



Accuracy

Coolant

Efficiency

ACE Spot Drill >>>

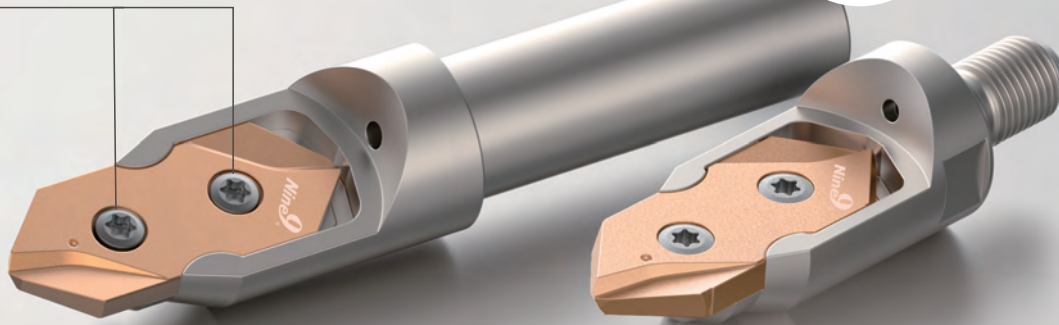
Spotting Concept!

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.



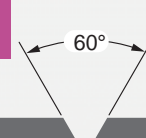
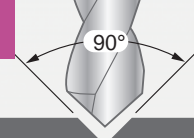
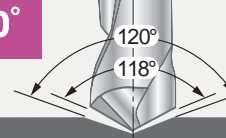
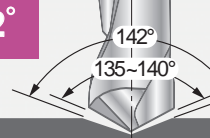
► Dual Clamping Screwed Design

- Ensures the vibration free during the cutting



Features >>>

► 4 Angles : 60° / 90° / 120° / 142°

<p>60°</p>  <p>• For 60° point angle drill.</p>	<p>90°</p>  <p>• For 90° point angle drill.</p>	<p>120°</p>  <p>• For spotting before drilling by 118° point angle drill.</p>	<p>142°</p>  <p>• For spotting before drilling by 135°~140° point angle high performance drill.</p>
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► 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.



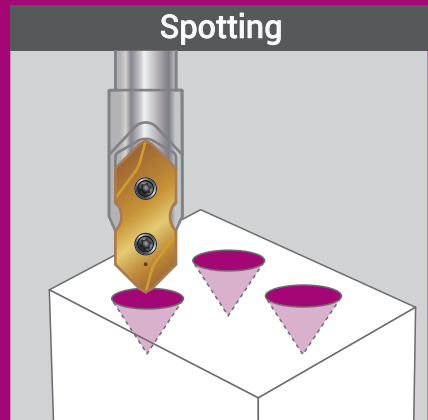
Internal Coolant

• Optimized coolant design for better balancing.



2-flutes Edged

• It is symmetric.

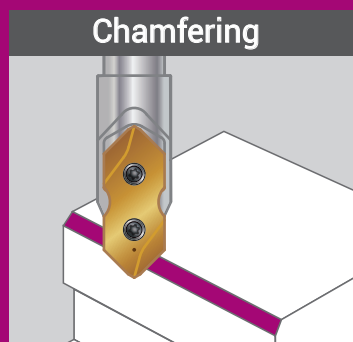


Spotting

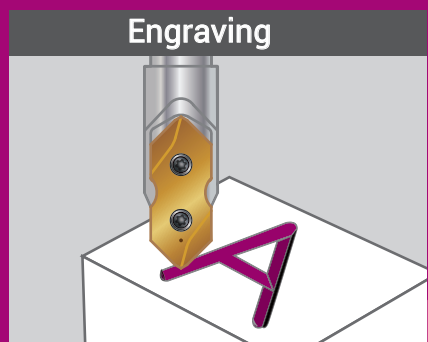
“ **Nine9 spotting tool improves hole position, increases drill feed rate, extends tool life, enhances production efficiency, and ensures uniform hole quality.** ”



Countersink

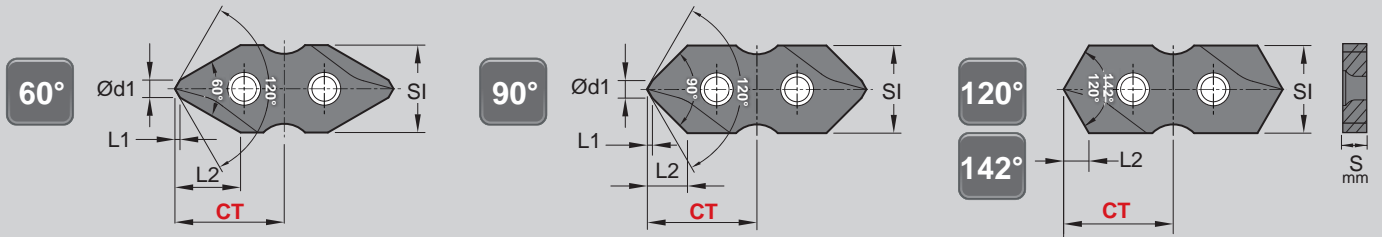


Chamfering



Engraving

Insert of ACE Spot Drill

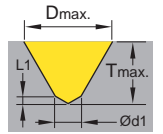


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ACE Spot Drill

► 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.



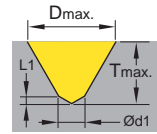
SI	Angle ±0.5	Code	Parts No.	Coating	Grade	Dimensions			Dmax.	Tmax.	S	CT ±0.025
						Ød1	L1	L2				
06	60°	06A021		NC2057	AlTiN+TiSiN	P35	1.2	0.35	4.5	5.5	4.1	1.8
		06A023	S9MT06T1-060	NC5254	Helica							
		06A022		XP9000	Uncoated							
	90°	06A031		NC2057	AlTiN+TiSiN		1.2	0.35	2.75	5.5	2.5	
		06A033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

1

ACE Spot Drill

Holders of ACE Spot Drill

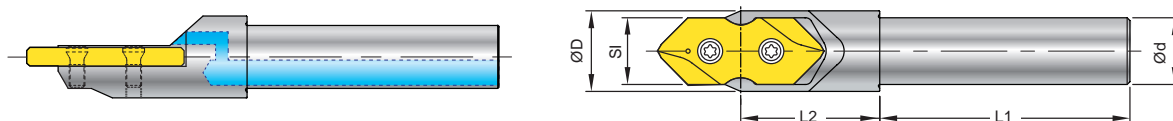


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ACE Spot Drill

► Cylindrical Shank >>

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

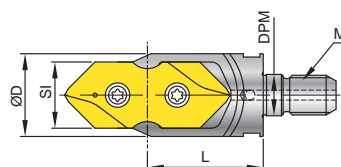


SI	Code	Parts No.	Ød	L1	L2	ØD	Screw	Key
06	6A0001	00-99688-SI06-06	6	27	14	8	*NS-18037 / 0.6Nm	NK-T6
08	6A0101	00-99688-SI08-08	8	36	19	10.5	*NS-20045 / 0.6Nm	NK-T6
10	6A0201	00-99688-SI10-10	10	40	22.5	13	*NS-25060 / 0.9Nm	NK-T7
12	6A0301	00-99688-SI12-12	12	45	25	15.5	NS-30072 / 2.0Nm	NK-T9
16	6A0401	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	0.05	0.04		0.46	0.05	0.04		0.58	0.06	0.05		0.69	0.06	0.05		0.92	0.1	0.15		1.16	0.1	0.15	

60°	90°	120°	142°
$t = \text{Ø}d \times 0.866 - \ell$	$t = \text{Ø}d \times 0.5 - \ell$	$t = \text{Ø}d \times 0.289 - \ell$	$t = \text{Ø}d \times 0.172 - \ell$

► 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).

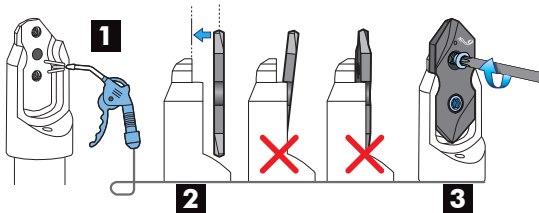
*Q \ T	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Material										
P	0.5	0.45	0.4	0.35	0.3	0.25	0.2	0.15	0.1	
M	0.2	0.2	0.2	0.15	0.15	0.15	0.1	0.1	0.1	
K	0.5	0.45	0.4	0.35	0.3	0.25	0.2	0.15	0.1	
N	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	

► Calculate spindle speed and feed rate

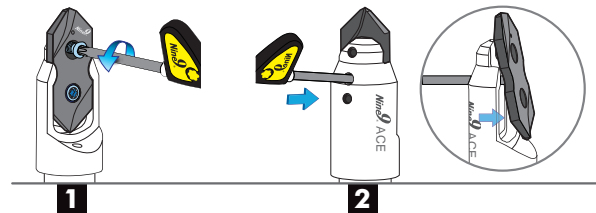
Metric	
$S = \frac{Vc \times 1000}{\pi \times d}$	d = diameter -mm S = Spindle Speed -r.p.m. Vc = Cutting Speed -m/min.
$F = S \times f$	f = mm/rev. F = mm/min.

Inch	
$S = \frac{(3.82 \times SFM)}{d}$	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

• 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% Carbon steel C>0.3% Low alloy steel C<0.3% High alloy steel	120 ~ 250	0.1 ~ 0.5mm	0.01 ~ 0.05	0.02 ~ 0.08	0.02 ~ 0.10	0.02 ~ 0.10	NC5254
	100 ~ 220						NC2057
	100 ~ 200						NC5254
	80 ~ 180						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% Carbon steel C>0.3% Low alloy steel C<0.3% High alloy steel	120 ~ 250	0.1 ~ 0.5mm	0.02 ~ 0.08	0.03 ~ 0.10	0.03 ~ 0.12	0.03 ~ 0.12	NC5254
	100 ~ 220						NC2057
	100 ~ 200						NC5254
	80 ~ 180						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	0.03 ~ 0.10	0.03 ~ 0.12	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	0.03 ~ 0.15	XP9000

Cutting Data

S108 - 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.

S110 - 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% Carbon steel C>0.3% Low alloy steel C<0.3% High alloy steel	120 ~ 250	0.1 ~ 0.5mm	0.03 ~ 0.08	0.04 ~ 0.15	0.05 ~ 0.20	0.05 ~ 0.20	NC5254
	100 ~ 220		0.03 ~ 0.07	0.03 ~ 0.12	0.05 ~ 0.15	0.05 ~ 0.15	NC2057
	100 ~ 200		0.02 ~ 0.06	0.03 ~ 0.10	0.04 ~ 0.12	0.04 ~ 0.12	NC5254
	80 ~ 180		0.02 ~ 0.08	0.03 ~ 0.12	0.04 ~ 0.12	0.05 ~ 0.15	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	0.03 ~ 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.

ACE Spot Drill

Cutting Data

S/12 - S9MT1203

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ACE Spot Drill

• 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% Carbon steel C>0.3% Low alloy steel C<0.3% High alloy steel	120 ~ 250	0.1 ~ 0.5mm	0.03 ~ 0.08	0.05 ~ 0.20	0.06 ~ 0.25	0.06 ~ 0.25	NC5254
	100 ~ 220		NC2057				
	100 ~ 200		0.03 ~ 0.07	0.04 ~ 0.15	0.05 ~ 0.20	0.05 ~ 0.20	NC5254
	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% 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 > 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% Carbon steel C>0.3% Low alloy steel C<0.3% High alloy steel	120 ~ 250	0.1 ~ 0.5mm	0.04 ~ 0.10	0.05 ~ 0.20	0.06 ~ 0.25	0.06 ~ 0.25	NC5254
	100 ~ 220		NC2057				
	100 ~ 200		0.03 ~ 0.08	0.04 ~ 0.15	0.05 ~ 0.20	0.05 ~ 0.20	NC5254
	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% Carbon steel C>0.3% Low alloy steel C<0.3% High alloy steel	120 ~ 250	0.1 ~ 0.5mm	0.04 ~ 0.10	0.05 ~ 0.25	0.06 ~ 0.30	0.06 ~ 0.30	NC5254
	100 ~ 220		0.03 ~ 0.08	0.04 ~ 0.20	0.05 ~ 0.25	0.05 ~ 0.25	NC2057
	100 ~ 200		0.02 ~ 0.07	0.04 ~ 0.15	0.05 ~ 0.20	0.05 ~ 0.20	NC5254
	80 ~ 180		0.03 ~ 0.08	0.04 ~ 0.20	0.05 ~ 0.25	0.05 ~ 0.25	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.

ACE Spot Drill