

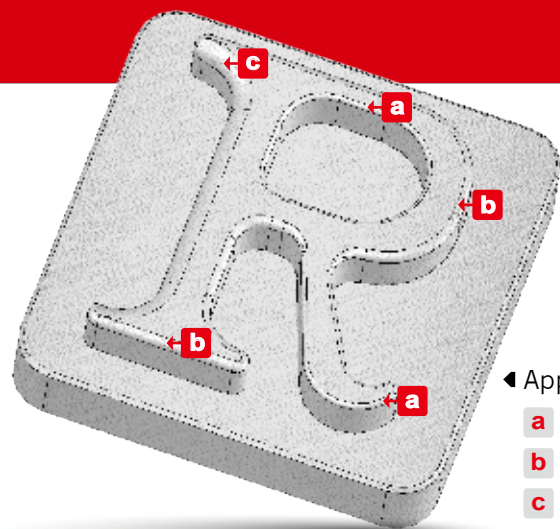
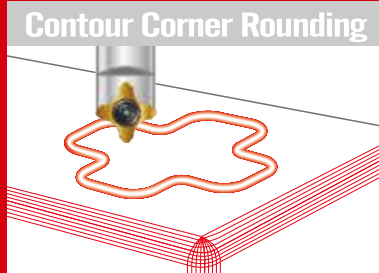
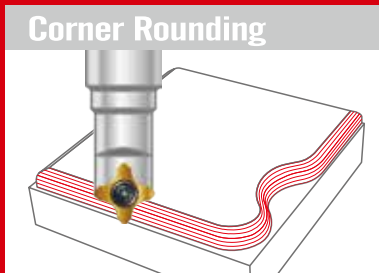


Corner Rounding >> Type of RC

Various corner radius inserts can fit on same holder
Carbide insert can stand very long tool life
Produces smooth and excellent surface finish on workpiece.

Features

- Each insert has 2 cutting edges.
- Combination corner rounding and 45° chamfering application on same insert.
- Higher cutting speed and feed rate.
- Very small X offset, good for contour chamfering.
- Utilizes standard NC Spot Drill holders
99616-06, 99616-14, 99616-22 & 99616-32.



Applications

- a** Radius 0.5
- b** Radius 1.0
- c** Radius 2.0



N9MT05T1RC

RC



RC0.5 ~ RC1.0
All are interchangeable on same holder

1

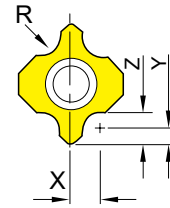
Corner Rounding

► **Inserts >>**

- Various corner radius inserts can fit on same holder.
- Very small X offset 1.25mm for radius 0.5, the small x offset allows for profiling in small corners.

- NC2071:**
- Universal grade for all unhardened steel and cast iron.
 - Inserts are CNC ground for precision radius location.
 - Each insert has 2 cutting edges.

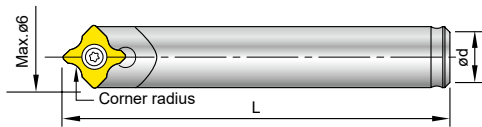
- NC9036:**
- For non-ferrous material such as aluminum, acrylic, titanium, brass, copper and stainless steel.
 - High positive geometry and sharp edge produces excellent surface finish.
 - Each insert has 2 cutting edges.



Insert Radius	Code	Parts No.	Coating	Grade	offset				Dimensions		
					X	Y	Z		L	S	
0.5	011203	N9MT05T1RC05	NC2071	TiN	K20F	1.25	0.75	1.25		5	1.8
	011206		NC9036	DLC							
0.75	011204	N9MT05T1RC075	NC2071	TiN	K20F	1.50	0.75	1.50			
	011207		NC9036	DLC							
1.0	011205	N9MT05T1RC10	NC2071	TiN	K20F	1.75	0.75	1.75			
	011208		NC9036	DLC							

► **Holder >>**

- For corner rounding using **NC Spot Drill** shank.



Code	Parts No.	Ød	L	Screw	Key
601001	00-99616-06-6	6	35	*NS-20036 0.6 Nm	NK-T6
601002	00-99616-06-5	5	35		
601003	00-99616-06-6L	6	60		

Note: 601003 is carbide shank holder.

*Torque screwdriver is recommended.

RC N9MT11T3RC



RC1.0 ~ RC3.0
All are interchangeable
on same holder

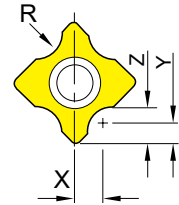
1

Corner Rounding

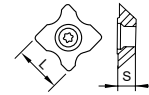
► Inserts >>

- Combination corner rounding and 45° chamfering application on same insert.
- Each insert has 2 cutting edges.

- NC40:**
- Universal grade for all unhardened steel and cast iron.
 - Inserts are CNC ground for precision radius location.
- NC9036:**
- For non-ferrous material such as aluminum, acrylic, titanium, brass, copper and stainless steel.
 - High positive geometry and sharp edge produces excellent surface finish.



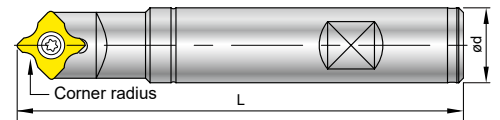
Insert Radius	Code	Parts No.	Coating	Grade	offset			Dimensions			
					X	Y	Z	L	S		
1.0	014209	N9MT11T3RC10	NC40	TiN	2.75	1.5	2.5	11.11	3.97		
	014224		NC9036	DLC							
1.5	014210	N9MT11T3RC15	NC40	TiN	3.25	1.5	3				
	014225		NC9036	DLC							
2.0	014211	N9MT11T3RC20	NC40	TiN	3.75	1.5	3.5				
	014226		NC9036	DLC							
2.5	014212	N9MT11T3RC25	NC40	TiN	4.25	1.5	4				
	014227		NC9036	DLC							
3.0	014213	N9MT11T3RC30	NC40	TiN	4.75	1.4	4.4				
	014228		NC9036	DLC							
1/64	014214	N9MT11T3RC1/64	NC40	TiN	0.086"	0.059"	0.0747"			0.437"	0.156"
	014229		NC9036	DLC							
1/32	014215	N9MT11T3RC1/32	NC40	TiN	0.101"	0.059"	0.090"				
	014230		NC9036	DLC							
1/16	014216	N9MT11T3RC1/16	NC40	TiN	0.133"	0.059"	0.122"				
	014231		NC9036	DLC							
3/32	014217	N9MT11T3RC3/32	NC40	TiN	0.164"	0.059"	0.153"				
	014232		NC9036	DLC							
1/8	014218	N9MT11T3RC 1/8	NC40	TiN	0.199"	0.055"	0.180"				
	014233		NC9036	DLC							



► Holder >>

- For corner rounding using **NC Spot Drill** shank.

Code	Parts No.	Ød	L	Screw/ Key
604002	00-99616-14-12	12	100	NS-35080 2.5 Nm /
604004	00-99616-14	16		
614001	00-99616-14-1/2	1/2"	100	NK-T15
614002	00-99616-14-5/8	5/8"		



► Starter Package >>

Code	Parts No.	Ød	Content
NEW 604204-4200	00-99616-14-ME5RC	16	N9MT11T3RC10-NC40 N9MT11T3RC15-NC40 N9MT11T3RC20-NC40 N9MT11T3RC25-NC40 N9MT11T3RC30-NC40 1 tool holder + 5 inserts + 1 key



N9MT1704RC / N9MT2506RC **NEW**

RC



**RC4.0 ~ RC6.0 /
RC7.0 ~ RC10.0**

All are interchangeable
on same holder

► N9MT1704RC >>

NC2071: • Universal grade for all unhardened steel and cast iron.

NC9036: • High positive geometry and sharp edge produces excellent surface finish.

• For non-ferrous material such as aluminum, acrylic, titanium, brass, copper and stainless steel.

Corner radius(R)	Code	Parts No.		Coating	Grade	offset			Dimensions L S
						X	Y	Z	
4.0	016202	N9MT1704RC40	NC2071	TiN	K20F	6.15	2	6	
	016208		NC9036	DLC					
5.0	016203	N9MT1704RC50	NC2071	TiN	K20F	7.1	2	7	
	016209		NC9036	DLC					
6.0	016204	N9MT1704RC60	NC2071	TiN	K20F	8.1	2	8	
	016210		NC9036	DLC					

► N9MT2506RC >> **NEW**

NC2033: • For carbon steel, alloy steel, high alloy steel, cast iron and hardened steel < 50 HRC.

XP9000: • High positive geometry and sharp edge produces excellent surface finish.

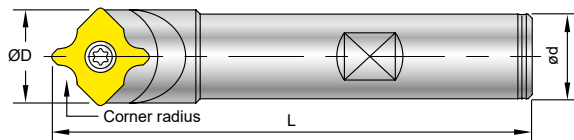
• For non-ferrous material such as aluminum, titanium, brass, copper and long cutting chip metal.

Corner radius(R)	Code	Parts No.		Coating	Grade	offset			Dimensions L S
						X	Y	Z	
7.0	018203	N9MT2506RC70	NC2033	TiAlN	K20F	9.5	3	10	
	018204		XP9000	-					
8.0	018205	N9MT2506RC80	NC2033	TiAlN	K20F	10.5	3	11	
	018206		XP9000	-					
9.0	018207	N9MT2506RC90	NC2033	TiAlN	K20F	11.5	3	12	
	018208		XP9000	-					
10.0	018209	N9MT2506RC100	NC2033	TiAlN	K20F	12.5	3	13	
	018210		XP9000	-					
5/16	018213	N9MT2506RC5/16	NC2033	TiAlN	K20F	0.411"	0.118"	0.430"	
	018214		XP9000	-					
3/8	018211	N9MT2506RC3/8	NC2033	TiAlN	K20F	0.474"	0.118"	0.493"	
	018212		XP9000	-					

► Holder >>

• For corner rounding using **NC Spot Drill** shank.

00-99616-32-XX



Code	Parts No.	Ød	L	ØD	Insert Type	Screw	Key
606001	00-99616-22	20	100	23.25	N9MT1704	NS-50125 5.5 Nm	NK-T20
606002	00-99616-22-25	25	150	23.25			
NEW 608001	00-99616-32-25	25	120	32.56	N9MT2506	NS-60180 5.5 Nm	NK-T25
NEW 618001	00-99616-32-1	1"	120	32.56			



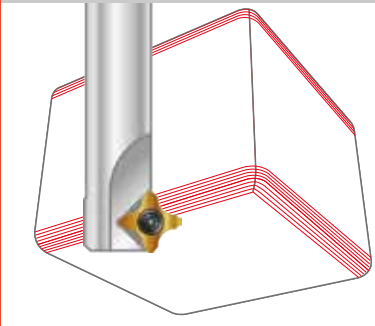
Corner Rounding >> Type of R

Various corner radius inserts can fit on same holder
Carbide insert can stand very long tool life
Produces smooth and excellent surface finish on workpiece.

Features

- Each insert has 4 cutting edges.
- R1.0 ~ R3.0 inserts are interchangeable on same holder.
- For front and back chamfering.
- Tool offset can be set after measuring tool length by tool presetter or Z-Zero Setter.
- Inserts are CNC ground for precision radius and location.
- Optimizes the tool performance and reduces the cutting time.

Front & Back
Corner Rounding



N9MT11T3R

R



R1.0~R3.0
All are interchangeable
on same holder

1
Corner Rounding

▶ Inserts >>

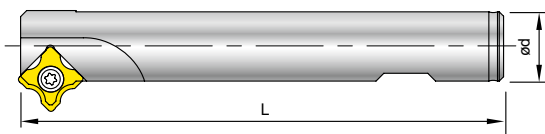
- For front and back corner rounding.
- Various corner radius inserts can fit on same holder.
- Coated carbide inserts for excellent tool life.
- Each insert has 4 cutting edges.

NC2071: • Universal grade for all unhardened steel and cast iron.
• Inserts are CNC ground for precision radius location.

Corner radius(R)	Code	Parts No.	Coating	Grade	Dimensions	
					L	S
1.0	014404	N9MT11T3R10-NC2071	TiN	P35		11.11
1.5	014405	N9MT11T3R15-NC2071	TiN	P35		
2.0	014406	N9MT11T3R20-NC2071	TiN	P35		
2.5	014407	N9MT11T3R25-NC2071	TiN	P35		
3.0	014408	N9MT11T3R30-NC2071	TiN	P35		

▶ Holder >>

- Center of radius of each tool is dedicated.
- Tool offset can be set after measuring tool length by tool presetter or Z-Zero Setter.



Code	Parts No.	Ød	L	Z	Screw	Key
604015	00-99616-16-25R	16	100	1	NS-35080 2.5 Nm	NK-T15
604019	00-99616-16-30R	16	120	1		
604020	00-99616-25-40R	25	150	4		

▶ More >>

- Also can fit with N9MT11T308LA inserts for front and back chamfering. (Please see page 1-39)

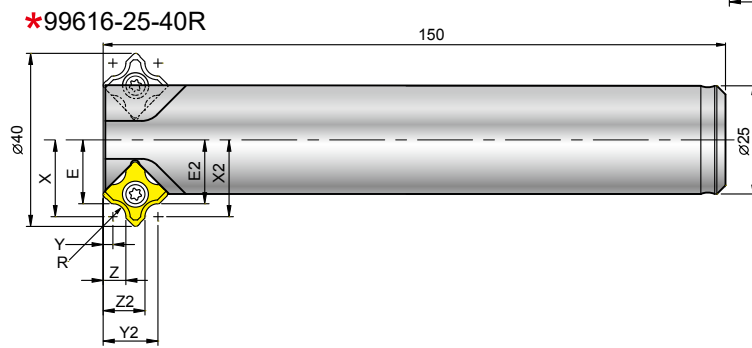
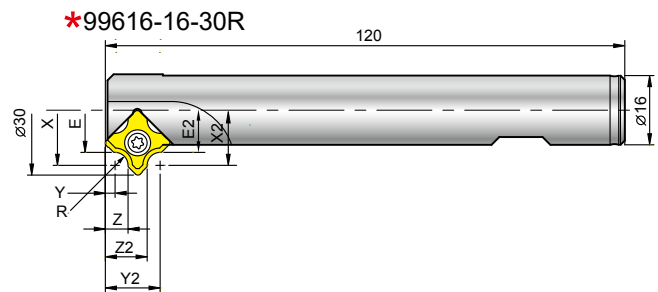
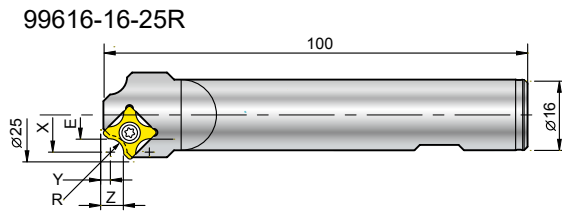
R N9MT11T3R



1

Corner Rounding

▶ Cutting Position >>



99616-16-30R & 99616-25-40R
 *For front and back corner rounding.
 *Eliminates 2nd operation or deburring time.

Insert Radius	Holder	Front Chamfering				Back Chamfering				⊗ Z
		E	X	Y	Z	E2	X2	Y2	Z2	
R1.0	00-99616-16-25R	8.25	9.25	3.25	4.25	—	—	—	—	1
	00-99616-16-30R	10.75	11.75	3.25	4.25	10.75	11.75	11.65	10.65	1
	00-99616-25-40R	15.75	16.75	3.25	4.25	15.75	16.75	11.65	10.65	4
R1.5	00-99616-16-25R	8	9.5	3	4.5	—	—	—	—	1
	00-99616-16-30R	10.5	12	3	4.5	10.5	12	11.9	10.4	1
	00-99616-25-40R	15.5	17	3	4.5	15.5	17	11.9	10.4	4
R2.0	00-99616-16-25R	7.75	9.75	2.75	4.75	—	—	—	—	1
	00-99616-16-30R	10.25	12.25	2.75	4.75	10.25	12.25	12.15	10.15	1
	00-99616-25-40R	15.25	17.25	2.75	4.75	15.25	17.25	12.15	10.15	4
R2.5	00-99616-16-25R	7.5	10	2.5	5	—	—	—	—	1
	00-99616-16-30R	10	12.5	2.5	5	10	12.5	12.4	9.9	1
	00-99616-25-40R	15	17.5	2.5	5	15	17.5	12.4	9.9	4
R3.0	00-99616-16-25R	7.25	10.25	2.25	5.25	—	—	—	—	1
	00-99616-16-30R	9.75	12.75	2.25	5.25	9.75	12.75	12.65	9.65	1
	00-99616-25-40R	14.75	17.75	2.25	5.25	14.75	17.75	12.65	9.65	4

N9MT11T308LA 45° Chamfering Tool



1

Corner Rounding-LA

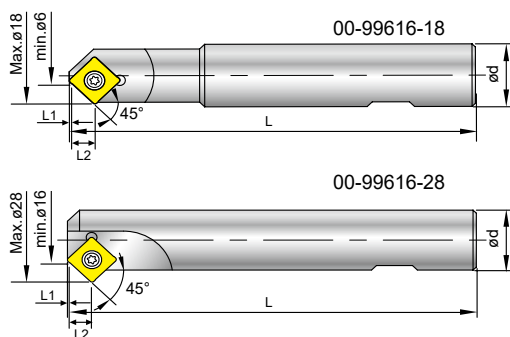
► Inserts >>

- NC40:**
 - General purpose, universal grade for all unhardened steel.
 - Each insert has 4 cutting edges.
- NC10:**
 - High positive angle and fully ground cutting edge and relief angle.
 - Universal grade for Al, Al-alloy, non-ferrous metal, cast iron and stainless steel.
 - Each insert has 4 cutting edges.
- NC60:**
 - Cermet insert, for hardened steel up to 56 HRC .
 - Each insert has 4 cutting edges.

Code	Parts No.	Coating	Grade		Dimensions			
					L	S	Re	
014409	N9MT11T308LA	NC40	TiN		11.11	3.97	0.8	
014410		NC10	TiAN					K10F
014411		NC60	Cermet					

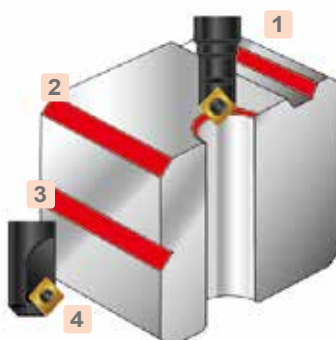
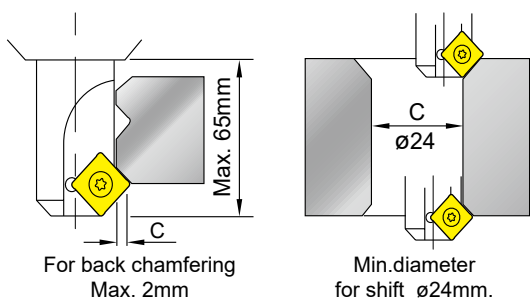
► Holder >>

- 00-99616-28 can be applied for machining back chamfering and side grooving.



Code	Parts No.	Chamfering	Ød	L	L1	L2	Z	Insert type	Screw / Key
604017	00-99616-18	Ø6-Ø18	20	120	1.15	7.55	1	N9MT11T308LA	NS-35080 2.5 Nm
604018	00-99616-28	Ø16-Ø28	20	120	1.15	7.55	1		NK-T15

► Example >>

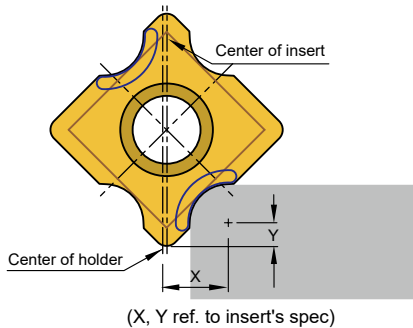


Action	
1	External and internal chamfering
2	Side chamfering
3	Side grooving
4	Back chamfering

Cutting Data

► For Insert N9MT05T1RC / N9MT11T3RC / N9MT1704RC / N9MT2506RC

1
Corner Rounding



$$d = 2 \times X \quad \text{mm}$$

$$S = \frac{Vc \times 1000}{d \times \pi} \quad \text{r.p.m.}$$

$$F = S \times f \quad \text{mm/min.}$$

Calculate spindle speed

d = diameter of the tool

X = tool radius offset

Vc = Cutting Speed -m/min.

S = Spindle Speed -r.p.m.

F = mm/min.

f = mm/rev.

Calculate tool length offset on machining center

X = tool radius offset

Y = distance to the center of radius.

TL' = tool length

TL = tool length offset.

H = tool radius offset

$$TL = TL' - Y,$$

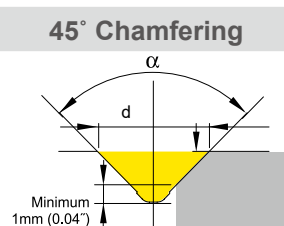
$$H = X$$

RC Insert	Work Material	Vc (m/min)	f (mm/rev.)	Grade of Insert
	P Carbon steel	150~320	0.05~0.10	NC40, NC2071, NC2033
	P Alloy steel	100~250	0.05~0.10	NC40, NC2071, NC2033
	P High alloy steel	80~150	0.04~0.08	NC40, NC2071, NC2033
	M Stainless steel	65~125	0.05~0.10	NC9036
	K Casting iron	150~250	0.05~0.10	NC40, NC2071, NC2033
	N Aluminum, Al-alloy Si < 12%	150~320	0.05~0.10	NC9036, XP9000
	N Al-alloy Si > 12%	100~300	0.05~0.10	NC9036, XP9000
	N Cu	200~250	0.05~0.10	NC9036, XP9000
	N Brass and Bronze	150~250	0.05~0.10	NC9036, XP9000
	S Ti, Ti-alloy	40~80	0.03~0.08	NC9036

► N9MT-R Insert >> Corner Rounding (4 cutting edges)

R Insert	Work Material	Vc (m/min)	f (mm/rev.)	Grade of Insert
	P Carbon steel	150~320	0.05~0.10	NC2071
	P Alloy steel	100~250	0.04~0.08	NC2071
	P High alloy steel	60~80	0.03~0.06	NC2071
	K Casting iron	150~250	0.05~0.10	NC2071

► LA Insert >> 45° Chamfering



$$S = \frac{Vc \times 1000}{d \times \pi} \quad \text{r.p.m.}$$

$$F = S \times f \quad \text{mm/min.}$$

Formula

α = point angle 90°

d = effective diameter

Vc = cutting speed-m/min.or ft/min.

S = Spindle speed

f = feed per rev.-mm/rev.

45° Chamfering	Work Material	Vc (m/min)	f (mm/rev.)	Grade of Insert
	P Carbon steel	150-320	0.05~0.10	NC40
	P Alloy steel	100-250	0.04~0.08	NC40
	P High alloy steel	60-80	0.03~0.06	NC40
	M Stainless steel	65-125	0.03~0.06	NC10
	K Casting iron	150-250	0.05~0.10	NC10, NC40
	N Aluminum, Al-alloy Si < 12%	150-320	0.05~0.10	NC10
	N Al-alloy Si > 12%	100-300	0.05~0.10	NC10
	N Cu	200-250	0.05~0.10	NC10
	N Brass and Bronze	150-250	0.05~0.10	NC10
	H Hardened steel 40~56 HRC	60-80	0.05~0.10	NC60