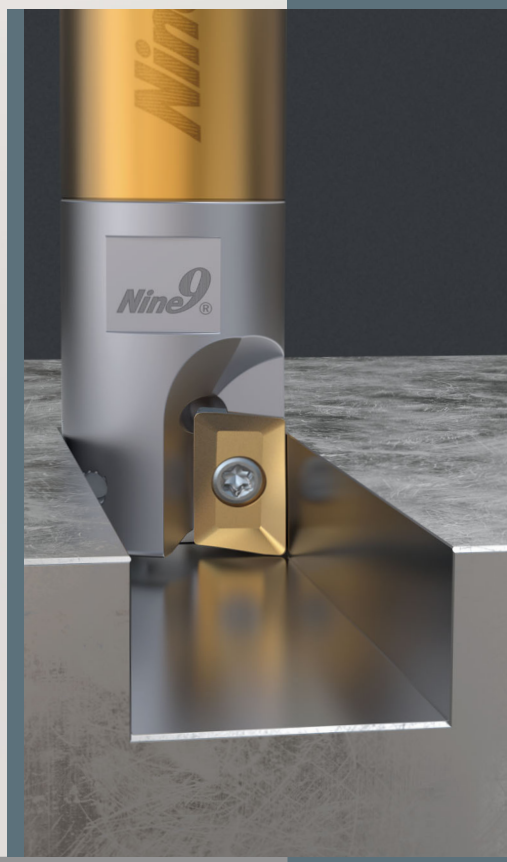
Power Mill >>>

Indexable Milling Cutter 10mm

Patented dual relief angle insert!

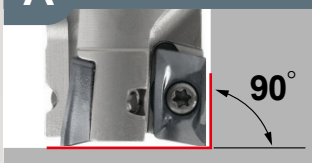
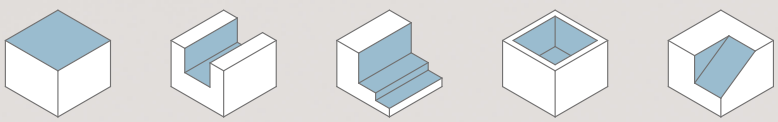
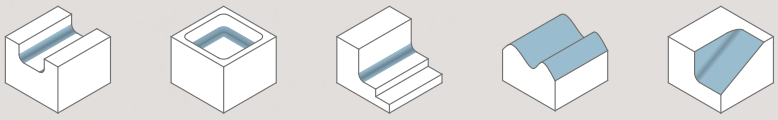
P K

- Higher Feed Rate.
- Higher Wearing Resistance!
- Fast Chip Removal!



Features >

- Applications

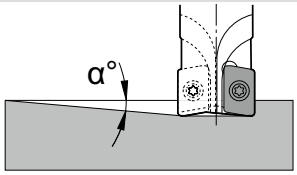
A Series		Shoulder Face Mills Dia. range: Ø10 ~ Ø25mm 
C Series		Torus Radius Mills Dia. range: Ø10 ~ Ø26mm 

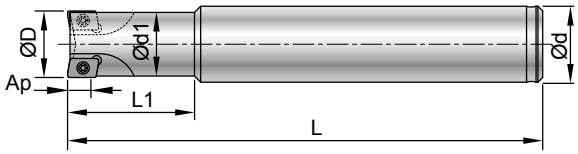
A Series Shoulder Face Mills

Features

- Strong insert with high positive geometry and helical cutting edges.
- Shoulder mill with good cutting performance and cutting edge strength. which produce perfect 90° shoulders.

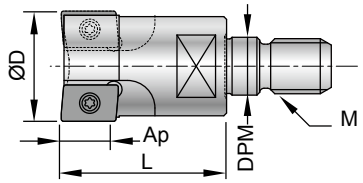
Cylindrical Shank >>





Part No.	Type	ØD	Ød h6	Ød1	α°	L1	L	⌖ Z	Ap	Insert type
00-99802-BC10-10A06	BC10-10A06-100	**10**	10	9.8	5.0	40	100	2	5	A9...0602...
00-99802-BC12-10A06	BC12-10A06-80	**10**	12	9.8	5.0	20	80	2		
00-99802-BC12-11A06	BC12-11A06-80	**11**	12	10.8	4.5	22	80	2		
00-99802-BC12-12A06	BC12-12A06-80	**12**	12	11.4	4.0	24	80	2		
00-99802-BC16-13A06	BC16-13A06-100	**13**	16	12.4	3.5	26	100	2		
00-99802-BC16-14A06	BC16-14A06-100	**14**	16	13.4	3.0	28	100	2		
00-99802-BC16-15A06	BC16-15A06-100	**15**	16	14.4	2.5	30	100	3		
00-99802-BC16-16A06	BC16-16A06-100	**16**	16	15.4	2.0	32	100	3		
00-99802-BC16-16A10	BC16-16A10-100	**16**	16	14.5	2.5	32	100	2	9	A9...1035...
00-99802-BC20-20A10	BC20-20A10-120	**20**	20	18.5	2.0	40	120	3		
00-99802-BC25-25A10	BC25-25A10-150	**25**	25	23.5	1.3	50	150	3		

Screw-Fit Type >>



Part No.	Type	ØD	α°	L	M	DPM	⌖ Z	Ap	Insert type
00-99805-M05-10A06	M05-10A06	**10**	5.0	13	M5xP0.8	5.5	2	5	A9...0602...
00-99805-M05-11A06	M05-11A06	**11**	4.5	13	M5xP0.8	5.5	2		
00-99805-M06-12A06	M06-12A06	**12**	4.0	13	M6xP1.0	6.5	2		
00-99805-M06-13A06	M06-13A06	**13**	3.5	13	M6xP1.0	6.5	2		
00-99805-M08-14A06	M08-14A06	**14**	3.0	13	M8xP1.25	8.5	2		
00-99805-M08-15A06	M08-15A06	**15**	2.5	15	M8xP1.25	8.5	3		
00-99805-M08-16A06	M08-16A06	**16**	2.0	15	M8xP1.25	8.5	3		
00-99805-M08-17A06	M08-17A06	**17**	1.5	15	M8xP1.25	8.5	3		
00-99802-M08-16A10	M08-16A10	**16**	2.5	25	M8xP1.25	8.5	2	9	A9...1035...
00-99802-M10-20A10	M10-20A10	**20**	2.0	30	M10xP1.5	10.5	3		
00-99802-M12-25A10-3T	M12-25A10-3T	**25**	1.3	35	M12xP1.75	12.5	3		
00-99805-M12-25A10	M12-25A10	**25**	1.3	20	M12xP1.75	12.5	3		

* Refer to page 9-156 for extension bars.

A Series Shoulder Face Mills


NC5072


U-NC2023


H-NC2033


H-NC9031

Insert

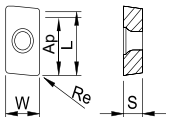
- U type insert is fully ground for reducing the cutting resistance during the cutting, best choice for long shank cutter.
- H type with high positive rake angle, shape edge.

NC5072 :
- High rigidity, special edge honing, resistance of impact during milling operation.
- Special chip breaker design for high removal rate.
- P40 tougher grade for smooth cutting, good for all kinds of steel.

U-NC2032 :
- High rigidity, special edge honing, resistance of impact during milling operation.
- For all kinds of steel from < 50 HRC, carbon steel, alloy steel, cast iron, aluminum and non-ferrous metal.

H-NC2033 :
- Sharp cutting edge and high positive rake angle, good for finishing milling and surface roughness.
- Re 0.5 and Re1.0 for your option.
- Sutiable for all kinds of steel.

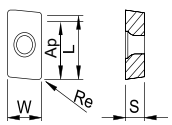
H-NC9031 :
- Sharp cutting edge and high positive rake angle, low friction coefficient for non-ferrous metal.
- Good for Al, Al-alloy, Copper, Copper alloy and Non-Ferrous metal.

Insert Size	Parts No.		Coating	Grade		Dimensions					Screw / Key
						L	W	S	Re	Ap	
06	A9MT060205	NC5072	TiAlN	P40		6.5	4	2.45	0.5	5	*NS-18037 0.6Nm / NK-T6
	A9GT060201U	NC2032	TiAlN	K20F					0.1		
	A9GT060202U	NC2032	TiAlN	K20F					0.2		
	A9GT060205U	NC2032	TiAlN	K20F					0.5		
	A9GT060201H	NC2033	TiAlN	K20F					0.1		
		NC9031	TiN	K20F							
	A9GT060202H	NC2033	TiAlN	K20F					0.2		
		NC9031	TiN	K20F							
	A9GT060205H	NC2033	TiAlN	K20F					0.5		
		NC9031	TiN	K20F							
	A9GT060210H	NC2033	TiAlN	K20F					1.0		

*Torque screwdriver is recommended.

NC2032 :
- High rigidity, special edge honing, resistance of impact during milling operation.
- Special chip breaker design for high removal rate.
- Good for hard cutting carbon steel and alloy steel.

H-NC9031 :
- Sharp cutting edge and high positive rake angle, low friction coefficient for non-ferrous metal.
- Good for Al, Al-alloy, Copper, Copper alloy and Non-Ferrous metal.

Insert Size	Parts No.		Coating	Grade		Dimensions					Screw / Key
						L	W	S	Re	Ap	
10	A9MT1035	NC2032	TiAlN	K20F		10	6.6	3.5	0.4	9	*NS-25060 0.9Nm NK-T7
	A9GT103505H	NC9031	TiN	K20F					0.5		

*Torque screwdriver is recommended.

Cutting Data

- Reduce the feed rate 30% from the below table for slotting operation.
- Ramping angle should be under α°. (Please refer to holder specifications)

Insert Size: 6.5mm (Holder Ø10~Ø17mm) >>

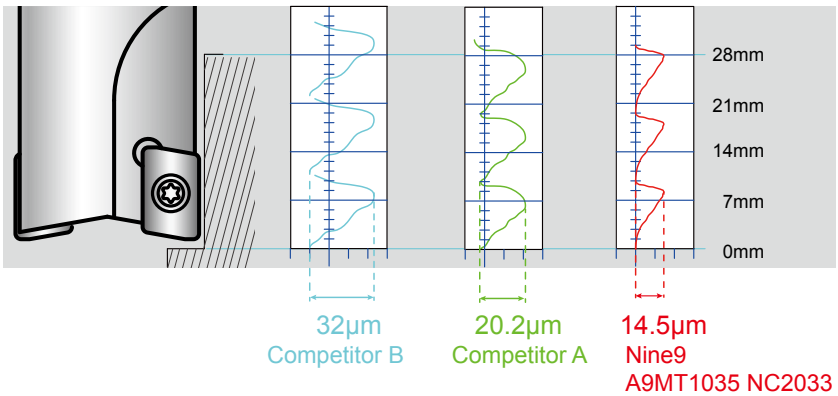
	Work Material	Sample Code (JIS)	Vc (m/min)	fz (mm/tooth)	Ap(mm)	Ap(mm)	Ae(mm)	Grade of Insert
P	Carbon Steel	P5	80~150	0.03~0.07	1.5	4	1.5	NC5072
								NC2033
P	Low-alloy Steel, C ≤ 0.3%	SCM440	80~150	0.03~0.07	1.5	4	1	NC5072
								NC2033
P	High-alloy Steel, C > 0.3%	SKD11	60~120	0.03~0.07	1	2.5	1	NC5072
								NC2033
M	Stainless Steel	SUS304	60~120	0.01~0.05	0.5	2	1	NC5072
								NC2033
K	Casting Iron	FC25	60~120	0.03~0.07	1	2.5	1	NC5072
								NC2033
K	Malleable Cast Iron, Grey Cast Iron		100~150	0.03~0.07	1.5	4	1.5	NC5072
								NC2033
N	Al, Al-alloy	A6061	200~500	0.03~0.07	2	4	2	NC9031

Insert Size: 10mm (Holder Ø16~Ø25mm) >>

	Work Material	Sample Code (JIS)	Vc (m/min)	fz (mm/tooth)	Ap(mm)	Ap(mm)	Ae(mm)	Grade of Insert
P	Carbon Steel	P5	150~250	0.08~0.15	3	8	3	NC2032
P	Low-alloy Steel, C ≤ 0.3%	SCM440	150~250	0.08~0.15	3	8	2	NC2032
P	High-alloy Steel, C > 0.3%	SKD11	120~200	0.08~0.15	2	4	2	NC2032
M	Stainless Steel	SUS304	80~120	0.04~0.08	1	4	2	NC2032
K	Casting Iron	FC25	120~200	0.08~0.12	2	5	2	NC2032
K	Malleable Cast Iron, Grey Cast Iron		100~150	0.06~0.10	3	8	3	NC2032
N	Al, Al-alloy	A6061	200~500	0.03~0.07	5	8	3	NC9031

Surface Roughness Comparison

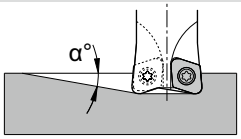
- Nine9 A series shoulder face mill insert receive a better result of surface finish.



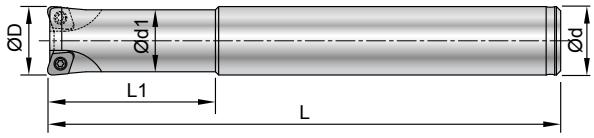
C Series Torus Radius Mills

Features

- Good for corner finishing.
- Series C is developed for replacement of the other milling cutters with ram feed.

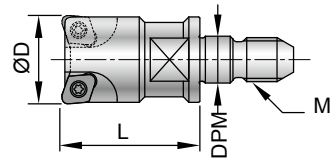


Cylindrical Shank >>



Part No.	Type	ØD	Ød h6	Ød1	α°	L1	L	Z	Insert type
00-99802-BC12-12C5	BC12-12C5	**12**	12	10.5	8.0	30	100	2	C9MT05T105 C9MT05T110H
00-99802-BC16-16C5	BC16-16C5	**16**	16	14.5	5.5	40	120	3	
00-99802-BC20-20C5	BC20-20C5	**20**	20	18	4.0	50	130	3	
00-99802-BC25-25C5	BC25-25C5	**25**	25	23	3.0	60	150	4	

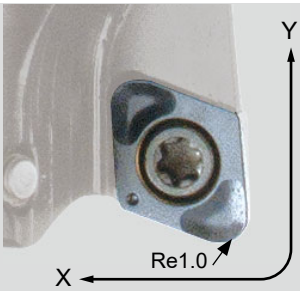
Screw-Fit Type >>



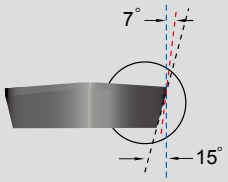
Part No.	Type	ØD	α°	L	M	DPM	Z	Insert type
00-99802-M05-10C4	M05-10C4	**10**	8	15	M5xP0.8	5.5	2	C9MT040105 C9MT040110
00-99802-M05-11C4	M05-11C4	**11**	6	15	M5xP0.8	5.5		
00-99802-M06-12C5	M06-12C5	**12**	8	25	M6xP1.0	6.5	2	C9MT05T105 C9MT05T110H
00-99802-M06-13C5	M06-13C5	**13**	7.5	25	M6xP1.0	6.5		
00-99802-M08-16C5	M08-16C5	**16**	5.5	25	M8xP1.25	8.5	3	
00-99802-M08-17C5	M08-17C5	**17**	5	25	M8xP1.25	8.5		
00-99802-M10-20C5	M10-20C5	**20**	4	30	M10xP1.5	10.5		
00-99802-M10-21C5	M10-21C5	**21**	3.5	30	M10xP1.5	10.5		
00-99802-M12-25C5	M12-25C5	**25**	3	35	M12xP1.75	12.5	4	
00-99802-M12-26C5	M12-26C5	**26**	2.5	35	M12xP1.75	12.5		
00-99805-M05-11C5	M05-11C5	**11**	10	13	M5xP0.8	5.5	2	C9MT05T105 C9MT05T110H
00-99805-M06-12C5	M06-12C5	**12**	8	13	M6xP1.0	6.5		
00-99805-M06-13C5	M06-13C5	**13**	7.5	13	M6xP1.0	6.5		
00-99805-M08-16C5	M08-16C5	**16**	5.5	15	M8xP1.25	8.5	3	
00-99805-M08-17C5	M08-17C5	**17**	5	15	M8xP1.25	8.5		
00-99805-M10-20C5	M10-20C5	**20**	4	15	M10xP1.5	10.5		
00-99805-M10-21C5	M10-21C5	**21**	3.5	15	M10xP1.5	10.5		
00-99805-M12-25C5	M12-25C5	**25**	3	20	M12xP1.75	12.5	4	
00-99805-M12-26C5	M12-26C5	**26**	2.5	20	M12xP1.75	12.5		

* Refer to page 9-156 for extension bars.

C Series Torus Radius Mills



Dual Relief Angle Insert



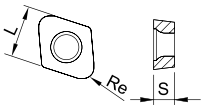
Higher feed rate!
Higher wearing resistance!

Insert

- Submicron carbide inserts are fully ground.
- Special design milling cutter and ground insert for semi-finishing 3D surface milling for mold industry.

NC30 :
- Flat cutting edge design, universal type for all kind of materials.

NC2032 :
- High positive angle, special chip breaker design, higher wearing resistance.
- Good for hardened material.

Parts No.	Coating	Grade		Dimensions			Screw	Key
				L	S	Re		
C9MT040105-NC30	AlTiN	K10F		4	1.59	0.5	*NS-18037 0.6Nm	NK-T6
C9MT040110-NC30	AlTiN	K10F		4	1.59	1.0		
C9MT05T105-NC30	AlTiN	K10F		5	2.0	0.5	*NS-20045 0.6Nm	NK-T6
C9MT05T110H-NC2032	AlTiN	K20F		5	2.0	1.0		

*Torque screwdriver is recommended.

Cutting Data

- Recommand Ae below 2.5mm.

	Work Material	Sample Code (JIS)	Vc (m/min)	fz (mm/tooth)	Ap(mm)	Grade of Insert
P	Carbon Steel	P5	150~300	0.2~0.5	0.2~0.5	NC30
						NC2032
	Alloy Steel	SCM440	120~250	0.2~0.5	0.2~0.5	NC30
						NC2032
M	Stanless Steel	SUS304	120~200	0.2~0.4	0.2~0.4	NC30
						NC2032
H	Hardened Steel < HRC52	SKD61	100~150	0.1~0.3	0.1~0.3	NC2032