



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.

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Chamfer Mill

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 honing and optimized coated for high cutting speed.
- Optimized the number of teeth on the holder to achieve higher feed rate.

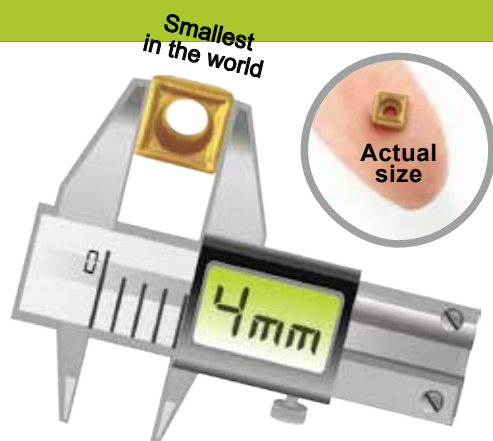


► Applications >>

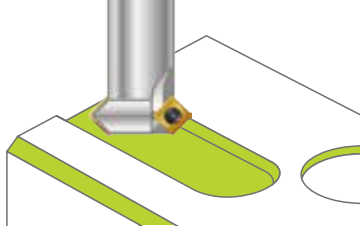
- For front and back chamfering.
- 90° counter sink and 45° chamfering.
- For counter sink, circular chamfering, contour chamfering and face milling.

► Economical >>

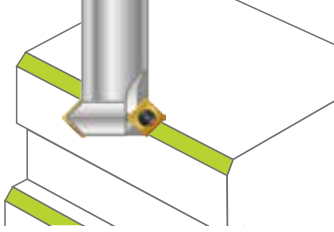
- Each insert has 4 cutting edges.
- Long tool life.



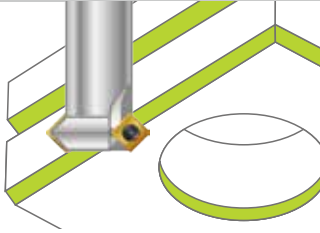
Face Milling



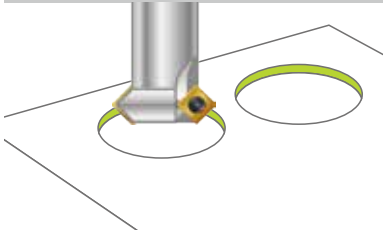
Chamfering



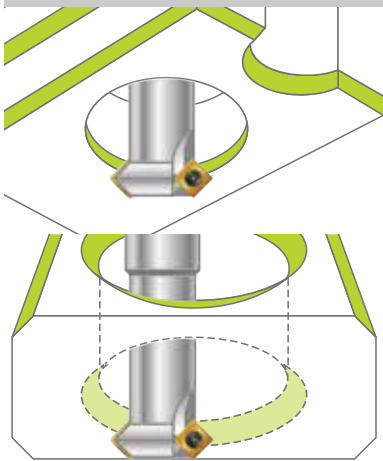
Back Chamfering



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.

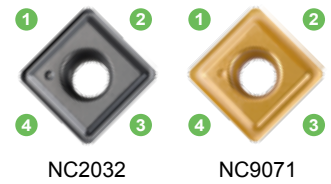
Indexable Chamfer Mill

► 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.



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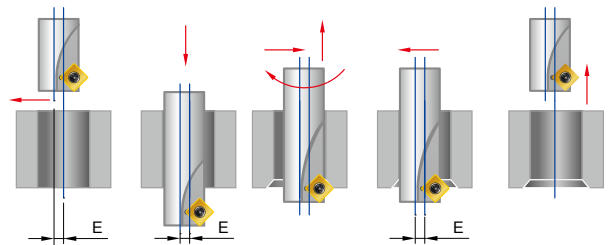
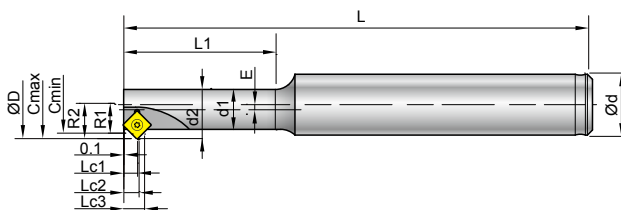
Chamfer Mill

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	K20F		6.35	2.38	0.4	*NS-22055 0.9Nm	NK-T7
023402		NC9071							
025401	N9GX090308	NC2032	K20F		9.52	3.18	0.8	NS-30072 2.0Nm	NK-T9
025402		NC9071							

*Torque screwdriver is recommended, see page 6-4.

► Holder_ 99616-C02, C04, C06 >>

- 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	z	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, see page 6-4.

► Holder_ 99616-C10~99616-C52 >>

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

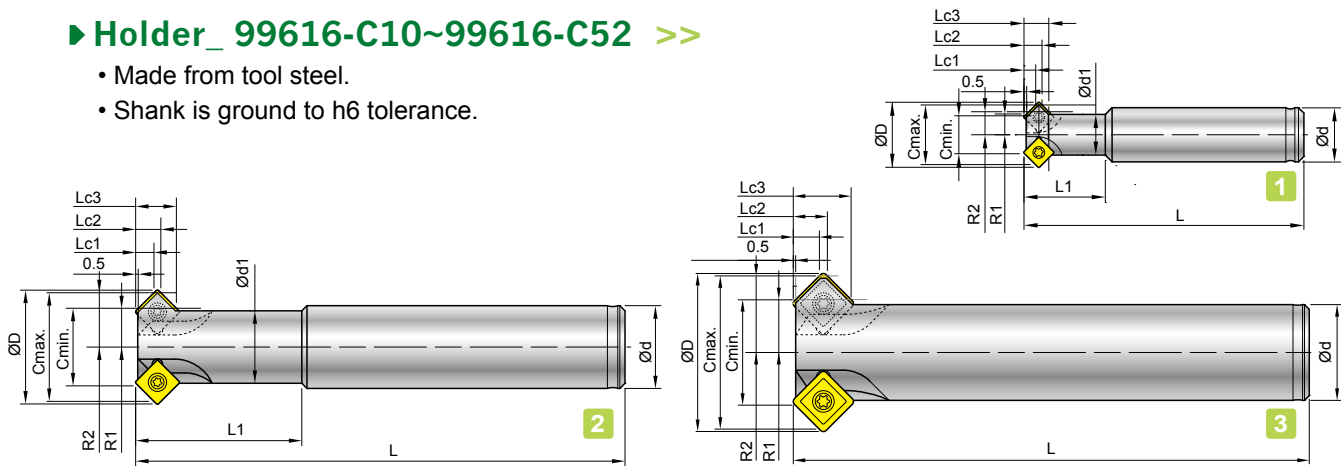


Fig	Code	Parts No.	Type	Cmin ø	Cmax ø	ød	ød1	øD	R1	R2	L	L1	Lc1	Lc2	Lc3	øz	insert Screw / Key
1	701001	00-99616-C10	BC10-C07-60	7	11	10	7.5	12	3.5	5.5	60	15	2.6	2.9	4.6	2	N9GX04T002
	701002	00-99616-C20	BC12-C11-100	11	16	12	9.6	16.15	5.5	8.0	100	25	2.6	2.9	5.0	4	*NS-18037 0.6Nm NK-T6
2	703001	00-99616-C30	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, see page 6-4.

► Starter Kit >>

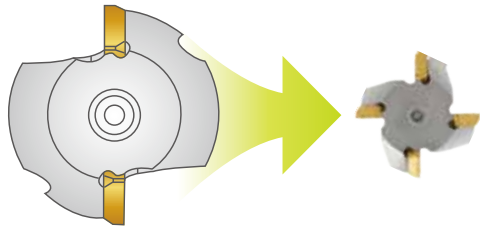
Fig	Code	Parts No.	Insert included	Holder included	Content
1	701201-1401	00-99616-C1020-32	N9GX04T002-NC2032	00-99616-C10 + 00-99616-C20	
	701201-1402	00-99616-C1020-71	N9GX04T002-NC9071		
2	703201-3401	00-99616-C3040-32	N9GX060204-NC2032	00-99616-C30 + 00-99616-C40	2 x holders + 10 inserts + 1 key
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



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Chamfer Mill

Performance



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



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

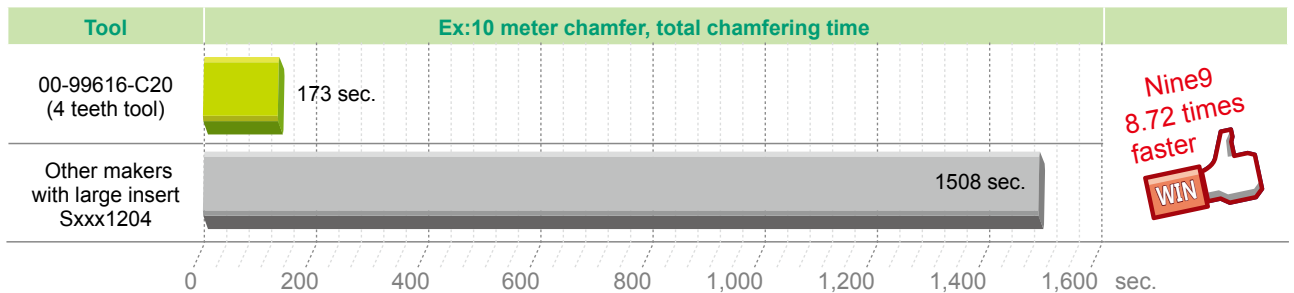
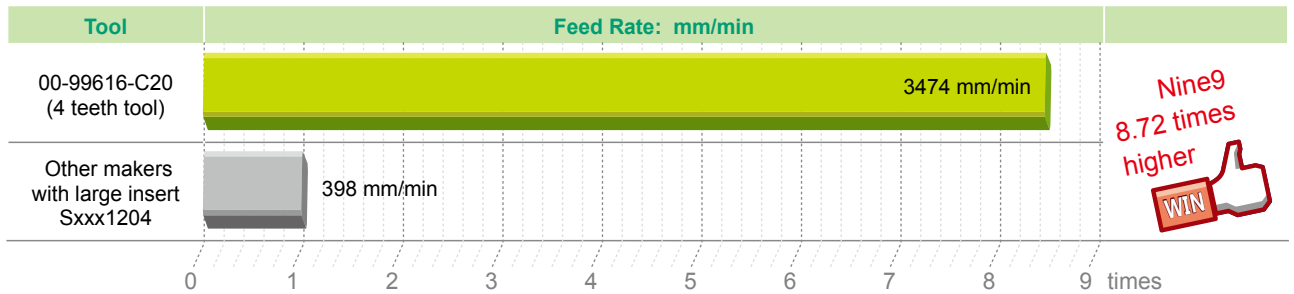
► Test Result >> Example 1

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

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Chamfer Mill

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

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Chamfer Mill

▶ 99616-C10~C52 Cutting Data >>

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

Torque Screwdriver

It prevents damages of the screws and tool



► Why Torque Control is important? >>

- Increase tool life of insert screw.
- Optimize performance of milling cutters after locking with identical torque on all inserts.
- Avoid damage of screw, resulted couldn't take insert out from the cutter.
- Deliver right tightening force to precise parts, no more over-tightening.
- Enhance the function of both tightened parts and connected parts.

► 0.6~5.5Nm torque screwdriver with 25mm+50mm TORX® high precision bit.

Parts No.	Contents						N.W.	Packaging Illustration
	Handle	Adapter			Bit			
		Nm	KgfcM	In-lb	Size	25mm+50mm		
0-TPK01-TX06-0.6-S	TPK-H02	0.6	6.1	5.3	TX6	2 pcs + 2 pcs	122g	
0-TPK01-TX07-0.9-S		0.9	9.2	8.0	TX7			
0-TPK01-TX08-1.2-S		1.2	12.0	10.6	TX8			
0-TPK01-TX08-2.0	TPK-H01	2.0	20.4	17.7	TX8	2 pcs + 2 pcs	130g	
0-TPK01-TX09-1.4		1.4	14.0	12.4	TX9			
0-TPK01-TX09-2.0		2.0	20.4	17.7	TX9			
0-TPK01-TX10-2.0		2.0	20.4	17.7	TX10			
0-TPK01-TX15-3.0		3.0	30.6	26.6	TX15			
0-TPK01-TX20-5.0	TPK-H03	5.0	51.0	44.3	TX20	2 pcs	200g	
0-TPK01-TX20-5.5		5.5	56.1	48.7	TX20			
0-TPK01-TX2025-5.5								
					Bit 50mm			
					TX20	2 pcs		
					TX25	2 pcs		

Note: other size are available, please feel free to contact us.

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Accessory