

X060 SERIES

Nine9®

One holder supports the entire X060 series insert

- No need to reset tool length.
- High positive rake angle.
- Multi-side grinding.
- High speed, high feed rate.



Engraving

30° / 45° / 60° / 90°
Burr-Free!



Spotting

90° / 120° / 142°
0.1mm & 0.2mm tips



Deburring

60° / 90°, 6 flutes
Ideal for fine hole
deburring.



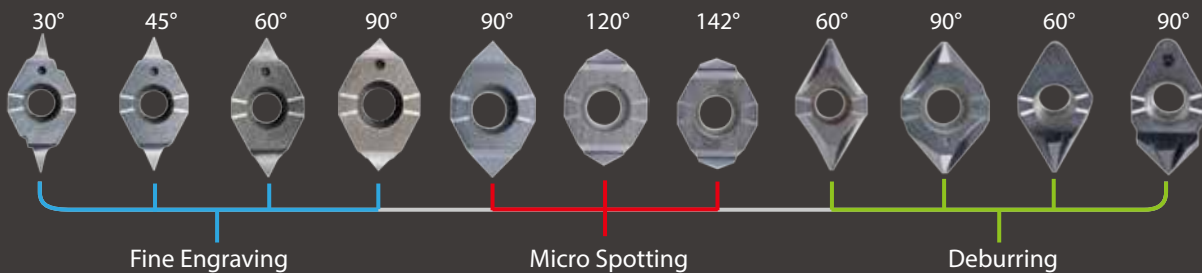
No Need To Choose, Nine9 Does It All

X060 Series

Patent

US 9,579,812 B2
US 9,764,396 B2

One holder supports the entire X060 series insert



X060 Insert

NC2032

- For all kinds of steel < HRC 40, carbon steel, alloy steel, and cast iron.

NC2035

- ALDURA coating, reduces heat and tool wear.
- For steel with heat treatment up to HRC 50.

XP9001

- For non-ferrous metal, aluminum, brass, copper, plastic, acrylic.



NC2032 NC2035 XP9001

Products	Grade	Coating	P Steel	M Stainless Steel	K Cast Iron	N Non- Ferrous	H Hardened Steel Up to 50 HRC
Engraving	 NC2032	TiAIN	●		●		
	 NC2035	ALDURA	◎		○		●
	 XP9001	Uncoated		○		●	
Micro Spot Drill	 NC2032	TiAIN	●	◎	●		
	 NC2035	ALDURA	◎		○		●
	 XP9001	Uncoated		○		●	
NC Deburring	 NC2032	TiAIN	●	○	◎	◎	
	 XP9001	Uncoated				●	

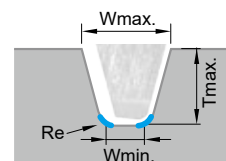
● Best ◎ Suit ○ Possible

Engraving | 30° / 45° / 60° / 90°

- Multi-side grinding, excellent performance.
- Higher cutting speed and depth of cut.
- No need to reset tool length.
- Each insert has 2 cutting edges.
- Widely used for marking on machine components, medical components, gun components, mold and die, automotive parts, gears, bearings and luxury goods.

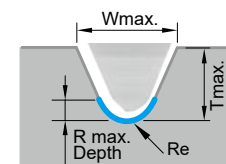


• Radius Angled Form



Angle	Code	Parts No.	Coating	Grade		Dimensions			Wmin.	Wmax.	Tmax.
						L	S	Re			
30°	01X0140	NC2032	TiAIN	K20F		6	2.05	0.04	0.20	0.52	0.6
	01X0141	X060A30W020R	ALDURA								
	01X0142	XP9001	Uncoated								
45°	01X0021	NC2032	TiAIN	K20F		6	2.05	0.04	0.20	0.86	0.8
	01X0153	X060A45W020R	ALDURA								
	01X0154	XP9001	Uncoated								
60°	01X0063	NC2032	TiAIN	K20F		6	2.05	0.04	0.20	1.36	1.0
	01X0165	X060A60W020R	ALDURA								
	01X0166	XP9001	Uncoated								
90°	01X0207	NC2032	TiAIN	K20F		6	2.05	0.04	0.2	2.2	1.0
	01X0208	X060A90W020R	ALDURA								
	01X0209	XP9001	Uncoated								

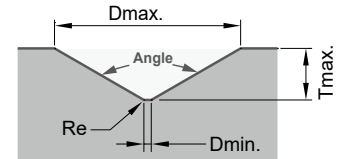
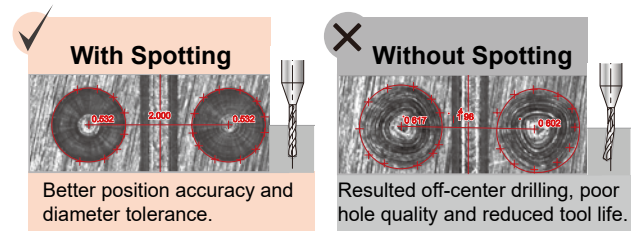
• Radius Form



Angle	Code	Parts No.	Coating	Grade		Dimensions			R max. Depth	Wmax.	Tmax.
						L	S	Re			
30°	01X0119	NC2032	TiAIN	K20F		6	2.05	0.2	0.15	0.63	0.6
	01X0132	X060A30R020	ALDURA								
	01X0134	XP9001	Uncoated								
45°	01X0013	NC2032	TiAIN	K20F		6	2.05	0.2	0.12	0.93	0.8
	01X0149	X060A45R020	ALDURA								
	01X0150	XP9001	Uncoated								
60°	01X0117	NC2032	TiAIN	K20F		6	2.05	0.2	0.10	1.39	1.0
	01X0158	X060A60R020	ALDURA								
	01X0159	XP9001	Uncoated								

0.1 and 0.2mm | 90° / 120° / 142° Micro Spotting

- It produces a consistent surface for micro drill success fully to enter the workpiece, especially for round, angled or curved surfaces.
- To improve hole location and tool life of a deep hole drill or micro drill.
- High efficiency! Long tool life! Cost saving!
- Each insert has 2 cutting edges.

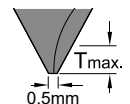
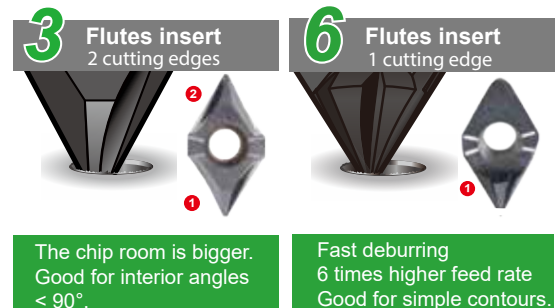


Angle ±0.5	Code	Parts No.		Coating	Grade		Dimensions			Dmin.	Dmax.	Tmax.						
							L	S	Re									
90°	01X0082		NC2032	TiAlN	K20F		6	2.05	0.02	0.1	1.1	0.5						
	01X0221	X060A90W010R	NC2035	ALDURA														
	01X0220		XP9001	Uncoated														
90°	01X0207		NC2032	TiAlN	K20F					6	2.05	0.04	0.2	2.2	1.0			
	01X0208	*X060A90W020R	NC2035	ALDURA														
	01X0209		XP9001	Uncoated														
120°	01X0222	X060A120W010R	NC2032	TiAlN	K20F								6	2.05	0.02	0.1	2.53	0.7
142°	01X0223	X060A142W010R	NC2032	TiAlN	K20F										0.02	0.1	2.42	0.4

* X060A90W020R is also good for engraving.

Deburring | 60° / 90°

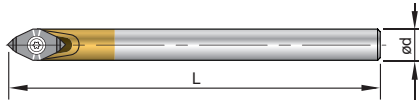
- Ideal for fine hole deburring.
- Smallest chamfer diameter $\varnothing 0.5\text{mm}$.
- Achieve high speed and feed rate on CNC machine.
- Retain exceptional positional accuracy of the deburring depth and diameter.



Angle	Code	Part No.		Coating	Grade	Flutes		Dimensions		0.5mm	
								L	S	Tmin.	Tmax.
60°	01X611	X060A60T3	NC2032	TiAIN	K20F	3		6	2.8	0.1	0.9
	01X612		XP9001	Uncoated							
90°	01X911	X060A90T3	NC2032	TiAIN							
	01X912		XP9001	Uncoated							
60°	01X601	X060A60T6	NC2032	TiAIN	K20F	6		6	2.0	0.1	1.8
90°	01X901	X060A90T6	NC2032							0.5	1.5

Holder

- One holder supports the entire X060 series of carbide inserts.
- XL (100mm length) is only for AI, AI-alloy cutting, unbalanced <0.6gm.

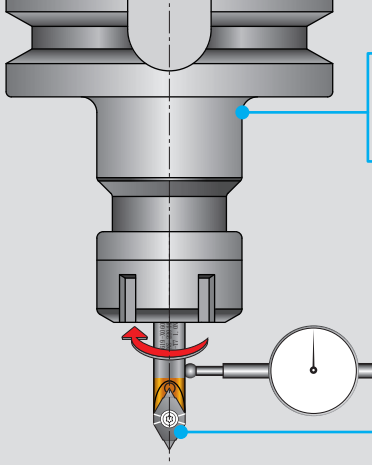


Code	Parts No.	Shank	Ød	L	Screw	Key
69X001	00-99619-X060-06	Steel	6	40	*NS-22044 0.9Nm	NK-T7
69X002	00-99619-X060-06L	Carbide	6	60		
69X003	00-99619-X060-06LS	Steel	6			
69X004	00-99619-X060-06XL	Carbide	6	100		
69X005	00-99619-X060-08	Steel	8	60		

*Torque screwdriver is recommended.

Technical guide

► Before you start, please pay attention the following conditions



1 Recommended of tool holders
High precision spring collet chucks, precision milling chucks, hydraulic chuck.

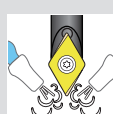
2 Pre-balance the tool holder
minimum G6.3/10,000 r.p.m. is necessary.

3 The downward feed rate of the Z-axis
should be **reduced to 50%** of the table feed rate.

4 Tool shank runout:
below 0.01 mm.

5 Torque screwdriver is recommended

6 Cutting fluid and cooling condition

Emulsion / Oil  P Steel S Titanium M Stainless Steel H Hardened Steel	Oil  N Non-Ferrous	Air  K Cast Iron
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► Clamping insert

- Place and hold the insert in the insert pocket against the positioning side.



Cutting Data

▶ 30° Engraving - X060A30W020R / X060A30R020

(Tmax. : 0.6mm)

Workpiece Material		S (r.p.m)	f (mm/rev.)		Depth of cut (mm)						Grade of Insert
			Radius Angled 	Radius 	1st	2nd	3rd	4th	5th ~	Finishing	
P	Carbon steel	8000 ~ 40000	0.001 ~ 0.010	0.002 ~ 0.015	0.15	0.1	0.05	0.05	0.05	0.02	NC2032
	Alloy steel		0.001 ~ 0.006	0.002 ~ 0.010	0.15	0.1	0.05	0.05	0.03	0.02	NC2032, NC2035
M	Stainless steel		0.001 ~ 0.006	0.002 ~ 0.010	0.1	0.05	0.05	0.03	0.03	0.02	NC2032
K	Cast Iron		0.001 ~ 0.006	0.002 ~ 0.010	0.15	0.1	0.05	0.05	0.03	0.02	NC2032
N	Non-ferrous metal		0.001 ~ 0.012	0.002 ~ 0.020	0.2	0.1	0.1	0.05	0.05	0.02	XP9001
H	Hardened steel < HRC50		0.001 ~ 0.005	0.002 ~ 0.006	0.1	0.05	0.03	0.03	0.02	0.01	NC2035

▶ 45° Engraving - X060A45W020R / X060A45R020

(Tmax. : 0.8mm)

Workpiece Material		S (r.p.m)	f (mm/rev.)		Depth of cut (mm)						Grade of Insert
			Radius  Angled	Radius 	1st	2nd	3rd	4th	5th ~	Finishing	
P	Carbon steel	8000 ~ 40000	0.002 ~ 0.012	0.002 ~ 0.015	0.25	0.15	0.1	0.05	0.05	0.03	NC2032
	Alloy steel		0.002 ~ 0.010	0.002 ~ 0.010	0.2	0.1	0.05	0.05	0.05	0.03	NC2032, NC2035
M	Stainless steel		0.002 ~ 0.008	0.002 ~ 0.010	0.2	0.1	0.05	0.05	0.05	0.03	NC2032
K	Cast Iron		0.002 ~ 0.010	0.002 ~ 0.010	0.2	0.1	0.1	0.05	0.05	0.03	NC2032
N	Non-ferrous metal		0.002 ~ 0.015	0.002 ~ 0.020	0.3	0.2	0.1	0.1	0.05	0.03	XP9001
H	Hardened steel < HRC50		0.002 ~ 0.006	0.002 ~ 0.006	0.15	0.1	0.05	0.05	0.03	0.02	NC2035

▶ 60° Engraving - X060A60W020R / X060A60R020

(Tmax. : 1.0mm)

Workpiece Material		S (r.p.m)	f (mm/rev.)		Depth of cut (mm)						Grade of Insert
			Radius  Angled 	Radius 	1st	2nd	3rd	4th	5th ~	Finishing	
	Carbon steel	8000 ~ 40000	0.002 ~ 0.012	0.002 ~ 0.015	0.3	0.2	0.1	0.1	0.05	0.03	NC2032
	Alloy steel		0.002 ~ 0.010	0.002 ~ 0.010	0.3	0.1	0.1	0.05	0.05	0.03	NC2032, NC2035
	Stainless steel		0.002 ~ 0.008	0.002 ~ 0.010	0.2	0.1	0.1	0.05	0.05	0.03	NC2032
	Cast Iron		0.002 ~ 0.010	0.002 ~ 0.010	0.3	0.1	0.1	0.05	0.05	0.03	NC2032
	Non-ferrous metal		0.002 ~ 0.015	0.002 ~ 0.020	0.3	0.2	0.1	0.1	0.05	0.03	XP9001
	Hardened steel < HRC50		0.002 ~ 0.006	0.002 ~ 0.006	0.2	0.1	0.05	0.05	0.03	0.02	NC2035

▶ 90° Engraving - X060A90W020R

(Tmax. : 1.0mm)

Workpiece Material		S (r.p.m)	f (mm/rev.)	Depth of cut (mm)						Grade of Insert
				1st	2nd	3rd	4th	5th ~	Finishing	
P	Carbon steel	8000 ~ 40000	0.002 ~ 0.015	0.3	0.2	0.1	0.1	0.05	0.03	NC2032
	Alloy steel		0.002 ~ 0.010	0.3	0.1	0.1	0.05	0.05	0.03	NC2032, NC2035
M Stainless steel	0.002 ~ 0.010		0.2	0.1	0.1	0.05	0.05	0.03	NC2032	
K Cast Iron	0.002 ~ 0.010		0.3	0.1	0.1	0.05	0.05	0.03	NC2032	
N Non-ferrous metal	0.002 ~ 0.020		0.4	0.3	0.2	0.1	0.05	0.03	XP9001	
H Hardened steel < HRC50	0.002 ~ 0.006		0.2	0.1	0.05	0.05	0.03	0.02	NC2035	

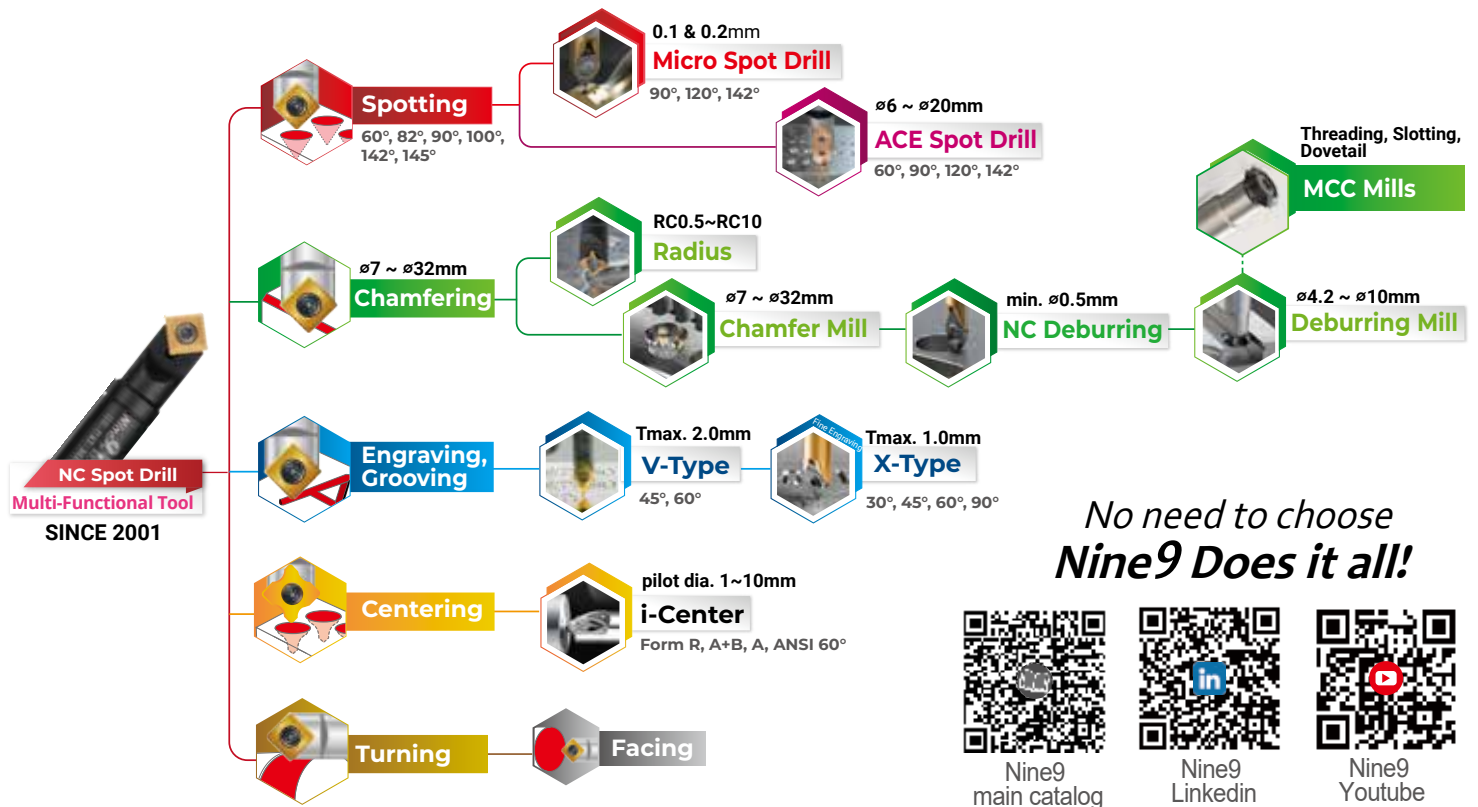
Cutting Data

► Micro Spotting - X060A90W010R / X060A90W020R / X060A120W010R / X060A142W010R

Workpiece Material	S (r.p.m.)	f (mm/rev.)			Grade of Insert
		X060A90W010R	X060A90W020R	X060A120W010R X060A142W010R	
P Carbon steel	8000 ~ 40000	0.002 ~ 0.012	0.002 ~ 0.015	0.002 ~ 0.015	NC2032
Alloy steel		0.002 ~ 0.010	0.002 ~ 0.010	0.002 ~ 0.010	NC2032, NC2035
M Stainless steel		0.002 ~ 0.008	0.002 ~ 0.010	0.002 ~ 0.010	NC2032
K Cast Iron		0.002 ~ 0.010	0.002 ~ 0.010	0.002 ~ 0.010	NC2032
N Non-ferrous metal		0.002 ~ 0.015	0.002 ~ 0.020	-	XP9001
H Hardened steel < HRC50		0.002 ~ 0.006	0.002 ~ 0.006	-	NC2035

► Deburring - X060A60T3 / X060A60T6

Workpiece Material	S (r.p.m.)	Feed Rate (mm / tooth)	Grade of Insert
P Carbon steel	8000~40000	0.005-0.05	NC2032
Alloy steel	6000~35000	0.005-0.04	
M Stainless steel	6000~25000	0.005-0.03	
K Cast Iron	6000~35000	0.005-0.03	
N Non-ferrous metal	8000~40000	0.005-0.05	XP9001





X060 One Tool, Infinite Possibilities



Always Better
JIMMORE
International Corp.

