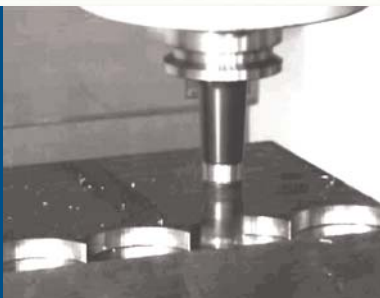
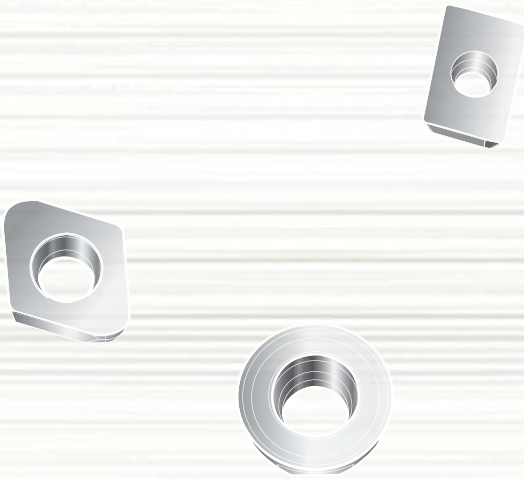


Nine9®

Power Mill

Smallest milling cutter 10mm.
Patented Dual Relief Angle Insert !
Higher feed rate !
Higher wearing resistance !!





Nine 9 Power Mill offers you High Rigidity & High Feed Rate milling cutter.

*Precision ground insert performs efficient repeatability and excellent accuracy.
Special geometry design helps the strength of cutting edge in shoulder milling application.
Patented Dual relief angle (7° and 15°) increases the stiffness of the insert for absorbing cutting force.*

On insert size to optimize the number of teeth for feed operation.

Nine 9 Power Mill has minimal size insert type, it helps you to manage your tool stock in low cost to compare other milling cutter with various size inserts.

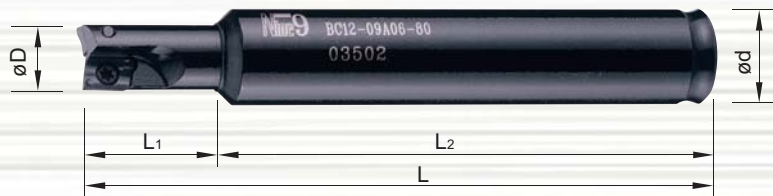
*Smallest indexable milling cutter from 10mm.
Low tool cost to compare with solid carbide end mill.*




Reliable quality ! Valuable product !

Patented Precision Ground Insert **A** :

- Sub-micron carbide, fully ground to ensure efficient repeatability.
- Inserts are designed with high positive geometry and helical cutting edge.
- Inserts perform good shoulder milling operation.

Cylindrical Shank Milling Cutter



Order No.	Part No.	$\varnothing D$ ± 0.05	L	L ₁	L ₂	$\varnothing d$ h6	No. of teeth	Insert	Screw / key		
00-99802-BC10-10A06	BC10-10A06-100	10	100	40	60	10	2	 A9FT060205H A9GT060205H A9GT060210H 	NS-18037 0.9 Nm NK-T6		
00-99802-BC12-10A06	BC12-10A06-80	10	80	20	60	12	2				
00-99802-BC12-11A06	BC12-11A06-80	11	80	22	58	12	2				
00-99802-BC12-12A06	BC12-12A06-80	12	80	24	56	12	2				
00-99802-BC16-13A06	BC16-13A06-100	13	100	26	74	16	2				
00-99802-BC16-14A06	BC16-14A06-100	14	100	28	72	16	2				
00-99802-BC16-15A06	BC16-15A06-100	15	100	30	70	16	3				
00-99802-BC16-16A06	BC16-16A06-100	16	100	32	68	16	3				
00-99802-BC16-16A10	BC16-16A10-100	16	100	32	68	16	2			A9MT1035 A9FT103505H 	NS-25060 1.0Nm NK-T7
00-99802-BC20-20A10	BC20-20A10-120	20	120	40	80	20	3				
00-99802-BC25-25A10	BC25-25A10-150	25	150	50	100	25	3				

A Series Milling Insert



■ A9MT :

High rigidity, special edge honing, resistance of impact during milling operation, good for milling of carbon steel and alloy steel.

-NC2032 :

- K20F grade, AlTiN coated.
- Special chip breaker design.
- High surface hardness for high wearing resistance.
- Good for hard cutting carbon steel and alloy steel.



■ A9GT :

Sharp cutting edge and high positive rake angle, good for finishing milling and surface roughness.

-NC2033 :

- K20F grade, TiAlN coated.
- For better surface roughness.
- Good for all kind of steel.



■ A9FT :

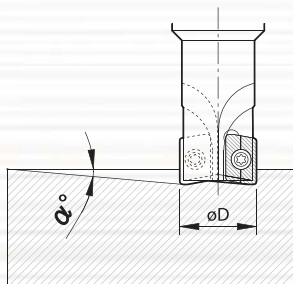
Sharp cutting edge and high positive rake angle, low friction coefficient for Non-Ferrous metal.

-NC9031 :

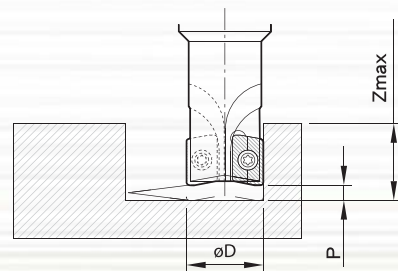
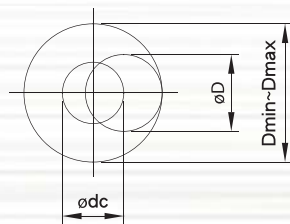
- K20F grade, TiN coated.
- Good for Al, Al-alloy, Copper, Copper alloy and Non-Ferrous metal, etc.

Milling Operation Notice

■ Ramping



■ Helical milling



ØD	α°	Dmin. (hole diameter)	P (plunge depth)	Zmax.	Dmax. (hole diameter)	P (plunge depth)	Zmax.
10	5°	13	0.41	5	18	1.09	10
11	4.5°	15	0.50	5.5	20	1.11	11
12	4°	17	0.55	6	22	1.09	12
13	3.5°	19	0.58	6.5	24	1.05	13
14	3°	21	0.58	7	26	0.98	14
15	2.5°	23	0.55	7.5	28	0.89	15
16	2°	25	0.50	8	30	0.76	16

Unit : mm

- The ramp angle α° is limited due to the insert edge design.
- Using helical milling method, please take care hole diameter and plunge depth.

A Series Insert Cutting Data (ø10-ø16mm)

Parts No.	Grade	Coating		Dimensions			
				L	W	S	Re±0.03
A9GT060205H - NC2033	K20F	TiAlN		6.5	4	2.45	0.5
A9GT060210H - NC2033	K20F	TiAlN		6.5	4	2.45	1.0
A9FT060205H - NC9031	K20F	TiN		6.5	4	2.45	0.5

Material	Grade of Insert	Insert Size	Vc(m/min)	fz (mm/tooth)			
					Ap (mm)	Ap (mm)	Ae(mm)
Carbon Steel	NC2033	06	80~150	0.03~0.07	1.5	4	1.5
Low-alloy Steel, C≤ 0.3%	NC2033	06	80~150	0.03~0.07	1.5	4	1
High-alloy Steel, C> 0.3%	NC2033	06	60~120	0.03~0.07	1.0	2.5	1
Casting Steel	NC2033	06	60~120	0.03~0.07	1.0	2.5	1
Stainless Steel	NC2033	06	60~120	0.01~0.05	0.5	2	1
Malleable Cast Iron Grey Cast Iron	NC2033	06	100~150	0.03~0.07	1.5	4	1.5
Al, Al-alloy	NC9031	06	200~500	0.03~0.07	2	4	2

A Series Insert Cutting Data (ø16-ø25mm)

Parts No.	Grade	Coating		Dimensions			
				L	W	S	Re±0.03
A9FT103505H - NC9031	K20F	TiN		10	6.6	3.5	0.5
A9MT1035 - NC2032	K20F	AlTiN		10	6.6	3.5	0.4

Material	Grade of Insert	Insert Size	Vc(m/min)	fz (mm/tooth)			
					Ap (mm)	Ap (mm)	Ae(mm)
Carbon Steel	NC2032	10	150~250	0.08~0.15	3	8	3
Low-alloy Steel ≤ 0.3% C	NC2032	10	150~250	0.08~0.15	3	8	2
High-alloy Steel > 0.3% C	NC2032	10	120~200	0.08~0.15	2	4	2
Casting Steel	NC2032	10	120~200	0.08~0.12	2	5	2
Stainless Steel	NC2032	10	80~120	0.04~0.08	1	4	2
Malleable Cast Iron Grey Cast Iron	NC2032	10	100~150	0.06~0.10	3	8	3
Al, Al-alloy	NC9031	10	200~1000	0.06~0.12	5	8	3

• Reduce the feed rate 30% from the above table for slotting operation.

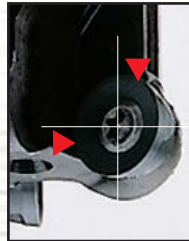
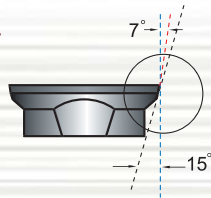
R Series-Round Insert

Patented Precision Ground Insert R :

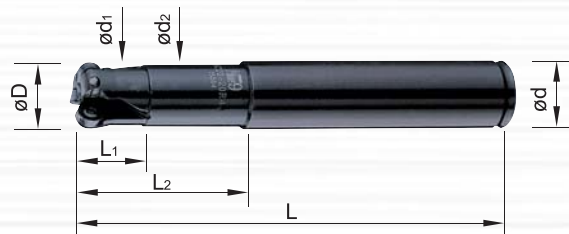
- Submicron carbide inserts are fully ground.
- Round insert with square seating pocket for exact positioning, especially for unstable cutting condition.
- Maximum number of teeth for feed operation.
- High feed rate capability.


- Patented Dual Relief Angle Insert !
- Higher feed rate!
- Higher wearing resistance!

- Dual Relief



Cylindrical Shank Milling Cutter



Order No.	Part No.	$\varnothing D$	L	L ₁	L ₂	$\varnothing d_{h6}$	$\varnothing d_1$	$\varnothing d_2$	No. of teeth	Insert	Screw / key
00-99802-BC16-16R4	BC16-16R4-120	16	120	-	40	16	-	14.5	2	R9MT0803	NS-30056, NK-T9
00-99802-BC20-20R4	BC20-20R4-130	20	130	20	50	20	17	18	3	R9MT0803F	
00-99802-BC25-25R4-45°	BC25-25R4-150-45°	25	150	30	60	25	21	23	3	R9MT0803P	NS-30072 2.0 Nm NK-T9
00-99802-BC32-35R4	BC32-35R4-200	35	200	-	80	32	-	30	3		

* The insert pocket of the cutter 25R4-45° has rotated 45°. The cutter can take advantage of the reversed side of the used insert for second use .

■ **R9MT :**

Corner radius especial good for 3D corner milling, high reliability performance and long tool life.



■ **-NC40 :**

TiN coated, K20 grade. Sharp cutting edge and high positive angle. Good for stainless steel.



■ **F-NC2032 :**

AlTiN coated, K20F grade. Special chip breaker design, sharp cutting edge. Good for carbon steel, low alloy steel.

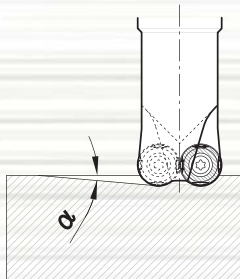


■ **P-NC30 :**

AlTiN coated, K10F grade, flat cutting edge design. Universal type for high-alloy steel and cast iron.

Milling Operation Notice

■ **Ramping**



øD	α °
16	4.5
20	2.5
25	1.5
35	1.0

R Series Insert

Parts No.	Grade	Coating	Diagram	Dimensions		
				lc	S	Re
R9MT0803P - NC30	K10F	AlTiN		8	3.17	0.4
R9MT0803F - NC2032	K20F	AlTiN		8	3.17	0.4
R9MT0803 - NC40	K20F	TiN		8	3.17	0.4

Material	Grade of Insert	Vc(m/min)	fz (mm/tooth)	Cutting Depth Ap (mm)
Carbon Steel	F-NC2032	150~200	0.3~0.8	0.4~1.0
Low-alloy Steel, C≤ 0.3%	F-NC2032	150~200	0.3~0.8	0.4~0.6
High-alloy Steel, C> 0.3%	P-NC30	120~200	0.3~0.8	0.4~0.6
Casting Steel	P-NC30	120~200	0.3~0.8	0.3~0.6
Stainless Steel	NC40	100~140	0.3~0.5	0.3~0.6
Hardened Steel <HRC52	P-NC30	60~120	0.2~0.4	0.3~0.4
Malleable Cast Iron Grey Cast Iron	P-NC30	120~200	0.3~0.8	0.4~0.6

$$S = \frac{V_c \times 1000}{\pi \times D} \text{ r.p.m. } F = f_z \times S \times n \text{ mm/min.}$$

S: Spindle Speed (rpm) Vc: Cutting Speed (m/min.)
F: Feed Rate (mm/min.) fz: Feed per Tooth D: Drill Dia. n: No. of Flute

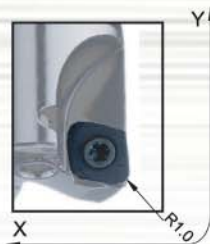
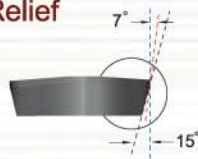
C Series-Torus Radius Insert

Patented Precision Ground Insert C :

- Submicron carbide inserts are fully ground.
- Good for semi-finishing 3D surface milling for mold industry.
- To replace the other milling cutters with ramp feed.


- Patented Dual Relief Angle Insert !
- Higher feed rate!
- Higher wearing resistance!

• Dual Relief



Cylindrical Shank Milling Cutter



Order No.	Part No.	$\varnothing D$ ± 0.03	L	L ₁	$\varnothing d$ h6	$\varnothing d_1$	No. of teeth	Insert	Screw / key
00-99802-BC12-12C5	BC12-12C5	12	100	30	12	10.5	2	C9MT05T105	NS-20045
00-99802-BC16-16C5	BC16-16C5	16	120	40	16	14.5	3	C9MT05T110	0.8 Nm
00-99802-BC20-20C5	BC20-20C5	20	130	50	20	18	3	C9MT05T110H	NK-T6
00-99802-BC25-25C5	BC25-25C5	25	150	60	25	23	4		

■ C9MT :

Patented insert, fully ground corner radius.



-NC30 :

- Submicron carbide insert, AlTiN coated, K10 grade.
- Flat cutting edge design, universal type for all kind of materials.

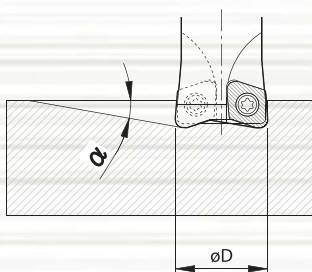


-NC2032 :

- Submicron carbide insert, AlTiN coated, K20F grade.
- High positive angle, special chip breaker design, higher wearing resistance.
- Good for carbon steel and low alloy steel.

Milling Operation Notice

■ Ramping



ϕD	α°
12	8
16	5.5
20	4
25	3

C Series Insert Cutting Data

Parts No.	Grade	Coating		Dimensions		
				L	S	Re ± 0.02
C9MT05T105 - NC30	K10F	AlTiN		5	2.0	0.5
C9MT05T110 - NC30	K10F	AlTiN		5	2.0	1.0
C9MT05T110H - NC2032	K20F	AlTiN		5	2.0	1.0

Material	Grade of Insert	Vc(m/min)	fz (mm/tooth)	Cutting Depth Ap (mm)
Carbon Steel	NC2032	150~300	0.2~0.5	0.2~0.5
	NC30	150~300	0.2~0.5	0.2~0.5
Low-alloy Steel, C \leq 0.3%	NC2032	150~300	0.2~0.5	0.2~0.5
	NC30	150~300	0.2~0.5	0.2~0.5
High-alloy Steel, C $>$ 0.3%	NC30	120~200	0.2~0.4	0.2~0.4
Casting Steel	NC30	120~200	0.2~0.4	0.2~0.4
Hardened Steel <HRC52	NC30	100~150	0.1~0.3	0.1~0.3

- Reduce the feed rate 30% from the above table for slotting operation.

Cylindrical Shank Milling Cutter :



C9MT
Semi-finishing

- 99802-BC12-12C5
- 99802-BC16-16C5
- 99802-BC20-20C5
- 99802-BC25-25C5



R9MT
Roughing

- 99802-BC16-16R4
- 99802-BC20-20R4
- 99802-BC25-25R4-45°
- 99802-BC32-35R4



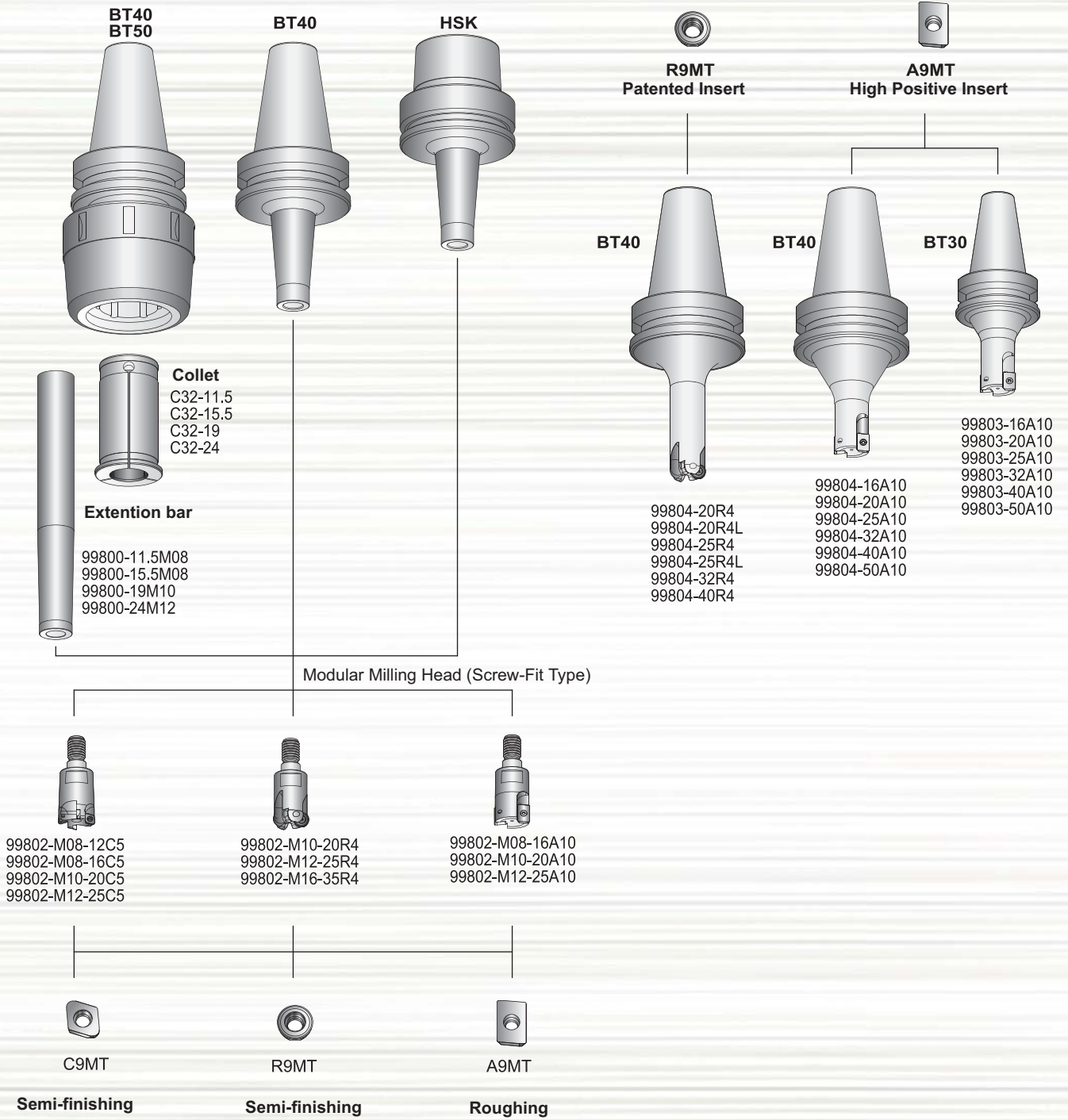
A9MT
Roughing

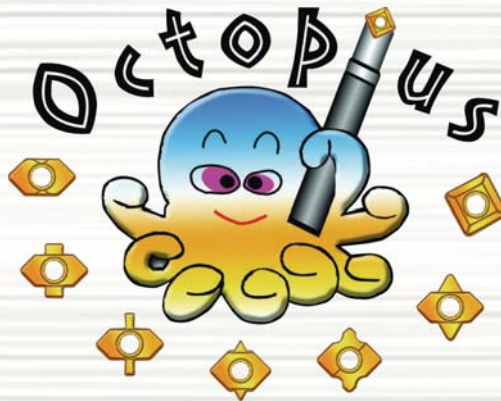
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- 99802-BC16-14A06
- 99802-BC16-15A06
- 99802-BC16-16A06
- 99802-BC16-16A10
- 99802-BC20-20A10
- 99802-BC25-25A10



■ **Modular Power-Mill System**

■ **Solid Power-Mill**





- ***Super Power Drill and Super Drill***
- ***High Speed Boring Tool***
- ***NC-Spot Drill***
- ***Power Mill***
- ***Solid Carbide End Mill***
- ***Tool Holder***



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Distributor: