Accuracy
Coolant
Efficiency

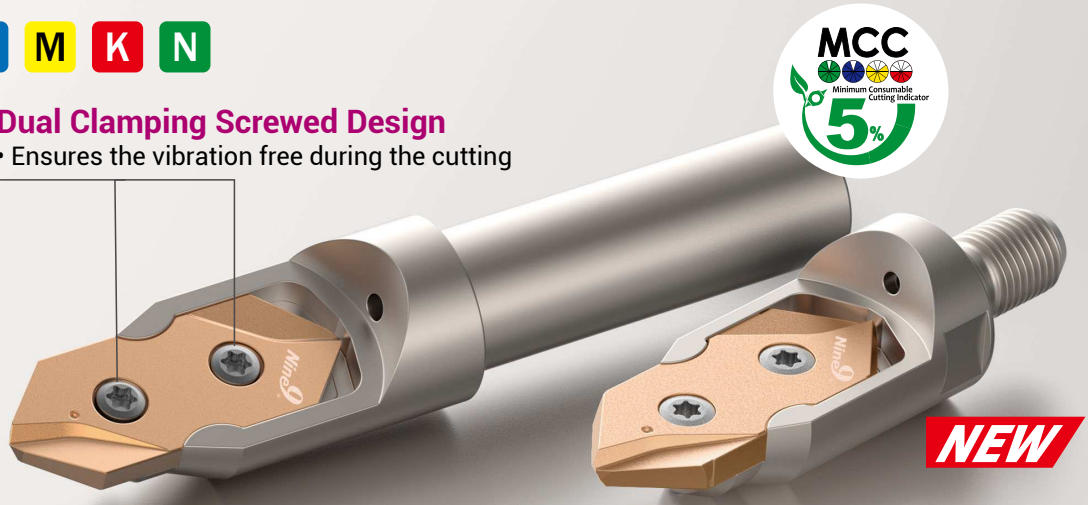
ACE Spot Drill >>>

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.

P M K N

MCC Minimum Consumable Cutting Indicator 5%



Features >>>

Dual Clamping Screwed Design

- Ensures the vibration free during the cutting

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

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

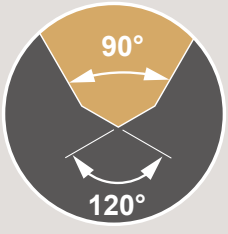
- Symmetric 2-flute edge design reducing the lateral force, it enhances ACE Spot drill rigidity enabling to run high feed rate.
- Double point angle makes the insert tip stronger to prolong service life, which results in lower production cost.



2-flutes edged



Internal Coolant

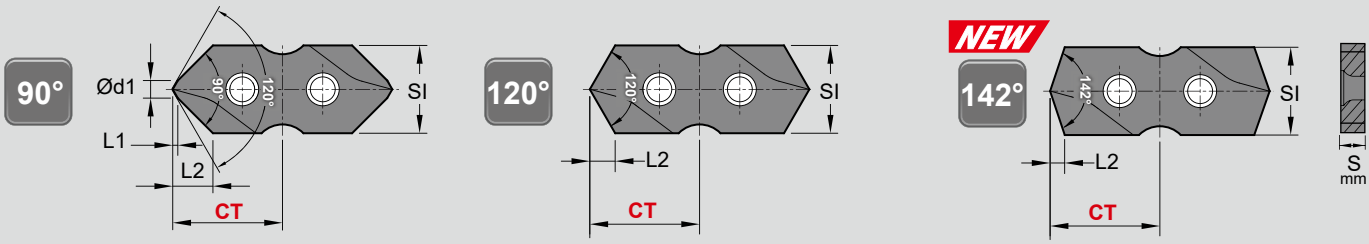


Dual point angle



Fine surface finish

Insert of ACE Spot Drill

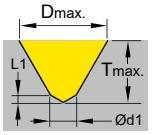


Inserts >>

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.

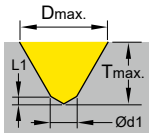


Sl	Angle ±0.02"	Parts No.		Coating	Grade	Dimensions			Dmax.	Tmax.	S	CT ±0.025
						Ød1	L1	L2				
06 (0.236)	90°	S9MT06T1-090	NC2057	AlTiN+TiSiN	P35	1.2 (0.047")	0.35 (0.014")	2.75 (0.108")	5.5 (0.217")	2.5 (0.098")	1.8 (0.071")	7.5 (0.295")
			NC5254	Helica								
			XP9000	Uncoated								
	120°	S9MT06T1-120	NC2057	AlTiN+TiSiN		-	-	1.73 (0.068")	5.5 (0.217")	1.6 (0.063")		
			NC5254	Helica								
			XP9000	Uncoated								
	142°	S9MT06T1-142	NC2057	AlTiN+TiSiN		-	-	1.03 (0.041")	5.5 (0.217")	0.95 (0.037")		7.0 (0.276")
			NC5254	Helica								
			XP9000	Uncoated								
08 (0.315")	90°	S9MT0802-090	NC2057	AlTiN+TiSiN	P35	1.6 (0.063")	0.46 (0.018")	3.6 (0.142")	7.5 (0.295")	3.4 (0.134")	2.4 (0.094")	10 (0.394")
			NC5254	Helica								
			XP9000	Uncoated								
	120°	S9MT0802-120	NC2057	AlTiN+TiSiN		-	-	2.3 (0.090")	7.5 (0.295")	2.2 (0.087")		
			NC5254	Helica								
			XP9000	Uncoated								
	142°	S9MT0802-142	NC2057	AlTiN+TiSiN		-	-	1.38 (0.054")	7.5 (0.295")	1.29 (0.051")		9 (0.354")
			NC5254	Helica								
			XP9000	Uncoated								

The quantity of insert per box.:

Sl 06	Sl 08	Sl 10	Sl 12	Sl 16	Sl 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 Ød1	Dimensions L1	Dimensions L2	Dmax.	Tmax.	S	CT ±0.025
10 (0.394")	90°	S9MT1003-090	NC2057	AlTiN+TiSiN	P35	2 (0.079")	0.58 (0.023")	4.6 (0.181")	9.5 (0.374")	4.4 (0.173")	3.0 (0.118")	12.50 (0.492")
			NC5254	Helica								
			XP9000	Uncoated								
	120°	S9MT1003-120	NC2057	AlTiN+TiSiN		-	-	2.9 (0.114")	9.5 (0.374")	2.7 (0.106")		
			NC5254	Helica								
			XP9000	Uncoated								
	142°	S9MT1003-142	NC2057	AlTiN+TiSiN		-	-	1.72 (0.068")	9.5 (0.374")	1.64 (0.065")		11.50 (0.453")
			NC5254	Helica								
			XP9000	Uncoated								
12 (0.472")	90°	S9MT1203-090	NC2057	AlTiN+TiSiN	P35	2.4 (0.094")	0.69 (0.027")	5.5 (0.217")	11.5 (0.453")	5.3 (0.209")	3.0 (0.118")	15 (0.059")
			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")		13.5 (0.531")
			NC5254	Helica								
			XP9000	Uncoated								
16 (0.630")	90°	S9MT1603-090	NC2057	AlTiN+TiSiN	P35	3.2 (0.126")	0.92 (0.036")	7.3 (0.287")	15.5 (0.610")	7.0 (0.276")	3.18 (0.125")	20 (0.787")
			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")		18 (0.709")
			NC5254	Helica								
			XP9000	Uncoated								
20 (0.787")	90°	S9MT2004-090	NC2057	AlTiN+TiSiN	P35	4.0 (0.157")	1.16 (0.046")	9.2 (0.362")	19.5 (0.768")	8.9 (0.350")	4.76 (0.187")	25 (0.984")
			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")		22 (0.866")
			NC5254	Helica								
			XP9000	Uncoated								

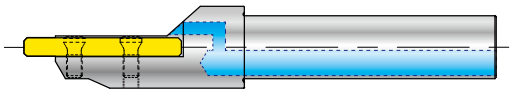
The quantity of insert per box.:

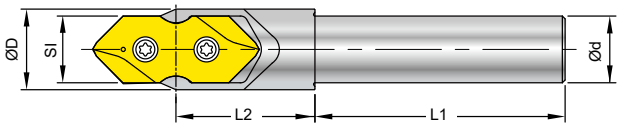
SI 06	SI 08	SI 10	SI 12	SI 16	SI 20
5 pcs	5 pcs	5 pcs	5 pcs	2 pcs	1 pcs

Holders of ACE Spot Drill



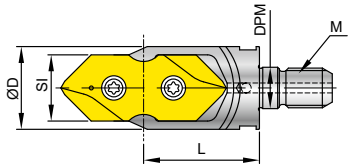
Cylindrical Shank >>





Sl	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

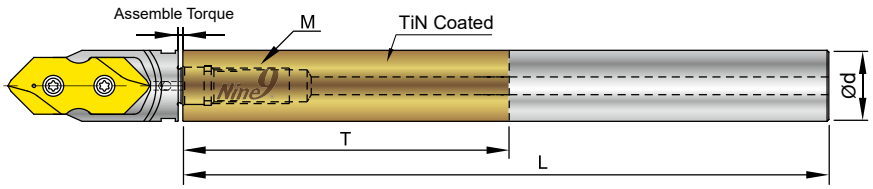


Sl	Parts No.	ØD	L	M	DPM	Screw	Key
06 (0.236)	99688-SI06-M04	8 (0.315")	14.5 (0.571")	M4xP0.7	4.5 (0.177")	NS-18037 / 0.6Nm	NK-T6
08 (0.315")	99688-SI08-M05	10 (0.394")	19 (0.748")	M5xP0.8	5.5 (0.217")	NS-20045 / 0.6Nm	NK-T6
10 (0.394")	99688-SI10-M06	12 (0.472")	22 (0.866")	M6xP1.0	6.5 (0.256")	NS-25060 / 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 >>

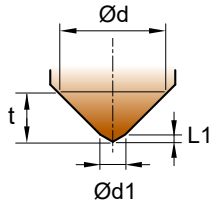
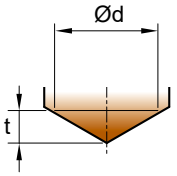
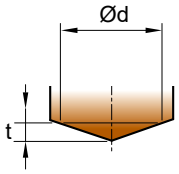
- T is the maximum overhang length.
- With internal coolant hole.



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"

90°	120°	142°
		
t = (Ød-Ød1) X 0.5 + L1	t = 0.289 X Ød	t = 0.172 X Ød

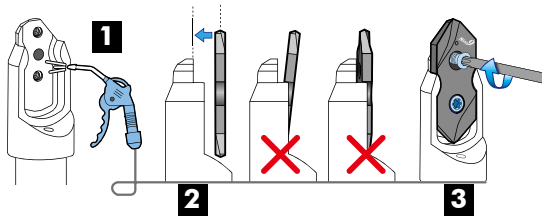
SI	Angle ±0.02"	Insert	Ød1	L1	Tmax.
06 (0.236)	**90°**	S9MT06T1-090	1.2 (0.047")	0.35 (0.014")	2.50 (0.098")
	120°	S9MT06T1-120	-	-	1.60 (0.063")
	142°	S9MT06T1-142	-	-	0.95 (0.037")
08 (0.315")	**90°**	S9MT0802-090	1.6 (0.063")	0.46 (0.018")	3.40 (0.134")
	120°	S9MT0802-120	-	-	2.20 (0.087")
	142°	S9MT0802-142	-	-	1.29 (0.051")
10 (0.394")	**90°**	S9MT1003-090	2.0 (0.079")	0.58 (0.023")	4.40 (0.173")
	120°	S9MT1003-120	-	-	2.70 (0.106")
	142°	S9MT1003-142	-	-	1.64 (0.065")
12 (0.472")	**90°**	S9MT1203-090	2.4 (0.094")	0.69 (0.027")	5.30 (0.209")
	120°	S9MT1203-120	-	-	3.30 (0.130")
	142°	S9MT1203-142	-	-	1.98 (0.078")
16 (0.630")	**90°**	S9MT1603-090	3.2 (0.126")	0.92 (0.036")	7.00 (0.276")
	120°	S9MT1603-120	-	-	4.40 (0.173")
	142°	S9MT1603-142	-	-	2.67 (0.105")
20 (0.787")	**90°**	S9MT2004-090	4.0 (0.157")	1.16 (0.046")	8.90 (0.350")
	120°	S9MT2004-120	-	-	5.60 (0.220")
	142°	S9MT2004-142	-	-	3.36 (0.132")

Calculate spindle speed and feed rate

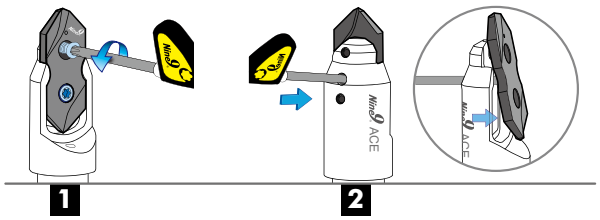
Metric	
$S = \frac{Vc \times 1000}{\pi \times d}$	d = diameter -mm
	S = Spindle Speed -r.p.m.
	Vc = Cutting Speed -m/min.
F = S x f	f = mm/rev.
	F = mm/min.

Inch	
$S = \frac{(3.82 \times SFM)}{d}$	d = diameter-inch
	S = Spindle Speed-r.p.m.
SFM = Vc x 3.28	SFM = Surface Speed-ft./min.
F = r.p.m. x IPR	f = IPR = inch/rev.
	F = inch/min.

Clamping insert



Loosen insert



Cutting Data

SI06- S9MT06T1

	Workpiece Material	SFM	IPR (inch/rev.)			Grade of insert
			90°	120°	142°	
P	Carbon steel C<0.3%	390 ~ 820	0.0008” ~ 0.0031”	0.0008” ~ 0.0039”	0.0008” ~ 0.0039”	NC5254
P	Carbon steel C>0.3%	330 ~ 720	0.0008” ~ 0.0031”	0.0008” ~ 0.0039”	0.0008” ~ 0.0039”	NC2057
P	Low alloy steel C<0.3%	330 ~ 660	0.0008” ~ 0.0028”	0.0008” ~ 0.0031”	0.0008” ~ 0.0031”	NC5254
P	High alloy steel C>0.3%	265 ~ 590	0.0008” ~ 0.0024”	0.0008” ~ 0.0028”	0.0008” ~ 0.0028”	NC2057
M	Stainless Steel	100 ~ 265	0.0004” ~ 0.0012”	0.0004” ~ 0.0012”	0.0004” ~ 0.0012”	NC5254
K	Casting Iron	265 ~ 590	0.0008” ~ 0.0031”	0.0008” ~ 0.0039”	0.0008” ~ 0.0039”	NC2057
N	Al, and non-ferrous metal	500 ~ 985	0.0012” ~ 0.0039”	0.0012” ~ 0.0047”	0.0012” ~ 0.0047”	XP9000

SI08 - S9MT0802

	Workpiece Material	SFM	IPR (inch/rev.)			Grade of insert
			90°	120°	142°	
P	Carbon steel C<0.3%	390 ~ 820	0.0012” ~ 0.0039”	0.0012” ~ 0.0047”	0.0012” ~ 0.0047”	NC5254
P	Carbon steel C>0.3%	330 ~ 720	0.0012” ~ 0.0039”	0.0012” ~ 0.0047”	0.0012” ~ 0.0047”	NC2057
P	Low alloy steel C<0.3%	330 ~ 660	0.0012” ~ 0.0031”	0.0012” ~ 0.0039”	0.0012” ~ 0.0039”	NC5254
P	High alloy steel C>0.3%	265 ~ 590	0.0012” ~ 0.0028”	0.0012” ~ 0.0031”	0.0012” ~ 0.0031”	NC2057
M	Stainless Steel	100 ~ 265	0.0004” ~ 0.0016”	0.0004” ~ 0.0016”	0.0004” ~ 0.0016”	NC5254
K	Casting Iron	265 ~ 590	0.0012” ~ 0.0039”	0.0012” ~ 0.0047”	0.0012” ~ 0.0047”	NC2057
N	Al, and non-ferrous metal	500 ~ 985	0.0012” ~ 0.0047”	0.0012” ~ 0.0059”	0.0012” ~ 0.0059”	XP9000

SI10 - S9MT1003

	Workpiece Material	SFM	IPR (inch/rev.)			Grade of insert
			90°	120°	142°	
P	Carbon steel C<0.3%	390 ~ 820	0.0016” ~ 0.0059”	0.0020” ~ 0.0079”	0.0020” ~ 0.0079”	NC5254
P	Carbon steel C>0.3%	330 ~ 720	0.0016” ~ 0.0059”	0.0020” ~ 0.0079”	0.0020” ~ 0.0079”	NC2057
P	Low alloy steel C<0.3%	330 ~ 660	0.0012” ~ 0.0047”	0.0020” ~ 0.0059”	0.0020” ~ 0.0059”	NC5254
P	High alloy steel C>0.3%	265 ~ 590	0.0012” ~ 0.0039”	0.0016” ~ 0.0047”	0.0016” ~ 0.0047”	NC2057
M	Stainless Steel	100 ~ 265	0.0004” ~ 0.0016”	0.0004” ~ 0.0016”	0.0004” ~ 0.0016”	NC5254
K	Casting Iron	265 ~ 590	0.0012” ~ 0.0047”	0.0020” ~ 0.0059”	0.0020” ~ 0.0059”	NC2057
N	Al, and non-ferrous metal	500 ~ 985	0.0016” ~ 0.0079”	0.0020” ~ 0.0098”	0.0020” ~ 0.0098”	XP9000

Cutting Data

SI12 - S9MT1203

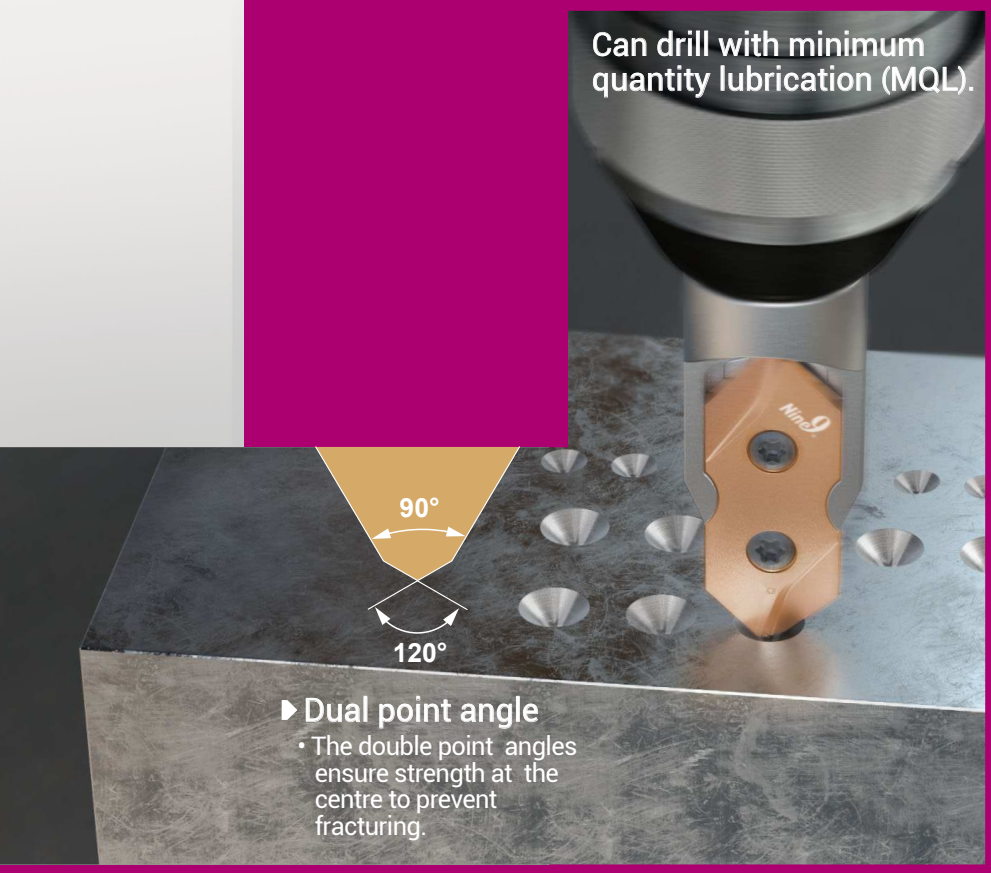
	Workpiece Material	SFM	IPR (inch/rev.)			Grade of insert
			90°	120°	142°	
P	Carbon steel C<0.3%	390 ~ 820	0.0020” ~ 0.0080”	0.0024” ~ 0.0098”	0.0024” ~ 0.0098”	NC5254
P	Carbon steel C>0.3%	330 ~ 720	0.0020” ~ 0.0080”	0.0024” ~ 0.0098”	0.0024” ~ 0.0098”	NC2057
P	Low alloy steel C<0.3%	330 ~ 660	0.0016” ~ 0.0059”	0.0020” ~ 0.0080”	0.0020” ~ 0.0079”	NC5254
P	High alloy steel C>0.3%	265 ~ 590	0.0016” ~ 0.0047”	0.0020” ~ 0.0063”	0.0020” ~ 0.0063”	NC2057
M	Stainless Steel	100 ~ 265	0.0004” ~ 0.0016”	0.0004” ~ 0.0016”	0.0004” ~ 0.0016”	NC5254
K	Casting Iron	265 ~ 590	0.0016” ~ 0.0059”	0.0020” ~ 0.0080”	0.0020” ~ 0.0080”	NC2057
N	Al, and non-ferrous metal	500 ~ 985	0.0020” ~ 0.0087”	0.0024” ~ 0.0098”	0.0024” ~ 0.0098”	XP9000

SI16 - S9MT1603

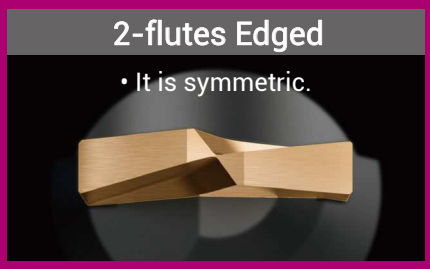
	Workpiece Material	SFM	IPR (inch/rev.)			Grade of insert
			90°	120°	142°	
P	Carbon steel C<0.3%	390 ~ 820	0.0020” ~ 0.0079”	0.0024” ~ 0.0098”	0.0024” ~ 0.0098”	NC5254
P	Carbon steel C>0.3%	330 ~ 720	0.0020” ~ 0.0079”	0.0024” ~ 0.0098”	0.0024” ~ 0.0098”	NC2057
P	Low alloy steel C<0.3%	330 ~ 660	0.0016” ~ 0.0060”	0.0020” ~ 0.0079”	0.0020” ~ 0.0079”	NC5254
P	High alloy steel C>0.3%	265 ~ 590	0.0016” ~ 0.0047”	0.0020” ~ 0.0063”	0.0020” ~ 0.0063”	NC2057
M	Stainless Steel	100 ~ 265	0.0004” ~ 0.0016”	0.0004” ~ 0.0016”	0.0004” ~ 0.0016”	NC5254
K	Casting Iron	265 ~ 590	0.0016” ~ 0.0060”	0.0020” ~ 0.0079”	0.0020” ~ 0.0079”	NC2057
N	Al, and non-ferrous metal	500 ~ 985	0.0020” ~ 0.0098”	0.0024” ~ 0.0098”	0.0024” ~ 0.0098”	XP9000

SI20 - S9MT2004

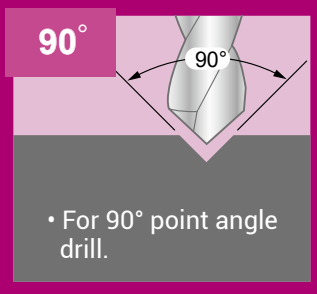
	Workpiece Material	SFM	IPR (inch/rev.)			Grade of insert
			90°	120°	142°	
P	Carbon steel C<0.3%	390 ~ 820	0.0020” ~ 0.0098”	0.0024” ~ 0.0118”	0.0024” ~ 0.0118”	NC5254
P	Carbon steel C>0.3%	330 ~ 720	0.0020” ~ 0.0098”	0.0024” ~ 0.0118”	0.0024” ~ 0.0118”	NC2057
P	Low alloy steel C<0.3%	330 ~ 660	0.0016” ~ 0.0079”	0.0020” ~ 0.0098”	0.0020” ~ 0.0098”	NC5254
P	High alloy steel C>0.3%	265 ~ 590	0.0016” ~ 0.0060”	0.0020” ~ 0.0079”	0.0020” ~ 0.0079”	NC2057
M	Stainless Steel	100 ~ 265	0.0004” ~ 0.0016”	0.0004” ~ 0.0016”	0.0004” ~ 0.0016”	NC5254
K	Casting Iron	265 ~ 590	0.0016” ~ 0.0079”	0.0020” ~ 0.0098”	0.0020” ~ 0.0098”	NC2057
N	Al, and non-ferrous metal	500 ~ 985	0.0020” ~ 0.0118”	0.0024” ~ 0.0118”	0.0024” ~ 0.0118”	XP9000

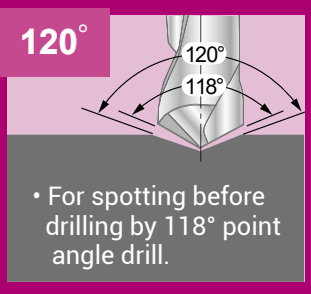


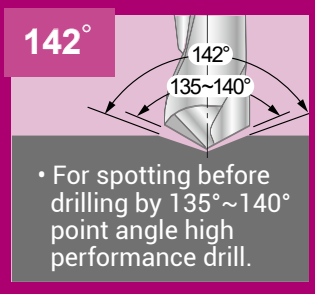




Spotting produces a shallow hole to get better hole position enabling to produce more accurate final product. Ideally, the proper spotting angle should have larger point angle than that of your drill, so the center of a drill shall be the first point to contact workpiece to avoid drill walking or positional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







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