

NPN

New Product News



APEX MILL

New Solid Carbide End Mills for 3D Profiling



MAXIRUSH
INDEXABLE SOLID HEADS

KEY POINT

TaeguTec launches APEX-MILL solid carbide end mills for profiling in 5-axis machines.

The APEX-MILL line has introduced end mills with oval and lens shapes for 5-axis machining following MAXIRUSH's recently added carbide heads (refer to NPA 2021-14 for more details). The new end mills for 5-axis profiling provides the best solution for semi-finished and finished profiling applications in aerospace, power generation, medical and mold and die industry components.

Features

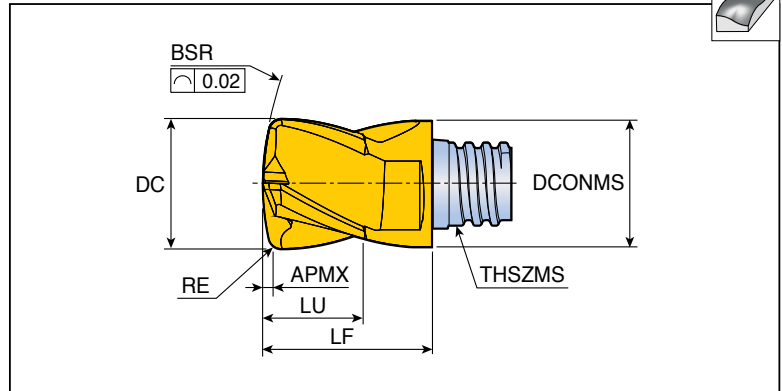
- Larger profile radius reduces the cutting distance during machining for better productivity
- Improved surface finish due to the cutter's larger profile radius
- Larger profile radius for improved machining stability and longer tool life
- Ideal for machining difficult-to-cut materials such as titanium alloy, Inconel and stainless steel

	MXCSL	Lens shape head	
	MXCSO	Oval shape head	
	SCSL new	Lens shape endmill	
	SCSO new	Oval shape endmill	
	SCST new	Tapered oval shape endmill	

MXCSL



4 flute, lens shape for 5-axis profiling



Designation	Feed (mm/tooth)	Dimension (mm)								Grade
		DC	BSR	RE	APMX	LU	THSZMS	DCONMS	LF	
MXCSL 4080R016-S05	0.02-0.08	8	16	0.5	0.9	5.5	S05	8	10	●
4100R020-S06	0.03-0.09	10	20	1.0	1.4	7.5	S06	10	13	●
4120R024-S08	0.03-0.10	12	24	1.0	1.6	9	S08	12	16.5	●
4160R032-S10	0.04-0.12	16	32	1.0	1.8	12	S10	16	20.5	●

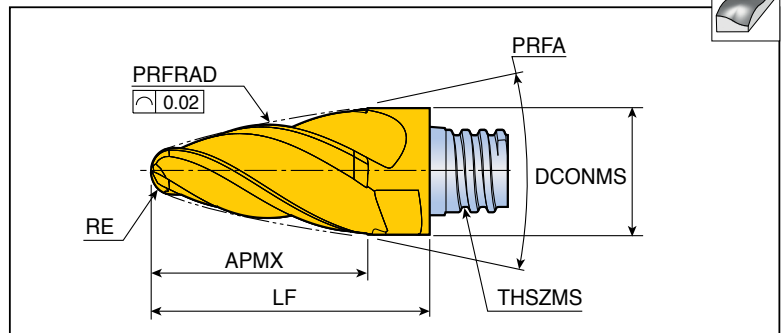
- Wrench should be ordered separately.
- BSR : Wiper edge radius

●: Standard items

MXCSO



4 flute, oval shape for 5-axis profiling



Designation	Feed (mm/tooth)	Dimension (mm)							Grade
		PRFRAD	RE	APMX	PRFA	THSZMS	DCONMS	LF	
MXCSO 4080R080-S05	0.02-0.08	80	1.5	14.2	24	S05	8	18	●
4100R085-S06	0.03-0.09	85	2.0	16.5	24	S06	10	22	●
4120R075-S08	0.03-0.10	75	2.0	21.3	24	S08	12	27	●
4160R075-S10	0.04-0.12	75	3.0	27.0	24	S10	16	33.4	●

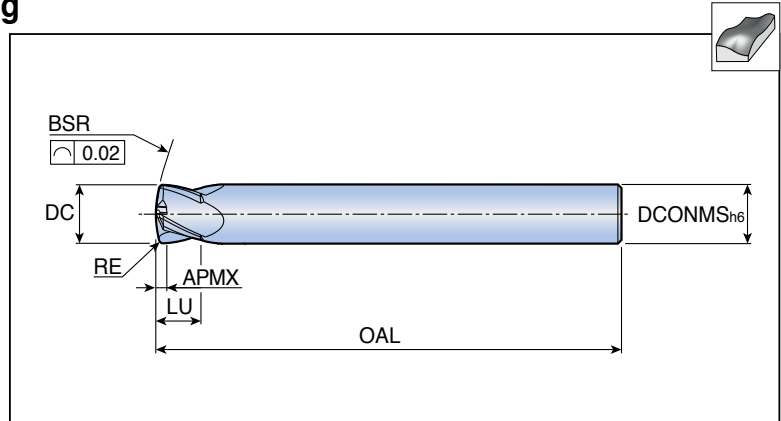
- Wrench should be ordered separately.
- PRFRAD : Profile radius

●: Standard items

SCSL new



4, 6 flute, lens shape for 5-axis profiling



Designation	Feed (mm/tooth)	Dimension (mm)								Grade
		DC	NOF	BSR	RE	APMX	LU	DCONMS	OAL	
SCSL 4080R015X05	0.02-0.08	8	4	15	0.75	1.1	5.0	8	63	●
6100R020X07	0.03-0.09	10	6	20	1.0	1.4	7.0	10	72	●
6120R025X09	0.03-0.10	12	6	25	1.0	1.5	9.0	12	83	●

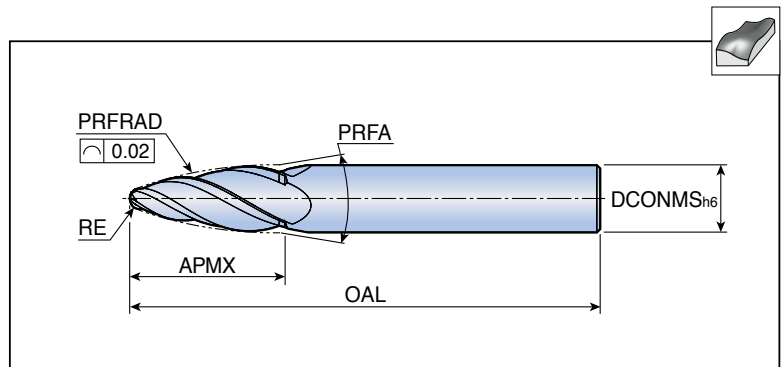
• BSR : Wiper edge radius

●: Standard items

SCSO new



4 flute, oval shape for 5-axis profiling



Designation	Feed (mm/tooth)	Dimension (mm)						Grade
		PRFRAD	RE	APMX	PRFA	DCONMS	OAL	
SCSO 4080R090X24	0.02-0.08	90	1.0	24.8	14.9	8	63	●
4100R085X26	0.03-0.09	85	2.0	26.6	15.5	10	72	●
4120R080X27	0.03-0.10	80	2.0	27.1	18.4	12	83	●

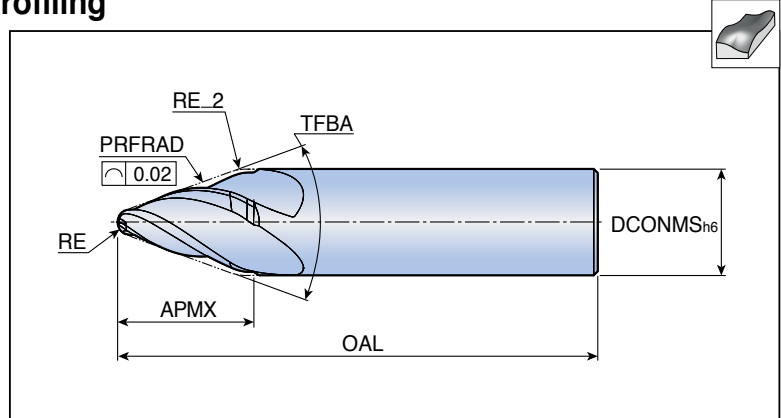
• PRFRAD : Profile radius

●: Standard items

SCST new



4 flute, tapered oval shape for 5-axis profiling



Designation	Feed (mm/tooth)	Dimension (mm)							Grade
		PRFRAD	RE	RE_2	APMX	TFBA	DCONMS	OAL	TT5515
SCST 4080R250A40X10	0.02-0.08	250	1.0	4.0	10.0	40	8	63	●
4100R250A40X11	0.03-0.09	250	2.0	5.0	11.0	40	10	63	●
4120R250A40X12	0.03-0.10	250	3.0	6.0	12.0	40	12	63	●

• PRFRAD : Profile radius

●: Standard items

Recommended Cutting Conditions

ISO	Material	Condition	Tensile strength (N/mm ²)	Hardness HB	Material No.	Vc m/min	Feed (mm/tooth) vs. head diameter				
							Ø 8	Ø 10	Ø 12	Ø 16	
P	Non-alloy steel, $\leq 0.25\%C$	Annealed	420	125	1	240-260	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
		Annealed	650	190	2	180-220	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
	cast steel, $\leq 0.55\%C$	Quenched and tempered	850	250	3	150-180	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
		Annealed	750	220	4	150-180	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
	free cutting steel	Quenched and tempered	1000	300	5	150-180	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
			600	200	6	150-180	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
			930	275	7	120-150	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
			1000	300	8	120-150	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
	Low alloy steel and cast steel (less than 5% of alloying elements)	Quenched and tempered	1200	350	9	110-150	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
			680	200	10	110-150	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
High alloy steel, cast steel and tool steel	Quenched and tempered	1100	325	11	110-150	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12		
		M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12	100-170	0.02-0.08	0.03-0.09	0.03-0.10
Martensitic	820			240	13	100-170	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
Austenitic	600			180	14	80-110	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
K	Gray cast iron (GG)	Ferritic		160	15	80-260	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
		Pearlitic		250	16	120-240	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
	Cast iron nodular (GGG)	Ferritic		180	17	150-270	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
		Pearlitic		260	18	120-240	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
	Malleable cast iron	Ferritic		130	19	150-250	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
Pearlitic			230	20	110-220	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12		
N	Aluminum - wrought alloy	Not cureable		60	21	600-800	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
		Cured		100	22	600-800	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
	Aluminum-cast, alloyed $\leq 12\% Si$	Not cureable		75	23	600-800	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
		Cured		90	24	600-800	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
	>12% Si	High temp.		130	25						
		Free cutting		110	26						
	Copper alloys	Brass		90	27						
		Electrolitic copper		100	28						
Non-metallic	Duroplastics, fiber plastics			29							
	Hard rubber			30							
S	High temp. alloys	Fe based	Annealed		200	31	10-30	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12
			Cured		280	32	10-30	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12
		Ni or Co based	Annealed		250	33	10-30	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12
			Cured		350	34	30-60	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12
	Cast			320	35	30-60	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
		Titanium, Ti alloys		Rm 400	36	30-50	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12	
	Alpha-beta alloys cured		Rm 1050	37	30-40	0.02-0.08	0.03-0.09	0.03-0.10	0.04-0.12		
H	Hardened steel	Hardened		55HRC	38						
		Hardened		60HRC	39						
	Chilled cast iron	Cast		400	40						
	Cast iron nodular	Hardened		55HRC	41						

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