	35 - 39	10	9.7	7	1	S06	13	KEYV-S06	10
VEH120L09.0R05I04S08	●	4	35 - 39	12	11.7	9	0.5	S08	16.5	KEYV-S08	15
VEH120L09.0R10I04S08	●	4	35 - 39	12	11.7	9	1	S08	16.5	KEYV-S08	15
VEH160L12.0R05I04S10	●	4	35 - 39	16	15.3	12	0.5	S10	20.5	KEYV-S10	28
VEH160L12.0R10I04S10	●	4	35 - 39	16	15.3	12	1	S10	20.5	KEYV-S10	28
VEH200L15.0R05I04S12	●	4	35 - 39	20	18.3	15	0.5	S12	25.5	KEYV-S12	28
VEH200L15.0R10I04S12	●	4	35 - 39	20	18.3	15	1	S12	25.5	KEYV-S12	28

* Recommended clamping torque (N·m)
2 pieces per package

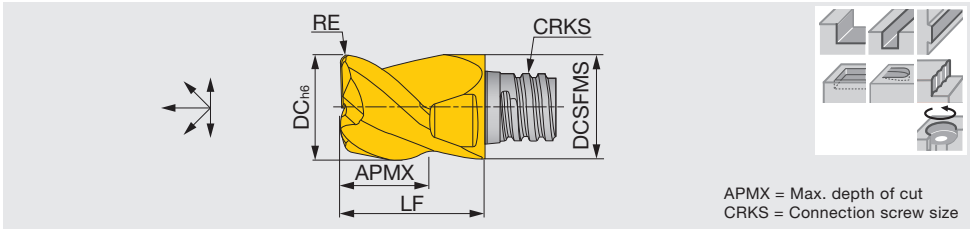
●: Line up

TUNGMEISTER

VEE**-03...

4 flute square head, for general purpose (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VEE080L05.0R00-03S05	●	3	45°	8	7.7	5	S05	10	KEYV-S05	7
VEE100L07.0R00-03S06	●	3	45°	10	9.7	7	S06	13	KEYV-S06	10
VEE120L09.0R00-03S08	●	3	45°	12	11.7	9	S08	16.5	KEYV-S08	15

* Recommended clamping torque (N・m)
2 pieces per package

●: Line up

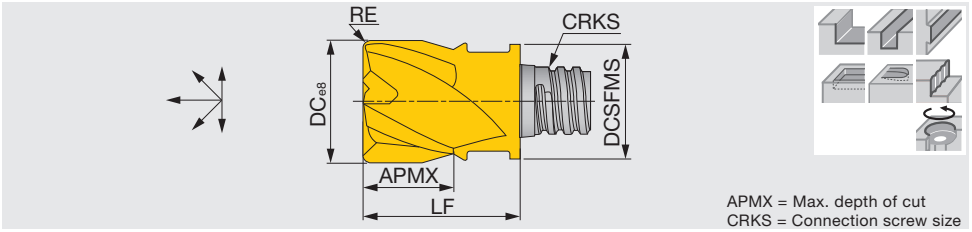
Reference pages: Standard cutting conditions → I070 - I071

TUNGMEISTER

VEE**-04..., VED**-04...

4 flute square head, for general purpose (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE060L05.0R00-04S05	●	4	45°	6	8	5	-	S05	10	KEYV-S05	7
VEE080L05.0R00-04S05	●	4	45°	8	7.7	5	-	S05	10	KEYV-S05	7
VED080L05.0R05-04S05	●	4	30°	8	7.7	5	0.5	S05	10	KEYV-S05	7
VED080L05.0R10-04S05	●	4	30°	8	7.7	5	1	S05	10	KEYV-S05	7
VED080L05.0R15-04S05	●	4	30°	8	7.7	5	1.5	S05	10	KEYV-S05	7
VEE100L07.0R00-04S06	●	4	45°	10	9.7	7	-	S06	13	KEYV-S06	10
VED100L07.0R05-04S06	●	4	30°	10	9.7	7	0.5	S06	13	KEYV-S06	10
VEE100L07.0R05-04S06	●	4	45°	10	9.7	7	0.5	S06	13	KEYV-S06	10
VED100L07.0R10-04S06	●	4	30°	10	9.7	7	1	S06	13	KEYV-S06	10
VEE100L07.0R10-04S06	●	4	45°	10	9.7	7	1	S06	13	KEYV-S06	10
VEE120L09.0R00-04S08	●	4	45°	12	11.7	9	-	S08	16.5	KEYV-S08	15
VED120L09.0R05-04S08	●	4	30°	12	11.7	9	0.5	S08	16.5	KEYV-S08	15
VEE120L09.0R05-04S08	●	4	45°	12	11.7	9	0.5	S08	16.5	KEYV-S08	15
VED120L09.0R10-04S08	●	4	30°	12	11.7	9	1	S08	16.5	KEYV-S08	15
VEE120L09.0R10-04S08	●	4	45°	12	11.7	9	1	S08	16.5	KEYV-S08	15
VEE160L12.0R00-04S10	●	4	45°	16	15.3	12	-	S10	20.5	KEYV-S10	28
VED160L12.0R05-04S10	●	4	30°	16	15.3	12	0.5	S10	20.5	KEYV-S10	28
VEE160L12.0R05-04S10	●	4	45°	16	15.3	12	0.5	S10	20.5	KEYV-S10	28
VED160L12.0R10-04S10	●	4	30°	16	15.3	12	1	S10	20.5	KEYV-S10	28
VEE160L12.0R10-04S10	●	4	45°	16	15.3	12	1	S10	20.5	KEYV-S10	28
VED160L12.0R15-04S10	●	4	30°	16	15.3	12	1.5	S10	20.5	KEYV-S10	28
VEE160L12.0R15-04S10	●	4	45°	16	15.3	12	1.5	S10	20.5	KEYV-S10	28
VED160L12.0R20-04S10	●	4	30°	16	15.3	12	2	S10	20.5	KEYV-S10	28
VEE160L12.0R20-04S10	●	4	45°	16	15.3	12	2	S10	20.5	KEYV-S10	28
VED160L12.0R30-04S10	●	4	30°	16	15.3	12	3	S10	20.5	KEYV-S10	28
VEE160L12.0R30-04S10	●	4	45°	16	15.3	12	3	S10	20.5	KEYV-S10	28
VED160L12.0R40-04S10	●	4	30°	16	15.3	12	4	S10	20.5	KEYV-S10	28
VEE160L12.0R40-04S10	●	4	45°	16	15.3	12	4	S10	20.5	KEYV-S10	28
VEE200L15.0R00-04S12	●	4	45°	20	18.3	15	-	S12	25.5	KEYV-S12	28
VED200L15.0R05-04S12	●	4	30°	20	18.3	15	0.5	S12	25.5	KEYV-S12	28
VED200L15.0R10-04S12	●	4	30°	20	18.3	15	1	S12	25.5	KEYV-S12	28
VED200L15.0R20-04S12	●	4	30°	20	18.3	15	2	S12	25.5	KEYV-S12	28
VED200L15.0R30-04S12	●	4	30°	20	18.3	15	3	S12	25.5	KEYV-S12	28

* Recommended clamping torque (N·m)
2 pieces per package

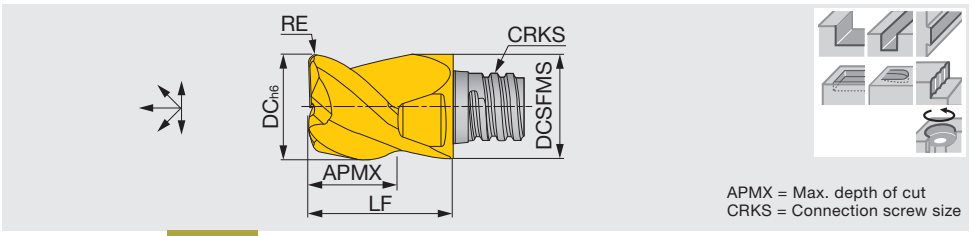
●: Line up

TUNGMEISTER

VEE**-03...

3 flute square head, for key way (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE077L04.0R02-03S05	●	3	38°	7.7	7.7	4	0.2	S05	10	KEYV-S05	7
VEE097L05.0R03-03S06	●	3	38°	9.7	9.7	5	0.3	S06	13	KEYV-S06	10
VEE117L07.0R03-03S08	●	3	38°	11.7	11.7	7	0.3	S08	16.5	KEYV-S08	15
VEE157L08.0R03-03S10	●	3	38°	15.7	15.3	8	0.3	S10	20.5	KEYV-S10	28
VEE197L12.0R04-03S12	●	3	38°	19.7	18.3	12	0.4	S12	25.5	KEYV-S12	28

* Recommended clamping torque(N・m)
2 pieces per package

●: Line up

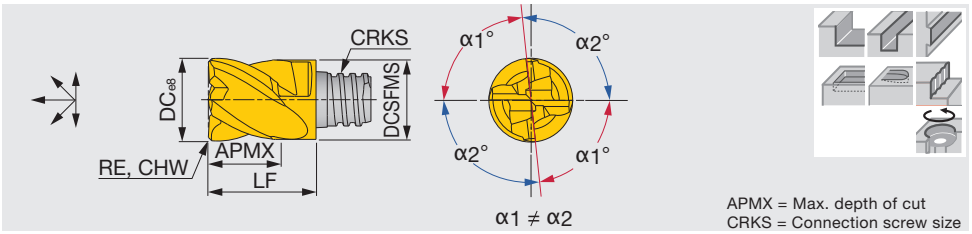
Reference pages: Standard cutting conditions → I070 - I071

TUNGMEISTER

VEE**I...

4 flute square head, variable pitch, for chatter dampening (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VEE080L05.0C30I04S05	●	4	38°	8	7.7	5	-	0.3	S05	10	KEYV-S05	7
VEE100L07.0C40I04S06	●	4	38°	10	9.7	7	-	0.4	S06	13	KEYV-S06	10
VEE120L09.0C50I04S08	●	4	38°	12	11.7	9	-	0.5	S08	16.5	KEYV-S08	15
VEE160L12.0C60I04S10	●	4	38°	16	15.3	12	-	0.6	S10	20.5	KEYV-S10	28
VEE200L15.0C60I04S12	●	4	38°	20	18.3	15	-	0.6	S12	25.5	KEYV-S12	28
VEE250L22.0C60I04S15	●	4	38°	25	23.9	22	-	0.6	S15	37	KEYV-W20	40
VEE250L22.0R00I04S15	●	4	38°	25	23.9	22	-	-	S15	37	KEYV-W20	40
VEE250L22.0R05I04S15	●	4	38°	25	23.9	22	0.5	-	S15	37	KEYV-W20	40
VEE250L22.0R10I04S15	●	4	38°	25	23.9	22	1	-	S15	37	KEYV-W20	40
VEE250L22.0R20I04S15	●	4	38°	25	23.9	22	2	-	S15	37	KEYV-W20	40
VEE250L22.0R30I04S15	●	4	38°	25	23.9	22	3	-	S15	37	KEYV-W20	40

●: Line up

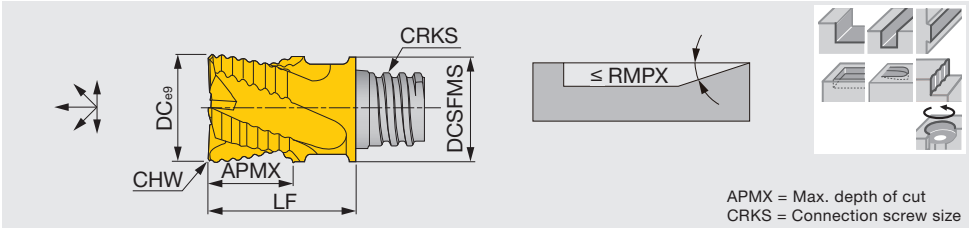
* Recommended clamping torque(N・m)
VEE080 ~ VEE200: 2 pieces per package
VEE250: 1 piece per package

TUNGMEISTER

VEE**R...

4 flute square head, variable pitch, for chatter dampening (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	CHW	CRKS	LF	RMPX	Wrench	Torque*
VEE080L05.0C25R04S05	●	4	45°	8	7.7	5	0.25	S05	10	90°	KEYV-S05	7
VEE100L07.0C30R04S06	●	4	45°	10	9.7	7	0.3	S06	13	90°	KEYV-S06	10
VEE120L09.0C35R04S08	●	4	45°	12	11.7	9	0.35	S08	16.5	90°	KEYV-S08	15
VEE160L12.0C40R05S10	●	5	45°	16	15.3	12	0.4	S10	20.5	7°	KEYV-S10	28
VEE200L15.0C40R06S12	●	6	45°	20	18.3	15	0.4	S12	25.5	3°	KEYV-S12	28
VEE250L22.0C50R06S15	●	6	45°	25	23.9	22	0.5	S15	37	3°	KEYV-W20	40

●: Line up

* Recommended clamping torque (N・m)
VEE080 ~ VEE200: 2 pieces per package
VEE250: 1 piece per package

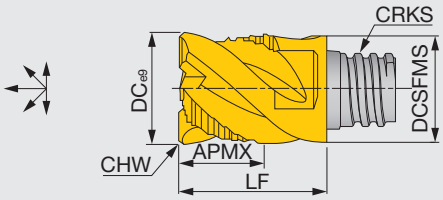
Reference pages: Standard cutting conditions → I070 - I071

TUNGMEISTER

VEE**C...

Square head, roughing and finishing combination type (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	CHW	CRKS	LF	Wrench	Torque*
VEE080L05.0C30C04S05	●	4	45°	8	7.7	5	0.3	S05	10	KEYV-S05	7
VEE100L07.0C30C04S06	●	4	45°	10	9.7	7	0.3	S06	13	KEYV-S06	10
VEE120L09.0C40C04S08	●	4	45°	12	11.7	9	0.4	S08	16.5	KEYV-S08	15
VEE160L12.0C60C04S10	●	4	45°	16	15.3	12	0.6	S10	20.5	KEYV-S10	28
VEE200L15.0C60C04S12	●	4	45°	20	18.3	15	0.6	S12	25.5	KEYV-S12	28
VEE250L22.0C60C04S15	●	4	45°	25	23.9	22	0.6	S15	37	KEYV-W20	40

* Recommended clamping torque(N・m)
VEE080 ~ VEE200: 2 pieces per package
VEE250: 1 piece per package

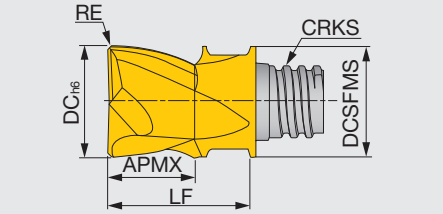
●: Line up

TUNGMEISTER

VEE**A02...

2 flute square head, for aluminium machining (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE100L07.0R05A02S06	●	2	45°	10	9.7	7	0.5	S06	13	KEYV-S06	10
VEE100L07.0R10A02S06	●	2	45°	10	9.7	7	1	S06	13	KEYV-S06	10
VEE120L09.0R05A02S08	●	2	45°	12	11.7	9	0.5	S08	16.5	KEYV-S08	15

* Recommended clamping torque(N·m)
2 pieces per package

●: Line up

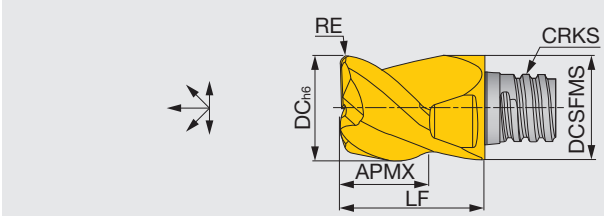
Reference pages: Standard cutting conditions → I070 - I071

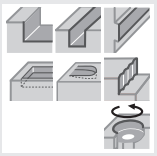
TUNGMEISTER

VEE**A03...

3 flute square head, for aluminium machining (TungMeister)







APMX = Max. depth of cut
CRKS = Connection screw size

Designation	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE080L05.0R05A03S05	●	3	45°	8	7.7	5	0.5	S05	10	KEYV-S05	7
VEE100L06.0R05A03S06	●	3	45°	10	9.7	6	0.5	S06	13	KEYV-S06	10
VEE100L06.0R10A03S06	●	3	45°	10	9.7	6	1	S06	13	KEYV-S06	10
VEE120L08.0R05A03S08	●	3	45°	12	11.7	8	0.5	S08	16.5	KEYV-S08	15
VEE120L08.0R10A03S08	●	3	45°	12	11.7	8	1	S08	16.5	KEYV-S08	15
VEE160L10.0R00A03S10	●	3	45°	16	15.3	10	-	S10	20.5	KEYV-S10	28
VEE160L10.0R10A03S10	●	3	45°	16	15.3	10	1	S10	20.5	KEYV-S10	28
VEE160L10.0R20A03S10	●	3	45°	16	15.3	10	2	S10	20.5	KEYV-S10	28
VEE200L12.0R05A03S12	●	3	45°	20	18.3	12	0.5	S12	25.5	KEYV-S12	28
VEE200L12.0R10A03S12	●	3	45°	20	18.3	12	1	S12	25.5	KEYV-S12	28
VEE200L12.0R20A03S12	●	3	45°	20	18.3	12	2	S12	25.5	KEYV-S12	28

* Recommended clamping torque(N·m)
2 pieces per package

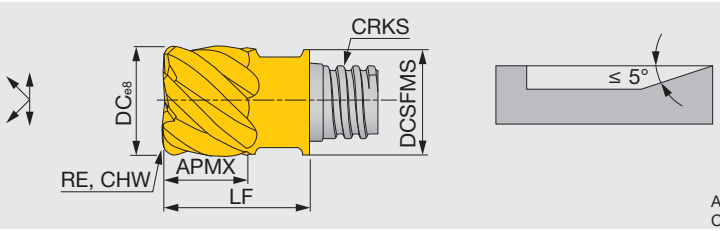
●: Line up

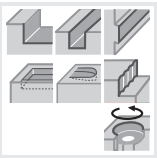
TUNGMEISTER

VED**-06..., VEE**-06...

6 flute square head, for difficult-to-cut material (TungMeister)







APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	AH750	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VEE080L05.0R05-06S05	●		6	45°	8	7.7	5	0.5	-	S05	10	KEYV-S05	7
VEE080L05.0R10-06S05	●		6	45°	8	7.7	5	1	-	S05	10	KEYV-S05	7
VEE080L05.0R15-06S05	●		6	45°	8	7.7	5	1.5	-	S05	10	KEYV-S05	7
VEE080L05.0C10-06S05		●	6	50°	8	7.7	5	-	0.1	S05	10	KEYV-S05	7
VEE100L07.0R00-06S06	●		6	45°	10	9.7	7	-	-	S06	13	KEYV-S06	10
VED100L07.0R05-06S06	●		6	30°	10	9.7	7	0.5	-	S06	13	KEYV-S06	10
VEE100L07.0R05-06S06	●		6	45°	10	9.7	7	0.5	-	S06	13	KEYV-S06	10
VED100L07.0R10-06S06	●		6	30°	10	9.7	7	1	-	S06	13	KEYV-S06	10
VEE100L07.0R10-06S06	●		6	45°	10	9.7	7	1	-	S06	13	KEYV-S06	10
VED100L07.0R15-06S06	●		6	30°	10	9.7	7	1.5	-	S06	13	KEYV-S06	10
VEE100L07.0R15-06S06	●		6	45°	10	9.7	7	1.5	-	S06	13	KEYV-S06	10
VEE100L07.0C10-06S06		●	6	50°	10	9.7	7	-	0.1	S06	13	KEYV-S06	10
VEE120L09.0R00-06S08	●		6	45°	12	11.7	9	-	-	S08	16.5	KEYV-S08	15
VED120L09.0R05-06S08	●		6	30°	12	11.7	9	0.5	-	S08	16.5	KEYV-S08	15
VED120L09.0R10-06S08	●		6	30°	12	11.7	9	1	-	S08	16.5	KEYV-S08	15
VEE120L09.0R10-06S08	●		6	45°	12	11.7	9	1	-	S08	16.5	KEYV-S08	15
VEE120L09.0R15-06S08	●		6	45°	12	11.7	9	1.5	-	S08	16.5	KEYV-S08	15
VEE120L09.0C10-06S08		●	6	50°	12	11.7	9	-	0.1	S08	16.5	KEYV-S08	15

* Recommended clamping torque(N·m)
2 pieces per package

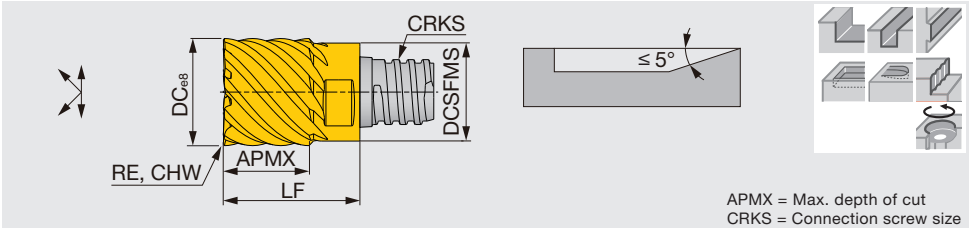
●: Line up

Reference pages: Standard cutting conditions → I070 - I071

TUNGMEISTER
VED**-08,10..., VEE**-08,10...

8-10 flute square head, for difficult-to-cut material (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	AH750	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VED160L12.0R05-08S10	●		8	30°	16	15.3	12	0.5	-	S10	20.5	KEYV-S10	28
VED160L12.0R10-08S10	●		8	30°	16	15.3	12	1	-	S10	20.5	KEYV-S10	28
VED160L12.0R16-08S10	●		8	30°	16	15.3	12	1.6	-	S10	20.5	KEYV-S10	28
VED160L12.0R20-08S10	●		8	30°	16	15.3	12	2	-	S10	20.5	KEYV-S10	28
VEE160L12.0C20-08S10		●	8	50°	16	15.3	12	-	0.2	S10	20.5	KEYV-S10	28
VED200L15.0R10-10S12	●		10	30°	20	18.3	15	1	-	S12	25.5	KEYV-S12	28
VED200L15.0R20-10S12	●		10	30°	20	18.3	15	2	-	S12	25.5	KEYV-S12	28
VEE200L15.0C20-10S12		●	10	50°	20	18.3	15	-	0.2	S12	25.5	KEYV-S12	28
VED250L22.0R10-10S15	●		10	30°	25	23.9	22	1	-	S15	37	KEYV-W20	40
VED250L22.0R20-10S15	●		10	30°	25	23.9	22	2	-	S15	37	KEYV-W20	40

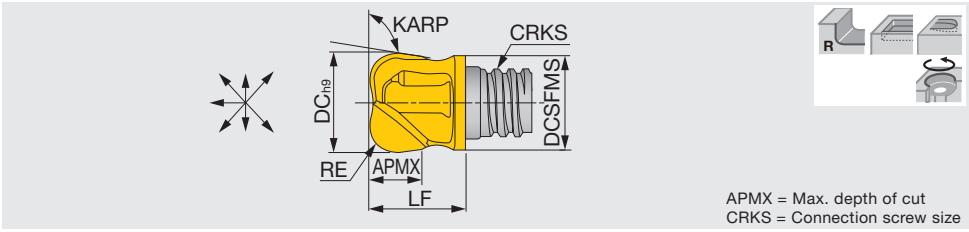
●: Line up

* Recommended clamping torque(N·m)
VED/VEE160 ~ VED/VEE200: 2 pieces per package
VED250: 1 piece per package

TUNGMEISTER
VRB**-02..., VRC**-02...

2 flute radius head (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	KARP	CRKS	LF	Wrench	Torque*
VRC100L07.0R05-02S06	●	2	15°	10	9.5	7	0.5	95°	S06	12.4	KEYV-S06	10
VRC100L07.0R10-02S06	●	2	15°	10	9.5	7	1	95°	S06	12.4	KEYV-S06	10
VRB100L06.0R20-02S06	●	2	0°	10	9.2	6	2	97°	S06	12.4	KEYV-S06	10
VRB120L05.7R30-02S06	●	2	0°	12	9.5	5.7	3	97°	S06	9.1	**KEYV-S08	10
VRB120L05.4R40-02S06	●	2	0°	12	9.5	5.4	4	97°	S06	9.1	**KEYV-S08	10
VRB120L06.3R16-02S08	●	2	0°	12	11.5	5.9	1.6	97°	S08	11.1	KEYV-S08	15
VRB120L06.2R20-02S08	●	2	0°	12	11.5	6.2	2	97°	S08	11.1	KEYV-S08	15
VRB120L06.1R25-02S08	●	2	0°	12	11.5	5.8	2.5	97°	S08	11.1	KEYV-S08	15
VRB120L06.1R30-02S08	●	2	0°	12	11.5	5.7	3	97°	S08	11.1	KEYV-S08	15
VRB120L05.9R40-02S08	●	2	0°	12	11.5	5.5	4	97°	S08	11.1	KEYV-S08	15
VRB160L08.0R50-02S10	●	2	0°	16	15.2	8	5	97°	S10	20.2	KEYV-S10	28
VRB200L11.1R30-02S12	●	2	0°	20	18.3	11	3	97°	S12	17	KEYV-S12	28
VRB200L11.5R40-02S12	●	2	0°	20	18.3	11.3	4	97°	S12	17.3	KEYV-S12	28
VRB200L11.5R50-02S12	●	2	0°	20	18.3	11.3	5	97°	S12	17.3	KEYV-S12	28
VRB200L11.4R60-02S12	●	2	0°	20	18.3	11.2	6	97°	S12	17.3	KEYV-S12	28
VRB200L11.3R80-02S12	●	2	0°	20	18.3	11.1	8	97°	S12	17.3	KEYV-S12	28

●: Line up

Note: Suitable for contouring operation.
** The wrench size for these heads is different from the ones for the other head types.
* Recommended clamping torque(N·m)
2 pieces per package

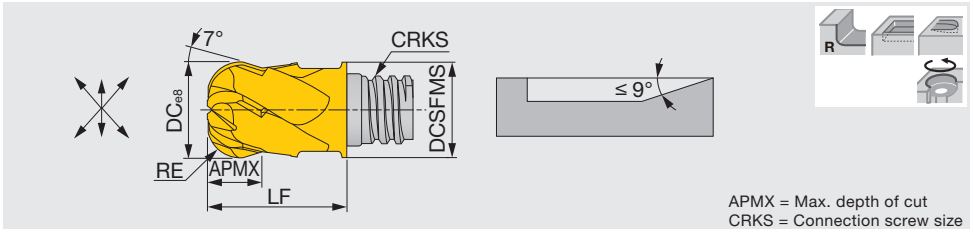
Reference pages: Standard cutting conditions → I070 - I071

TUNGMEISTER

VRD**-06...

Radius head with 6 ground flutes (TungMeister)





Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VRD080L04.0R20-06S05	●	6	30°	8	7.7	4	2	S05	10	KEYV-S05	7
VRD100L05.0R30-06S06	●	6	30°	10	9.7	5	3	S06	13	KEYV-S06	10
VRD120L07.0R40-06S08	●	6	30°	12	11.7	7	4	S08	16.5	KEYV-S08	15
VRD160L09.0R50-06S10	●	6	30°	16	15.3	9	5	S10	20.5	KEYV-S10	28

●: Line up

* Recommended clamping torque(N·m)
2 pieces per package

STANDARD CUTTING CONDITIONS

Shoulder milling (VEH, VEE: 3 flutes, VED/VEE: 4 flutes, VEE-A, VEE-I, VEE-R, VEE-C, VRB, VRC, VRD)

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (m/min)	Feed per tooth: *fz* (mm/t) Tool diameter: DC (mm) 6	8	10	12	16	20	25	Depth of cut *ap* (mm)	Pick feed Pf (mm)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.	- 300 HB	80 - 180	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.25 x DC
P	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.	- 300 HB	60 - 140	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.25 x DC
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	60 - 120	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.25 x DC
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	- 200 HB	40 - 100	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.25 x DC
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.	150 - 250 HB	80 - 200	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.25 x DC
K	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250 HB	80 - 200	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.25 x DC
N	Aluminium alloys Si < 13%	-	200 - 700	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.25 x DC
N	Aluminium alloys Si ≥13%	-	100 - 300	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.25 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	40 - 80	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.05 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	20 - 40	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.05 x DC
H	Hardened steel SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	40 - 50 HRC	40 - 80	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.05 x DC
H	Hardened steel SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	20 - 60	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.05 x DC

Slot milling (VEH, VEE: 3 flutes, VED/VEE: 4 flutes, VEE-A, VEE-I, VEE-R, VEE-C, VRB, VRC, VRD)

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (m/min)	Feed per tooth: *fz* (mm/t) Tool diameter: DC (mm) 6	8	10	12	16	20	25	Depth of cut *ap* (mm)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.	- 300 HB	80 - 180	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x DC
P	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.	- 300 HB	60 - 140	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x DC
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	60 - 120	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x DC
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	- 200 HB	40 - 100	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x DC
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.	150 - 250 HB	80 - 200	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x DC
K	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250 HB	80 - 200	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.10	0.5 x DC
N	Aluminium alloys Si < 13%	-	200 - 700	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x DC
N	Aluminium alloys Si ≥13%	-	100 - 300	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	40 - 80	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	20 - 40	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.5 x DC
H	Hardened steel SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	40 - 50 HRC	40 - 80	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.2 x DC
H	Hardened steel SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	20 - 60	0.03 - 0.07	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.07 - 0.1	0.2 x DC

Shoulder milling (VED / VEE: 6 flutes, VED / VEE: 8, 10 flutes)

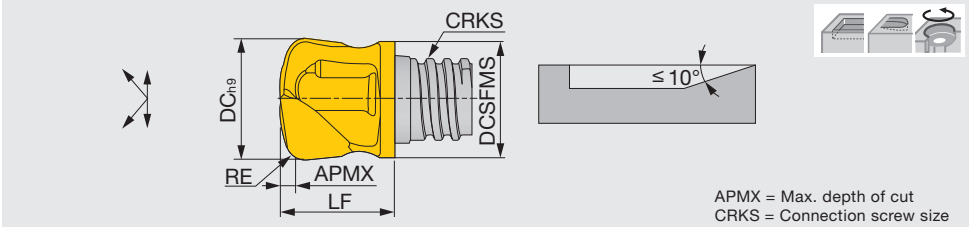
ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (m/min)	Feed per tooth: *fz* (mm/t) Tool diameter: DC (mm) 8	10	12	16	20	25	Depth of cut *ap* (mm)	Pick feed Pf (mm)
S	Titanium alloys Ti-6Al-4V, etc.	-	60 - 120	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.02 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	30 - 60	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.02 x DC
H	Hardened steel SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	40 - 50 HRC	80 - 160	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.02 x DC
H	Hardened steel SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	40 - 90	0.05 - 0.09	0.07 - 0.12	0.08 - 0.13	0.09 - 0.15	0.1 - 0.17	0.1 - 0.17	0.6 x DC	0.02 x DC

TUNGMEISTER

VFX**-02...

2 fulte head for high feed milling (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE(1)	CRKS	LF	Wrench	Torque*	fz (mm/t)
VFX100L00.6R20-02S06	●	2	0°	10	9.6	0.6	2	S06	12.5	KEYV-S06	10	0.3-0.6
VFX120L01.0R25-02S08	●	2	0°	12	11.5	1.0	2.5	S08	11.1	KEYV-S08	15	0.5-1.0
VFX160L01.1R30-02S10	●	2	0°	16	15.2	1.1	3	S10	20	KEYV-S10	28	0.55-1.1
VFX200L01.5R33-02S12	●	2	0°	20	18.3	1.5	3.3	S12	17.5	KEYV-S12	28	0.75-1.5

(1) Corner radius for CAM programming

●: Line up

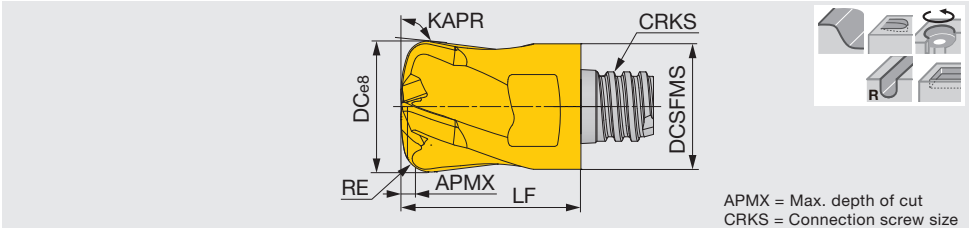
Note: Please use tapered neck shank or tungsten shank for VFX head.
* Recommended clamping torque (N·m)
2 pieces per package

TUNGMEISTER

VFX**-04...

4 fulte head for high feed milling (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	KAPR	CRKS	LF	Wrench	Torque*	fz (mm/t)
VFX120L0.60R18H04S08	●	4	20°	12	11.5	0.6	1.8	97°	S08	16.5	KEYV-S08	15	0.16-0.67
VFX160L0.80R22H04S10	●	4	20°	16	15.4	0.8	2.2	97°	S10	20.5	KEYV-S10	28	0.2-0.75

* Recommended clamping torque (N·m)
2 pieces per package

●: Line up

STANDARD CUTTING CONDITIONS

High feed milling (VFX)

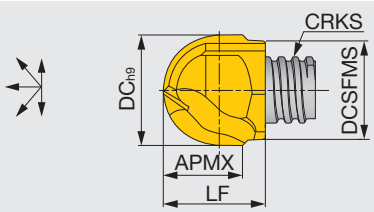
ISO	Workpiece material	Hardness	Cutting speed Vc (m/min)	ø10 Feed per tooth fz (mm/t)	ø12 Feed per tooth fz (mm/t)	ø16 Feed per tooth fz (mm/t)	ø20 Feed per tooth fz (mm/t)	Width of cut ae (mm)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.	- 300 HB	100 - 200	0.3 - 0.7	0.4 - 0.8	0.5 - 0.9	0.6 - 1	0.6 x DC
P	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.	- 300 HB	80 - 180		0.3 - 0.7	0.4 - 0.8	0.5 - 0.9	0.6 x DC
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	80 - 160	0.2 - 0.5	0.2 - 0.5	0.3 - 0.6	0.3 - 0.6	0.6 x DC
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	- 200 HB	60 - 100	0.2 - 0.6	0.2 - 0.6	0.3 - 0.7	0.3 - 0.7	0.6 x DC
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.	150 - 250 HB	100 - 220	0.3 - 0.7	0.4 - 0.8	0.5 - 0.9	0.6 - 1	0.6 x DC
K	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250 HB	100 - 220	0.2 - 0.6	0.3 - 0.7	0.4 - 0.8	0.5 - 0.9	0.6 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	40 - 80	0.2 - 0.5	0.2 - 0.5	0.2 - 0.6	0.2 - 0.6	0.25 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	20 - 40	0.1 - 0.3	0.1 - 0.3	0.1 - 0.3	0.1 - 0.3	0.25 x DC
H	Hardened steel SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	40 - 50 HRC	40 - 80	0.2 - 0.4	0.2 - 0.4	0.3 - 0.5	0.3 - 0.5	0.45 x DC
H	Hardened steel SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	20 - 60	0.1 - 0.2	0.1 - 0.2	0.1 - 0.3	0.1 - 0.3	0.25 x DC

Feed per tooth should not exceed the maximum value for each product.

TUNGMEISTER
VBB**-BM...

2 flute ball nose head for roughing (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VBB080L08.0-BM-02S05	●	2	0°	8	7.6	8	S05	10	KEYV-S05	7
VBB100L10.0-BM-02S06	●	2	0°	10	9.5	10	S06	12.4	KEYV-S06	10
VBB120L12.0-BM-02S08	●	2	0°	12	11.5	11.5	S08	15.3	KEYV-S08	15
VBB160L16.0-BM-02S10	●	2	0°	16	15.2	16	S10	19.1	KEYV-S10	28

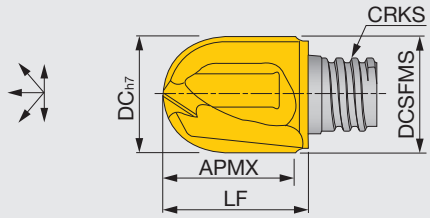
●: Line up

* Recommended clamping torque(N·m)
2 pieces per package

TUNGMEISTER
VBB**-BG...

2 flute ball nose head for semi-finishing (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH750	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VBB080L08.0-BG-02S05	●	2	0°	8	7.6	8	S05	10	KEYV-S05	7
VBB100L10.0-BG-02S06	●	2	0°	10	9.6	10	S06	12.4	KEYV-S06	10
VBB120L12.0-BG-02S08	●	2	0°	12	11.5	12	S08	15.3	KEYV-S08	15
VBB160L16.0-BG-02S10	●	2	0°	16	15.2	16	S10	19.1	KEYV-S10	28

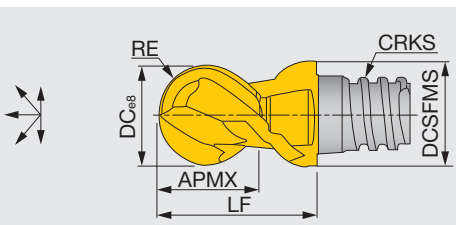
●: Line up

* Recommended clamping torque(N·m)
2 pieces per package

TUNGMEISTER
VBD**-BG...

Ball nose head with 2 ground flutes for finishing (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VBD080L05.0-BG-02S05	●	2	30°	8	7.7	5	3.982(1)	S05	10	KEYV-S05	7
VBD100L07.0-BG-02S06	●	2	30°	10	9.7	7	4.982(1)	S06	13	KEYV-S06	10
VBD120L09.0-BG-02S08	●	2	30°	12	11.7	9	5.978(2)	S08	16.5	KEYV-S08	15
VBD160L09.5-BG-02S10	●	2	30°	16	15.3	9	7.978(2)	S10	20.5	KEYV-S10	28

●: Line up

RE tolerance: (1) ± 0.010 (2) ± 0.012
* Recommended clamping torque(N·m)
2 pieces per package

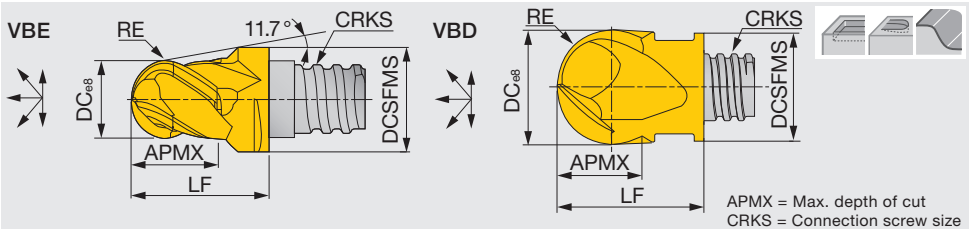
Reference pages: Standard cutting conditions → I075

TUNGMEISTER

VBD**-BG..., VBE**-BG...

Ball nose head with 4 ground flutes for finishing (TungMeister)





Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VBE060L05.5-BG-04S05	●	4	38°	6	8	5.5	2.987(1)	S05	10	KEYV-S05	7
VBD080L05.0-BG-04S05	●	4	30°	8	7.7	5	3.982(1)	S05	10	KEYV-S05	7
VBD100L07.0-BG-04S06	●	4	30°	10	9.7	7	4.982(1)	S06	13	KEYV-S06	10
VBD120L09.0-BG-04S08	●	4	30°	12	11.7	9	5.978(2)	S08	16.5	KEYV-S08	15
VBD160L12.0-BG-04S10	●	4	30°	16	15.3	12	7.978(2)	S10	20.5	KEYV-S10	28
VBD200L15.0-BG-04S12	●	4	30°	20	18.3	15	9.972(2)	S12	25.5	KEYV-S12	28
VBD250L22.0-BG-04S15	●	4	30°	25	23.9	22	12.470(3)	S15	37	KEYV-W20	40

RE tolerance: **(1) ± 0.01 (2) ± 0.012 (3) ± 0.02**

●: Line up

* Recommended clamping torque(N·m)

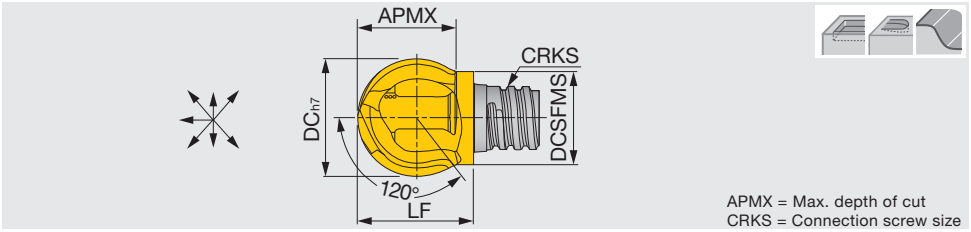
VBE060/VBD080 ~ VBD200: 2 pieces per package, VBD250: 1 piece per package

TUNGMEISTER

VBB**-SG...

2 flute ball nose head, with spherical designed edge (TungMeister)





Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VBB100L08.0-SG-02S05	●	2	0°	10	7.6	7.5	S05	10	KEYV-S05	7
VBB120L09.6-SG-02S06	●	2	0°	12	9.5	9	S06	11.6	**KEYV-S08	10
VBB160L12.9-SG-02S08	●	2	0°	16	12.2	12	S08	15.4	**KEYV-S10	15
VBB200L16.1-SG-02S10	●	2	0°	20	15.2	15	S10	18.4	KEYV-S10	28

Also capable of pull cutting on the vertical wall

●: Line up

** The wrench size for these heads is different from the ones for the other head types.

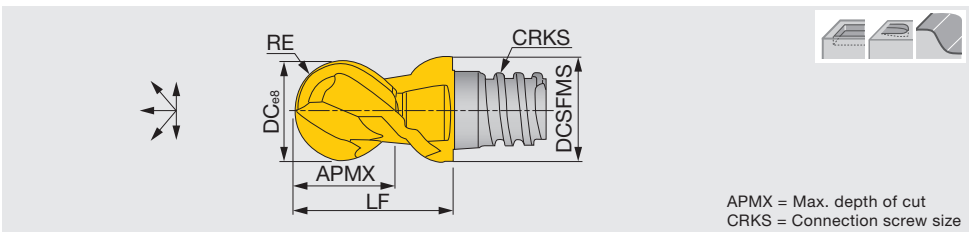
* Recommended clamping torque(N·m). 2 pieces per package

TUNGMEISTER

VBE**-BGA...

Ball nose head with 2 ground flutes for aluminium machining (TungMeister)





Designation	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VBE080L05.0-BGA02S05	●	2	45°	8	7.7	5	3.982(1)	S05	10	KEYV-S05	7
VBE100L07.0-BGA02S06	●	2	45°	10	9.7	7	4.982(1)	S06	13	KEYV-S06	10
VBE120L09.0-BGA02S08	●	2	45°	12	11.7	9	5.987(2)	S08	16.5	KEYV-S08	15
VBE160L12.0-BGA02S10	●	2	45°	16	15.3	12	7.978(2)	S10	20.5	KEYV-S10	28
VBE200L15.0-BGA02S12	●	2	45°	20	18.3	15	9.972(2)	S12	25.5	KEYV-S12	28

RE tolerance: **(1) ± 0.01 (2) ± 0.012** * Recommended clamping torque(N·m). 2 pieces per package

●: Line up

Reference pages: Standard cutting conditions → I075

STANDARD CUTTING CONDITIONS

Standard cutting conditions: Roughing (VBB-BM / BG / SG, VBD-BG, VBE-BGA)

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (m/min)	Feed per tooth: *fz* (mm/t) Tool diameter: DC (mm) 6	8	10	12	16	20	25	Depth of cut *ap* (mm)	Pick feed *Pf* (mm)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.	- 300 HB	100 - 200	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x DC	0.4 x DC
P	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.	- 300 HB	80 - 180	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x DC	0.4 x DC
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	80 - 160	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x DC	0.4 x DC
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	- 200 HB	60 - 100	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x DC	0.4 x DC
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.	150 - 250 HB	100 - 220	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x DC	0.4 x DC
K	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250 HB	100 - 220	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x DC	0.4 x DC
N	Aluminium alloys Si < 13%	-	200 - 700	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x DC	0.4 x DC
N	Aluminium alloys Si ≥13%	-	100 - 300	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x DC	0.4 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	40 - 80	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x DC	0.2 x DC
S	Heat-resistant alloys Inconel 718, etc.	50 - 60 HRC	20 - 40	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x DC	0.2 x DC
H	Hardened steel SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	-	40 - 80	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x DC	0.2 x DC
H	Hardened steel SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	20 - 60	0.03 - 0.07	0.04 - 0.08	0.05 - 0.10	0.06 - 0.11	0.07 - 0.13	0.08 - 0.15	0.08 - 0.15	0.3 x DC	0.2 x DC

Standard cutting conditions: Profiling for semi-finishing and finishing (VBB-BM / BG / SG, VBD-BG, VBE-BGA)

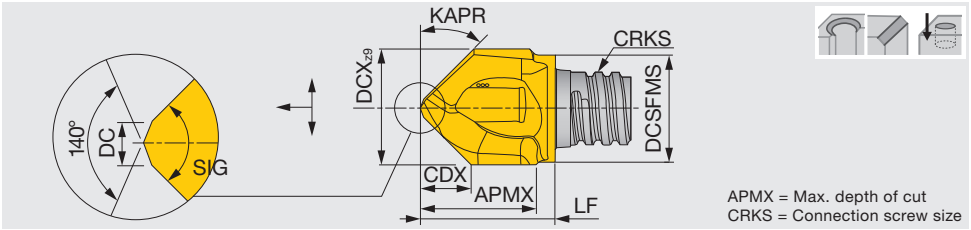
ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (m/min)	Feed per tooth: *fz* (mm/t) Tool diameter: DC (mm) 6	8	10	12	16	20	25	Depth of cut *ap* (mm)	Pick feed *Pf* (mm)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.	- 300 HB	120 - 250	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x DC	0.15 x DC
P	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.	- 300 HB	100 - 220	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x DC	0.15 x DC
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	100 - 200	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x DC	0.15 x DC
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	- 200 HB	80 - 120	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x DC	0.15 x DC
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.	150 - 250 HB	120 - 280	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x DC	0.15 x DC
K	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250 HB	120 - 280	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x DC	0.15 x DC
N	Aluminium alloys Si < 13%	-	300 - 1000	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x DC	0.15 x DC
N	Aluminium alloys Si ≥13%	-	150 - 400	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.1 x DC	0.15 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	50 - 100	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.08 x DC	0.1 x DC
S	Heat-resistant alloys Inconel 718, etc.	50 - 60 HRC	30 - 50	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.08 x DC	0.1 x DC
H	Hardened steel SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	-	50 - 100	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.08 x DC	0.1 x DC
H	Hardened steel SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	30 - 80	0.04 - 0.09	0.06 - 0.11	0.07 - 0.12	0.08 - 0.13	0.09 - 0.16	0.1 - 0.18	0.1 - 0.18	0.08 x DC	0.1 x DC

TUNGMEISTER

VCP**-02...

2 flute head, for spot drilling and chamfering (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	SIG	FHA	DCX	DCSFMS	APMX	CDX	CRKS	LF	DC	KAPR	Wrench	Torque*
VCP100L09.5A30-02S06	●	2	60°	0°	10	9.5	8.5	7.5	S06	11.75	1.5	60°	KEYV-S06	10
VCP120L12.0A30-02S08	●	2	60°	0°	12	11.5	11	9.2	S08	15.4	1.5	60°	KEYV-S08	15
VCP160L15.0A30-02S10	●	2	60°	0°	16	15.2	16	12	S10	20.2	2.5	60°	KEYV-S10	28
VCP080L07.7A45-02S05	●	2	90°	0°	8	7.6	7.5	3.7	S05	9.75	1	45°	KEYV-S05	7
VCP083L07.9A45-02S05	●	2	90°	0°	8.3	7.6	7.5	3.8	S05	10	1	45°	KEYV-S05	7
VCP100L09.0A45-02S06	●	2	90°	0°	10	9.5	9.5	4.4	S06	11.75	1.5	45°	KEYV-S06	10
VCP104L09.0A45-02S06	●	2	90°	0°	10.4	9.5	9.5	4.6	S06	11.75	1.5	45°	KEYV-S06	10
VCP120L12.0A45-02S08	●	2	90°	0°	12	11.5	11.5	5.4	S08	15.4	1.5	45°	KEYV-S08	15
VCP124L12.0A45-02S08	●	2	90°	0°	12.4	11.5	11.5	5.6	S08	15.4	1.5	45°	KEYV-S08	15
VCP160L15.0A45-02S10	●	2	90°	0°	16	15.2	15	7.1	S10	18.8	1.5	45°	KEYV-S10	28
VCP165L15.0A45-02S10	●	2	90°	0°	16.5	15.2	15	7.1	S10	18.8	1.5	45°	KEYV-S10	28
VCP100L09.5A60-02S06	●	2	120°	0°	10	9.5	9.5	2.7	S06	12.7	1.5	30°	KEYV-S06	10
VCP120L12.0A60-02S08	●	2	120°	0°	12	11.5	11.5	3.3	S08	15.2	1.5	30°	KEYV-S08	15
VCP160L15.5A60-02S10	●	2	120°	0°	16	15.2	16	4.4	S10	19.9	1.5	30°	KEYV-S10	28

●: Line up

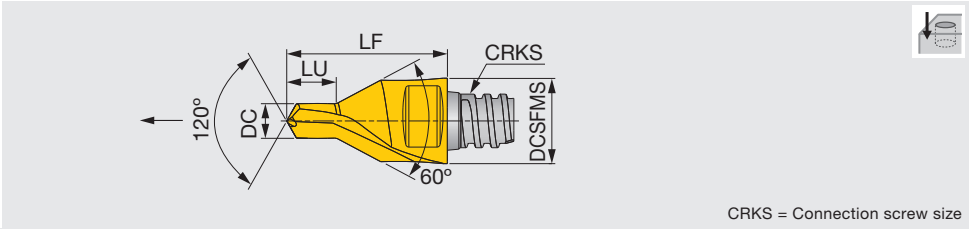
Minimum hole diameter ø1.5 mm
* Recommended clamping torque(N·m)
2 pieces per package

TUNGMEISTER

VDP**-02...

2 flute head, with chamfered edge, for spot drilling (TungMeister)





CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC± 0.02	DCSFMS	LU	CRKS	LF	Wrench	Torque*
VDP328L04.6A30-02S05	●	2	0°	3.28	8	4.6	S05	15	KEYV-S05	7
VDP412L05.9A30-02S06	●	2	0°	4.12	10	5.9	S06	19	KEYV-S06	10
VDP513L07.2A30-02S08	●	2	0°	5.13	12	7.2	S08	23	KEYV-S08	15
VDP646L08.9A30-02S10	●	2	0°	6.46	16	8.9	S10	28	KEYV-S10	28

●: Line up

* Recommended clamping torque(N·m)
2 pieces per package

Reference pages: Standard cutting conditions → I077

STANDARD CUTTING CONDITIONS

Drilling (VCP, VDP)

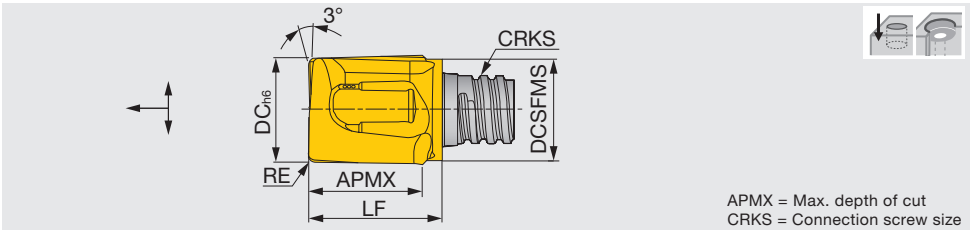
ISO	Workpiece material		Hardness	Cutting speed *Vc* (m/min)	Feed: *f* (mm/rev)				
					VDP328	VDP412	VDP513	VDP646	VCP
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.		- 300 HB	40 - 80	0.04 - 0.08	0.05 - 0.10	0.05 - 0.10	0.06 - 0.12	0.06 - 0.12
P	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.		- 300 HB	30 - 50	0.04 - 0.08	0.05 - 0.10	0.05 - 0.10	0.06 - 0.12	0.06 - 0.12
P	Prehardened steel PX5, NAK80, etc.		30 - 40 HRC	20 - 30	0.04 - 0.08	0.05 - 0.10	0.05 - 0.10	0.06 - 0.12	0.06 - 0.12
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.		- 200 HB	15 - 25	0.04 - 0.08	0.05 - 0.10	0.05 - 0.10	0.06 - 0.12	0.06 - 0.12
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.		150 - 250 HB	60 - 100	0.05 - 0.09	0.07 - 0.12	0.07 - 0.12	0.12 - 0.18	0.12 - 0.18
K	Ductile cast irons FCD400, etc. 400-15S, etc.		150 - 250 HB	60 - 100	0.04 - 0.08	0.05 - 0.10	0.05 - 0.10	0.10 - 0.15	0.10 - 0.15
S	Titanium alloys Ti-6Al-4V, etc.		-	15 - 25	0.04 - 0.07	0.04 - 0.07	0.04 - 0.07	0.04 - 0.07	0.04 - 0.07
S	Heat-resistant alloys Inconel 718, etc.		-	10 - 20	0.03 - 0.06	0.03 - 0.06	0.03 - 0.06	0.03 - 0.06	0.03 - 0.06
H	Hardened steel	SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	40 - 50 HRC	15 - 25	0.04 - 0.07	0.04 - 0.07	0.04 - 0.07	0.04 - 0.07	0.04 - 0.07
H	Hardened steel	SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	10 - 20	0.03 - 0.06	0.03 - 0.06	0.03 - 0.06	0.03 - 0.06	0.03 - 0.06

TUNGMEISTER

VGC**-02...

2 flute head, for counterboring (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VGC078L08.0R02-02S05	●	2	10°	7.8	7.6	7.7	0.2	S05	10	KEYV-S05	7
VGC080L08.0R04-02S05	●	2	10°	8	7.6	7.7	0.4	S05	10	KEYV-S05	7
VGC080L08.0R10-02S05	●	2	10°	8	7.6	7.7	1	S05	10	KEYV-S05	7
VGC080L08.0R20-02S05	●	2	10°	8	7.6	7.7	2	S05	10	KEYV-S05	7
VGC098L09.0R03-02S06	●	2	10°	9.8	9.5	9	0.3	S06	12.4	KEYV-S06	10
VGC100L09.0R04-02S06	●	2	10°	10	9.5	9	0.4	S06	12.4	KEYV-S06	10
VGC100L09.0R10-02S06	●	2	10°	10	9.5	9	1	S06	12.4	KEYV-S06	10
VGC100L09.0R20-02S06	●	2	10°	10	9.5	9	2	S06	12.4	KEYV-S06	10
VGC117L10.0R03-02S08	●	2	10°	11.7	11.5	10	0.3	S08	14.2	KEYV-S08	15
VGC120L10.0R04-02S08	●	2	10°	12	11.5	10	0.4	S08	14.2	KEYV-S08	15
VGC120L10.0R10-02S08	●	2	10°	12	11.5	10	1	S08	14.2	KEYV-S08	15
VGC120L10.0R20-02S08	●	2	10°	12	11.5	10	2	S08	14.2	KEYV-S08	15
VGC157L15.0R03-02S10	●	2	10°	15.7	15.2	15	0.3	S10	19	KEYV-S10	28
VGC160L15.0R04-02S10	●	2	10°	16	15.2	14.9	0.4	S10	19	KEYV-S10	28
VGC160L15.0R08-02S10	●	2	10°	16	15.2	14.9	0.8	S10	19	KEYV-S10	28

●: Line up

Also capable of drilling with step feed (Max. depth = ap x 0.5)
* Recommended clamping torque(N·m)
2 pieces per package

Reference pages: Standard cutting conditions → I079

Counter boring (VGC)

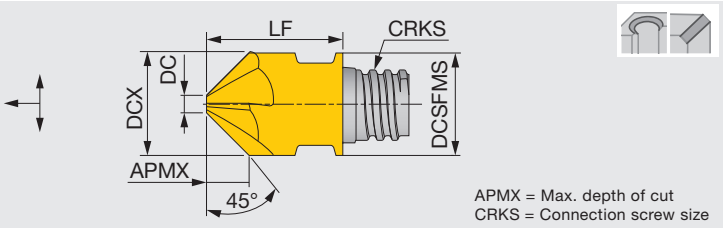
ISO	Workpiece material		Hardness	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.		- 300 HB	40 - 80	0.04 - 0.08
	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.		- 300 HB	30 - 50	0.04 - 0.08
	Prehardened steel PX5, NAK80, etc.		30 - 40 HRC	20 - 30	0.04 - 0.08
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.		- 200 HB	15 - 25	0.04 - 0.08
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.		150 - 250 HB	60 - 100	0.05 - 0.09
	Ductile cast irons FCD400, etc. 400-15S, etc.		150 - 250 HB	60 - 100	0.04 - 0.08
S	Titanium alloys Ti-6Al-4V, etc.		-	15 - 25	0.04 - 0.07
	Heat-resistant alloys Inconel 718, etc.		-	10 - 20	0.03 - 0.06
H	Hardened steel	SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	40 - 50 HRC	15 - 25	0.04 - 0.07
		SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	10 - 20	0.03 - 0.06

TUNGMEISTER

VCA**-04,06...

4 or 6 flute head, without center cutting edge, for countersinking and chamfering (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DCX	DCSFMS	APMX	DC	CRKS	LF	Wrench	Torque*
VCA100L04.0A45-04S06	●	4	0°	10	10	4	1.95	S06	13	KEYV-S06	10
VCA120L05.0A45-04S08	●	4	0°	12	12	5	1.95	S08	16.5	KEYV-S08	15
VCA127L05.3A45-04S08	●	4	0°	12.7	12.7	5.3	1.98	S08	16.5	KEYV-S08	15
VCA160L06.5A45-06S10	●	6	0°	16	16	6.5	3	S10	20.3	KEYV-S10	28
VCA200L07.5A45-06S12	●	6	0°	20	18.3	7.5	5	S12	25.5	KEYV-S12	28

* Recommended clamping torque(N·m)
2 pieces per package

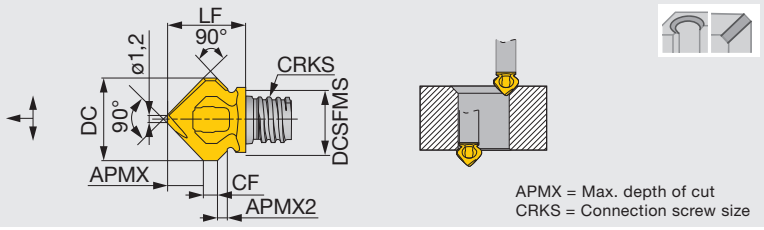
●: Line up

TUNGMEISTER

VCW**-02...

2 flute head, for front and back chamfering (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DC	DCSFMS	APMX	APMX2	CF	CRKS	LF	Wrench	Torque*
VCW118L05.0A45-02S06	●	2	0°	11.8	9.3	5	1.2	2	S06	11.2	KEYV-S08	10

Also capable of reverse chamfering
* The wrench size for these heads is different from the ones for the other head types.
* Recommended clamping torque(N·m)
2 pieces per package

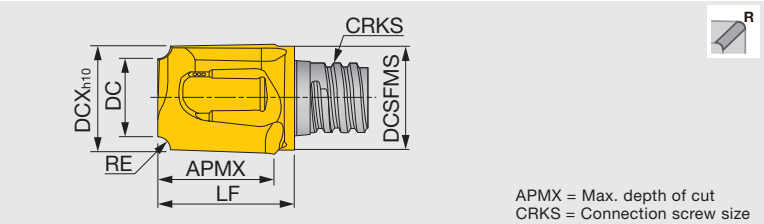
●: Line up

TUNGMEISTER

VCR**-02...

2 flute head, for concave radius chamfering (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Designation	AH725	NOF	FHA	DCX	DCSFMS	DC	APMX	RE	CRKS	LF	Wrench	Torque*
VCR080L07.5R10-02S05	●	2	0°	8	7.6	5.8	7.5	1	S05	10.5	KEYV-S05	7
VCR100L09.5R16-02S06	●	2	0°	10	9.5	6.8	9.5	1.6	S06	12.5	KEYV-S06	10
VCR100L09.5R25-02S06	●	2	0°	10	9.5	5.1	9.5	2.5	S06	12.5	KEYV-S06	10
VCR127L12.0R30-02S08	●	2	0°	12.7	12.2	6.5	12	3	S08	15.6	KEYV-S08	15
VCR127L12.0R40-02S08	●	2	0°	12.7	12.2	4.7	12	4	S08	15.6	KEYV-S08	15
VCR160L15.0R50-02S10	●	2	0°	16	15.2	6.2	15	5	S10	19.1	KEYV-S10	28
VCR200L07.0R60-02S12	●	2	0°	20	18.3	8	7	6	S12	17.4	KEYV-S12	28

* Recommended clamping torque(N·m)
2 pieces per package

●: Line up

Reference pages: Standard cutting conditions → I081

STANDARD CUTTING CONDITIONS

Chamfering and countersinking (VCA, VCW, VCR, VCP)

ISO	Workpiece material		Hardness	Cutting speed *Vc* (m/min)	Feed *f* (mm/rev)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.		- 300 HB	60 - 100	0.06 - 0.12
	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.		- 300 HB	50 - 80	0.06 - 0.12
	Prehardened steel PX5, NAK80, etc.		30 - 40 HRC	40 - 70	0.06 - 0.12
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.		- 200 HB	30 - 50	0.06 - 0.12
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.		150 - 250 HB	80 - 120	0.06 - 0.12
	Ductile cast irons FC250, FC300, etc. 400-15S, etc.		150 - 250 HB	80 - 120	0.06 - 0.12
N	Aluminium alloys		-	100 - 200	0.08 - 0.15
S	Titanium alloys Ti-6Al-4V, etc.		-	30 - 50	0.05 - 0.1
	Heat-resistant alloys Inconel 718, etc.		-	20 - 40	0.04 - 0.08
H	Hardened steel	SKD61, SKT4, etc. X40CrMoV5 1, 55NiCrMoV6, etc.	40 - 50 HRC	30 - 50	0.05 - 0.1
		SKD11, SKH, etc. X153CrMoV12, HS18-0-1, etc.	50 - 60 HRC	20 - 40	0.04 - 0.08

TOLERANCE OF TOOL DIAMETER

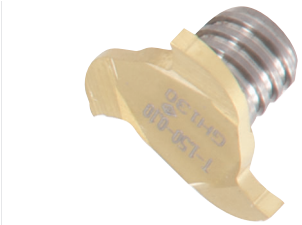
Basic dimensions (mm)		Permissible dimensional deviations (μm)						
>	≤	e8	e9	h6	h7	h9	h10	z9
6	10	-25 -47	-25 -61	0 -9	0 -15	0 -36	0 -58	+78 +42
10	14	-32 -59	-32 -75	0 -11	0 -18	0 -43	0 -70	+93 +50
14	18	-32 -59	-32 -75	0 -11	0 -18	0 -43	0 -70	+103 +60
18	30	-40 -73	-40 -92	0 -13	0 -21	0 -52	0 -84	-

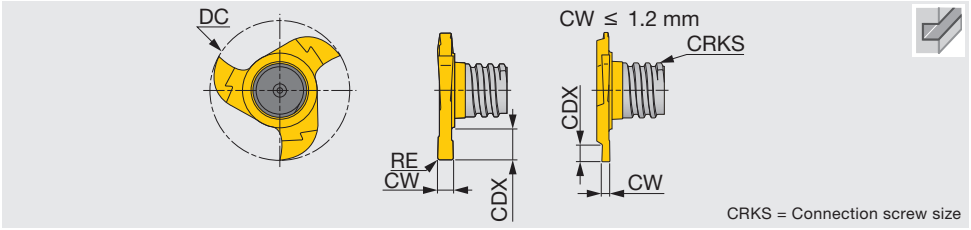
JISB0401-2: 1998 (ISO286-2: 1988) extract

TUNGMEISTER

VST**-3...

3 tooth slotting head, 1.2-3.17 mm slot width (TungMeister)





Designation	GH130	NOF	FHA	DC	CW* 0.02	RE	CRKS	CDX	Wrench	Torque*
VST157W1.50R010-3S06	●	3	0°	15.7	1.5	0.1	S06	2.8	KEYV-177	10
VST157W1.57R020-3S06	●	3	0°	15.7	1.57	0.2	S06	2.8	KEYV-177	10
VST157W2.00R020-3S06	●	3	0°	15.7	2	0.2	S06	2.8	KEYV-177	10
VST157W2.39R020-3S06	●	3	0°	15.7	2.39	0.2	S06	2.8	KEYV-177	10
VST157W2.50R020-3S06	●	3	0°	15.7	2.5	0.2	S06	2.8	KEYV-177	10
VST157W3.00R020-3S06	●	3	0°	15.7	3	0.2	S06	2.8	KEYV-177	10
VST157W3.17R020-3S06	●	3	0°	15.7	3.17	0.2	S06	2.8	KEYV-177	10
VST177W1.20R005-3S06	●	3	0°	17.7	1.2(1)	0.05	S06	3.8	KEYV-177	10
VST177W1.40R005-3S06	●	3	0°	17.7	1.4(1)	0.05	S06	3.8	KEYV-177	10
VST177W1.50R010-3S06	●	3	0°	17.7	1.5	0.1	S06	3.8	KEYV-177	10
VST177W1.57R020-3S06	●	3	0°	17.7	1.57	0.2	S06	3.8	KEYV-177	10
VST177W1.70R005-3S06	●	3	0°	17.7	1.7(1)	0.05	S06	3.8	KEYV-177	10
VST177W2.00R020-3S06	●	3	0°	17.7	2	0.2	S06	3.8	KEYV-177	10
VST177W2.20R110-3S06	●	3	0°	17.7	2.2	1.1	S06	3.8	KEYV-177	10
VST177W2.39R020-3S06	●	3	0°	17.7	2.39	0.2	S06	3.8	KEYV-177	10
VST177W2.50R020-3S06	●	3	0°	17.7	2.5	0.2	S06	3.8	KEYV-177	10
VST177W3.00R020-3S06	●	3	0°	17.7	3	0.2	S06	3.8	KEYV-177	10
VST177W3.17R020-3S06	●	3	0°	17.7	3.17	0.2	S06	3.8	KEYV-177	10

●: Line up

(1) CW is based on DIN471/472.
* Recommended clamping torque(N·m)
2 pieces per package

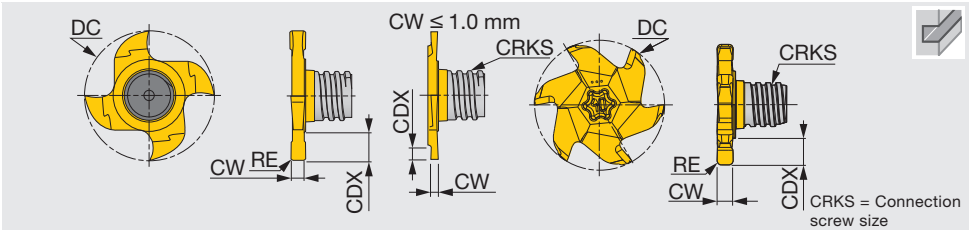
Reference pages: Standard cutting conditions → I085

TUNGMEISTER

VST**-4,6...

4 or 6 tooth slotting head, 0.76-10.0 mm slot width (TungMeister)





Designation	GH130	NOF	FHA	DC	CW* 0.02	RE	CRKS	CDX	Wrench	Torque*
VST217W0.76R000-4S08	●	4	0°	21.7	0.76(1)	-	S08	1.5	KEYV-217	15
VST217W0.86R000-4S08	●	4	0°	21.7	0.86(1)	-	S08	1.7	KEYV-217	15
VST217W0.96R000-4S08	●	4	0°	21.7	0.96(1)	-	S08	1.9	KEYV-217	15
VST217W1.00R005-4S08	●	4	0°	21.7	1	0.05	S08	2	KEYV-217	15
VST217W1.20R005-4S08	●	4	0°	21.7	1.2(1)	0.05	S08	4.5	KEYV-217	15
VST217W1.40R005-4S08	●	4	0°	21.7	1.4(1)	0.05	S08	4.5	KEYV-217	15
VST217W1.57R000-4S08	●	4	0°	21.7	1.57	-	S08	4.5	KEYV-217	15
VST217W1.70R010-4S08	●	4	0°	21.7	1.7(1)	0.1	S08	4.5	KEYV-217	15
VST217W1.95R020-4S08	●	4	0°	21.7	1.95(1)	0.2	S08	4.5	KEYV-217	15
VST217W2.00R020-4S08	●	4	0°	21.7	2	0.2	S08	4.5	KEYV-217	15
VST217W2.25R020-4S08	●	4	0°	21.7	2.25(1)	0.2	S08	4.5	KEYV-217	15
VST217W2.39R020-4S08	●	4	0°	21.7	2.39	0.2	S08	4.5	KEYV-217	15
VST217W2.50R020-4S08	●	4	0°	21.7	2.5	0.2	S08	4.5	KEYV-217	15
VST217W2.75R020-4S08	●	4	0°	21.7	2.75(1)	0.2	S08	4.5	KEYV-217	15
VST217W3.00R020-4S08	●	4	0°	21.7	3	0.2	S08	4.5	KEYV-217	15
VST217W3.17R020-4S08	●	4	0°	21.7	3.17	0.2	S08	4.5	KEYV-217	15
VST217W3.25R020-4S08	●	4	0°	21.7	3.25(1)	0.2	S08	4.5	KEYV-217	15
VST217W4.00R020-4S08	●	4	0°	21.7	4	0.2	S08	4.5	KEYV-217	15
VST217W4.25R020-4S08	●	4	0°	21.7	4.25(1)	0.2	S08	4.5	KEYV-217	15
VST217W4.75R020-4S08	●	4	0°	21.7	4.75	0.2	S08	4.5	KEYV-217	15
VST217W5.25R020-4S08	●	4	0°	21.7	5.25(1)	0.2	S08	4.5	KEYV-217	15
VST277W2.50R020-6S10	●	6	0°	27.7	2.5	0.2	S10	6	KEYV-T40L	28
VST277W5.25R020-6S10	●	6	0°	27.7	5.25	0.2	S10	6	KEYV-T40L	28
VST277W10.0R020-6S10	●	6	0°	27.7	10	0.2	S10	6	KEYV-T40L	28

(1) CW is based on DIN471/472.
* Recommended clamping torque(N·m)
2 pieces per package

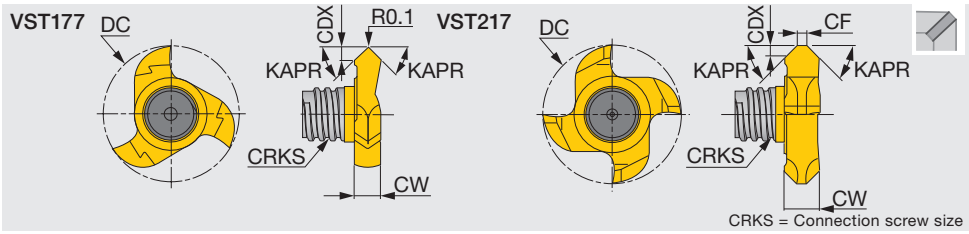
●: Line up

TUNGMEISTER

VST**A45...

3 or 4 tooth slotting head, for chamfering (TungMeister)





Designation	GH130	NOF	FHA	DC	CW	KAPR	CRKS	CDX	CF	Wrench	Torque*
VST177L01.40A45-3S06	●	3	0°	17.7	3.4	45°	S06	1.4	-	KEYV-177	10
VST217L01.70A45-4S08	●	4	0°	21.7	5.5	45°	S08	1.7	1.5	KEYV-217	15

●: Line up

* Recommended clamping torque(N·m)
2 pieces per package

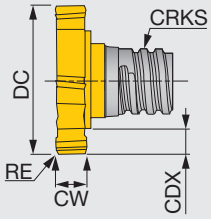
Reference pages: Standard cutting conditions → I085

TUNGMEISTER

VTB**-06...

6 tooth T-slotting head, 3-8 mm slot width (TungMeister)





CRKS = Connection screw size

Designation	GH130	NOF	FHA	DC $^{0}_{-0.05}$	CW ± 0.02	CDX	CRKS	RE	Wrench	Torque*
VTB135W3.00R04-06S05	●	6	0°	13.5	3	2.65	S05	0.4	KEYV-T20	7
VTB135W4.00R04-06S05	●	6	0°	13.5	4	2.65	S05	0.4	KEYV-T20	7
VTB160W2.00R04-06S06	●	6	0°	16	2	2.9	S06	0.4	KEYV-T20	10
VTB160W3.00R04-06S06	●	6	0°	16	3	2.9	S06	0.4	KEYV-T25	10
VTB160W4.00R04-06S06	●	6	0°	16	4	2.9	S06	0.4	KEYV-T25	10
VTB165W2.00R04-06S06	●	6	0°	16.5	2	3.15	S06	0.4	KEYV-T20	10
VTB165W3.00R04-06S06	●	6	0°	16.5	3	3.15	S06	0.4	KEYV-T25	10
VTB165W4.00R04-06S06	●	6	0°	16.5	4	3.15	S06	0.4	KEYV-T25	10
VTB195W4.00R04-06S08	●	6	0°	19.5	4	3.45	S08	0.4	KEYV-T30L	15
VTB195W5.00R04-06S08	●	6	0°	19.5	5	3.45	S08	0.4	KEYV-T30L	15
VTB195W6.00R04-06S08	●	6	0°	19.5	6	3.45	S08	0.4	KEYV-T30L	15
VTB225W5.00R04-06S08	●	6	0°	22.5	5	4.95	S08	0.4	KEYV-T40L	15
VTB225W6.00R04-06S08	●	6	0°	22.5	6	4.95	S08	0.4	KEYV-T40L	15
VTB225W8.00R04-06S08	●	6	0°	22.5	8	4.95	S08	0.4	KEYV-T40L	15
VTB250W6.00R04-06S08	●	6	0°	25	6	5.9	S08	0.4	KEYV-T50L	15
VTB250W8.00R04-06S08	●	6	0°	25	8	5.9	S08	0.4	KEYV-T50L	15
VTB250W5.00R04-06S10	●	6	0°	25	5	4.3	S10	0.4	KEYV-T50L	28
VTB250W6.00R04-06S10	●	6	0°	25	6	4.3	S10	0.4	KEYV-T50L	28
VTB250W8.00R04-06S10	●	6	0°	25	8	4.3	S10	0.4	KEYV-T50L	28

* Recommended clamping torque(N·m)
2 pieces per package

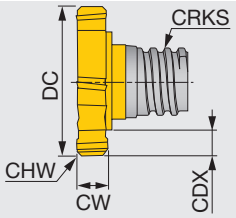
●: Line up

TUNGMEISTER

VTB**C15-06...

6 tooth T-slotting head, with chamfered edge, 2 mm slot width (TungMeister)





CRKS = Connection screw size

Designation	GH130	NOF	FHA	DC $^{0}_{-0.05}$	CW ± 0.05	CDX	CRKS	CHW	Wrench	Torque*
VTB135W2.00C15-06S05	●	6	0°	13.5	2	2.65	S05	0.15	KEYV-T20	7

* Recommended clamping torque(N·m)
2 pieces per package

●: Line up

Reference pages: Standard cutting conditions → I085

STANDARD CUTTING CONDITIONS

Slotting (VST, VTB)

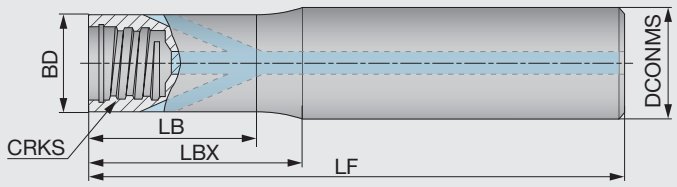
ISO	Workpiece material	Hardness HB	VST type		VTB type	
			Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steels S45C, S55C, etc. C45, C55, etc.	- 300	80 - 180	0.05 - 0.15	80 - 180	0.08 - 0.18
P	High carbon steels SCM440, SCr415, etc. 42CrMo4, 15Cr3, etc.	- 300	60 - 120	0.04 - 0.12	60 - 120	0.05 - 0.15
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.	- 200	50 - 120	0.04 - 0.12	50 - 120	0.05 - 0.15
K	Grey cast irons FC250, FC300, etc. 250, 300, etc.	150 - 250	100 - 200	0.05 - 0.15	100 - 200	0.08 - 0.18
K	Ductile cast irons FCD400, etc. 400-15S, etc.	150 - 250	100 - 200	0.04 - 0.12	100 - 200	0.05 - 0.15
N	Aluminium alloys Si < 13%	-	200 - 600	0.05 - 0.15	200 - 600	0.08 - 0.18
N	Aluminium alloys Si ≥13%	-	100 - 300	0.03 - 0.13	100 - 300	0.05 - 0.15
S	Titanium alloys Ti-6Al-4V, etc.	-	40 - 60	0.04 - 0.12	40 - 60	0.05 - 0.15
S	Heat-resistant alloys Inconel 718, etc.	-	15 - 35	0.02 - 0.1	15 - 35	0.02 - 0.1

TUNGMEISTER

VSSD**-W-A

Cylindrical shank + straight neck, with coolant hole (TungMeister)



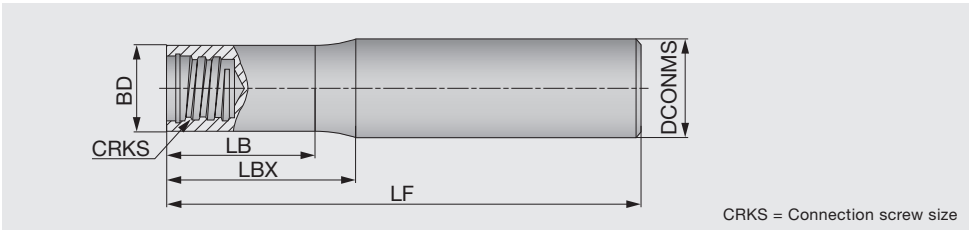


CRKS = Connection screw size

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

Cylindrical shank + straight neck (TungMeister)



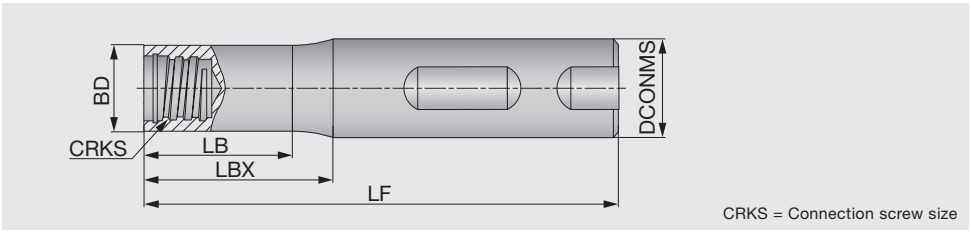


CRKS = Connection screw size

Designation	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSSD08L060S05-S	8	7.6	60	15	12.5	S05	Cylindrical	Steel
VSSD08L070S05-C	8	7.6	70	20	18.5	S05	Cylindrical	Carbide
VSSD08L090S05-C	8	7.6	90	40	38.5	S05	Cylindrical	Carbide
VSSD08L110S05-C	8	7.6	110	60	58.5	S05	Cylindrical	Carbide
VSSD10L070S06-C	10	9.6	70	20	18.5	S06	Cylindrical	Carbide
VSSD10L075S06-S	10	9.6	75	20	17.5	S06	Cylindrical	Steel
VSSD10L090S06-C	10	9.6	90	40	38.5	S06	Cylindrical	Carbide
VSSD10L110S06-C	10	9.6	110	60	58.5	S06	Cylindrical	Carbide
VSSD10L150S06-C	10	9.6	150	100	98.5	S06	Cylindrical	Carbide
VSSD12L070S08-C	12	11.5	70	20	17	S08	Cylindrical	Carbide
VSSD12L090S08-C	12	11.5	90	40	38	S08	Cylindrical	Carbide
VSSD12L090S08-S	12	11.5	90	16	13.5	S08	Cylindrical	Steel
VSSD12L110S08-C	12	11.5	110	60	58	S08	Cylindrical	Carbide
VSSD12L130S08-C	12	11.5	130	80	78	S08	Cylindrical	Carbide
VSSD16L090S10-C	16	15.2	90	40	38	S10	Cylindrical	Carbide
VSSD16L100S10-S	16	15.2	100	20	18	S10	Cylindrical	Steel
VSSD16L110S10-C	16	15.2	110	60	58	S10	Cylindrical	Carbide
VSSD16L130S10-C	16	15.2	130	80	78	S10	Cylindrical	Carbide
VSSD16L150S10-C	16	15.2	150	100	98	S10	Cylindrical	Carbide
VSSD20L090S12-C	20	18.3	90	40	37	S12	Cylindrical	Carbide
VSSD20L120S12-S	20	18.3	120	25	20.5	S12	Cylindrical	Steel
VSSD20L130S12-C	20	18.3	130	80	77	S12	Cylindrical	Carbide
VSSD20L200S12-C	20	18.3	200	120	117	S12	Cylindrical	Carbide
VSSD25L120S15-C	25	23.9	120	60	58	S15	Cylindrical	Carbide
VSSD25L135S15-S	25	23.9	135	35	33	S15	Cylindrical	Steel
VSSD25L170S15-C	25	23.9	170	100	98	S15	Cylindrical	Carbide
VSSD25L250S15-C	25	23.9	250	150	148	S15	Cylindrical	Carbide

Weldon shank + straight neck (TungMeister)





CRKS = Connection screw size

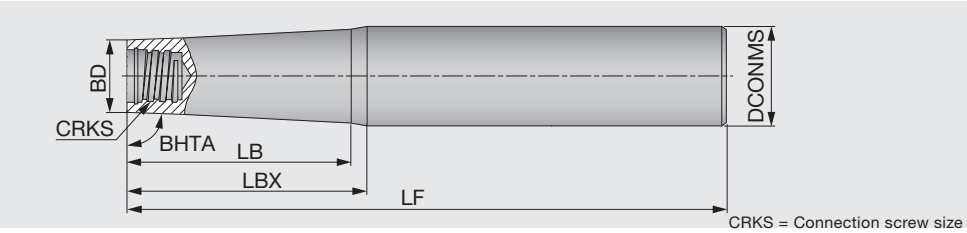
Designation	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSSD12L055W05-S	12	7.6	55	3.8	-	S05	Weldon	Steel
VSSD16L065W06-S	16	9.6	65	6	-	S06	Weldon	Steel
VSSD16L065W08-S	16	11.5	65	4	-	S08	Weldon	Steel
VSSD20L070W10-S	20	15.2	70	4	-	S10	Weldon	Steel
VSSD25L075W12-S	25	18.3	75	6	-	S12	Weldon	Steel

TUNGMEISTER

VTSD...

Cylindrical shank + tapered neck (TungMeister)





CRKS = Connection screw size

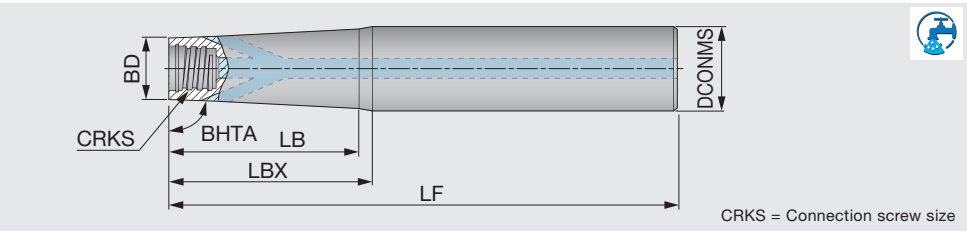
Designation	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VTSD12L080S05-S	85°	12	7.6	80	25	-	S05	Cylindrical	Steel
VTSD12L100S05-S	89°	12	7.6	100	35	29	S05	Cylindrical	Steel
VTSD12L110S05-C	89°	12	7.6	110	60	56	S05	Cylindrical	Carbide
VTSD12L130S05-C	89°	12	7.6	130	80	77	S05	Cylindrical	Carbide
VTSD16L125S06-S	85°	16	9.6	125	34	31	S06	Cylindrical	Steel
VTSD16L130S08-C	89°	16	11.5	130	80	76.5	S08	Cylindrical	Carbide
VTSD16L140S08-S	85°	16	11.5	140	22	19	S08	Cylindrical	Steel
VTSD16L150S05-C	89°	16	7.6	150	100	91	S05	Cylindrical	Carbide
VTSD16L150S06-C	89°	16	9.6	150	100	94.5	S06	Cylindrical	Carbide
VTSD16L150S08-C	89°	16	11.5	150	100	98	S08	Cylindrical	Carbide
VTSD16L160S06-S	89°	16	9.6	160	55	46.5	S06	Cylindrical	Steel
VTSD16L170S06-C	89°	16	9.6	170	120	116.5	S06	Cylindrical	Carbide
VTSD20L140S10-S	85°	20	15.2	140	27.5	-	S10	Cylindrical	Steel
VTSD20L170S08-C	89°	20	11.5	170	120	112	S08	Cylindrical	Carbide
VTSD20L170S08-S	89°	20	11.5	170	80	69.5	S08	Cylindrical	Steel
VTSD20L170S10-C	89°	20	15.2	170	120	119	S10	Cylindrical	Carbide
VTSD20L190S10-C	89°	20	15.2	190	140	-	S10	Cylindrical	Carbide
VTSD20L190S10-S	89°	20	15.2	190	80	73	S10	Cylindrical	Steel
VTSD20L210S10-C	89°	20	15.2	210	160	-	S10	Cylindrical	Carbide
VTSD25L160S12-S	85°	25	18.3	160	40	-	S12	Cylindrical	Steel
VTSD25L170S10-S	85°	25	15.2	170	56	-	S10	Cylindrical	Steel
VTSD25L180S12-C	89°	25	18.3	180	120	115	S12	Cylindrical	Carbide
VTSD25L210S12-S	89°	25	18.3	210	100	94.5	S12	Cylindrical	Steel
VTSD25L250S12-C	89°	25	18.3	250	140	136.5	S12	Cylindrical	Carbide
VTSD32L155S15-S	85°	32	23.9	155	45	-	S15	Cylindrical	Steel
VTSD32L190S12-S	85°	32	18.3	190	80	-	S12	Cylindrical	Steel
VTSD32L220S15-S	85°	32	23.9	220	100	-	S15	Cylindrical	Steel
VTSD32L250S15-C	89°	32	23.9	250	150	145	S15	Cylindrical	Carbide
VTSD32L300S15-C	89°	32	23.9	300	200	198	S15	Cylindrical	Carbide

TUNGMEISTER

VTSD**-W-A

Cylindrical shank + tapered neck, with coolant hole (TungMeister)





CRKS = Connection screw size

Designation	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VTSD12L110S06-W-A	89°	12	9.6	110	60	59	S06	Cylindrical	Tungsten
VTSD16L170S06-W-A	89°	16	9.6	170	120	116	S06	Cylindrical	Tungsten

TUNGMEISTER

VSC...

Cylindrical shank for VST slotting heads (TungMeister)



CRKS = Connection screw size

Designation	DCONMS	BD	LF	CRKS	Coolant hole	Shank shape	Shank material
VSC100L100S06-C	10	10	100	S06	Without	Cylindrical	Carbide
VSC120L100S08-C-A	12	12	100	S08	With	Cylindrical	Carbide

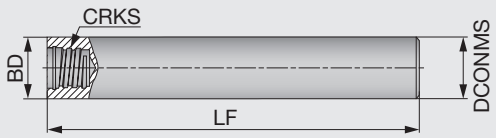
VSC shank should be used with VST slotting head.
If other types of heads are used, please be sure not to exceed the maximum depth of cut for each head (See ap for each head).
VSC shank does not have external clearance, and it may interfere with the workpiece during machining.

TUNGMEISTER

VSTD...

Cyrindrical shank for VTB slotting head (TungMeister)





CRKS = Connection screw size

Designation	DCONMS	BD	LF	CRKS	Shank shape	Shank material
VSTD08L070S05-S	8	8	70	S05	Cylindrical	Steel
VSTD10L080S06-S	10	10	80	S06	Cylindrical	Steel
VSTD12L090S08-S	12	12	90	S08	Cylindrical	Steel
VSTD16L100S10-S	16	16	100	S10	Cylindrical	Steel

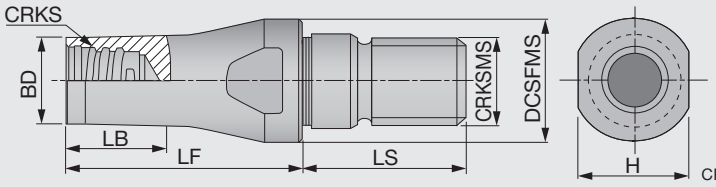
VSTD shank should be used with VTB slotting head.
If other types of heads are used, please be sure not to exceed the maximum depth of cut for each head (See ap for each head).
VSTD shank does not have external clearance, and it may interfere with the workpiece during machining.

TUNGMEISTER TUNGFLEX

VAD**-M...

Adapter for TungFlex conversion





CRKS = Connection screw size

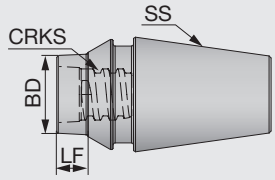
Designation	BD	DCSFMS	LF	LS	LB	CRKS	CRKSMS	H
VAD130L016S08-S-M8	11.7	13	16	17.5	6	S08	M8	11
VAD130L025S08-S-M8	11.7	13	25	17.5	20	S08	M8	11
VAD180L020S08-S-M10	11.7	18	20	20	12	S08	M10	13
VAD180L025S08-S-M10	11.7	18	25	20	15	S08	M10	11
VAD210L020S08-S-M12	11.7	21	20	20	10	S08	M12	12.75
VAD210L025S08-S-M12	11.7	21	25	20	13	S08	M12	12.75

TUNGMEISTER

VER...

Adapter for ER collect chucks

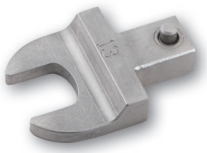




CRKS = Connection screw size

Designation	SS	BD	LF	CRKS
VER11CL006S05-S	ER11	7.92	6	S05
VER11CL020S05-S	ER11	7.92	20	S05
VER16CL012S05-S	ER16	7.92	12	S05
VER16CL020S05-S	ER16	7.92	20	S05
VER16CL010S06-S	ER16	9.92	10	S06
VER16CL020S06-S	ER16	9.92	20	S06
VER16CL006S08-S	ER16	11.6	6	S08
VER16CL020S08-S	ER16	11.6	20	S08

TORQUE WRENCHES

Appearance		Designation	Stock	Connection screw size	TM Head description	Torque (N·m)
Handle		TORQUEWRENCH5-50NM9x12	●	-	-	-
Open wrenches for cylindrical heads		TM-WRENCH-6-05	●	S05	VED, VEE VEE-I, VEE-R VEE-C, VEE-A VRD, VBD-BG VBE-BGA VDP, VCA	7
		TM-WRENCH-8-06	●	S06		10
		TM-WRENCH-10-08	●	S08		15
		TM-WRENCH-13-10	●	S10		28
		TM-WRENCH-16-12	●	S12		28
		TM-WRENCH-20-15	●	S15		40
Open wrenches for 2 flute heads		TM-WRENCH-4E-05	●	S05	VRB, VRC VFX, VBB-BM VBB-BG VBB-SG VCP, VGC VCW, VCR	7
		TM-WRENCH-5E-06	●	S06		10
		TM-WRENCH-7E-08	●	S08		15
		TM-WRENCH-8E-10	●	S10		28
		TM-WRENCH-9E-12	●	S12		28
90° adaptor for Torx bits		INSERT-TOOL-9X12MM	●	-	-	-
Torx bits sockets		BIT-SOCKET-T20-DRIVE	●	S05, S06	VTB135 VTB160W2.00 VTB165W2.00	7, 10
		BIT-SOCKET-T25-DRIVE	●	S06	VTB160W3.00 VTB160W4.00	10
		BIT-SOCKET-T30-DRIVE	●	S08	VTB165W3.00	15
		BIT-SOCKET-T40-DRIVE	●	S08, S10	VTB165W4.00 VTB195	15, 28
		BIT-SOCKET-T50-DRIVE	●	S08, S10	VST277 VTB225 VTB250	15, 28

WRENCH

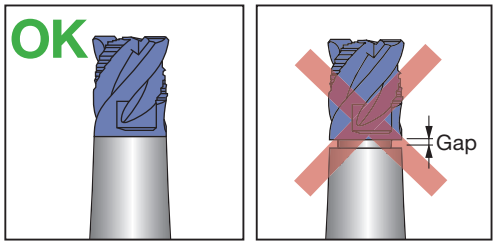
KEYV-..., KEYV-S..., KEYV-T..., KEYV-T**L, KEYV-W20

Appearance	Designation	Connection screw size	Torque (N·m)	Applicable head
	KEYV-S05	S05	7	Square Ball Radius Drilling Chamfering Counter boring
	KEYV-S06	S06	10	
	KEYV-S08	S08	15	
	KEYV-S10	S10	28	
	KEYV-S12	S12	28	
	KEYV-W20	S15	40	
	KEYV-177	S06	10	Slotting VST type
	KEYV-217	S08	15	
	KEYV-T40L	S08	15	Slotting VST, VTB type
		S10	28	
	KEYV-T20	S05	7	Slotting VTB type
		S06	10	
	KEYV-T25	S06	10	
	KEYV-T30L	S08	15	
	KEYV-T50L	S08	15	
		S10	28	

Note: Wrenches are sold separately.

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 wiping cloth to remove chips and other foreign matter that may remain.
- Do not apply the 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.) Do not re-tightening or over-tightening. Excessive tightening may cause the cutting head to break.
- Do not apply excessive force or a hammer when tightening or exchanging the cutting heads.



EVX

Multi purpose endmill, shank type, with center cutting edge

Standard type GAMP = +2˚~ +5˚, GAMF = -10˚~ -3.5˚
Long type GAMP = +5˚, GAMF = -4˚~ -2˚



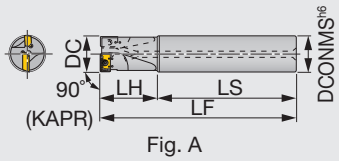


Fig. A

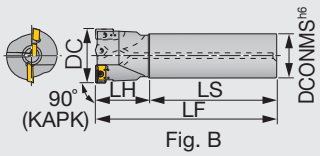
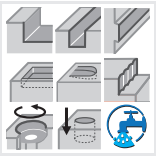


Fig. B



Designation	APMX	DC	CICT	DCONMS	LS	LH	LF	Coolant hole	Fig.	Insert
EVX08016RSA	7	16	2	16	90	30	120	With	A	XXMU08...
EVX08016RS	7	16	2	16	90	30	120	Without	A	XXMU08...
EVX08016RLA	7	16	2	16	135	40	175	With	A	XXMU08...
EVX08016RL	7	16	2	16	135	40	175	Without	A	XXMU08...
EVX10020RSA	9	20	2	20	90	30	120	With	A	XXMU10...
EVX10020RS	9	20	2	20	90	30	120	Without	A	XXMU10...
EVX10020RLA	9	20	2	20	135	50	185	With	A	XXMU10...
EVX10020RL	9	20	2	20	135	50	185	Without	A	XXMU10...
EVX12025RSA	11.5	25	2	25	100	40	140	With	A	XXMU12...
EVX12025RS	11.5	25	2	25	100	40	140	Without	A	XXMU12...
EVX12025RLA	11.5	25	2	25	150	70	220	With	A	XXMU12...
EVX12025RL	11.5	25	2	25	150	70	220	Without	A	XXMU12...
EVX16032RSA	15	32	2	32	110	50	160	With	A	XXMU16...
EVX16032RS	15	32	2	32	110	50	160	Without	A	XXMU16...
EVX16032RLA	15	32	2	32	175	80	255	With	A	XXMU16...
EVX16032RL	15	32	2	32	175	80	255	Without	A	XXMU16...
EVX12040RSA	11.5	40	2	42	120	60	180	With	B	XXMU12, WCMT05...
EVX12040RS	11.5	40	2	42	120	60	180	Without	B	XXMU12, WCMT05...
EVX12040RLA	11.5	40	2	42	210	100	310	With	B	XXMU12, WCMT05...
EVX12040RL	11.5	40	2	42	210	100	310	Without	B	XXMU12, WCMT05...
EVX16050RSA	15	50	2	42	160	50	210	With	B	XXMU16, WCMT06...
EVX16050RS	15	50	2	42	160	50	210	Without	B	XXMU16, WCMT06...
EVX16050RLA	15	50	2	42	310	50	360	With	B	XXMU16, WCMT06...
EVX16050RL	15	50	2	42	310	50	360	Without	B	XXMU16, WCMT06...
EVX16063RSA	15	63	2	42	190	50	240	With	B	XXMU16, WCMT06...
EVX16063RS	15	63	2	42	190	50	240	Without	B	XXMU16, WCMT06...
EVX16063RLA	15	63	2	42	310	50	360	With	B	XXMU16, WCMT06...
EVX16063RL	15	63	2	42	310	50	360	Without	B	XXMU16, WCMT06...

SPARE PARTS







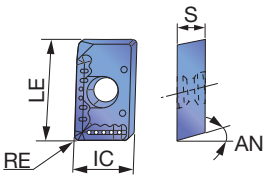
Designation	Clamping screw 1	Clamping screw 2	Lubricant	Wrench 1	Wrench 2
EVX08016R...	-	CSPB-2.2	M-1000	IP-7D	-
EVX10020R...	-	CSPB-2.5	M-1000	IP-8D	-
EVX12025R...	-	CSPD-3	M-1000	IP-10D	-
EVX16032R...	CSPB-3.5	-	M-1000	IP-15D	-
EVX12040R...	-	CSPD-3	M-1000	IP-10D	-
EVX16050, 63R...	CSPB-3.5	CSTB-3.5D	M-1000	IP-15D	T-9D

* Recommended clamping torque (N·m): CSPB-2.2=1, CSPB-2.5=1.3, CSPB-3.5=3.5, CSPD-3=2.5, CSTB-3.5D=2.3

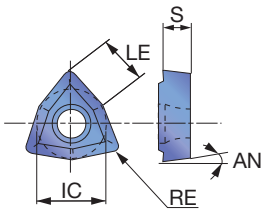
Reference pages: Standard cutting conditions → I093

INSERT

XXMU-MJ



WCMT-D4



		AH3135	AH120	AH140
P	Steel	★	★	
M	Stainless	★		★
K	Cast iron		★	
N	Non-ferrous			
S	Superalloys			
H	Hard materials	★		

★ : First choice
☆ : Second choice

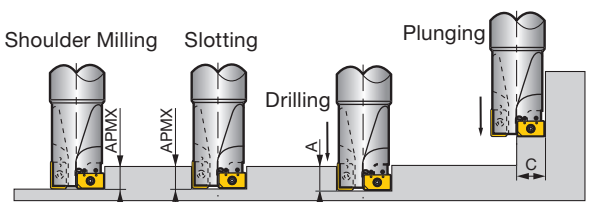
Designation	RE	Coated AH3135	Coated AH120	Coated AH140	LE	IC	S	AN
XXMU08T204PR-MJ	0.4	●	●	●	8.2	5.6	2.78	10°
XXMU10H308PR-MJ	0.8	●	●	●	10.6	6.8	3.5	11°
XXMU12X408PR-MJ	0.8	●	●	●	13.2	7.9	4.2	11°
XXMU16X508PR-MJ	0.8	●	●	●	16.8	11.1	5	11°
WCMT050308-D4	0.8		●	●	5.4	7.94	3.18	7°
WCMT06T308-D4	0.8		●	●	6.5	9.525	3.97	7°

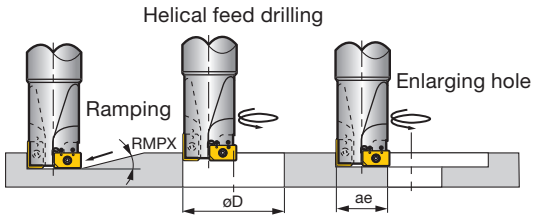
●: Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Tool diameter: ø16 - 20 Cutting speed *Vc* (m/min)	Tool diameter: ø16 - 20 Feed per tooth: *fz* (mm/t) Slotting	Tool diameter: ø16 - 20 Feed per tooth: *fz* (mm/t) Drilling	Tool diameter: ø25 - 63 Cutting speed *Vc* (m/min)	Tool diameter: ø25 - 63 Feed per tooth: *fz* (mm/t) Slotting	Tool diameter: ø25 - 63 Feed per tooth: *fz* (mm/t) Drilling
P	Carbon steels S50C, etc. C55, etc. < 300 HBt	AH3135	100 - 180	0.05 - 0.2	0.03 - 0.08	120 - 200	0.08 - 0.25	0.05 - 0.1
P	Alloy steels SCM440, etc. 42CrMo4, etc. < 300 HB	AH3135	80 - 160	0.05 - 0.15	0.03 - 0.08	100 - 180	0.08 - 0.2	0.05 - 0.1
P	Die steels SKD11, etc. X96CrMoV12, etc. < 300 HB	AH3135	60 - 120	0.05 - 0.13	0.03 - 0.06	80 - 150	0.08 - 0.15	0.03 - 0.08
M	Stainless steels SUS304, etc. X5CrNi18 9, etc.	AH3135	70 - 140	0.05 - 0.15	0.03 - 0.08	90 - 160	0.08 - 0.2	0.03 - 0.08
K	Cast irons FC250, etc. 250, etc.	AH120	100 - 180	0.05 - 0.25	0.03 - 0.1	120 - 200	0.08 - 0.25	0.05 - 0.1

APPLICATION RANGE



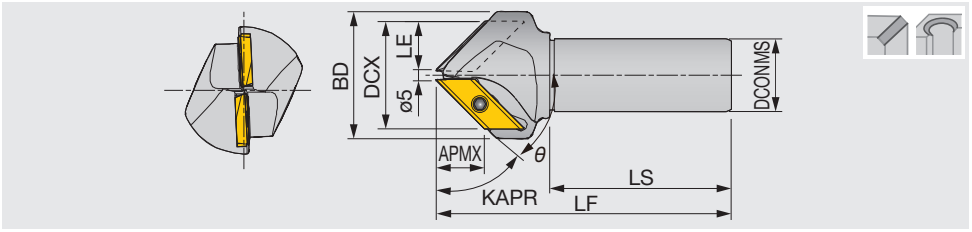


Designation	Tool dia. DC	Max. depth of cut APMX	Max. drilling depth A	Max. cutting width in plunging C	Max. ramping angle RMPX	Min. machining hole dia. øDmin	Max. machining hole dia. øDmax	Max. cutting width in enlarging hole ae
EVX08016R...	16	7	8	8	3°	19.2	30	14
EVX10020R...	20	9	10	10	3°	24	38	18
EVX12025R...	25	11.5	12.5	12.5	3°	30	48	23
EVX16032R...	32	15	16	16	3°	38.4	62	30
EVX12040RS/L (A)	40	11.5	20	20	3°	48	78	38
EVX16050RS/L (A)	50	15	25	25	3°	60	98	48
EVX16063RS/L (A)	63	15	31.5	31.5	3°	75.6	124	61

ECC31

Chamfering endmill, screw clamp system, for large parallelogram inserts





Designation	DCX	CICT	KAPR	θ	BD	LE	APMX	DCONMS	LS	LF	Insert
ECC31005R-30	34	1	60°	30°	40	14.5	25.5	32	80	130.2	XCET3104...
ECC31005R-45	46	2	45°	45°	56	20.5	20.5	32	80	130.1	XCET3104...
ECC31005R-60	55	2	30°	60°	72	25.5	14.5	32	80	130.1	XCET3104...

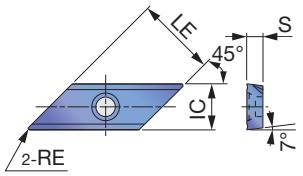
SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
ECC31...	CSTB-5S	M-1000	T-20D

* Recommended clamping torque: CSTB-5S=5

INSERT

XCET31



		Coated			Cermet	Un-coated
		AH3135	AH330	AH120	NS740	UX30
P	Steel	★	☆	☆	★	☆
M	Stainless	★	★			
K	Cast iron		★	★		
N	Non-ferrous					
S	Superalloys					
H	Hard materials	☆				

★ : First choice
☆ : Second choice

Designation	RE	Coated AH3135	Coated AH330	Coated AH120	Cermet NS740	Un-coated UX30	LE	IC	S
XCET310404ER	0.4	●	●	●	●	●	22	12.7	4.5

●: Line up

STANDARD CUTTING CONDITIONS

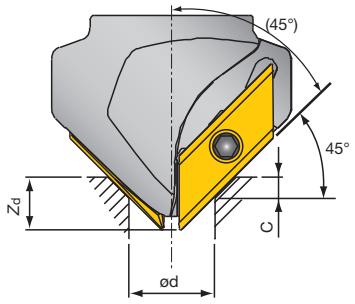
ISO	Workpiece material	Grade	No. of revolutions: *n* (min-1)	Feed per tooth: *fz* (mm/t)
P	Carbon steels S55C, etc. C55, etc. Alloy steels SCM440, etc. 42CrMo4, etc. < 300 HB	NS740	1000 - 3000 - 7000	0.1 - 0.25
		UX30	700 - 2000 - 4900	0.1 - 0.25
	Die steels SKD61, etc. X40CrMoV5-1, etc. < 300 HB	AH3135	1000 - 3000 - 7000	0.1 - 0.2
M	Stainless steels SUS304, etc. X5CrNi18-10, etc. < 250 HB	AH3135	1000 - 3000 - 7000	0.1 - 0.25
K	Cast irons FC250, etc. 250, etc.	AH330	1000 - 3000 - 7000	0.1 - 0.25

Notes:
- When the hole diameter to be chamfered is small or the cutting edges near the front end of tool are used, use at higher side of the revolution range shown in the Table.
  In contrast, when the hole diameter to be chamfered is large or the cutting edges far from the tool's front end are used, use the lower side of the revolution range shown in the Table.
- When chamfering a small diameter hole (smaller than ø10 mm) in a plungemilling mode, peck-feeding should not be used.
- When the hole diameter to be chamfered is smaller than ø10 mm or the cutting edges near the tool's front end are used, the feed should be set within 0.15 mm/t.

Guidelines for programming

Z-axis plunging depth Zd (mm) in 45° chamfering of hole

Hole dia. ød (mm)	Size of chamfering C (mm)						
	0.5	1	1.5	2	3	4	5
5	0.7	1.2	1.7	2.2	3.2	-	-
6	1.2	1.7	2.2	2.7	3.7	-	-
6.8	1.6	2.1	2.6	3.1	4.1	-	-
8	2.2	2.7	3.2	3.7	4.7	-	-
8.5	2.4	2.9	3.4	3.9	4.9	-	-
10	3.2	3.7	4.2	4.7	5.7	6.7	7.7
10.2	3.3	3.8	4.3	4.8	5.8	6.8	7.8
12	4.2	4.7	5.2	5.7	6.7	7.7	8.7
14	5.2	5.7	6.2	6.7	7.7	8.7	9.7
16	6.2	6.7	7.2	7.7	8.7	9.7	10.7
17.5	6.9	7.4	7.9	8.4	9.4	10.4	11.4
20	8.2	8.7	9.2	9.7	10.7	11.7	12.7
21	8.7	9.2	9.7	10.2	11.2	12.2	13.2
24	10.2	10.7	11.2	11.7	12.7	13.7	14.7
30	13.2	13.7	14.2	14.7	15.7	16.7	17.7
33	14.7	15.2	15.7	16.2	17.2	18.2	19.2
36	16.2	16.7	17.2	17.7	18.7	19.7	-
42	19.2	19.7	20.2	-	-	-	-

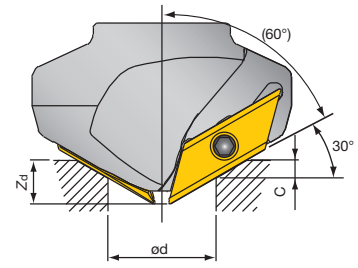


Tool: ECC31005R-45

Note: When the hole depth is smaller than the Z-axis plunging depth (Zd), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

Z-axis plunging depth Zd (mm) in 30° chamfering of hole

Hole dia. ød (mm)	Size of chamfering C (mm)						
	0.5	1	1.5	2	2.5	3	3.5
5	0.6	1.1	1.6	2.1	-	-	-
6	0.9	1.4	1.9	2.4	-	-	-
6.8	1.1	1.6	2.1	2.6	-	-	-
8	1.4	1.9	2.4	2.9	-	-	-
8.5	1.6	2.1	2.6	3.1	-	-	-
10	2	2.5	3	3.5	4	4.5	5
10.2	2.1	2.6	3.1	3.6	4.1	4.6	5.1
12	2.6	3.1	3.6	4.1	4.6	5.1	5.6
16	3.7	4.2	4.7	5.2	5.7	6.2	6.7
17.5	4.2	4.7	5.2	5.7	6.2	6.7	7.2
20	4.9	5.4	5.9	6.4	6.9	7.4	7.9
21	5.2	5.7	6.2	6.7	7.2	7.7	8.2
24	6.1	6.6	7.1	7.6	8.1	8.6	9.1
30	7.8	8.3	8.8	9.3	9.8	10.3	10.8
33	8.7	9.2	9.7	10.2	10.7	11.2	11.7
36	9.5	10	10.5	11	11.5	12	12.5
38	10.1	10.6	11.1	11.6	12.1	12.6	13.1
42	11.2	11.7	12.2	12.7	13.2	13.7	14.2
46	12.4	12.9	13.4	13.9	14.4	-	-
48	13	13.5	14	14.5	-	-	-
52	14.1	-	-	-	-	-	-

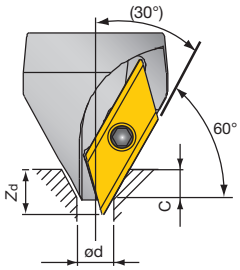


Tool: ECC31005R-60

Note: When the hole depth is smaller than the Z-axis plunging depth (Zd), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

Z-axis plunging depth Zd (mm) in 60° chamfering of hole

Hole dia. ød (mm)	Size of chamfering C (mm)							
	0.5	1	1.5	2	2.5	3	3.5	4
5	0.8	1.3	1.8	2.3	2.8	-	-	-
6	1.7	2.2	2.7	3.2	3.7	-	-	-
6.8	2.4	2.9	3.4	3.9	4.4	-	-	-
8	3.4	3.9	4.4	4.9	5.4	-	-	-
8.5	3.8	4.3	4.8	5.3	5.8	-	-	-
10	5.1	5.6	6.1	6.6	7.1	7.6	8.1	8.6
10.2	5.3	5.8	6.3	6.8	7.3	7.8	8.3	8.8
12	6.9	7.4	7.9	8.4	8.9	9.4	9.9	10.4
16	10.3	10.8	11.3	11.8	12.3	12.8	13.3	13.8
17.5	11.6	12.1	12.6	13.1	13.6	14.1	14.6	15.1
20	13.7	14.2	14.7	15.2	15.7	16.2	16.7	17.2
21	14.6	15.1	15.6	16.1	16.6	17.1	17.6	18.1
24	17.2	17.7	18.2	18.7	19.2	19.7	20.2	20.7
30	22.4	22.9	23.4	23.9	24.4	24.9	25.4	-
33	24.9	25.4	-	-	-	-	-	-



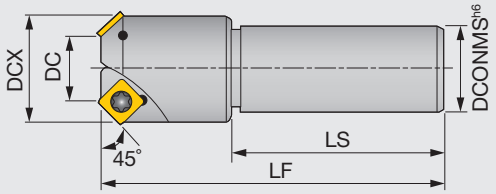
Tool: ECC31005R-30

Note: When the hole depth is smaller than the Z-axis plunging depth (Zd), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

ECP4400R

Chamfering endmill, screw clamp system, for square inserts





Designation	DC	CICT	DCX	DCONMS	LF	LS	Insert
ECP440AR	10	1	27.5	32	130	80	SPMA422*N
ECP4423R	23	2	40.3	32	130	80	SPMA422*N
ECP4436R	36	3	53.3	32	130	80	SPMA422*N

SPARE PARTS

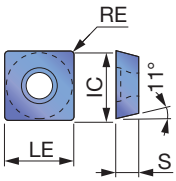



Designation	Clamping screw	Wrench
ECP44...	CSTA-4	T-15D

* Recommended clamping torque: CSTA-4=3.5

INSERT

SPMA42



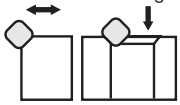
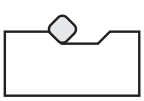
		Cermet			Uncoated														
P	Steel	★	☆		☆														
M	Stainless																		
K	Cast iron					★													
N	Non-ferrous																		
S	Superalloys																		
H	Hard materials																		

★ : First choice
☆ : Second choice

Designation	RE	NS740	N308	UX30	TH10	LE	IC	S
SPMA422TN	0.8	●	●	●		12.7	12.7	3.18
SPMA422FN	0.8				●	12.7	12.7	3.18

●: Line up

STANDARD CUTTING CONDITIONS

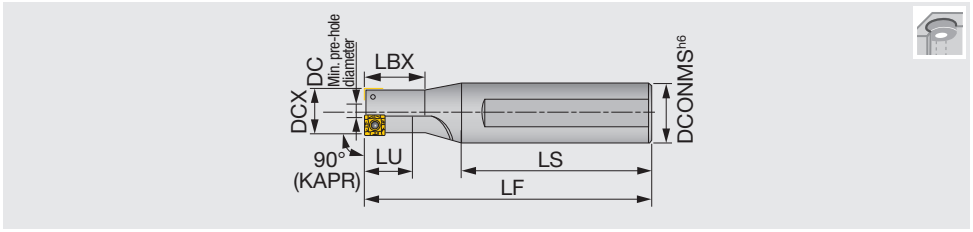
Operations		Workpiece material	Grade	Cutting speed *Vc* (m/min)	Maximum depth of cut *ap* (mm)	Feed per tooth *fz* (mm/t)
Single or double chamfering, Hole chamfering 	P	Carbon steels, Alloy steels < 300HB	NS740 · N308 UX30	100 - 150	-	0.2 - 0.5
	P	Die steels < 30HRC	NS740 · N308 UX30	50 - 70	-	0.15 - 0.4
	K	Cast irons	TH10	90 - 110	-	0.2 - 0.6
Facing, Grooving 	P	Carbon steels, Alloy steels < 300HB	NS740 · N308 UX30	100 - 150	3	0.1 - 0.15
	P	Die steels < 30HRC	UX30	50 - 70	2	0.1 - 0.15
	K	Cast irons	TH10	90 - 110	3	0.1 - 0.15

Notes:
• When chamfering stainless steel, down-milling is recommended. Conventional milling may cause edge chipping.
• When chamfering above C3.0, the feed per tooth should be set at the lower side of the value shown in the above table.

TCB

Counterboring endmill, monoblock type

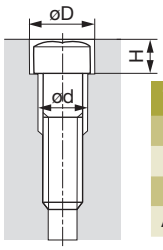




Designation	DCX	CICT	DC	LU	LBX	LF	LS	DCONMS	Insert
TCB100F16	10	1	2.8	13	17	86	60	16	SPMP771...
TCB110F16	11	1	2.8	14	18.7	87	60	16	SPMP771...
TCB120F20	12	1	3.6	15	20.5	89	60	20	SPMP771...
TCB130F20	13	2	4.5	16	22.2	91	60	20	SPMP771...
TCB-140	14	1	4	11	18	117	80	25	SPMP831...
TCB140F25	14	2	5.5	18	24	113	80	25	SPMP771...
TCB150F25	15	2	6.5	19	25.7	114	80	25	SPMP771...
TCB160F25	16	2	7.5	20	27.5	116	80	25	SPMP771...
TCB170F25	17	2	6.6	13	21	114	80	25	SPMP831...
TCB175F25	17.5	2	7.1	14	22	115	80	25	SPMP831...
TCB180F25	18	2	7.5	15	23	116	80	25	SPMP831...
TCB190F25	19	2	8.5	15	24	118	80	25	SPMP831...
TCB-200	20	2	8.2	16	25	120	80	25	SPMP042...
TCB200F25	20	2	8.2	16	25	120	80	25	SPMP042...
TCB210F25	21	2	9	17	26	122	80	25	SPMP042...
TCB220F25	22	2	10	18	28	124	80	25	SPMP042...
TCB-230	23	2	11	19	29	126	80	25	SPMP042...
TCB230F25	23	2	11	19	29	126	80	25	SPMP042...
TCB240F25	24	2	12	20	-	128	80	25	SPMP042...
TCB250F25	25	2	13	25	-	130	80	25	SPMP042...
TCB-260	26	2	14	21	33	132	80	32	SPMP042...
TCB-290	29	2	14	23	36	138	80	32	SPMM322...
TCB-320	32	2	16.9	40	-	144	80	32	SPMM322...
TCB-350	35	2	14	43	-	150	80	32	SPMM432...
TCB-390	39	2	17.9	48	-	158	80	32	SPMM432...
TCB-430	43	2	21.7	53	-	171	85	42	SPMM432...

Tool diameter tolerance	Applicable tolerance range of hole diameter
+0.2 / 0	+0.3 / 0

Countersink dimensions of bolt hole



Thread size	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27
øD (mm)	11	14	17.5	20	23	26	29	32	35	39	43
H (mm)	6.5	8.6	10.8	13	15.2	17.5	19.5	21.5	23.5	25.5	29
ød (mm)	6	9	11	14	16	18	20	22	24	26	30
Applicable tool	TCB110	TCB140	TCB175	TCB200	TCB230	TCB260	TCB290	TCB320	TCB350	TCB390	TCB430

SPARE PARTS




Designation	Clamping screw	Wrench
TCB100... - TCB160...	CSTB-2L040	T-6D
TCB-140...	CSTB-2.2S	T-7D
TCB170... - TCB190...	CSTB-2.2	T-7D
TCB200... - TCB260...	CSTA-NO3	T-9D
TCB-290 - TCB-320	CSTA-NO5	T-9D
TCB-350 - TCB-430	CSTA-4	T-15D

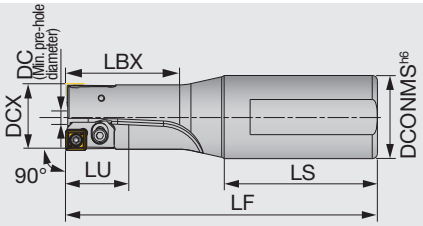
* Recommended clamping torque: CSTB-2L040=0.7, CSTB-2.2S / CSTB-2.2=1, CSTA-NO3 / CSTA-NO5=2.3 CSTA-4=3.5

Reference pages: Inserts, Standard cutting conditions → I100 - I101

TCB

Counterboring endmill, cartridge type





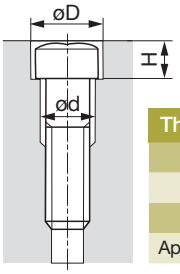
LU: Maximum hole depth

Body Designation	DCX	DCONMS	DC	LU	LS	LBX	LF	WT(kg)	Cartridge set Designation	Shim plate Designation	Shim plate Thickness	Insert
TCB260-290F32	26	32	13.2	40	59	43	120	0.6	TCB04CA-26-29	-	-	SPMP042...
TCB260-290F32	27	32	14.2	40	59	43	120	0.6	TCB04CA-26-29	AP16050	0.5	SPMP042...
TCB260-290F32	28	32	15.2	40	59	43	120	0.6	TCB04CA-26-29	AP16100	1	SPMP042...
TCB260-290F32	29	32	16.2	40	59	43	120	0.6	TCB04CA-26-29	AP16150	1.5	SPMP042...
TCB300-340F32	30	32	14.2	45	59	55	130	0.6	TCB32CA-30-39	-	-	SPMM322...
TCB300-340F32	31	32	15.2	45	59	55	130	0.6	TCB32CA-30-39	AP16050	0.5	SPMM322...
TCB300-340F32	32	32	16.2	45	59	55	130	0.6	TCB32CA-30-39	AP16100	1	SPMM322...
TCB300-340F32	33	32	17.2	45	59	55	130	0.6	TCB32CA-30-39	AP16150	1.5	SPMM322...
TCB300-340F32	34	32	18.2	45	59	55	130	0.6	TCB32CA-30-39	AP16200	2	SPMM322...
TCB350-390F32	35	32	19	50	59	70	140	0.7	TCB32CA-30-39	-	-	SPMM322...
TCB350-390F32	36	32	20	50	59	70	140	0.7	TCB32CA-30-39	AP16050	0.5	SPMM322...
TCB350-390F32	37	32	21	50	59	70	140	0.7	TCB32CA-30-39	AP16100	1	SPMM322...
TCB350-390F32	38	32	22	50	59	70	140	0.7	TCB32CA-30-39	AP16150	1.5	SPMM322...
TCB350-390F32	39	32	23	50	59	70	140	0.7	TCB32CA-30-39	AP16200	2	SPMM322...
TCB400-440F32	40	32	18	55	59	80	150	1	TCB43CA-40-59	-	-	SPMM432...
TCB400-440F32	41	32	19	55	59	80	150	1	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB400-440F32	42	32	20	55	59	80	150	1	TCB43CA-40-59	AP21100	1	SPMM432...
TCB400-440F32	43	32	21	55	59	80	150	1	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB400-440F32	44	32	22	55	59	80	150	1	TCB43CA-40-59	AP21200	2	SPMM432...
TCB450-490F32	45	32	23	65	59	90	160	1.2	TCB43CA-40-59	-	-	SPMM432...
TCB450-490F32	46	32	24	65	59	90	160	1.2	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB450-490F32	47	32	25	65	59	90	160	1.2	TCB43CA-40-59	AP21100	1	SPMM432...
TCB450-490F32	48	32	26	65	59	90	160	1.2	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB450-490F32	49	32	27	65	59	90	160	1.2	TCB43CA-40-59	AP21200	2	SPMM432...
TCB500-540F32	50	32	28	70	59	97	165	1.5	TCB43CA-40-59	-	-	SPMM432...
TCB500-540F32	51	32	29	70	59	97	165	1.5	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB500-540F32	52	32	30	70	59	97	165	1.5	TCB43CA-40-59	AP21100	1	SPMM432...
TCB500-540F32	53	32	31	70	59	97	165	1.5	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB500-540F32	54	32	32	70	59	97	165	1.5	TCB43CA-40-59	AP21200	2	SPMM432...
TCB550-590F32	55	32	33	75	59	105	175	1.9	TCB43CA-40-59	-	-	SPMM432...
TCB550-590F32	56	32	34	75	59	105	175	1.9	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB550-590F32	57	32	35	75	59	105	175	1.9	TCB43CA-40-59	AP21100	1	SPMM432...
TCB550-590F32	58	32	36	75	59	105	175	1.9	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB550-590F32	59	32	37	75	59	105	175	1.9	TCB43CA-40-59	AP21200	2	SPMM432...

The cartridge sets and shim plates are included.

Tool diameter tolerance	Applicable tolerance range of hole diameter
+0.2 / 0	+0.3 / 0

Countersink dimensions of bolt hole



Thread size	M16	M18	M20	M22	M24	M27	M30	M33	M36
øD (mm)	26	29	32	35	39	43	48	54	58
H (mm)	17.5	19.5	21.5	23.5	25.5	29	32	35	38
ød (mm)	18	20	22	24	26	30	33	36	39
Applicable tool	TCB260	TCB290	TCB320	TCB350	TCB390	TCB430	TCB480	TCB540	TCB580

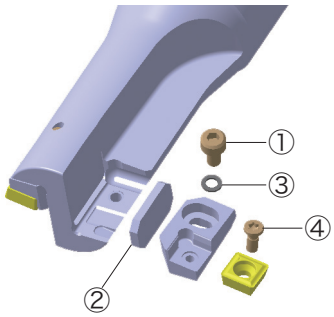
Reference pages: Inserts, Standard cutting conditions → I100 - I101

Body
SPARE PARTS

Designation	① Cartridge screw	② Shim plate	② Shim plate	② Shim plate	② Shim plate	Wrench for cartridge	③ Washer
TCB260-290F32	CM3×0.5×6	AP16050	AP16100	AP16150		P-2.5	3.2X6X0.5
TCB300-340F32	CM3×0.5×6	AP16050	AP16100	AP16150	AP16200	P-2.5	3.2X6X0.5
TCB350-390F32	CM3×0.5×6	AP16050	AP16100	AP16150	AP16200	P-2.5	3.2X6X0.5
TCB400-440F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5
TCB450-490F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5
TCB500-540F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5
TCB550-590F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5

Cartridge set
SPARE PARTS

Designation	④ Insert screw	Wrench
TCB04CA-26-29	CSTA-NO3	T-9D
TCB32CA-30-39	CSTA-NO5	T-9D
TCB32CA-30-39	CSTA-NO5	T-9D
TCB43CA-40-59	CSTA-4	T-15D
TCB43CA-40-59	CSTA-4	T-15D
TCB43CA-40-59	CSTA-4	T-15D
TCB43CA-40-59	CSTA-4	T-15D



* Recommended clamping torque: CSTA-NO3 / CSTA-NO5=2.3, CSTA-4=3.5

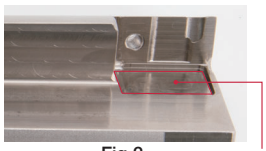
Fine adjustment shim plates (sold separately)
SPARE PARTS

Designation	Thickness
AP16005	0.05
AP16020	0.2
AP21005	0.05
AP21020	0.2

Cautions in preparing the cartridge type cutter

- Firmly press the cartridge in the arrowed direction while tightening the screw to install the cartridge on the cutter body. (Fig.1)
- Ensure that the shim plates thickness are always the same on both sides to equalize the tool diameter.
- Ensure to locate the shim plate fit within the cartridge pocket. (Fig.2)
- Use thin shim plates (not included) for fine diameter adjustments in ø0.1 mm increments.
- When using multiple shim plates in one pocket for a diameter adjustment, always use the thinest shim plates at the bottom to prevent them from dislocating during machining. (Fig.3)
- Ensure that the top shim is always in contact with the rim of the cartridge pocket to prevent it from dislocation during machining. (Fig.4)


Fig.1


Fig.2

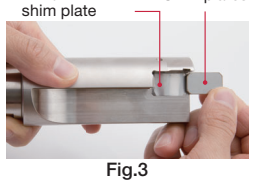


Fig.3

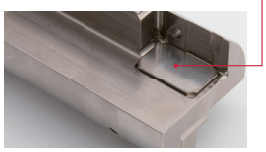


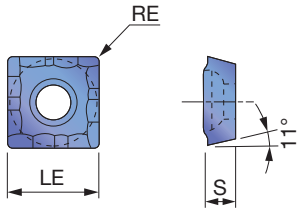
Fig.4

CUSTOM-BUILT TOOL SERVICE

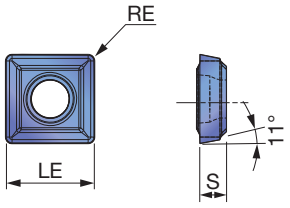
Tungaloy also designs and fabricates semi-standard or tailor-made tools with the TCB inserts according to the desired tool specifications. Contact your Tungaloy representative for further details.

INSERT

SPMP/SPMM



SPMP/SPMM-CG



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

★ : First choice
☆ : Second choice

Designation	RE	Coated		LE	S
		T313W	AH6030		
SPMP771-CG	0.4		●	5.4	1.61
SPMP831-CG	0.4		●	6.35	2.38
SPMP042ER-CG	0.8		●	7.94	3.18
SPMM322ER-CG	0.8		●	9.53	3.18
SPMM432ER-CG	0.8		●	12.7	4.76
SPMP831DS	0.4	●		6.35	2.38
SPMP042ERD	0.8	●		7.94	3.18
SPMM322ERD	0.8	●		9.53	3.18
SPMM432ERD	0.8	●		12.7	4.76

●: Line up

STANDARD CUTTING CONDITIONS

Counterboring

ISO	Workpiece material	Cutting speed *Vc* (m/min)	Feed : *f* (mm/rev)	
			ø10 - 12 (z = 1)	ø13 - 59 (z = 2)
P	Carbon steel	80 - 200	0.03 - 0.08	0.1 - 0.3
M	Stainless steel	80 - 150	0.03 - 0.05	0.06 - 0.15
K	Grey cast iron	80 - 200	0.05 - 0.1	0.1 - 0.4
N	Non-ferrous	100 - 300	0.05 - 0.2	0.1 - 0.4
S	Superalloys	50 - 80	0.03 - 0.05	0.06 - 0.15
H	Hard materials	50 - 80	0.03 - 0.05	0.06 - 0.15

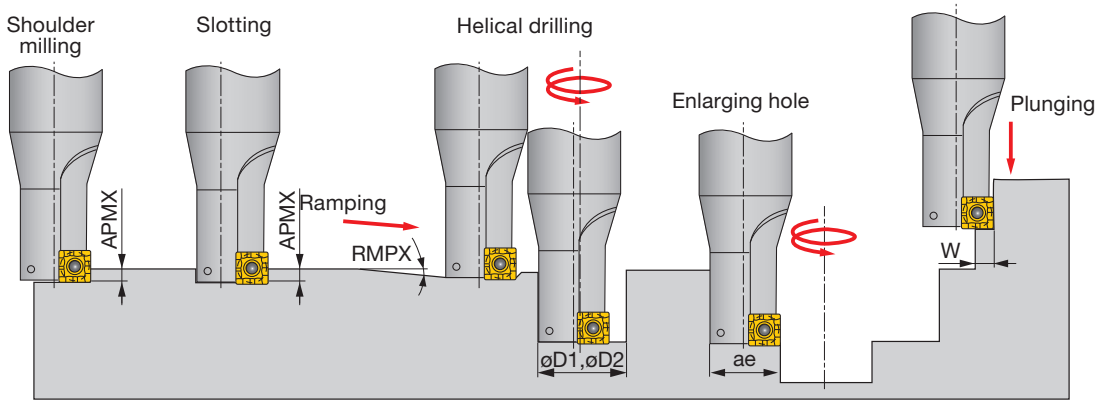
Milling

ISO	Workpiece material	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Carbon steel	80 - 200	0.05 - 0.15
M	Stainless steel	80 - 150	0.05 - 0.1
K	Grey cast iron	80 - 200	0.05 - 0.2
N	Non-ferrous	100 - 300	0.1 - 0.2
S	Superalloys	50 - 80	0.05 - 0.08
H	Hard materials	50 - 80	0.05 - 0.08

Internal boring (With one cutting edge)

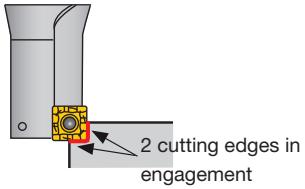
ISO	Workpiece material	Cutting speed *Vc* (m/min)	Depth of cut *ap* (mm)	Feed : *f* (mm/rev)
P	Carbon steel	80 - 200	0.5 -	0.05 - 0.15
M	Stainless steel	80 - 150	0.5 -	0.05 - 0.1
K	Grey cast iron	80 - 200	0.5 -	0.05 - 0.2
N	Non-ferrous	100 - 300	0.5 -	0.1 - 0.2
S	Superalloys	50 - 80	0.5 -	0.05 - 0.08
H	Hard materials	50 - 80	0.5 -	0.05 - 0.08

APPLICATION



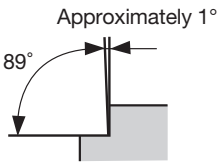
Designation	Tool dia. DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max.cutting width in plunging W	Min. machinable hole dia. øD1	Max. machinable hole dia. øD2	Max. cutting width in enlarging hole ae
TCB100F16	10	4	-	4	-	-	-
TCB110F16	11	4	2.1°	4	12	20	10
TCB120F20	12	4	2.1°	4	14	22	11
TCB130F20	13	4	2.1°	4	17	24	12
TCB-140	14	5	3°	5	20	25	13
TCB140F25	14	4	1.9°	4	19	26	13
TCB150F25	15	4	1.6°	4	21	28	14
TCB160F25	16	4	1.3°	4	23	30	15
TCB170F25	17	5	2.5°	5	25	32	16
TCB175F25	17.5	5	2.2°	5	25.5	33	16.5
TCB180F25	18	5	2°	5	26	34	17
TCB190F25	19	5	1.5°	5	27	36	18
TCB200F25	20	6	3°	6	29	38	19
TCB210F25	21	6	2.5°	6	30	40	20
TCB220F25	22	6	2°	6	31	42	21
TCB230F25	23	6	1.6°	6	32	44	22
TCB240F25	24	6	1.3°	6	33	46	23
TCB250F25	25	6	1.1°	6	34	48	24.5
TCB-260	26	6	1°	6	35	50	25
TCB-290	29	8	3°	8	37	56	28
TCB-320	32	8	2.5°	8	40	62	31
TCB-350	35	10	2.5°	10	45	68	34
TCB-390	39	10	2°	10	49	76	38
TCB-430	43	10	1.5°	10	53	84	42

The insert can be used for a maximum 2 indexings.
(full 4 indexing for a plunging application.)



Cautions in shouldering operation

The cutter is design so that the insert provides 1° taper relief on the periphery. The wall, therefore, will be 89° when milled.

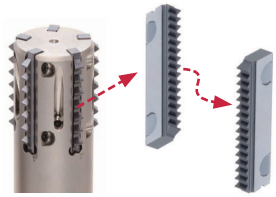


THREADMILLING



Highly economical tool design

Cost reduction



2-corner double sided inserts

SOLIDTHREAD Selection Guide (for ISO metric)

External / General purpose



MTECE***ISO
P=1~2mm

Head changeable

Partial profile



VTR***IS**-***
P=0.5~4.5mm

Full profile



VMT***IS**-***
P=0.75~3mm

Head changeable

Partial profile



VTR***IS**-***
P=0.5~4.5mm

Internal / General purpose



MTEC***ISO
P=0.5~3mm

Coolant hole

Good chip evacuation

for Deep blind hole



MTECQ***ISO
P=1~3.5mm

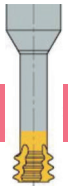
for Blind hole



MTECB***ISO
P=0.5~3mm

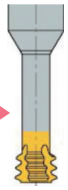
Short edge length

Reduced cutting force



MTECS***ISO
P=0.25~2.5mm

for hardened metal



MTECSH***ISO
P=0.35~2mm

End cutting edge

Threading simultaneously



Left hand

MTECD***ISO
P=0.7~2mm

for Through hole



MTECZ***ISO
P=1~2mm

Reference pages: I103 - I115, L058

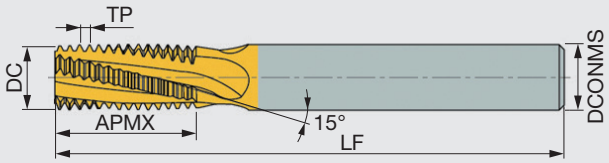
Designation System for Solid Carbide Endmills

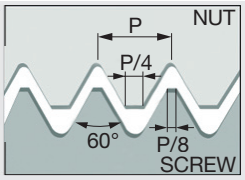
MTEC□		06	04	C	ISO
ThreadMilling Endmill Carbide	I - Single Point S - Short SH - Short for Hardened steel B - with Coolant Bore Q - with Coolant Bore with long neck Z - with Coolant hole with through hole D - with Drilling (end mill) cutting edge E - for External thread	Shank Dia.	Tool Dia.	No. of Flutes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

ISO metric

MTEC-ISO

Solid carbide internal threading endmill, for ISO metric profile





Designation	TP	Application range Fine	Application range Coarse	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC06038C100.5ISO	0.5	-	≥M5	6	3.8	3	10.3	58	Without	AH725
MTEC06022C50.5ISO	0.5	M3	≥M4	6	2.2	3	5.3	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	M16	≥M17	10	10	3	27	73	Without	AH725
MTEC1010C392.0ISO	2	M16	≥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

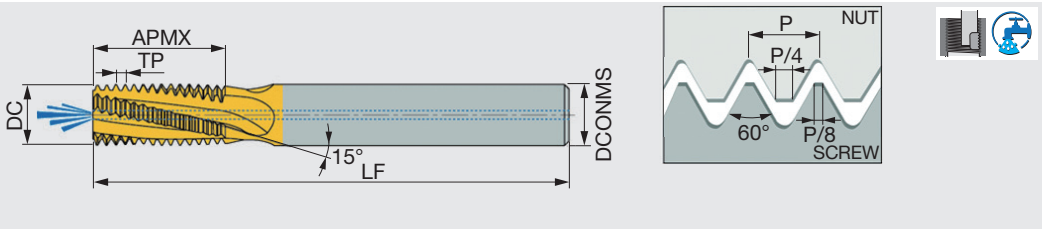
Reference pages: Standard cutting conditions → I118 - I120

SOLIDTHREAD

ISO metric

MTECB-ISO

Solid carbide internal threading endmill, with coolant hole, for ISO metric profile

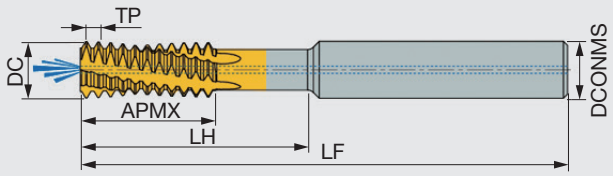


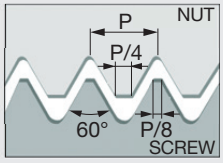
Designation	TP	Application range Fine	Application range Coarse	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECB06038C100.5ISO	0.5	-	≥M5	6	3.8	3	10.3	58	With	AH725
MTECB06031C70.7ISO	0.7	M4	≥M5	6	3.1	3	7.4	58	With	AH725
MTECB06045C100.75ISO	0.75	-	≥M6	6	4.5	3	10.1	58	With	AH725
MTECB1010D240.75ISO	0.75	-	≥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

Reference pages: Standard cutting conditions → I118 - I120

MTECQ-ISO

Solid carbide deep internal threading endmill, with internal coolant hole, for ISO metric profile

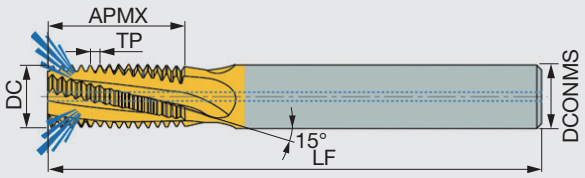


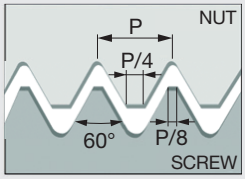


Designation	TP	Application range	DCONMS	DC	NOF	APMX	LH	LF	Coolant hole	Grade
MTECQ1212D381.0ISO	1	≥M14	12	12	4	21	38	84	With	AH725
MTECQ1010D301.5ISO	1.5	≥M13	10	10	4	18	30	73	With	AH725
MTECQ2020F562.0ISO	2	≥M24	20	20	6	34	56	105	With	AH725
MTECQ2020D453.5ISO	3.5	≥M26	20	20	4	28	45.5	105	With	AH725

MTECZ-ISO

Solid carbide internal threading endmill, with coolant hole in the flute, for ISO metric profile





Designation	TP	Application range		DCONMS	DC	NOF	APMX	LF	Coolant 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

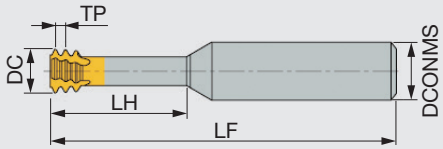
Reference pages: Standard cutting conditions → I118 - I120

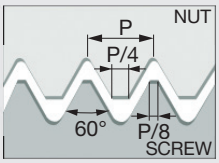
SOLIDTHREAD

ISO metric

MTECS-ISO

Small diameter solid carbide internal threading endmill, short edge type, for ISO metric profile



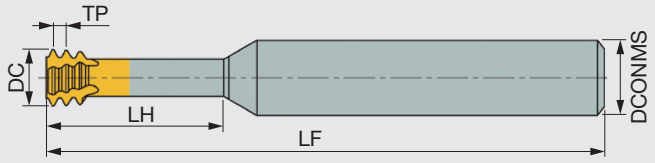


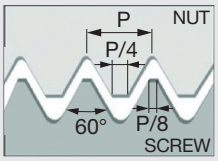
Designation	TP	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS03007C20.25ISO	0.25	≥M1	3	0.72	3	2.5	39	Without	AH725
MTECS03009C30.25ISO	0.25	≥M1.2	3	0.9	3	3	39	Without	AH725
MTECS03011C40.3ISO	0.3	≥M1.4	3	1.05	3	4	39	Without	AH725
MTECS03012C50.35ISO	0.35	≥M1.6	3	1.2	3	4.8	39	Without	AH725
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

Reference pages: Standard cutting conditions → I118 - I120

MTECSH-ISO

Small diameter solid carbide internal threading endmill, short edge type, left hand cutting, for ISO metric profile





Designation	TP	Application range	DCONMS	DC	NOF	LH	LF	Coolant 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

Reference pages: Standard cutting conditions → I118 - I120

SOLIDTHREAD

ISO metric

MTECD-ISO

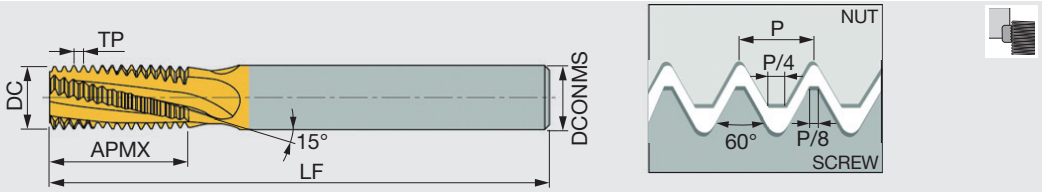
Small diameter solid carbide endmill for internal threading, drilling, and chamfering, short edge type, left hand cutting, for ISO metric profile



Designation	TP	Application range	DCONMS	DC	NOF	LH	LF	CHW	L1	Coolant 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 endmill, for ISO metric profile



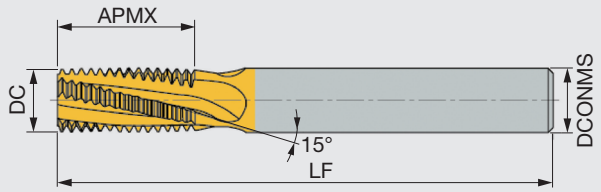
Designation	TP	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECE1010D161.0ISO	1	10	10	4	16.5	73	Without	AH725
MTECE1010D161.25ISO	1.25	10	10	4	16.9	73	Without	AH725
MTECE1010D151.5ISO	1.5	10	10	4	15.8	73	Without	AH725
MTECE1212D201.5ISO	1.5	12	12	4	20.3	84	Without	AH725
MTECE1212D201.75ISO	1.75	12	12	4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

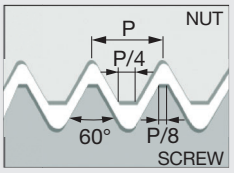
Reference pages: Standard cutting conditions → I118 - I120

Unified

MTEC-UN

Solid carbide internal threading endmill, for UN profile





Designation	TPI	Application range			DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
		UNC	UNF	UNEF							
MTEC06032C632UN	32	#8	#10	#12	6	3.2	3	6.8	58	Without	AH725
MTEC0604C1128UN	28	-	1/4	-	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

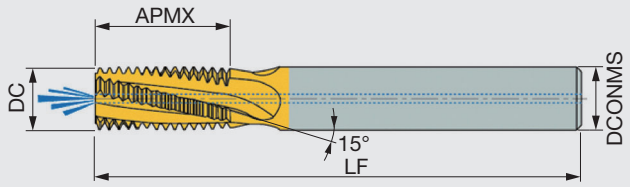
Reference pages: Standard cutting conditions → I118 - I120

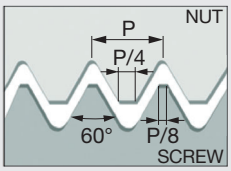
SOLIDTHREAD

Unified

MTECB-UN

Solid carbide internal threading endmill, with coolant hole, for UN profile

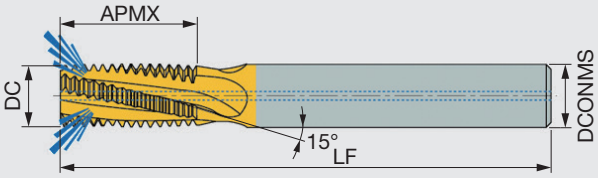


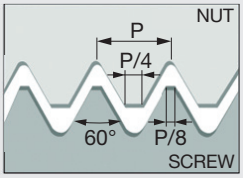


Designation	TPI	Application range			DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
		UNC	UNF	UNEF							
MTECB06032C632UN	32	#8	#10	#12	6	3.2	3	6.8	58	With	AH725
MTECB0606C1432UN	32	-	-	7/16-1/2	6	6	3	16	58	With	AH725
MTECB0605C1128UN	28	-	1/4	-	6	5	3	11.3	58	With	AH725
MTECB08066C1424UN	24	-	5/16	-	8	6.6	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 internal threading endmill, with coolant hole in the flute, for UN profile



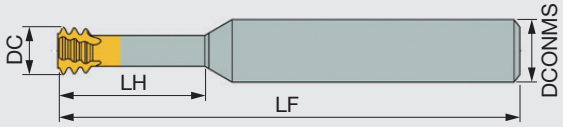


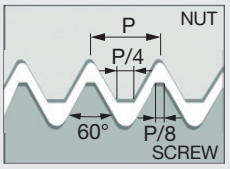
Designation	TPI	Application range			DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
		UNC	UNF	UNEF							
MTECZ1010D2220UN	20	-	1/2	-	10	10	4	22.3	73	With	AH725
MTECZ12113D2618UN	18	-	9/16-5/8	1 1/8-1 5/8	12	11.3	4	26.1	84	With	AH725
MTECZ08067C1616UN	16	3/8	-	-	8	6.7	3	16.7	64	With	AH725
MTECZ16144D3410UN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

Reference pages: Standard cutting conditions → I118 - I120

MTECS-UN

Small diameter solid carbide internal threading endmill, short edge type, for UN profile





Designation	TPI	Application range UNC	Application range UNF	DCONMS	DC	NOF	LH	LF	Coolant 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

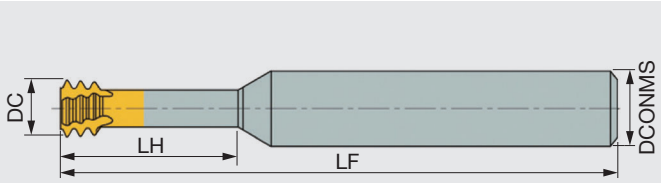
Reference pages: Standard cutting conditions → I118 - I120

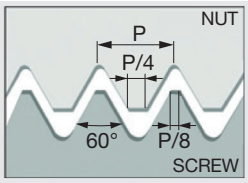
SOLIDTHREAD

Unified

MTECSH-UN

Small diameter solid carbide internal threading endmill, short edge type, left hand cutting, for UN profile

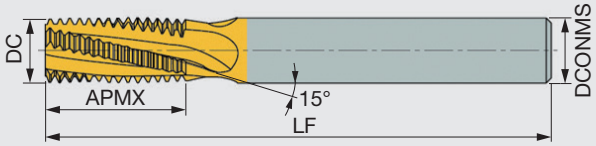


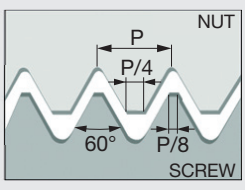


Designation	TPI	Application range UNC	Application range UNF	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECSH06012C480UN	80	-	#0	6	1.15	3	4	58	Without	AH725
MTECSH06016C656UN	56	#2	#3	6	1.65	3	6.6	58	Without	AH725
MTECSH06019C548UN	48	#3	#4	6	1.9	3	5.2	58	Without	AH725
MTECSH06021C640UN	40	#4	-	6	2.1	3	6.3	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 external threading endmill, for UN profile





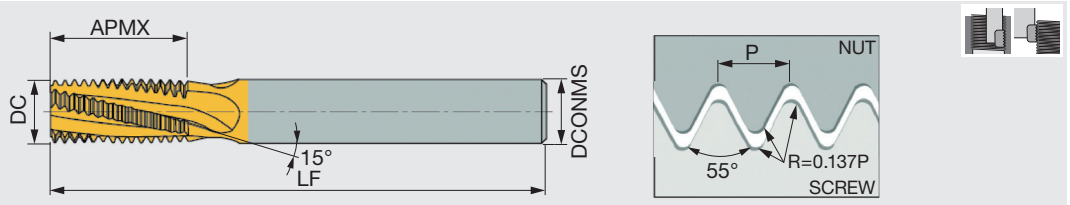
Designation	TPI	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECE1010D1624UN	24	10	10	4	16.4	73	Without	AH725
MTECE1212E2120UN	20	12	12	5	21	84	Without	AH725

Reference pages: Standard cutting conditions → I118 - I120

Whitworth

MTEC-W

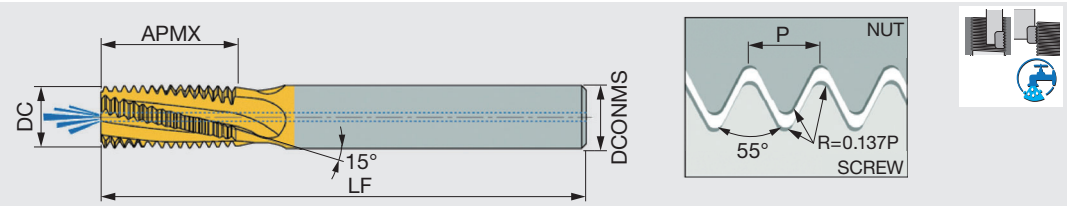
Solid carbide internal and external threading endmill, for BSP profile



Designation	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant 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

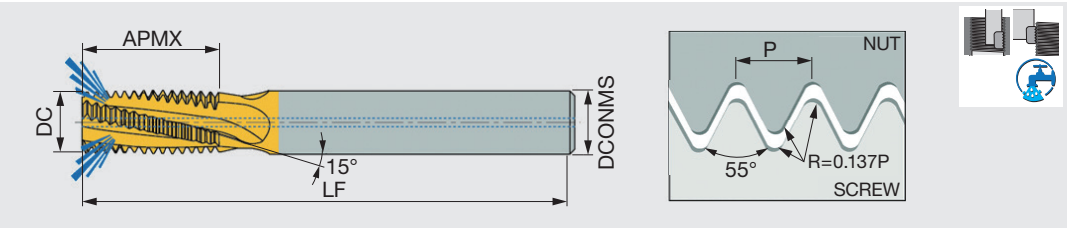
Solid carbide internal and external threading endmill, with coolant hole, for BSP profile



Designation	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECB08078C1428W	28	1/8	8	7.8	3	14.1	64	Without	AH725
MTECB1010D1619W	19	1/4-3/8	10	10	4	16.7	73	Without	AH725
MTECB1616E2614W	14	1/2-7/8	16	16	5	26.3	105	Without	AH725
MTECB1616D3811W	11	≥1	16	16	4	38.1	105	Without	AH725
MTECB2020E4711W	11	≥1	20	20	5	47.3	105	Without	AH725

MTECZ-W

Solid carbide internal and external threading endmill, with coolant hole, for BSP profile



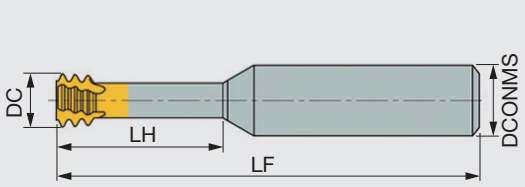
Designation	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECZ08078C1428W	28	1/8	8	7.8	3	14.1	64	With	AH725
MTECZ1010D1619W	19	1/4-3/8	10	10	4	16.7	73	With	AH725
MTECZ1616E2614W	14	1/2-7/8	16	16	5	26.3	101	With	AH725

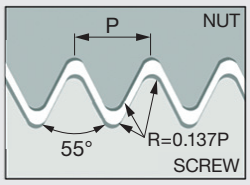
Reference pages: Standard cutting conditions → I118 - I120

SOLIDTHREAD

MTECS-W

Solid carbide internal and external threading endmill, short edge type, for BSP/BSF profile



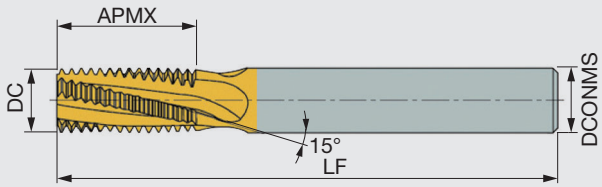


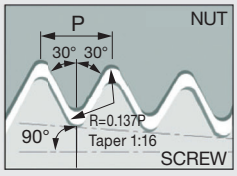
Designation	TPI	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS08078C1928W	28	1/8	8	7.8	3	19.5	64	Without	AH725
MTECS1010D3019W	19	1/4-3/8	10	10	4	30	73	Without	AH725
MTECS1212D3714W	14	1/2-7/8	12	12	4	37	84	Without	AH725

BSPT

MTEC-BSPT

Solid carbide internal and external threading endmill. for BSPT profile



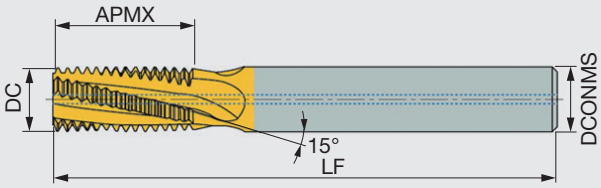


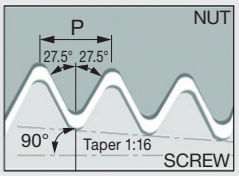
Designation	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC0606C928BSPT	28	1/8	6	6	3	9.5	58	Without	AH725
MTEC0808C1419BSPT	19	1/4-3/8	8	8	3	14	64	Without	AH725
MTEC1212D1914BSPT	14	1/2-7/8	12	12	4	19.1	84	Without	AH725
MTEC1616D2811BSPT	11	1-2	16	16	4	28.9	105	Without	AH725

NPT

MTEC-NPT

Solid carbide internal and external threading endmill. for NPT profile

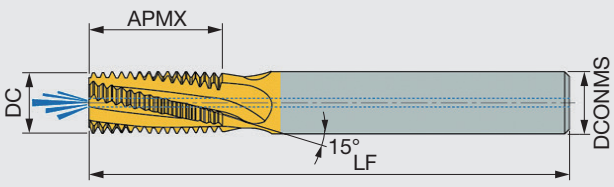


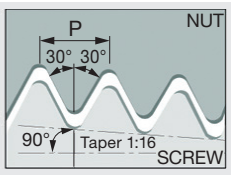


Designation	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC0606C927NPT	27	1/16-1/8	6	6	3	9.9	58	Without	AH725
MTEC0808C1418NPT	18	1/4-3/8	8	8	3	14.8	64	Without	AH725
MTEC1212D2014NPT	14	1/2-3/4	12	12	4	20.9	84	Without	AH725
MTEC1616D2711.5NPT	11.5	1-2	16	16	4	27.6	105	Without	AH725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

MTECB-NPT

Solid carbide internal and external threading endmill, with coolant hole, for NPT profile

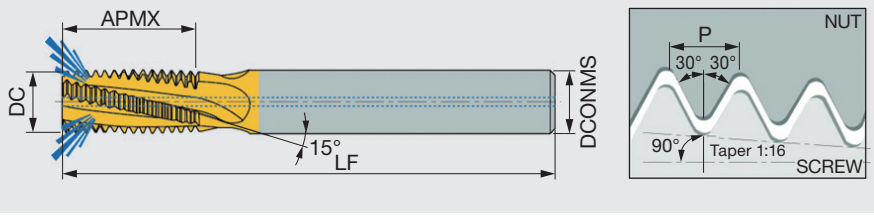




Designation	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECB08076C1027NPT	27	1/8	8	7.6	3	10.8	64	With	AH725
MTECB1010D1618NPT	18	1/4-3/8	10	10	4	16.2	73	With	AH725
MTECB16155D2214NPT	14	1/2-3/4	16	15.5	4	22.7	105	With	AH725

NPTF
MTECZ-NPTF

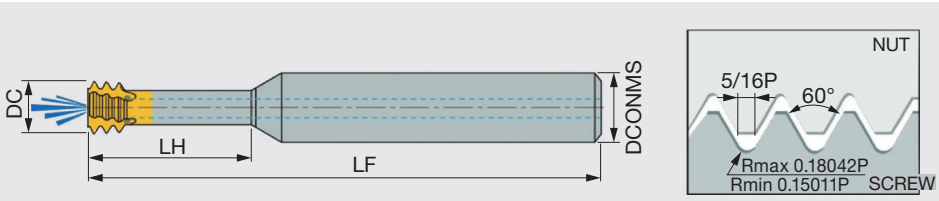
Solid carbide internal and external threading endmill, with coolant hole in the flute, for NPTF profile



Designation	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant 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 solid carbide internal threading endmill, short edge type, with coolant hole, for MJ profile



Designation	TP	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS06039C120.8MJ	0.8	5	6	3.9	3	12.5	58	Without	AH725
MTECS08061C201.25MJ	1.25	8	8	6.1	3	20	64	With	AH725
MTECS10092C301.75MJ	1.75	12	10	9.2	3	30	73	With	AH725

UNJ
MTECS-UNJ

Small diameter solid carbide internal threading endmill, short edge type, with coolant hole, for UNJ profile



Designation	TPI	Application range UNJC	Application range UNJF	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
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	-	8	6.15	3	20	64	With	AH725

Reference pages: Standard cutting conditions → I118 - I120

TUNGMEISTER

Designation System for TungMeister

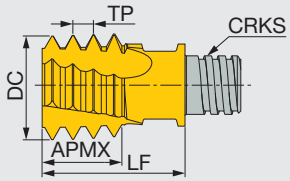
VMT	100	L06	IS	15	-	4	S05
TungMeister ThreadMilling VMT : Full profile VTR : Partial profile	Tool Dia. x10	Cutting Length	Thread Profile ISO UN W	Pitch x10 TPI		No. of Flutes	Connection Size

ISO metric

VMT***IS

Internal threading head, for ISO metric profile (TungMeister)





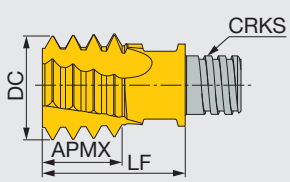
Designation	TP	Application range Fine	Application range Coarse	DC	NOF	APMX	LF	CRKS	Grade	Wrench
VMT100L06IS07-4S05	0.75	-	≥M12	10	4	6	12.8	S05	AH725	KEYV-S05
VMT100L06IS10-4S05	1	-	≥M12	10	4	6	12.8	S05	AH725	KEYV-S05
VMT100L06IS15-4S05	1.5	-	≥M14	10	4	6	12.8	S05	AH725	KEYV-S05
VMT120L09IS15-4S06	1.5	-	≥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

Internal threading head, for UN profile (TungMeister)





Designation	TPI	Application range UNC	Application range UNF	Application range UNEF	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
VMT100L06UN18-4S05	18	-	9/16-5/8	1 1/8-1 5/8	10	4	5.6	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
VMT160L12UN08-3S08	8	1	-	-	16	3	12.7	19	S08	AH725	KEYV-T30L

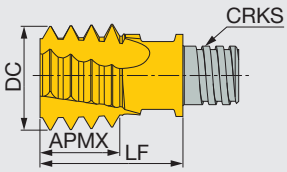
Reference pages: ThreadMill → I103 - I115

Whitworth

VMT***W

Internal and external threading head, for 55° BSP profile (TungMeister)





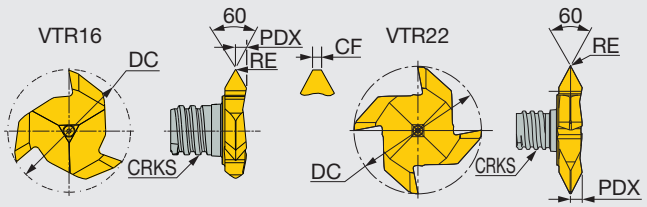
Designation	TPI	Application range	DC	NOF	APMX	LF	CRKS	Grade	Wrench
VMT100L06W19-4S05	19	1/4-3/8	10	4	5.3	12.8	S05	AH725	KEYV-S05
VMT160L12W14-4S08	14	1/2-7/8	16	4	12.7	19	S08	AH725	KEYV-T30L
VMT160L11W11-4S08	11	≥1	16	4	11.6	19	S08	AH725	KEYV-T30L

60° partial profile

VTR***IS

Internal and external threading head, for 60° partial profile (TungMeister)





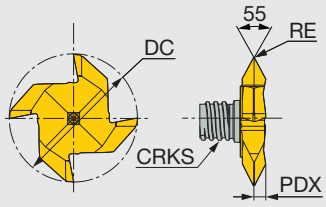
Designation	TP TPN	TP TPX	Smallest Possible thread	DC	NOF	RE	CF	PDX	CRKS	Grade	Wrench
VTR160L12IS05-3S06	0.5	2	M20	15.7	3	-	0.05	1.4	S06	GH130	KEYV-177
VTR160L12IS15-3S06	1.5	2	M22	15.7	3	0.05	-	1.4	S06	GH130	KEYV-177
VTR220L28IS30-4S08	3	4.5	M36	21.7	4	0.2	-	2.8	S08	GH130	KEYV-217

55° partial profile

VTR***W

Internal and external threading head, for 55° partial profile





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

Reference pages: ThreadMill → I103 - I115

THREADMILLING

STANDARD CUTTING CONDITIONS

ISO	Material		Condition	Tensile strength [N/mm²]	Hardness HB	Cutting speed (m/min) AH725
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	100-250
		≥ 0.25 %C	Annealed	650	190	80-210
		< 0.55 %C	Quenched and tempered	850	250	65-170
		≥ 0.55 %C	Annealed	750	220	110-180
			Quenched and tempered	1000	300	95-160
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	90-160
			Quenched and tempered	930	275	65-200
				1000	300	70-210
				1200	350	95-160
	High alloyed steel, cast steel, and tool steel		Annealed	680	200	130-170
			Quenched and tempered	1100	325	75-100
	Stainless steel and cast steel		Ferritic/martensitic	680	200	110-170
			Martensitic	820	240	70-155
M	Stainless steel		Annealed	600	180	85-100
K	Cast iron nodular (GGG)		Ferritic/martensitic		180	120-160
			Pearlitic		260	75-160
	Grey cast iron (GG)		Ferritic		160	70-150
			Pearlitic		250	110-140
	Malleable cast iron		Ferritic		130	120-160
			Pearlitic		230	110-140
N	Aluminum- wrought alloy		Not cureable		60	160-300
			Cured		100	
	Aluminum-cast, alloyed	≤12% Si	Not cureable		75	150-350
			Cured		90	
		>12% Si	High temperature		130	100-250
	Copper alloys	>1% Pb	Free cutting		110	
			Brass		90	
			Electrolitic copper		100	
	Non-metallic		Duroplastics, fiber plastics			100-400
			Hard rubber			
S	High temp. alloys	Fe based	Annealed		200	
			Cured		280	
		Ni or Co based	Annealed		250	20-80
			Cured		350	
			Cast		320	
	Titanium Ti alloys			RM 400		
			Alpha+beta alloys cured	RM 1050		20-80
H	Hardened steel		Hardened		55 HRC	55-65
			Hardened		60 HRC	45-55
	Chilled cast iron		Cast		400	90-105
	Cast iron		Hardened		55 HRC	55-65

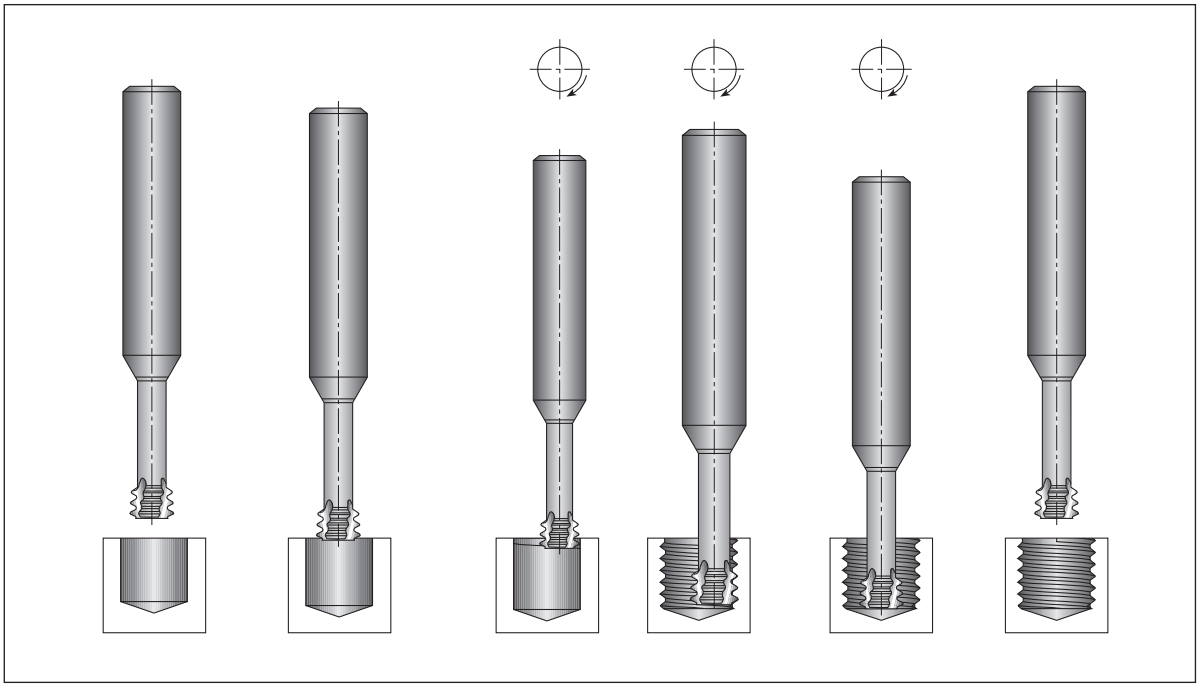
Tool dia. (mm)											
Feed (mm/t)											
ø2	ø3	ø4	ø6	ø8	ø10	ø12	ø14	ø16	ø20	ø25	ø30
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.09	0.1	0.12	0.15	0.18
0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.09	0.1	0.12	0.15	0.18
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.21	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10	0.12
0.05	0.06	0.07	0.09	0.1	0.11	0.12	0.13	0.15	0.18	0.22	0.25
0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05
0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05

With long edge, reduce feed rate to 40%.

THREADMILLING

MTECS
Small Diameter, Short type

Thread Milling - Recommended Procedure



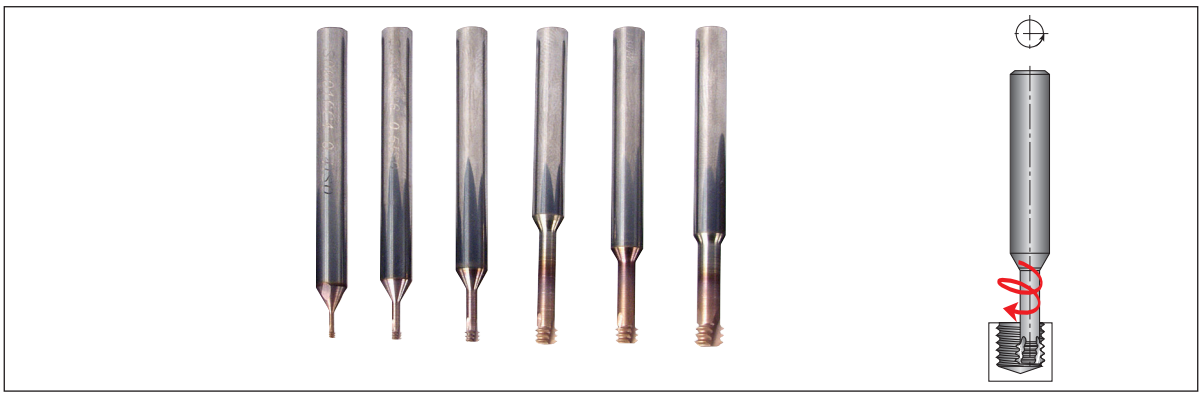
STANDARD CUTTING CONDITIONS

ISO	Material	Cutting speed m/min	Feed (mm/t)												
			ø1.5	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø9	ø10	ø12	ø14	ø15
P	Low & medium carbon steels	60-120	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
P	High carbon steels	60-90	0.04	0.05	0.06	0.08	0.09	0.1	0.12	0.13	0.14	0.14	0.16	0.17	0.18
P	Alloy steels, treated steels	50-80	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.1	0.12	0.13	0.14
P	Cast steels	70-90	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.1	0.12	0.13	0.14
M	Stainless steels	60-90	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.1	0.11	0.12	0.13
S	Nickel alloys, titanium alloys	20-40	0.03	0.03	0.04	0.04	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08
K	Cast iron	40-80	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
N	Aluminum	80-150	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
N	Synthetics, duroplastics, thermoplastics	50-200	0.1	0.11	0.12	0.14	0.16	0.18	0.19	0.19	0.19	0.19	0.19	0.2	0.2

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

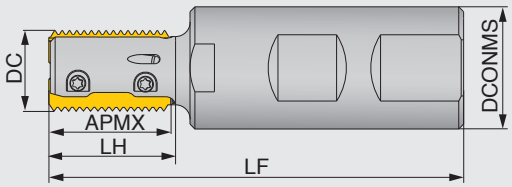


THREADMILLING

Thread milling cutter

Indexable thread milling cutter, long edge





Designation	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.

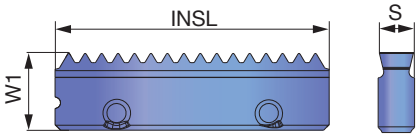
SPARE PARTS




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

INSERT

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	Threads per inch	Number of threads per edge	Coated AH725	INSL	W1	S
ISO Metric	Internal	TL25DIR1.5ISO	1.5	-	16	●	25	7	3.1
		TL25DIR2.0ISO	2	-	12	●	25	7	3.1
		TL25DIR3.0ISO (2)	3	-	8	●	25	7	3.1
Unified	Internal	TL25DIR20UN	-	20	19	●	25	7	3.1
		TL25DIR12UN	-	12	11	●	25	7	3.1
		TL25DIR9UN	-	9	8	●	25	7	3.1
		TL25DIR8UN (2)	-	8	7	●	25	7	3.1
Whitworth	Internal and external	TL25DEIR14W	-	14	13	●	25	7	3.1
		TL25DEIR11W	-	11	10	●	25	7	3.1

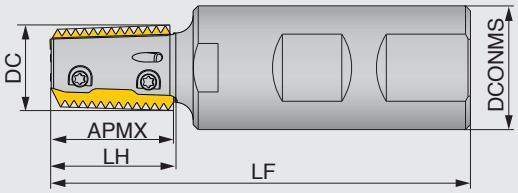
(2) Does not fit the DC 17 holder

●: Line up

Reference pages: Standard cutting conditions → I125

Indexable thread milling cutter, long edge





Designation	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...

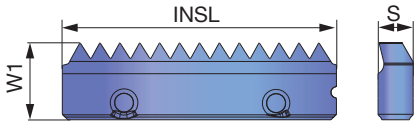
SPARE PARTS




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

INSERT

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	Threads per inch	Number of threads per edge	Coated AH725	INSL	W1	S
BSPT	Internal and external	TL25SEIR14BSPT	-	14	13	●	25	7	3.1
		TL25SEIR11BSPT	-	11	10	●	25	7	3.1
NPT	Internal and external	TL25SEIR14NPT	-	14	13	●	25	7	3.1
		TL25SEIR11.5NPT	-	11.5	11	●	25	7	3.1
NPTF	Internal and external	TL25SEIR14NPTF	-	14	13	●	25	7	3.1

●: Line up

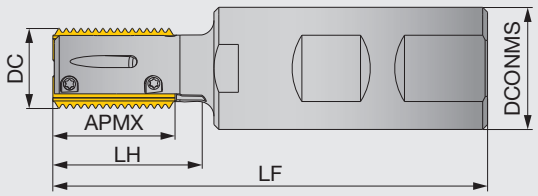
Reference pages: Standard cutting conditions → I125

THREADMILLING

Thread milling cutter

Indexable thread milling cutter, long edge type





Designation	DC	APMX	CICT	DCONMS	LH	LF	Coolant 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 do not fit.

SPARE PARTS

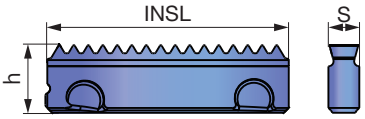



Designation	Clamping screw	Wrench
ETLN25...	SSTM3-3	T-6F

* Recommended clamping torque: SSTM3-3=1

INSERT

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	Threads per inch	Coated AH725	INSL	h	S
ISO Metric	Internal	LN25DIR1.5ISO	1.5	-	●	25	7	3.1
		LN25DIR2.0ISO	2	-	●	25	7	3.1
		LN25DIR3.0ISO (2)	3	-	●	25	7	3.1
Unified	Internal	LN25DIR20UN	-	20	●	25	7	3.1
		LN25DIR12UN	-	12	●	25	7	3.1
		LN25DIR8UN (2)	-	8	●	25	7	3.1
Whitworth	Internal and external	LN25DEIR14W	-	14	●	25	7	3.1
		LN25DEIR11W	-	11	●	25	7	3.1

(2) Does not fit the DC 17 holder

●: Line up

Reference pages: Standard cutting conditions → I125

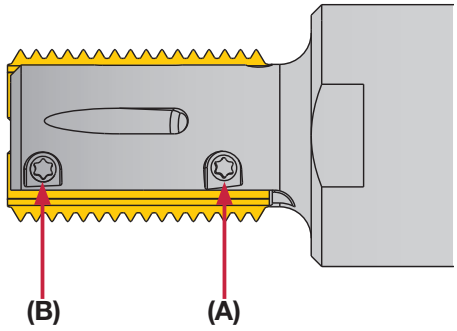
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grades	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Low carbon steel	AH725	100 - 200	0.1 - 0.3
	High carbon steel	AH725	70 - 150	0.1 - 0.3
	High carbon steels	AH725	70 - 170	0.1 - 0.3
	Cast steel	AH725	70 - 170	0.1 - 0.3
M	Stainless steel	AH725	90 - 140	0.1 - 0.3
K	Cast iron	AH725	60 - 130	0.05 - 0.3
N	Aluminium alloys	AH725	80 - 400	0.1 - 0.4
S	Heat-resistant alloys	AH725	10 - 30	0.02 - 0.1
	Titanium alloy	AH725	20 - 90	0.02 - 0.1

• 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.

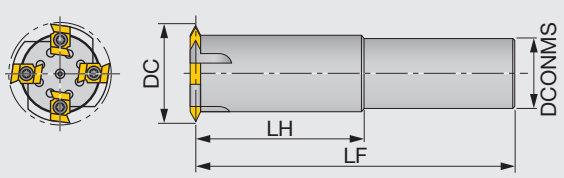


THREADMILLING

Thread milling cutter

Indexable thread milling cutter, single tooth





Right hand, 4 inserts

Designation	DC	CICT	DCONMS	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...

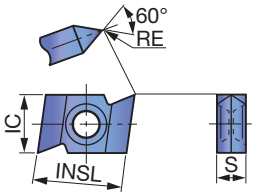
SPARE PARTS

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

* Recommended clamping torque (N·m): CSTB-4=3.5, CSTB-5=5

INSERT

T*-R...



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

★ : First choice
☆ : Second choice

Designation	RE	Coated	INSL	IC	S
		GH330			
T1-R14	0.14	●	14.4	9.525	4.76
T1-R28	0.28	●	14.4	9.525	4.76
T2-R14	0.14	●	17.8	12.7	6.35
T2-R28	0.28	●	17.8	12.7	6.35

●: Line up

Reference pages: Standard cutting conditions → I127

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grades	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Mild steels / Unhardened steels < 200HB	GH330	150 - 200	0.3 - 0.4
P	Carbon steels / Alloy steels < 300HB	GH330	150 - 200	0.17 - 0.26
P	Die steels < 50HRC	GH330	30 - 50	0.14 - 0.2
M	Stainless steels < 300HB	GH330	150 - 200	0.05 - 0.12

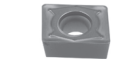
- Climb milling is recommended.
- When threading a blind hole, use the right hand cutter in right-hand rotation. Cut up from the bottom to prevent chip recutting.

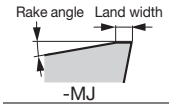
THREADING MILLS AND APPLICABLE THREADS

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

Milling Insert

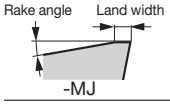
● ACMT**PR-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH140	GH330	T3130	
	ACMT060308PR-MJ	●	●	●	●	ELP07/09/12...
	ACMT07T308PR-MJ	●	●	●	●	
	ACMT100408PR-MJ	●	●	●	●	



● ADMT**PR-MJ

Shape	Designation	Coated			Applicable mill
		AH120	AH140	T3130	
	ADMT130308PR-MJ	●	●	●	ELP13/17/21... (old item)
	ADMT17T308PR-MJ	●	●	●	
	ADMT210408PR-MJ	●	●	●	



● AECW**PEFR, AECW**PESR, AEMW**PEFR, AEMW**PETR

Shape	Designation	Coated		Cermet	Uncoated		Applicable mill
		AH120	GH330	NS740	UX30	TH10	
	AECW1403PEFR					●	EPE4000/5000/ 6000... (old item)
	AECW1403PESR	●	●	●	●		
	AECW16T3PEFR					●	
	AECW16T3PESR	●	●	●	●		
	AECW1804PEFR					●	
	AECW1804PESR	●	●	●	●		
	AEMW1403PEFR					●	
	AEMW1403PETR		●	●	●		
	AEMW16T3PEFR					●	
	AEMW16T3PETR		●	●	●		
	AEMW1804PEFR					●	
	AEMW1804PETR		●	●	●		

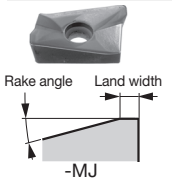
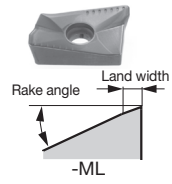
● ANEA542TN, ANEA642TN

Shape	Designation	Uncoated	Applicable mill
		UX30	
	ANEA542TN	●	VSN... (old item)
	ANEA642TN	●	

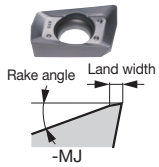
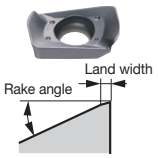
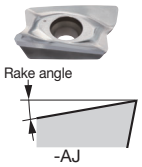
●: Line up

Milling Insert

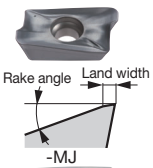
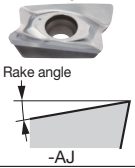
● ANMT**PPPR-MJ, ANMT**PPPR-ML

Shape	Designation	Coated			Applicable mill
		AH120	GH330	T3130	
	ANMT09T3PPPR-MJ	●	●	●	EPN09 (old item) EPN14... TPN14... (old item)
	ANMT09T3PPPR-ML	●			
	ANMT1404PPPR-MJ	●	●	●	
	ANMT1404PPPR-ML	●			
					

● AOMT**PDPR-MJ, AOGT**PDFR-AJ, AOMT070208PDPR-HJ

Shape	Designation	Coated		Uncoated	Applicable mill
		AH140	AH725	KS15F	
	AOMT070202PDPR-MJ	●	●		TUNGREC TPO07... Page H143 EPO07... Page H143 HPO07... Page H144
	AOMT070204PDPR-MJ	●	●		
	AOMT070208PDPR-MJ	●	●		
	AOMT070216PDPR-MJ	●	●		
	AOMT070208PDPR-HJ	●	●		
	AOGT070204PDFR-AJ			●	
					
					

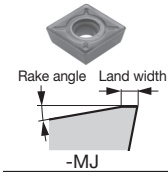
● AOMT**PDPR-MJ, AOGT**PDFR-AJ

Shape	Designation	Coated		Uncoated	Applicable mill
		AH140	AH725	KS15F	
	AOMT180508PDPR-MJ	●	●		TUNGREC TPO18... Page H152 EPO18... Page H153
	AOMT180516PDPR-MJ	●	●		
	AOMT180524PDPR-MJ	●	●		
	AOMT180532PDPR-MJ	●	●		
	AOGT180504PDFR-AJ			●	
	AOGT180508PDFR-AJ			●	
					

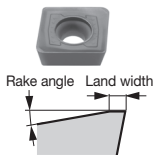
●: Line up

Milling Insert

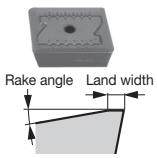
● APMT**PN-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH140	GH330	T3130	
	APMT070308PN-MJ	●	●	●	●	ELP07/09/12... (old item)
	APMT09T308PN-MJ	●	●	●	●	
	APMT120408PN-MJ	●	●	●	●	

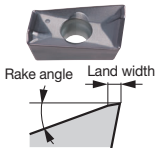
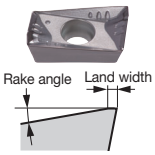
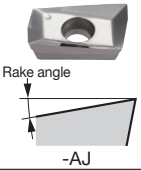
● APMT120416PR-MJ

Shape	Designation	Coated		Applicable mill
		AH120	T3130	
	APMT120416PR-MJ	●	●	TZP12... Page H229 HZP12... (old item)

● APMR190616PR-MJ

Shape	Designation	Coated		Applicable mill
		AH120	T3130	
	APMR190616PR-MJ	●	●	TZP19... Page H232

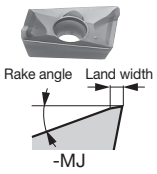
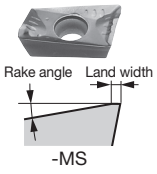
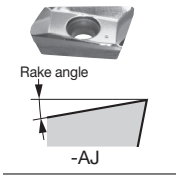
● ASMT**PDPR-MJ, ASGT11**PDFR-AJ, ASMT304PDPR-MS

Shape	Designation	Coated							Cermet	Uncoated		Applicable mill
		AH120	AH130	AH140	AH725	T1115	T1215	T3130	DS1100	NS740	KS05F	
	ASMT11T304PDPR-MJ	●	●		●	●		●		●		TUNGREC TPO11... Page H146 TLS11... Page H146 EPO11... Page H147 HPO11... Page H148 ELS11... Page H148
	ASMT11T308PDPR-MJ	●	●		●	●	●	●		●		
	ASMT11T312PDPR-MJ	●			●			●				
	ASMT11T316PDPR-MJ	●			●			●		●		
	ASMT11T320PDPR-MJ	●										
	ASMT11T330PDPR-MJ	●	●									
	ASMT11T304PDPR-MS		●	●								
	ASGT11T304PDFR-AJ								●		●	
	ASGT11T308PDFR-AJ								●		●	
												

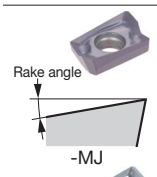
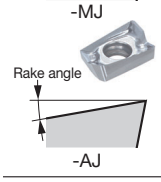
●: Line up

Milling Insert

● ASMT17**PDPR-MJ, ASGT17**PDFR-AJ, ASMT170508PDPR-MS

Shape	Designation	Coated						Cermet			Uncoated				Applicable mill
		AH120	AH130	AH140	T1115	T3130	DS1100	NS740			KS05F				
	ASMT170504PDPR-MJ	●			●	●		●							TPS17... (old item) EPS17... (old item)
	ASMT170508PDPR-MJ	●			●	●		●							
	ASMT170512PDPR-MJ	●				●									
	ASMT170516PDPR-MJ	●				●		●							
	ASMT170520PDPR-MJ	●													
	ASMT170530PDPR-MJ	●													
	ASMT170532PDPR-MJ	●				●		●							
	ASMT170508PDPR-MS		●	●											
	ASGT170504PDFR-AJ						●				●				
	ASGT170508PDFR-AJ						●				●				
															

● AVGT**PBER-MJ, AVGT**PBFR-AJ

Shape	Designation	Coated			Uncoated										Applicable mill
		AH120	AH130	AH3135	KS05F										
	AVGT060300PBER-MJ			●											TUNGFREC EPAV... Page H138 HPAV06... Page H139, H140 TPAV06... Page H139
	AVGT060302PBER-MJ	●	●	●											
	AVGT060304PBER-MJ	●	●	●											
	AVGT060308PBER-MJ	●	●	●											
	AVGT060300PBFR-AJ				●										
	AVGT060302PBFR-AJ				●										
	AVGT060304PBFR-AJ				●										
	AVGT060308PBFR-AJ				●										

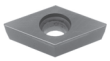
● CPMW**-EN, CPMT**-EN

Shape	Designation	Coated			Uncoated										Applicable mill
		GH330			UX30										
	CPMW050208EN	●			●										EVP1000 (old item)
	CPMW06T208EN	●			●										
	CPMT080308EN	●			●										

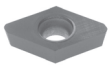
●: Line up

Milling Insert

● DCMW**TN

Shape	Designation	Coated										Applicable mill
		AH120	AH330									
	DCMW070204TN	●	●									EBP... Page H225 HBP... (old item)
	DCMW11T304TN	●	●									

● DPCW11T3ZFR

Shape	Designation	Coated			Cermet							Applicable mill
		AH740			NS740							
	DPCW11T3ZFR	●			●							TZF11... Page H234 HZF11... (old item)

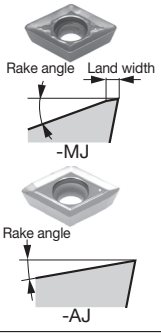
● EDKW53ZTR

Shape	Designation	Coated			Uncoated							Applicable mill
		GH330			UX30							
	EDKW53ZTR	●			●							ESD5000 (old item)

● ENEQ**TN-T

Shape	Designation	Coated										Applicable mill
		AH120										
	ENEQ090508TN-T	●										VSNE09... (old item)
	ENEQ100508TN-T	●										VSNE10... (old item)
	ENEQ130608TN-T	●										VSNE13... (old item)
	ENEQ160608TN-T	●										VSNE16... (old item)

● GDMT**PDPR-MJ, GDGT**PDFR-AJ

Shape	Designation	Coated					Uncoated					Applicable mill
		AH120	AH140	AH330	T3130	DS1100	UX30	TH10				
	GDMT10H3PDPR-MJ	●	●	●	●		●					TSD10/17... (old item) ESD10/17... (old item) HSD10/17... (old item)
	GDMT17X6PDPR-MJ	●	●	●	●		●					
	GDGT10H3PDFR-AJ					●		●				
	GDGT17X6PDFR-AJ					●		●				

●: Line up

Milling Insert

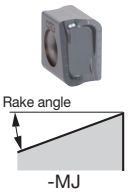
● HEHN532FN

Shape	Designation	Uncoated	Applicable mill
		TH10	
	HEHN532FN	●	QYE5300 (old item)

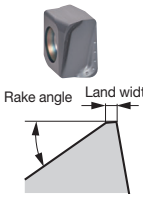
● HPKN532FN

Shape	Designation	Uncoated	Applicable mill
		TH10	
	HPKN532FN	●	QYP5300 (old item)

● LMEU**ZNEN-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH140	AH725	AH3135	
	LMEU100808ZNEN-MJ	●	●	●	●	TECTSLOT ASN 10/12/15... Page H199 TSN 10/12/15... Page H200
	LMEU100810ZNEN-MJ	●			●	
	LMEU100816ZNEN-MJ	●	●	●	●	
	LMEU100820ZNEN-MJ	●			●	
	LMEU100824ZNEN-MJ	●	●	●	●	
	LMEU100830ZNEN-MJ	●			●	
	LMEU100832ZNEN-MJ	●	●	●	●	
	LMEU120808ZNEN-MJ	●	●	●	●	
	LMEU120816ZNEN-MJ	●	●	●	●	
	LMEU120820ZNEN-MJ	●			●	
	LMEU120824ZNEN-MJ	●	●	●	●	
	LMEU120830ZNEN-MJ	●			●	
	LMEU120832ZNEN-MJ	●	●	●	●	
	LMEU150908ZNEN-MJ	●	●	●	●	
	LMEU150916ZNEN-MJ	●	●	●	●	
	LMEU150920ZNEN-MJ	●			●	
	LMEU150924ZNEN-MJ	●	●	●	●	
	LMEU150930ZNEN-MJ	●			●	
	LMEU150932ZNEN-MJ	●	●	●	●	
	LMEU150940ZNEN-MJ	●			●	
	LMEU150950ZNEN-MJ	●			●	

● LMMU**PNER-MJ

Shape	Designation	Coated						Applicable mill
		AH3135	AH120	AH140	AH725	T1215	T3225	
	LMMU110708PNER-MJ	●	●	●	●	●	●	TECMILL TPM11/16... Page H171 TLM11... Page H171 EPM11... Page H172
	LMMU110716PNER-MJ	●	●	●	●	●	●	
	LMMU110724PNER-MJ		●	●	●			
	LMMU110732PNER-MJ		●	●	●			
	LMMU160908PNER-MJ	●	●	●	●	●	●	
	LMMU160916PNER-MJ	●	●	●	●			
	LMMU160924PNER-MJ		●	●	●			
	LMMU160932PNER-MJ		●	●	●			

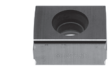
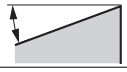
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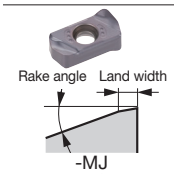
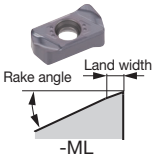
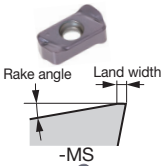
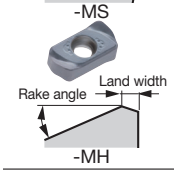
● LNCA64ZTR

Shape	Designation	Coated			Uncoated									Applicable mill
		T3130			UX30									
	LNCA64ZTR	●			●									VSN6000I (old item)

● LNCQ0906N-**L, LNCQ0906R-50S

Shape	Designation	Coated			Cermet									Applicable mill
		AH120	GH110		NS740									
 Rake angle 	LNCQ0906N-100L	●	●		●									NMS09... Page H114 EMS09... Page H114
	LNCQ0906N-50L	●	●		●									
	LNCQ0906R-50S	●	●		●									

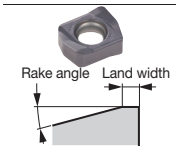
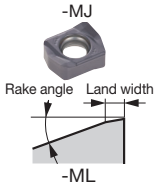
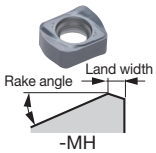
● LNMU0303ZER-MJ, LNMU0303ZER-ML, LNMU0303ZER-MS, LNGU0303ZER-MH

Shape	Designation	Coated												Applicable mill
		AH130	AH725	AH3035	AH8015	AH8005								
 Rake angle Land width -MJ  Rake angle Land width -ML  Rake angle Land width -MS  Rake angle Land width -MH	LNMU0303ZER-MJ	●	●	●	●									DOFEED TXN03... Page H026 EXN03... Page H026, H027 HXN03... Page H028
	LNMU0303ZER-ML	●	●	●	●									
	LNMU0303ZER-MS	●												
	LNGU0303ZER-MH				●	●								

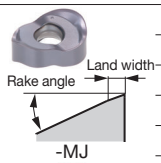
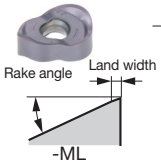
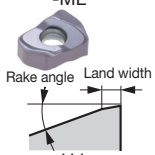
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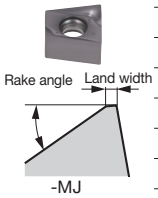
● LNMU06X5ZER-MJ, LNMU06X5ZER-ML, LNGU06X5ZER-MH, LNGU06X5ZER-W

Shape	Designation	Coated						Applicable mill
		AH120	AH130	AH725	AH3035	AH8015	AH8005	
 -MJ	LNMU06X5ZER-MJ	●	●	●	●	●		DOFEED TXN06... Page H032 EXN06... Page H033
 -ML	LNMU06X5ZER-ML	●	●	●	●	●		
 -MH	LNGU06X5ZER-MH					●	●	
 -W	LNGU06X5ZER-W			●				

● LNMX040*R*-MJ, LNMX0405R4-ML, LNMX0405R4-HJ, LNMX0607ZER-HJ

Shape	Designation	Coated		Applicable mill
		AH120	AH3135	
 -MJ	LNMX0405R4-MJ	●	●	DOTWIST BALL TXLN... Page H036 EXLN... Page H037 HXLN... Page H038
	LNMX0405R4-ML	●	●	
	LNMX0405ZER-HJ	●	●	
	LNMX0506R5-MJ	●	●	
	LNMX0607R6-MJ	●	●	
	LNMX0607ZER-HJ	●	●	
 -ML				
 -HJ				

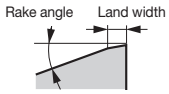
● LQMU**PNER-MJ, LQMU110708PXER-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH140	AH725	AH3135	
 -MJ	LQMU110704PNER-MJ	●	●	●		DOREC TPQ11/18... Page H167 EPQ11/18... Page H168
	LQMU110708PNER-MJ	●	●	●		
	LQMU110708PXER-MJ	●			●	
	LQMU110716PNER-MJ	●	●	●		
	LQMU110720PNER-MJ	●				
	LQMU180804PNER-MJ	●	●	●		
	LQMU180808PNER-MJ	●	●	●		
	LQMU180816PNER-MJ	●	●	●		
	LQMU180824PNER-MJ	●	●	●		

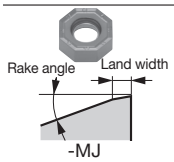
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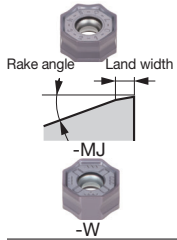
● LSMT0202ZER-HM, LSMT0202R2-MM

Shape	Designation	Coated AH3225	Coated AH8015	Applicable mill
 -HM  -MM 	LSMT0202ZER-HM	●	●	TUNGFEED EXLS... Page H022 HXLS... Page H022
	LSMT0202R2-MM	●	●	

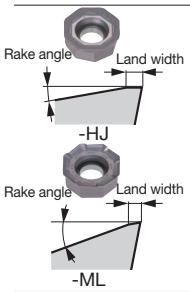
● ONMU0705ANPN-MJ, ONHU0705ANPN-MJ, ONMU0705ANPN-ML, ONHU0705ANTN-ML, ONHU0705ANPR-W

Shape	Designation	Coated AH120	Coated AH140	Coated AH725	Coated AH3135	Coated T1115	Coated T1215	Coated T3225	Applicable mill
	ONMU0705ANPN-MJ		●	●	●	●	●	●	DOOCTO TAN07... Page H063, H064
	ONHU0705ANPN-MJ		●	●					
	ONMU0705ANPN-ML	●			●				
	ONHU0705ANTN-ML	●	●	●					
	ONHU0705ANPR-W	●							

● ONGU0507ANEN-MJ, ONGU0507ANEN-W, ONMU0507ANEN-MJ

Shape	Designation	Coated AH120	Coated AH3135	Coated T3225	Coated T1215	Applicable mill
	ONGU0507ANEN-MJ	●	●	●	●	DOTMILL TASN13... Page H060
	ONGU0507ANEN-W	●	●			
	ONMU0507ANEN-MJ	●	●	●	●	

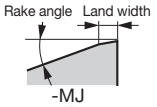
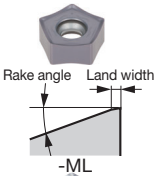
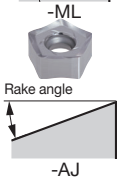
● OWMT0807ZNER-HJ, OWMT0807AAER-ML

Shape	Designation	Coated AH130	Coated AH3135	Applicable mill
	OWMT0807ZNER-HJ		●	DOOCTO TAN07... Page H063, H064
	OWMT0807AAER-ML	●	●	

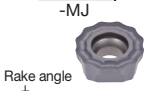
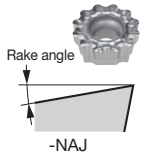
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Milling Insert

● PNMU0905GNEN-MJ, PNCU0905GNEN-MJ, PNCU0905GNER-MJ, PNCU0905GNEN-ML, PNCU0905GNFR-AJ, PNCU0905GNER-W

Shape	Designation	Coated							Cermet	Uncoated		Applicable mill
		AH120	AH140	AH725	AH3135	T1115	T1215	T3130	T3225	NS740	TH10	
 Neutral	PNMU0905GNEN-MJ	●			●		●		●			DOPENT TEN09R/L... Page H070 EEN09... Page H071
 Right hand	PNCU0905GNEN-MJ	●			●		●		●			
	PNCU0905GNER-MJ	●	●	●		●		●		●		
	PNCU0905GNEN-ML				●							
	PNCU0905GNFR-AJ										●	
	PNCU0905GNER-W			●								
 Rake angle Land width -MJ												
 Rake angle Land width -ML												
 Rake angle -AJ												
 -W												

● RCMT**EN-MJ, RCMT**EN-NMJ, RCMT**FN-NAJ

Shape	Designation	Coated			Uncoated							Applicable mill
		AH120	AH140	AH725	KS15F							
 Rake angle Land width -MJ	RCMT1204EN-MJ	●	●	●								ROUNDSPLIT TRC12/16... Page H217 ERC12/16... Page H218
	RCMT1204EN-NMJ	●	●	●								
	RCMT1204FN-NAJ				●							
	RCMT1606EN-MJ	●	●	●								
	RCMT1606EN-NMJ	●	●	●								
	RCMT1606FN-NAJ				●							
 Rake angle -NMJ												
 Rake angle -NAJ												

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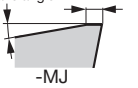
● RDCA2004TN, RDCN2004TN, RDKN2004...

Shape	Designation	Coated			Uncoated								Applicable mill
		AH120			UX30	TH10							
	RDCA2004TN				●								TRD6000 (old item)
	RDCN2004TN				●								
	RDKN2004FN					●							ERD6000 (old item)
	RDKN2004TN	●			●								

● RDCM1203TN, RDMA1203TN

Shape	Designation	Uncoated											Applicable mill
		UX30											
	RDCM1203TN	●											ERD4000 (old item)
	RDMA1203TN	●											

● RDMT**ZDPN-MJ, RDMW**ZDSN

Shape	Designation	Coated					Uncoated						Applicable mill
		AH120	AH130	AH140	AH330	T3130	UX30						
  	RDMT1204ZDPN-MJ	●		●	●	●	●						TRD12/16... (old item)
	RDMW1204ZDSN	●		●		●							
	RDMT1606ZDPN-MJ	●	●	●	●	●	●						ERD12/16... (old item)
	RDMW1606ZDSN	●		●		●							

● RDMW**M0

Shape	Designation	Coated											Applicable mill
		AH120											
	RDMW0501M0	●											EWD05/07/10... Page H221
	RDMW0702M0	●											
	RDMW1003M0	●											HWD07... Page H221

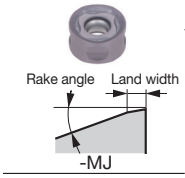
● RFEN2004ZFTN, RFEN2004M0TN

Shape	Designation	Coated			Uncoated								Applicable mill
		AH120	GH330		UX30	KS20							
	RFEN2004ZFTN	●	●		●	●							TRF6000 (old item)
	RFEN2004M0TN		●		●	●							ERF6000 (old item)

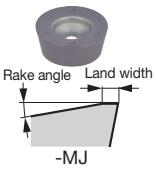
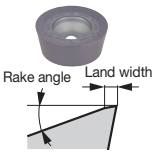
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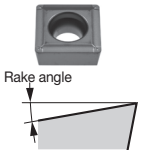
● RNGU1307ZNER-MJ, RNMU1307ZNER-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH3135	T1215	T3225	
	RNMU1307ZNER-MJ	●	●	●	●	DOTMILL TASN13... Page H060

● RPMT**EN-MJ, RPMT**EN-ML

Shape	Designation	Coated			Applicable mill
		AH130	AH725	AH4035	
 	RPMT10T3EN-MJ	●	●	●	FIXRMILL TRP10/12/16... Page H212 ERP10/12/16... Page H212 HRP10/12... Page H213
	RPMT10T3EN-ML	●	●	●	
	RPMT1204EN-MJ	●	●	●	
	RPMT1204EN-ML	●	●	●	
	RPMT1606EN-MJ	●	●	●	
	RPMT1606EN-ML	●	●	●	

● SCMT**-23

Shape	Designation	Coated	Applicable mill
		AH120	
	SCMT09T308-23	●	EBD... Page H227 HBD... (old item)
	SCMT120408-23	●	

● SDCN1504ZDSR, SDEN1504ZDSR, SDNN1504ZDSR

Shape	Designation	Coated				Applicable mill
		AH120	AH140	T1115	T3130	
	SDCN1504ZDSR	●	●		●	MILLFEED TXD15... (old item)
	SDEN1504ZDSR	●	●	●	●	
	SDNN1504ZDSR	●	●	●	●	

●: Line up

Milling Insert

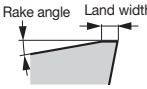
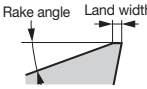
● SDCN42HTR, SDKN42HTR

Shape	Designation	Coated												Applicable mill
		GH330												
	SDCN42HTR	●												EUD4600 (old item)
	SDKN42HTR	●												

● SDKN42EF..., SDEN42EFTR24

Shape	Designation	Coated			Cermet			Uncoated						Applicable mill
		T3130			NS740			TH10	UX30					
	SDKN42EFTR	●			●									TMD4100I (old item)
	SDKN42EFFR							●						
	SDEN42EFTR24				●				●					

● SDCN42Z..., SDEN42Z..., SDKN42Z..., SDCN42ZFN-DIA, SDKR42ZSR-MJ, SDMR1203AETN-MJ, SDKR1203AETN-MJ, SDKR42ZPN-MS

Shape	Designation	Coated									Cermet		Uncoated		PCD	Applicable mill
		AH3135	AH120	AH130	AH140	AH330	GH330	T1115	T1215	T3130	T3225	NS740	N308	UX30	TH10	DX140	
	SDCN42ZFN														●		TMD4400R/LI Page H095
	SDCN42ZTN											●	●	●			
	SDCN42ZTN20											●					EMD4400RI Page H096
	SDEN42ZFN														●		
	SDEN42ZTN	●	●		●		●	●	●			●	●	●			TGD4400-A Page H101
	SDEN42ZTNCR	●	●		●	●						●					
Rake angle Land width  -MJ	SDEN42ZTN20									●	●						EGD4400 Page H101
	SDKN42ZFN														●		
	SDKN42ZTN	●	●	●	●	●	●	●	●			●	●	●			TFD4400-A (old item)
	SDKN42ZTNCR											●					
	SDKN42ZTN16									●	●						
Rake angle Land width  -MS	SDCN42ZFN-DIA															●	
	SDKR42ZSR-MJ	●	●			●	●			●	●						
	SDMR1203AETN-MJ											●					
	SDKR1203AETN-MJ											●					
	SDKR42ZPN-MS	●		●	●												

DX140: Packing quantity = 1pc.

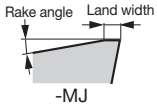
●SDCN53HTR, SDKN53HTR

Shape	Designation	Coated												Applicable mill
		GH330												
	SDCN53HTR	●												TUD5600 (old item)
	SDKN53HTR	●												

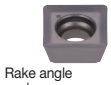
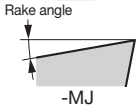
●: Line up

Milling Insert

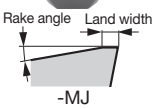
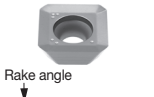
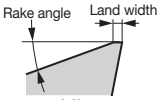
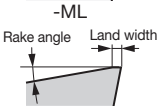
● SDCN53ZTN, SDEN53Z..., SDKN53Z..., SDKR53ZSR-MJ

Shape	Designation	Coated					Cermet		Uncoated					Applicable mill
		AH120	AH130	AH140	GH330	T3130	NS740	N308	UX30	TH10				
	SDCN53ZTN						●	●						TMD5400RI Page H099
	SDEN53ZFN									●				
	SDEN53ZTN				●		●		●					
	SDEN53ZTNCR						●							
	SDEN53ZTN20					●								
	SDKN53ZFN									●				
	SDKN53ZTN	●	●	●	●		●	●	●					
	SDKN53ZTNCR						●							
	SDKN53ZTN16					●								
	SDKR53ZSR-MJ				●	●								

● SDMT050204PN-MJ, SDHT050204FN-AJ

Shape	Designation	Coated			Uncoated								Applicable mill
		AH140	AH725		TH10								
	SDMT050204PN-MJ	●	●										TUNGQUAD TPD05... Page H157 EPD05... Page H157 ELD05... Page H158 EASD05... Page H158
	SDHT050204FN-AJ				●								
													

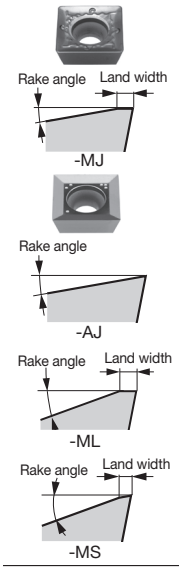
● SDMT1204AFPN-MJ, SDMT1204AFTN-MJ, SDMT1204AFPN-ML, SDMT1204AFPN-MS, SDGT1204AFTN-MJ, SDGT1204AFFN-AJ

Shape	Designation	Coated					Cermet		Uncoated					Applicable mill
		AH120	AH140	AH330	GH330	T3130	NS740		TH10					
	SDMT1204AFPN-MJ	●	●	●	●	●								TAD12... EAD12... (old item)
	SDMT1204AFTN-MJ						●							
	SDMT1204AFPN-ML	●		●										
	SDMT1204AFPN-MS		●											
	SDGT1204AFTN-MJ	●		●			●							
	SDGT1204AFFN-AJ								●					
														
														
														

●: Line up

Milling Insert

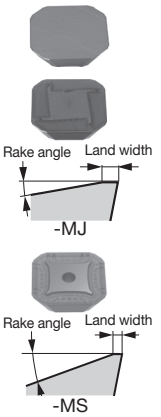
● SDMT1204PDSR-MJ, SDMT1204PDTR-MJ, SDMT1204PDPR-ML, SDMT1204PDPR-MS SDGT1204PDTR-MJ, SDGT1204PDFR-AJ

Shape	Designation	Coated					Cermet		Uncoated		Applicable mill
		AH120	AH140	AH330	GH330	T3130	NS740		TH10		
	SDMT1204PDSR-MJ	●	●	●	●	●					TPD12... EPD12... (old item)
	SDMT1204PDTR-MJ						●				
	SDMT1204PDPR-ML	●		●							
	SDMT1204PDPR-MS		●								
	SDGT1204PDTR-MJ	●		●			●				
	SDGT1204PDFR-AJ								●		

● SDMW090308TN, SDMW120408TN

Shape	Designation	Uncoated			Applicable mill
		UX30			
	SDMW090308TN	●			ELD3000 ELD4000 (old item)
	SDMW120408TN	●			

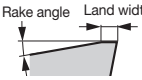
● SECN1203AGFN, SEEN1203AG..., SEKN1203AG..., SEKR1203AGSR-MJ, SEKR1203AGPN-MS

Shape	Designation	Coated							Cermet		Uncoated		Applicable mill
		AH120	AH130	AH140	AH330	GH330	T1115	T3130	NS740		UX30	TH10	
	SECN1203AGFN											●	TME4400R/LI Page H088
	SEEN1203AGFN											●	
	SEEN1203AGTN	●	●	●		●	●		●		●		TME4400RB Page H089
	SEEN1203AGTN-T							●	●		●		
	SEEN1203AGTNCR	●	●	●	●			●					EME4400 Page H090
	SEEN1203AGTNCR-14								●				
	SEKN1203AGFN-T											●	
	SEKN1203AGTN	●	●	●	●	●		●	●		●		
	SEKN1203AGTN-T					●	●	●	●		●		
	SEKN1203AGTNCR								●				
	SEKR1203AGSR-MJ	●			●	●		●					
	SEKR1203AGPN-MS		●	●									

●: Line up

Milling Insert

● SE*N1504AG..., SEKR1504AGSR-MJ

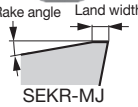
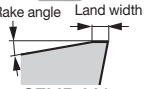
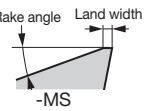
Shape	Designation	Coated					Cermet			Uncoated					Applicable mill
		AH120	AH140	GH330	T3130		NS740			TH10	UX30				
 Rake angle Land width  -MJ	SEEN1504AGTN						●				●				TME5400RI Page H093
	SEKN1504AGFN									●					
	SEKN1504AGTN	●	●	●	●		●				●				
	SEKN1504AGTN-T				●		●								
	SEKR1504AGSR-MJ			●	●										

● SECN422TN, SECN422FN, SEEN422TN, SEEN422FN, SECN422FN-DIA

Shape	Designation	ISO Designation (Metric)	Cermet				Uncoated			PCD				Applicable mill
			NS740	N308			UX30	TH10		DX140				
  -DIA	SECN422TN	SECN120308TN	●	●			●							EGE4000 (old item)
	SECN422FN	SECN120308FN						●						
	SEEN422TN	SEEN120308TN	●	●			●							QHE4000
	SEEN422FN	SEEN120308FN						●						
	SECN422FN-DIA	SECN120308FN-D								●				

DX140: Packing quantity = 1pc.

● SEEN1203AFTNCR-14, SEKN42AFTN, SEKN42AFFN, SEKN42AFTN16, SEKR42AFSR-MJ, SEKR1203AFPN-MS, SEKR1203AFTN-MJ, SEMR1203AFTN-MJ

Shape	Designation	ISO Designation (Metric)	Coated					Cermet	Uncoated		Applicable mill
			AH120	AH130	AH140	GH330	T3130	NS740	TH10	UX30	
  Rake angle Land width  SEKR-MJ	SEEN1203AFTNCR-14							●			TGE4400I EGE4400 (old item)
	SEKN42AFTN	SEKN1203AFTN	●	●	●	●				●	
	SEKN42AFFN	SEKN1203AFFN							●		
	SEKR42AFSR-MJ	SEKR1203AFSR-MJ				●	●				
	SEKR1203AFPN-MS				●						
	SEKR1203AFTN-MJ							●			
	SEMR1203AFTN-MJ							●			
 Rake angle Land width  SEMR-MJ											
Rake angle Land width  -MS											

●: Line up

Milling Insert

● SECN42EFTRCR, SEEN42EFTRCR, SEKN42EFTR, SEKN42EFFR

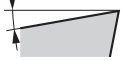
Shape	Designation	ISO Designation (Metric)	Coated			Cermet			Uncoated						Applicable mill
			GH330	T3130		NS740			UX30	TH10					
	SECN42EFTRCR	SECN1203EFTR				●									EGE4100 (old item)
	SEEN42EFTRCR	SEEN1203EFTR				●									
	SEKN42EFTR	SEKN1203EFTR	●	●		●									
	SEKN42EFFR	SEKN1203EFFR								●					

● SE*N42ZFR, SECN42ZFR-DIA

Shape	Designation	Uncoated			PCD									Applicable mill
		TH10			DX140									
	SECN42ZFR-DIA				●									THE4000RIA Page H177
	SECN42ZFR	●												
 -DIA	SEEN42ZFR	●												

DX140: Packing quantity = 1pc.

● SEGW12X4ZE*R, SEGT12X4ZEFR-AJ, SEGW12X4ZEFR-*, 2QP-SECW12X412ZETR, 1QP-SECW12X4ZETR-*

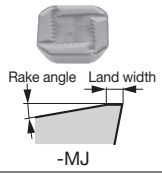
Shape	Designation	Coated			Cermet			Uncoated			PCD			CBN			Applicable mill
		AH120	AH140	DS1100	NS740			KS05F			DX140			BX480			
	SEGW12X4ZEFR							●									TFE12R...-...A Page H083
	SEGW12X4ZEPR	●	●		●												
 Rake angle  -AJ	SEGT12X4ZEFR-AJ			●				●									TFE12R... Page H082
	SEGW12X4ZEFR-D										●						EFE12R... Page H082
	SEGW12X4ZEFR-WD										●						
	SEGW12X4ZEFR-BD										●						
	2QP-SECW12X412ZETR													●			
	1QP-SECW12X4ZETR-W													●			
	1QP-SECW12X4ZETR-B													●			
 -D Regular edge  -WD Wiper edge  -BD Wiper for burr removal																	

DX140: Packing quantity = 1pc.

●: Line up

Milling Insert

●SEKR1504AFSR-MJ

Shape	Designation	Coated	Applicable mill
		T3130	
 Rake angle Land width -MJ	SEKR1504AFSR-MJ	●	(old item)

● SF*N42ZFN, SFCN42ZFN-DIA

Shape	Designation	Uncoated	PCD	Applicable mill
		TH10	DX140	
 -DIA	SFCN42ZFN	●		THF4400RIA (old item)
	SFEN42ZFN	●		
	SFCN42ZFN-DIA		●	

DX140: Packing quantity = 1pc.

● SF*N53ZFN, SFCN53ZFN-DIA

Shape	Designation	Uncoated	PCD	Applicable mill
		TH10	DX140	
 -DIA	SFCN53ZFN	●		THF5400RIA (old item)
	SFEN53ZFN	●		
	SFCN53ZFN-DIA		●	

DX140: Packing quantity = 1pc.

● SN**56FTR

Shape	Designation	Cermet	Applicable mill
		X407	
	SNAA56FTR	●	MS... Page H116
	SNAG56FTR		
	SNCC56FTR		
	SNCJ56FTR		

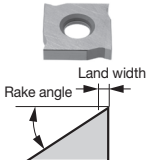
● SNCN43Z..., SNKF43Z..., SNKN43ZTN

Shape	Designation	Coated		Cermet		Ceramic	Uncoated		Applicable mill
		T1115	T3130	NS740	N308	FX105	UX30	TH10	
	SNCN43ZFN							●	TGN4200R-A (old item)
	SNCN43ZTN			●	●		●		
	SNKF43ZFN							●	
	SNKF43ZTN	●					●		
	SNKN43ZTN	●	●	●		●	●		

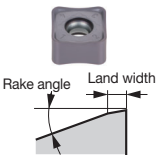
●: Line up

Milling Insert

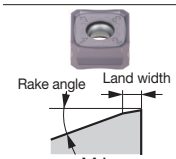
● SNEN12**Z...

Shape	Designation	Uncoated											Applicable mill
		UX30	TH10										
	SNEN12T2ZFN		●										SVN4000 (old item)
	SNEN12T2ZTN	●											
	SNEN1233ZFN		●										
	SNEN1233ZTN	●											

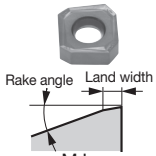
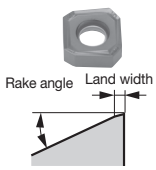
● SNMU120608HNEN-MM, SNMU1206**EN-MM

Shape	Designation	Coated											Applicable mill
		AH120	AH3135	T1215	T3225								
	SNMU120608HNEN-MM	●	●	●	●								DOQMILL THSN12... Page H067
	SNMU120612EN-MM		●	●									
	SNMU120620EN-MM		●	●									

● SNGU1307ANEN-MJ, SNGU1307ANEN-W, SNGU1307ANEN-MH, SNMU1307ANEN-MJ

Shape	Designation	Coated											Applicable mill
		AH120	AH3135	T3225	T1215								
 -MJ  -W  -MH	SNGU1307ANEN-MJ	●	●	●	●								DOTMILL TASN13... Page H060
	SNGU1307ANEN-W	●	●										
	SNGU1307ANEN-MH			●									
	SNMU1307ANEN-MJ	●	●	●	●								

● SNMU1706ANPR-MJ, SNHU1706ANPR-MJ, SNMU1706ANTR-ML, SNHU1706ANTR-ML, SNHU1706ANFN-W

Shape	Designation	Coated											Applicable mill
		AH120	AH140	AH725	AH3135	T1215	T3225						
 -MJ  -ML	SNMU1706ANPR-MJ		●	●	●	●	●						DOOCTO TAN07... Page H063, H064
	SNMU1706ANTR-ML	●			●								
	SNHU1706ANPR-MJ		●	●									
	SNHU1706ANTR-ML	●											
	SNHU1706ANFN-W	●											

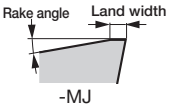
●: Line up

Milling Insert

● SNMN1204**TN

Shape	Designation	Coated			Cermic			Uncoated						Applicable mill
		AH120	T1115	T3130	FX105			UX30						
	SNMN120408TN				●									TGN4200R-A (Old item)
	SNMN120412TN	●	●	●	●			●						
	SNMN120416TN				●									
	SNMN120420TN				●									
	SNMN120424TN				●									

● SPCN42..., SPEN42..., SPKN42..., SPKR42SSR-MJ, SPGN120312TN

Shape	Designation	Coated					Cermet			Ceramic		Uncoated				Applicable mill
		AH120	AH140	GH330	T1115	T3130	NS740	N308		FX105		UX30	TH10			
	SPCN42STR						●	●				●				TGP4100RIA/ RBA/RBAE Page H104
	SPCN42SFR												●			
	SPEN42STR						●									
	SPKN42STR	●	●	●	●	●	●	●		●		●				
	SPKN42STL						●					●				
	SPKN42SFR												●			
	SPKN42SFL												●			
	SPKR42SSR-MJ			●	●	●										
	SPGN120312TN									●						
	SPEN423TN					●	●					●				
	SPEN423FN												●			

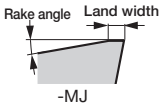
● SP*N42...

Shape	Designation	Coated			Cermet			Uncoated						Applicable mill
		T1115	T3130		NS740	X407	N308	UX30	TH10					
	SPAN42ZFR								●					TGP4200R-A Page H106
	SPCN42ZFL								●					
	SPCN42ZFR								●					
	SPCN42ZTR				●	●	●							
	SPEN423TN		●		●			●						
	SPEN423FN								●					
	SPEN42ZTR				●									
	SPKN42ZFL								●					
	SPKN42ZFR								●					
	SPKN42ZTR	●	●		●	●	●	●						

●: Line up

Milling Insert

● SP*N53S..., SPKR53SSR-MJ

Shape	Designation	Coated			Cermet		Uncoated						Applicable mill
		GH330	T1115	T3130	NS740	N308	UX30	TH10					
	SPCN53SFR							●					TGP5100RIA Page H108
	SPCN53STR					●	●						
	SPKN53SFR							●					
	SPKN53STL						●						
	SPKN53STR	●	●		●		●						
	SPKN53STR20			●									
	SPKR53SSR-MJ	●		●									

● SPGN120412TN

Shape	Designation	Coated	Ceramic	Applicable mill
		T1115	FX105	
	SPGN120412TN	●	●	QFP4000 (Old item)

● SPHA**FNW

Shape	Designation	Cermet	Uncoated	Applicable mill
		N308	TH10	
	SPHA431FNW	●	●	TSP4000IA Page H184 TFP4000IA Page H185 TFD4400-A (Old item) SFP4000R Page H118 EFP4000R Page H118
	SPHA435FNW	●	●	

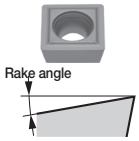
● SPMA422...

Shape	Designation	Cermet		Uncoated		Applicable mill
		NS740	N308	UX30	TH10	
	SPMA422TN	●	●	●		ECP4400R Page I096
	SPMA422FN				●	

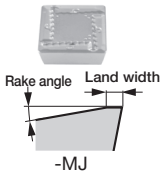
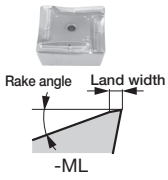
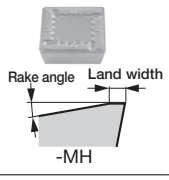
●: Line up

Milling Insert

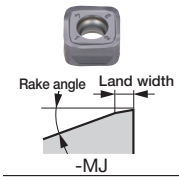
● SPMP..., SPMM**ERD

Shape	Designation	Coated										Applicable mill
		T313W	AH6030									
 Rake angle	SPMP771-CG		●									TCB... Page I097
	SPMP831-CG		●									
	SPMP042ER-CG		●									
	SPMP322ER-CG		●									
	SPMP432ER-CG		●									
	SPMP831DS	●										
	SPMP042ERD	●										
	SPMM322ERD	●										
	SPMM432ERD	●										

● SPMR1605PPTR-MJ, SPMR1605PPPR-ML, SPMR1605PPTR-MH

Shape	Designation	Coated				Uncoated						Applicable mill
		GH330	T1115	T3130		UX30						
 Rake angle Land width -MJ	SPMR1605PPTR-MJ	●	●	●		●						TPP16... (Old item)
 Rake angle Land width -ML	SPMR1605PPPR-ML	●										
 Rake angle Land width -MH	SPMR1605PPTR-MH	●		●		●						

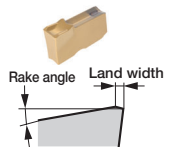
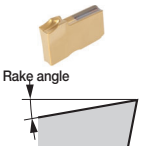
● SQMU1206ZSR-MJ

Shape	Designation	Coated										Applicable mill
		AH120	AH130	AH725	T3130							
 Rake angle Land width -MJ	SQMU1206ZSR-MJ	●	●	●	●							DOFEEDQUAD TXQ... Page H043

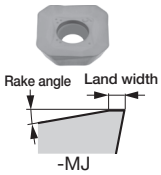
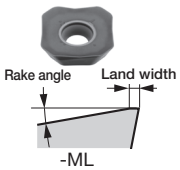
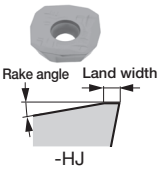
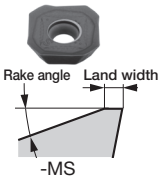
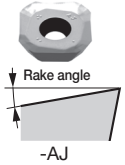
●: Line up

Milling Insert

● SSM..., SSS...

Shape	Designation	Coated												Applicable mill
		GH130												
 SSM	SSM22N	●												TUNGMILL S/ASG... Page H190
	SSM31N	●												
	SSM41N	●												
	SSS16N	●												
	SSS22N	●												
	SSS31N	●												
	SSS41N	●												
 SSS														

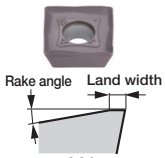
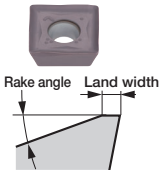
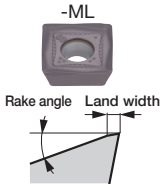
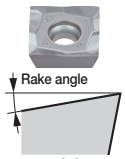
● SWMT13T3AFPR-MJ, SWMT13T3AFER-ML, SWMW13T3AFTR, SWMT13T3AFPR-HJ, SWMT13T3AFPR-MS, SWGT13T3AFPR-MJ, SWGT13T3AFFR-AJ

Shape	Designation	Coated								Cermet	Uncoated	Applicable mill
		AH120	AH130	AH140	AH3135	T1115	T1215	T3130	T3225	DS1100	NS740	KS05F	
 -MJ	SWMT13T3AFPR-MJ	●	●	●	●	●	●	●	●		●		TUNGMILL TAW13... Page H073 EAW13... Page H074
	SWMT13T3AFER-ML	●			●								
	SWMW13T3AFTR	●			●	●	●	●	●		●		
	SWMT13T3AFPR-HJ	●	●	●	●	●	●	●	●				
	SWMT13T3AFPR-MS		●	●	●								
	SWGT13T3AFPR-MJ	●			●						●		
	SWGT13T3AFFR-AJ									●		●	
 -ML													
 -FL													
 -HJ													
 -MS													
 -AJ													

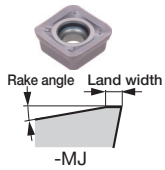
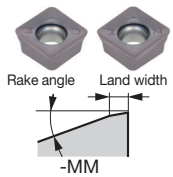
●: Line up

Milling Insert

● SWMT1304PDPR-MJ, SWMT1304PDER-ML, SWMT1304PDPR-MS, SWGT1304PDPR-MJ, SWGT1304PDFR-AJ

Shape	Designation	Coated									Cermet		Uncoated		Applicable mill
		AH120	AH130	AH140	AH3135	T1115	T1215	T3130	T3225	DS1100	NS740		KS05F		
 -MJ	SWMT1304PDPR-MJ	●	●	●	●	●	●	●	●		●				TUNGMILL TPW13... Page H162
	SWMT1304PDER-ML	●			●										
	SWMT1304PDPR-MS		●	●											EPW13... Page H163
	SWGT1304PDPR-MJ	●									●				
	SWGT1304PDFR-AJ									●			●		
 -ML															
 -MS															
 -AJ															

● SWMT1506ZER-MJ

Shape	Designation	Coated		Applicable mill
		AH120	AH3135	
 -MJ	SWMT0904ZER-MM		●	MILLQFEED TXSW09... Page H046
	SWMT0904UER-MM		●	
	SWMT1506ZER-MM	●	●	
	SWMT1506UER-MM		●	EXSW09... Page H046
	SWMT1506ZER-MJ	●	●	
 -MM				TXSW15... Page H047

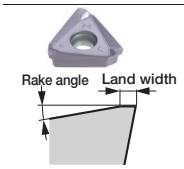
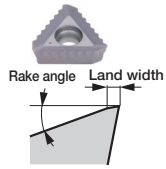
● T*-R...

Shape	Designation	Coated	Applicable mill
		GH330	
	T1-R14	●	Thread milling cutter Page I126
	T1-R28	●	
	T2-R14	●	
	T2-R28	●	

●: Line up

Milling Insert

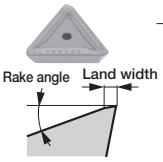
● TCGT160608PDER-MJ, TCMT160620PDER-NMJ

Shape	Designation	Coated														Applicable mill
		AH120	AH3135	T1215	T3225											
 -MJ	TCGT160608PDER-MJ	●	●													TUNG-TRISHRED LPTC16... Page H135 TPTC16... Page H135 EPTC16... Page H136
	TCMT160620PDER-NMJ	●	●	●	●											
 -NMJ																

●TDMN**N

Shape	Designation	Cermet			Uncoated											Applicable mill
		NS740			TH10	UX30										
	TDMN110304TN	●				●										ESD2000 (Old item)
	TDMN110304FN				●											
	TDMN110308TN	●				●										

● TECN32...,TEEN32..., TECN32ZFR-DIA, TEKR1603PEPR-MS

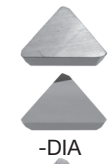
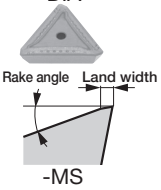
Shape	Designation	Coated										Cermet		Uncoated		PCD	Applicable mill
		AH120	AH130	AH140	AH330	AH3135	GH330	T1115	T3130	T1215	T3225	NS740	N308	UX30	TH10	DX140	
	TECN32ZFR														●		TSE3000R Page H178 ESE3000R Page H178
 -DIA	TECN32ZTR											●	●	●			
	TEEN32ZFR														●		
	TEEN32ZTR	●	●	●	●	●	●	●	●	●	●	●	●	●			
	TECN32ZFR-DIA															●	
	TEKR1603PEPR-MS			●													
 -MS																	

DX140: Packing quantity = 1pc.

●: Line up

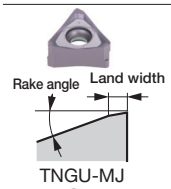
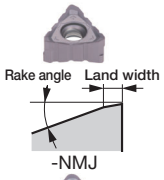
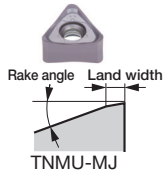
Milling Insert

● TECN43..., TEEN43..., TECN43ZFR-DIA, TEKR2204PEPR-MS

Shape	Designation	Coated										Cermet		Uncoated		PCD	Applicable mill
		AH120	AH130	AH140	AH330	AH3135	GH330	T1115	T3130	T1215	T3225	NS740	N308	UX30	TH10	DX140	
 -DIA	TECN43ZFR														●		TSE4000RIA Page H181
	TECN43ZTR											●	●	●			
	TEEN43ZFR														●		ESE4000R Page H182
	TEEN43ZTR	●	●	●	●	●	●	●	●	●	●	●	●	●			
	TECN43ZFR-DIA															●	
	TEKR2204PEPR-MS			●													
 -MS																	

DX140: Packing quantity = 1pc.

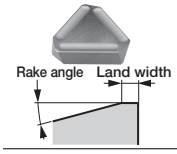
● TNGU120708PER-MJ, TNMU1207R16PER-MJ, TNMU120708PER-MJ, TNMU120708PER-NMJ

Shape	Designation	Coated															Applicable mill
		AH120	AH3135	T1215	T3225												
 TNGU-MJ	TNGU120708PER-MJ	●	●	●													DOFTRI TPTN12... Page H122 EPTN12... Page H122
	TNMU1207R16PER-MJ	●	●														
	TNMU120708PER-MJ	●	●	●	●												
	TNMU120708PER-NMJ	●	●														
 -NMJ																	
 TNMU-MJ																	

●: Line up

Milling Insert

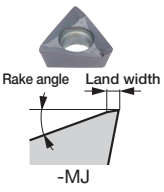
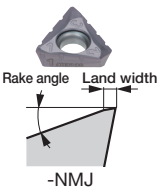
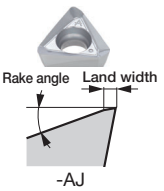
●TNKF64ZTR

Shape	Designation	Uncoated	Applicable mill
		UX30	
	TNKF64ZTR	●	TPN6400I (Old item)

●TNMN43ZENS

Shape	Designation	Uncoated	Applicable mill
		UX30	
	TNMN43ZENS	●	TSN4000 ESN4000 (Old item)

● TOMT**PDER-MJ, TOMT150608PDER-NMJ, TOGT**PDFR-AJ

Shape	Designation	Coated				Uncoated	Applicable mill
		AH120	AH3135	T1215	T3225	KS05F	
 -MJ	TOMT060302PDER-MJ	●	●				TUNG-TRI TPA06... Page H125
	TOMT060304PDER-MJ	●	●		●		EPA06... Page H125
	TOMT060308PDER-MJ	●	●	●	●		HPA06... Page H126
	TOMT100404PDER-MJ	●	●		●		TPA10... Page H126
	TOMT100408PDER-MJ	●	●	●	●		TLA10... Page H127
	TOMT100416PDER-MJ	●	●				EPA10... Page H127
	TOMT150604PDER-MJ	●	●		●		HPA10... Page H128
 -NMJ	TOMT150608PDER-MJ	●	●	●	●		TPA15... Page H128
	TOMT150616PDER-MJ	●	●				TLA15... Page H129 Page H130
	TOMT150620PDER-MJ	●	●				EPA15... Page H130
	TOMT150608PDER-NMJ	●	●		●		
	TOGT100404PDFR-AJ					●	
 -AJ	TOGT100408PDFR-AJ					●	

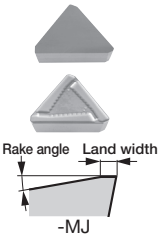
● TPCA43ZTRW1, TPMA432TNW1

Shape	Designation	Cermet	Uncoated		Applicable mill
		NS740	UX30	TH10	
	TPCA43ZTRW1			●	PES1500... (Old item)
	TPMA432TNW1	●	●	●	

●: Line up

Milling Insert

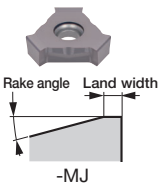
● TP*N43Z..., TPKR43ZSR-MJ, TPMR2204PDSR-MJ

Shape	Designation	Coated						Cermet		Uncoated			Applicable mill
		AH120	AH130	AH140	GH330	T1115	T3130	NS740	N308	UX30	TH10		
	TPCN43ZFR										●		TSP4000IA Page H184 TFP4000IA Page H185
	TPCN43ZTR							●	●	●			
	TPEN43ZTR							●					
	TPEN43ZTRCR						●						
	TPKN43ZFR										●		
	TPKN43ZTR	●	●	●	●	●	●	●	●	●			
	TPKR43ZSR-MJ				●		●						
	TPMR2204PDSR-MJ				●		●						
	TPKN43ZFL										●		

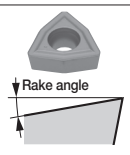
●TPMN**TN

Shape	Designation	Cermet	Applicable mill
		NS740	
	TPMN110304TN	●	(Old item)
	TPMN110308TN	●	
	TPMN160308TN	●	
	TPMN160312TN	●	
	TPMN220408TN	●	
	TPMN220412TN	●	

● TVKX**TN-MJ

Shape	Designation	Coated			Applicable mill
		AH120	AH130	AH725	
	TVKX020202TN-MJ	●		●	TUNGTSLIT ASV 02/03/04/05... Page H194
	TVKX020204TN-MJ	●		●	
	TVKX03X302TN-MJ	●		●	
	TVKX03X304TN-MJ	●		●	
	TVKX04H304TN-MJ	●	●	●	
	TVKX04H308TN-MJ	●	●	●	
	TVKX050404TN-MJ	●	●	●	
	TVKX050408TN-MJ	●	●	●	

● WCMT**-D4

Shape	Designation	Coated		Applicable mill
		AH120	AH140	
	WCMT050308-D4	●	●	EVX... (Old item)
	WCMT06T308-D4	●	●	
				HVX... (Old item)

●: Line up

Milling Insert

● WDCN42ZFR-DIA

Shape	Designation	PCD	Applicable mill
		DX140	
 Wiper edge -DIA	WDCN42ZFR-DIA	●	TMD4400R/LI Page H095 EMD4400RI Page H096 TGD4400-A Page H101 EGD4400 Page H102

DX140: Packing quantity = 1pc.

● WECN42ZFR-DIA

Shape	Designation	PCD	Applicable mill
		DX140	
 Wiper edge -DIA	WECN42ZFR-DIA	●	THE4000RIA Page H177

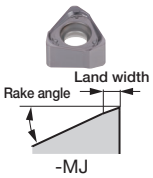
DX140: Packing quantity = 1pc.

● WFCN**ZFR-DIA

Shape	Designation	PCD	Applicable mill
		DX140	
 Wiper edge -DIA	WFCN42ZFR-DIA	●	THF4400RIA (Old item) THF5400RIA (Old item)
	WFCN53ZFR-DIA	●	

DX140: Packing quantity = 1pc.

● WNGU**TN-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH130	AH725	AH3135	
 -MJ	WNGU060304TN-MJ	●			●	TUNGUSLOT ASW 06/07/09... Page H196 TSW 06/07/09... Page H197
	WNGU060308TN-MJ	●	●	●	●	
	WNGU060310TN-MJ	●			●	
	WNGU060316TN-MJ		●	●		
	WNGU060320TN-MJ	●			●	
	WNGU07T304TN-MJ	●			●	
	WNGU07T308TN-MJ		●	●		
	WNGU07T310TN-MJ	●			●	
	WNGU07T316TN-MJ		●	●		
	WNGU07T320TN-MJ	●			●	
	WNGU090404TN-MJ	●			●	
	WNGU090408TN-MJ		●	●		
	WNGU090410TN-MJ	●			●	
	WNGU090416TN-MJ		●	●		
	WNGU090420TN-MJ	●			●	

●: Line up

Milling Insert

● WPAN42SFR

Shape	Designation	Cermet			Uncoated										Applicable mill
		N308			TH10										
 Wiper edge (2-corner type)	**WPAN42SFR**	●			●										TGP4100RIA/ RBA/RBAE Page H104

● WPAN42SFRS

Shape	Designation	Uncoated													Applicable mill
		TH10													
 Wiper edge (1-corner type)	**WPAN42SFRS**	●													TGP4100RIA/ RBA/RBAE Page H104

● WPAN42ZFR

Shape	Designation	Uncoated													Applicable mill
		TH10													
 Wiper edge (2-corner type)	**WPAN42ZFR**	●													TGP4200R-A Page H106

● WPMT**ZPR..., WPMT**ZPR-ML, WPMT**-MH, WPMT**-DML, WPMW**ZSR

Shape	Designation	Coated													Applicable mill
		AH120	AH130	AH140	AH730	T3130	AH3135								
	**WPMW05H315ZPR**	●		●		●	●								MILLFEED TXP05/06/08/09... Page H051 EXP05/06/08/09... Page H052 HXP... (Old item)
	WPMT05H315ZPR-ML	●		●		●	●								
	WPMT05H315ZPR-MH	●		●			●								
	**WPMT05H315ZPR-DML**				●										
Rake angle Land width -ML	**WPMW06X415ZPR**	●		●		●	●								
	WPMT06X415ZPR-ML	●	●	●		●	●								
	WPMT06X415ZPR-MH	●		●			●								
	WPMT06X415ZPR-DML				●										
 -MH	**WPMT080615ZSR**	●	●	●		●	●								
	WPMT080615ZPR-ML	●	●	●		●	●								
	WPMT080615ZSR-MH	●		●			●								
	WPMT080615ZPR-DML				●										
 Rake angle Land width -DML	**WPMT090725ZSR**	●		●		●	●								
	WPMT090725ZPR-ML	●	●	●		●	●								
	WPMT090725ZSR-MH	●	●	●			●								
	WPMT090725ZPR-DML				●										

●: Line up

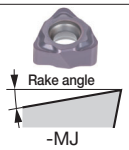
Milling Insert

● WWCW13T3AFER-WS, WWCW13T3AFFR-WS, WWCW13T3AFFR-WD

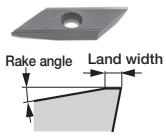
Shape	Designation	Coated			Cermet		Uncoated		PCD			Applicable mill
		GH110	DS1100		NS740		KS05F		DX140			
 -WD	WWCW13T3AFER-WS	●			●							TUNGMILL TAW13... Page H073 EAW13... Page H074
	WWCW13T3AFFR-WS		●				●					
	WWCW13T3AFFR-WD								●			

DX140: Packing quantity = 1pc.

● WXHU**R-MJ

Shape	Designation	Coated			Applicable mill
		AH110			
 Rake angle -MJ	WXHU040305R-MJ	●			DOMMILL HFWX04... Page H211
	WXHU040310R-MJ	●			

● XCET310404ER

Shape	Designation	Coated			Cermet	Uncoated			Applicable mill
		AH330	AH120	AH3135	NS740	UX30			
 Rake angle Land width	XCET310404ER	●	●	●	●	●			ECC31... Page I094

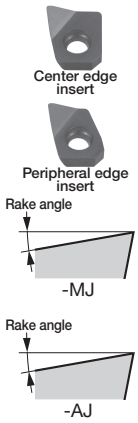
● XVCT16**R-AJ

Shape	Designation	Uncoated	Applicable mill
		TH10	
 Rake angle -AJ	XVCT160504R-AJ	●	TUNG-ALUMILL TPV16... Page H174 EPV16... Page H174
	XVCT160508R-AJ	●	
	XVCT160512R-AJ	●	
	XVCT160516R-AJ	●	
	XVCT160520R-AJ	●	
	XVCT160530R-AJ	●	
	XVCT160532R-AJ	●	
	XVCT160540R-AJ	●	
	XVCT160550R-AJ	●	

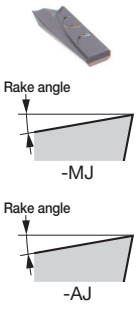
●: Line up

Milling Insert

● XVGT**EC-MJ, XVGT**EP-MJ, XVGT**FC-AJ, XVGT**FP-AJ

Shape	Designation	Coated		Applicable mill
		AH730	DS1200	
	XVGT06H205EC-MJ	●		HYBRIDTACMILL EVH... (Old item)
	XVGT07X305EC-MJ	●		
	XVGT09X405EC-MJ	●		
	XVGT06H205EP-MJ	●		
	XVGT07X305EP-MJ	●		
	XVGT09X405EP-MJ	●		
	XVGT06H205FC-AJ		●	
	XVGT07X305FC-AJ		●	
	XVGT09X405FC-AJ		●	
	XVGT06H205FP-AJ		●	
	XVGT07X305FP-AJ		●	
	XVGT09X405FP-AJ		●	

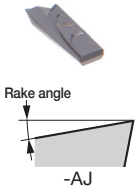
● XHGR**ER-MJ, XHGR**FR-AJ

Shape	Designation	Coated		Applicable mill
		AH730	DS1200	
	XHGR110202ER-MJ	●		HYBRIDTACMILL EPH11/13/18... (Old item)
	XHGR110204ER-MJ	●		
	XHGR110205ER-MJ	●		
	XHGR110208ER-MJ	●		
	XHGR110210ER-MJ	●		
	XHGR110212ER-MJ	●		
	XHGR110215ER-MJ	●		
	XHGR110216ER-MJ	●		
	XHGR110220ER-MJ	●		
	XHGR130202ER-MJ	●		
	XHGR130204ER-MJ	●		
	XHGR130205ER-MJ	●		
	XHGR130208ER-MJ	●		
	XHGR130210ER-MJ	●		
	XHGR130212ER-MJ	●		
	XHGR130215ER-MJ	●		
	XHGR130216ER-MJ	●		
	XHGR130220ER-MJ	●		
	XHGR18T202ER-MJ	●		
	XHGR18T204ER-MJ	●		
	XHGR18T205ER-MJ	●		
	XHGR18T208ER-MJ	●		
	XHGR18T210ER-MJ	●		
	XHGR18T212ER-MJ	●		
	XHGR18T215ER-MJ	●		
	XHGR18T216ER-MJ	●		
	XHGR18T220ER-MJ	●		
	XHGR110200FR-AJ		●	
	XHGR110202FR-AJ		●	
	XHGR110204FR-AJ		●	
	XHGR110205FR-AJ		●	
	XHGR110208FR-AJ		●	
	XHGR110210FR-AJ		●	

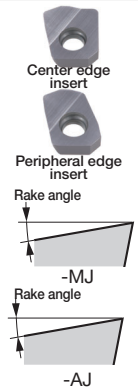
●: Line up

Milling Insert

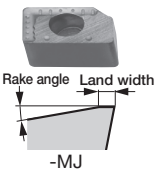
● XHGR**ER-MJ, XHGR**FR-AJ

Shape	Designation	Coated			Applicable mill
		AH730	DS1200		
	XHGR130212FR-AJ		●		HYBRIDTACMILL EPH11/13/18... (Old item)
	XHGR130215FR-AJ		●		
	XHGR130216FR-AJ		●		
	XHGR130220FR-AJ		●		
	XHGR18T200FR-AJ		●		
	XHGR18T202FR-AJ		●		
	XHGR18T204FR-AJ		●		
	XHGR18T205FR-AJ		●		
	XHGR18T208FR-AJ		●		
	XHGR18T210FR-AJ		●		
	XHGR18T212FR-AJ		●		
	XHGR18T215FR-AJ		●		
	XHGR18T216FR-AJ		●		
	XHGR18T220FR-AJ		●		

● XXGT**EC-MJ, XXGT**FC-AJ, XXGT**EP-MJ, XXGT**FP-AJ

Shape	Designation	Coated			Applicable mill
		AH730	DS1200		
	XXGT06H205EC-MJ	●			HYBRIDTACMILL EXH... (Old item)
	XXGT07X305EC-MJ	●			
	XXGT09X408EC-MJ	●			
	XXGT06H205FC-AJ		●		
	XXGT07X305FC-AJ		●		
	XXGT09X408FC-AJ		●		
	XXGT06H205EP-MJ	●			
	XXGT07X305EP-MJ	●			
	XXGT09X408EP-MJ	●			
	XXGT06H205FP-AJ		●		
	XXGT07X305FP-AJ		●		
	XXGT09X408FP-AJ		●		

● XXMU**PR-MJ

Shape	Designation	Coated			Applicable mill
		AH120	AH140	AH3135	
	XXMU08T204PR-MJ	●	●	●	EVX... Page I092 HVX... (Old item)
	XXMU10H308PR-MJ	●	●	●	
	XXMU12X408PR-MJ	●	●	●	
	XXMU16X508PR-MJ	●	●	●	

●: Line up

Milling Insert

● YDEN0905PDFR-D, YDEN0905PDFR-WD, YDEN0905PDFR-BD

Shape	Designation	PCD DX140	Applicable mill
 Regular edge	YDEN0905PDFR-D	●	DPD09... Page H086
	YDEN0905PDFR-WD	●	EDPD09... Page H086
 Wiper edge	YDEN0905PDFR-BD	●	
 Wiper for burr removal			

DX140: Packing quantity = 1pc.

● YDEN1505ADFR-D, YDEN1505ADFR-WD

Shape	Designation	PCD DX140	Applicable mill
 Regular edge	YDEN1505ADFR-D	●	DAD15... (Old item)
	YDEN1505ADFR-WD	●	
 Wiper edge			

DX140: Packing quantity = 1pc.

● YDEN1505PDFR-D, YDEN1505PDFR-WD

Shape	Designation	PCD DX140	Applicable mill
 Regular edge	YDEN1505PDFR-D	●	DPD15... EDPD15... (Old item)
	YDEN1505PDFR-WD	●	
 Wiper edge			

DX140: Packing quantity = 1pc.

● YDEN0603PDF/SR-D, YDEN0603PDFR-WD, YDEN0603PDFR-BD

Shape	Designation	PCD DX110	Applicable mill
 _D	YDEN0603PDFR-D	●	TUNGSMILL TPYD06... Page H080
	YDEN0603PDSR-D	●	
 _WD	YDEN0603PDFR-WD	●	EPYD06... Page H080
	YDEN0603PDFR-BD	●	
 _BD			

●: Line up

Milling Insert

● YDEN2405PDFR-D, YDEN2405PDFR-WD, YDEN2405PDFR-BD

Shape	Designation	PCD DX140	Applicable mill
 Regular edge	YDEN2405PDFR-D	●	DPD24... (Old item)
	YDEN2405PDFR-WD	●	
	YDEN2405PDFR-BD	●	
 Wiper edge			
 Wiper for burr removal			

DX140: Packing quantity = 1pc.

● YPEB12X3-1A**-D, YPEB12X3-1P**-D, YPEB12X3-2A**-D, YPEB12X3-FP**-D, YPEB12X3-2P07R-D

Shape	Designation	PCD DX160	Applicable mill
 -1A/P	YPEB12X3-1A01R-D	●	TUNGSMILL TPYP12... Page H078 EPYP12... Page H078
	YPEB12X3-1A02R-D	●	
	YPEB12X3-1A07R-D	●	
	YPEB12X3-1P02R-D	●	
 -FP	YPEB12X3-1P07R-D	●	
	YPEB12X3-FP02R-D	●	
	YPEB12X3-FP07R-D	●	
 -2A/P	YPEB12X3-2A01R-D	●	
	YPEB12X3-2A02R-D	●	
	YPEB12X3-2A07R-D	●	
	YPEB12X3-2P07R-D	●	

DX160: Packing quantity = 2pcs.

●: Line up

●YPEN1505PPTR-Q

Shape	Designation	T-CBN BX950	Applicable mill
	YPEN1505PPTR-Q	●	QPP15... (Old item)

BX950: Packing quantity = 1pc.

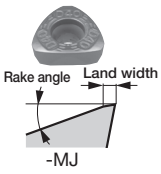
● ZDCA**TN

Shape	Designation	Uncoated UX30	Applicable mill
	ZDCA0804TN	●	TBF1000 (Old item)
	ZDCA1105TN	●	

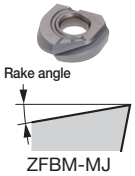
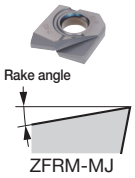
●: Line up

Milling Insert

● ZDMT**-MJ

Shape	Designation	Coated AH120	Applicable mill
	ZDMT4005-MJ	●	EBD... Page H227 HBD... (Old item)
	ZDMT5006-MJ	●	

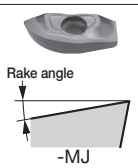
● ZFBM**-MJ, ZFRM**-MJ

Shape	Designation	Coated AH710	Coated AH725	Applicable mill
	ZFBM080R00-MJ	●	●	BALLFINISH NOSE EBFM... Page H206 HBFM... Page H207
	ZFBM100R00-MJ	●	●	
	ZFBM120R00-MJ	●	●	
	ZFBM160R00-MJ	●	●	
	ZFBM200R00-MJ	●	●	
	ZFBM250R00-MJ	●	●	
	ZFBM300R00-MJ	●	●	
	ZFBM320R00-MJ	●	●	
	ZFRM120R05-MJ	●	●	
	ZFRM120R10-MJ	●	●	
	ZFRM160R05-MJ	●	●	
	ZFRM160R10-MJ	●	●	
	ZFRM160R15-MJ	●	●	
	ZFRM200R10-MJ	●	●	
	ZFRM200R15-MJ	●	●	

● ZNCA**FN, ZNMM**EN

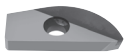
Shape	Designation	Uncoated UX30	Uncoated TH10	Applicable mill
	ZNCA1002FN2	●	●	TBN1000 Page H223
	ZNCA1203FN	●	●	
	ZNCA1603FN	●	●	
	ZNCA2004FN	●	●	
	ZNCA2505FN	●	●	
	ZNCA3005FN	●	●	
	ZNMM2004EN	●		
	ZNMM2505EN	●		
	ZNMM3005EN	●		

● ZPET**-MJ

Shape	Designation	Coated AH120	Coated AH330	Applicable mill
	ZPET2004-MJ	●	●	EBP... Page H225 HBP... (Old item)
	ZPET2505-MJ	●	●	
	ZPET3006-MJ	●	●	
	ZPET3206-MJ	●	●	

Milling Insert

● ZPCW**-QBN

Shape	Designation	T-CBN	Applicable mill
		BX950	
	ZPCW2003-QBN	●	EBB... Page H226
	ZPCW25H3-QBN	●	
	ZPCW30T3-QBN	●	
	ZPCW4004-QBN	●	
	ZPCW5004-QBN	●	

BX950: Packing quantity = 1pc.

● ZRBM**-MM

Shape	Designation	Coated	Applicable mill
		APH730	
	ZRBM160-MM	●	BALL R NOSE
	ZRBM200-MM	●	EBRM... Page H204
	ZRBM250-MM	●	HBRM... Page H204

●: Line up

● **2QP-SNGN..**

Shape	Designation	CBN BX910	Applicable mill
	**2QP-SNGN090308**	●	
	2QP-SNGN090312	●	

● **2QP-SPGW..., 2QP-SPGN...**

Shape	Designation	CBN BX910	Applicable mill
 2QP-SPGW	**2QP-SPGW09T308**	●	
	2QP-SPGW09T312	●	
	2QP-SPGW120408	●	
	2QP-SPGW120412	●	
 2QP-SPGN	**2QP-SPGW120416**	●	
	2QP-SPGN090308	●	
	2QP-SPGN090312	●	

● **3QP-TPGW..., 3QP-TPGN...**

Shape	Designation	CBN BX910	Applicable mill
 3QP-TPGW	**3QP-TPGW110308**	●	
	3QP-TPGN110308	●	
	3QP-TPGN110312	●	
 3QP-TPGN			

●: Line up

Milling Insert CBN

● **S-CNGN..., S-RNGN..., S-SNGN..., S-TNGN...**

Shape	Designation	CBN										Applicable mill
		BXC90										
 S-CNGN	**S-CNGN090308**	●										
	S-CNGN090312	●										
	S-CNGN120408	●										
	S-CNGN120412	●										
 S-RNGN	**S-RNGN090300**	●										
	S-RNGN120400	●										
	S-SNGN090308	●										
	S-SNGN090312	●										
 S-SNGN	**S-SNGN120308**	●										
	S-SNGN120312	●										
	S-SNGN120408	●										
	S-SNGN120412	●										
 S-TNGN	**S-TNGN110308**	●										
	S-TNGN110312	●										
	S-TNGN160408	●										
	S-TNGN160412	●										

●: Line up