Chamfer Mill >>>

45° Front And Back Chamfering!

Nine9 chamfer mill
is designed for chamfering and countersinking with indexable inserts.
The insert is a specifically designed for high speed machining ; the multiple flutes provide for increased feed rate, optimizing performance and reducing cutting time.

P M K N H

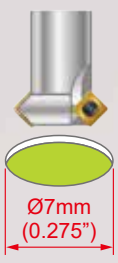
Economical

- Each insert has 4 cutting edges.
- Long tool life.

Features >>>

Excellent Repeatability

- Smallest Indexable counter sink, diameter Ø7 mm (0.275").
- The insert is dual-relief angle, specially edge honning and optimized coated for high cutting speed.
- Optimized the number of teeth on the holder to achieve higher feed rate.

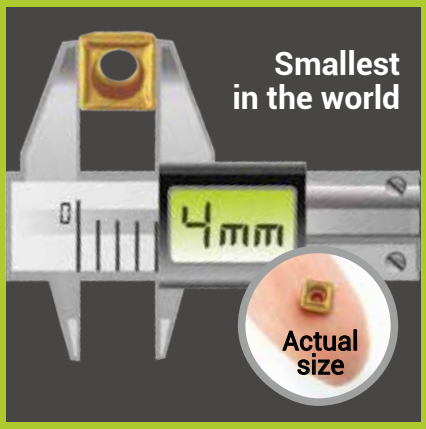


Applications

- For front and back chamfering.
- 90° counter sink and 45° chamfering.
- For counter sink, circular chamfering, contour chamfering and face milling.

Eliminate 2nd Operation Or Deburring Time.

Applications



"
- Ultra high speed and feed rate.
- 4 times faster in cutting speed and up to 10 times higher in feed rate.

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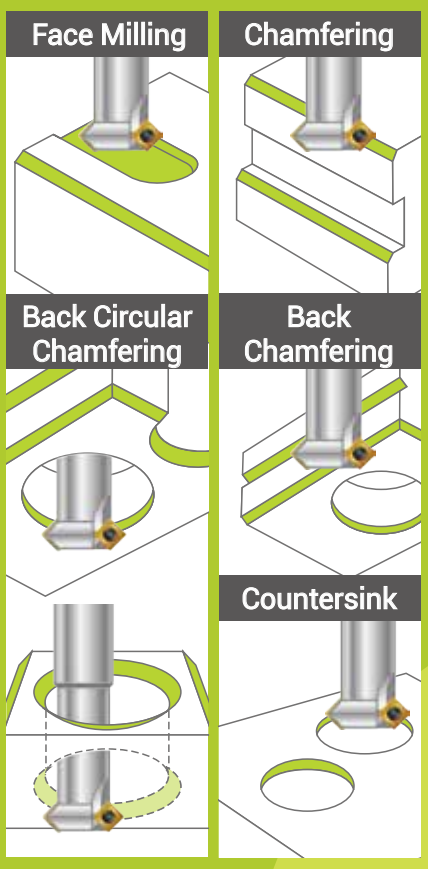


Indexable Chamfer Mill

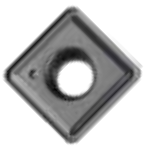
Features >>

- Benefiting from the specially ground dual-relief insert and optimized coating, higher feed rate and cutting speed can be achieved on chamfering operation.
- Each insert has 4 cutting edges, reducing insert cost.
- Fine edge honning cutting edge, good chip breaking condition and long tool life.

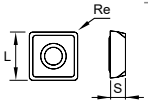
Inserts >>

NC2032:
- AlTiN coating, very long tool life.
- For carbon steel, alloy steel, cast iron and hardened steel up to 56HRC
- Each insert has 4 cutting edges.

NC9071:
- TiN coating, very sharp cutting edge produces excellent surface finish
- For non ferrous metal, aluminum, aluminum-alloy, brass, copper and stainless steel.
- Each insert has 4 cutting edges.

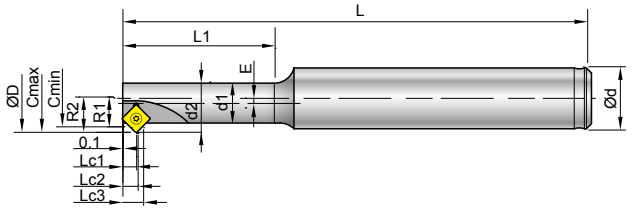

NC2032

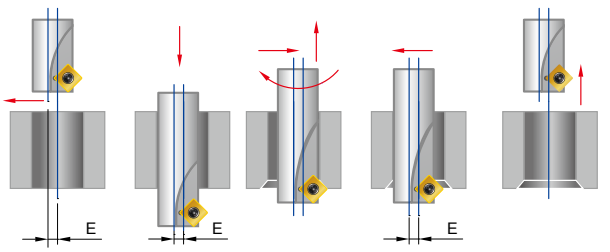

NC9071

Parts No.		Coating	Grade		Dimensions L	Dimensions S	Dimensions Re	Screw	Key
N9GX04T002	NC2032	AlTiN	K20F		4.0 (0.157")	1.8 (0.070")	0.2 (0.008")	NS-18037 0.6Nm	NK-T6
	NC9071	TiN							
N9GX060204	NC2032	AlTiN			6.35 (0.250")	2.38 (0.094")	0.4 (0.016")	NS-22055 0.9Nm	NK-T7
	NC9071	TiN							
N9GX090308	NC2032	AlTiN			9.52 (0.375")	3.18 (0.125")	0.8 (0.031")	NS-30072 2.0Nm	NK-T9
	NC9071	TiN							

Holder >>

- Made of hot working steel and hardened.
- Elliptical necked bar to optimize the tool strength.
- Shank is ground to h6 tolerance.

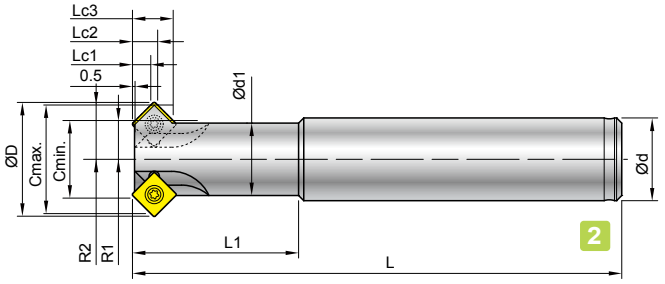


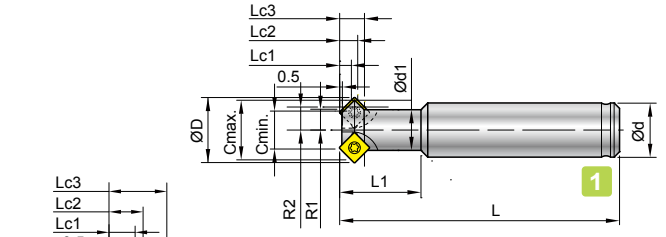


Parts No.	Thread Size	Cmin ø	Cmax ø	ød	ød1	ød2	øD	R1	R2	L	L1	Lc1	Lc2	Lc3	E	z	Insert Screw / Key
99616-C02	M8	6.8 (0.268")	8.8 (0.346")	10 (0.394")	5.25 (0.207")	6.5 (0.256")	9 (0.354")	3.4 (0.134")	4.4 (0.173")	80 (3.15")	20 (0.787")	2.56 (0.100")	2.93 (0.115")	3.93 (0.155")	1.25 (0.049")	1	N9GX04T002 NS-18037 0.6Nm / NK-T6
99616-C04	M10	8.5 (0.335")	10.8 (0.425")	12 (0.472")	6.45 (0.254")	8 (0.315")	11.1 (0.437")	4.25 (0.167")	5.4 (0.212")	100 (3.94")	25 (0.984")	2.51 (0.099")	2.98 (0.117")	4.13 (0.163")	1.55 (0.061")	1	
99616-C06	M12 1/2	10.26 (0.404")	13.2 (0.520")	12 (0.472")	7.88 (0.310")	9.75 (0.384")	13.5 (0.531")	5.13 (0.202")	6.6 (0.260")	100 (3.94")	30 (1.181")	2.51 (0.099")	2.98 (0.117")	4.45 (0.175")	1.88 (0.074")	1	

Holder >>

- Made from tool steel.
- Shank is ground to h6 tolerance.





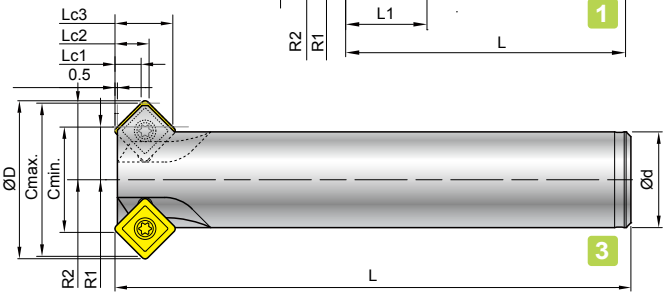
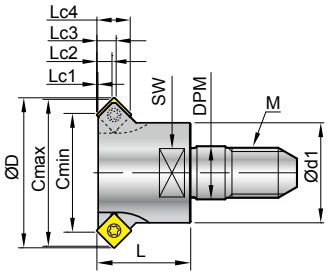


Fig	Parts No.	Type	Cmin ø	Cmax ø	ød	ød1	øD	R1	R2	L	L1	Lc1	Lc2	Lc3	○z	Insert Screw / Key
1	99616-C10	BC10-C07-60	7 (0.276")	11 (0.433)	10 (0.394")	7.5 (0.295")	12 (0.472")	3.5 (0.138")	5.5 (0.217")	60 (2.362")	15 (0.590")	2.6 (0.102")	2.9 (0.114")	4.6 (0.181")	2	N9GX04T002 NS-18037 0.6Nm NK-T6
	99616-C20	BC12-C11-100	11 (0.433")	16 (0.630")	12 (0.472")	9.6 (0.378")	16.15 (0.636")	5.5 (0.217")	8.0 (0.315")	100 (3.937")	25 (0.984")	2.6 (0.102")	2.9 (0.114")	5.0 (0.197")	4	
2	99616-C30	BC16-C15-120	15 (0.590")	21 (0.827")	16 (0.630")	14 (0.551")	22 (0.866")	7.5 (0.295")	10.5 (0.413")	120 (4.724")	40 (1.575")	3.5 (0.138")	4.9 (0.193")	7.9 (0.311")	4	N9GX060204 NS-22055 0.9Nm NK-T7
	99616-C40	BC20-C19-130	19 (0.748")	25 (0.984")	20 (0.787")	18 (0.709)	26 (1.024")	9.5 (0.374")	12.5 (0.492")	130 (5.118")	50 (1.969")	3.5 (0.138")	4.9 (0.193")	7.9 (0.311")	4	
3	99616-C50	BC20-C22-130	22 (0.866")	32 (1.260")	20 (0.787")	--	33 (1.299")	11 (0.039")	16 (0.630")	130 (5.118")	--	5.5 (0.217")	7.1 (0.280")	12.1 (0.476")	4	N9GX090308 NS-30072 2.0Nm NK-T9
2	99616-C52	BC25-C22-180	22 (0.866")	32 (1.260")	25 (0.984")	20 (0.787")	33 (1.299")	11 (0.039")	16 (0.630")	180 (7.090")	80 (3.150")	5.5 (0.217)	7.1 (0.280")	12.1 (0.476")	4	

Screw Fit Cutter >>

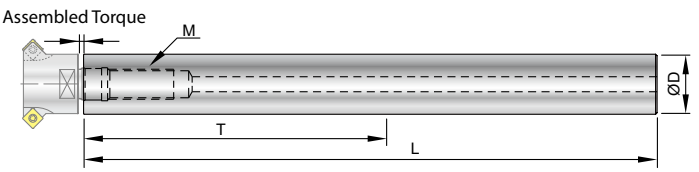
- Quick and easy to change system and provides chamfering flexibility.
- Capable of extended overhangs by almost any kind of the screw-fit tool holder or extension bar in the market.



Parts No.	Type	Cmin ø	Cmax ø	øD	M	SW	ød1	DPM	L	Lc1	Lc2	Lc3	Lc4	○z	Insert Screw / Key
99616-CM16-M05	M05-CM16	11 (0.433)	16 (0.630")	16.15 (0.636")	M5	8 (0.315")	10 (0.394")	5.5 (0.217")	13 (0.512")	0.09 (0.004")	2.59 (0.102")	2.9 (0.114")	5.4 (0.213")	3	N9GX04T002
99616-CM20-M06	M06-CM20	15 (0.590"	20 (0.787")	20.15 (0.793")	M6	10 (0.394")	12 (0.472")	6.5 (0.256")	13 (0.512")	0.09 (0.004")	2.59 (0.102")	2.9 (0.114")	5.4 (0.213")	4	NS-18037 0.6Nm NK-T6
99616-CM23-M08	M08-CM23	19 (0.748")	23.5 (0.925")	24 (0.945")	M8	14 (0.551")	16 (0.630")	8.5 (0.335")	15 (0.590")	0.16 (0.006")	2.41 (0.095")	3.08 (0.121")	5.33 (0.210")	4	
99616-CM29-M10	M10-CM29	23 (0.906")	29 (1.142")	30 (1.181")	M10	18 (0.709")	20 (0.787")	10.5 (0.413")	17 (0.670")	0.54 (0.021")	3.54 (0.139")	4.87 (0.192")	7.87 (0.310")	4	N9GX060204 NS-22055 0.9Nm / NK-T7

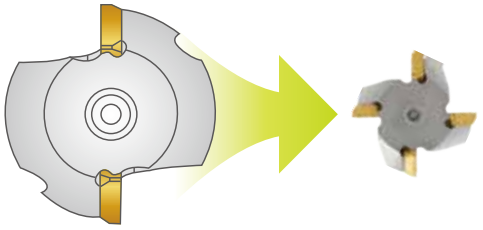
Solid Carbide Extension Bar >>

- T is the maximum overhang length.
- With internal coolant hole.
- Carbide extension bar with longer tool length is available on request. (REVA brand)



Parts No.	Type	ØD	T	L	M	Assembled Torque
99801-10W	BC10-100M05W	10 (0.394")	60 (2.362")	100 (3.937")	M5xP0.8	6.5 Nm
99801-16W	BC16-150M08W	16 (0.630")	80 (3.150")	150 (5.906")	M8xP1.25	25.0 Nm
99801-20W	BC20-200M10W	20 (0.787")	100 (3.937")	200 (7.874")	M10xP1.5	50.0 Nm

Performance



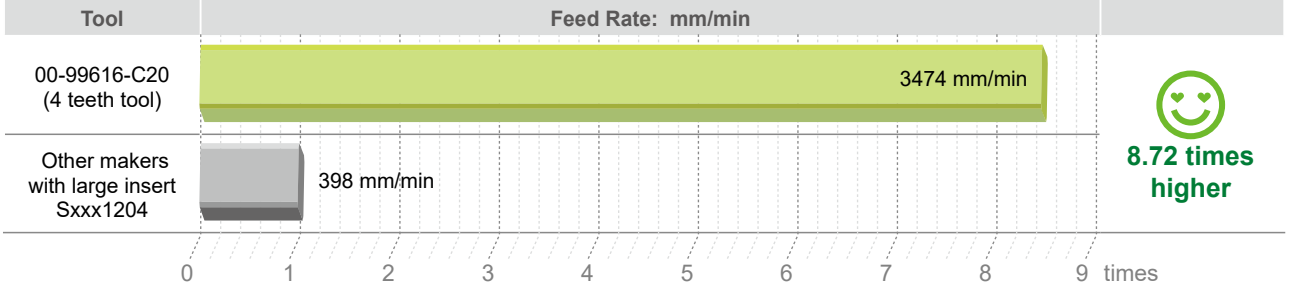
Feed Rate =
Feed per Tooth x Spindle Speed x **No. of Flute** mm/min.

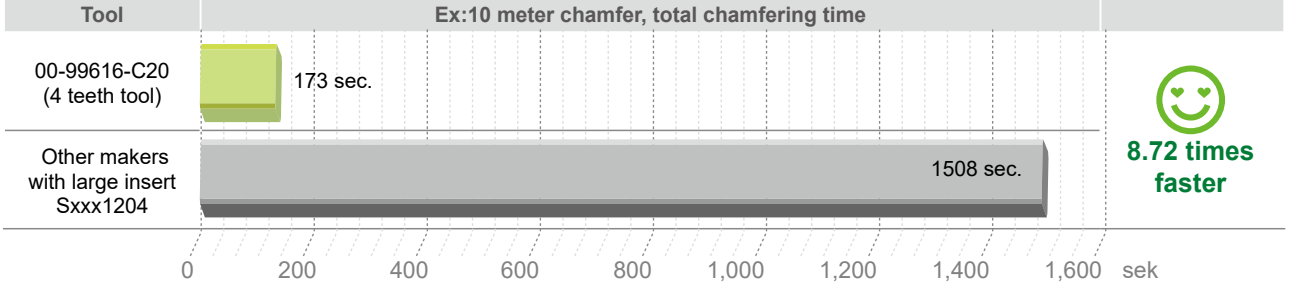
UP **Spindle Speed** = $\frac{\text{Cutting Speed x 1000}}{\pi \text{ x Cmin.}}$

Comparison >>

• Chamfer tool with larger insert(Sxxx1204) and Nine9 N9GX04 insert.

Tool			
Cutting data		**Nine 9 Chamfer mills**	**Other makers with Large insert**
Chamfering		1 mm	1 mm
Feed rate	**mm/rev.**	0.1	0.1
Dia. of cutter	**mm**	11	32
Teeth of cutter		**4**	2
Cutting Speed Vc	**m/min.**	300	200
Spindle Speed	**r.p.m.**	**8685**	1990
Feed rate	**mm/min**	**3474**	398





Cutting Data

99616-C02, C04, C06 Cutting Data >>

Workpiece Material			SFM	Feed Rate inch / tooth	Grade of Insert
Material Group		Sample Code (AISI)		N9GX04T002	
				Max. Chamfering 0.059 inch	
P	Carbon steel C<0.3%	1050	200-260-390	0.0007" ~ 0.0030"	NC9071
P	Carbon steel C>0.3%	1050	200-260-390	0.0007" ~ 0.0030"	NC2032
P	Low alloy steel C<0.3%	4130	200-260-390	0.0004" ~ 0.0020"	NC9071
P	High alloy steel	D2	200-260-390	0.0007" ~ 0.0030"	NC2032
M	Stainless steel	304	100-200-330	0.0004" ~ 0.0020"	NC9071
K	Cast iron	A48 35B / No 35B	200-260-390	0.0007" ~ 0.0023"	NC2032
N	Non-ferrous metal	6061	260-330-500	0.0011" ~ 0.0040"	NC9071

99616-C10~C52 Cutting Data >>

Workpiece Material			SFM	Feed Rate inch / tooth			Grade of Insert
Material Group		Sample Code (AISI)		N9GX04T002	N9GX060204	N9GX090308	
				Max. Chamfering 0.059 inch	Max. Chamfering 0.098 inch	Max. Chamfering 0.157 inch	
P	Carbon steel C<0.3%	1050	500-820-1150	0.002"~0.005"	0.004"~0.010"	0.004"~0.010"	NC9071
P	Carbon steel C>0.3%	1050	660-1050-1310	0.002"~0.004"	0.004"~0.008"	0.004"~0.010"	NC2032
P	Low alloy steel C<0.3%	4130	590-790-860	0.002"~0.004"	0.004"~0.008"	0.004"~0.008"	NC9071
P	High alloy steel	D2	390-500-660	0.002"~0.004"	0.004"~0.006"	0.004"~0.006"	NC2032
M	Stainless steel	304	390-500-590	0.002"~0.004"	0.002"~0.006"	0.004"~0.008"	NC9071
K	Cast iron	A48 35B / No 35B	390-500-590	0.002"~0.004"	0.004"~0.006"	0.004"~0.008"	NC2032
N	Non-ferrous metal	6061	660-1310-1970	0.002"~0.006"	0.004"~0.010"	0.004"~0.010"	NC9071
H	Hardened steel < HRC50	H13	265-300-330	0.002"~0.004"	0.002"~0.005"	0.004"~0.006"	NC2032