

Accuracy
Coolant
Efficiency



ACE Spot Drill >>>

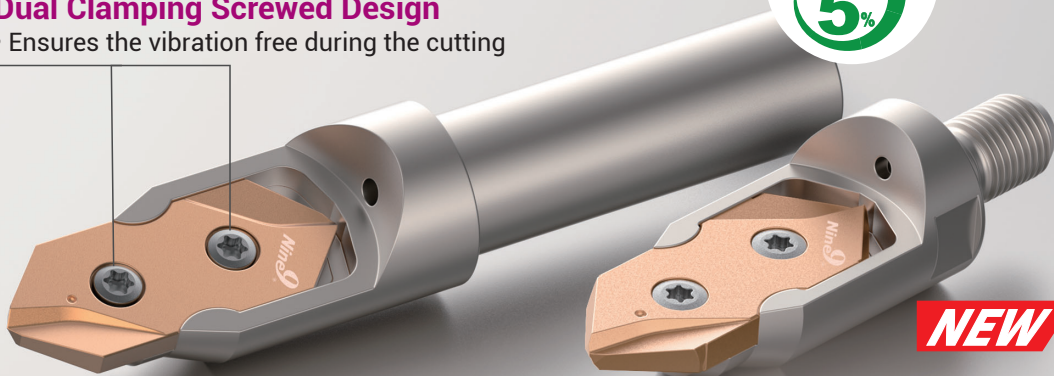
60° / 90° / 120° / 142°

Nine9 ACE spot tool improves hole position, increases drill feed rate, extends tool life, enhances production efficiency, and ensures uniform hole quality.



► Dual Clamping Screwed Design

- Ensures the vibration free during the cutting

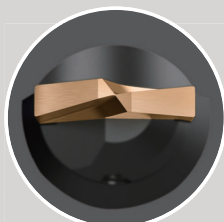


Features >>>

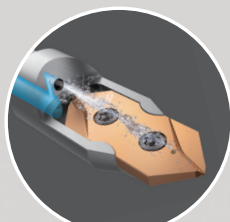
► Excellent Repeatability. No Need Tool Length Re-setting By Insert Type.

► High Rigidity, High Performance Cutting, Ultra-long Tool Life.

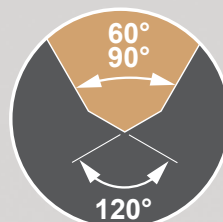
- Symmetric 2-flute edge design reducing the lateral force, it enhances ACE Spot drill rigidity enabling to run high feed rate.
- Double point angle makes the insert tip stronger to prolong service life, which results in lower production cost.



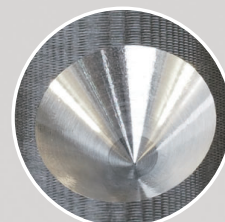
2-flutes edged



Internal Coolant

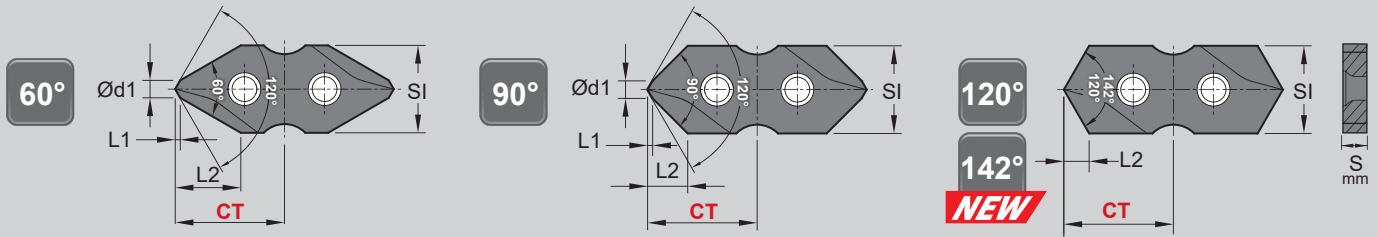


Dual point angle



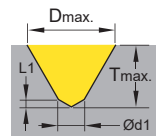
Fine surface finish

Insert of ACE Spot Drill



► Inserts >>

- NC2057:** • Universal grade for alloy steel and cast iron.
 - Each insert has 2 cutting edges.
- NC5254:** • For stainless steel.
 - Each insert has 2 cutting edges.
- 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.
 - Each insert has 2 cutting edges.



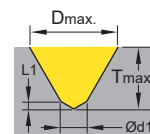
SI	Angle ±0.02°	Parts No.	Coating	Grade	Dimensions			Dmax.	Tmax.	S	CT ±0.025	
					Ød1	L1	L2					
06 (0.236)	60°	S9MT06T1-060	NC2057	AlTiN+TiSiN	P35	1.2 (0.047")	0.35 (0.014")	4.5	5.5	4.1	1.8 (0.071")	7.5 (0.295")
			NC5254	Helica				-	5.5	2.5		
			XP9000	Uncoated								
	90°	S9MT06T1-090	NC2057	AlTiN+TiSiN		2.75	5.5	2.5				
			NC5254	Helica		-	5.5	1.6				
			XP9000	Uncoated								
	120°	S9MT06T1-120	NC2057	AlTiN+TiSiN		1.73	5.5	1.6				
			NC5254	Helica		-	5.5	0.95				
			XP9000	Uncoated								
	142°	S9MT06T1-142	NC2057	AlTiN+TiSiN		1.03	5.5	0.95				
			NC5254	Helica		-	5.5	0.95				
			XP9000	Uncoated								
08 (0.315")	60°	S9MT0802-060	NC2057	AlTiN+TiSiN	P35	1.6 (0.063")	0.46 (0.018")	6.0	7.5	5.6	2.4 (0.094")	10 (0.394")
			NC5254	Helica				-	7.5	3.4		
			XP9000	Uncoated								
	90°	S9MT0802-090	NC2057	AlTiN+TiSiN		3.6	7.5	3.4				
			NC5254	Helica		-	7.5	2.2				
			XP9000	Uncoated								
	120°	S9MT0802-120	NC2057	AlTiN+TiSiN		2.3	7.5	2.2				
			NC5254	Helica		-	7.5	1.29				
			XP9000	Uncoated								
	142°	S9MT0802-142	NC2057	AlTiN+TiSiN		1.38	7.5	1.29				
			NC5254	Helica		-	7.5	1.29				
			XP9000	Uncoated								
10 (0.394")	60°	S9MT1003-060	NC2057	AlTiN+TiSiN	P35	2 (0.079")	0.58 (0.023")	7.5	9.5	7.1	3.0 (0.118")	12.50 (0.492")
			NC5254	Helica				-	9.5	4.4		
			XP9000	Uncoated								
	90°	S9MT1003-090	NC2057	AlTiN+TiSiN		4.6	9.5	4.4				
			NC5254	Helica		-	9.5	2.7				
			XP9000	Uncoated								
	120°	S9MT1003-120	NC2057	AlTiN+TiSiN		2.9	9.5	2.7				
			NC5254	Helica		-	9.5	1.64				
			XP9000	Uncoated								
	142°	S9MT1003-142	NC2057	AlTiN+TiSiN		1.72	9.5	1.64				
			NC5254	Helica		-	9.5	1.64				
			XP9000	Uncoated								

The quantity of insert per box.:

SI 06	SI 08	SI 10	SI 12	SI 16	SI 20
5 pcs	5 pcs	5 pcs	5 pcs	2 pcs	1 pcs

Insert of ACE Spot Drill

► Inserts >>



SI	Angle ±0.02°	Parts No.	Coating	Grade	Dimensions			Dmax.	Tmax.	S	CT ±0.025	
					Ød1	L1	L2					
12 (0.472")	60°	S9MT1203-060	NC2057	AlTiN+TiSiN	P35	2.4 (0.094")	0.69 (0.027")	9.0 (0.354")	11.5 (0.453")	8.6 (0.339")	3.0 (0.118")	15 (0.059")
			NC5254	Helica								
			XP9000	Uncoated								
	90°	S9MT1203-090	NC2057	AlTiN+TiSiN		2.4 (0.094")	0.69 (0.027")	5.5 (0.217")	11.5 (0.453")	5.3 (0.209")		
			NC5254	Helica								
			XP9000	Uncoated								
	120°	S9MT1203-120	NC2057	AlTiN+TiSiN		-	-	3.5 (0.138")	11.5 (0.453")	3.3 (0.130")		
			NC5254	Helica								
			XP9000	Uncoated								
	142°	S9MT1203-142	NC2057	AlTiN+TiSiN		-	-	2.07 (0.081")	11.5 (0.453")	1.98 (0.078")		
			NC5254	Helica								
			XP9000	Uncoated								
16 (0.630")	60°	S9MT1603-060	NC2057	AlTiN+TiSiN	P35	3.2 (0.126")	0.92 (0.036")	12 (0.472")	15.5 (0.610")	11.6 (0.457")	3.18 (0.125")	20 (0.787")
			NC5254	Helica								
			XP9000	Uncoated								
	90°	S9MT1603-090	NC2057	AlTiN+TiSiN		3.2 (0.126")	0.92 (0.036")	7.3 (0.287")	15.5 (0.610")	7.0 (0.276")		
			NC5254	Helica								
			XP9000	Uncoated								
	120°	S9MT1603-120	NC2057	AlTiN+TiSiN		-	-	4.6 (0.181")	15.5 (0.610")	4.4 (0.173")		
			NC5254	Helica								
			XP9000	Uncoated								
	142°	S9MT1603-142	NC2057	AlTiN+TiSiN		-	-	2.76 (0.109")	15.5 (0.610")	2.67 (0.105")		
			NC5254	Helica								
			XP9000	Uncoated								
20 (0.787")	60°	S9MT2004-060	NC2057	AlTiN+TiSiN	P35	4.0 (0.157")	1.16 (0.046")	15 (0.591")	19.5 (0.768")	14.6 (0.575")	4.76 (0.187")	25 (0.984")
			NC5254	Helica								
			XP9000	Uncoated								
	90°	S9MT2004-090	NC2057	AlTiN+TiSiN		4.0 (0.157")	1.16 (0.046")	9.2 (0.362")	19.5 (0.768")	8.9 (0.350")		
			NC5254	Helica								
			XP9000	Uncoated								
	120°	S9MT2004-120	NC2057	AlTiN+TiSiN		-	-	5.8 (0.228")	19.5 (0.768")	5.6 (0.220")		
			NC5254	Helica								
			XP9000	Uncoated								
	142°	S9MT2004-142	NC2057	AlTiN+TiSiN		-	-	3.44 (0.135")	19.5 (0.768")	3.36 (0.132")		
			NC5254	Helica								
			XP9000	Uncoated								

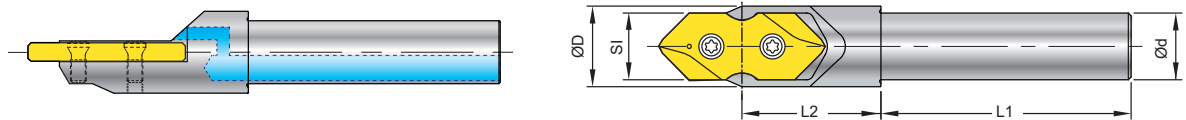
The quantity of insert per box.:

SI 06	SI 08	SI 10	SI 12	SI 16	SI 20
5 pcs	5 pcs	5 pcs	5 pcs	2 pcs	1 pcs

Holders of ACE Spot Drill

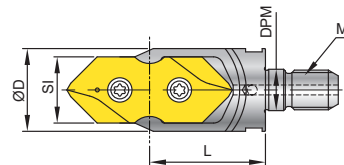


▶ Cylindrical Shank >>



SI	Parts No.	Ød	L1	L2	ØD	Screw	Key
06 (0.236)	99688-SI06-06	6 (0.236")	27 (1.063")	14 (0.551")	8 (0.315")	NS-18037 / 0.6Nm	NK-T6
08 (0.315")	99688-SI08-08	8 (0.315")	36 (1.417")	19 (0.748")	10.5 (0.413")	NS-20045 / 0.6Nm	NK-T6
10 (0.394")	99688-SI10-10	10 (0.394")	40 (1.575")	22.5 (0.886")	13 (0.512")	NS-25060 / 0.9Nm	NK-T7
12 (0.472")	99688-SI12-12	12 (0.472")	45 (1.772")	25 (0.984")	15.5 (0.610")	NS-30072 / 2.0Nm	NK-T9
16 (0.630")	99688-SI16-16	16 (0.630")	48 (1.890")	32 (1.260")	21 (0.827")	NS-35080 / 2.5Nm	NK-T15
20 (0.787")	99688-SI20-20	20 (0.787")	50 (1.969")	35 (1.378")	26 (1.024")	NS-50125 / 5.5Nm	NK-T20

▶ Screw Fit Cutter >> **NEW**

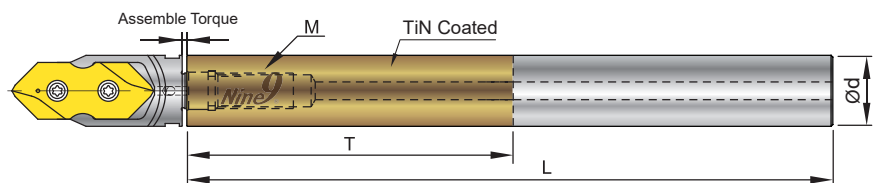


SI	Parts No.	ØD	L	M	DPM	Screw	Key
06 (0.236)	99688-SI06-M04	8 (0.315")	14.5 (0.571")	M4xP0.7	4.5 (0.177")	NS-18037 / 0.6Nm	NK-T6
08 (0.315")	99688-SI08-M05	10 (0.394")	19 (0.748")	M5xP0.8	5.5 (0.217")	NS-20045 / 0.6Nm	NK-T6
10 (0.394")	99688-SI10-M06	12 (0.472")	22 (0.866")	M6xP1.0	6.5 (0.256")	NS-25060 / 0.9Nm	NK-T7
12 (0.472")	99688-SI12-M08	16 (0.630")	25 (0.984")	M8xP1.25	8.5 (0.335")	NS-30072 / 2.0Nm	NK-T9
16 (0.630")	99688-SI16-M10	20 (0.787")	31 (1.220")	M10xP1.5	10.5 (0.413")	NS-35080 / 2.5Nm	NK-T15
20 (0.787")	99688-SI20-M12	25 (0.984")	35 (1.378")	M12xP1.75	12.5 (0.492")	NS-50125 / 5.5Nm	NK-T20

▶ Extension Bar >>

▶ Solid Carbide Type >>

- T is the maximum overhang length.
- With internal coolant hole.



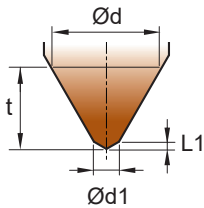
Part No.	Type	Ød	T	L	M	Assemble Torque
99801-08W	BC08-075M04W	8 (0.315")	25 (0.984")	75 (2.953")	M4xP0.7	3.5 Nm
99801-10W	BC10-100M05W	10 (0.394")	50 (1.969")	100 (3.937")	M5xP0.8	6.5 Nm
99801-12W	BC12-100M06W	12 (0.472")	60 (2.362")	100 (3.937")	M6xP1.0	11.0 Nm
99801-14W	BC14-120M08W	14 (0.551")	70 (2.756")	120 (4.724")	M8xP1.25	25.0 Nm
99801-16W	BC16-150M08W	16 (0.630")	80 (3.150")	150 (5.906")	M8xP1.25	25.0 Nm
99801-18W	BC18-150M10W	18 (0.709")	90 (3.543")	150 (5.906")	M10xP1.5	50.0 Nm
99801-20W	BC20-200M10W	20 (0.787")	100 (3.937")	200 (7.874")	M10xP1.5	50.0 Nm
99801-25W	BC25-200M12W	25 (0.984")	125 (4.921")	200 (7.874")	M12xP1.75	60.0 Nm

Technical Guide

► From spot diameter "d" to get spotting depth "t"

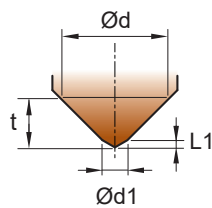
Insert Spec.	S9MT06T1				S9MT0802				S9MT1003				S9MT1203				S9MT1603				S9MT2004			
Angle	60°	90°	120°	142°	60°	90°	120°	142°	60°	90°	120°	142°	60°	90°	120°	142°	60°	90°	120°	142°	60°	90°	120°	142°
Tmax.	0.161"	0.098"	0.063"	0.037"	0.220"	0.134"	0.087"	0.051"	0.280"	0.173"	0.106"	0.065"	0.339"	0.209"	0.130"	0.078"	0.457"	0.276"	0.173"	0.105"	0.575"	0.350"	0.220"	0.132"
Ød1	0.047"		-		0.063"		-		0.079"		-		0.094"		-		0.126"		-		0.157"		-	
L1	0.014"		-		0.018"		-		0.023"		-		0.027"		-		0.036"		-		0.046"		-	

60°



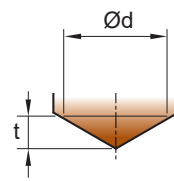
$$t = (\text{Ød} - \text{Ød1}) \times 0.866 + L1$$

90°



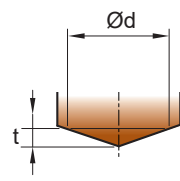
$$t = (\text{Ød} - \text{Ød1}) \times 0.5 + L1$$

120°



$$t = 0.289 \times \text{Ød}$$

142°



$$t = 0.172 \times \text{Ød}$$

► Attention for 60° spotting (S9MTxxx-060) , peak drilling cycle is necessary

Step 1 Get "t" (spotting depth) from above.

Step 2 Calculate T (depth factor): $T = \frac{t}{T_{max}}$
 If $T < 0.3$, no need peck drilling.
 If $T \geq 0.3$, peck drilling is necessary.

Step 3 According to material, refer to the table and find *Q (each pecking depth).

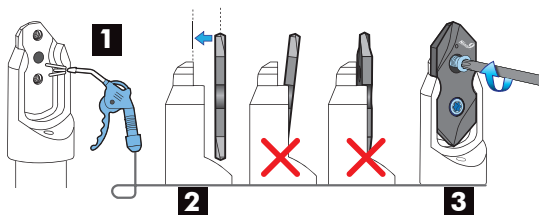
*Q T	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Material								
P	0.020"	0.016"	0.014"	0.012"	0.010"	0.008"	0.006"	0.004"
M	0.008"	0.008"	0.006"	0.006"	0.006"	0.004"	0.004"	0.004"
K	0.020"	0.016"	0.014"	0.012"	0.010"	0.008"	0.006"	0.004"
N	0.039"	0.031"	0.028"	0.024"	0.020"	0.016"	0.012"	0.008"

► Calculate spindle speed and feed rate

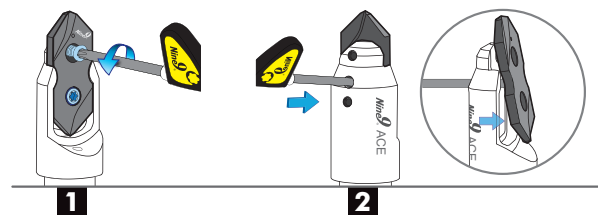
Metric	
$S = \frac{Vc \times 1000}{\pi \times d}$	d = diameter -mm S = Spindle Speed -r.p.m. Vc = Cutting Speed -m/min.
$F = S \times f$	f = mm/rev. F = mm/min.

Inch	
$S = \frac{(3.82 \times \text{SFM})}{d}$	d = diameter-inch S = Spindle Speed-r.p.m. SFM = Surface Speed-ft./min.
$F = \text{r.p.m.} \times \text{IPR}$	f = IPR = inch/rev. F = inch/min.

► Clamping insert



► Loosen insert



Cutting Data

S106- S9MT06T1

Workpiece Material	SFM	60°		90°	120°	142°	Grade of insert
		*Q (Each pecking depth)	IPR (inch/rev.)				
P Carbon steel C<0.3%	390 ~ 820	0.0039" ~ 0.0197"	0.0004" ~ 0.0020"	0.0008" ~ 0.0031"	0.0008" ~ 0.0039"	0.0008" ~ 0.0039"	NC2057
	Carbon steel C>0.3%		0.0004" ~ 0.0016"	0.0008" ~ 0.0028"	0.0008" ~ 0.0031"	0.0008" ~ 0.0031"	
	Low alloy steel C<0.3%		0.0004" ~ 0.0012"	0.0008" ~ 0.0024"	0.0008" ~ 0.0028"	0.0008" ~ 0.0028"	
	High alloy steel C>0.3%		0.0004" ~ 0.0012"	0.0008" ~ 0.0024"	0.0008" ~ 0.0028"	0.0008" ~ 0.0028"	
M Stainless Steel	100 ~ 265	0.0039" ~ 0.0079"	0.0004" ~ 0.0008"	0.0004" ~ 0.0012"	0.0004" ~ 0.0012"	0.0004" ~ 0.0012"	NC5254
K Casting Iron	265 ~ 590	0.0039" ~ 0.0197"	0.0004" ~ 0.0020"	0.0008" ~ 0.0031"	0.0008" ~ 0.0039"	0.0008" ~ 0.0039"	NC2057
N Al, and non-ferrous metal	500 ~ 985	0.0079" ~ 0.0394"	0.0004" ~ 0.0024"	0.0012" ~ 0.0039"	0.0012" ~ 0.0047"	0.0012" ~ 0.0047"	XP9000

S108 - S9MT0802

Workpiece Material	SFM	60°		90°	120°	142°	Grade of insert
		*Q (Each pecking depth)	IPR (inch/rev.)				
P Carbon steel C<0.3%	390 ~ 820	0.0039" ~ 0.0197"	0.0008" ~ 0.0031"	0.0012" ~ 0.0039"	0.0012" ~ 0.0047"	0.0012" ~ 0.0047"	NC2057
	Carbon steel C>0.3%		0.0008" ~ 0.0028"	0.0012" ~ 0.0031"	0.0012" ~ 0.0039"	0.0012" ~ 0.0039"	
	Low alloy steel C<0.3%		0.0008" ~ 0.0024"	0.0012" ~ 0.0028"	0.0012" ~ 0.0031"	0.0012" ~ 0.0031"	
	High alloy steel C>0.3%		0.0008" ~ 0.0024"	0.0012" ~ 0.0028"	0.0012" ~ 0.0031"	0.0012" ~ 0.0031"	
M Stainless Steel	100 ~ 265	0.0039" ~ 0.0079"	0.0004" ~ 0.0012"	0.0004" ~ 0.0016"	0.0004" ~ 0.0016"	0.0004" ~ 0.0016"	NC5254
K Casting Iron	265 ~ 590	0.0039" ~ 0.0197"	0.0008" ~ 0.0031"	0.0012" ~ 0.0039"	0.0012" ~ 0.0047"	0.0012" ~ 0.0047"	NC2057
N Al, and non-ferrous metal	500 ~ 985	0.0079" ~ 0.0394"	0.0012" ~ 0.0039"	0.0012" ~ 0.0047"	0.0012" ~ 0.0059"	0.0012" ~ 0.0059"	XP9000

S110 - S9MT1003

Workpiece Material	SFM	60°		90°	120°	142°	Grade of insert
		*Q (Each pecking depth)	IPR (inch/rev.)				
P Carbon steel C<0.3%	390 ~ 820	0.0039" ~ 0.0197"	0.0012" ~ 0.0031"	0.0016" ~ 0.0059"	0.0020" ~ 0.0079"	0.0020" ~ 0.0079"	NC2057
	Carbon steel C>0.3%		0.0012" ~ 0.0028"	0.0012" ~ 0.0047"	0.0020" ~ 0.0059"	0.0020" ~ 0.0059"	
	Low alloy steel C<0.3%		0.0008" ~ 0.0024"	0.0012" ~ 0.0039"	0.0016" ~ 0.0047"	0.0016" ~ 0.0047"	
	High alloy steel C>0.3%		0.0008" ~ 0.0024"	0.0012" ~ 0.0039"	0.0016" ~ 0.0047"	0.0016" ~ 0.0047"	
M Stainless Steel	100 ~ 265	0.0039" ~ 0.0079"	0.0004" ~ 0.0012"	0.0004" ~ 0.0016"	0.0004" ~ 0.0016"	0.0004" ~ 0.0016"	NC5254
K Casting Iron	265 ~ 590	0.0039" ~ 0.0197"	0.0008" ~ 0.0031"	0.0012" ~ 0.0047"	0.0020" ~ 0.0059"	0.0020" ~ 0.0059"	NC2057
N Al, and non-ferrous metal	500 ~ 985	0.0079" ~ 0.0394"	0.0012" ~ 0.0039"	0.0016" ~ 0.0079"	0.0020" ~ 0.0098"	0.0020" ~ 0.0098"	XP9000

Cutting Data

S/12 - S9MT1203

Workpiece Material	SFM	60°		90°	120°	142°	Grade of insert
		*Q (Each pecking depth)	IPR (inch/rev.)				
P Carbon steel C<0.3%	390 ~ 820	0.0039" ~ 0.0197"	0.0012" ~ 0.0031"	0.0020" ~ 0.0080"	0.0024" ~ 0.0098"	0.0024" ~ 0.0098"	NC2057
	Carbon steel C>0.3%		0.0012" ~ 0.0028"	0.0016" ~ 0.0059"	0.0020" ~ 0.0080"	0.0020" ~ 0.0079"	
	Low alloy steel C<0.3%		0.0008" ~ 0.0024"	0.0016" ~ 0.0047"	0.0020" ~ 0.0063"	0.0020" ~ 0.0063"	
	High alloy steel C>0.3%		0.0008" ~ 0.0024"	0.0016" ~ 0.0047"	0.0020" ~ 0.0063"	0.0020" ~ 0.0063"	
M Stainless Steel	100 ~ 265	0.0039" ~ 0.0079"	0.0004" ~ 0.0012"	0.0004" ~ 0.0016"	0.0004" ~ 0.0016"	0.0004" ~ 0.0016"	NC5254
K Casting Iron	265 ~ 590	0.0039" ~ 0.0197"	0.0008" ~ 0.0031"	0.0016" ~ 0.0059"	0.0020" ~ 0.0080"	0.0020" ~ 0.0080"	NC2057
N Al, and non-ferrous metal	500 ~ 985	0.0079" ~ 0.0394"	0.0012" ~ 0.0040"	0.0020" ~ 0.0087"	0.0024" ~ 0.0098"	0.0024" ~ 0.0098"	XP9000

S/16 - S9MT1603

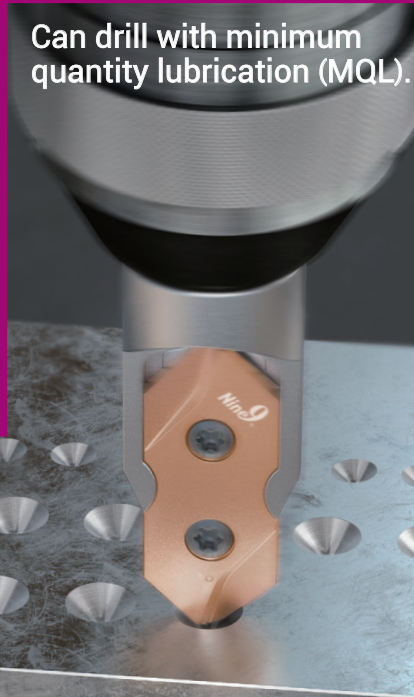
Workpiece Material	SFM	60°		90°	120°	142°	Grade of insert
		*Q (Each pecking depth)	IPR (inch/rev.)				
P Carbon steel C<0.3%	390 ~ 820	0.0039" ~ 0.0197"	0.0016" ~ 0.0039"	0.0020" ~ 0.0079"	0.0024" ~ 0.0098"	0.0024" ~ 0.0098"	NC2057
	Carbon steel C>0.3%		0.0012" ~ 0.0031"	0.0016" ~ 0.0060"	0.0020" ~ 0.0079"	0.0020" ~ 0.0079"	
	Low alloy steel C<0.3%		0.0008" ~ 0.0028"	0.0016" ~ 0.0047"	0.0020" ~ 0.0063"	0.0020" ~ 0.0063"	
	High alloy steel C>0.3%		0.0008" ~ 0.0028"	0.0016" ~ 0.0047"	0.0020" ~ 0.0063"	0.0020" ~ 0.0063"	
M Stainless Steel	100 ~ 265	0.0039" ~ 0.0079"	0.0004" ~ 0.0012"	0.0004" ~ 0.0016"	0.0004" ~ 0.0016"	0.0004" ~ 0.0016"	NC5254
K Casting Iron	265 ~ 590	0.0039" ~ 0.0197"	0.0012" ~ 0.0031"	0.0016" ~ 0.0060"	0.0020" ~ 0.0079"	0.0020" ~ 0.0079"	NC2057
N Al, and non-ferrous metal	500 ~ 985	0.0079" ~ 0.0394"	0.0016" ~ 0.0047"	0.0020" ~ 0.0098"	0.0024" ~ 0.0098"	0.0024" ~ 0.0098"	XP9000

S/20 - S9MT2004

Workpiece Material	SFM	60°		90°	120°	142°	Grade of insert
		*Q (Each pecking depth)	IPR (inch/rev.)				
P Carbon steel C<0.3%	390 ~ 820	0.0039" ~ 0.0197"	0.0016" ~ 0.0039"	0.0020" ~ 0.0098"	0.0024" ~ 0.0118"	0.0024" ~ 0.0118"	NC2057
	Carbon steel C>0.3%		0.0012" ~ 0.0031"	0.0016" ~ 0.0079"	0.0020" ~ 0.0098"	0.0020" ~ 0.0098"	
	Low alloy steel C<0.3%		0.0008" ~ 0.0028"	0.0016" ~ 0.0060"	0.0020" ~ 0.0079"	0.0020" ~ 0.0079"	
	High alloy steel C>0.3%		0.0008" ~ 0.0028"	0.0016" ~ 0.0060"	0.0020" ~ 0.0079"	0.0020" ~ 0.0079"	
M Stainless Steel	100 ~ 265	0.0039" ~ 0.0079"	0.0004" ~ 0.0012"	0.0004" ~ 0.0016"	0.0004" ~ 0.0016"	0.0004" ~ 0.0016"	NC5254
K Casting Iron	265 ~ 590	0.0039" ~ 0.0197"	0.0012" ~ 0.0031"	0.0016" ~ 0.0079"	0.0020" ~ 0.0098"	0.0020" ~ 0.0098"	NC2057
N Al, and non-ferrous metal	500 ~ 985	0.0079" ~ 0.0394"	0.0016" ~ 0.0047"	0.0020" ~ 0.0118"	0.0024" ~ 0.0118"	0.0024" ~ 0.0118"	XP9000

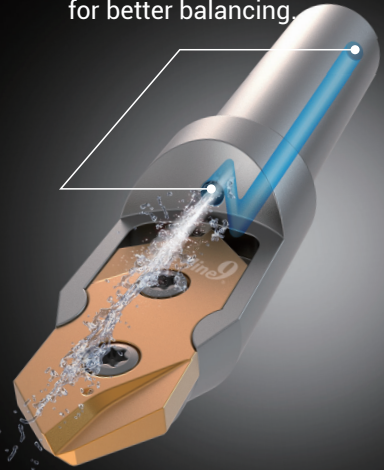


Can drill with minimum quantity lubrication (MQL).



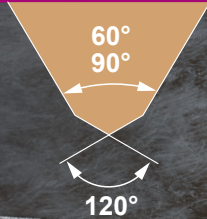
Internal Coolant

- Optimized coolant design for better balancing.



2-flutes Edged

- It is symmetric.

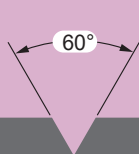


► Dual point angle

- The double point angles ensure strength at the centre to prevent fracturing.

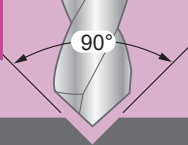
Spotting produces a shallow hole to get better hole position enabling to produce more accurate final product. Ideally, the proper spotting angle should have larger point angle than that of your drill, so the center of a drill shall be the first point to contact workpiece to avoid drill walking or positional issues.

60°



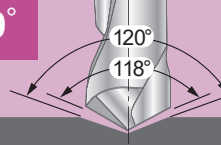
- For 60° point angle drill.

90°



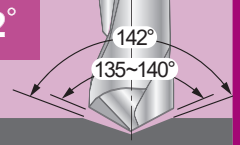
- For 90° point angle drill.

120°



- For spotting before drilling by 118° point angle drill.

142°



- For spotting before drilling by 135°~140° point angle high performance drill.



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