



Accuracy

Coolant

Efficiency

ACE Spot Drill >>>

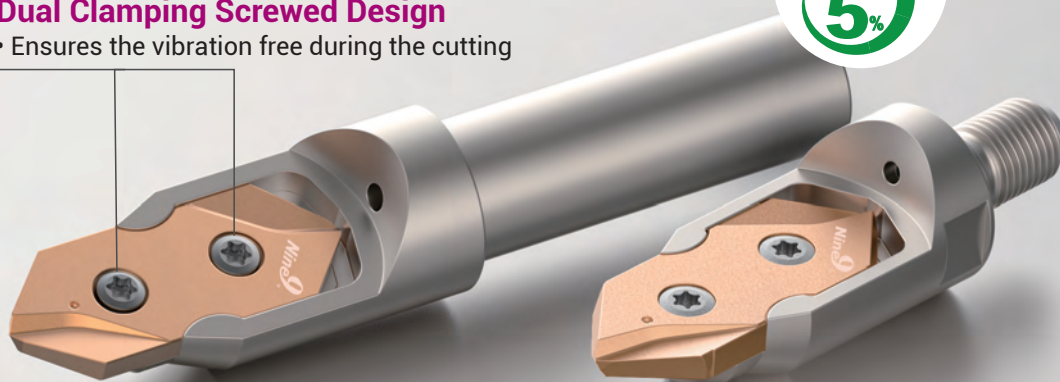
Spotting Concept!

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 the drill walked or moved in starting drilling.



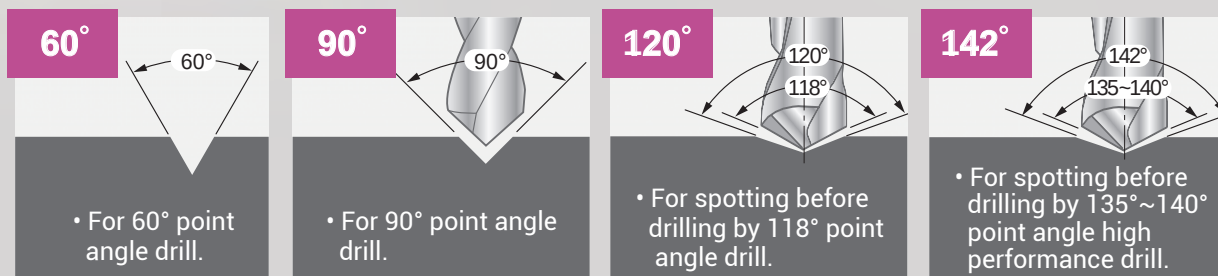
► Dual Clamping Screwed Design

- Ensures the vibration free during the cutting



Features >>>

► 4 Angles : 60° / 90° / 120° / 142°



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

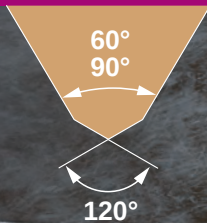
► High Rigidity, High Performance Cutting, Ultra-long Tool Life.

- 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.



Applications

Can drill with minimum quantity lubrication (MQL).

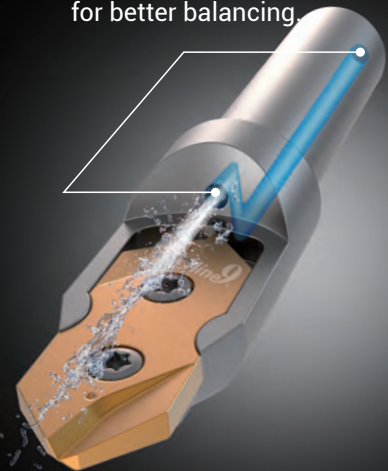


► Dual point angle

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

Internal Coolant

- Optimized coolant design for better balancing.

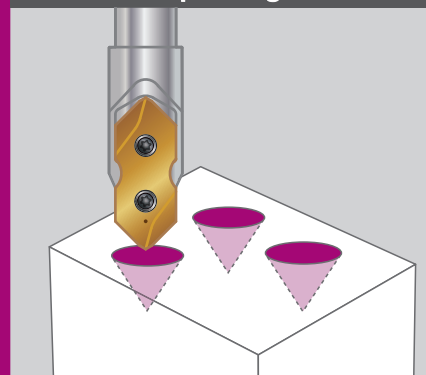


2-flutes Edged

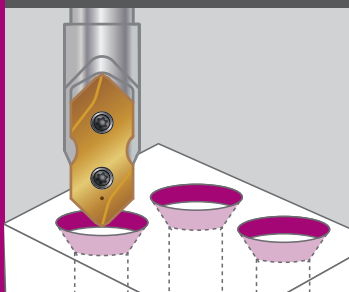
- It is symmetric.



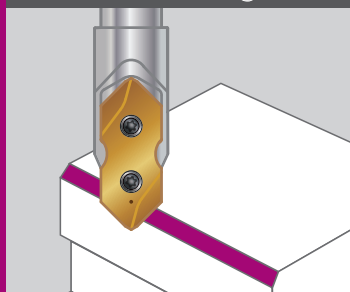
Spotting



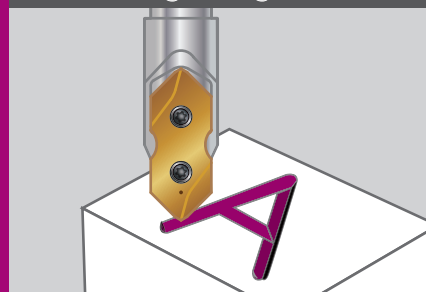
Countersink



Chamfering



Engraving

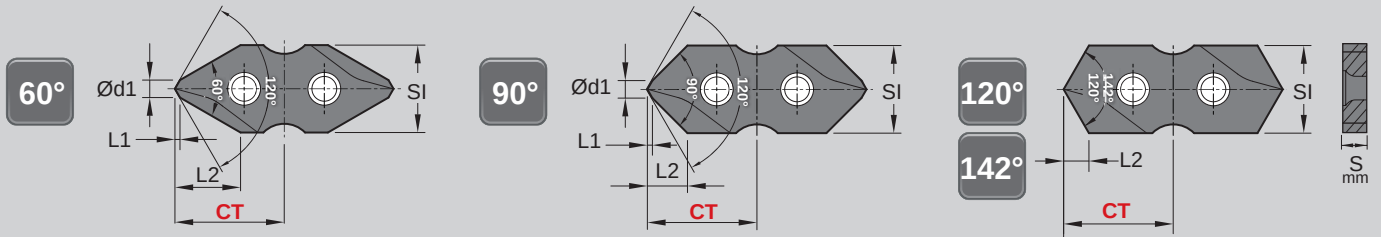


“ Nine9 spotting tool improves hole position, increases drill feed rate, extends tool life, enhances production efficiency, and ensures uniform hole quality. ”

Insert of ACE Spot Drill

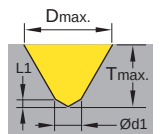
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ACE Spot Drill



► 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.



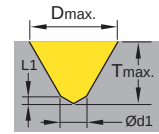
SI	Angle ±0.5	Code	Parts No.		Coating	Grade	Dimensions			Dmax.	Tmax.	S	CT ±0.025
							Ød1	L1	L2				
06	60°	06A021	S9MT06T1-060	NC2057	AlTiN+TiSiN	P35	1.2	0.35	4.5	5.5	4.1	1.8	7.5
		06A023		NC5254	Helica								
		06A022		XP9000	Uncoated								
	90°	06A031	S9MT06T1-090	NC2057	AlTiN+TiSiN		1.2	0.35	2.75	5.5	2.5		
		06A033		NC5254	Helica								
		06A032		XP9000	Uncoated								
	120°	06A041	S9MT06T1-120	NC2057	AlTiN+TiSiN		-	-	1.73	5.5	1.6		
		06A043		NC5254	Helica								
		06A042		XP9000	Uncoated								
	142°	06A051	S9MT06T1-142	NC2057	AlTiN+TiSiN		-	-	1.03	5.5	0.95		
		06A053		NC5254	Helica								
		06A052		XP9000	Uncoated								
08	60°	06A121	S9MT0802-060	NC2057	AlTiN+TiSiN	P35	1.6	0.46	6.0	7.5	5.6	2.4	10
		06A125		NC5254	Helica								
		06A122		XP9000	Uncoated								
	90°	06A131	S9MT0802-090	NC2057	AlTiN+TiSiN		1.6	0.46	3.6	7.5	3.4		
		06A135		NC5254	Helica								
		06A132		XP9000	Uncoated								
	120°	06A141	S9MT0802-120	NC2057	AlTiN+TiSiN		-	-	2.3	7.5	2.2		
		06A143		NC5254	Helica								
		06A142		XP9000	Uncoated								
	142°	06A151	S9MT0802-142	NC2057	AlTiN+TiSiN		-	-	1.38	7.5	1.29		
		06A153		NC5254	Helica								
		06A152		XP9000	Uncoated								
10	60°	06A221	S9MT1003-060	NC2057	AlTiN+TiSiN	P35	2	0.58	7.5	9.5	7.1	3.0	12.50
		06A223		NC5254	Helica								
		06A222		XP9000	Uncoated								
	90°	06A231	S9MT1003-090	NC2057	AlTiN+TiSiN		2	0.58	4.6	9.5	4.4		
		06A233		NC5254	Helica								
		06A232		XP9000	Uncoated								
	120°	06A241	S9MT1003-120	NC2057	AlTiN+TiSiN		-	-	2.9	9.5	2.7		
		06A243		NC5254	Helica								
		06A242		XP9000	Uncoated								
	142°	06A251	S9MT1003-142	NC2057	AlTiN+TiSiN		-	-	1.72	9.5	1.64		
		06A253		NC5254	Helica								
		06A252		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 ±0.5	Code	Parts No.		Coating	Grade	Dimensions			Dmax.	Tmax.	S	CT ±0.025
							Ød1	L1	L2				
12	60°	06A321	S9MT1203-060	NC2057	AlTiN+TiSiN	P35	2.4	0.69	9.0	11.5	8.6	3.0	15
		06A323		NC5254	Helica								
		06A322		XP9000	Uncoated								
	90°	06A331	S9MT1203-090	NC2057	AlTiN+TiSiN		2.4	0.69	5.5	11.5	5.3		
		06A333		NC5254	Helica								
		06A332		XP9000	Uncoated								
	120°	06A341	S9MT1203-120	NC2057	AlTiN+TiSiN		-	-	3.5	11.5	3.3		
		06A343		NC5254	Helica								
		06A342		XP9000	Uncoated								
	142°	06A351	S9MT1203-142	NC2057	AlTiN+TiSiN		-	-	2.07	11.5	1.98	13.5	
		06A353		NC5254	Helica								
		06A352		XP9000	Uncoated								
16	60°	06A421	S9MT1603-060	NC2057	AlTiN+TiSiN	P35	3.2	0.92	12	15.5	11.6	3.18	20
		06A423		NC5254	Helica								
		06A422		XP9000	Uncoated								
	90°	06A431	S9MT1603-090	NC2057	AlTiN+TiSiN		3.2	0.92	7.3	15.5	7.0		
		06A433		NC5254	Helica								
		06A432		XP9000	Uncoated								
	120°	06A441	S9MT1603-120	NC2057	AlTiN+TiSiN		-	-	4.6	15.5	4.4		
		06A443		NC5254	Helica								
		06A442		XP9000	Uncoated								
	142°	06A451	S9MT1603-142	NC2057	AlTiN+TiSiN		-	-	2.76	15.5	2.67	18	
		06A453		NC5254	Helica								
		06A452		XP9000	Uncoated								
20	60°	06A521	S9MT2004-060	NC2057	AlTiN+TiSiN	P35	4.0	1.16	15	19.5	14.6	4.76	25
		06A523		NC5254	Helica								
		06A522		XP9000	Uncoated								
	90°	06A531	S9MT2004-090	NC2057	AlTiN+TiSiN		4.0	1.16	9.2	19.5	8.9		
		06A533		NC5254	Helica								
		06A532		XP9000	Uncoated								
	120°	06A541	S9MT2004-120	NC2057	AlTiN+TiSiN		-	-	5.8	19.5	5.6		
		06A543		NC5254	Helica								
		06A542		XP9000	Uncoated								
	142°	06A551	S9MT2004-142	NC2057	AlTiN+TiSiN		-	-	3.44	19.5	3.36	22	
		06A553		NC5254	Helica								
		06A552		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

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ACE Spot Drill

Holders of ACE Spot Drill

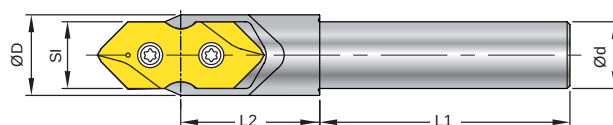
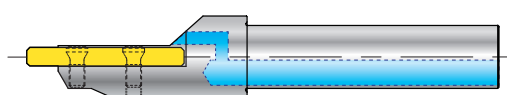


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ACE Spot Drill

► Cylindrical Shank >>

- Made of hardened high alloy steel, HRC 53.
- Internal coolant.

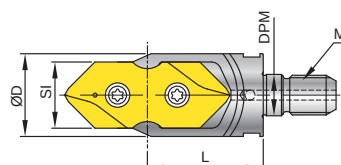


SI	Code	Parts No.	Ød	L1	L2	ØD	Screw	Key
06	6A0001	00-99688-SI06-06	6	27	14	8	*NS-18037 / 0.6Nm	NK-T6
08	6A0101	00-99688-SI08-08	8	36	19	10.5	*NS-20045 / 0.6Nm	NK-T6
10	6A0201	00-99688-SI10-10	10	40	22.5	13	*NS-25060 / 0.9Nm	NK-T7
12	6A0301	00-99688-SI12-12	12	45	25	15.5	NS-30072 / 2.0Nm	NK-T9
16	6A0401	00-99688-SI16-16	16	48	32	21	NS-35080 / 2.5Nm	NK-T15
20	6A0501	00-99688-SI20-20	20	50	35	26	NS-50125 / 5.5Nm	NK-T20

*Torque screwdriver is recommended.

► Screw Fit Cutter >>

- Made of hardened high alloy steel, HRC 53.
- Internal coolant.



SI	Code	Parts No.	ØD	L	M	DPM	Screw	Key
06	6A2001	00-99688-SI06-M04	8	14.5	M4xP0.7	4.5	*NS-18037 / 0.6Nm	NK-T6
08	6A2101	00-99688-SI08-M05	10	19	M5xP0.8	5.5	*NS-20045 / 0.6Nm	NK-T6
10	6A2201	00-99688-SI10-M06	12	22	M6xP1.0	6.5	*NS-25060 / 0.9Nm	NK-T7
12	6A2301	00-99688-SI12-M08	16	25	M8xP1.25	8.5	NS-30072 / 2.0Nm	NK-T9
16	6A2401	00-99688-SI16-M10	20	31	M10xP1.5	10.5	NS-35080 / 2.5Nm	NK-T15
20	6A2501	00-99688-SI20-M12	25	35	M12xP1.75	12.5	NS-50125 / 5.5Nm	NK-T20

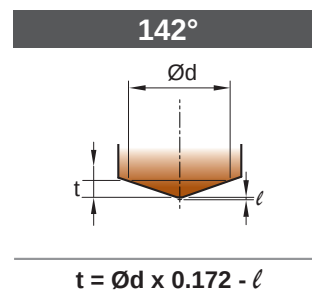
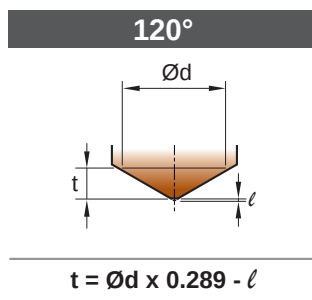
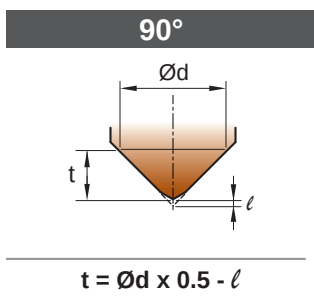
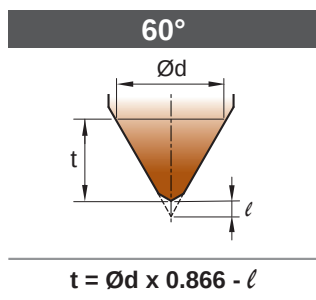
• Refer to Page 164 for extension bars.

*Torque screwdriver is recommended.

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.	4.1	2.5	1.6	0.95	5.6	3.4	2.2	1.29	7.1	4.4	2.7	1.64	8.6	5.3	3.3	1.98	11.6	7.0	4.4	2.67	14.6	8.9	5.6	3.36
ℓ	0.35				0.46				0.58				0.69				0.92				1.16			
t	0.35				0.05				0.04				0.06				0.05				0.1			



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

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

Step 2 Calculate T (depth factor): $T = \frac{t}{T_{\max}}$

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

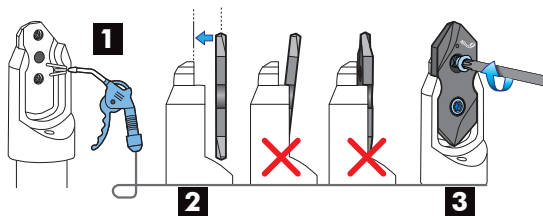
*Q T	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Material										
P	0.5	0.45	0.4	0.35	0.3	0.25	0.2	0.15	0.1	
M	0.2	0.2	0.2	0.15	0.15	0.15	0.1	0.1	0.1	
K	0.5	0.45	0.4	0.35	0.3	0.25	0.2	0.15	0.1	
N	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	

► Calculate spindle speed and feed rate

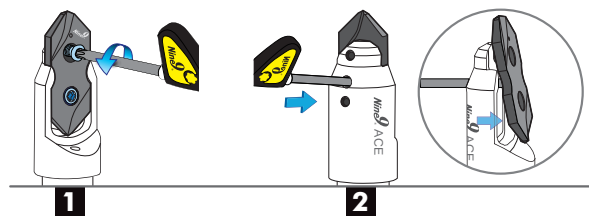
Metric	
$S = \frac{V_c \times 1000}{\pi \times d}$	d = diameter -mm
	S = Spindle Speed -r.p.m.
	Vc = Cutting Speed -m/min.
$F = S \times f$	f = mm/rev.
	F = mm/min.

Inch	
$S = \frac{(3.82 \times \text{SFM})}{d}$	d = diameter-inch
	S = Spindle Speed-r.p.m.
$\text{SFM} = V_c \times 3.28$	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

• For Spotting

Workpiece Material		Vc (m/min)	60°	90°	120°	142°	Grade of insert	
			*Q (each pecking depth)	f (mm/rev.)				
P	Carbon steel C<0.3%	120 ~ 250	0.1 ~ 0.5mm	0.01 ~ 0.05	0.02 ~ 0.08	0.02 ~ 0.10	0.02 ~ 0.10	NC5254
	Carbon steel C>0.3%	100 ~ 220						NC2057
	Low alloy steel C<0.3%	100 ~ 200		0.01 ~ 0.04	0.02 ~ 0.07	0.02 ~ 0.08	0.02 ~ 0.08	NC5254
	High alloy steel	80 ~ 180		0.01 ~ 0.03	0.02 ~ 0.06	0.02 ~ 0.07	0.02 ~ 0.07	NC2057
M	Stainless steel	30 ~ 80	0.1 ~ 0.2mm	0.01 ~ 0.02	0.01 ~ 0.03	0.01 ~ 0.03	0.01 ~ 0.03	NC5254
K	Cast Iron	80 ~ 180	0.1 ~ 0.5mm	0.01 ~ 0.05	0.02 ~ 0.08	0.02 ~ 0.10	0.02 ~ 0.10	NC2057
N	Non-ferrous metal	150 ~ 300	0.2 ~ 1.0mm	0.01 ~ 0.06	0.03 ~ 0.10	0.03 ~ 0.12	0.03 ~ 0.12	XP9000

• For Chamfering

Workpiece Material	Vc (m/min)	f (mm/rev.)				Grade of insert
		60°	90° (Cmax.: 2.0 mm)	120°	142°	
P Carbon steel C<0.3% Carbon steel C>0.3% Low alloy steel C<0.3% High alloy steel	60 ~ 150	0.02 ~ 0.05	0.02 ~ 0.08	0.02 ~ 0.06	0.02 ~ 0.05	NC5254
	60 ~ 150	0.04 ~ 0.16	0.04 ~ 0.20	0.04 ~ 0.16	0.04 ~ 0.14	NC2057
	40 ~ 120	0.02 ~ 0.05	0.02 ~ 0.08	0.02 ~ 0.06	0.02 ~ 0.05	NC5254
	40 ~ 100	0.04 ~ 0.12	0.04 ~ 0.16	0.04 ~ 0.14	0.04 ~ 0.12	NC2057
M Stainless steel	30 ~ 80	0.01 ~ 0.03	0.01 ~ 0.04	0.01 ~ 0.04	0.01 ~ 0.03	NC5254
K Cast Iron	40 ~ 120	0.04 ~ 0.16	0.04 ~ 0.20	0.04 ~ 0.16	0.04 ~ 0.14	NC2057
N Non-ferrous metal	90 ~ 200	0.02 ~ 0.16	0.02 ~ 0.20	0.02 ~ 0.16	0.02 ~ 0.14	XP9000

* Feed rate (f) should be gradually reduced while C > 1 mm.

Recommend using the minimum value of feed rate (red color) while Cmax is required.

S108 - S9MT0802

• For Spotting

Workpiece Material		Vc (m/min)	60°	90°	120°	142°	Grade of insert
			*Q (each pecking depth)	f (mm/rev.)			
P	Carbon steel C<0.3%	120 ~ 250	0.1 ~ 0.5mm	0.02 ~ 0.08	0.03 ~ 0.10	0.03 ~ 0.12	NC5254
	Carbon steel C>0.3%	100 ~ 220					NC2057
	Low alloy steel C<0.3%	100 ~ 200		0.02 ~ 0.07	0.03 ~ 0.08	0.03 ~ 0.10	NC5254
	High alloy steel	80 ~ 180		0.02 ~ 0.06	0.03 ~ 0.07	0.03 ~ 0.08	NC2057
M	Stainless steel	30 ~ 80	0.1 ~ 0.2mm	0.01 ~ 0.03	0.01 ~ 0.04	0.01 ~ 0.04	NC5254
K	Cast Iron	80 ~ 180	0.1 ~ 0.5mm	0.02 ~ 0.08	0.03 ~ 0.10	0.03 ~ 0.12	NC2057
N	Non-ferrous metal	150 ~ 300	0.2 ~ 1.0mm	0.03 ~ 0.10	0.03 ~ 0.12	0.03 ~ 0.15	XP9000

Cutting Data

S/08 - S9MT0802

• For Chamfering

Workpiece Material	Vc (m/min)	f (mm/rev.)				Grade of insert
		60°	90° (Cmax.: 2.5 mm)	120°	142°	
P Carbon steel C<0.3% Carbon steel C>0.3% Low alloy steel C<0.3% High alloy steel	60 ~ 150	0.03 ~ 0.06	0.03 ~ 0.10	0.03 ~ 0.08	0.03 ~ 0.08	NC5254
	60 ~ 150	0.06 ~ 0.20	0.06 ~ 0.30	0.06 ~ 0.20	0.06 ~ 0.16	NC2057
	40 ~ 120	0.03 ~ 0.06	0.03 ~ 0.10	0.03 ~ 0.08	0.03 ~ 0.08	NC5254
	40 ~ 100	0.06 ~ 0.18	0.06 ~ 0.25	0.06 ~ 0.18	0.06 ~ 0.14	NC2057
M Stainless steel	30 ~ 80	0.01 ~ 0.03	0.01 ~ 0.04	0.01 ~ 0.04	0.01 ~ 0.03	NC5254
K Cast Iron	40 ~ 120	0.06 ~ 0.18	0.06 ~ 0.25	0.06 ~ 0.18	0.06 ~ 0.14	NC2057
N Non-ferrous metal	90 ~ 200	0.03 ~ 0.20	0.03 ~ 0.30	0.03 ~ 0.20	0.03 ~ 0.16	XP9000

* Feed rate (f) should be gradually reduced while C > 1.25 mm.
Recommend using the minimum value of feed rate (red color) while Cmax is required.

S/10 - S9MT1003

• For Spotting

Workpiece Material		Vc (m/min)	60°		90°	120°	142°	Grade of insert	
			*Q (each pecking depth)	f (mm/rev.)					
P	Carbon steel C<0.3%	120 ~ 250	0.1 ~ 0.5mm	0.03 ~ 0.08	0.04 ~ 0.15	0.05 ~ 0.20	0.05 ~ 0.20	NC5254	
	Carbon steel C>0.3%	100 ~ 220			0.03 ~ 0.07	0.03 ~ 0.12	0.05 ~ 0.15	0.05 ~ 0.15	NC2057
	Low alloy steel C<0.3%	100 ~ 200				0.03 ~ 0.10	0.04 ~ 0.12	0.04 ~ 0.12	NC5254
	High alloy steel	80 ~ 180				0.02 ~ 0.06	0.03 ~ 0.10	0.04 ~ 0.12	0.04 ~ 0.12
M	Stainless steel	30 ~ 80	0.1 ~ 0.2mm	0.01 ~ 0.03		0.01 ~ 0.04	0.01 ~ 0.04	0.01 ~ 0.04	NC5254
K	Cast Iron	80 ~ 180	0.1 ~ 0.5mm	0.02 ~ 0.08	0.03 ~ 0.12	0.05 ~ 0.15	0.05 ~ 0.15	NC2057	
N	Non-ferrous metal	150 ~ 300	0.2 ~ 1.0mm	0.03 ~ 0.10	0.04 ~ 0.20	0.05 ~ 0.25	0.05 ~ 0.25	XP9000	

• For Chamfering

Workpiece Material	Vc (m/min)	f (mm/rev.)				Grade of insert
		60°	90° (Cmax.: 3.4 mm)	120°	142°	
P Carbon steel C<0.3% Carbon steel C>0.3% Low alloy steel C<0.3% High alloy steel	60 ~ 150	0.04 ~ 0.08	0.04 ~ 0.12	0.04 ~ 0.08	0.04 ~ 0.08	NC5254
	60 ~ 150	0.08 ~ 0.30	0.08 ~ 0.40	0.08 ~ 0.30	0.08 ~ 0.30	NC2057
	40 ~ 120	0.04 ~ 0.08	0.04 ~ 0.10	0.04 ~ 0.08	0.04 ~ 0.08	NC5254
	40 ~ 100	0.08 ~ 0.25	0.08 ~ 0.30	0.08 ~ 0.25	0.08 ~ 0.25	NC2057
M Stainless steel	30 ~ 80	0.01 ~ 0.04	0.01 ~ 0.06	0.01 ~ 0.04	0.01 ~ 0.04	NC5254
K Cast Iron	40 ~ 120	0.08 ~ 0.25	0.08 ~ 0.30	0.08 ~ 0.25	0.08 ~ 0.25	NC2057
N Non-ferrous metal	90 ~ 200	0.04 ~ 0.30	0.04 ~ 0.40	0.04 ~ 0.30	0.04 ~ 0.30	XP9000

* Feed rate (f) should be gradually reduced while C > 1.7 mm.
Recommend using the minimum value of feed rate (red color) while Cmax is required.

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ACE Spot Drill

Cutting Data

S/12 - S9MT1203

• For Spotting

Workpiece Material		Vc (m/min)	60°		90°	120°	142°	Grade of insert
			*Q (each pecking depth)	f (mm/rev.)				
P	Carbon steel C<0.3%	120 ~ 250	0.1 ~ 0.5mm	0.03 ~ 0.08	0.05 ~ 0.20	0.06 ~ 0.25	0.06 ~ 0.25	NC5254
	Carbon steel C>0.3%	100 ~ 220						NC2057
	Low alloy steel C<0.3%	100 ~ 200		0.03 ~ 0.07	0.04 ~ 0.15	0.05 ~ 0.20	0.05 ~ 0.20	NC5254
	High alloy steel	80 ~ 180		0.02 ~ 0.06	0.04 ~ 0.12	0.05 ~ 0.16	0.05 ~ 0.16	NC2057
M	Stainless steel	30 ~ 80	0.1 ~ 0.2mm	0.01 ~ 0.03	0.01 ~ 0.04	0.01 ~ 0.04	0.01 ~ 0.04	NC5254
K	Cast Iron	80 ~ 180	0.1 ~ 0.5mm	0.02 ~ 0.08	0.04 ~ 0.15	0.05 ~ 0.20	0.05 ~ 0.20	NC2057
N	Non-ferrous metal	150 ~ 300	0.2 ~ 1.0mm	0.03 ~ 0.10	0.05 ~ 0.22	0.06 ~ 0.25	0.06 ~ 0.25	XP9000

• For Chamfering

	Workpiece Material	Vc (m/min)	f (mm/rev.)				Grade of insert
			60°	90° (Cmax.: 4.0 mm)	120°	142°	
P	Carbon steel C<0.3%	60 ~ 150	0.06 ~ 0.10	0.06 ~ 0.16	0.06 ~ 0.12	0.06 ~ 0.10	NC5254
	Carbon steel C>0.3%	60 ~ 150	0.10 ~ 0.40	0.10 ~ 0.50	0.10 ~ 0.50	0.10 ~ 0.40	NC2057
	Low alloy steel C<0.3%	40 ~ 120	0.06 ~ 0.10	0.06 ~ 0.16	0.06 ~ 0.12	0.06 ~ 0.10	NC5254
	High alloy steel	40 ~ 100	0.10 ~ 0.30	0.10 ~ 0.40	0.10 ~ 0.40	0.10 ~ 0.30	NC2057
M	Stainless steel	30 ~ 80	0.02 ~ 0.06	0.02 ~ 0.08	0.02 ~ 0.08	0.02 ~ 0.06	NC5254
K	Cast Iron	40 ~ 120	0.10 ~ 0.30	0.10 ~ 0.40	0.10 ~ 0.40	0.10 ~ 0.30	NC2057
N	Non-ferrous metal	90 ~ 200	0.06 ~ 0.40	0.06 ~ 0.50	0.06 ~ 0.50	0.06 ~ 0.40	XP9000

* Feed rate (f) should be gradually reduced while C > 2.0 mm.

Recommend using the minimum value of feed rate (red color) while Cmax is required.

S/16 - S9MT1603

• For Spotting

Workpiece Material		Vc (m/min)	60°	90°	120°	142°	Grade of insert	
			*Q (each pecking depth)	f (mm/rev.)				
P	Carbon steel C<0.3%	120 ~ 250	0.1 ~ 0.5mm	0.04 ~ 0.10	0.05 ~ 0.20	0.06 ~ 0.25	0.06 ~ 0.25	NC5254
	Carbon steel C>0.3%	100 ~ 220						NC2057
	Low alloy steel C<0.3%	100 ~ 200		0.03 ~ 0.08	0.04 ~ 0.15	0.05 ~ 0.20	0.05 ~ 0.20	NC5254
	High alloy steel	80 ~ 180		0.02 ~ 0.07	0.04 ~ 0.12	0.05 ~ 0.16	0.05 ~ 0.16	NC2057
M	Stainless steel	30 ~ 80	0.1 ~ 0.2mm	0.01 ~ 0.03	0.01 ~ 0.04	0.01 ~ 0.04	0.01 ~ 0.04	NC5254
K	Cast Iron	80 ~ 180	0.1 ~ 0.5mm	0.03 ~ 0.08	0.04 ~ 0.15	0.05 ~ 0.20	0.05 ~ 0.20	NC2057
N	Non-ferrous metal	150 ~ 300	0.2 ~ 1.0mm	0.04 ~ 0.12	0.05 ~ 0.25	0.06 ~ 0.25	0.06 ~ 0.25	XP9000

Cutting Data

SI16 - S9MT1603

• For Chamfering

Workpiece Material	Vc (m/min)	f (mm/rev.)				Grade of insert
		60°	90° (Cmax.: 5.5 mm)	120°	142°	
P Carbon steel C<0.3% Carbon steel C>0.3% Low alloy steel C<0.3% High alloy steel	60 ~ 150	0.06 ~ 0.10	0.06 ~ 0.16	0.06 ~ 0.12	0.06 ~ 0.10	NC5254
	60 ~ 150	0.10 ~ 0.40	0.10 ~ 0.50	0.10 ~ 0.50	0.10 ~ 0.40	NC2057
	40 ~ 120	0.06 ~ 0.10	0.06 ~ 0.16	0.06 ~ 0.12	0.06 ~ 0.10	NC5254
	40 ~ 100	0.10 ~ 0.30	0.10 ~ 0.40	0.10 ~ 0.40	0.10 ~ 0.30	NC2057
M Stainless steel	30 ~ 80	0.02 ~ 0.06	0.02 ~ 0.08	0.02 ~ 0.08	0.02 ~ 0.06	NC5254
K Cast Iron	40 ~ 120	0.10 ~ 0.03	0.10 ~ 0.40	0.10 ~ 0.40	0.10 ~ 0.30	NC2057
N Non-ferrous metal	90 ~ 200	0.06 ~ 0.40	0.06 ~ 0.50	0.06 ~ 0.50	0.06 ~ 0.40	XP9000

* Feed rate (f) should be gradually reduced while C > 2.5 mm.

Recommend using the minimum value of feed rate (red color) while Cmax is required.

SI20 - S9MT2004

• For Spotting

Workpiece Material		Vc (m/min)	60°	90°	120°	142°	Grade of insert	
			*Q (each pecking depth)	f (mm/rev.)				
P	Carbon steel C<0.3%	120 ~ 250	0.1 ~ 0.5mm	0.04 ~ 0.10	0.05 ~ 0.25	0.06 ~ 0.30	0.06 ~ 0.30	NC5254
	Carbon steel C>0.3%	100 ~ 220						NC2057
	Low alloy steel C<0.3%	100 ~ 200		0.03 ~ 0.08	0.04 ~ 0.20	0.05 ~ 0.25	0.05 ~ 0.25	NC5254
	High alloy steel	80 ~ 180		0.02 ~ 0.07	0.04 ~ 0.15	0.05 ~ 0.20	0.05 ~ 0.20	NC2057
M	Stainless steel	30 ~ 80	0.1 ~ 0.2mm	0.01 ~ 0.03	0.01 ~ 0.04	0.01 ~ 0.04	0.01 ~ 0.04	NC5254
K	Cast Iron	80 ~ 180	0.1 ~ 0.5mm	0.03 ~ 0.08	0.04 ~ 0.20	0.05 ~ 0.25	0.05 ~ 0.25	NC2057
N	Non-ferrous metal	150 ~ 300	0.2 ~ 1.0mm	0.04 ~ 0.12	0.05 ~ 0.30	0.06 ~ 0.30	0.06 ~ 0.30	XP9000

• For Chamfering

Workpiece Material	Vc (m/min)	f (mm/rev.)				Grade of insert
		60°	90° (Cmax.: 7.0 mm)	120°	142°	
P Carbon steel C<0.3% Carbon steel C>0.3% Low alloy steel C<0.3% High alloy steel	60 ~ 150	0.06 ~ 0.10	0.06 ~ 0.16	0.06 ~ 0.12	0.06 ~ 0.10	NC5254
	60 ~ 150	0.10 ~ 0.40	0.10 ~ 0.50	0.10 ~ 0.50	0.10 ~ 0.40	NC2057
	40 ~ 120	0.06 ~ 0.10	0.06 ~ 0.16	0.06 ~ 0.12	0.06 ~ 0.10	NC5254
	40 ~ 100	0.10 ~ 0.30	0.10 ~ 0.40	0.10 ~ 0.40	0.10 ~ 0.30	NC2057
M Stainless steel	30 ~ 80	0.02 ~ 0.06	0.02 ~ 0.08	0.02 ~ 0.08	0.02 ~ 0.06	NC5254
K Cast Iron	40 ~ 120	0.10 ~ 0.30	0.10 ~ 0.40	0.10 ~ 0.40	0.10 ~ 0.30	NC2057
N Non-ferrous metal	90 ~ 200	0.06 ~ 0.40	0.06 ~ 0.50	0.06 ~ 0.50	0.06 ~ 0.40	XP9000

* Feed rate (f) should be gradually reduced while C > 3.0 mm.

Recommend using the minimum value of feed rate (red color) while Cmax is required.