



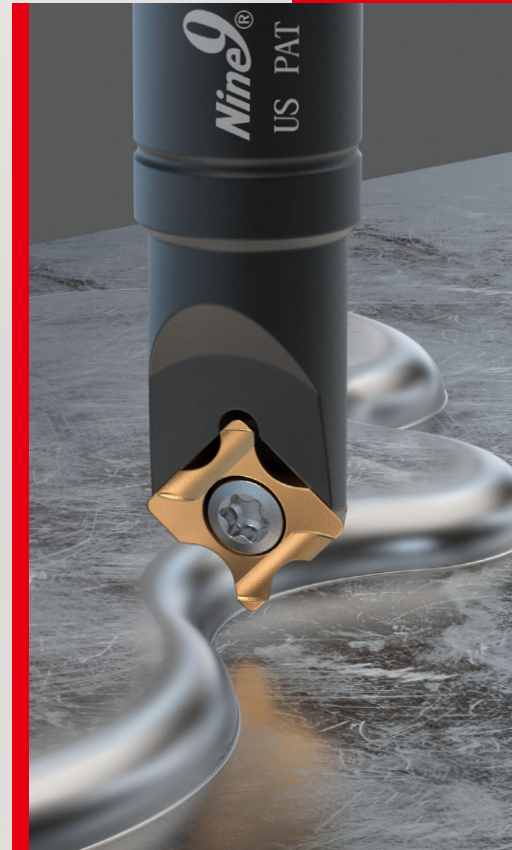
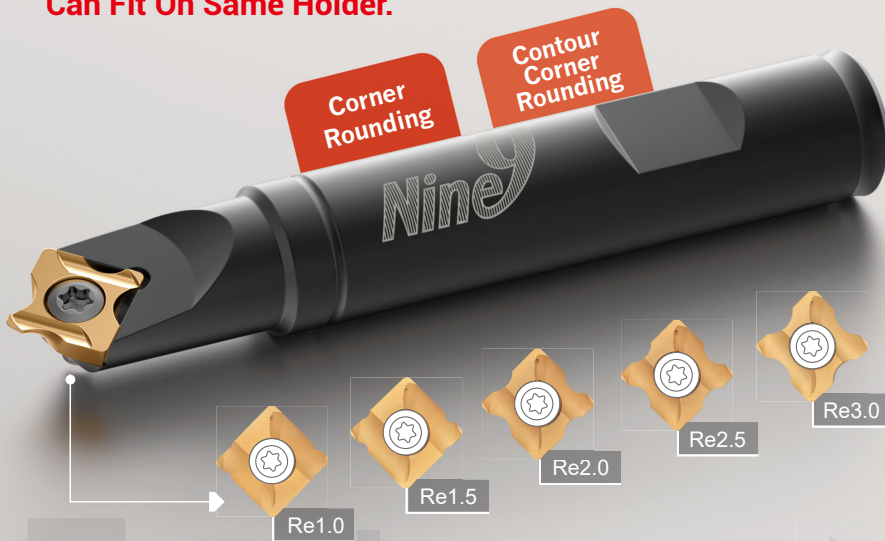
Corner Rounding >>>

Type of RC / Radius 0.5 ~10mm

Produces smooth and excellent surface finish on workpiece.

P M K N S

► **Various Corner Radius Inserts
Can Fit On Same Holder.**



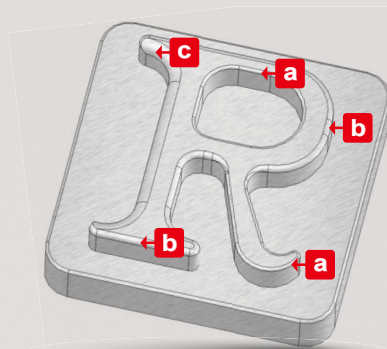
Features >

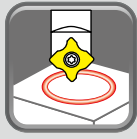
► **Each Insert Has 2 Or 4 Cutting Edges**

- Carbide insert can stand very long tool life.
- 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.

► **Example**

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





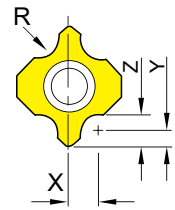
RC0.5 ~ RC1.0

► Inserts >>

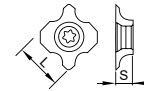
- Various corner radius inserts can fit on same holder.
- Very small X offset 1.25mm for radius 0.5, the small x offset allows for profiling in small corners.

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.

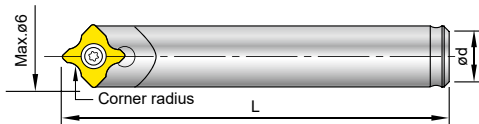


Corner Radius	Code	Parts No.		Coating	Grade	offset			Dimensions	
						X	Y	Z	L	S
0.5	011203	N9MT05T1RC05	NC2071	TiN	K20F	1.25	0.75	1.25	5	1.8
	011206		NC9036	DLC						
0.75	011204	N9MT05T1RC075	NC2071	TiN	K20F	1.50	0.75	1.50		
	011207		NC9036	DLC						
1.0	011205	N9MT05T1RC10	NC2071	TiN	K20F	1.75	0.75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



► Holder >>

- For corner rounding using **NC Spot Drill** basic holder.



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



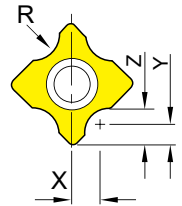
RC1.0 ~ RC3.0

► Inserts >>

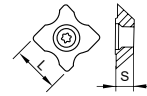
- Combination corner rounding and 45° chamfering application on same insert.
- Each insert has 2 cutting edges.

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.



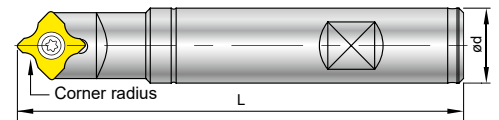
Corner Radius	Code	Parts No.	Coating	Grade	offset			Dimensions			
					X	Y	Z	L	S		
1.0	014209	N9MT11T3RC10	NC40	TiN	2.75	1.5	2.5	11.11	3.97		
	014224		NC9036	DLC							
1.5	014210	N9MT11T3RC15	NC40	TiN	3.25	1.5	3				
	014225		NC9036	DLC							
2.0	014211	N9MT11T3RC20	NC40	TiN	3.75	1.5	3.5				
	014226		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** basic holder.

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	Insert included	Content
604204-4200	00-99616-14-ME5RC	16	N9MT11T3RC10-NC40 N9MT11T3RC15-NC40 N9MT11T3RC20-NC40 N9MT11T3RC25-NC40 N9MT11T3RC30-NC40	1 tool holder + 5 inserts + 1 key



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Corner Rounding

N9MT1704RC / N9MT2506RC

RC



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

► 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	
						X	Y	Z		L	S
4.0	016202	N9MT1704RC40	NC2071	TiN	K20F	6.15	2	6		17	4.76
	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 >>

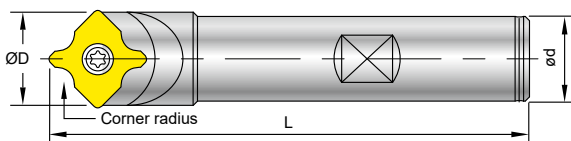
- NC2033:** • For carbon steel, alloy steel, high alloy steel, cast iron and hardened steel < 50 HRC.
- XP9000:** • High positive geometry and sharp edge produces excellent surface finish.
 - For non-ferrous material such as aluminum, titanium, brass, copper and long cutting chip metal.

Corner Radius(R)	Code	Parts No.		Coating	Grade	offset				Dimensions	
						X	Y	Z		L	S
7.0	018203	N9MT2506RC70	NC2033	TiAlN	K20F	9.5	3	10		25	6.35
	018204		XP9000	Uncoated							
8.0	018205	N9MT2506RC80	NC2033	TiAlN	K20F	10.5	3	11			
	018206		XP9000	Uncoated							
9.0	018207	N9MT2506RC90	NC2033	TiAlN	K20F	11.5	3	12			
	018208		XP9000	Uncoated							
10.0	018209	N9MT2506RC100	NC2033	TiAlN	K20F	12.5	3	13			
	018210		XP9000	Uncoated							
5/16	018213	N9MT2506RC5/16	NC2033	TiAlN	K20F	0.411"	0.118"	0.430"			
	018214		XP9000	Uncoated							
3/8	018211	N9MT2506RC3/8	NC2033	TiAlN	K20F	0.474"	0.118"	0.493"			
	018212		XP9000	Uncoated							

* 2 pcs per box.

► Holder >>

- For corner rounding using **NC Spot Drill** basic holder.



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				
608001	00-99616-32-25	25	120	32.56	N9MT2506	NS-60180 5.5 Nm	NK-UT25
618001	00-99616-32-1	1"	120				

2

Corner Rounding



Corner Rounding >>>

Type of R / Radius 1.0~3.0mm

Produces smooth and excellent surface finish on workpiece.

P **K**

► For Front And Back Chamfering (By LA Insert),
And Corner Rounding (By R Insert)



Features >

► **Each Insert Has 4 Cutting Edges**

- Carbide insert can stand very long tool life.
- 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.





R1.0~R3.0

▶ Inserts >>

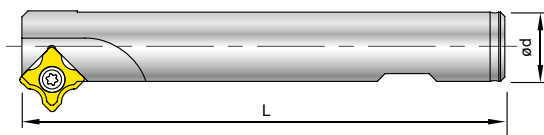
- For front and back corner rounding.
- Various corner radius inserts can fit on same holder.
- Coated carbide inserts for excellent tool life.
- Each insert has 4 cutting edges.

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	3.97
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		

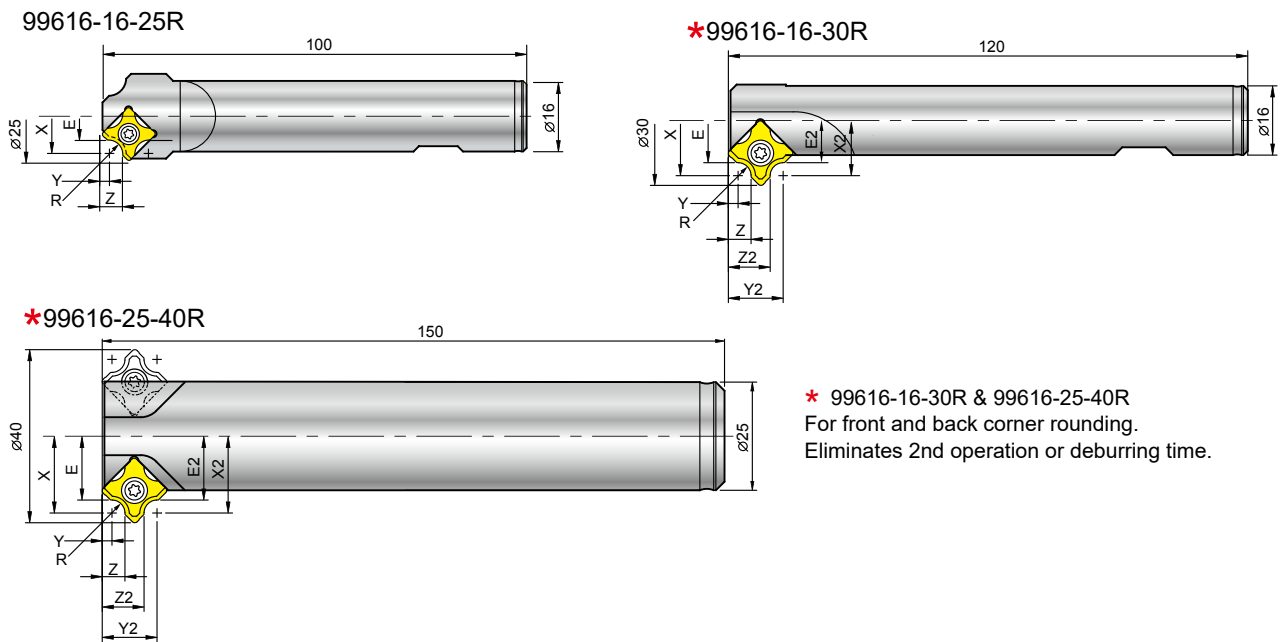
▶ More >>

- Also can fit with N9MT11T308LA inserts for front and back chamfering. (Please see page 2-43)

R N9MT11T3R



► Cutting Position ►►



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

Corner 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

2

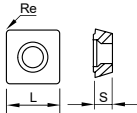
Corner Rounding

N9MT11T308LA 45° Chamfering Tool



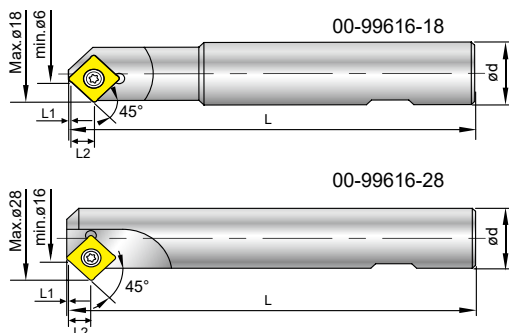
▶ Inserts >>

- 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	P35	11.11	3.97	0.8
014410		NC10	TiAlN	K10F			
014411		NC60	Cermet				

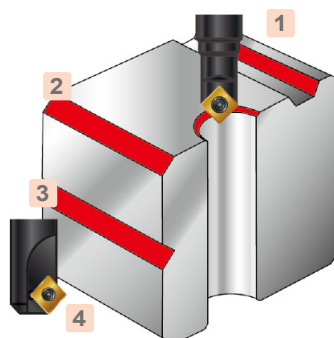
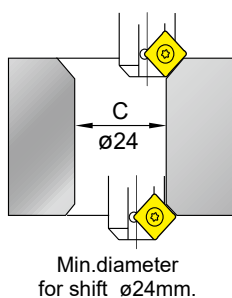
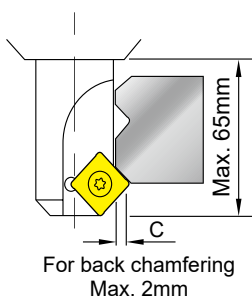
▶ Holder >>

- 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 >>



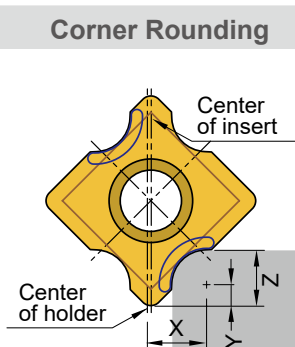
Action	
1	External and internal chamfering
2	Side chamfering
3	Side grooving
4	Back chamfering

▶ More >>

- Also can fit with 99616-XX-25R/30R/40R holders. (Please see page 2-42)

Cutting Data

► For Insert N9MT05T1RC / N9MT11T3RC / N9MT1704RC / N9MT2506RC



Corner Rounding		Calculate spindle speed	
$d = 2 \times X$	mm	$d =$	diameter of the tool
$S = \frac{Vc \times 1000}{d \times \pi}$	r.p.m.	$X =$	tool radius offset
$F = S \times f$	mm/min.	$Vc =$	Cutting Speed -m/min.
		$S =$	Spindle Speed -r.p.m.
		$F =$	mm/min.
		$f =$	mm/rev.
Calculate tool length offset on machining center			
$X, Y \text{ \& } Z$ ref. to insert's spec		$X =$	tool radius offset
		$Y =$	distance to the center of radius.
		$Z =$	distance of cut

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
	Alloy steel	100~250	0.05~0.10	NC40, NC2071, NC2033
	High alloy steel	80~150	0.04~0.08	NC40, NC2071, NC2033
	M Stainless steel	65~125	0.03~0.08	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
	Al-alloy Si >12%	100~300	0.05~0.10	NC9036, XP9000
	Cu	200~250	0.05~0.10	NC9036, XP9000
	Brass and Bronze	150~250	0.05~0.10	NC9036, XP9000
	S Ti, Ti-alloy	40~80	0.03~0.08	NC9036
H Hardened steel < 50 HRC	30~60	0.03~0.08	NC2033	

► For 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
	Alloy steel	100~250	0.04~0.08	NC2071
	High alloy steel	60~80	0.03~0.06	NC2071
	K Casting iron	150~250	0.05~0.10	NC2071

► For LA Insert >> 45° Chamfering

45° Chamfering	Formula			
	$S = \frac{Vc \times 1000}{d \times \pi}$	r.p.m.	$\alpha =$	point angle 90°
	$F = S \times f$	mm/min.	$d =$	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
	Alloy steel	100-250	0.04~0.08	NC40
	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
	Al-alloy Si >12%	100-300	0.05~0.10	NC10
	Cu	200-250	0.05~0.10	NC10
	Brass and Bronze	150-250	0.05~0.10	NC10
	H Hardened steel 40~56 HRC	60-80	0.05~0.10	NC60

2

Corner Rounding