SOLID END MILLS

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SOLID END MILLS

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• For more technical information, see TaeguTec technical guide part TF

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Tool Selection Guide

Solid end mill

Series	HARDMILL					
	HSB 2	HSB 2...S6	HSB 2...S/M	HSB 4...M	HSF 2	HSF 4
Type	Ball	Ball	Ball	Ball	Flat	Flat
Flute	2	2	2	4	2	4
Length	Long neck	Long neck	Short	Medium	Long neck	Long neck
Grades	TT5505	TT5505	TT5505	TT5505	TT5505	TT5505
Application	* H.S.M	H.S.M	H.S.M	H.S.M	H.S.M	H.S.M
Material	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
	○ ○ ●	○ ○ ●	○ ○ ●	○ ○ ●	○ ○ ●	○ ○ ●
Range	Ø0.3 - Ø12.0	Ø0.6 - Ø2.0	Ø1.0 - Ø12.0	Ø4.0 - Ø12.0	Ø0.3 - Ø12.0	Ø1.0 - Ø12.0
Pages	F16 - F19	F20	F21 - F22	F23	F24 - F27	F28 - F29

Series	HARDMILL					
	HSF 6...M	HSF 6...XLT	HSR 2	HSR 4	HSR 6	HSR 6...M
Type	Flat	Flat	Radius	Radius	Radius	Radius
Flute	6	6	2	4	6	6
Length	Medium	Extra long	Long neck	Long neck	Long neck	Medium
Grades	TT5505	TT5505	TT5505	TT5505	TT5505	TT5505
Application	Finishing	Finishing	H.S.M	H.S.M	Finishing	Finishing
Material	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
	○ ○ ●	○ ○ ●	○ ○ ●	○ ○ ●	○ ○ ●	○ ○ ●
Range	Ø3.0 - Ø12.0	Ø5.0 - Ø12.0	Ø0.3 - Ø12.0	Ø1.0 - Ø12.0	Ø6.0 - Ø12.0	Ø6.0 - Ø12.0
Pages	F30	F31	F32- F38	F39 - F42	F43	F44

• *H.S.M : High Speed Machining

Tool Selection Guide

Solid end mill

APEXMILL

RIB 2	RIF 2	SMB 2	HMF 2	AMB 2...T	AMF 2...T	AMF 4...T
Ball	Flat	Ball	Flat	Ball	Flat	Flat
2	2	2	2	2	2	4
Long neck	Long neck	Short	Short	Long neck	Long neck	Long neck
TT5515	TT5515	TT5515	TT5515	TT5515	TT5515	TT5515
General	General	Miniature	Miniature	General	General	General
P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
● ○ ● ○ ○	● ○ ● ○ ○	● ○ ● ○	● ○ ● ○	● ○ ● ○ ○	● ○ ● ○ ○	● ○ ● ○ ○
Ø0.4 - Ø3.0	Ø0.4 - Ø3.0	Ø0.6 - Ø1.5	Ø0.4 - Ø1.5	Ø1.0 - Ø16.0	Ø1.0 - Ø16.0	Ø3.0 - Ø16.0
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APEXMILL

AMR 2...T-R	AMR 4...T-R	AMR 6...T-R	SEH 6...T	SEH 6...XLT	SEH 6...T-R	SBE 2...S
Radius	Radius	Radius	Flat	Flat	Radius	Ball
2	4	6	6	6	6	2
Long neck	Long neck	Long neck	Medium	Extra long	Medium	Short
TT5515	TT5515	TT5515	TT5515	TT5515	TT5515	TT5515
General	General	Finishing	Finishing	Finishing	Finishing	General
P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
● ○ ● ○ ○	● ○ ● ○ ○	● ○ ○	● ○ ●	● ○ ○ ●	● ○ ○ ●	● ○ ● ○
Ø3.0 - Ø12.0	Ø3.0 - Ø12.0	Ø6.0 - Ø12.0	Ø3.0 - Ø20.0	Ø6.0 - Ø20.0	Ø6.0 - Ø20.0	Ø2.0 - Ø20.0
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● Recommended, ○ Suitable

Tool Selection Guide

Solid end mill

Series	APEXMILL				
	SBE 2...T	SBE 2...LT	SBE 4...T	REB ...L	SBO 2...T
Type	Ball	Ball	Ball	Ball	Ball (Through coolant)
Flute	2	2	4	3-4	2
Length	Medium	Long	Medium	Long	Medium
Grades	TT5515, UF10N	TT5515, UF10N	TT5515, UF10N	TT5515	TT5525
Application	General	General	General	Roughing	General
Material	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
	● ○ ● ○	● ○ ● ○	● ○ ● ○	● ○ ○ ○ ●	● ○ ○ ○
Range	Ø1.0 - Ø20.0	Ø2.0 - Ø16.0	Ø1.0 -Ø 20.0	Ø6.0 - Ø20.0	Ø6.0 - Ø14.0
Pages	F60	F61	F62	F63	F63

Series	APEXMILL				
	BES 2...T	BES 4...T	TSE 2...M	TSE 4...M	HES 2...LT
Type	Ball (Spherical)	Ball (Spherical)	Flat	Flat	Flat
Flute	2	4	2	4	2
Length	Medium	Medium	Medium	Medium	Long
Grades	TT5515	TT5515	TT5515,TT5525,UF10	TT5515,TT5525,UF10	TT5525
Application	General	General	General	General	General
Material	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
	● ○ ○ ○	● ○ ○ ○	● ○ ● ○	● ○ ● ○	● ○ ● ○
Range	Ø3.0 - Ø16.0	Ø3.0 - Ø16.0	Ø1.0 - Ø20.0	Ø2.0 - Ø25.0	Ø3.0 - Ø20.0
Pages	F64	F64	F65	F66	F67

Tool Selection Guide

Solid end mill

APEXMILL

HES 4...LT	HES 2...XLT	HES 4...XLT	HES 2...T-R	HES 2...LT-R	HES 4...T-R
Flat	Flat	Flat	Radius	Radius	Radius
4	2	4	2	2	4
Long	Extra long	Extra long	Medium	Long	Medium
TT5525	TT5515, TT5525	TT5515, TT5525	TT5515, TT5525	TT5515, TT5525	TT5515, TT5525
General	General	General	General	General	General
P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
● ○ ● ○	● ○ ● ○	● ○ ● ○	● ○ ● ○	● ○ ● ○	● ○ ● ○
Ø3.0 - Ø20.0	Ø3.0 - Ø20.0	Ø3.0 - Ø20.0	Ø3.0 - Ø20.0	Ø3.0 - Ø12.0	Ø3.0 - Ø20.0
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APEXMILL

HES 4...LT-R	HFM 2	HFM 4	CFM 4...M	REL ...L	FSM 4...M
	SOLIDFEED	SOLIDFEED	VFIMILL		MULTIMILL
Radius	Flat	Flat	Chamfer	Chamfer	Chamfer
4	2	4	4	3-4	4
Long	Medium	Medium	Medium	Long	Medium
TT5515, TT5525	TT5515	TT5515	TT5525	TT5515	TT5525
General	* H.F.M	H.F.M	General	Roughing	Roughing+Finishing
P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
● ○ ● ○	● ● ○	● ● ○	● ● ○ ●	● ○ ○ ○ ●	● ○
Ø4.0 - Ø12.0	Ø4.0 - Ø12.0	Ø6.0 - Ø12.0	Ø6.0 - Ø25.0	Ø6.0 - Ø20.0	Ø6.0 - Ø25.0
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• *H.F.M : High Feed Machining

● Recommended, ○ Suitable

Tool Selection Guide

Solid end mill

Series	APEXMILL					
	CEM 2...-C60	CEM 2	CEM 2...-C120	CEM	ECEM 2	ECEM 4
Type	Chamfer 60°	Chamfer 90°	Chamfer 120°	Chamfer 90°	Chamfer 90°	Chamfer 90°
Flute	2	2	2	2	2	4
Length	Long	Long	Long	Long	Medium	Medium
Grades	UF10	UF10	UF10	UF10	UF10	UF10
Application	General	General	General	General	General	General
Material	P M K N S H ● ○ ○ ● ○	P M K N S H ● ○ ○ ● ○	P M K N S H ● ○ ○ ● ○	P M K N S H ● ○ ○ ● ○	P M K N S H ● ○ ○ ● ○	P M K N S H ● ○ ○ ● ○
Range	Ø4.0 - Ø20.0	Ø4.0 - Ø20.0	Ø4.0 - Ø20.0	Ø10.0 - Ø20.0	Ø2.0 - Ø16.0	Ø6.0 - Ø12.0
Pages	F78	F78	F79	F79	F80	F80

Series	APEXMILL					
	EBE 2...S	EBE 2...M	EBE 2...L	EFE 2...S	EFE 2...M	EFE 2...L
Type	Ball	Ball	Ball	Flat	Flat	Flat
Flute	2	2	2	2	2	2
Length	Short	Medium	Long	Short	Medium	Long
Grades	TT5515	TT5515	TT5515	TT5525	TT5525	TT5525
Application	General (Eco)	General (Eco)	General (Eco)	General (Eco)	General (Eco)	General (Eco)
Material	P M K N S H ● ○ ● ○	P M K N S H ● ○ ● ○	P M K N S H ● ○ ● ○	P M K N S H ● ○ ● ○	P M K N S H ● ○ ● ○	P M K N S H ● ○ ● ○
Range	Ø3.0 - Ø20.0	Ø3.0 - Ø20.0	Ø3.0 - Ø20.0	Ø3.0 - Ø20.0	Ø3.0 - Ø20.0	Ø3.0 - Ø20.0
Pages	F81	F82	F83	F84	F85	F86

Eco : Economical type

Tool Selection Guide

Solid end mill

APEXMILL					STARMILL	
EFE 3...S	EFE 3...M	EFE 4...S	EFE 4...M	EFE 4...L	SBT 3...U	SBT 4...U
Flat	Flat	Flat	Flat	Flat	Ball	Ball
3	3	4	4	4	3	4
Short	Medium	Short	Medium	Long	Medium	Medium
TT5525	TT5525	TT5525	TT5525	TT5525	TT5515	TT5515
General (Eco)	General (Eco)	General (Eco)	General (Eco)	General (Eco)	Difficult-to-cut	Difficult-to-cut
P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
● ○ ● ○	● ○ ● ○	● ○ ● ○	● ○ ● ○	● ○ ● ○	○ ● ● ○	○ ● ● ●
Ø3.0 - Ø20.0	Ø3.0 - Ø20.0	Ø3.0 - Ø20.0	Ø3.0 - Ø20.0	Ø3.0 - Ø20.0	Ø4.0 - Ø12.0	Ø4.0 - Ø12.0
F87	F88	F89	F90	F91	F92	F92

STARMILL						
SED 3...T	SED 4...U	SED 4...U-R/C	HES 6...T	REH ...S	REH ...M	REH ...L
Flat	Flat	Radius/Chamfer	Flat	Chamfer	Chamfer	Chamfer
3	4	4	6	4-6	3-6	4-6
Medium	Medium	Medium	Medium	Short	Medium	Long
TT9020	TT5515	TT5515	TT5525	TT5525	TT5525	TT5525
Difficult-to-cut	Difficult-to-cut	Difficult-to-cut	Finishing	Roughing	Roughing	Roughing
P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
○ ● ●	○ ● ●	○ ● ●	○ ● ●	○ ○ ● ○	○ ○ ● ○	○ ○ ● ○
Ø2.0 - Ø20.0	Ø4.0 - Ø20.0	Ø4.0 - Ø12.0	Ø6.0 - Ø20.0	Ø6.0 - Ø20.0	Ø4.0 - Ø25.0	Ø6.0 - Ø20.0
F93	F94	F94- F95	F95	F96	F97	F98

● Recommended, ○ Suitable

Contents

Tool Selection Guide

Solid end mill

Series	ALUMILL					
	AEB 2...S	AEB 3...M	AES 2	AES 2...XL	AES 3	AES 3...ML
Type	Ball	Ball	Ball	Flat	Flat	Flat
Flute	2	3	2	2	3	3
Length	Short	Medium	Medium	Extra long	Medium	Long
Grades	TT9020	TT9020	UF10	UF10	UF10	UF10
Application	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium
Material	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
	●	●	●	●	●	●
Range	Ø6.0 - Ø20.0	Ø2.0 - Ø16.0	Ø1.0 - Ø20.0	Ø2.0 - Ø20.0	Ø2.0 - Ø25.0	Ø3.0 - Ø20.0
Pages	F99	F99	F100	F101	F102	F103

Series	ALUMILL					
	AES 3...XL	AES 2...-R	AES 3...-R	REMA 3/3...C	REA 3...L	AWE 3
Type	Flat	Radius	Radius	Radius	Chamfer	Wave
Flute	3	2	3	3	3	3
Length	Extra long	Medium	Medium	Long neck	Long	Medium
Grades	UF10	UF10	UF10	UF10	UF10	UF10
Application	Aluminium	Aluminium	Aluminium	Roughing	Roughing	Aluminium
Material	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
	●	●	●	●	●	●
Range	Ø6.0 - Ø20.0	Ø6.0 - Ø16.0	Ø6.0 - Ø12.0	Ø6.0 - Ø20.0	Ø6.0 - Ø20.0	Ø6.0 - Ø20.0
Pages	F104	F105	F106	F107	F107	F108

Tool Selection Guide

Solid end mill

ALUMILL	DIAMILL					
AWE 3...ML	**DMB 2**	**DEB 2...S**	**DEB 2...L**	**DMR 2**	**DER 3...S**	**DER 3...L**
Wave	Ball	Ball	Ball	Radius	Radius	Radius
3	2	2	2	2	3	3
Long	Miniature	Short	Long	Miniature	Short	Long
UF10	TT6050	TT6050	TT6050	TT6050	TT6050	TT6050
Aluminium	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite
P M K N S H ●	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite
Ø6.0 - Ø20.0	Ø0.6 - Ø2.0	Ø3.0 - Ø12.0	Ø3.0 - Ø12.0	Ø0.6 - Ø2.0	Ø3.0 - Ø12.0	Ø4.0 - Ø12.0
F108	F109	F109	F110	F110	F111	F111

● Recommended, ○ Suitable

Grades

Solid end mill

Grades	ISO	Characteristics & applications
TT5505 PVD coated	P05 – P25 H05 – H25	• High wear and oxidation resistance that delivers exceptional productivity levels • Hardened steel, pre-hardened steel (Hardness < 65 HRC) • High speed machining • Ultra fine substrate
TT5515 PVD coated	P10 – P30 M15 – M30 K10 – K30 S10 – S30 H10 – H30	• An ultra wear resistant high performance grade covering all ISO ranges • Alloy steel, pre-hardeded steel, stainless steel, high-temp alloy (45 < HRC < 55) • Medium to high speed machining • Ultra fine substrate
TT5525 PVD coated	P20 – P40 M20 – M40 S20 – S40	• Optimally balanced with wear resistant and anti-chipping properties • General machining of carbon steel, alloy steel, stainless steel, high-temp alloy (< 40 HRC) • Low to medium speed machining • Submicron substrate
TT6050 Diamond coated	**Graphite**	• High hardness and excellent wear resistance • Machining of graphite
UF10N **UF10** Uncoated	P25 – P35 M25 – M35 N25 – N35	• General machining of steel, aluminum alloys, non-ferrous materials • Submicron substrate

HSF 4100 150 250

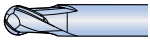
Designation System

HARDMILL

HSB	2	010	010	030
1	2	3	4/4*	5

1 End mill type

HSB Ball nose



HSF Flat

HSR Corner radius

2 No. of flute

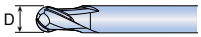
2 2 Flutes

4 4 Flutes

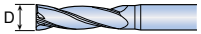
6 6 Flutes

3 Cutting diameter

010 1.0 mm



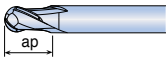
100 10.0 mm



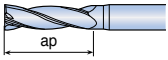
4 Length of cut

HSB / HSF type

010 1.0 mm



120 12.0 mm

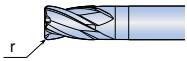


4* Corner radius

HSR type

005 R0.05 mm

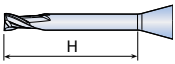
020 R0.2 mm



5 Length of neck

030 3.0 mm

200 20.0mm

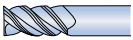
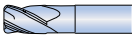


Designation System

APEXMILL | STARMILL | ALUMILL | DIAMILL

SBE	2	010	S	-	***
1	2	3	4		5

1 End mill type

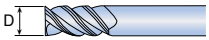
SBE/SBT/AEB/DEB	Ball nose	
TSE/SED/AES	Flat	
AMR/DER	Corner radius	

2 No. of flute

2	2 Flutes	
4	4 Flutes	
6	6 Flutes	

3 Cutting diameter

010	1.0 mm
100	10.0 mm



4 Overall length

S	Short length	
M	Medium length	
L	Long length	
XL	Extra long length	

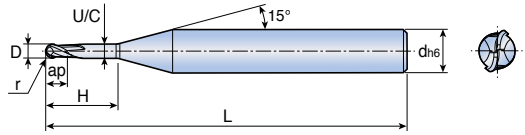
5 Others

-□	Shank diameter
-R□□	Corner radius

HSB 2

HARDMILL

2 flute long neck ball



r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

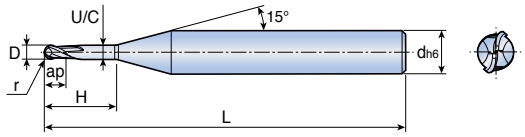
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSB 2003 003 010	0.3	0.15	45	0.3	1.0	0.27	4.0	●
2003 003 020	0.3	0.15	45	0.3	2.0	0.27	4.0	●
2003 003 030	0.3	0.15	45	0.3	3.0	0.27	4.0	●
2004 004 010	0.4	0.2	45	0.4	1.0	0.36	4.0	●
2004 004 015	0.4	0.2	45	0.4	1.5	0.36	4.0	●
2004 004 020	0.4	0.2	45	0.4	2.0	0.36	4.0	●
2004 004 025	0.4	0.2	45	0.4	2.5	0.36	4.0	●
2004 004 030	0.4	0.2	45	0.4	3.0	0.36	4.0	●
2004 004 040	0.4	0.2	45	0.4	4.0	0.36	4.0	●
2005 005 010	0.5	0.25	45	0.5	1.0	0.45	4.0	●
2005 005 015	0.5	0.25	45	0.5	1.5	0.45	4.0	●
2005 005 020	0.5	0.25	45	0.5	2.0	0.45	4.0	●
2005 005 025	0.5	0.25	45	0.5	2.5	0.45	4.0	●
2005 005 030	0.5	0.25	45	0.5	3.0	0.45	4.0	●
2005 005 040	0.5	0.25	45	0.5	4.0	0.45	4.0	●
2005 005 050	0.5	0.25	45	0.5	5.0	0.45	4.0	●
2005 005 060	0.5	0.25	45	0.5	6.0	0.45	4.0	●
2005 005 080	0.5	0.25	45	0.5	8.0	0.45	4.0	●
2006 006 020	0.6	0.3	45	0.6	2.0	0.55	4.0	●
2006 006 030	0.6	0.3	45	0.6	3.0	0.55	4.0	●
2006 006 040	0.6	0.3	45	0.6	4.0	0.55	4.0	●
2006 006 050	0.6	0.3	45	0.6	5.0	0.55	4.0	●
2006 006 060	0.6	0.3	45	0.6	6.0	0.55	4.0	●
2006 006 080	0.6	0.3	45	0.6	8.0	0.55	4.0	●
2006 006 100	0.6	0.3	45	0.6	10.0	0.55	4.0	●
2008 008 020	0.8	0.4	45	0.8	2.0	0.75	4.0	●
2008 008 030	0.8	0.4	45	0.8	3.0	0.75	4.0	●
2008 008 040	0.8	0.4	45	0.8	4.0	0.75	4.0	●
2008 008 050	0.8	0.4	45	0.8	5.0	0.75	4.0	●
2008 008 060	0.8	0.4	45	0.8	6.0	0.75	4.0	●
2008 008 080	0.8	0.4	45	0.8	8.0	0.75	4.0	●
2008 008 100	0.8	0.4	45	0.8	10.0	0.75	4.0	●
2008 008 120	0.8	0.4	45	0.8	12.0	0.75	4.0	●

●: Standard item

HSB 2

HARDMILL

2 flute long neck ball



r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

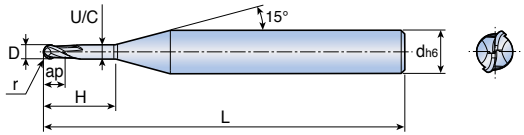
2 | H·A 30° | Cutting Condition TF11

Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSB 2010 010 030	1.0	0.5	50	1.0	3	0.97	4.0	●
2010 010 040	1.0	0.5	50	1.0	4	0.97	4.0	●
2010 010 050	1.0	0.5	50	1.0	5	0.97	4.0	●
2010 010 060	1.0	0.5	50	1.0	6	0.97	4.0	●
2010 010 070	1.0	0.5	50	1.0	7	0.97	4.0	●
2010 010 080	1.0	0.5	50	1.0	8	0.95	4.0	●
2010 010 090	1.0	0.5	50	1.0	9	0.95	4.0	●
2010 010 100	1.0	0.5	50	1.0	10	0.95	4.0	●
2010 010 120	1.0	0.5	50	1.0	12	0.93	4.0	●
2010 010 140	1.0	0.5	50	1.0	14	0.93	4.0	●
2010 010 160	1.0	0.5	50	1.0	16	0.93	4.0	●
2010 010 180	1.0	0.5	55	1.0	18	0.93	4.0	●
2010 010 200	1.0	0.5	55	1.0	20	0.93	4.0	●
2012 012 040	1.2	0.6	50	1.2	4	1.15	4.0	●
2012 012 060	1.2	0.6	50	1.2	6	1.15	4.0	●
2012 012 080	1.2	0.6	50	1.2	8	1.15	4.0	●
2012 012 100	1.2	0.6	50	1.2	10	1.15	4.0	●
2012 012 120	1.2	0.6	50	1.2	12	1.13	4.0	●
2015 015 040	1.5	0.75	50	1.5	4	1.45	4.0	●
2015 015 060	1.5	0.75	50	1.5	6	1.45	4.0	●
2015 015 080	1.5	0.75	50	1.5	8	1.45	4.0	●
2015 015 100	1.5	0.75	50	1.5	10	1.45	4.0	●
2015 015 120	1.5	0.75	50	1.5	12	1.43	4.0	●
2015 015 140	1.5	0.75	50	1.5	14	1.43	4.0	●
2015 015 160	1.5	0.75	50	1.5	16	1.41	4.0	●
2015 015 180	1.5	0.75	55	1.5	18	1.41	4.0	●
2015 015 200	1.5	0.75	55	1.5	20	1.39	4.0	●
2020 030 060	2.0	1.0	50	3.0	6	1.95	4.0	●
2020 030 080	2.0	1.0	50	3.0	8	1.95	4.0	●
2020 030 100	2.0	1.0	50	3.0	10	1.95	4.0	●
2020 030 120	2.0	1.0	50	3.0	12	1.93	4.0	●
2020 030 140	2.0	1.0	50	3.0	14	1.93	4.0	●
2020 030 160	2.0	1.0	50	3.0	16	1.93	4.0	●
2020 030 180	2.0	1.0	55	3.0	18	1.93	4.0	●
2020 030 200	2.0	1.0	55	3.0	20	1.93	4.0	●

●: Standard item

HSB 2

2 flute long neck ball



r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

2 | H·A 30° | Cutting Condition TF11

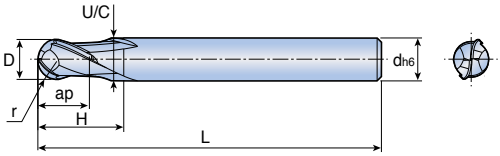
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSB 2020 030 250	2.0	1.0	60	3.0	25	1.93	4.0	●
2020 030 300	2.0	1.0	70	3.0	30	1.93	4.0	●
2025 035 080	2.5	1.25	55	3.5	8	2.45	4.0	●
2025 035 100	2.5	1.25	55	3.5	10	2.45	4.0	●
2025 035 120	2.5	1.25	55	3.5	12	2.43	4.0	●
2025 035 160	2.5	1.25	55	3.5	16	2.41	4.0	●
2025 035 200	2.5	1.25	55	3.5	20	2.41	4.0	●
2030 040 080	3.0	1.5	55	4.0	8	2.85	6.0	●
2030 040 100	3.0	1.5	55	4.0	10	2.85	6.0	●
2030 040 120	3.0	1.5	55	4.0	12	2.85	6.0	●
2030 040 140	3.0	1.5	55	4.0	14	2.85	6.0	●
2030 040 160	3.0	1.5	55	4.0	16	2.85	6.0	●
2030 040 180	3.0	1.5	60	4.0	18	2.85	6.0	●
2030 040 200	3.0	1.5	60	4.0	20	2.85	6.0	●
2030 040 250	3.0	1.5	60	4.0	25	2.85	6.0	●
2030 040 300	3.0	1.5	75	4.0	30	2.85	6.0	●
2030 040 350	3.0	1.5	75	4.0	35	2.85	6.0	●
2030 040 400	3.0	1.5	80	4.0	40	2.85	6.0	●
2040 050 100	4.0	2.0	55	5.0	10	3.9	6.0	●
2040 050 120	4.0	2.0	55	5.0	12	3.9	6.0	●
2040 050 160	4.0	2.0	55	5.0	16	3.9	6.0	●
2040 050 200	4.0	2.0	60	5.0	20	3.9	6.0	●
2040 050 250	4.0	2.0	60	5.0	25	3.9	6.0	●
2040 050 300	4.0	2.0	75	5.0	30	3.9	6.0	●
2040 050 350	4.0	2.0	75	5.0	35	3.9	6.0	●
2040 050 400	4.0	2.0	80	5.0	40	3.9	6.0	●
2050 060 120	5.0	2.5	70	6.0	12	4.9	6.0	●
2050 060 300	5.0	2.5	70	6.0	30	4.9	6.0	●

●: Standard item

HSB 2

HARDMILL

2 flute long neck ball



r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

2 | H·A 30° | Cutting Condition TF11

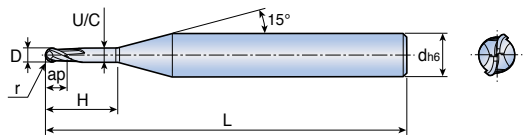
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSB 2060 080 150	6.0	3	60	8	15	5.9	6.0	●
2060 080 200	6.0	3	60	8	20	5.9	6.0	●
2060 080 300	6.0	3	80	8	30	5.9	6.0	●
2060 080 350	6.0	3	80	8	35	5.9	6.0	●
2080 100 150	8.0	4	80	10	15	7.9	8.0	●
2080 100 200	8.0	4	80	10	20	7.9	8.0	●
2080 100 300	8.0	4	100	10	30	7.9	8.0	●
2100 120 200	10.0	5	80	12	20	9.9	10.0	●
2100 120 250	10.0	5	80	12	25	9.9	10.0	●
2100 120 350	10.0	5	100	12	35	9.9	10.0	●
2120 140 250	12.0	6	80	14	25	11.9	12.0	●
2120 140 400	12.0	6	110	14	40	11.9	12.0	●

●: Standard item

HSB 2...S6

HARDMILL

2 flute long neck ball (Shank 6mm)



2 | H·A 30° | Cutting Condition TF11

r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

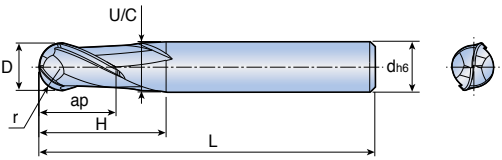
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSB 2006 006 020 S6	0.6	0.3	45	0.6	2	0.55	6.0	●
2006 006 040 S6	0.6	0.3	45	0.6	4	0.55	6.0	●
2006 006 060 S6	0.6	0.3	45	0.6	6	0.55	6.0	●
2008 008 020 S6	0.8	0.4	45	0.8	2	0.75	6.0	●
2008 008 040 S6	0.8	0.4	45	0.8	4	0.75	6.0	●
2008 008 060 S6	0.8	0.4	45	0.8	6	0.75	6.0	●
2008 008 080 S6	0.8	0.4	45	0.8	8	0.75	6.0	●
2010 010 030 S6	1.0	0.5	50	1.0	3	0.95	6.0	●
2010 010 040 S6	1.0	0.5	50	1.0	4	0.95	6.0	●
2010 010 060 S6	1.0	0.5	50	1.0	6	0.95	6.0	●
2010 010 080 S6	1.0	0.5	50	1.0	8	0.95	6.0	●
2010 010 100 S6	1.0	0.5	50	1.0	10	0.95	6.0	●
2015 015 040 S6	1.5	0.75	50	1.5	4	1.45	6.0	●
2015 015 060 S6	1.5	0.75	50	1.5	6	1.45	6.0	●
2015 015 080 S6	1.5	0.75	50	1.5	8	1.45	6.0	●
2015 015 100 S6	1.5	0.75	50	1.5	10	1.45	6.0	●
2015 015 120 S6	1.5	0.75	50	1.5	12	1.45	6.0	●
2020 030 060 S6	2.0	1.0	50	3.0	6	1.95	6.0	●
2020 030 080 S6	2.0	1.0	50	3.0	8	1.95	6.0	●
2020 030 100 S6	2.0	1.0	50	3.0	10	1.95	6.0	●
2020 030 120 S6	2.0	1.0	50	3.0	12	1.95	6.0	●
2020 030 160 S6	2.0	1.0	50	3.0	16	1.95	6.0	●

●: Standard item

HSB 2...S

HARDMILL

2 flute short ball



r		
	D≤6	±0.005
	D>6	±0.010

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

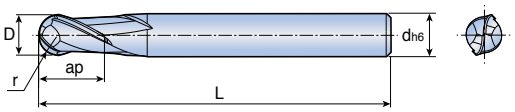
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSB 2010S	1.0	0.5	38	1.5	2.5	0.95	6.0	●
2015S	1.5	0.75	38	2.5	4.5	1.45	6.0	●
2020S	2.0	1.0	38	3.0	6.5	1.45	6.0	●
2030S	3.0	1.5	38	4.5	8.0	2.9	6.0	●
2040S	4.0	2.0	54	6.0	10.0	3.9	6.0	●
2050S	5.0	2.5	54	7.5	15.0	4.9	6.0	●
2060S	6.0	3.0	54	9.0	17.0	5.9	6.0	●
2080S	8.0	4.0	58	12.0	20.0	7.9	8.0	●
2100S	10.0	5.0	66	15.0	25.0	9.9	10.0	●
2120S	12.0	6.0	73	18.0	30.0	11.9	12.0	●

●: Standard item

HSB 2...M

HARDMILL

2 flute medium ball



r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

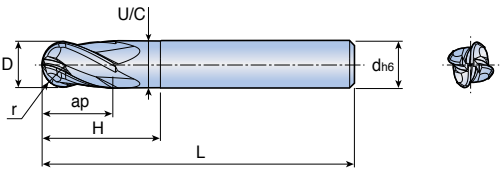
Designation	Designation					Grade
	D	r	L	ap	d	TT5505
HSB 2003M	0.3	0.15	45	0.6	4.0	●
2004M	0.4	0.2	45	0.8	4.0	●
2005M	0.5	0.25	45	1.0	4.0	●
2006M	0.6	0.3	45	1.2	4.0	●
2007M	0.7	0.35	45	1.4	4.0	●
2008M	0.8	0.4	45	1.6	4.0	●
2009M	0.9	0.45	45	1.8	4.0	●
2010M	1.0	0.5	50	2.5	6.0	●
2015M	1.5	0.75	50	4.0	6.0	●
2020M	2.0	1.0	50	5.0	6.0	●
2025M	2.5	1.25	60	7.0	6.0	●
2030M	3.0	1.5	60	8.0	6.0	●
2035M	3.5	1.75	70	8.0	6.0	●
2040M	4.0	2.0	70	8.0	6.0	●
2045M	4.5	2.25	80	10.0	6.0	●
2050M	5.0	2.5	80	10.0	6.0	●
2060M	6.0	3.0	80	12.0	6.0	●
2080M	8.0	4.0	90	14.0	8.0	●
2100M	10.0	5.0	100	18.0	10.0	●
2120M	12.0	6.0	110	22.0	12.0	●

●: Standard item

HSB 4...M

HARDMILL

4 flute medium ball



r		
	D≤6	±0.005
	D>6	±0.010

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

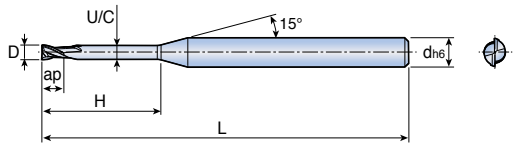
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSB 4040M	4.0	2.0	70	6.0	10	3.9	6.0	●
4050M	5.0	2.5	80	7.5	15	4.9	6.0	●
4060M	6.0	3.0	80	9.0	17	5.9	6.0	●
4080M	8.0	4.0	90	12.0	20	7.9	8.0	●
4100M	10.0	5.0	100	15.0	25	9.9	10.0	●
4120M	12.0	6.0	110	18.0	30	11.9	12.0	●

●: Standard item

HSF 2

HARDMILL

2 flute long neck flat



D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

2 | H·A 30° | Cutting Condition TF15

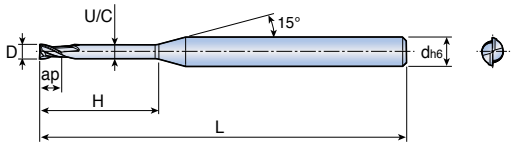
Designation	Dimension (mm)						Grade
	D	L	ap	H	U/C	d	TT5505
HSF 2003 004 010	0.3	45	0.4	1.0	0.27	4.0	●
2003 004 020	0.3	45	0.4	2.0	0.27	4.0	●
2003 004 030	0.3	45	0.4	3.0	0.27	4.0	●
2004 006 010	0.4	45	0.6	1.0	0.37	4.0	●
2004 006 015	0.4	45	0.6	1.5	0.37	4.0	●
2004 006 020	0.4	45	0.6	2.0	0.37	4.0	●
2004 006 025	0.4	45	0.6	2.5	0.37	4.0	●
2004 006 030	0.4	45	0.6	3.0	0.37	4.0	●
2004 006 040	0.4	45	0.6	4.0	0.37	4.0	●
2004 006 050	0.4	45	0.6	5.0	0.37	4.0	●
2004 006 060	0.4	45	0.6	6.0	0.37	4.0	●
2005 007 010	0.5	45	0.7	1.0	0.45	4.0	●
2005 007 015	0.5	45	0.7	1.5	0.45	4.0	●
2005 007 020	0.5	45	0.7	2.0	0.45	4.0	●
2005 007 025	0.5	45	0.7	2.5	0.45	4.0	●
2005 007 030	0.5	45	0.7	3.0	0.45	4.0	●
2005 007 040	0.5	45	0.7	4.0	0.45	4.0	●
2005 007 050	0.5	45	0.7	5.0	0.45	4.0	●
2005 007 060	0.5	45	0.7	6.0	0.45	4.0	●
2005 007 080	0.5	45	0.7	8.0	0.45	4.0	●
2006 009 020	0.6	45	0.9	2.0	0.55	4.0	●
2006 009 030	0.6	45	0.9	3.0	0.55	4.0	●
2006 009 040	0.6	45	0.9	4.0	0.55	4.0	●
2006 009 050	0.6	45	0.9	5.0	0.55	4.0	●
2006 009 060	0.6	45	0.9	6.0	0.55	4.0	●
2006 009 080	0.6	45	0.9	8.0	0.55	4.0	●
2006 009 100	0.6	45	0.9	10.0	0.55	4.0	●
2007 012 020	0.7	45	1.2	2.0	0.65	4.0	●
2007 012 040	0.7	45	1.2	4.0	0.65	4.0	●
2007 012 060	0.7	45	1.2	6.0	0.65	4.0	●
2007 012 080	0.7	45	1.2	8.0	0.65	4.0	●
2007 012 100	0.7	45	1.2	10.0	0.65	4.0	●

●: Standard item

HSF 2

HARDMILL

2 flute long neck flat



D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

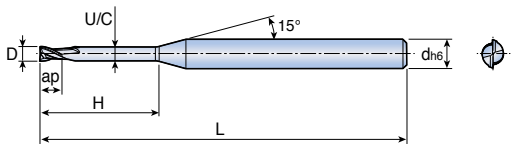
2 | H·A 30° | Cutting Condition TF15

Designation	Dimension (mm)						Grade
	D	L	ap	H	U/C	d	TT5505
HSF 2008 012 020	0.8	45	1.2	2	0.75	4.0	●
2008 012 040	0.8	45	1.2	4	0.75	4.0	●
2008 012 060	0.8	45	1.2	6	0.75	4.0	●
2008 012 080	0.8	45	1.2	8	0.73	4.0	●
2008 012 100	0.8	45	1.2	10	0.73	4.0	●
2008 012 120	0.8	45	1.2	12	0.73	4.0	●
2010 015 030	1.0	50	1.5	3	0.97	4.0	●
2010 015 040	1.0	50	1.5	4	0.97	4.0	●
2010 015 060	1.0	50	1.5	6	0.97	4.0	●
2010 015 080	1.0	50	1.5	8	0.95	4.0	●
2010 015 100	1.0	50	1.5	10	0.95	4.0	●
2010 015 120	1.0	50	1.5	12	0.93	4.0	●
2010 015 140	1.0	50	1.5	14	0.93	4.0	●
2010 015 160	1.0	50	1.5	16	0.91	4.0	●
2010 015 180	1.0	55	1.5	18	0.91	4.0	●
2010 015 200	1.0	55	1.5	20	0.85	4.0	●
2012 018 040	1.2	50	1.8	4	1.17	4.0	●
2012 018 060	1.2	50	1.8	6	1.17	4.0	●
2012 018 080	1.2	50	1.8	8	1.15	4.0	●
2012 018 100	1.2	50	1.8	10	1.15	4.0	●
2012 018 120	1.2	50	1.8	12	1.15	4.0	●
2012 018 160	1.2	50	1.8	16	1.13	4.0	●
2015 023 040	1.5	50	2.3	4	1.47	4.0	●
2015 023 060	1.5	50	2.3	6	1.47	4.0	●
2015 023 080	1.5	50	2.3	8	1.45	4.0	●
2015 023 100	1.5	50	2.3	10	1.45	4.0	●
2015 023 120	1.5	50	2.3	12	1.43	4.0	●
2015 023 140	1.5	50	2.3	14	1.43	4.0	●
2015 023 160	1.5	50	2.3	16	1.41	4.0	●
2015 023 180	1.5	55	2.3	18	1.41	4.0	●
2015 023 200	1.5	55	2.3	20	1.41	4.0	●

●: Standard item

HSF 2

2 flute long neck flat



D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

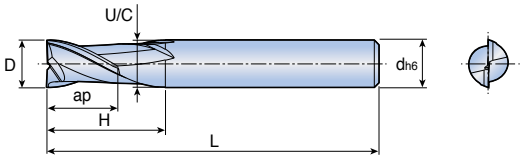
Designation	Dimension (mm)						Grade
	D	L	ap	H	U/C	d	TT5505
HSF 2020 030 060	2.0	50	3.0	6	1.95	4.0	●
2020 030 080	2.0	50	3.0	8	1.95	4.0	●
2020 030 100	2.0	50	3.0	10	1.95	4.0	●
2020 030 120	2.0	50	3.0	12	1.93	4.0	●
2020 030 160	2.0	50	3.0	16	1.91	4.0	●
2020 030 180	2.0	55	3.0	18	1.91	4.0	●
2020 030 200	2.0	55	3.0	20	1.91	4.0	●
2020 030 250	2.0	60	3.0	25	1.91	4.0	●
2020 030 300	2.0	70	3.0	30	1.91	4.0	●
2025 040 080	2.5	50	4.0	8	2.4	4.0	●
2025 040 100	2.5	50	4.0	10	2.4	4.0	●
2025 040 120	2.5	50	4.0	12	2.4	4.0	●
2025 040 160	2.5	50	4.0	16	2.4	4.0	●
2025 040 200	2.5	55	4.0	20	2.4	4.0	●
2030 045 080	3.0	55	4.5	8	2.85	6.0	●
2030 045 100	3.0	55	4.5	10	2.85	6.0	●
2030 045 120	3.0	55	4.5	12	2.85	6.0	●
2030 045 160	3.0	55	4.5	16	2.85	6.0	●
2030 045 180	3.0	60	4.5	18	2.85	6.0	●
2030 045 200	3.0	60	4.5	20	2.85	6.0	●
2030 045 250	3.0	60	4.5	25	2.85	6.0	●
2030 045 300	3.0	70	4.5	30	2.85	6.0	●
2030 045 350	3.0	75	4.5	35	2.85	6.0	●
2030 045 400	3.0	80	4.5	40	2.85	6.0	●
2040 060 100	4.0	55	6.0	10	3.9	6.0	●
2040 060 120	4.0	55	6.0	12	3.9	6.0	●
2040 060 160	4.0	55	6.0	16	3.9	6.0	●
2040 060 200	4.0	60	6.0	20	3.9	6.0	●
2040 060 250	4.0	60	6.0	25	3.9	6.0	●
2040 060 300	4.0	70	6.0	30	3.9	6.0	●
2040 060 350	4.0	75	6.0	35	3.9	6.0	●
2040 060 400	4.0	80	6.0	40	3.9	6.0	●

●: Standard item

HSF 2

HARDMILL

2 flute long neck flat



D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

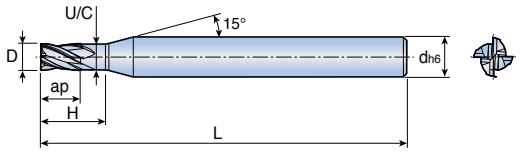
2 | H·A 30° | Cutting Condition TF15

Designation	Dimension (mm)						Grade
	D	L	ap	H	U/C	d	TT5505
HSF 2050 080 150	5.0	60	8	15	4.8	6.0	●
2050 080 300	5.0	90	8	30	4.8	6.0	●
2060 090 150	6.0	60	9	15	5.9	6.0	●
2060 090 200	6.0	80	9	20	5.9	6.0	●
2060 090 300	6.0	90	9	30	5.9	6.0	●
2080 120 200	8.0	65	12	20	7.9	8.0	●
2080 120 300	8.0	80	12	30	7.9	8.0	●
2080 120 400	8.0	100	12	40	7.9	8.0	●
2100 150 250	10.0	70	15	25	9.9	10.0	●
2100 150 350	10.0	85	15	35	9.9	10.0	●
2100 150 450	10.0	100	15	45	9.9	10.0	●
2120 180 300	12.0	80	18	30	11.9	12.0	●
2120 180 400	12.0	100	18	40	11.9	12.0	●
2120 180 500	12.0	120	18	50	11.9	12.0	●

●: Standard item

HSF 4

4 flute long neck flat



D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

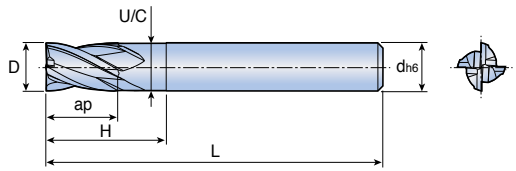
Designation	Dimension (mm)						Grade
	D	L	ap	H	U/C	d	TT5505
HSF 4010 015 030	1.0	50	1.5	3	0.97	4.0	●
4010 015 040	1.0	50	1.5	4	0.97	4.0	●
4010 015 060	1.0	50	1.5	6	0.97	4.0	●
4010 015 080	1.0	50	1.5	8	0.97	4.0	●
4010 015 100	1.0	50	1.5	10	0.97	4.0	●
4015 025 040	1.5	50	2.5	4	1.45	4.0	●
4015 025 060	1.5	50	2.5	6	1.45	4.0	●
4015 025 080	1.5	50	2.5	8	1.45	4.0	●
4015 025 100	1.5	50	2.5	10	1.45	4.0	●
4015 025 120	1.5	50	2.5	12	1.45	4.0	●
4015 025 160	1.5	50	2.5	16	1.45	4.0	●
4020 030 060	2.0	50	3.0	6	1.95	4.0	●
4020 030 080	2.0	50	3.0	8	1.95	4.0	●
4020 030 100	2.0	50	3.0	10	1.95	4.0	●
4020 030 120	2.0	50	3.0	12	1.95	4.0	●
4020 030 160	2.0	50	3.0	16	1.95	4.0	●
4020 030 200	2.0	50	3.0	20	1.95	4.0	●
4030 045 080	3.0	55	4.5	8	2.85	6.0	●
4030 045 100	3.0	55	4.5	10	2.85	6.0	●
4030 045 120	3.0	55	4.5	12	2.85	6.0	●
4030 045 160	3.0	55	4.5	16	2.85	6.0	●
4030 045 200	3.0	60	4.5	20	2.85	6.0	●
4040 060 100	4.0	55	6.0	10	3.90	6.0	●
4040 060 120	4.0	55	6.0	12	3.90	6.0	●
4040 060 160	4.0	55	6.0	16	3.90	6.0	●
4040 060 200	4.0	60	6.0	20	3.90	6.0	●
4040 060 250	4.0	60	6.0	25	3.90	6.0	●
4050 080 150	5.0	60	8.0	15	4.80	6.0	●
4050 080 300	5.0	90	8.0	30	4.80	6.0	●

●: Standard item

HSF 4

HARDMILL

4 flute long neck flat



D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

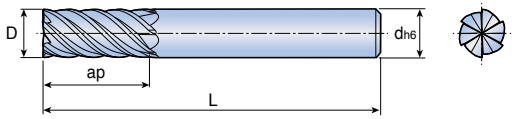
Designation	Dimension (mm)						Grade
	D	L	ap	H	U/C	d	TT5505
HSF 4060 090 150	6.0	60	9	15	5.9	6.0	●
4060 090 200	6.0	80	9	20	5.9	6.0	●
4060 090 300	6.0	100	9	30	5.9	6.0	●
4080 120 200	8.0	65	12	20	7.9	8.0	●
4080 120 300	8.0	80	12	30	7.9	8.0	●
4080 120 400	8.0	100	12	40	7.9	8.0	●
4100 150 250	10.0	70	15	25	9.9	10.0	●
4100 150 350	10.0	80	15	35	9.9	10.0	●
4100 150 450	10.0	100	15	45	9.9	10.0	●
4120 180 300	12.0	80	18	30	11.9	12.0	●
4120 180 400	12.0	100	18	40	11.9	12.0	●
4120 180 500	12.0	120	18	50	11.9	12.0	●

●: Standard item

HSF 6...M

HARDMILL

6 flute medium flat



D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

• Finishing

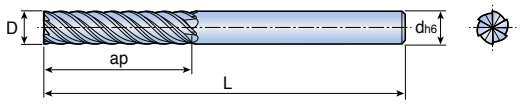
Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5505
HSF 6030M	3.0	50	8	6.0	●
6040M	4.0	60	10	6.0	●
6050M	5.0	60	15	6.0	●
6060M	6.0	60	15	6.0	●
6080M	8.0	65	20	8.0	●
6100M	10.0	70	22	10.0	●
6120M	12.0	80	26	12.0	●

●: Standard item

HSF 6...XLT

HARDMILL

6 flute extra long flat



D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

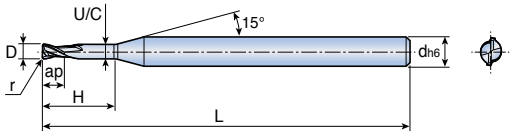
• Finishing

Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5505
HSF 6050XLT	5.0	80	25	6.0	●
6060XLT	6.0	80	25	6.0	●
6080XLT	8.0	90	35	8.0	●
6100XLT	10.0	100	45	10.0	●
6120XLT	12.0	110	55	12.0	●

●: Standard item

HSR 2

2 flute long neck corner radius



r ±0.005

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

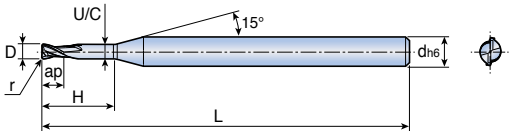
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSR 2003 005 010	0.3	0.05	45	0.4	1.0	0.27	4.0	●
2003 005 020	0.3	0.05	45	0.4	2.0	0.27	4.0	●
2003 005 030	0.3	0.05	45	0.4	3.0	0.27	4.0	●
2004 005 010	0.4	0.05	45	0.6	1.0	0.37	4.0	●
2004 005 015	0.4	0.05	45	0.6	1.5	0.37	4.0	●
2004 005 025	0.4	0.05	45	0.6	2.5	0.37	4.0	●
2004 005 030	0.4	0.05	45	0.6	3.0	0.37	4.0	●
2004 005 040	0.4	0.05	45	0.6	4.0	0.37	4.0	●
2005 005 010	0.5	0.05	45	0.7	1.0	0.45	4.0	●
2005 005 015	0.5	0.05	45	0.7	1.5	0.45	4.0	●
2005 005 025	0.5	0.05	45	0.7	2.5	0.45	4.0	●
2005 005 030	0.5	0.05	45	0.7	3.0	0.45	4.0	●
2005 005 040	0.5	0.05	45	0.7	4.0	0.45	4.0	●
2006 005 020	0.6	0.05	45	0.9	2.0	0.55	4.0	●
2006 005 040	0.6	0.05	45	0.9	4.0	0.55	4.0	●
2006 005 060	0.6	0.05	45	0.9	6.0	0.55	4.0	●
2006 010 020	0.6	0.10	45	0.9	2.0	0.55	4.0	●
2006 010 040	0.6	0.10	45	0.9	4.0	0.55	4.0	●
2006 010 060	0.6	0.10	45	0.9	6.0	0.55	4.0	●
2006 020 020	0.6	0.20	45	0.9	2.0	0.55	4.0	●
2006 020 040	0.6	0.20	45	0.9	4.0	0.55	4.0	●
2006 020 060	0.6	0.20	45	0.9	6.0	0.55	4.0	●
2008 005 020	0.8	0.05	45	1.2	2.0	0.75	4.0	●
2008 005 040	0.8	0.05	45	1.2	4.0	0.75	4.0	●
2008 005 060	0.8	0.05	45	1.2	6.0	0.75	4.0	●
2008 005 080	0.8	0.05	45	1.2	8.0	0.73	4.0	●
2008 010 020	0.8	0.10	45	1.2	2.0	0.75	4.0	●
2008 010 040	0.8	0.10	45	1.2	4.0	0.75	4.0	●
2008 010 060	0.8	0.10	45	1.2	6.0	0.75	4.0	●
2008 010 080	0.8	0.10	45	1.2	8.0	0.73	4.0	●
2008 020 020	0.8	0.20	45	1.2	2.0	0.75	4.0	●
2008 020 040	0.8	0.20	45	1.2	4.0	0.75	4.0	●
2008 020 060	0.8	0.20	45	1.2	6.0	0.75	4.0	●
2008 020 080	0.8	0.20	45	1.2	8.0	0.73	4.0	●

●: Standard item

HSR 2

HARDMILL

2 flute long neck corner radius



2 | H·A 30° | Cutting Condition TF15

r ±0.005

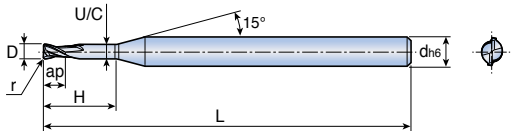
D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSR 2010 005 030	1.0	0.05	50	2.0	3	0.97	4.0	●
2010 005 040	1.0	0.05	50	2.0	4	0.97	4.0	●
2010 005 060	1.0	0.05	50	2.0	6	0.97	4.0	●
2010 005 080	1.0	0.05	50	2.0	8	0.95	4.0	●
2010 005 100	1.0	0.05	50	2.0	10	0.95	4.0	●
2010 010 030	1.0	0.10	50	2.0	3	0.97	4.0	●
2010 010 040	1.0	0.10	50	2.0	4	0.97	4.0	●
2010 010 060	1.0	0.10	50	2.0	6	0.97	4.0	●
2010 010 080	1.0	0.10	50	2.0	8	0.95	4.0	●
2010 010 100	1.0	0.10	50	2.0	10	0.95	4.0	●
2010 020 030	1.0	0.20	50	2.0	3	0.97	4.0	●
2010 020 040	1.0	0.20	50	2.0	4	0.97	4.0	●
2010 020 060	1.0	0.20	50	2.0	6	0.97	4.0	●
2010 020 080	1.0	0.20	50	2.0	8	0.95	4.0	●
2010 020 100	1.0	0.20	50	2.0	10	0.95	4.0	●
2010 030 030	1.0	0.30	50	2.0	3	0.97	4.0	●
2010 030 040	1.0	0.30	50	2.0	4	0.97	4.0	●
2010 030 060	1.0	0.30	50	2.0	6	0.97	4.0	●
2010 030 080	1.0	0.30	50	2.0	8	0.95	4.0	●
2010 030 100	1.0	0.30	50	2.0	10	0.95	4.0	●
2012 010 040	1.2	0.10	50	2.2	4	1.17	4.0	●
2012 010 060	1.2	0.10	50	2.2	6	1.17	4.0	●
2012 010 080	1.2	0.10	50	2.2	8	1.15	4.0	●
2012 010 100	1.2	0.10	50	2.2	10	1.15	4.0	●
2012 020 040	1.2	0.20	50	2.2	4	1.17	4.0	●
2012 020 060	1.2	0.20	50	2.2	6	1.17	4.0	●
2012 020 080	1.2	0.20	50	2.2	8	1.15	4.0	●
2012 020 100	1.2	0.20	50	2.2	10	1.15	4.0	●
2012 030 040	1.2	0.30	50	2.2	4	1.17	4.0	●
2012 030 060	1.2	0.30	50	2.2	6	1.17	4.0	●
2012 030 080	1.2	0.30	50	2.2	8	1.15	4.0	●
2012 030 100	1.2	0.30	50	2.2	10	1.15	4.0	●

●: Standard item

HARDMILL

2 flute long neck corner radius



r ±0.005

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

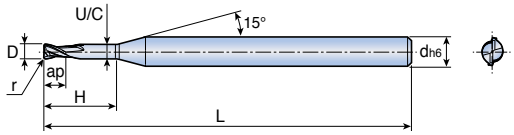
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSR 2015 005 040	1.5	0.05	50	2.5	4	1.47	4.0	●
2015 005 060	1.5	0.05	50	2.5	6	1.47	4.0	●
2015 005 080	1.5	0.05	50	2.5	8	1.45	4.0	●
2015 005 100	1.5	0.05	50	2.5	10	1.45	4.0	●
2015 005 120	1.5	0.05	50	2.5	12	1.43	4.0	●
2015 010 040	1.5	0.10	50	2.5	4	1.47	4.0	●
2015 010 060	1.5	0.10	50	2.5	6	1.47	4.0	●
2015 010 080	1.5	0.10	50	2.5	8	1.45	4.0	●
2015 010 100	1.5	0.10	50	2.5	10	1.45	4.0	●
2015 010 120	1.5	0.10	50	2.5	12	1.43	4.0	●
2015 020 040	1.5	0.20	50	2.5	4	1.47	4.0	●
2015 020 060	1.5	0.20	50	2.5	6	1.47	4.0	●
2015 020 080	1.5	0.20	50	2.5	8	1.45	4.0	●
2015 020 100	1.5	0.20	50	2.5	10	1.45	4.0	●
2015 020 120	1.5	0.20	50	2.5	12	1.43	4.0	●
2015 030 040	1.5	0.30	50	2.5	4	1.47	4.0	●
2015 030 060	1.5	0.30	50	2.5	6	1.47	4.0	●
2015 030 080	1.5	0.30	50	2.5	8	1.45	4.0	●
2015 030 100	1.5	0.30	50	2.5	10	1.45	4.0	●
2015 030 120	1.5	0.30	50	2.5	12	1.43	4.0	●
2015 050 040	1.5	0.50	50	2.5	4	1.47	4.0	●
2015 050 060	1.5	0.50	50	2.5	6	1.47	4.0	●
2015 050 080	1.5	0.50	50	2.5	8	1.45	4.0	●
2015 050 100	1.5	0.50	50	2.5	10	1.45	4.0	●
2015 050 120	1.5	0.50	50	2.5	12	1.43	4.0	●
2020 010 060	2.0	0.10	50	3.0	6	1.95	4.0	●
2020 010 080	2.0	0.10	50	3.0	8	1.95	4.0	●
2020 010 100	2.0	0.10	50	3.0	10	1.95	4.0	●
2020 010 120	2.0	0.10	50	3.0	12	1.93	4.0	●
2020 010 160	2.0	0.10	50	3.0	16	1.91	4.0	●
2020 010 200	2.0	0.10	50	3.0	20	1.91	4.0	●

●: Standard item

HSR 2

HARDMILL

2 flute long neck corner radius



2 | H·A 30° | Cutting Condition TF15

r	±0.005

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

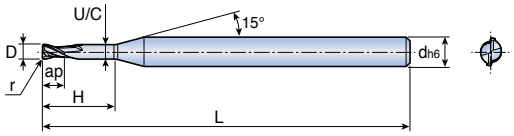
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSR 2020 020 060	2.0	0.20	50	3.0	6	1.95	4.0	●
2020 020 080	2.0	0.20	50	3.0	8	1.95	4.0	●
2020 020 100	2.0	0.20	50	3.0	10	1.95	4.0	●
2020 020 120	2.0	0.20	50	3.0	12	1.93	4.0	●
2020 020 160	2.0	0.20	50	3.0	16	1.91	4.0	●
2020 020 200	2.0	0.20	50	3.0	20	1.91	4.0	●
2020 030 060	2.0	0.3	50	3.0	6	1.95	4.0	●
2020 030 080	2.0	0.3	50	3.0	8	1.95	4.0	●
2020 030 100	2.0	0.3	50	3.0	10	1.95	4.0	●
2020 030 120	2.0	0.3	50	3.0	12	1.93	4.0	●
2020 030 160	2.0	0.3	50	3.0	16	1.91	4.0	●
2020 030 200	2.0	0.3	50	3.0	20	1.91	4.0	●
2020 050 060	2.0	0.5	50	3.0	6	1.95	4.0	●
2020 050 080	2.0	0.5	50	3.0	8	1.95	4.0	●
2020 050 100	2.0	0.5	50	3.0	10	1.95	4.0	●
2020 050 120	2.0	0.5	50	3.0	12	1.93	4.0	●
2020 050 160	2.0	0.5	50	3.0	16	1.91	4.0	●
2020 050 200	2.0	0.5	50	3.0	20	1.91	4.0	●
2025 020 080	2.5	0.2	55	3.5	8	2.4	4.0	●
2025 020 100	2.5	0.2	55	3.5	10	2.4	4.0	●
2025 020 120	2.5	0.2	55	3.5	12	2.4	4.0	●
2025 020 160	2.5	0.2	55	3.5	16	2.4	4.0	●
2025 030 080	2.5	0.3	55	3.5	8	2.4	4.0	●
2025 030 100	2.5	0.3	55	3.5	10	2.4	4.0	●
2025 030 120	2.5	0.3	55	3.5	12	2.4	4.0	●
2025 030 160	2.5	0.3	55	3.5	16	2.4	4.0	●
2025 050 080	2.5	0.5	55	3.5	8	2.4	4.0	●
2025 050 100	2.5	0.5	55	3.5	10	2.4	4.0	●
2025 050 120	2.5	0.5	55	3.5	12	2.4	4.0	●
2025 050 160	2.5	0.5	55	3.5	16	2.4	4.0	●

●: Standard item

HSR 2

HARDMILL

2 flute long neck corner radius



2 | H·A 30° | Cutting Condition TF15

r ±0.005

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

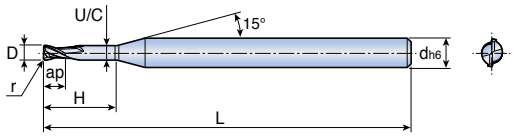
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSR 2030 010 080	3.0	0.1	55	4.5	8	2.85	6.0	●
2030 010 100	3.0	0.1	55	4.5	10	2.85	6.0	●
2030 010 120	3.0	0.1	55	4.5	12	2.85	6.0	●
2030 010 160	3.0	0.1	55	4.5	16	2.85	6.0	●
2030 010 200	3.0	0.1	60	4.5	20	2.85	6.0	●
2030 020 080	3.0	0.2	55	4.5	8	2.85	6.0	●
2030 020 100	3.0	0.2	55	4.5	10	2.85	6.0	●
2030 020 120	3.0	0.2	55	4.5	12	2.85	6.0	●
2030 020 160	3.0	0.2	55	4.5	16	2.85	6.0	●
2030 020 200	3.0	0.2	60	4.5	20	2.85	6.0	●
2030 030 080	3.0	0.3	55	4.5	8	2.85	6.0	●
2030 030 100	3.0	0.3	55	4.5	10	2.85	6.0	●
2030 030 120	3.0	0.3	55	4.5	12	2.85	6.0	●
2030 030 160	3.0	0.3	55	4.5	16	2.85	6.0	●
2030 030 200	3.0	0.3	60	4.5	20	2.85	6.0	●
2030 050 080	3.0	0.5	55	4.5	8	2.85	6.0	●
2030 050 100	3.0	0.5	55	4.5	10	2.85	6.0	●
2030 050 120	3.0	0.5	55	4.5	12	2.85	6.0	●
2030 050 160	3.0	0.5	55	4.5	16	2.85	6.0	●
2030 050 200	3.0	0.5	60	4.5	20	2.85	6.0	●
2030 100 080	3.0	1.0	55	4.5	8	2.85	6.0	●
2030 100 100	3.0	1.0	55	4.5	10	2.85	6.0	●
2030 100 120	3.0	1.0	55	4.5	12	2.85	6.0	●
2030 100 160	3.0	1.0	55	4.5	16	2.85	6.0	●
2030 100 200	3.0	1.0	60	4.5	20	2.85	6.0	●

●: Standard item

HSR 2

HARDMILL

2 flute long neck corner radius



r ±0.005

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

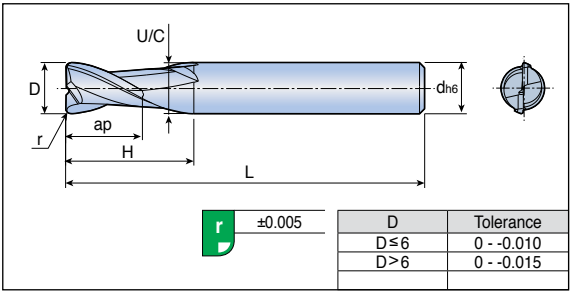
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSR 2040 010 100	4.0	0.1	55	6.0	10	3.9	6.0	●
2040 010 120	4.0	0.1	55	6.0	12	3.9	6.0	●
2040 010 160	4.0	0.1	55	6.0	16	3.9	6.0	●
2040 010 200	4.0	0.1	60	6.0	20	3.9	6.0	●
2040 010 250	4.0	0.1	60	6.0	25	3.9	6.0	●
2040 020 100	4.0	0.2	55	6.0	10	3.9	6.0	●
2040 020 120	4.0	0.2	55	6.0	12	3.9	6.0	●
2040 020 160	4.0	0.2	55	6.0	16	3.9	6.0	●
2040 020 200	4.0	0.2	60	6.0	20	3.9	6.0	●
2040 020 250	4.0	0.2	60	6.0	25	3.9	6.0	●
2040 030 100	4.0	0.3	55	6.0	10	3.9	6.0	●
2040 030 120	4.0	0.3	55	6.0	12	3.9	6.0	●
2040 030 160	4.0	0.3	55	6.0	16	3.9	6.0	●
2040 030 200	4.0	0.3	60	6.0	20	3.9	6.0	●
2040 030 250	4.0	0.3	60	6.0	25	3.9	6.0	●
2040 050 100	4.0	0.5	55	6.0	10	3.9	6.0	●
2040 050 120	4.0	0.5	55	6.0	12	3.9	6.0	●
2040 050 160	4.0	0.5	55	6.0	16	3.9	6.0	●
2040 050 200	4.0	0.5	60	6.0	20	3.9	6.0	●
2040 050 250	4.0	0.5	60	6.0	25	3.9	6.0	●
2040 100 100	4.0	1.0	55	6.0	10	3.9	6.0	●
2040 100 120	4.0	1.0	55	6.0	12	3.9	6.0	●
2040 100 160	4.0	1.0	55	6.0	16	3.9	6.0	●
2040 100 200	4.0	1.0	60	6.0	20	3.9	6.0	●
2040 100 250	4.0	1.0	60	6.0	25	3.9	6.0	●

●: Standard item

HSR 2

HARDMILL

2 flute long neck corner radius



D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

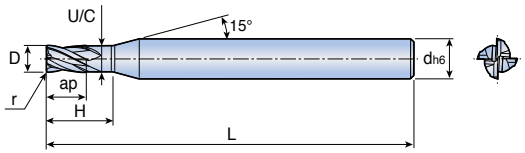
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSR 2060 020 150	6.0	0.2	60	9	15	5.9	6.0	●
2060 030 150	6.0	0.3	60	9	15	5.9	6.0	●
2060 030 200	6.0	0.3	60	9	20	5.9	6.0	●
2060 050 150	6.0	0.5	60	9	15	5.9	6.0	●
2060 050 200	6.0	0.5	60	9	20	5.9	6.0	●
2060 100 150	6.0	1.0	60	9	15	5.9	6.0	●
2060 100 200	6.0	1.0	60	9	20	5.9	6.0	●
2060 150 150	6.0	1.5	60	9	15	5.9	6.0	●
2060 200 150	6.0	2.0	60	9	15	5.9	6.0	●
2080 020 200	8.0	0.2	65	12	20	7.9	8.0	●
2080 030 200	8.0	0.3	65	12	20	7.9	8.0	●
2080 050 200	8.0	0.5	65	12	20	7.9	8.0	●
2080 100 200	8.0	1.0	65	12	20	7.9	8.0	●
2080 150 200	8.0	1.5	65	12	20	7.9	8.0	●
2100 020 250	10.0	0.2	75	15	25	9.9	10.0	●
2100 030 250	10.0	0.3	75	15	25	9.9	10.0	●
2100 050 250	10.0	0.5	75	15	25	9.9	10.0	●
2100 100 250	10.0	1.0	75	15	25	9.9	10.0	●
2100 150 250	10.0	1.5	75	15	25	9.9	10.0	●
2100 200 250	10.0	2.0	75	15	25	9.9	10.0	●
2120 030 280	12.0	0.3	85	18	28	11.9	12.0	●
2120 050 280	12.0	0.5	85	18	28	11.9	12.0	●
2120 100 280	12.0	1.0	85	18	28	11.9	12.0	●
2120 150 280	12.0	1.5	85	18	28	11.9	12.0	●
2120 200 280	12.0	2.0	85	18	28	11.9	12.0	●

●: Standard item

HSR 4

HARDMILL

4 flute long neck corner radius



r	±0.005

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

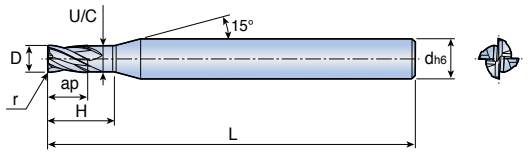
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSR 4010 010 030	1.0	0.1	50	2.0	3	0.97	4.0	●
4010 010 040	1.0	0.1	50	2.0	4	0.97	4.0	●
4010 010 060	1.0	0.1	50	2.0	6	0.97	4.0	●
4010 020 030	1.0	0.2	50	2.0	3	0.97	4.0	●
4010 020 040	1.0	0.2	50	2.0	4	0.97	4.0	●
4010 020 060	1.0	0.2	50	2.0	6	0.97	4.0	●
4010 030 030	1.0	0.3	50	2.0	3	0.97	4.0	●
4010 030 040	1.0	0.3	50	2.0	4	0.97	4.0	●
4010 030 060	1.0	0.3	50	2.0	6	0.97	4.0	●
4015 010 040	1.5	0.1	50	2.5	4	1.45	4.0	●
4015 010 060	1.5	0.1	50	2.5	6	1.45	4.0	●
4015 020 040	1.5	0.2	50	2.5	4	1.45	4.0	●
4015 020 060	1.5	0.2	50	2.5	6	1.45	4.0	●
4015 030 040	1.5	0.3	50	2.5	4	1.45	4.0	●
4015 030 060	1.5	0.3	50	2.5	6	1.45	4.0	●
4020 010 060	2.0	0.1	50	3.0	6	1.95	4.0	●
4020 010 080	2.0	0.1	50	3.0	8	1.95	4.0	●
4020 020 060	2.0	0.2	50	3.0	6	1.95	4.0	●
4020 020 080	2.0	0.2	50	3.0	8	1.95	4.0	●
4020 030 060	2.0	0.3	50	3.0	6	1.95	4.0	●
4020 030 080	2.0	0.3	50	3.0	8	1.95	4.0	●
4020 050 060	2.0	0.5	50	3.0	6	1.95	4.0	●
4020 050 080	2.0	0.5	50	3.0	8	1.95	4.0	●

●: Standard item

HSR 4

HARDMILL

4 flute long neck corner radius



r ±0.005

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

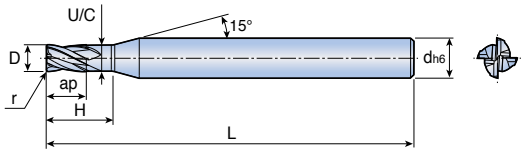
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSR 4030 010 080	3.0	0.1	55	4	8	2.85	6.0	●
4030 010 100	3.0	0.1	55	4	10	2.85	6.0	●
4030 010 120	3.0	0.1	55	4	12	2.85	6.0	●
4030 010 160	3.0	0.1	55	4	16	2.85	6.0	●
4030 010 200	3.0	0.1	60	4	20	2.85	6.0	●
4030 020 080	3.0	0.2	55	4	8	2.85	6.0	●
4030 020 100	3.0	0.2	55	4	10	2.85	6.0	●
4030 020 120	3.0	0.2	55	4	12	2.85	6.0	●
4030 020 160	3.0	0.2	55	4	16	2.85	6.0	●
4030 020 200	3.0	0.2	60	4	20	2.85	6.0	●
4030 030 080	3.0	0.3	55	4	8	2.85	6.0	●
4030 030 100	3.0	0.3	55	4	10	2.85	6.0	●
4030 030 120	3.0	0.3	55	4	12	2.85	6.0	●
4030 030 160	3.0	0.3	55	4	16	2.85	6.0	●
4030 030 200	3.0	0.3	60	4	20	2.85	6.0	●
4030 050 080	3.0	0.5	55	4	8	2.85	6.0	●
4030 050 100	3.0	0.5	55	4	10	2.85	6.0	●
4030 050 120	3.0	0.5	55	4	12	2.85	6.0	●
4030 050 160	3.0	0.5	55	4	16	2.85	6.0	●
4030 050 200	3.0	0.5	60	4	20	2.85	6.0	●
4030 100 080	3.0	1.0	55	4	8	2.85	6.0	●
4030 100 100	3.0	1.0	55	4	10	2.85	6.0	●
4030 100 120	3.0	1.0	55	4	12	2.85	6.0	●
4030 100 160	3.0	1.0	55	4	16	2.85	6.0	●
4030 100 200	3.0	1.0	60	4	20	2.85	6.0	●

●: Standard item

HSR 4

HARDMILL

4 flute long neck corner radius



r ±0.005

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

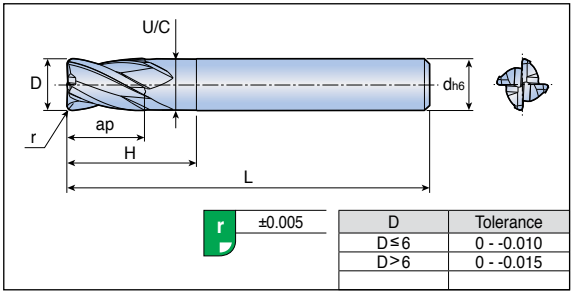
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSR 4040 010 100	4.0	0.1	55	6	10	3.9	6.0	●
4040 010 120	4.0	0.1	55	6	12	3.9	6.0	●
4040 010 160	4.0	0.1	55	6	16	3.9	6.0	●
4040 010 200	4.0	0.1	60	6	20	3.9	6.0	●
4040 010 250	4.0	0.1	60	6	25	3.9	6.0	●
4040 020 100	4.0	0.2	55	6	10	3.9	6.0	●
4040 020 120	4.0	0.2	55	6	12	3.9	6.0	●
4040 020 160	4.0	0.2	55	6	16	3.9	6.0	●
4040 020 200	4.0	0.2	60	6	20	3.9	6.0	●
4040 020 250	4.0	0.2	60	6	25	3.9	6.0	●
4040 030 100	4.0	0.3	55	6	10	3.9	6.0	●
4040 030 120	4.0	0.3	55	6	12	3.9	6.0	●
4040 030 160	4.0	0.3	55	6	16	3.9	6.0	●
4040 030 200	4.0	0.3	60	6	20	3.9	6.0	●
4040 030 250	4.0	0.3	60	6	25	3.9	6.0	●
4040 050 100	4.0	0.5	55	6	10	3.9	6.0	●
4040 050 120	4.0	0.5	55	6	12	3.9	6.0	●
4040 050 160	4.0	0.5	55	6	16	3.9	6.0	●
4040 050 200	4.0	0.5	60	6	20	3.9	6.0	●
4040 050 250	4.0	0.5	60	6	25	3.9	6.0	●
4040 100 100	4.0	1.0	55	6	10	3.9	6.0	●
4040 100 120	4.0	1.0	55	6	12	3.9	6.0	●
4040 100 160	4.0	1.0	55	6	16	3.9	6.0	●
4040 100 200	4.0	1.0	60	6	20	3.9	6.0	●
4040 100 250	4.0	1.0	60	6	25	3.9	6.0	●

●: Standard item

HSR 4

HARDMILL

4 flute long neck corner radius



D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

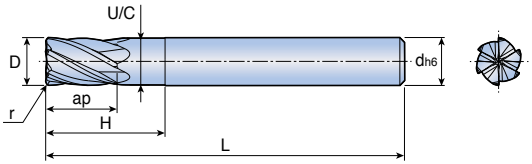
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSR 4060 020 150	6.0	0.2	60	9	15	5.9	6.0	●
4060 030 150	6.0	0.3	60	9	15	5.9	6.0	●
4060 050 150	6.0	0.5	60	9	15	5.9	6.0	●
4060 100 150	6.0	1.0	60	9	15	5.9	6.0	●
4060 150 150	6.0	1.5	60	9	15	5.9	6.0	●
4060 200 150	6.0	2.0	60	9	15	5.9	6.0	●
4080 020 200	8.0	0.2	70	12	20	7.9	8.0	●
4080 030 200	8.0	0.3	70	12	20	7.9	8.0	●
4080 050 200	8.0	0.5	70	12	20	7.9	8.0	●
4080 100 200	8.0	1.0	70	12	20	7.9	8.0	●
4080 150 200	8.0	1.5	70	12	20	7.9	8.0	●
4080 200 200	8.0	2.0	70	12	20	7.9	8.0	●
4100 020 250	10.0	0.2	75	15	25	9.9	10.0	●
4100 030 250	10.0	0.3	75	15	25	9.9	10.0	●
4100 050 250	10.0	0.5	75	15	25	9.9	10.0	●
4100 100 250	10.0	1.0	75	15	25	9.9	10.0	●
4100 150 250	10.0	1.5	75	15	25	9.9	10.0	●
4100 200 250	10.0	2.0	75	15	25	9.9	10.0	●
4120 030 300	12.0	0.3	85	18	30	11.9	12.0	●
4120 050 300	12.0	0.5	85	18	30	11.9	12.0	●
4120 100 300	12.0	1.0	85	18	30	11.9	12.0	●
4120 150 300	12.0	1.5	85	18	30	11.9	12.0	●
4120 200 300	12.0	2.0	85	18	30	11.9	12.0	●

●: Standard item

HSR 6

HARDMILL

6 flute long neck corner radius



• Finishing

r ±0.005

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

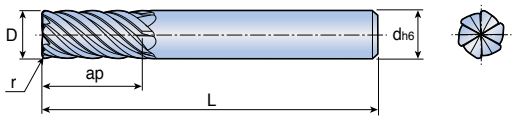
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5505
HSR 6060 050 150	6.0	0.5	60	9	15	5.8	6.0	●
6060 100 150	6.0	1.0	60	9	15	5.8	6.0	●
6080 050 200	8.0	0.5	70	12	20	7.8	8.0	●
6080 100 200	8.0	1.0	70	12	20	7.8	8.0	●
6100 050 250	10.0	0.5	75	15	25	9.8	10.0	●
6100 100 250	10.0	1.0	75	15	25	9.8	10.0	●
6120 050 300	12.0	0.5	85	18	30	11.6	12.0	●
6120 100 300	12.0	1.0	85	18	30	11.6	12.0	●

●: Standard item

HSR 6...M

HARDMILL

6 flute medium corner radius



• Finishing

r	±0.005

D	Tolerance
D≤6	0 - -0.010
D>6	0 - -0.015

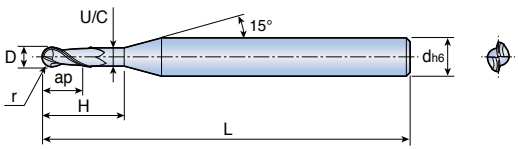
Designation	Dimension (mm)					Grade
	D	r	L	ap	d	TT5505
HSR 6060M 050	6.0	0.5	60	15	6.0	●
6060M 100	6.0	1.0	60	15	6.0	●
6080M 050	8.0	0.5	65	20	8.0	●
6080M 100	8.0	1.0	65	20	8.0	●
6100M 050	10.0	0.5	70	22	10.0	●
6100M 100	10.0	1.0	70	22	10.0	●
6100M 150	10.0	1.5	70	22	10.0	●
6120M 050	12.0	0.5	80	26	12.0	●
6120M 100	12.0	1.0	80	26	12.0	●
6120M 150	12.0	1.5	80	26	12.0	●

●: Standard item

RIB 2

APEXMILL

2 flute long neck ball



r	±0.005

D	Tolerance
D≤6	0 - -0.012

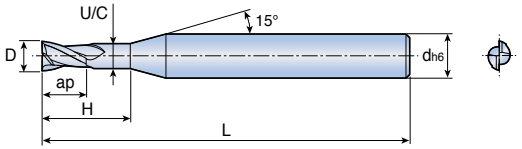
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5515
RIB 2004-0.6x3	0.4	0.2	45	0.6	3	0.36	4	●
2005-0.7x4	0.5	0.25	45	0.7	4	0.45	4	●
2005-0.7x6	0.5	0.25	45	0.7	6	0.45	4	●
2005-0.7x8	0.5	0.25	45	0.7	8	0.45	4	●
2006-0.9x2	0.6	0.3	45	0.9	2	0.55	4	●
2006-0.9x4	0.6	0.3	45	0.9	4	0.55	4	●
2006-0.9x6	0.6	0.3	45	0.9	6	0.55	4	●
2006-0.9x8	0.6	0.3	45	0.9	8	0.55	4	●
2008-1.2x4	0.8	0.4	45	1.2	4	0.75	4	●
2008-1.2x6	0.8	0.4	45	1.2	6	0.75	4	●
2008-1.2x8	0.8	0.4	45	1.2	8	0.75	4	●
2008-1.2x10	0.8	0.4	45	1.2	10	0.75	4	●
2010-1.5x4	1.0	0.5	45	1.5	4	0.97	4	●
2010-1.5x6	1.0	0.5	45	1.5	6	0.97	4	●
2010-1.5x8	1.0	0.5	45	1.5	8	0.95	4	●
2010-1.5x10	1.0	0.5	45	1.5	10	0.95	4	●
2010-1.5x12	1.0	0.5	45	1.5	12	0.93	4	●
2012-1.8x4	1.2	0.6	45	1.8	4	1.15	4	●
2012-1.8x8	1.2	0.6	45	1.8	8	1.17	4	●
2012-1.8x12	1.2	0.6	45	1.8	12	1.13	4	●
2015-2.3x8	1.5	0.75	45	2.3	8	1.45	4	●
2015-2.3x10	1.5	0.75	45	2.3	10	1.45	4	●
2015-2.3x12	1.5	0.75	45	2.3	12	1.43	4	●
2015-2.3x16	1.5	0.75	50	2.3	16	1.41	4	●
2015-2.3x20	1.5	0.75	55	2.3	20	1.39	4	●
2020-3.0x6	2.0	1.0	45	3.0	6	1.95	4	●
2020-3.0x8	2.0	1.0	45	3.0	8	1.95	4	●
2020-3.0x10	2.0	1.0	45	3.0	10	1.93	4	●
2020-3.0x12	2.0	1.0	50	3.0	12	1.93	4	●
2020-3.0x16	2.0	1.0	50	3.0	16	1.91	4	●
2020-3.0x20	2.0	1.0	55	3.0	20	1.89	4	●
2030-4.5x10	3.0	1.5	50	4.5	10	2.85	6	●
2030-4.5x12	3.0	1.5	50	4.5	12	2.85	6	●
2030-4.5x16	3.0	1.5	55	4.5	16	2.85	6	●
2030-4.5x20	3.0	1.5	60	4.5	20	2.85	6	●

●: Standard item

RIF 2

APEXMILL

2 flute long neck flat



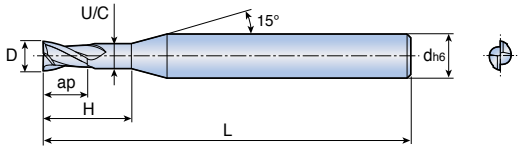
D	Tolerance
D	0 - -0.015

Designation	Dimension (mm)						Grade
	D	L	ap	H	U/C	d	TT5515
RIF 2004-0.6x4	0.4	45	0.6	4	0.37	4	●
2004-0.6x5	0.4	45	0.6	5	0.37	4	●
2005-0.7x4	0.5	45	0.7	4	0.45	4	●
2005-0.7x6	0.5	45	0.7	6	0.45	4	●
2005-0.7x8	0.5	45	0.7	8	0.45	4	●
2006-0.9x6	0.6	45	0.9	6	0.55	4	●
2006-0.9x8	0.6	45	0.9	8	0.55	4	●
2008-1.2x4	0.8	45	1.2	4	0.75	4	●
2008-1.2x6	0.8	45	1.2	6	0.75	4	●
2008-1.2x8	0.8	45	1.2	8	0.75	4	●
2008-1.2x10	0.8	45	1.2	10	0.75	4	●
2010-1.5x6	1.0	45	1.5	6	0.97	4	●
2010-1.5x8	1.0	45	1.5	8	0.95	4	●
2010-1.5x10	1.0	45	1.5	10	0.95	4	●
2010-1.5x12	1.0	45	1.5	12	0.93	4	●
2010-1.5x16	1.0	50	1.5	16	0.93	4	●
2012-1.8x6	1.2	45	1.8	6	1.17	4	●
2012-1.8x8	1.2	45	1.8	8	1.15	4	●
2012-1.8x10	1.2	45	1.8	10	1.15	4	●
2012-1.8x16	1.2	50	1.8	16	1.13	4	●
2015-2.3x6	1.5	45	2.3	6	1.47	4	●
2015-2.3x8	1.5	45	2.3	8	1.45	4	●
2015-2.3x10	1.5	45	2.3	10	1.45	4	●
2015-2.3x12	1.5	45	2.3	12	1.43	4	●
2015-2.3x16	1.5	50	2.3	16	1.41	4	●
2015-2.3x20	1.5	55	2.3	20	1.41	4	●
2016-2.4x10	1.6	45	2.4	10	1.55	4	●
2016-2.4x16	1.6	50	2.4	16	1.53	4	●
2018-2.7x12	1.8	45	2.7	12	1.73	4	●
2018-2.7x16	1.8	50	2.7	16	1.71	4	●

●: Standard item

RIF 2

2 flute long neck flat



D	Tolerance
D	0 - -0.015

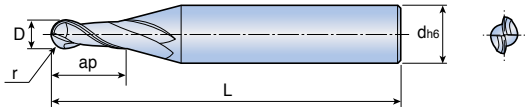
Designation	Dimension (mm)						Grade
	D	L	ap	H	U/C	d	TT5515
RIF 2020-3.0x8	2.0	45	3.0	8	1.95	4	●
2020-3.0x10	2.0	45	3.0	10	1.95	4	●
2020-3.0x12	2.0	45	3.0	12	1.93	4	●
2020-3.0x16	2.0	50	3.0	16	1.91	4	●
2025-3.7x12	2.5	45	3.7	12	2.40	4	●
2025-3.7x16	2.5	55	3.7	16	2.40	4	●
2030-4.5x14	3.0	50	4.5	14	2.85	6	●
2030-4.5x18	3.0	55	4.5	18	2.85	6	●
2030-4.5x20	3.0	60	4.5	20	2.85	6	●
2030-4.5x25	3.0	65	4.5	25	2.85	6	●

●: Standard item

SMB 2

APEXMILL

2 flute miniature ball (Shank 3mm)



2 | H·A 30° | Cutting Condition TF20

r	D≤6	±0.005

D	Tolerance
D≤ 1.5	0 - -0.012
d	0 - -0.006

Designation	Dimension (mm)					Grade
	D	r	L	ap	d	TT5515
SMB 2006-3	0.6	0.3	40	1.1	3	●
2007-3	0.7	0.35	40	1.5	3	●
2008-3	0.8	0.4	40	2.0	3	●
2009-3	0.9	0.45	40	2.2	3	●
2010-3	1.0	0.5	40	2.5	3	●
2012-3	1.2	0.6	40	3.0	3	●
2015-3	1.5	0.75	40	4.0	3	●

●: Standard item

HMF 2

APEXMILL

2 flute miniature flat

D	Tolerance
D≤1.5	0 - -0.012
d=3	0 - -0.006
d=4	0 - -0.008

2 | H·A 30° | Cutting Condition TF20

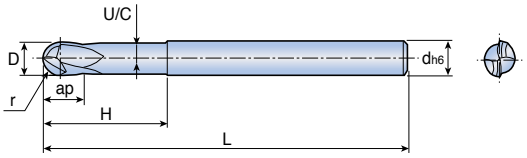
Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5515
HMF 2004-3	0.4	40	0.8	3	●
2005-3	0.5	40	1.0	3	●
2006-3	0.6	40	1.2	3	●
2007-3	0.7	40	1.4	3	●
2008-3	0.8	40	1.6	3	●
2009-3	0.9	40	2.0	3	●
2010-4	1.0	40	2.5	4	●
2012-4	1.2	40	4.0	4	●
2015-4	1.5	40	4.0	4	●

●: Standard item

AMB 2...T

APEXMILL

2 flute long neck ball



r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=d	-0.01 - -0.035

2 | H·A 30° | Cutting Condition TF21

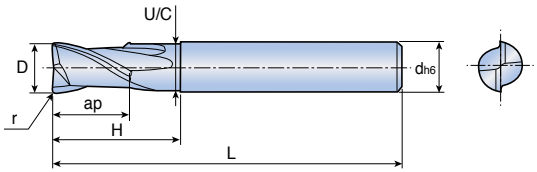
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5515
AMB 2010T-6D	1	0.5	52	1.2	2.5	0.9	6	●
2010T-3D	1	0.5	40	1.2	2.5	0.9	3	●
2020T-6D	2	1.0	52	2.5	5	1.9	6	●
2020T-3D	2	1.0	40	2.5	5	1.9	3	●
2030T	3	1.5	70	4.0	9	2.85	6	●
2030T-3D	3	1.5	40	4.0	9	2.85	3	●
2040T	4	2.0	70	5.0	12	3.85	6	●
2040T-4D	4	2.0	50	5.0	12	3.85	4	●
2050T	5	2.5	80	6.0	15	4.8	6	●
2060T	6	3.0	80	7.0	18	5.8	6	●
2080T	8	4.0	90	10.0	24	7.8	8	●
2100T	10	5.0	100	12.0	30	9.8	10	●
2120T	12	6.0	110	14.0	36	11.8	12	●
2140T	14	7.0	120	17.0	40	13.6	12	●
2160T	16	8.0	125	19.0	48	15.6	16	●

●: Standard item

AMF 2...T

APEXMILL

2 flute long neck corner radius



r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤ 6	0 - -0.012
D> 6	0 - -0.015
D=d	-0.01 - -0.035

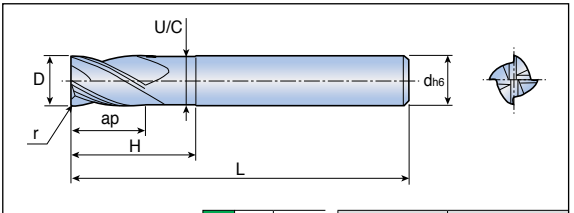
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5515
AMF 2010T	1	0.15	52	1.2	2.5	0.9	6	●
2010T-3D	1	0.15	40	1.2	2.5	0.9	3	●
2020T	2	0.15	52	2.5	5	1.9	6	●
2020T-3D	2	0.15	40	2.5	5	1.9	3	●
2030T	3	0.2	52	5.0	8	2.85	6	●
2030T-3D	3	0.2	40	5.0	8	2.85	3	●
2040T	4	0.2	52	6.0	10	3.85	6	●
2040T-4D	4	0.2	40	6.0	10	3.85	4	●
2050T	5	0.2	52	8.0	15	4.8	6	●
2060T	6	0.3	52	8.0	15	5.8	6	●
2080T	8	0.3	60	12.0	20	7.8	8	●
2100T	10	0.4	68	15.0	25	9.8	10	●
2120T	12	0.4	76	18.0	28	11.6	12	●
2140T	14	0.4	85	20.0	30	13.6	16	●
2160T	16	0.5	90	25.0	35	15.6	16	●

●: Standard item

AMF 4...T

APEXMILL

4 flute long neck corner radius



r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=d	-0.01 - -0.035

4 | H·A 30° | Cutting Condition TF21

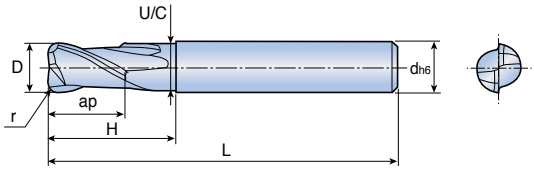
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5515
AMF 4030T	3.0	0.2	52	5	8	2.85	6	●
4030T-3D	3.0	0.2	40	5	8	2.85	3	●
4035T	3.5	0.2	52	5	8	3.35	6	●
4040T	4.0	0.2	52	6	10	3.85	6	●
4040T-4D	4.0	0.2	40	6	10	3.85	4	●
4050T	5.0	0.2	52	8	15	4.8	6	●
4060T	6.0	0.3	52	8	15	5.8	6	●
4080T	8.0	0.3	60	12	20	7.8	8	●
4100T	10.0	0.4	68	15	25	9.8	10	●
4120T	12.0	0.4	76	18	28	11.6	12	●
4140T	14.0	0.4	85	20	30	13.6	16	●
4160T	16.0	0.5	90	25	35	15.6	16	●

●: Standard item

AMR 2...T-R

APEXMILL

2 flute long neck corner radius



r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤ 6	0 - -0.012
D> 6	0 - -0.015
D=d	-0.01 - -0.035

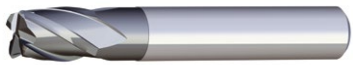
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5515
AMR 2030T-R0.5	3	0.5	52	5	8	2.85	6	●
2030T-R1.0	3	1.0	52	5	8	2.85	6	●
2040T-R0.5	4	0.5	52	6	10	3.85	6	●
2040T-R1.0	4	1.0	52	6	10	3.85	6	●
2060T-R1.0	6	1.0	52	8	15	5.8	6	●
2060T-R1.5	6	1.5	52	8	15	5.8	6	●
2080T-R1.0	8	1.0	60	12	20	7.8	8	●
2080T-R2.0	8	2.0	60	12	20	7.8	8	●
2100T-R1.0	10	1.0	68	15	25	9.8	10	●
2100T-R2.0	10	2.0	68	15	25	9.8	10	●
2120T-R1.0	12	1.0	76	18	28	11.6	12	●
2120T-R2.0	12	2.0	76	18	28	11.6	12	●
2120T-R3.0	12	3.0	76	18	28	11.6	12	●

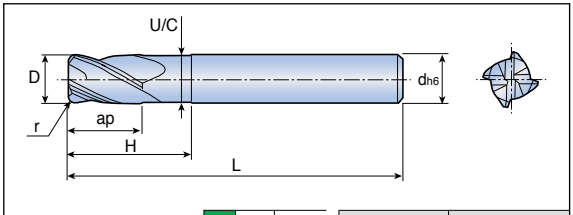
●: Standard item

AMR 4...T-R

APEXMILL

4 flute long neck corner radius





r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=d	-0.01 - -0.035

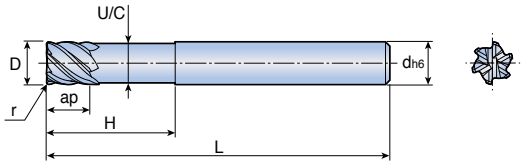
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5515
AMR 4030T-R0.5	3	0.5	52	5	8	2.85	6	●
4030T-R1.0	3	1.0	52	5	8	2.85	6	●
4040T-R0.5	4	0.5	52	6	10	3.85	6	●
4040T-R1.0	4	1.0	52	6	10	3.85	6	●
4060T-R1.0	6	1.0	52	8	15	5.8	6	●
4060T-R1.5	6	1.5	52	8	15	5.8	6	●
4080T-R1.0	8	1.0	60	12	20	7.8	8	●
4080T-R2.0	8	2.0	60	12	20	7.8	8	●
4100T-R1.0	10	1.0	68	15	25	9.8	10	●
4100T-R1.5	10	1.5	68	15	25	9.8	10	●
4100T-R2.0	10	2.0	68	15	25	9.8	10	●
4120T-R1.0	12	1.0	76	18	28	11.6	12	●
4120T-R2.0	12	2.0	76	18	28	11.6	12	●
4120T-R3.0	12	3.0	76	18	28	11.6	12	●

●: Standard item

AMR 6...T-R

APEXMILL

6 flute long neck corner radius



r		
	D≤6	±0.005
	D>6	±0.010

D	Tolerance
D=d	-0.01 - -0.035

• Finishing

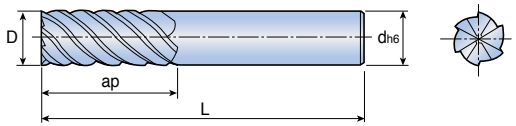
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT5515
AMR 6060T-R0.5	6	0.5	52	8	15	5.8	6	●
6080T-R0.5	8	0.5	60	12	20	7.8	8	●
6100T-R1.0	10	1.0	68	15	25	9.8	10	●
6120T-R1.0	12	1.0	76	18	28	11.6	12	●

●: Standard item

SEH 6...T

APEXMILL

6 flute medium flat



D	Tolerance
D≤6	-0.015 - -0.035
6<D≤10	-0.015 - -0.040
10<D≤20	-0.015 - -0.045

• Finishing

Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5515
SEH 6030T	3	47	10	6	●
6040T	4	47	12	6	●
6050T	5	52	15	6	●
6060T	6	52	15	6	●
6070T	7	60	18	8	●
6080T	8	60	18	8	●
6090T	9	68	22	10	●
6100T	10	68	22	10	●
6120T	12	76	26	12	●
6140T	14	85	32	14	●
6160T	16	90	32	16	●
6180T	18	110	38	18	●
6200T	20	110	38	20	●

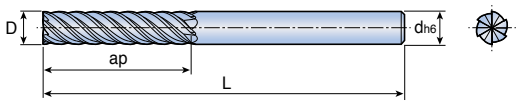
• Weldon shank is available on request (Ordering example: SEHW 6...T)

●: Standard item

SEH 6...XLT

APEXMILL

6 flute extra long flat



D	Tolerance
D≤6	-0.015 - -0.035
6<D≤10	-0.015 - -0.040
10<D≤20	-0.015 - -0.045

• Finishing

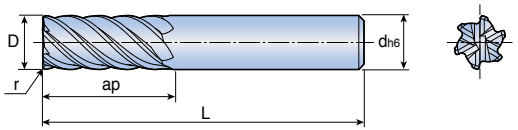
Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5515
SEH 6060XLT	6	80	25	6	●
6080XLT	8	90	35	8	●
6100XLT	10	100	45	10	●
6120XLT	12	110	55	12	●
6160XLT	16	125	70	16	●
6200XLT	20	150	75	20	●

●: Standard item

SEH 6...T-R

APEXMILL

6 flute medium corner radius



r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D ≤ 6	-0.015 - -0.035
6 < D ≤ 10	-0.015 - -0.040
10 < D ≤ 20	-0.015 - -0.045

• Finishing

6 | H·A 45° | Cutting Condition TF23

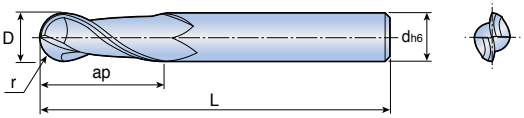
Designation	Dimension (mm)					Grade
	D	r	L	ap	d	TT5515
SEH 6060T-R0.5	6	0.5	52	15	6	●
6080T-R0.5	8	0.5	60	18	8	●
6100T-R0.5	10	0.5	68	22	10	●
6100T-R1.0	10	1.0	68	22	10	●
6120T-R0.5	12	0.5	76	26	12	●
6120T-R1.0	12	1.0	76	26	12	●
6160T-R1.0	16	1.0	90	32	16	●
6160T-R1.5	16	1.5	90	32	16	●
6200T-R1.0	20	1.0	110	38	20	●
6200T-R1.5	20	1.5	110	38	20	●
6200T-R2.0	20	2.0	110	38	20	●

●: Standard item

SBE 2...S

APEXMILL

2 flute short ball



2 | H·A 30° | Cutting Condition TF24

r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤ 6	0 - -0.012
D> 6	0 - -0.015
D=d	-0.01 - -0.035

Designation	Dimension (mm)					Grade
	D	r	L	ap	d	TT5515
SBE 2020S	2	1.0	50	3	6	●
2030S	3	1.5	50	4	6	●
2040S	4	2.0	54	5	6	●
2050S	5	2.5	54	6	6	●
2060S	6	3.0	54	7	6	●
2080S	8	4.0	58	9	8	●
2100S	10	5.0	66	11	10	●
2120S	12	6.0	73	12	12	●
2160S	16	8.0	82	16	16	●
2180S-18	18	9.0	84	18	18	●
2200S	20	10.0	92	20	20	●

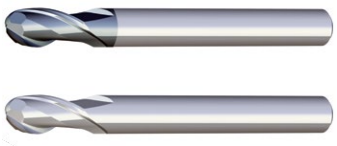
• Weldon shank is available on request (Ordering example: SBEW 2...S)

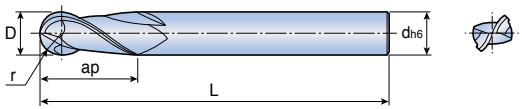
●: Standard item

SBE 2...T

APEXMILL

2 flute medium ball





2 | H·A 30° | Cutting Condition TF25

r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=d	-0.01 - -0.035

Designation	Dimension (mm)					Grades	
	D	r	L	ap	d	TT5515	UF10
SBE 2010T	1.0	0.5	50	1.5	4	●	●
2010T-6	1.0	0.5	50	1.5	6	●	
2012T	1.2	0.6	50	1.8	4	●	
2015T	1.5	0.75	50	2.3	4	●	●
2015T-6	1.5	0.75	50	2.3	6	●	
2015T-5x70	1.5	0.75	70	5.0	6	●	
2020T	2.0	1.0	50	3.0	4	●	●
2020T-6	2.0	1.0	50	3.0	6	●	●
2020T-7x70	2.0	1.0	70	7.0	6	●	
2025T	2.5	1.25	50	3.8	4	●	
2025T-6	2.5	1.25	50	3.8	6	●	
2030T	3.0	1.5	70	8.0	6	●	●
2030T-10x70	3.0	1.5	70	10.0	6	●	
2040T	4.0	2.0	70	8.0	6	●	●
2040T-12x70	4.0	2.0	70	12.0	6	●	
2050T	5.0	2.5	80	12.0	6	●	●
2050T-15x80	5.0	2.5	80	15.0	6	●	
2060T	6.0	3.0	80	12.0	6	●	●
2060T-15x80	6.0	3.0	80	15.0	6	●	
2070T	7.0	3.5	90	15.0	8	●	●
2080T	8.0	4.0	90	15.0	8	●	●
2080T-20x90	8.0	4.0	90	20.0	8	●	
2090T	9.0	4.5	100	20.0	10	●	●
2100T	10.0	5.0	100	20.0	10	●	●
2100T-25x100	10.0	5.0	100	25.0	10	●	
2120T	12.0	6.0	110	25.0	12	●	●
2120T-30x100	12.0	6.0	100	30.0	12	●	
2140T	14.0	7.0	120	30.0	12	●	●
2160T	16.0	8.0	125	35.0	16	●	●
2180T	18.0	9.0	150	40.0	20	●	●
2200T	20.0	10.0	150	40.0	20	●	●

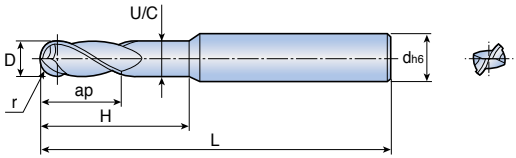
• Weldon shank is available on request (Ordering example: SBEW 2...T)

●: Standard item

SBE 2...LT

APEXMILL

2 flute long ball



r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤ 6	0 - -0.020
6< D≤ 10	0 - -0.025
10< D≤ 20	0 - -0.030

Designation	Dimension (mm)							Grades	
	D	r	L	ap	H	U/C	d	TT5515	UF10N
SBE 2020LT	2	1.0	100	4	20	1.85	6	●	
2030LT	3	1.5	100	4	35	2.85	6	●	●
2040LT	4	2.0	100	6	35	3.85	6	●	●
2050LT	5	2.5	115	7	40	4.8	8	●	●
2060LT	6	3.0	115	8	45	5.8	8	●	●
2060LT-6D	6	3.0	115	8	45	5.8	6	●	●
2060LT-6D WU	6	3.0	115	8	-	-	6	●	
2070LT	7	3.5	125	10	45	6.8	10	●	●
2080LT	8	4.0	125	12	55	7.8	10	●	●
2080LT-8D	8	4.0	125	12	55	7.8	8	●	●
2080LT-8D WU	8	4.0	125	12	-	-	8	●	
2090LT	9	4.5	140	15	65	8.8	10	●	●
2100LT	10	5.0	140	15	65	9.8	10	●	●
2100LT-WU	10	5.0	140	15	-	-	10	●	
2120LT	12	6.0	150	18	75	11.8	12	●	●
2120LT-WU	12	6.0	150	18	-	-	12	●	
2140LT	14	7.0	155	23	75	13.6	16	●	●
2160LT	16	8.0	155	30	75	15.6	16	●	●
2160LT-WU	16	8.0	155	30	-	-	16	●	

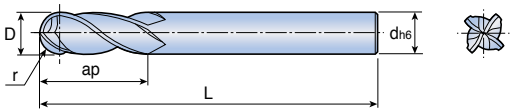
• **WU**: Without under cut

●: Standard item

SBE 4...T

APEXMILL

4 flute medium ball



4 | H·A 30° | Cutting Condition TF26

r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=d	-0.01 - -0.035

Designation	Dimension (mm)					Grades	
	D	r	L	ap	d	TT5515	UF10N
SBE 4010T	1.0	0.5	50	2.5	4	●	
4010T-6	1.0	0.5	50	2.5	6	●	
4015T	1.5	0.75	50	4.0	4	●	
4015T-6	1.5	0.75	50	4.0	6	●	
4020T	2.0	1.0	50	5.0	6	●	
4030T	3.0	1.5	57	8.0	6	●	
4035T	3.5	1.75	70	8.0	6	●	
4040T	4.0	2.0	70	8.0	6	●	●
4050T	5.0	2.5	80	12.0	6	●	●
4060T	6.0	3.0	80	12.0	6	●	●
4070T	7.0	3.5	90	15.0	8	●	●
4080T	8.0	4.0	90	15.0	8	●	●
4090T	9.0	4.5	100	20.0	10	●	●
4100T	10.0	5.0	100	20.0	10	●	●
4120T	12.0	6.0	110	25.0	12	●	●
4160T	16.0	8.0	125	35.0	16	●	●
4180T	18.0	9.0	150	40.0	20	●	●
4200T	20.0	10.0	150	40.0	20	●	●

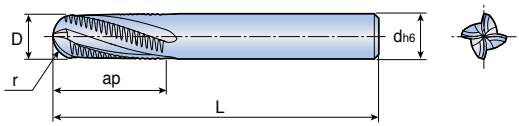
• Weldon shank is available on request (Ordering example: SBEW 4...T)

●: Standard item

REB ...L

APEXMILL

3-4 flute rough long ball



3-4 | H·A 20° | Cutting Condition TF27

r	±0.02

D	Tolerance	D	Tolerance
D≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

Designation	Dimension (mm)						Grade
		D	r	L	ap	d	TT5515
REB 3060L	3	6	3	57	16	6	●
3080L	3	8	4	63	16	8	●
4100L	4	10	5	72	22	10	●
4120L	4	12	6	83	26	12	●
4140L-14	4	14	7	83	26	14	●
4160L	4	16	8	92	32	16	●
4180L-18	4	18	9	92	32	18	●
4200L	4	20	10	104	38	20	●

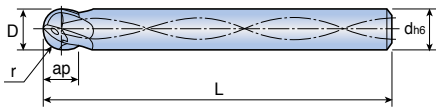
• Weldon shank is available on request (Ordering example: REBW ....L)

●: Standard item

SBO 2...T

APEXMILL

2 flute through coolant ball



2 | H·A 30° | Cutting Condition TF25

r	D≤6	±0.005
	D>6	±0.010

D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=d	-0.01 - -0.035

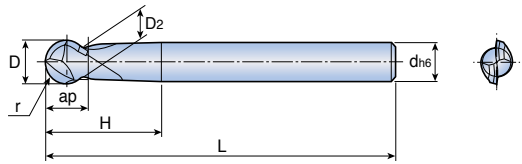
Designation	Dimension (mm)					Grade
	D	r	L	ap	d	TT5525
SBO 2060T	6	3	91	6	8	●
2080T	8	4	91	8	8	●
2100T	10	5	103	10	10	●
2120T	12	6	118	12	12	●
2140T	14	7	124	14	12	●

●: Standard item

BES 2...T

APEXMILL

2 flute spherical ball



2 | H·A 30° | Cutting Condition TF25

r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=d	-0.01 - -0.035

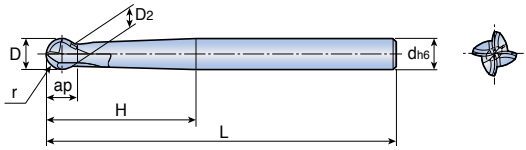
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	D2	d	TT5515
BES 2030T	3	1.5	80	3.3	28.5	2.52	6	●
2040T	4	2.0	80	4.1	28.5	3.35	6	●
2050T	5	2.5	80	5.4	38.0	4.19	6	●
2060T	6	3.0	100	6.1	28.0	5.03	6	●
2080T	8	4.0	100	8.2	33.0	6.71	8	●
2100T	10	5.0	100	9.7	40.0	8.39	10	●
2120T	12	6.0	110	12.3	49.0	10.06	12	●
2160T	16	8.0	155	15.4	58.0	13.42	16	●

●: Standard item

BES 4...T

APEXMILL

4 flute spherical ball



4 | H·A 30° | Cutting Condition TF26

r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=d	-0.01 - -0.035

Designation	Dimension (mm)							Grade
	D	r	L	ap	H	D2	d	TT5515
BES 4030T	3	1.5	80	3.3	28.5	2.52	6	●
4040T	4	2.0	80	4.1	28.5	3.35	6	●
4050T	5	2.5	80	5.4	38.0	4.19	6	●
4060T	6	3.0	100	6.1	28.0	5.03	6	●
4080T	8	4.0	100	8.2	33.0	6.71	8	●
4100T	10	5.0	100	9.7	40.0	8.39	10	●
4120T	12	6.0	110	12.3	49.0	10.06	12	●
4160T	16	8.0	155	15.4	58.0	13.42	16	●

●: Standard item

TSE 2...M

APEXMILL

2 flute medium flat

D	Tolerance	D	Tolerance
D≤3	-0.014 - -0.028	10< D≤18	-0.032 - -0.059
3< D≤6	-0.020 - -0.038	18< D≤30	-0.040 - -0.073
6< D≤10	-0.025 - -0.047		

2 | H·A 30° | Cutting Condition TF28

Designation	Dimension (mm)				Grades		
	D	L	ap	d	TT5515	TT5525	UF10
TSE 2010M-4	1.0	40	3	4	●	●	●
2010M	1.0	42	3	6	●	●	●
2015M-4	1.5	40	4	4	●	●	●
2015M	1.5	42	4	6	●	●	●
2020M-4	2.0	40	6	4	●	●	●
2020M	2.0	42	6	6	●	●	●
2025M-4	2.5	40	8	4	●	●	●
2025M	2.5	42	8	6	●	●	●
2030M	3.0	57	10	6	●	●	●
2035M-4	3.5	50	12	4	●		●
2035M	3.5	47	10	6	●	●	●
2040M-4	4.0	50	12	4	●	●	●
2040M	4.0	57	12	6	●	●	●
2045M	4.5	57	14	6	●	●	●
2050M-5	5.0	50	14	5	●	●	●
2050M	5.0	57	14	6	●	●	●
2055M	5.5	57	16	6	●		
2060M	6.0	57	16	6	●	●	●
2065M-7	6.5	60	20	7		●	
2065M	6.5	60	20	8	●	●	●
2070M	7.0	60	20	8	●		●
2080M	8.0	63	20	8	●	●	●
2085M	8.5	72	22	10	●		●
2090M	9.0	68	25	10	●	●	●
2100M	10.0	72	22	10	●	●	●
2110M	11.0	76	30	12	●	●	●
2120M	12.0	83	25	12	●	●	●
2130M	13.0	85	35	14	●	●	●
2140M-14	14.0	83	25	14	●	●	●
2150M	15.0	92	32	16	●	●	●
2160M	16.0	92	32	16	●	●	●
2180M-18	18.0	92	32	18	●	●	●
2200M	20.0	104	38	20	●	●	●

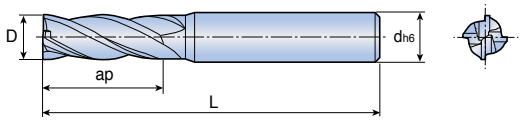
• Weldon shank is available on request (Ordering example: TSEW 2...M)

●: Standard item

TSE 4...M

APEXMILL

4 flute medium flat



D	Tolerance	D	Tolerance
D≤3	-0.014 - -0.028	10< D≤18	-0.032 - -0.059
3< D≤6	-0.020 - -0.038	18< D≤30	-0.040 - -0.073
6< D≤10	-0.025 - -0.047		

4 | H·A 30° | Cutting Condition TF29

Designation	Dimension (mm)				Grades		
	D	L	ap	d	TT5515	TT5525	UF10
TSE 4020M	2.0	42	6	6	●	●	●
4025M-4	2.5	40	8	4	●	●	●
4025M	2.5	42	8	6	●		●
4030M	3.0	57	10	6	●	●	●
4035M-4	3.5	50	12	4	●		●
4035M	3.5	47	10	6	●	●	●
4040M-4	4.0	50	12	4	●	●	●
4040M	4.0	57	12	6	●	●	●
4045M	4.5	57	12	6	●		
4050M	5.0	57	14	6	●	●	●
4060M	6.0	57	16	6	●	●	●
4070M	7.0	60	20	8	●	●	●
4080M	8.0	63	20	8	●	●	●
4090M	9.0	68	25	10	●	●	●
4100M	10.0	72	22	10	●	●	●
4110M	11.0	76	30	12	●	●	●
4120M	12.0	83	25	12	●	●	●
4130M	13.0	85	35	14	●	●	●
4140M-14	14.0	83	25	14	●	●	●
4150M	15.0	92	32	16	●	●	●
4160M	16.0	92	32	16	●	●	●
4180M-18	18.0	92	32	18	●	●	●
4200M	20.0	104	38	20	●	●	●
4250M	25.0	140	65	25	●	●	●

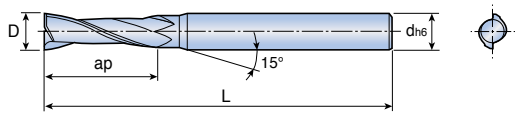
• Weldon shank is available on request (Ordering example: TSEW 4...M)

●: Standard item

HES 2...LT

APEXMILL

2 flute long flat



D	Tolerance
D≤6	-0.015 - -0.035
6<D≤10	-0.015 - -0.040
10<D≤20	-0.015 - -0.045

2 | H·A 30° | Cutting Condition TF30

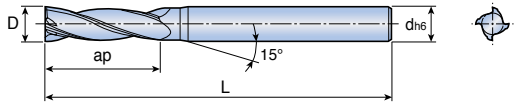
Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5525
HES 2030LT	3	70	10	6	●
2040LT	4	70	12	6	●
2050LT	5	80	15	6	●
2060LT	6	80	15	6	●
2080LT	8	90	20	8	●
2100LT	10	100	25	10	●
2120LT	12	110	30	12	●
2140LT	14	125	35	16	●
2160LT	16	125	40	16	●
2180LT	18	150	45	20	●
2200LT	20	150	45	20	●

●: Standard item

HES 4...LT

APEXMILL

4 flute long flat



D	Tolerance
D≤6	-0.015 - -0.035
6<D≤10	-0.015 - -0.040
10<D≤20	-0.015 - -0.045

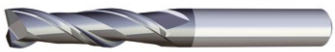
Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5525
HES 4030LT	3	70	10	6	●
4040LT	4	70	12	6	●
4050LT	5	80	15	6	●
4060LT	6	80	15	6	●
4080LT	8	90	20	8	●
4100LT	10	100	25	10	●
4120LT	12	110	30	12	●
4140LT	14	125	35	16	●
4160LT	16	125	40	16	●
4180LT	18	150	45	20	●
4200LT	20	150	45	20	●

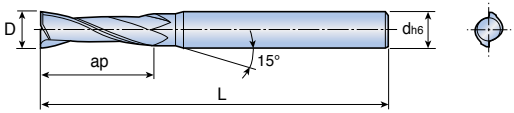
●: Standard item

HES 2...XLT

APEXMILL

2 flute extra long flat





D	Tolerance
D≤6	-0.015 - -0.035
6<D≤10	-0.015 - -0.040
10<D≤20	-0.015 - -0.045

2 | H·A 30° | Cutting Condition TF30

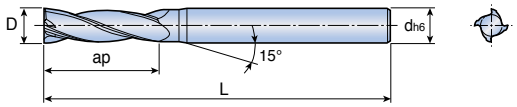
Designation	Dimension (mm)				Grades	
	D	L	ap	d	TT5515	TT5525
HES 2030XLT	3	70	20	6	●	●
2040XLT	4	70	20	6	●	●
2050XLT	5	80	25	6	●	●
2060XLT	6	80	25	6	●	●
2080XLT	8	90	35	8	●	●
2100XLT	10	100	45	10	●	●
2120XLT	12	110	55	12	●	●
2140XLT	14	125	60	16	●	●
2160XLT	16	125	70	16	●	●
2180XLT	18	150	75	20	●	●
2200XLT	20	150	75	20	●	●

●: Standard item

HES 4...XLT

APEXMILL

4 flute extra long flat



D	Tolerance
D≤ 6	-0.015 - -0.035
6< D≤ 10	-0.015 - -0.040
10< D≤ 20	-0.015 - -0.045

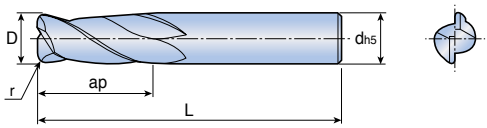
Designation	Dimension (mm)				Grades	
	D	L	ap	d	TT5515	TT5525
HES 4030XLT	3	70	20	6	●	●
4040XLT	4	70	20	6	●	●
4050XLT	5	80	25	6	●	●
4060XLT	6	80	25	6	●	●
4080XLT	8	90	35	8	●	●
4100XLT	10	100	45	10	●	●
4120XLT	12	110	55	12	●	●
4140XLT	14	125	60	16	●	●
4160XLT	16	125	70	16	●	●
4180XLT	18	150	75	20	●	●
4200XLT	20	150	75	20	●	●

●: Standard item

HES 2...T-R

APEXMILL

2 flute medium corner radius



2 | H·A 30° | Cutting Condition TF28

r	D≤6	±0.005
	D>6	±0.010

D	Tolerance
D≤6	-0.015 - -0.035
6<D≤10	-0.015 - -0.040
10<D≤20	-0.015 - -0.045

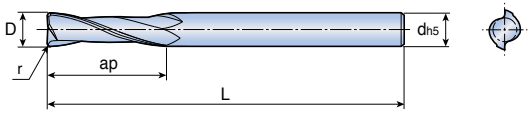
Designation	Dimension (mm)					Grades	
	D	r	L	ap	d	TT5515	TT5525
HES 2030T-R0.5	3	0.5	47	10	6	●	●
2040T-R0.5	4	0.5	47	12	6	●	●
2050T-R0.5	5	0.5	52	15	6	●	●
2060T-R0.5	6	0.5	52	15	6	●	●
2060T-R1.0	6	1.0	52	15	6	●	●
2080T-R0.5	8	0.5	60	20	8	●	●
2080T-R1.0	8	1.0	60	20	8	●	●
2080T-R1.5	8	1.5	60	20	8	●	●
2080T-R2.0	8	2.0	60	20	8	●	●
2100T-R0.5	10	0.5	68	25	10	●	●
2100T-R1.0	10	1.0	68	25	10	●	●
2100T-R1.5	10	1.5	68	25	10	●	●
2100T-R2.0	10	2.0	68	25	10	●	●
2100T-R2.5	10	2.5	68	25	10	●	●
2100T-R3.0	10	3.0	68	25	10	●	●
2120T-R0.5	12	0.5	76	30	12	●	●
2120T-R1.0	12	1.0	76	30	12	●	●
2120T-R1.5	12	1.5	76	30	12	●	●
2120T-R2.0	12	2.0	76	30	12	●	●
2120T-R2.5	12	2.5	76	30	12	●	●
2120T-R3.0	12	3.0	76	30	12	●	●
2160T-R0.5	16	0.5	90	40	16	●	●
2160T-R1.0	16	1.0	90	40	16	●	●
2160T-R1.5	16	1.5	90	40	16	●	●
2160T-R2.0	16	2.0	90	40	16	●	●
2160T-R3.0	16	3.0	90	40	16	●	●
2200T-R0.5	20	0.5	110	45	20	●	●
2200T-R1.0	20	1.0	110	45	20	●	●
2200T-R1.5	20	1.5	110	45	20	●	●
2200T-R2.0	20	2.0	110	45	20	●	●
2200T-R3.0	20	3.0	110	45	20	●	●

●: Standard item

HES 2...LT-R

APEXMILL

2 flute long corner radius



r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	-0.015 - -0.035
6<D≤10	-0.015 - -0.040
10<D≤20	-0.015 - -0.045

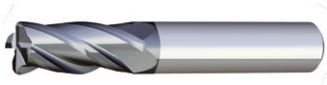
Designation	Dimension (mm)					Grades	
	D	r	L	ap	d	TT5515	TT5525
HES 2030LT-R0.5	3	0.5	70	10	6	●	●
2040LT-R0.5	4	0.5	70	12	6	●	●
2050LT-R0.5	5	0.5	80	15	6	●	●
2060LT-R0.5	6	0.5	80	15	6	●	●
2060LT-R1.0	6	1.0	80	15	6	●	●
2080LT-R0.5	8	0.5	90	20	8	●	●
2080LT-R1.0	8	1.0	90	20	8	●	●
2100LT-R0.5	10	0.5	100	25	10	●	●
2100LT-R1.0	10	1.0	100	25	10	●	●
2120LT-R0.5	12	0.5	110	30	12	●	●
2120LT-R1.0	12	1.0	110	30	12	●	●

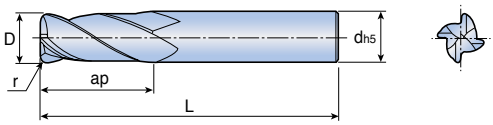
●: Standard item

HES 4...T-R

APEXMILL

4 flute medium corner radius





r	
D≤6	±0.005
D>6	±0.010

D	Tolerance
D≤6	-0.015 - -0.035
6<D≤10	-0.015 - -0.040
10<D≤20	-0.015 - -0.045

4 | H·A 30° | Cutting Condition TF31

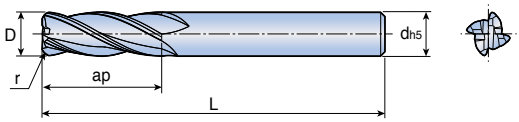
Designation	Dimension (mm)					Grades	
	D	r	L	ap	d	TT5515	TT5525
HES 4030T-R0.3	3	0.3	47	10	6	●	●
4040T-R0.3	4	0.3	47	12	6	●	●
4050T-R0.3	5	0.3	52	15	6	●	●
4060T-R0.5	6	0.5	52	15	6	●	●
4060T-R1.0	6	1.0	52	15	6	●	●
4080T-R0.5	8	0.5	60	20	8	●	●
4080T-R1.0	8	1.0	60	20	8	●	●
4080T-R1.5	8	1.5	60	20	8	●	●
4080T-R2.0	8	2.0	60	20	8	●	●
4100T-R0.5	10	0.5	68	25	10	●	●
4100T-R1.0	10	1.0	68	25	10	●	●
4100T-R1.5	10	1.5	68	25	10	●	●
4100T-R2.0	10	2.0	68	25	10	●	●
4100T-R2.5	10	2.5	68	25	10	●	●
4100T-R3.0	10	3.0	68	25	10	●	●
4120T-R0.5	12	0.5	76	30	12	●	●
4120T-R1.0	12	1.0	76	30	12	●	●
4120T-R1.5	12	1.5	76	30	12	●	●
4120T-R2.0	12	2.0	76	30	12	●	●
4120T-R2.5	12	2.5	76	30	12	●	●
4120T-R3.0	12	3.0	76	30	12	●	●
4160T-R0.5	16	0.5	90	40	16	●	●
4160T-R1.0	16	1.0	90	40	16	●	●
4160T-R1.5	16	1.5	90	40	16	●	●
4160T-R2.0	16	2.0	90	40	16	●	●
4160T-R3.0	16	3.0	90	40	16	●	●
4200T-R0.5	20	0.5	110	45	20	●	●
4200T-R1.0	20	1.0	110	45	20	●	●
4200T-R1.5	20	1.5	110	45	20	●	●
4200T-R2.0	20	2.0	110	45	20	●	●
4200T-R3.0	20	3.0	110	45	20	●	●

●: Standard item

HES 4...LT-R

APEXMILL

4 flute long corner radius



r		
	D≤6	±0.005
	D>6	±0.010

D	Tolerance
D≤ 6	-0.015 - -0.035
6< D≤ 10	-0.015 - -0.040
10< D≤ 20	-0.015 - -0.045

Designation	Dimension (mm)					Grades	
	D	r	L	ap	d	TT5515	TT5525
HES 4040LT-R0.5	4	0.5	70	12	6	●	●
4040LT-R1.0	4	1.0	70	12	6	●	●
4060LT-R0.5	6	0.5	80	15	6	●	●
4060LT-R1.0	6	1.0	80	15	6	●	●
4080LT-R0.5	8	0.5	90	20	8	●	●
4080LT-R1.0	8	1.0	90	20	8	●	●
4100LT-R0.5	10	0.5	100	25	10	●	●
4100LT-R1.0	10	1.0	100	25	10	●	●
4120LT-R0.5	12	0.5	110	30	12	●	●
4120LT-R1.0	12	1.0	110	30	12	●	●

●: Standard item

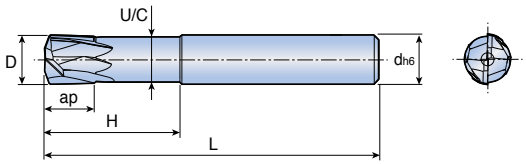
HFM 2

APEXMILL

2 flute high feed flat

SOLIDFEED

• High Feed Machining (H.F.M)



D	Tolerance
D≤ 6	-0.015 - -0.030
6 < D ≤ 10	-0.015 - -0.035
10 < D ≤ 20	-0.015 - -0.040

Designation	Dimension (mm)						Grade
	D	L	ap	H	U/C	d	TT5515
HFM 2040	4	47	4	10	3.9	6	●
2060	6	52	6	16	5.5	6	●
2080	8	60	8	22	7.3	8	●
2100	10	68	10	28	9.2	10	●
2120	12	76	12	33	11.0	12	●

●: Standard item

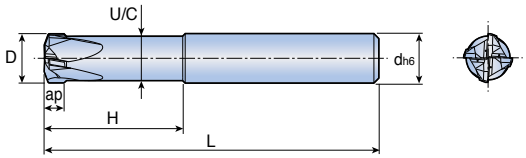
HFM 4

APEXMILL

4 flute high feed flat

SOLIDFEED

• High Feed Machining (H.F.M)



D	Tolerance
D≤ 6	-0.015 - -0.030
6 < D ≤ 10	-0.015 - -0.035
10 < D ≤ 20	-0.015 - -0.040

Designation	Dimension (mm)						Grade
	D	L	ap	H	U/C	d	TT5515
HFM 4060	6	52	2.5	16	5.4	6	●
4080	8	60	3.5	24	7.2	8	●
4100	10	68	4.0	28	9.2	10	●
4120	12	76	5.0	33	11.0	12	●

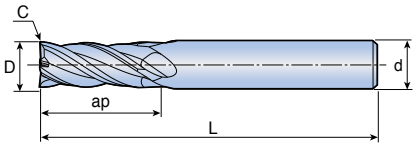
●: Standard item

CFM 4...M

APEXMILL

4 flute corner chamfer

• Vibration free mill



D	Tolerance	D	Tolerance
3< D≤6	-0.020 - -0.038	10< D≤18	-0.032 - -0.059
6< D≤10	-0.025 - -0.047	18< D≤30	-0.040 - -0.073

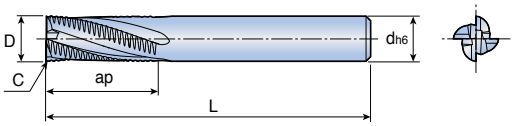
Designation	Dimension (mm)					Grade
	D	C	L	ap	d	TT5525
CFM 4060M	6	0.25	57	14	6	●
4080M	8	0.3	63	18	8	●
4100M	10	0.4	72	22	10	●
4120M	12	0.5	83	26	12	●
4160M	16	0.6	100	34	16	●
4200M	20	0.6	110	42	20	●
4250M	25	0.6	121	52	25	●

●: Standard item

REL ...L

APEXMILL

3-4 flute rough long flat



D	Tolerance	D	Tolerance
D≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

Designation	Dimension (mm)						Grade
		D	C	L	ap	d	TT5515
REL 3060L	3	6	0.38	57	16	6	●
3080L	3	8	0.38	63	16	8	●
4100L	4	10	0.61	72	22	10	●
4120L	4	12	0.61	83	26	12	●
4140L-14	4	14	0.61	83	26	14	●
4160L	4	16	0.61	92	32	16	●
4200L	4	20	0.61	104	38	20	●

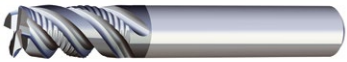
• Weldon shank is available on request (Ordering example: RELW ....L)

●: Standard item

FSM 4...M

APEXMILL

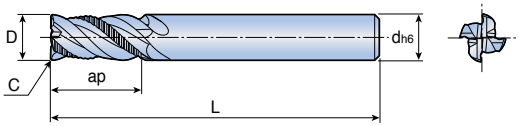
4 flute medium corner chamfer



MULTIMILL

• MULTIMILL (Rough + Finish)

4 | H·A 45° | Cutting Condition TF33



D	Tolerance	D	Tolerance
3< D≤6	-0.020 - -0.038	10< D≤18	-0.032 - -0.059
6< D≤10	-0.025 - -0.047	18< D≤30	-0.040 - -0.073

Designation	Dimension (mm)					Grade
	D	C	L	ap	d	TT5525
FSM 4060M	6	0.25	57	14	6	●
4080M	8	0.3	63	18	8	●
4100M	10	0.3	72	22	10	●
4120M	12	0.4	83	26	12	●
4140M	14	0.4	83	30	14	●
4160M	16	0.6	92	34	16	●
4200M	20	0.6	104	42	20	●
4250M	25	0.6	121	52	25	●

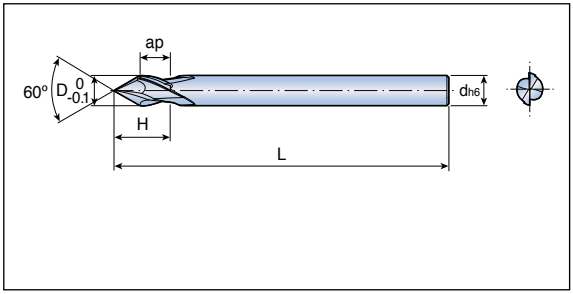
• Weldon shank is available on request (Ordering example: REHW ....S)

●: Standard item

CEM 2...-C60

APEXMILL

2 flute, 60° chamfer



- Multi-function
  - Chamfer boring, chamfer milling, side milling

2 | H·A 30° | Cutting Condition TF34

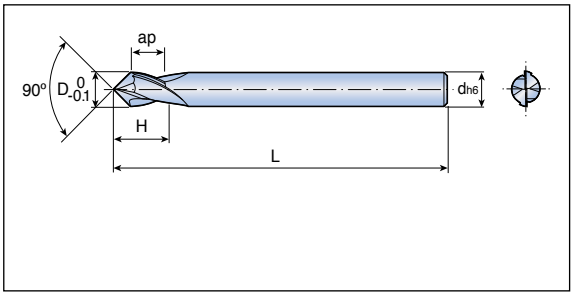
Designation	Dimension (mm)					Grade
	D	L	ap	H	d	UF10
CEM 2040-C60	4	70	4	7.4	6	●
2060-C60	6	80	6	11.2	6	●
2080-C60	8	90	8	14.9	8	●
2100-C60	10	100	10	18.6	10	●
2120-C60	12	110	12	22.3	12	●
2160-C60	16	125	16	29.8	16	●
2200-C60	20	150	20	37.3	20	●

●: Standard item

CEM 2

APEXMILL

2 flute, 90° chamfer



- Multi-function
  - Chamfer boring, chamfer milling, side milling,
  - *centering, V-slot milling

2 | H·A 30° | Cutting Condition TF34

Designation	Dimension (mm)					Grade
	D	L	ap	H	d	UF10
CEM 2040	4	70	4	6	6	●
2060	6	80	6	9	6	●
2080	8	90	8	12	8	●
2100	10	100	10	15	10	●
2120	12	110	12	18	12	●
2160	16	125	16	24	16	●
2200	20	150	20	30	20	●

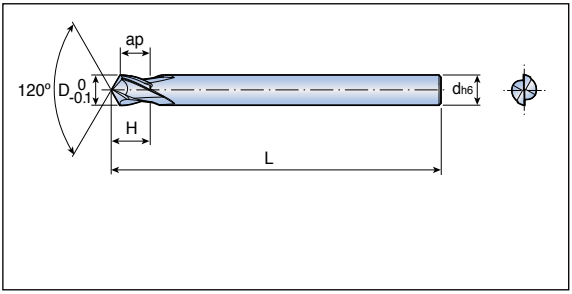
- *Centering of 90˚ is only applicable on cast iron & non-ferrous material.

●: Standard item

CEM 2...-C120

APEXMILL

2 flute, 120° chamfer



- Multi-function
  - Chamfer boring, chamfer milling, side milling, centering, V-slot milling, drilling

2 | H·A 30° | Cutting Condition TF34

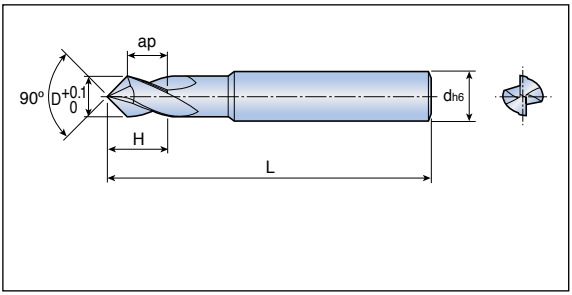
Designation	Dimension (mm)					Grade
	D	L	ap	H	d	UF10
CEM 2040-C120	4	70	4	5.1	6	●
2060-C120	6	80	6	7.7	6	●
2080-C120	8	90	8	10.3	8	●
2100-C120	10	100	10	12.8	10	●
2120-C120	12	110	12	15.4	12	●
2160-C120	16	125	16	20.6	16	●
2200-C120	20	150	20	25.7	20	●

●: Standard item

CEM

APEXMILL

Top-solid - Economical type



- Multi-function
  - Centering, chamfering, V-shape grooving and side-milling

2 | H·A 30° | Cutting Condition TF34

Designation	Dimension (mm)					Grade
	D	L	ap	H	d	UF10
CEM 1016	10	115	10	15	16	●
1216	12	145	14	20	16	●
1620	16	150	15	23	20	●
2025	20	155	15	25	25	●

●: Standard item

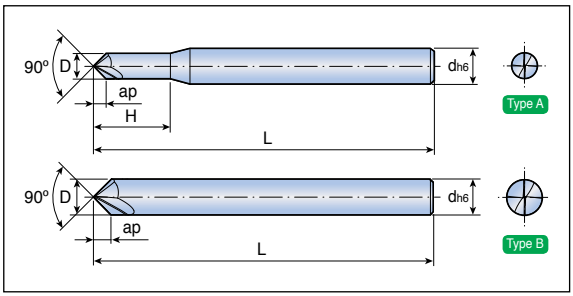
ECEM 2

APEXMILL

2 flute, 90° chamfer - Economical type

• Multi-function
-Chamfer boring, chamfer milling, centering, V-slot milling

2 | Cutting Condition TF35



Designation	Dimension (mm)						Grade
	D	L	ap	H	d	Type	UF10
ECEM 2020	2	57	1.0	6	6	A	●
2030	3	57	1.5	9	6	A	●
2040	4	57	2.0	12	6	A	●
2060	6	57	2.9	-	6	B	●
2080	8	63	3.8	-	8	B	●
2100	10	72	4.9	-	10	B	●
2120	12	83	5.9	-	12	B	●
2160	16	92	7.9	-	16	B	●

●: Standard item

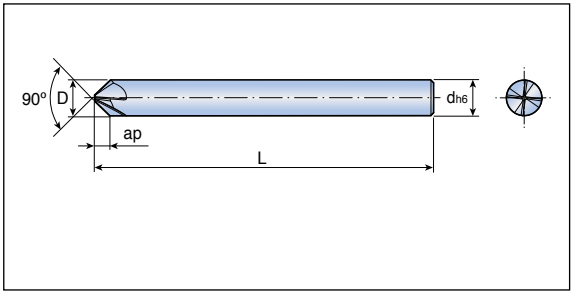
ECEM 4

APEXMILL

4 flute, 90° chamfer - Economical type

• Chamfer milling

4 | Cutting Condition TF35



Designation	Dimension (mm)				Grade
	D	L	ap	d	UF10
ECEM 4060	6	57	2.5	6	●
4080	8	63	3.4	8	●
4100	10	72	4.4	10	●
4120	12	83	5.1	12	●

●: Standard item

EBE 2...S

APEXMILL

2 flute short ball - Economical type

r ±0.01

D	Tolerance	D	Tolerance
≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

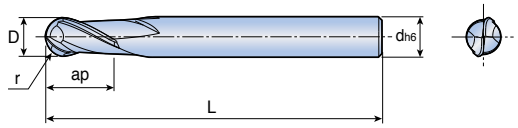
Designation	Dimension (mm)					Grade
	D	r	L	ap	d	TT5515
EBE 2030S	3	1.5	38	4	3	●
2040S	4	2.0	40	6	4	●
2060S	6	3.0	54	7	6	●
2080S	8	4.0	58	9	8	●
2100S	10	5.0	66	10	10	●
2120S	12	6.0	70	14	12	●
2140S	14	7.0	75	14	14	●
2160S	16	8.0	75	16	16	●
2180S	18	9.0	84	18	18	●
2200S	20	10.0	92	20	20	●

●: Standard item

EBE 2...M

APEXMILL

2 flute medium ball - Economical type



2 | H·A 30° | Cutting Condition TF36

r ±0.01

D	Tolerance	D	Tolerance
≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

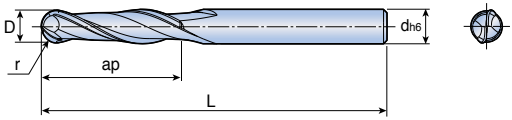
Designation	Dimension (mm)					Grade
	D	r	L	ap	d	TT5515
EBE 2030M	3	1.5	50	7	3	●
2040M	4	2.0	50	8	4	●
2060M	6	3.0	54	10	6	●
2080M	8	4.0	63	16	8	●
2100M	10	5.0	72	19	10	●
2120M	12	6.0	83	22	12	●
2140M	14	7.0	83	22	14	●
2160M	16	8.0	92	26	16	●
2180M	18	9.0	92	26	18	●
2200M	20	10.0	100	32	20	●

●: Standard item

EBE 2...L

APEXMILL

2 flute long ball - Economical type



r ±0.01

D	Tolerance	D	Tolerance
≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

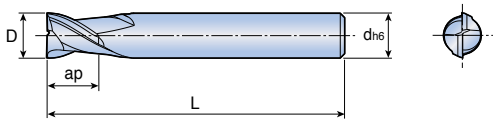
Designation	Dimension (mm)					Grade
	D	r	L	ap	d	TT5515
EBE 2030L	3	1.5	75	20	3	●
2040L	4	2.0	75	20	4	●
2050L	5	2.5	75	25	5	●
2060L	6	3.0	80	25	6	●
2080L	8	4.0	90	30	8	●
2100L	10	5.0	100	40	10	●
2120L	12	6.0	105	45	12	●
2140L	14	7.0	120	45	14	●
2160L	16	8.0	120	55	16	●
2180L	18	9.0	130	60	18	●
2200L	20	10.0	130	60	20	●

●: Standard item

EFE 2...S

APEXMILL

2 flute short flat - Economical type



D	Tolerance	D	Tolerance
≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

2 | H·A 30° | Cutting Condition TF37

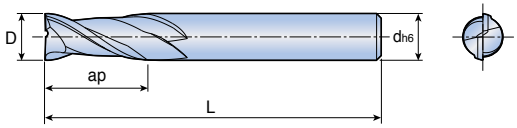
Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5525
EFE 2030S	3	38	4	3	●
2040S	4	40	5	4	●
2050S	5	54	6	5	●
2060S	6	54	7	6	●
2080S	8	58	9	8	●
2100S	10	66	11	10	●
2120S	12	70	12	12	●
2140S	14	75	14	14	●
2160S	16	75	16	16	●
2180S	18	84	18	18	●
2200S	20	92	20	20	●

●: Standard item

EFE 2...M

APEXMILL

2 flute medium flat - Economical type



D	Tolerance	D	Tolerance
≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

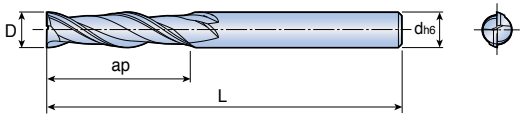
Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5525
EFE 2030M	3	50	12	3	●
2040M	4	50	12	4	●
2050M	5	54	14	5	●
2060M	6	54	16	6	●
2070M	7	60	20	7	●
2080M	8	63	20	8	●
2090M	9	66	20	9	●
2100M	10	72	22	10	●
2120M	12	75	22	12	●
2140M	14	75	22	14	●
2160M	16	82	25	16	●
2180M	18	92	26	18	●
2200M	20	100	32	20	●

●: Standard item

EFE 2...L

APEXMILL

2 flute long flat - Economical type



D	Tolerance	D	Tolerance
≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

2 | H·A 30° | Cutting Condition TF38

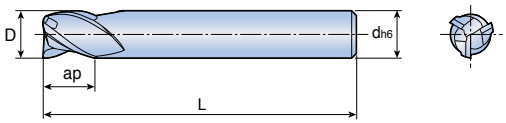
Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5525
EFE 2030L	3	75	20	3	●
2040L	4	75	20	4	●
2050L	5	75	25	5	●
2060L	6	80	25	6	●
2080L	8	90	30	8	●
2100L	10	100	40	10	●
2120L	12	105	45	12	●
2140L	14	120	45	14	●
2160L	16	120	55	16	●
2180L	18	130	60	18	●
2200L	20	130	60	20	●

●: Standard item

EFE 3...S

APEXMILL

3 flute short flat - Economical type



D	Tolerance	D	Tolerance
≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

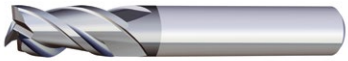
Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5525
EFE 3030S	3	38	4	3	●
3040S	4	40	5	4	●
3050S	5	54	6	5	●
3060S	6	54	7	6	●
3080S	8	58	9	8	●
3100S	10	66	11	10	●
3120S	12	70	12	12	●
3140S	14	75	14	14	●
3160S	16	75	16	16	●
3180S	18	84	18	18	●
3200S	20	92	20	20	●

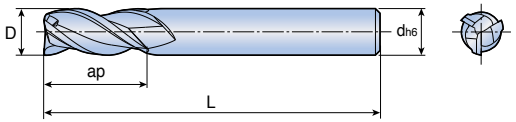
●: Standard item

EFE 3...M

APEXMILL

3 flute medium flat - Economical type





D	Tolerance	D	Tolerance
≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

3 | H·A 38° | Cutting Condition TF39

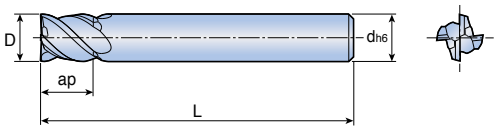
Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5525
EFE 3030M	3	50	8	3	●
3040M	4	50	11	4	●
3050M	5	54	13	5	●
3060M	6	54	13	6	●
3080M	8	63	19	8	●
3100M	10	72	22	10	●
3120M	12	75	22	12	●
3140M	14	75	22	14	●
3160M	16	82	26	16	●
3200M	20	100	32	20	●

●: Standard item

EFE 4...S

APEXMILL

4 flute short flat - Economical type



D	Tolerance	D	Tolerance
≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

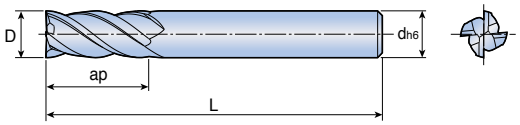
Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5525
EFE 4030S	3	38	5	3	●
4040S	4	40	8	4	●
4050S	5	54	9	5	●
4060S	6	54	10	6	●
4080S	8	58	12	8	●
4100S	10	66	14	10	●
4120S	12	70	16	12	●
4140S	14	75	18	14	●
4160S	16	75	22	16	●
4180S	18	84	24	18	●
4200S	20	92	26	20	●

●: Standard item

EFE 4...M

APEXMILL

4 flute medium flat - Economical type



D	Tolerance	D	Tolerance
≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5525
EFE 4030M	3	50	12	3	●
4040M	4	50	12	4	●
4050M	5	54	14	5	●
4060M	6	54	16	6	●
4070M	7	60	20	7	●
4080M	8	63	20	8	●
4090M	9	66	20	9	●
4100M	10	72	22	10	●
4120M	12	75	22	12	●
4140M	14	75	22	14	●
4160M	16	82	25	16	●
4180M	18	92	26	18	●
4200M	20	100	32	20	●

●: Standard item

EFE 4...L

APEXMILL

4 flute long flat - Economical type

D	Tolerance	D	Tolerance
≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

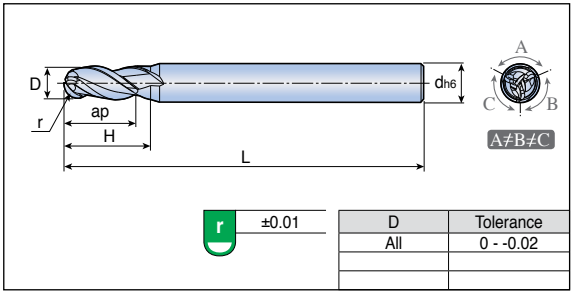
Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5525
EFE 4030L	3	75	20	3	●
4040L	4	75	20	4	●
4050L	5	75	25	5	●
4060L	6	80	25	6	●
4080L	8	90	30	8	●
4100L	10	100	40	10	●
4120L	12	105	45	12	●
4140L	14	120	45	14	●
4160L	16	120	55	16	●
4180L	18	130	60	18	●
4200L	20	130	60	20	●

●: Standard item

SBT 3...U

STARMILL

3 flute medium ball



- Excellent chatter damping due to unequal spacing of cutting edges

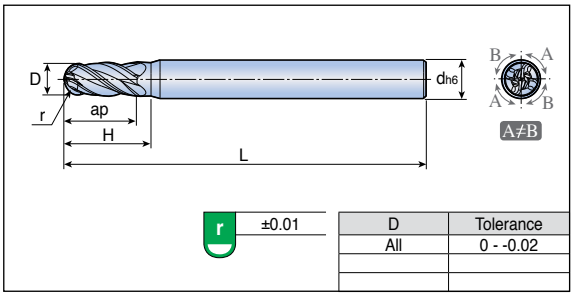
Designation	Dimension (mm)						Grade
	D	r	L	ap	H	d	TT5515
SBT 3040U	4	2	70	8	10	6	●
3060U	6	3	80	12	-	6	●
3080U	8	4	90	16	-	8	●
3100U	10	5	100	20	-	10	●
3120U	12	6	110	25	-	12	●

●: Standard item

SBT 4...U

STARMILL

4 flute medium ball



- Excellent chatter damping due to unequal spacing of cutting edges

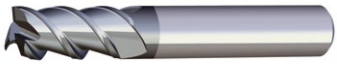
Designation	Dimension (mm)						Grade
	D	r	L	ap	H	d	TT5515
SBT 4040U	4	2	70	8	10	6	●
4060U	6	3	80	12	-	6	●
4080U	8	4	90	16	-	8	●
4100U	10	5	100	20	-	10	●
4120U	12	6	110	25	-	12	●

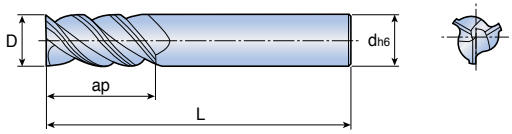
●: Standard item

SED 3...T

STARMILL

3 flute medium flat





D	Tolerance
D≤6	-0.015 - -0.035
6<D≤10	-0.015 - -0.040
10<D≤20	-0.015 - -0.045

Designation	Dimension (mm)				Grade
	D	L	ap	d	TT9020
SED 3020T	2.0	40	6	4	●
3025T	2.5	40	8	4	●
3030T	3.0	47	10	6	●
3040T	4.0	47	12	6	●
3050T	5.0	52	15	6	●
3060T	6.0	52	15	6	●
3070T	7.0	60	18	8	●
3080T	8.0	60	18	8	●
3090T	9.0	68	22	10	●
3100T	10.0	68	22	10	●
3120T	12.0	76	26	12	●
3140T	14.0	85	32	14	●
3160T	16.0	90	32	16	●
3180T	18.0	110	38	18	●
3200T	20.0	110	38	20	●

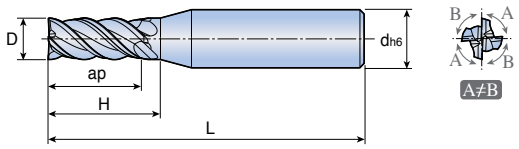
• Weldon shank is available on request (Ordering example: SEDW 3...T)

●: Standard item

SED 4...U

STARMILL

4 flute medium flat



D	Tolerance	D	Tolerance
D≤3	-0.014 - -0.028	10< D≤18	-0.032 - -0.059
3< D≤6	-0.020 - -0.038	18< D≤30	-0.040 - -0.073
6< D≤10	-0.025 - -0.047		

- Excellent chatter damping credit to unequal spacing of cutting edges

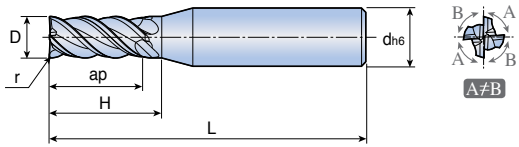
Designation	Dimension (mm)					Grade
	D	L	ap	H	d	TT5515
SED 4040U	4	57	12	14	6	●
4050U	5	57	13	16	6	●
4060U	6	57	13	-	6	●
4080U	8	63	19	-	8	●
4100U	10	72	22	-	10	●
4120U	12	83	26	-	12	●
4160U	16	92	32	-	16	●
4200U	20	104	38	-	20	●

●: Standard item

SED 4...U-R

STARMILL

4 flute medium corner radius



D	Tolerance	D	Tolerance
D≤3	-0.014 - -0.028	10< D≤18	-0.032 - -0.059
3< D≤6	-0.020 - -0.038	18< D≤30	-0.040 - -0.073
6< D≤10	-0.025 - -0.047		

- Excellent chatter damping credit to unequal spacing of cutting edges

Designation	Dimension (mm)						Grade
	D	r	L	ap	H	d	TT5515
SED 4040U-R0.1	4	0.1	57	12	14	6	●
4050U-R0.15	5	0.15	57	13	16	6	●
4060U-R0.2	6	0.2	57	13	-	6	●
4080U-R0.2	8	0.2	63	19	-	8	●
4100U-R0.2	10	0.2	72	22	-	10	●
4120U-R0.3	12	0.3	83	26	-	12	●

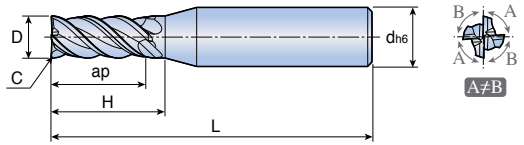
●: Standard item

SED 4...U-C

STARMILL

4 flute medium corner chamfer

- Excellent chatter damping credit to unequal spacing of cutting edges



D	Tolerance	D	Tolerance
D≤3	-0.014 - -0.028	10< D≤18	-0.032 - -0.059
3< D≤6	-0.020 - -0.038	18< D≤30	-0.040 - -0.073
6< D≤10	-0.025 - -0.047		

Designation	Dimension (mm)						Grade
	D	C	L	ap	H	d	TT5515
SED 4040U-C0.1	4	0.1	57	12	14	6	●
4050U-C0.15	5	0.15	57	13	16	6	●
4060U-C0.2	6	0.2	57	13	-	6	●
4080U-C0.3	8	0.3	63	19	-	8	●
4100U-C0.3	10	0.3	72	22	-	10	●
4120U-C0.4	12	0.4	83	26	-	12	●

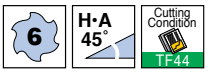
●: Standard item

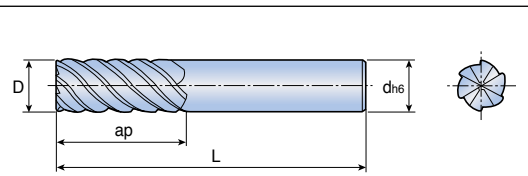
HES 6...T

STARMILL

6 flute medium flat

- Finishing





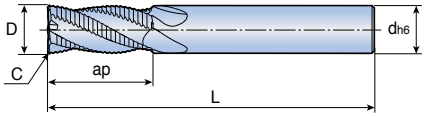
D	Tolerance
D≤6	-0.015 - -0.035
6< D≤10	-0.015 - -0.040
10< D≤20	-0.015 - -0.045

Designation	Dimension (mm)				Grade
	D	L	ap	d	TT5525
HES 6060T	6	52	15	6	●
6070T	7	60	20	8	●
6080T	8	60	20	8	●
6100T	10	68	25	10	●
6120T	12	76	30	12	●
6140T	14	85	35	14	●
6160T	16	90	40	16	●
6180T	18	110	45	18	●
6200T	20	110	45	20	●

●: Standard item

REH ...S

4-6 flute rough short corner chamfer



D	Tolerance	D	Tolerance
D≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

4-6 | H·A 45° | Cutting Condition TF45

Designation	Dimension (mm)						Grade
		D	C	L	ap	d	TT5525
REH 4060S	4	6	0.25	54	7	6	●
4080S	4	8	0.30	58	9	8	●
4100S	4	10	0.36	66	14	10	●
4120S	4	12	0.36	73	16	12	●
5160S	5	16	0.36	82	22	16	●
6200S	6	20	0.36	92	26	20	●

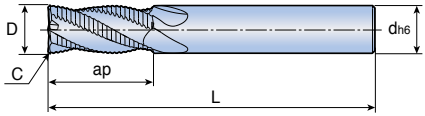
• Weldon shank is available on request (Ordering example: REHW ....S)

●: Standard item

REH ...M

STARMILL

3-6 flute rough medium corner chamfer



D	Tolerance	D	Tolerance
D≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

3-6 | H·A 45° | Cutting Condition TF45

Designation	Dimension (mm)						Grade
		D	C	L	ap	d	TT5525
REH 3040M	3	4	0.15	57	11	6	●
4050M	4	5	0.20	57	13	6	●
4060M	4	6	0.25	57	16	6	●
4070M	4	7	0.28	63	16	8	●
4080M	4	8	0.30	63	16	8	●
4090M	4	9	0.33	72	19	10	●
4100M	4	10	0.36	72	22	10	●
4120M	4	12	0.36	83	26	12	●
5140M-14	5	14	0.36	83	26	14	●
5160M	5	16	0.36	92	32	16	●
6200M	6	20	0.36	104	38	20	●
6250M	6	25	0.36	121	45	25	●

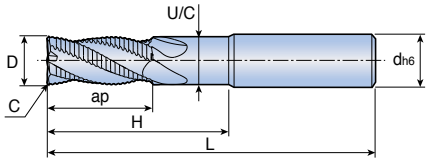
• Weldon shank is available on request (Ordering example: REHW ....M)

●: Standard item

REH ...L

STARMILL

4-6 flute rough long neck corner chamfer



D	Tolerance	D	Tolerance
D≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

Designation	Dimension (mm)								Grade
	⌀	D	C	L	ap	H	U/C	d	TT5525
REH 4060L	4	6	0.25	57	16	20	5.5	6	●
4080L	4	8	0.30	63	16	26	7.5	8	●
4100L	4	10	0.36	72	22	31	9.5	10	●
4120L	4	12	0.36	83	26	37	11.5	12	●
5160L	5	16	0.36	100	32	51	15.5	16	●
6200L	6	20	0.36	110	38	59	19.2	20	●

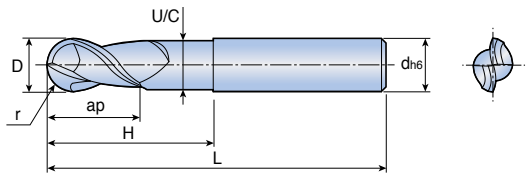
• Weldon shank is available on request (Ordering example: REHW ....L)

●: Standard item

AEB 2...S

ALUMILL

2 flute short ball



r		
D≤6	±0.005	
D>6	±0.01	

D	Tolerance
D	±0.02

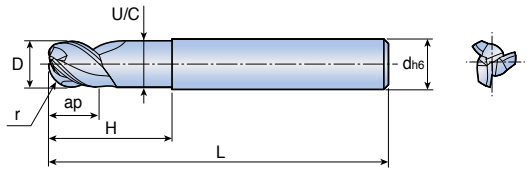
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT9020
AEB 2060S	6	3	55	5.5	25	5.4	6	●
2080S	8	4	65	7.0	30	7.2	8	●
2100S	10	5	75	8.5	35	9.0	10	●
2120S	12	6	75	10.5	40	11.0	12	●
2160S	16	8	90	14.0	50	14.5	16	●
2200S	20	10	100	17.0	50	18.0	20	●

●: Standard item

AEB 3...M

ALUMILL

3 flute medium ball



r	
	±0.01

D	Tolerance	D	Tolerance
D≤3	-0.014 - -0.028	10< D≤18	-0.032 - -0.059
3< D≤6	-0.020 - -0.038	18< D≤30	-0.040 - -0.073
6< D≤10	-0.025 - -0.047		

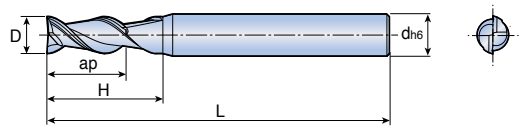
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT9020
AEB 3020M	2	1.0	60	3.0	5.0	1.9	6	●
3030M	3	1.5	60	4.5	6.5	2.8	6	●
3040M	4	2.0	65	6.0	8.0	3.7	6	●
3050M	5	2.5	65	7.5	10.0	4.6	6	●
3060M	6	3.0	75	9.0	12.0	5.6	6	●
3080M	8	4.0	75	12.0	25.0	7.4	8	●
3100M	10	5.0	80	15.0	30.0	9.4	10	●
3120M	12	6.0	90	18.0	36.0	11.4	12	●
3160M	16	8.0	100	24.0	40.0	15.4	16	●

●: Standard item

AES 2

ALUMILL

2 flute medium flat



D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=d	h6

2 | H·A 45° | Cutting Condition TF47

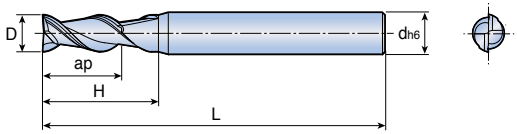
Designation	Dimension (mm)					Grade
	D	L	ap	H	d	UF10
AES 2010	1.0	40	3	5	4	●
2010-6	1.0	47	3	5	6	●
2015-6	1.5	47	3	5	6	●
2020	2.0	40	6	8	4	●
2020-6	2.0	47	6	8	6	●
2025	2.5	40	8	10	4	●
2025-6	2.5	47	8	10	6	●
2030	3.0	47	10	13	6	●
2035	3.5	47	10	13	6	●
2040	4.0	47	12	15	6	●
2050	5.0	52	15	20	6	●
2060	6.0	52	15	-	6	●
2070	7.0	60	20	26	8	●
2080	8.0	60	20	-	8	●
2090	9.0	68	25	31	10	●
2100	10.0	68	25	31	10	●
2110	11.0	76	30	37	12	●
2120	12.0	76	30	-	12	●
2130	13.0	85	35	40	14	●
2140	14.0	85	35	40	14	●
2150	15.0	90	40	50	16	●
2160	16.0	90	40	-	16	●
2170	17.0	110	45	55	18	●
2180	18.0	110	45	55	18	●
2190	19.0	110	45	55	20	●
2200	20.0	110	45	-	20	●

●: Standard item

AES 2...XL

ALUMILL

2 flute extra long flat



D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=d	h6

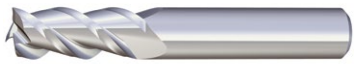
Designation	Dimension (mm)					Grade
	D	L	ap	H	d	UF10
AES 2020XL	2	60	12	15	4	●
2030XL	3	70	20	23	6	●
2040XL	4	70	25	28	6	●
2050XL	5	80	30	35	6	●
2060XL	6	80	30	-	6	●
2080XL	8	90	40	-	8	●
2100XL	10	100	50	-	10	●
2120XL	12	110	55	-	12	●
2160XL	16	125	70	-	16	●
2200XL	20	150	75	-	20	●

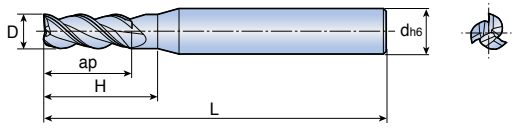
●: Standard item

AES 3

ALUMILL

3 flute medium flat





D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=d	h6

3 | H·A 45° | Cutting Condition TF48

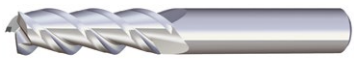
Designation	Dimension (mm)					Grade
	D	L	ap	H	d	UF10
AES 3020-6	2	47	6	8	6	●
3030	3	47	10	13	6	●
3040	4	47	12	15	6	●
3050	5	52	15	20	6	●
3060	6	52	15	-	6	●
3070	7	60	20	26	8	●
3080	8	60	20	-	8	●
3090	9	68	25	31	10	●
3100	10	68	25	-	10	●
3110	11	76	30	37	12	●
3120	12	76	30	-	12	●
3130	13	85	35	40	14	●
3140	14	85	35	40	14	●
3150	15	90	40	50	16	●
3160	16	90	40	-	16	●
3180	18	110	45	55	18	●
3200	20	110	45	-	20	●
3250	25	140	65	-	25	●

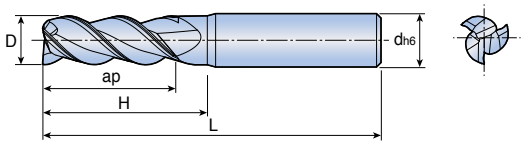
●: Standard item

AES 3...ML

ALUMILL

3 flute long flat





D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=d	h6

3 | H·A 45° | Cutting Condition TF48

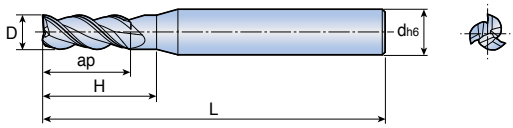
Designation	Dimension (mm)					Grade
	D	L	ap	H	d	UF10
AES 3030ML	3	60	15	18	6	●
3040ML	4	60	20	25	6	●
3050ML	5	65	25	30	6	●
3060ML	6	65	25	-	6	●
3070ML	7	75	30	35	8	●
3080ML	8	75	30	-	8	●
3090ML	9	80	35	40	10	●
3100ML	10	80	35	-	10	●
3120ML	12	95	40	-	12	●
3140ML	14	110	55	62	16	●
3160ML	16	110	55	-	16	●
3180ML	18	125	60	70	20	●
3200ML	20	125	60	-	20	●

●: Standard item

AES 3...XL

ALUMILL

3 flute extra long flat



D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=d	h6

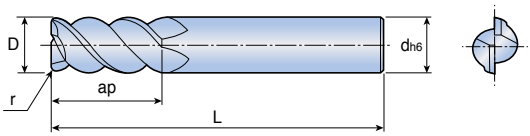
Designation	Dimension (mm)					Grade
	D	L	ap	H	d	UF10
AES 3060XL	6	80	30	-	6	●
3080XL	8	90	40	-	8	●
3100XL	10	100	50	-	10	●
3120XL	12	110	55	-	12	●
3160XL	16	125	70	-	16	●
3180XL	18	150	75	85	20	●
3180XL(80x150)	18	150	80	90	20	●
3200XL	20	150	75	-	20	●
3200XL(80x150)	20	150	80	-	20	●

●: Standard item

AES 2...R

ALUMILL

2 flute medium corner radius



D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=6	h6

2 | H·A 45° | Cutting Condition TF47

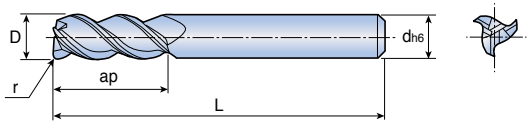
Designation	Dimension (mm)					Grade
	D	r	L	ap	d	UF10
AES 2060-R0.5	6	0.5	52	15	6	●
2060-R1.0	6	1.0	52	15	6	●
2060-R2.0	6	2.0	52	15	6	●
2080-R0.5	8	0.5	60	20	8	●
2080-R1.0	8	1.0	60	20	8	●
2080-R2.0	8	2.0	60	20	8	●
2080-R3.0	8	3.0	60	20	8	●
2100-R1.0	10	1.0	68	25	10	●
2100-R1.5	10	1.5	68	25	10	●
2100-R2.0	10	2.0	68	25	10	●
2100-R3.0	10	3.0	68	25	10	●
2100-R4.0	10	4.0	68	25	10	●
2120-R1.0	12	1.0	76	30	12	●
2120-R2.0	12	2.0	76	30	12	●
2120-R3.0	12	3.0	76	30	12	●
2120-R4.0	12	4.0	76	30	12	●
2140-R1.0	14	1.0	85	35	14	●
2140-R2.0	14	2.0	85	35	14	●
2140-R3.0	14	3.0	85	35	14	●
2140-R4.0	14	4.0	85	35	14	●
2140-R5.0	14	5.0	85	35	14	●
2160-R1.0	16	1.0	90	40	16	●
2160-R2.0	16	2.0	90	40	16	●
2160-R3.0	16	3.0	90	40	16	●
2160-R4.0	16	4.0	90	40	16	●
2160-R5.0	16	5.0	90	40	16	●

●: Standard item

AES 3...R

ALUMILL

3 flute medium corner radius



D	Tolerance
D≤6	0 - -0.012
D>6	0 - -0.015
D=d	h6

3 | H·A 45° | Cutting Condition TF48

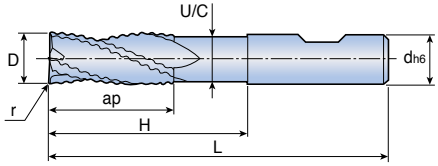
Designation	Dimension (mm)					Grade
	D	r	L	ap	d	UF10
AES 3060-R0.5	6	0.5	52	15	6	●
3060-R1.0	6	1.0	52	15	6	●
3060-R2.0	6	2.0	52	15	6	●
3080-R0.5	8	0.5	60	20	8	●
3080-R1.0	8	1.0	60	20	8	●
3080-R2.0	8	2.0	60	20	8	●
3100-R1.0	10	1.0	68	25	10	●
3100-R1.5	10	1.5	68	25	10	●
3100-R2.0	10	2.0	68	25	10	●
3100-R3.0	10	3.0	68	25	10	●
3100-R4.0	10	4.0	68	25	10	●
3120-R1.0	12	1.0	76	30	12	●
3120-R2.0	12	2.0	76	30	12	●
3120-R3.0	12	3.0	76	30	12	●
3120-R4.0	12	4.0	76	30	12	●

●: Standard item

REMA 3/ 3...C

ALUMILL

3 flute rough corner radius



D	Tolerance	D	Tolerance
≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

3 | H·A 45° | Cutting Condition TF48

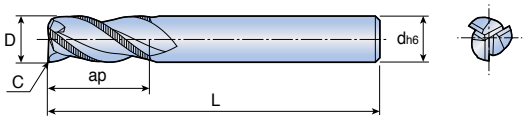
Designation		Dimension (mm)							Grade
Cylindrical shank	Welden shank	D	r	L	ap	H	U/C	d	UF10
REMA 3060C	REMA 3060	6	0.2	57	9	21	5.5	6	●
3080C	3080	8	0.2	63	12	27	7.2	8	●
3100C	3100	10	0.2	72	12	31	9.0	10	●
3120C	3120	12	0.2	83	12	37	11.0	12	●
3160C	3160	16	0.2	92	14	43	15.0	16	●
3200C	3200	20	0.2	104	17	53	18.8	20	●

●: Standard item

REA 3...L

ALUMILL

3 flute rough corner chamfer



D	Tolerance	D	Tolerance
≤3	0 - -0.040	10< D≤18	0 - -0.070
3< D≤6	0 - -0.048	18< D≤30	0 - -0.084
6< D≤10	0 - -0.058		

3 | H·A 30° | Cutting Condition TF48

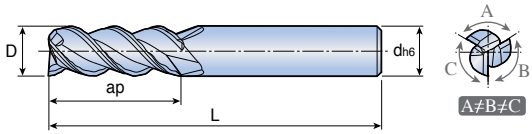
Designation	Dimension (mm)					Grade
	D	C	L	ap	d	UF10
REA 3060L	6	0.61	57	16	6	●
3080L	8	0.61	63	16	8	●
3100L	10	0.61	72	22	10	●
3120L	12	0.66	83	26	12	●
3140L-14	14	0.99	83	26	14	●
3160L	16	0.99	92	32	16	●
3200L	20	0.99	104	38	20	●

●: Standard item

AWE 3

ALUMILL

3 flute wave flat



D	Tolerance
D=d	h6

• Wave cutting edge

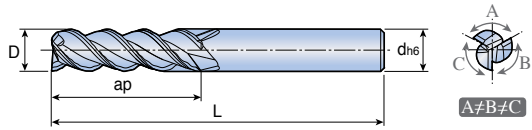
Designation	Dimension (mm)				Grade
	D	L	ap	d	UF10
AWE 3060	6	52	14	6	●
3080	8	60	14	8	●
3100	10	68	19	10	●
3120	12	76	22	12	●
3140	14	85	24	14	●
3160	16	90	30	16	●
3180	18	110	34	18	●
3200	20	110	38	20	●

●: Standard item

AWE 3...ML

ALUMILL

3 flute wave long flat



D	Tolerance
D=d	h6

• Wave cutting edge

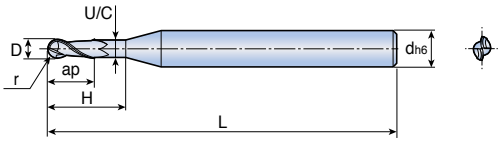
Designation	Dimension (mm)				Grade
	D	L	ap	d	UF10
AWE 3060ML	6	65	20	6	●
3080ML	8	75	20	8	●
3100ML	10	80	25	10	●
3120ML	12	95	30	12	●
3140ML	14	110	35	14	●
3160ML	16	110	40	16	●
3180ML	18	125	45	18	●
3200ML	20	125	45	20	●

●: Standard item

DMB 2

DIAMILL

2 flute miniature ball



2 | H·A 30° | Cutting Condition TF50

r ±0.01

D	Tolerance
D	-0.014 - -0.028

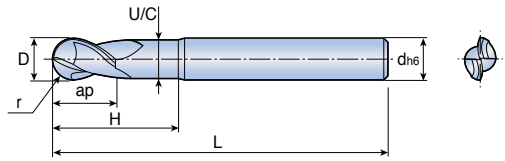
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT6050
DMB 2006-0.6x3.0	0.6	0.3	40	0.6	3.0	0.55	3	●
2008-0.8x4.0	0.8	0.4	40	0.8	4.0	0.75	3	●
2010-1.0x5.0	1.0	0.5	40	1.0	5.0	0.95	3	●
2010-1.0x8.5	1.0	0.5	40	1.0	8.5	0.95	3	●
2012-1.2x6.0	1.2	0.6	50	1.2	6.0	1.15	3	●
2015-1.5x7.5	1.5	0.75	50	1.5	7.5	1.4	3	●
2015-1.5x12.0	1.5	0.75	50	1.5	12.0	1.4	3	●
2020-2.2x10.0	2.0	1.0	60	2.2	10.0	1.9	3	●
2020-2.2x16.0	2.0	1.0	60	2.2	16.0	1.9	3	●

●: Standard item

DEB 2...S

DIAMILL

2 flute short ball



2 | H·A 30° | Cutting Condition TF50

r ±0.01

D	Tolerance	D	Tolerance
D≤3	-0.014 - -0.028	10< D≤18	-0.032 - -0.059
3< D≤6	-0.020 - -0.038	18< D≤30	-0.040 - -0.073
6< D≤10	-0.025 - -0.047		

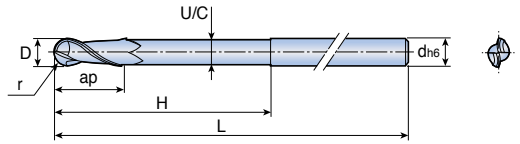
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT6050
DEB 2030S	3	1.5	60	4.5	6.5	2.8	6	●
2040S	4	2.0	65	6.0	8.0	3.7	6	●
2050S	5	2.5	65	7.5	10.0	4.6	6	●
2060S	6	3.0	75	9.0	12.0	5.6	6	●
2080S	8	4.0	75	12.0	25.0	7.4	8	●
2100S	10	5.0	80	15.0	30.0	9.4	10	●
2120S	12	6.0	90	18.0	36.0	11.4	12	●

●: Standard item

DEB 2...L

DIAMILL

2 flute long neck ball



2 | H·A 30° | Cutting Condition TF50

r ±0.01

D	Tolerance	D	Tolerance
D≤3	-0.014 - -0.028	10< D≤18	-0.032 - -0.059
3< D≤6	-0.020 - -0.038	18< D≤30	-0.040 - -0.073
6< D≤10	-0.025 - -0.047		

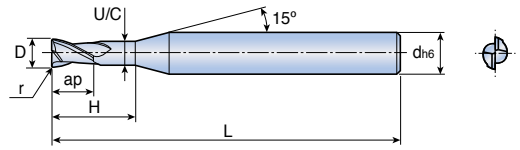
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT6050
DEB 2030L-4	3	1.5	80	15	25	2.9	4	●
2040L-4	4	2.0	80	20	30	3.9	4	●
2050L	5	2.5	100	30	50	4.9	6	●
2060L	6	3.0	100	30	50	5.5	6	●
2080L	8	4.0	110	40	60	7.5	8	●
2100L	10	5.0	120	50	70	9.5	10	●
2120L	12	6.0	130	55	75	11.5	12	●

●: Standard item

DMR 2

DIAMILL

2 flute miniature corner radius



2 | H·A 30° | Cutting Condition TF50

D	Tolerance
D	0 - -0.015

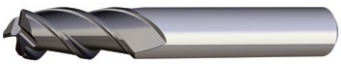
Designation	Dimension (mm)							Grade
	D	r	L	ap	H	U/C	d	TT6050
DMR 2006-0.9x3.0	0.6	0.05	40	0.9	3.0	0.55	3	●
2008-1.2x4.0	0.8	0.05	40	1.2	4.0	0.75	3	●
2010-1.5x5.0	1.0	0.1	40	1.5	5.0	0.95	3	●
2010-1.5x8.5	1.0	0.1	40	1.5	8.5	0.95	3	●
2012-1.8x6.0	1.2	0.1	50	1.8	6.0	1.15	3	●
2015-2.2x7.5	1.5	0.15	50	2.2	7.5	1.4	3	●
2015-2.2x12.0	1.5	0.15	50	2.2	12.0	1.4	3	●
2020-2.2x10.0	2.0	0.15	60	2.2	10.0	1.9	3	●
2020-2.2x16.0	2.0	0.15	60	2.2	16.0	1.9	3	●

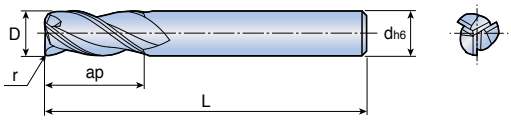
●: Standard item

DER 3...S

DIAMILL

3 flute short corner radius





D	Tolerance
D≤6	-0.010 - -0.05
D>6	0 - -0.06

3 | H·A 40° | Cutting Condition TF51

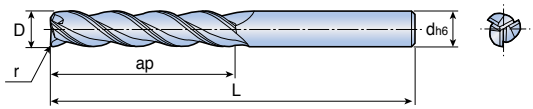
Designation	Dimension (mm)					Grade
	D	r	L	ap	d	TT6050
DER 3030S-3	3	0.15	40	12	3	●
3040S-4	4	0.2	50	14	4	●
3050S-5	5	0.3	50	16	5	●
3060S	6	0.3	65	20	6	●
3080S	8	0.5	65	20	8	●
3100S	10	0.5	75	25	10	●
3120S	12	0.5	75	25	12	●

●: Standard item

DER 3...L

DIAMILL

3 flute long corner radius



D	Tolerance
D≤6	-0.010 - -0.05
D>6	0 - -0.06

3 | H·A 40° | Cutting Condition TF51

Designation	Dimension (mm)					Grade
	D	r	L	ap	d	TT6050
DER 3040L-4	4	0.2	60	30	4	●
3050L-5	5	0.3	70	35	5	●
3060L	6	0.3	100	40	6	●
3080L	8	0.5	100	40	8	●
3100L	10	0.5	100	40	10	●
3120L	12	0.5	100	45	12	●

●: Standard item

Recommended Cutting Conditions

ISO	Material		Condition	Tensile strength (N/mm^2)	Hardness HB	Material No.
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C	Annealed	420	125	1
		>=0.25%C	Annealed	650	190	2
		<0.55%C	Quenched and tempered	850	250	3
		>=0.55%C	Annealed	750	220	4
			Quenched and tempered	1000	300	5
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	6
			Quenched and tempered	930	275	7
				1000	300	8
				1200	350	9
	High alloy steel, cast steel and tool steel		Annealed	680	200	10
			Quenched and tempered	1100	325	11
M	Stainless steel and cast steel		Ferritic / martensitic	680	200	12
			Martensitic	820	240	13
			Austenitic	600	180	14
K	Gray cast iron (GG)		Ferritic		160	15
			Pearlitic		250	16
	Cast iron nodular (GGG)		Ferritic		180	17
			Pearlitic		260	18
	Malleable cast iron		Ferritic		130	19
			Pearlitic		230	20
N	Aluminum - Wrought alloy		Not cureable		60	21
			Cured		100	22
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23
			Cured		90	24
		>12% Si	High temp.		130	25
	Copper alloys	>1% Pb	Free cutting		110	26
			Brass		90	27
			Electrolitic copper		100	28
	Non-metallic		Duroplastics, graphite			29
			Hard rubber			30
S	High temp. alloys	Fe based	Annealed		200	31
			Cured		280	32
		Ni or Co based	Annealed		250	33
			Cured		350	34
			Cast		320	35
	Titanium, Ti alloys			Rm 400		36
			Alpha+beta alloys cured	Rm 1050		37
H	Hardened steel		Hardened		55HRC	38
			Hardened		60HRC	39
	Chilled cast iron		Cast		400	40
	Cast iron nodular		Hardened		55HRC	41

• For more information of material groups, see the Technical Guide "material conversion table".

Steel Stainless steel Cast iron Nonferrous High temp. alloys Hardened steel

Recommended Cutting Conditions

Grades				
Coated				Uncoated
TT5505	TT5515	TT5525	TT6050	UF10N/UF10
260-300	260-280	210-220		180-200
200-250	200-230	160-180		140-160
160-230	160-220	130-180		110-150
160-230	160-220	130-180		110-150
140-200	140-180	110-140		100-130
160-230	160-220	130-180		110-150
120-200	120-180	100-140		80-130
140-200	130-180	100-140		90-130
140-200	140-180	110-140		100-130
140-200	130-180	100-140		90-130
80-150	70-120	60-100		50-80
	80-160	60-130		60-110
	60-150	50-120		40-100
	60-120	50-100		40-80
100-300	80-260	60-210		60-180
130-280	130-140	100-190		90-170
150-280	150-270	120-220		100-200
90-280	90-270	70-220		60-200
150-280	150-270	120-220		100-200
140-250	140-240	110-190		100-170
				800-900
				700-800
				800-900
				750-850
			400-550	400-450
				500-550
				500-550
				350-380
			300-500	
20-40	20-40	20-30		10-20
20-30	20-40	20-20		10-20
20-30	20-50	20-20		20-50
20-30	20-70	20-20		20-50
30-80	30-70	20-60		20-50
	30-70	20-60		20-30
	30-70	20-60		20-30
30-60				40-60
30-40				20-30
70-90	60-80			65-75
30-60	30-50			40-45

• For more information of cutting conditions(RPM & Feed), see the Technical Guide page.