



Chamfer Mill 45° >>

Nine9 chamfer mill

is designed for chamfering and countersinking with an indexable insert.

The insert is specifically designed for use in high speed machining ; the multiple flutes provide for increased feed rate, optimizing performance and reducing cutting time.

Features

Ultra high speed and feed rate is the biggest advantage of Nine9 Chamfer Mills.

It is not a traditional chamfer tool, it runs 4 times faster in cutting speed and 10 times higher in feed rate. It is the most efficient tool you ever met.

► Excellent Repeatability >>

- Smallest Indexable counter sink, diameter $\varnothing 7$ mm.
- 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.

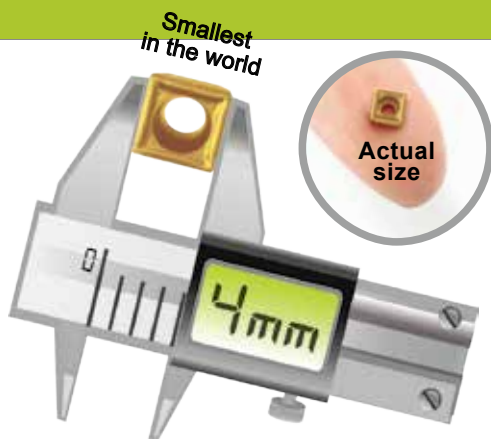


► Applications >>

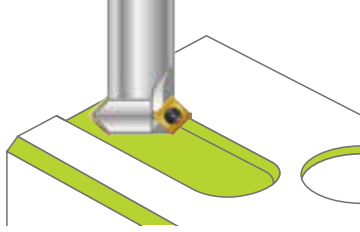
- For front and back chamfering.
- 90° counter sink and 45° chamfering.
- For counter sink, circular chamfering, contour chamfering and face milling.

► Economical >>

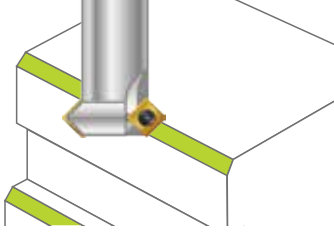
- Each insert has 4 cutting edges.
- Long tool life.



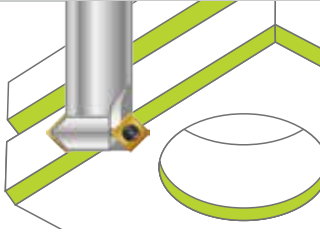
Face Milling



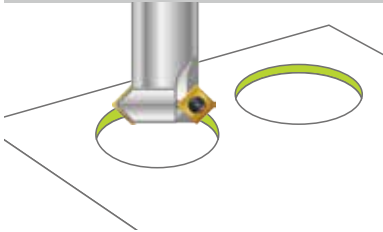
Chamfering



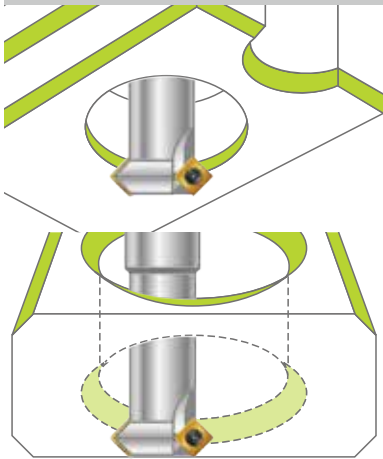
Back Chamfering



Countersink



Back Circular Chamfering



- High performance chamfer tool for upgrading your machining process.

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Chamfer Mill



- ▲ For front and back chamfering.
Eliminates 2nd operation or deburring time.

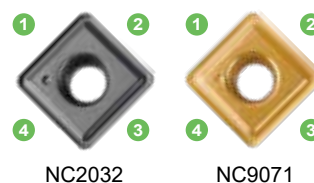
Indexable Chamfer Mill

► Features >>

- Benefiting from the specially ground dual-relief insert and optimized coating, higher feed rates and cutting speeds can be achieved on chamfering operations.
- 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.

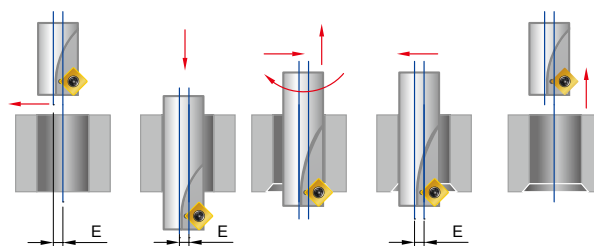
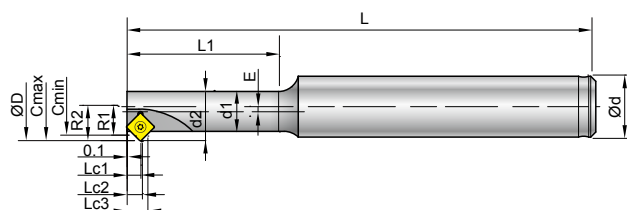


Code	Parts No.	Coating	Grade	Dimensions			Screw	Key	
				L	S	Re			
021401	N9GX04T002	NC2032	K20F		4.0	1.8	0.2	*NS-18037 0.6Nm	NK-T6
021402		NC9071							
023401	N9GX060204	NC2032			6.35	2.38	0.4	*NS-22055 0.9Nm	NK-T7
023402		NC9071			TiN				
025401	N9GX090308	NC2032			9.52	3.18	0.8	NS-30072 2.0Nm	NK-T9
025402		NC9071							

*Torque screwdriver is recommended.

► Holder >>

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



Code	Parts No.	Type	Cmin ø	Cmax ø	ød	ød1	ød2	ød	R1	R2	L	L1	Lc1	Lc2	Lc3	E	Øz	insert Screw / Key
701003	00-99616-C02	BC10-C02-80	6.8	8.8	10	5.25	6.5	9	3.4	4.4	80	20	2.56	2.93	3.93	1.25	1	N9GX04T002
701004	00-99616-C04	BC12-C04-100	8.5	10.8	12	6.45	8	11.1	4.25	5.4	100	25	2.51	2.98	4.13	1.55	1	*NS-18037 0.6Nm NK-T6
701005	00-99616-C06	BC12-C06-100	10.26	13.2	12	7.88	9.75	13.5	5.13	6.6	100	30	2.51	2.98	4.45	1.88	1	

*Torque screwdriver is recommended.

► Holder >>

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

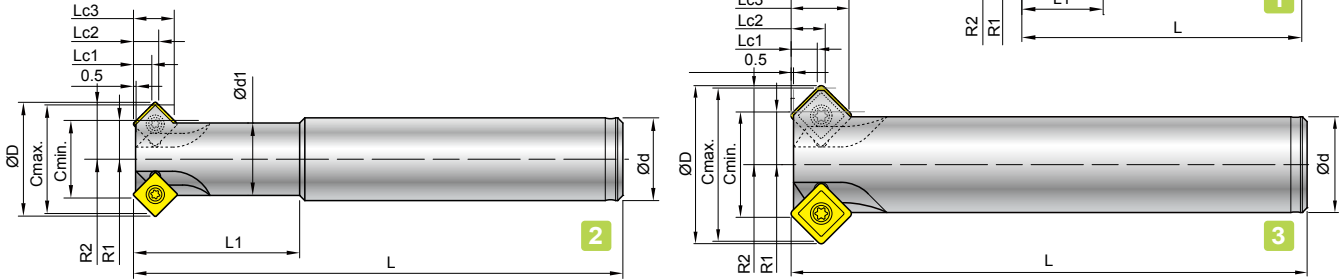
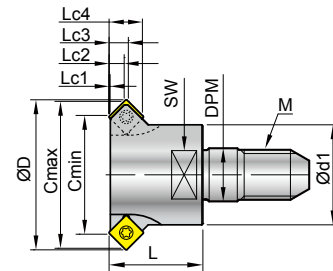


Fig	Code	Parts No.	Type	Cmin ø	Cmax ø	øD	ød1	øD	R1	R2	L	L1	Lc1	Lc2	Lc3	Øz	Insert Screw / Key
1	701001	00-99616-C10	BC10-C07-60	7	11	10	7.5	12	3.5	5.5	60	15	2.6	2.9	4.6	2	N9GX04T002
	701002	00-99616-C20	BC12-C11-100	11	16	12	9.6	16.15	5.5	8.0	100	25	2.6	2.9	5.0	4	*NS-18037 0.6Nm NK-T6
2	703001	00-99616-C30	BC16-C15-120	15	21	16	14	22	7.5	10.5	120	40	3.5	4.9	7.9	4	N9GX060204
	703002	00-99616-C40	BC20-C19-130	19	25	20	18	26	9.5	12.5	130	50	3.5	4.9	7.9	4	*NS-22055 0.9Nm NK-T7
3	705001	00-99616-C50	BC20-C22-130	22	32	20	--	33	11	16	130	--	5.5	7.1	12.1	4	N9GX090308
2	705002	00-99616-C52	BC25-C22-180	22	32	25	20	33	11	16	180	80	5.5	7.1	12.1	4	NS-30072 2.0Nm NK-T9

*Torque screwdriver is recommended.

► 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.



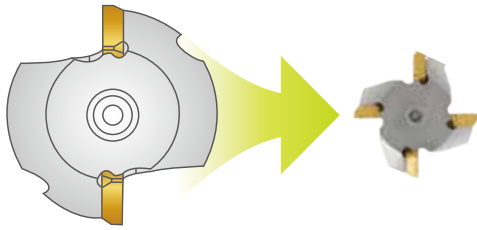
Code	Parts No.	Type	Cmin ø	Cmax ø	øD	M	SW	ød1	DPM	L	Lc1	Lc2	Lc3	Lc4	Øz	Insert Screw / Key
721101	00-99616-CM16-M05	M05-CM16	11	16	16.15	M5	8	10	5.5	15	0.09	2.59	2.9	5.4	3	N9GX04T002
721201	00-99616-CM20-M06	M06-CM20	15	20	20.15	M6	11	12	6.5	16	0.09	2.59	2.9	5.4	4	*NS-18037 0.6Nm / NK-T6
723301	00-99616-CM23-M08	M08-CM23	19	23.5	24	M8	14	16	8.5	19	0.16	2.41	3.08	5.33	4	N9GX060204
723401	00-99616-CM29-M10	M10-CM29	23	29	30	M10	18	20	10.5	17	0.54	3.54	4.87	7.87	4	*NS-22055 0.9Nm / NK-T7

*Torque screwdriver is recommended.

► Starter Kit >>

Fig	Code	Parts No.	Insert included	Holder included	Content
1	701201-1401	00-99616-C1020-32	N9GX04T002-NC2032	00-99616-C10 + 00-99616-C20	2 x holders + 10 inserts + 1 key
	701201-1402	00-99616-C1020-71	N9GX04T002-NC9071		
2	703201-3401	00-99616-C3040-32	N9GX060204-NC2032	00-99616-C30 + 00-99616-C40	
	703201-3402	00-99616-C3040-71	N9GX060204-NC9071		
3	705201-5401	00-99616-C5052-32	N9GX090308-NC2032	00-99616-C50 + 00-99616-C52	
	705201-5402	00-99616-C5052-71	N9GX090308-NC9071		

Performance



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



UP **Spindle Speed =** $\frac{\text{Cutting Speed} \times 1000}{\pi \times C \text{min.}}$

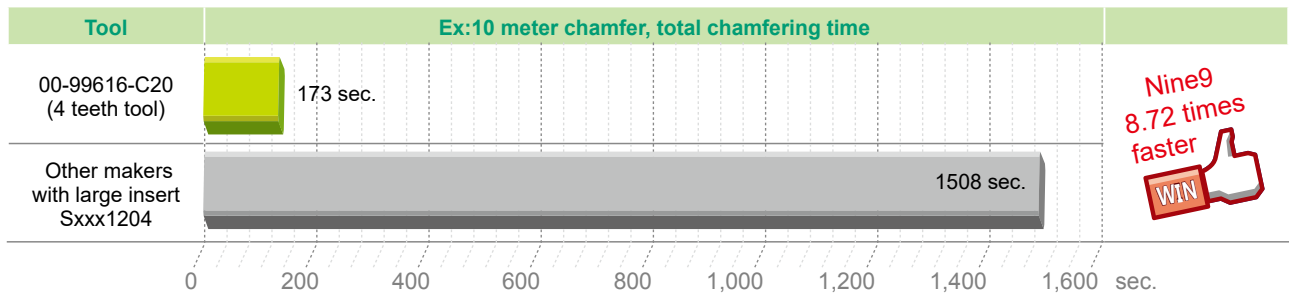
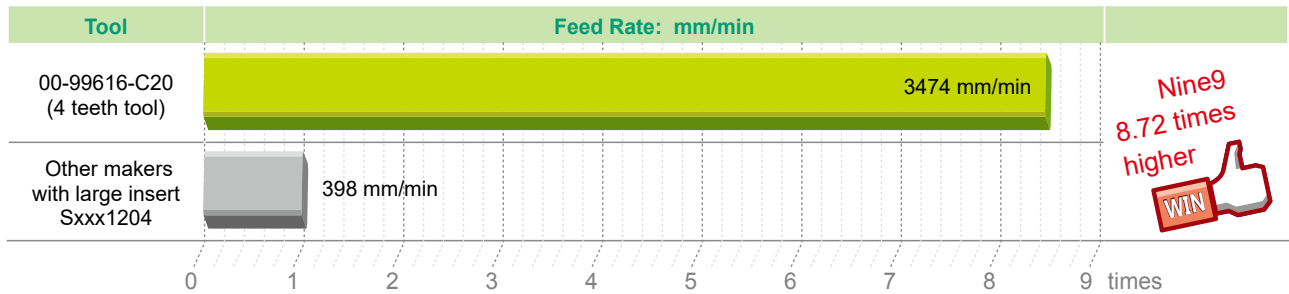
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Chamfer Mill

► Test Result >> Example 1

• 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		Cutting Speed VC m/min.	Feed Rate mm / tooth		Grade of Insert
Material Group	Sample Code (JIS)		N9GX04T002		
			Max. Chamfering 1.5mm		
P	Carbon steel C<0.3%	SS400	60-80-120	0.02 ~ 0.07	NC9071
	Carbon steel C>0.3%	S50C, P5	60-80-120	0.02 ~ 0.07	NC2032
	Low alloy steel C<0.3%	SCM420	60-80-120	0.01 ~ 0.04	NC9071
	High alloy steel C>0.3%	SKD11	60-80-120	0.02 ~ 0.07	NC2032
M	Stainless steel	SUS304	30-60-100	0.01 ~ 0.04	NC9071
K	Cast iron	FC25	60-80-120	0.02 ~ 0.06	NC2032
N	Al, and non-ferrous metal	A6061	80-100-150	0.03 ~ 0.10	NC9071

▶ 99616-C10~C52 Cutting Data >>

Workpiece material		Cutting Speed Vc m/min.	Feed rate mm / tooth			Grade of Insert	
Material Group	Sample Code (JIS)		N9GX04T002	N9GX060204	N9GX090308		
			Max. Chamfering 1.5mm	Max. Chamfering 2.5mm	Max. Chamfering 4mm		
P	Carbon steel C<0.3%	SS400	150-250-350	0.06~0.12	0.10~0.25	0.10~0.25	NC9071
	Carbon steel C>0.3%	S50C,P5	200-300-400	0.06~0.10	0.10~0.20	0.10~0.25	NC2032
	Low alloy steel C<0.3%	SCM420	180-240-260	0.06~0.10	0.10~0.20	0.10~0.20	NC9071
	High alloy steel C>0.3%	SKD11	120-150-200	0.06~0.10	0.10~0.15	0.10~0.15	NC2032
M	Stainless steel	SUS304	120-150-180	0.06~0.10	0.06~0.15	0.10~0.20	NC9071
K	Casting iron	FC25	120-150-180	0.06~0.10	0.10~0.15	0.10~0.20	NC2032
N	Al, and non-ferrous metal	A6061	200-400-600	0.06~0.15	0.10~0.25	0.10~0.25	NC9071
H	Hardened steel<50 HRC	SKD61	80-90-100	0.06~0.10	0.06~0.12	0.10~0.15	NC2032



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