

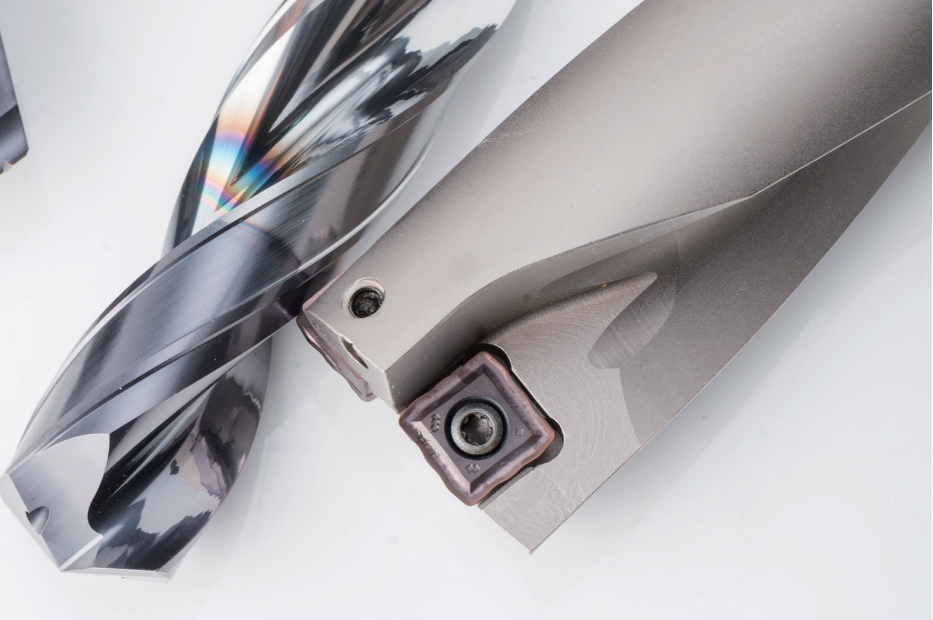
HOLEMAKING TOOLS

SOLID CARBIDE DRILLS





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Solid Carbide Drills C























































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C

SOLID CARBIDE DRILLS














Content of Drills Series

Drills Series	Description and profile	Point Angle	Shank Type	Coating	Drilling Depth	Coolant Type / form	Tool Type	Dimension Range	Hole accuracy class	Dimension Page	Cutting Parameters Page
D918S	3D External Cooling, Twist Drill 	140°		AlCrN/TiSiN	3D		D918S-A3N NEW	D3~D20	IT9-10	463	495
	3D Inner Cooling, Twist Drill 	140°		AlCrN/TiSiN	3D		D918S-A3C NEW	D3~D20	IT9-10	464	495
	5D External Cooling, Twist Drill 	140°		AlCrN/TiSiN	5D		D918S-A5N NEW	D3~D20	IT9-10	465	495
	5D Inner Cooling, Twist Drill 	140°		AlCrN/TiSiN	5D		D918S-A5C NEW	D3~D20	IT9-10	466	495
D968S	3D External Cooling, Twist Drill 	140°		AlTiN nano	3D		D968S-A3N NEW	D3~D20	IT9-10	467	497
	3D Inner Cooling, Twist Drill 	140°		AlTiN nano	3D		D968S-A3C NEW	D3~D20	IT9-10	468	497
	5D External Cooling, Twist Drill 	140°		AlTiN nano	5D		D968S-A5N NEW	D3~D20	IT9-10	469	497
	5D Inner Cooling, Twist Drill 	140°		AlTiN nano	5D		D968S-A5C NEW	D3~D20	IT9-10	470	497
D101	90° NC Centre Drill 	90°		TiAlN			D101-AMN	D5~D20		492	503
D102	120° NC Centre Drill 	120°		TiAlN			D102-ANN	D5~D20		493	503
D103	145° NC Centre Drill 	145°		TiAlN			D103-APN	D5~D20		494	503
D938	3D External Cooling, Twist Drill 	140°		AlTiN nano	3D		D938-A3N	D3-D20	IT9-10	471	499
	3D Inner Cooling, Twist Drill 	140°		AlTiN nano	3D		D938-A3C	D3-D20	IT9-10	475	499
	5D External Cooling, Twist Drill 	140°		AlTiN nano	5D		D938-A5N	D3-D20	IT9-10	479	499
D938	5D Inner Cooling, Twist Drill 	140°		AlTiN nano	5D		D938-A5C	D3-D20	IT9-10	483	499
	8D Inner Cooling, Twist Drill 	140°		AlTiN nano	8D		D938-A8C NEW	D3-D16	IT9-10	487	501
	12D Inner Cooling, Twist Drill 	135°		AlTiN nano	12D		D938-A12C NEW	D3-D12	IT9-10	490	501
	15D Inner Cooling, Twist Drill 	135°		AlTiN nano	15D		D938-A15C NEW	D3-D12	IT9-10	491	501

● Most Suitable ○ Suitable

P				M			K		N					S		H											
1	2	3	4	5	6	7	1	2	3	1	2	3	4	5	1	2	3	4	1	2	3						
Carbon Steels, Alloy Steels				Alloy Steels, Tool Steels		PH and Ferrite/Martensitic Stainless	Stainless Steel		Cast Iron, Ductile Cast Iron		High Alloy Cast Iron		Wrought Aluminium Alloys, Cast Aluminium Alloys		Cast Aluminium Alloys		Copper Alloys		Composite Material	Heat Resistant Super Alloys		Titanium Alloys		Hardened Steels		Hardened Steels	
<35HRC				35-48HRC					<35HRC		35-45HRC		Si < 12%		Si > 12%		<200HB			<450HB		<400HB		45-55HRC		55-60HRC	
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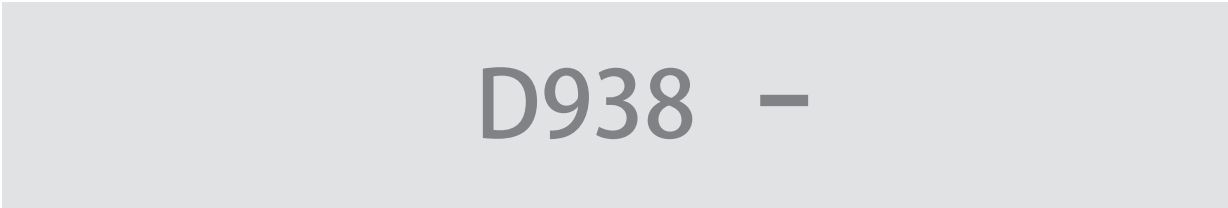
Content of Drills Series

Drills Series	Description and profile	Shank Type	Shank Type	Drilling depth	Tool Type	Dimension Range	Hole accuracy class	Dimension Page	Cutting Parameters Page
GSD Spade Drills	MCMG Spade insert			M3225	GSD	D13-D36	IT9-10	508	513
	GSD The Lateral Fixation Type Flange Shank and Helical Flute Holder			3D-12D				509	
	GSD-S The Lateral Fixation Type Flange Shank and straight Flute Holder			1D-26D				510	
	GSD-FMT Morse taper shank and Helical Flute Holder			2D-12D				511	
GHD Indexable Drills	QPMG Drilling insert			A4230 S4130	GHD	D14-D51	IT12-13	528	530
	GHD Drilling holder			2D-5D				516	
SPMG /WCMT Drilling insert	SPMG Drilling insert			A4230 S4130	SPMG		IT12-13	529	
	WCMT Drilling insert			A4230	WCMT		IT12-13	529	

○ Most Suitable ○ Suitable

	P			M			K			N			S		H										
	1	2	3	4	5	6	7	1	2	3	1	2	3	4	5	1	2	3	4	1	2	3			
	Carbon Steels, Alloy Steels			Alloy Steels, Tool Steels		PH and Ferrite/ Martensitic Stainless			Stainless Steel			Cast Iron, Ductile Cast Iron		High Alloy Cast Iron	Wrought Aluminium Alloys, Cast Aluminium Alloys		Cast Aluminium Alloys	Copper Alloys	Composite Material	Heat Resistant Super Alloys		Titanium Alloys	Hardened Steels	Hardened Steels	
<35HRC			35-48HRC								<35HRC		35-45HRC	Si < 12%		Si > 12%	<200HB		<450HB		<400HB	45-55HRC	55-60HRC		
	○							○	○	○															
	○							○	○	○															
	○							○	○	○															
	○							○	○	○															

Solid Carbide Drills Identification System



Workpiece Material	①Drills Series	
Steel,Cast Iron,Non-steel Material	D101	Straight Shank 90°NC Centre Drills
	D102	Straight Shank 120°NC Centre Drills
	D103	Straight Shank 145°NC Centre Drills
Steel	D918S	Twist Drills for General Purpose
	D938	Twist Drills for Steel
Stainless Steel	D968S	Twist Drills for Stainless Steel

A 5 C - 1200

②

② Shank Type	
A	DIN6535HA
E	DIN6535HE
B	DIN6535HB
Y	Continuous Parallel Shank
M	Mose Shank

③

③ Drilling Depth	
3	Drilling Depth $\leq 3D$
5	Drilling Depth $\leq 5D$
8	Drilling Depth $\leq 8D$
A	Drilling Depth $\leq 10D$
M	90° Point Angle
N	120° Point Angle
P	145° Point Angle

④

④ Coolant Type	
C	Internal Coolant
N	External Coolant

⑤

⑤ Drill Diameter	
0325	Dia: $\Phi 3.25$
0600	Dia: $\Phi 6.00$
1200	Dia: $\Phi 12.00$

Series Introduce



D938 Twist Drills for Steel

- Suitable for drilling of Steel ($\leq 48\text{HRC}$), Cast Iron.
- Unique cutting edge preparation to add strength to the cutting edge, and improve the drilling stability.
- New AlTiN-nano coating, superior wear resistance, longer tool life.
- Straight cutting edge, improves tool strength.



D101/D102/D103 NC Centre Drills

- Suitable for drilling the center hole and chamfer.
- Suitable for drilling steel, cast iron, aluminum alloys, copper alloy.



D968S High Performance Twist Drills for Stainless Steel

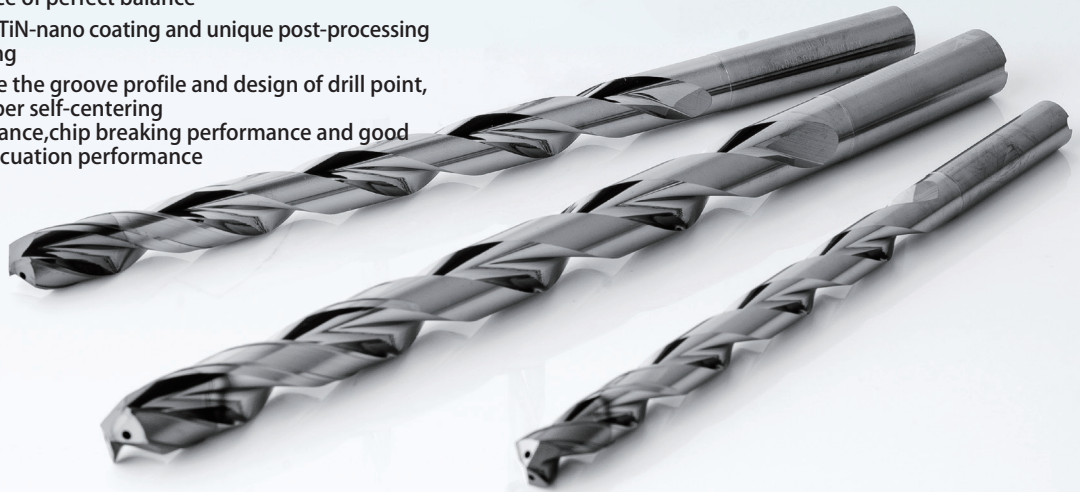
- Suitable for high efficient drilling of stainless steel, carbon steel, alloy steel, heat-resistant alloys and titanium alloys and other materials.
- Unique bottom edge design with stronger chip breaking capacity and larger chip holding space.
- New substrate coating—superior toughness and wear resistance.
- Large groove design, with good chip evacuation performance.

New Products

D938 Series

12D-15D Deep-hole Inner Cooling Twist Drill

- Suitable for efficient drilling of Steel, Cast Iron and Stainless steel
- New substrate material, toughness and wear resistance of perfect balance
- Using AlTiN-nano coating and unique post-processing of coating
- Optimize the groove profile and design of drill point, With super self-centering Performance, chip breaking performance and good chip evacuation performance



D918S

High Performance Twist Drills for Steel

- Suitable for drilling mild Steel, Interrupted cutting, defective cooling condition and other severe working conditions.
- Curved edge design , balance tip strength and sharpness.
- New G form flute design, strengthens chip breaking performance and tool rigidity.
- New substrate and upgraded coating, contributes to higher flexibility for various drilling conditions and better universality

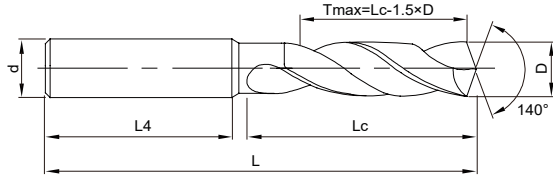


Application Summary of Solid Carbide Drills

ISO	WINTECH Material Group	Internal Coolant Drilling					External Coolant Drilling		
		3*D	5*D	8*D	12*D	15*D	Chamfer/ centre hole	3*D	5*D
P	Carbon Steels, Alloy Steels (<35HRC)	D938 D918S NEW		D938	NEW D938	NEW D938			D938 D918S
	Alloy Steels (35-48HRC)								
	PH and Ferrite/Martensitic Stainless (<35HRC)								
M	Stainless Steel	D968S NEW		Developing	Developing			D968S	
K	Cast Iron, Ductile Cast Iron (<32HRC)	D918S		Developing	Developing			D918S	
	High Alloy Cast Cast Iron (35-45HRC)								
N	Wrought Aluminium Alloys, Cast Aluminium Alloys			Developing	Developing		D101 D102 D103		
	Cast Aluminium Alloys (Si>12%)	D966						D966	
	Copper Alloys (<200HB)								
	Composite								
S	Heat Resistant Super Alloys (<450HB)	D968S						D968S	
	Titanium Alloys (<400HB)								
H	Hardened Steels (45-60HRC)	D968S						D968S	
	Hardened Steels (60-65HRC)								

D918S-A3N NEW

High Performance 3D External Cooling Twist Drills For Steel



Tmax-Recommended Maximum Depth

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D918S-A3N-0300	3.00	20	36	62	6	●
D918S-A3N-0330	3.30	20	36	62	6	●
D918S-A3N-0400	4.00	24	36	66	6	●
D918S-A3N-0420	4.20	24	36	66	6	●
D918S-A3N-0500	5.00	28	36	66	6	●
D918S-A3N-0600	6.00	28	36	66	6	●
D918S-A3N-0680	6.80	34	36	79	8	●
D918S-A3N-0700	7.00	34	36	79	8	●
D918S-A3N-0800	8.00	41	36	79	8	●
D918S-A3N-0850	8.50	47	40	89	10	●
D918S-A3N-0900	9.00	47	40	89	10	●
D918S-A3N-1000	10.00	47	40	89	10	●
D918S-A3N-1030	10.30	55	45	102	12	○

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D918S-A3N-1050	10.50	55	45	102	12	●
D918S-A3N-1100	11.00	55	45	102	12	●
D918S-A3N-1200	12.00	55	45	102	12	●
D918S-A3N-1250	12.50	60	45	107	14	○
D918S-A3N-1300	13.00	60	45	107	14	●
D918S-A3N-1400	14.00	60	45	107	14	●
D918S-A3N-1450	14.50	65	48	115	16	●
D918S-A3N-1500	15.00	65	48	115	16	○
D918S-A3N-1600	16.00	65	48	115	16	○
D918S-A3N-1700	17.00	73	48	123	18	○
D918S-A3N-1800	18.00	73	48	123	18	○
D918S-A3N-1900	19.00	79	50	131	20	○
D918S-A3N-2000	20.00	79	50	131	20	○

Note: Accept non-standard custom from D3 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

Workpiece Material					
P			M	K	
1 2 3 4	5	6 7	1 2 3	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Stainless Steel	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○	○

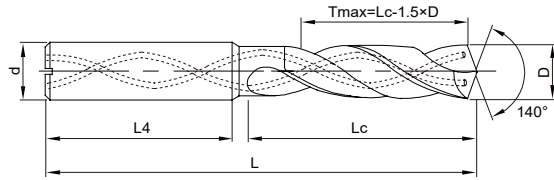
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P495

D918S-A3C NEW



High Performance 3D Inner Cooling Twist Drills For Steel



Tmax-Recommended Maximum Depth

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D918S-A3C-0300	3.00	20	36	62	6	○
D918S-A3C-0330	3.30	20	36	62	6	○
D918S-A3C-0400	4.00	24	36	66	6	○
D918S-A3C-0420	4.20	24	36	66	6	○
D918S-A3C-0500	5.00	28	36	66	6	○
D918S-A3C-0600	6.00	28	36	66	6	○
D918S-A3C-0680	6.80	34	36	79	8	○
D918S-A3C-0700	7.00	34	36	79	8	○
D918S-A3C-0800	8.00	41	36	79	8	○
D918S-A3C-0850	8.50	47	40	89	10	○
D918S-A3C-0900	9.00	47	40	89	10	○
D918S-A3C-1000	10.00	47	40	89	10	○
D918S-A3C-1030	10.30	55	45	102	12	○

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D918S-A3C-1050	10.50	55	45	102	12	○
D918S-A3C-1100	11.00	55	45	102	12	○
D918S-A3C-1200	12.00	55	45	102	12	○
D918S-A3C-1250	12.50	60	45	107	14	○
D918S-A3C-1300	13.00	60	45	107	14	○
D918S-A3C-1400	14.00	60	45	107	14	○
D918S-A3C-1450	14.50	65	48	115	16	○
D918S-A3C-1500	15.00	65	48	115	16	○
D918S-A3C-1600	16.00	65	48	115	16	○
D918S-A3C-1700	17.00	73	48	123	18	○
D918S-A3C-1800	18.00	73	48	123	18	○
D918S-A3C-1900	19.00	79	50	131	20	○
D918S-A3C-2000	20.00	79	50	131	20	○

Note: Accept non-standard Customization from D3 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2-3	+0.002/+0.012	0.000/-0.006
>3-6	+0.004/+0.016	0.000/-0.008
>6-10	+0.006/+0.021	0.000/-0.009
>10-18	+0.007/+0.025	0.000/-0.011
>18-20	+0.008/+0.029	0.000/-0.013

Unit(mm)

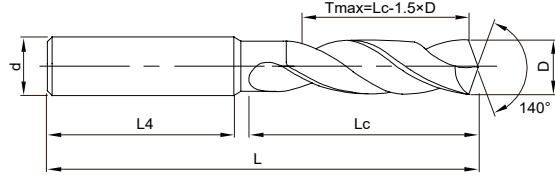
Workpiece Material					
P			M	K	
1 2 3 4	5	6 7	1 2 3	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Stainless Steel	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P495

D918S-A5N NEW

High Performance 5D External Cooling Twist Drills For Steel



Tmax-Recommended Maximum Depth

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D918S-A5N-0300	3.00	28	36	66	6	●
D918S-A5N-0350	3.50	28	36	66	6	●
D918S-A5N-0400	4.00	36	36	74	6	●
D918S-A5N-0420	4.20	36	36	74	6	○
D918S-A5N-0500	5.00	44	36	82	6	●
D918S-A5N-0600	6.00	44	36	82	6	○
D918S-A5N-0680	6.80	53	36	91	8	○
D918S-A5N-0700	7.00	53	36	91	8	○
D918S-A5N-0800	8.00	53	36	91	8	○
D918S-A5N-0850	8.50	61	40	103	10	○
D918S-A5N-0900	9.00	61	40	103	10	○
D918S-A5N-1000	10.00	61	40	103	10	○
D918S-A5N-1030	10.30	71	45	118	12	○

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D918S-A5N-1050	10.50	71	45	118	12	○
D918S-A5N-1100	11.00	71	45	118	12	○
D918S-A5N-1200	12.00	71	45	118	12	○
D918S-A5N-1250	12.50	77	45	124	14	○
D918S-A5N-1300	13.00	77	45	124	14	○
D918S-A5N-1400	14.00	77	45	124	14	○
D918S-A5N-1450	14.50	83	48	133	16	○
D918S-A5N-1500	15.00	83	48	133	16	○
D918S-A5N-1600	16.00	83	48	133	16	○
D918S-A5N-1700	17.00	93	48	143	18	○
D918S-A5N-1800	18.00	93	48	143	18	○
D918S-A5N-1900	19.00	101	50	153	20	○
D918S-A5N-2000	20.00	101	50	153	20	○

Note: Accept non-standard Customization from D3 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2-3	+0.002/+0.012	0.000/-0.006
>3-6	+0.004/+0.016	0.000/-0.008
>6-10	+0.006/+0.021	0.000/-0.009
>10-18	+0.007/+0.025	0.000/-0.011
>18-20	+0.008/+0.029	0.000/-0.013

Unit(mm)

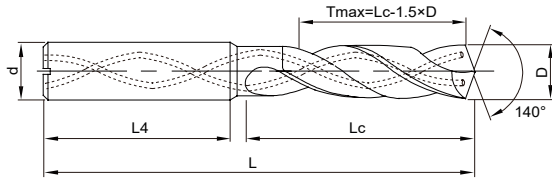
Workpiece Material					
P			M	K	
1 2 3 4	5	6 7	1 2 3	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Stainless Steel	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P495

D918S-A5C NEW

High Performance 5D Inner Cooling Twist Drills For Steel



Tmax-Recommended Maximum Depth

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D918S-A5C-0300	3.00	28	36	66	6	●
D918S-A5C-0330	3.30	28	36	66	6	○
D918S-A5C-0400	4.00	36	36	74	6	●
D918S-A5C-0450	4.50	36	36	74	6	●
D918S-A5C-0500	5.00	44	36	82	6	●
D918S-A5C-0550	5.50	44	36	82	6	●
D918S-A5C-0600	6.00	44	36	82	6	○
D918S-A5C-0700	7.00	53	36	91	8	○
D918S-A5C-0800	8.00	53	36	91	8	○
D918S-A5C-0850	8.50	61	40	103	10	○
D918S-A5C-0900	9.00	61	40	103	10	○
D918S-A5C-1000	10.00	61	40	103	10	○
D918S-A5C-1030	10.30	71	45	118	12	○

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D918S-A5C-1050	10.50	71	45	118	12	○
D918S-A5C-1100	11.00	71	45	118	12	○
D918S-A5C-1200	12.00	71	45	118	12	○
D918S-A5C-1250	12.50	77	45	124	14	○
D918S-A5C-1300	13.00	77	45	124	14	○
D918S-A5C-1400	14.00	77	45	124	14	○
D918S-A5C-1450	14.50	83	48	133	16	○
D918S-A5C-1500	15.00	83	48	133	16	○
D918S-A5C-1600	16.00	83	48	133	16	○
D918S-A5C-1700	17.00	93	48	143	18	○
D918S-A5C-1800	18.00	93	48	143	18	○
D918S-A5C-1900	19.00	101	50	153	20	○
D918S-A5C-2000	20.00	101	50	153	20	○

Note: Accept non-standard Customization from D3 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2-3	+0.002/+0.012	0.000/-0.006
>3-6	+0.004/+0.016	0.000/-0.008
>6-10	+0.006/+0.021	0.000/-0.009
>10-18	+0.007/+0.025	0.000/-0.011
>18-20	+0.008/+0.029	0.000/-0.013

Unit(mm)

Workpiece Material					
P			M	K	
1 2 3 4	5	6 7	1 2 3	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Stainless Steel	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○	○

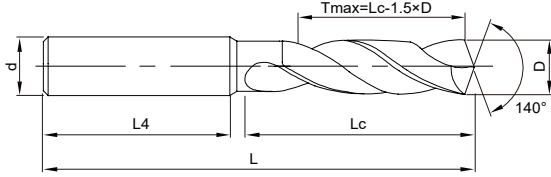
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P495

D968S-A3N NEW



High Performance 3D External Cooling Twist Drills for Stainless Steel



Tmax-Recommended Maximum Depth

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D968S-A3N-0100	1.00	7	30	45	4	●
D968S-A3N-0200	2.00	13	36	55	4	●
D968S-A3N-0300	3.00	20	36	62	6	●
D968S-A3N-0330	3.30	20	36	62	6	●
D968S-A3N-0400	4.00	24	36	66	6	●
D968S-A3N-0420	4.20	24	36	66	6	●
D968S-A3N-0500	5.00	28	36	66	6	●
D968S-A3N-0600	6.00	28	36	66	6	●
D968S-A3N-0680	6.80	34	36	79	8	●
D968S-A3N-0700	7.00	34	36	79	8	●
D968S-A3N-0800	8.00	41	36	79	8	●
D968S-A3N-0850	8.50	47	40	89	10	●
D968S-A3N-0900	9.00	47	40	89	10	●
D968S-A3N-1000	10.00	47	40	89	10	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D968S-A3N-1030	10.30	55	45	102	12	○
D968S-A3N-1050	10.50	55	45	102	12	○
D968S-A3N-1100	11.00	55	45	102	12	●
D968S-A3N-1200	12.00	55	45	102	12	●
D968S-A3N-1250	12.50	60	45	107	14	●
D968S-A3N-1300	13.00	60	45	107	14	○
D968S-A3N-1400	14.00	60	45	107	14	●
D968S-A3N-1450	14.50	65	48	115	16	○
D968S-A3N-1500	15.00	65	48	115	16	○
D968S-A3N-1600	16.00	65	48	115	16	○
D968S-A3N-1700	17.00	73	48	123	18	○
D968S-A3N-1800	18.00	73	48	123	18	○
D968S-A3N-1900	19.00	79	50	131	20	○
D968S-A3N-2000	20.00	79	50	131	20	○

Note: Accept non-standard Customization from D3 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

Workpiece Material			
P	M	S	
1 2 3 4	1 2 3	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Stainless Steel	Heat Resistant Super Alloys (<45HB)	Titanium Alloys (<400HB)
○	○	○	○

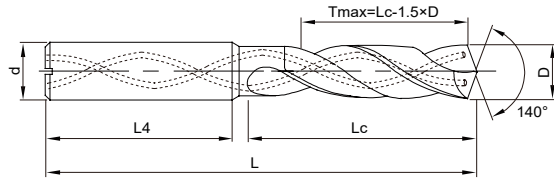
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P497

D968S-A3C NEW



High Performance 3D Inner Cooling Twist Drills for Stainless Steel



T_{max}-Recommended Maximum Depth

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D968S-A3C-0300	3.00	20	36	62	6	○
D968S-A3C-0330	3.30	20	36	62	6	○
D968S-A3C-0400	4.00	24	36	66	6	○
D968S-A3C-0420	4.20	24	36	66	6	○
D968S-A3C-0500	5.00	28	36	66	6	○
D968S-A3C-0600	6.00	28	36	66	6	○
D968S-A3C-0680	6.80	34	36	79	8	○
D968S-A3C-0700	7.00	34	36	79	8	○
D968S-A3C-0800	8.00	41	36	79	8	○
D968S-A3C-0850	8.50	47	40	89	10	○
D968S-A3C-0900	9.00	47	40	89	10	○
D968S-A3C-1000	10.00	47	40	89	10	○
D968S-A3C-1030	10.30	55	45	102	12	○

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D968S-A3C-1050	10.50	55	45	102	12	○
D968S-A3C-1100	11.00	55	45	102	12	○
D968S-A3C-1200	12.00	55	45	102	12	○
D968S-A3C-1250	12.50	60	45	107	14	○
D968S-A3C-1300	13.00	60	45	107	14	○
D968S-A3C-1400	14.00	60	45	107	14	○
D968S-A3C-1450	14.50	65	48	115	16	○
D968S-A3C-1500	15.00	65	48	115	16	○
D968S-A3C-1600	16.00	65	48	115	16	○
D968S-A3C-1700	17.00	73	48	123	18	○
D968S-A3C-1800	18.00	73	48	123	18	○
D968S-A3C-1900	19.00	79	50	131	20	○
D968S-A3C-2000	20.00	79	50	131	20	○

Note: Accept non-standard Customization from D2 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

Workpiece Material			
P	M	S	
1 2 3 4	1 2 3	1 2	3
Carbon Steels. Alloy Steels (<35HRC)	Stainless Steel	Heat Resistant Super Alloys (<45HB)	Titanium Alloys (<400HB)
○	⊙	○	○

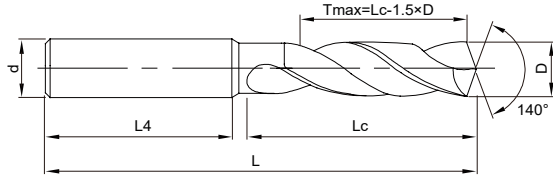
⊙ Most Suitable ○ Suitable

Recommended Cutting Data ※ P497

D968S-A5N NEW



High Performance 5D External Cooling Twist Drills for Stainless Steel



Tmax-Recommended Maximum Depth

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D968S-A5N-0300	3.00	28	36	66	6	○
D968S-A5N-0330	3.30	28	36	66	6	○
D968S-A5N-0400	4.00	36	36	74	6	○
D968S-A5N-0420	4.20	36	36	74	6	○
D968S-A5N-0500	5.00	44	36	82	6	○
D968S-A5N-0600	6.00	44	36	82	6	○
D968S-A5N-0680	6.80	53	36	91	8	○
D968S-A5N-0700	7.00	53	36	91	8	○
D968S-A5N-0800	8.00	53	36	91	8	○
D968S-A5N-0850	8.50	61	40	103	10	○
D968S-A5N-0900	9.00	61	40	103	10	○
D968S-A5N-1000	10.00	61	40	103	10	○
D968S-A5N-1030	10.30	71	45	118	12	○

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D968S-A5N-1050	10.50	71	45	118	12	○
D968S-A5N-1100	11.00	71	45	118	12	○
D968S-A5N-1200	12.00	71	45	118	12	○
D968S-A5N-1250	12.50	77	45	124	14	○
D968S-A5N-1300	13.00	77	45	124	14	○
D968S-A5N-1400	14.00	77	45	124	14	○
D968S-A5N-1450	14.50	83	48	133	16	○
D968S-A5N-1500	15.00	83	48	133	16	○
D968S-A5N-1600	16.00	83	48	133	16	○
D968S-A5N-1700	17.00	93	48	143	18	○
D968S-A5N-1800	18.00	93	48	143	18	○
D968S-A5N-1900	19.00	101	50	153	20	○
D968S-A5N-2000	20.00	101	50	153	20	○

Note: Accept non-standard custom from D1 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

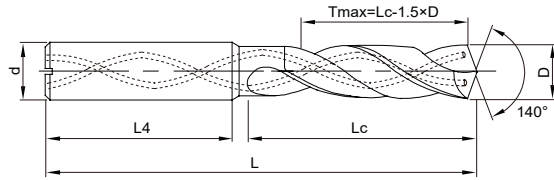
Workpiece Material			
P	M	S	
1 2 3 4	1 2 3	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Stainless Steel	Heat Resistant Super Alloys (<45HB)	Titanium Alloys (<400HB)
○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P497

D968S-A5C NEW

High Performance 5D Inner Cooling Twist Drills for Stainless Steel



Tmax-Recommended Maximum Depth

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D968S-A5C-0300	3.00	28	36	66	6	○
D968S-A5C-0330	3.30	28	36	66	6	○
D968S-A5C-0400	4.00	36	36	74	6	○
D968S-A5C-0420	4.20	36	36	74	6	○
D968S-A5C-0500	5.00	44	36	82	6	○
D968S-A5C-0600	6.00	44	36	82	6	○
D968S-A5C-0680	6.80	53	36	91	8	○
D968S-A5C-0700	7.00	53	36	91	8	○
D968S-A5C-0800	8.00	53	36	91	8	○
D968S-A5C-0850	8.50	61	40	103	10	○
D968S-A5C-0900	9.00	61	40	103	10	○
D968S-A5C-1000	10.00	61	40	103	10	○
D968S-A5C-1030	10.30	71	45	118	12	○

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D968S-A5C-1050	10.50	71	45	118	12	○
D968S-A5C-1100	11.00	71	45	118	12	○
D968S-A5C-1200	12.00	71	45	118	12	○
D968S-A5C-1250	12.50	77	45	124	14	○
D968S-A5C-1300	13.00	77	45	124	14	○
D968S-A5C-1400	14.00	77	45	124	14	○
D968S-A5C-1450	14.50	83	48	133	16	○
D968S-A5C-1500	15.00	83	48	133	16	○
D968S-A5C-1600	16.00	83	48	133	16	○
D968S-A5C-1700	17.00	93	48	143	18	○
D968S-A5C-1800	18.00	93	48	143	18	○
D968S-A5C-1900	19.00	101	50	153	20	○
D968S-A5C-2000	20.00	101	50	153	20	○

Note: Accept non-standard Customization from D2 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

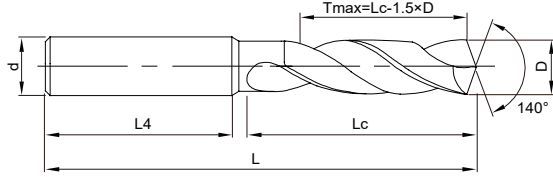
Workpiece Material			
P	M	S	
1 2 3 4	1 2 3	1 2	3
Carbon Steels. Alloy Steels (<35HRC)	Stainless Steel	Heat Resistant Super Alloys (<45HB)	Titanium Alloys (<400HB)
○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P497

D938-A3N

3D External Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3N-0300	3.00	20	36	62	6	●
D938-A3N-0310	3.10	20	36	62	6	●
D938-A3N-0320	3.20	20	36	62	6	●
D938-A3N-0330	3.30	20	36	62	6	●
D938-A3N-0340	3.40	20	36	62	6	●
D938-A3N-0350	3.50	20	36	62	6	●
D938-A3N-0360	3.60	20	36	62	6	●
D938-A3N-0370	3.70	20	36	62	6	●
D938-A3N-0380	3.80	24	36	66	6	●
D938-A3N-0390	3.90	24	36	66	6	●
D938-A3N-0400	4.00	24	36	66	6	●
D938-A3N-0410	4.10	24	36	66	6	●
D938-A3N-0420	4.20	24	36	66	6	●
D938-A3N-0430	4.30	24	36	66	6	●
D938-A3N-0440	4.40	24	36	66	6	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3N-0450	4.50	24	36	66	6	●
D938-A3N-0460	4.60	24	36	66	6	●
D938-A3N-0470	4.70	24	36	66	6	●
D938-A3N-0480	4.80	28	36	66	6	●
D938-A3N-0490	4.90	28	36	66	6	●
D938-A3N-0500	5.00	28	36	66	6	●
D938-A3N-0510	5.10	28	36	66	6	●
D938-A3N-0520	5.20	28	36	66	6	●
D938-A3N-0530	5.30	28	36	66	6	●
D938-A3N-0540	5.40	28	36	66	6	●
D938-A3N-0550	5.50	28	36	66	6	●
D938-A3N-0560	5.60	28	36	66	6	●
D938-A3N-0570	5.70	28	36	66	6	●
D938-A3N-0580	5.80	28	36	66	6	●
D938-A3N-0590	5.90	28	36	66	6	●

Note: Accept non-standard custom from D1 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

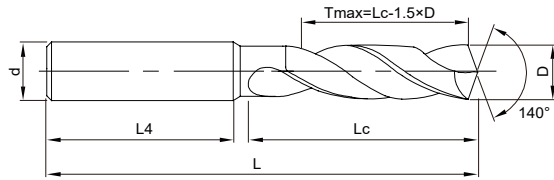
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A3N

3D External Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

» Continue

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3N-0600	6.00	28	36	66	6	●
D938-A3N-0610	6.10	34	36	79	8	●
D938-A3N-0620	6.20	34	36	79	8	●
D938-A3N-0630	6.30	34	36	79	8	●
D938-A3N-0640	6.40	34	36	79	8	●
D938-A3N-0650	6.50	34	36	79	8	●
D938-A3N-0660	6.60	34	36	79	8	●
D938-A3N-0670	6.70	34	36	79	8	●
D938-A3N-0680	6.80	34	36	79	8	●
D938-A3N-0690	6.90	34	36	79	8	●
D938-A3N-0700	7.00	34	36	79	8	●
D938-A3N-0710	7.10	41	36	79	8	●
D938-A3N-0720	7.20	41	36	79	8	●
D938-A3N-0730	7.30	41	36	79	8	●
D938-A3N-0740	7.40	41	36	79	8	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3N-0750	7.50	41	36	79	8	●
D938-A3N-0760	7.60	41	36	79	8	●
D938-A3N-0770	7.70	41	36	79	8	●
D938-A3N-0780	7.80	41	36	79	8	●
D938-A3N-0790	7.90	41	36	79	8	●
D938-A3N-0800	8.00	41	36	79	8	●
D938-A3N-0810	8.10	47	40	89	10	●
D938-A3N-0820	8.20	47	40	89	10	●
D938-A3N-0830	8.30	47	40	89	10	●
D938-A3N-0840	8.40	47	40	89	10	●
D938-A3N-0850	8.50	47	40	89	10	●
D938-A3N-0860	8.60	47	40	89	10	●
D938-A3N-0870	8.70	47	40	89	10	●
D938-A3N-0880	8.80	47	40	89	10	●
D938-A3N-0890	8.90	47	40	89	10	●

Note: Accept non-standard custom from D1 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

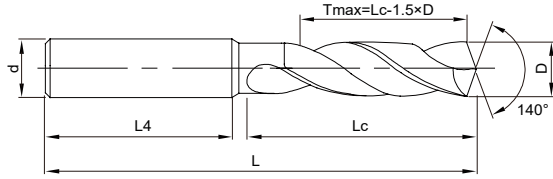
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A3N

3D External Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

» Continue

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3N-0900	9.00	47	40	89	10	●
D938-A3N-0910	9.10	47	40	89	10	●
D938-A3N-0920	9.20	47	40	89	10	●
D938-A3N-0925	9.25	47	40	89	10	○
D938-A3N-0930	9.30	47	40	89	10	●
D938-A3N-0940	9.40	47	40	89	10	●
D938-A3N-0950	9.50	47	40	89	10	●
D938-A3N-0960	9.60	47	40	89	10	○
D938-A3N-0970	9.70	47	40	89	10	●
D938-A3N-0980	9.80	47	40	89	10	●
D938-A3N-0990	9.90	47	40	89	10	●
D938-A3N-1000	10.00	47	40	89	10	●
D938-A3N-1010	10.10	55	45	102	12	●
D938-A3N-1020	10.20	55	45	102	12	●
D938-A3N-1030	10.30	55	45	102	12	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3N-1040	10.40	55	45	102	12	●
D938-A3N-1050	10.50	55	45	102	12	●
D938-A3N-1060	10.60	55	45	102	12	●
D938-A3N-1070	10.70	55	45	102	12	●
D938-A3N-1080	10.80	55	45	102	12	●
D938-A3N-1090	10.90	55	45	102	12	●
D938-A3N-1100	11.00	55	45	102	12	●
D938-A3N-1110	11.10	55	45	102	12	●
D938-A3N-1120	11.20	55	45	102	12	●
D938-A3N-1130	11.30	55	45	102	12	●
D938-A3N-1140	11.40	55	45	102	12	●
D938-A3N-1150	11.50	55	45	102	12	●
D938-A3N-1160	11.60	55	45	102	12	○
D938-A3N-1170	11.70	55	45	102	12	○
D938-A3N-1180	11.80	55	45	102	12	●

Note: Accept non-standard custom from D1 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

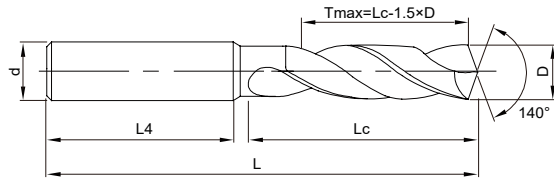
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A3N

3D External Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

» Continue

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3N-1190	11.90	55	45	102	12	○
D938-A3N-1200	12.00	55	45	102	12	●
D938-A3N-1250	12.50	60	45	107	14	●
D938-A3N-1280	12.80	60	45	107	14	●
D938-A3N-1300	13.00	60	45	107	14	●
D938-A3N-1350	13.50	60	45	107	14	●
D938-A3N-1380	13.80	60	45	107	14	●
D938-A3N-1400	14.00	60	45	107	14	●
D938-A3N-1450	14.50	65	48	115	16	●
D938-A3N-1480	14.80	65	48	115	16	○
D938-A3N-1500	15.00	65	48	115	16	●
D938-A3N-1550	15.50	65	48	115	16	●
D938-A3N-1580	15.80	65	48	115	16	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3N-1600	16.00	65	48	115	16	●
D938-A3N-1650	16.50	73	48	123	18	●
D938-A3N-1680	16.80	73	48	123	18	●
D938-A3N-1700	17.00	73	48	123	18	●
D938-A3N-1750	17.50	73	48	123	18	●
D938-A3N-1780	17.80	73	48	123	18	●
D938-A3N-1800	18.00	73	48	123	18	●
D938-A3N-1850	18.50	79	50	131	20	●
D938-A3N-1880	18.80	79	50	131	20	○
D938-A3N-1900	19.00	79	50	131	20	○
D938-A3N-1950	19.50	79	50	131	20	●
D938-A3N-1980	19.80	79	50	131	20	●
D938-A3N-2000	20.00	79	50	131	20	●

Note: Accept non-standard custom from D1 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

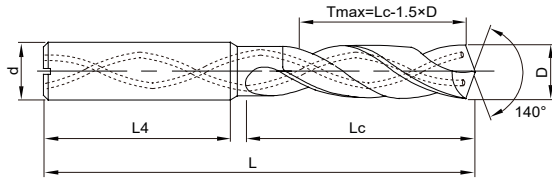
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A3C

3D Inner Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3C-0300	3.00	20	36	62	6	●
D938-A3C-0310	3.10	20	36	62	6	●
D938-A3C-0320	3.20	20	36	62	6	●
D938-A3C-0330	3.30	20	36	62	6	●
D938-A3C-0340	3.40	20	36	62	6	●
D938-A3C-0350	3.50	20	36	62	6	●
D938-A3C-0360	3.60	20	36	62	6	●
D938-A3C-0370	3.70	20	36	62	6	●
D938-A3C-0380	3.80	24	36	66	6	●
D938-A3C-0390	3.90	24	36	66	6	●
D938-A3C-0400	4.00	24	36	66	6	●
D938-A3C-0410	4.10	24	36	66	6	●
D938-A3C-0420	4.20	24	36	66	6	●
D938-A3C-0430	4.30	24	36	66	6	●
D938-A3C-0440	4.40	24	36	66	6	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3C-0450	4.50	24	36	66	6	●
D938-A3C-0460	4.60	24	36	66	6	●
D938-A3C-0470	4.70	24	36	66	6	●
D938-A3C-0480	4.80	28	36	66	6	●
D938-A3C-0490	4.90	28	36	66	6	●
D938-A3C-0500	5.00	28	36	66	6	●
D938-A3C-0510	5.10	28	36	66	6	●
D938-A3C-0520	5.20	28	36	66	6	●
D938-A3C-0530	5.30	28	36	66	6	●
D938-A3C-0540	5.40	28	36	66	6	○
D938-A3C-0550	5.50	28	36	66	6	●
D938-A3C-0560	5.60	28	36	66	6	●
D938-A3C-0570	5.70	28	36	66	6	○
D938-A3C-0580	5.80	28	36	66	6	●
D938-A3C-0590	5.90	28	36	66	6	●

Note: Accept non-standard custom from D2to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

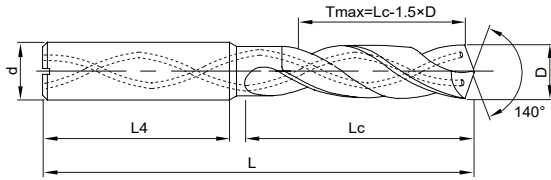
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A3C

3D Inner Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

» Continue

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3C-0600	6.00	28	36	66	6	●
D938-A3C-0610	6.10	34	36	79	8	●
D938-A3C-0620	6.20	34	36	79	8	●
D938-A3C-0630	6.30	34	36	79	8	○
D938-A3C-0640	6.40	34	36	79	8	●
D938-A3C-0650	6.50	34	36	79	8	●
D938-A3C-0660	6.60	34	36	79	8	●
D938-A3C-0670	6.70	34	36	79	8	●
D938-A3C-0680	6.80	34	36	79	8	●
D938-A3C-0690	6.90	34	36	79	8	●
D938-A3C-0700	7.00	34	36	79	8	●
D938-A3C-0710	7.10	41	36	79	8	○
D938-A3C-0720	7.20	41	36	79	8	●
D938-A3C-0730	7.30	41	36	79	8	●
D938-A3C-0740	7.40	41	36	79	8	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3C-0750	7.50	41	36	79	8	●
D938-A3C-0760	7.60	41	36	79	8	○
D938-A3C-0770	7.70	41	36	79	8	○
D938-A3C-0780	7.80	41	36	79	8	○
D938-A3C-0790	7.90	41	36	79	8	○
D938-A3C-0800	8.00	41	36	79	8	●
D938-A3C-0810	8.10	47	40	89	10	●
D938-A3C-0820	8.20	47	40	89	10	●
D938-A3C-0830	8.30	47	40	89	10	●
D938-A3C-0840	8.40	47	40	89	10	●
D938-A3C-0850	8.50	47	40	89	10	●
D938-A3C-0860	8.60	47	40	89	10	●
D938-A3C-0870	8.70	47	40	89	10	●
D938-A3C-0880	8.80	47	40	89	10	●
D938-A3C-0890	8.90	47	40	89	10	●

Note: Accept non-standard custom from D2to D20 stock.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

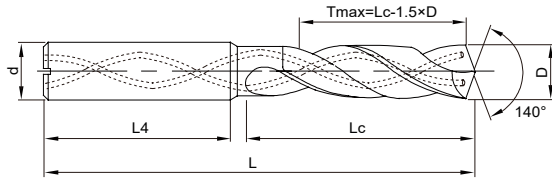
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A3C

3D Inner Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

» Continue

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3C-0900	9.00	47	40	89	10	●
D938-A3C-0910	9.10	47	40	89	10	○
D938-A3C-0920	9.20	47	40	89	10	○
D938-A3C-0930	9.30	47	40	89	10	●
D938-A3C-0940	9.40	47	40	89	10	●
D938-A3C-0950	9.50	47	40	89	10	●
D938-A3C-0960	9.60	47	40	89	10	○
D938-A3C-0970	9.70	47	40	89	10	●
D938-A3C-0980	9.80	47	40	89	10	●
D938-A3C-0990	9.90	47	40	89	10	●
D938-A3C-1000	10.00	47	40	89	10	●
D938-A3C-1010	10.10	55	45	102	12	●
D938-A3C-1020	10.20	55	45	102	12	●
D938-A3C-1030	10.30	55	45	102	12	●
D938-A3C-1040	10.40	55	45	102	12	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3C-1050	10.50	55	45	102	12	●
D938-A3C-1060	10.60	55	45	102	12	●
D938-A3C-1070	10.70	55	45	102	12	●
D938-A3C-1080	10.80	55	45	102	12	●
D938-A3C-1090	10.90	55	45	102	12	●
D938-A3C-1100	11.00	55	45	102	12	●
D938-A3C-1110	11.10	55	45	102	12	●
D938-A3C-1120	11.20	55	45	102	12	●
D938-A3C-1130	11.30	55	45	102	12	●
D938-A3C-1140	11.40	55	45	102	12	●
D938-A3C-1150	11.50	55	45	102	12	○
D938-A3C-1160	11.60	55	45	102	12	●
D938-A3C-1170	11.70	55	45	102	12	●
D938-A3C-1180	11.80	55	45	102	12	●
D938-A3C-1190	11.90	55	45	102	12	●

Note: Accept non-standard custom from D2to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

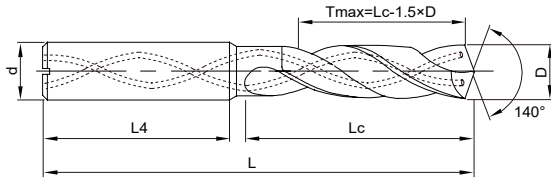
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A3C

3D Inner Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

» Continue

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3C-1200	12.00	55	45	102	12	●
D938-A3C-1250	12.50	60	45	107	14	●
D938-A3C-1280	12.80	60	45	107	14	●
D938-A3C-1300	13.00	60	45	107	14	●
D938-A3C-1350	13.50	60	45	107	14	●
D938-A3C-1380	13.80	60	45	107	14	○
D938-A3C-1400	14.00	60	45	107	14	●
D938-A3C-1450	14.50	65	48	115	16	●
D938-A3C-1480	14.80	65	48	115	16	●
D938-A3C-1500	15.00	65	48	115	16	●
D938-A3C-1550	15.50	65	48	115	16	○
D938-A3C-1580	15.80	65	48	115	16	○
D938-A3C-1600	16.00	65	48	115	16	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A3C-1650	16.50	73	48	123	18	●
D938-A3C-1680	16.80	73	48	123	18	○
D938-A3C-1700	17.00	73	48	123	18	●
D938-A3C-1750	17.50	73	48	123	18	●
D938-A3C-1780	17.80	73	48	123	18	○
D938-A3C-1800	18.00	73	48	123	18	●
D938-A3C-1850	18.50	79	50	131	20	●
D938-A3C-1880	18.80	79	50	131	20	○
D938-A3C-1900	19.00	79	50	131	20	○
D938-A3C-1950	19.50	79	50	131	20	●
D938-A3C-1980	19.80	79	50	131	20	○
D938-A3C-2000	20.00	79	50	131	20	○

Note: Accept non-standard custom from D2to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

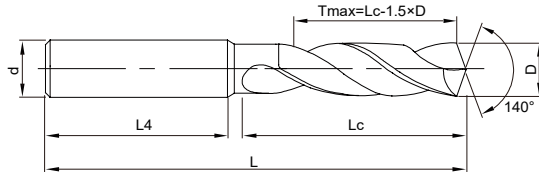
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A5N

5D External Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5N-0300	3.00	28	36	66	6	●
D938-A5N-0310	3.10	28	36	66	6	○
D938-A5N-0320	3.20	28	36	66	6	●
D938-A5N-0330	3.30	28	36	66	6	●
D938-A5N-0340	3.40	28	36	66	6	○
D938-A5N-0350	3.50	28	36	66	6	●
D938-A5N-0360	3.60	28	36	66	6	●
D938-A5N-0370	3.70	28	36	66	6	○
D938-A5N-0380	3.80	36	36	74	6	●
D938-A5N-0390	3.90	36	36	74	6	○
D938-A5N-0400	4.00	36	36	74	6	●
D938-A5N-0410	4.10	36	36	74	6	○
D938-A5N-0420	4.20	36	36	74	6	●
D938-A5N-0430	4.30	36	36	74	6	●
D938-A5N-0440	4.40	36	36	74	6	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5N-0450	4.5	36	36	74	6	●
D938-A5N-0460	4.6	36	36	74	6	○
D938-A5N-0465	4.65	36	36	74	6	○
D938-A5N-0470	4.7	36	36	74	6	○
D938-A5N-0480	4.8	44	36	82	6	●
D938-A5N-0490	4.9	44	36	82	6	○
D938-A5N-0500	5.0	44	36	82	6	●
D938-A5N-0510	5.1	44	36	82	6	●
D938-A5N-0520	5.2	44	36	82	6	●
D938-A5N-0530	5.3	44	36	82	6	○
D938-A5N-0540	5.4	44	36	82	6	○
D938-A5N-0550	5.5	44	36	82	6	●
D938-A5N-0555	5.55	44	36	82	6	○
D938-A5N-0560	5.6	44	36	82	6	●
D938-A5N-0570	5.7	44	36	82	6	○

Note: Accept non-standard custom from D1 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

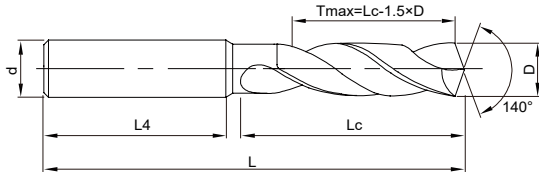
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A5N

5D External Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

» Continue

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5N-0580	5.8	44	36	82	6	●
D938-A5N-0590	5.9	44	36	82	6	●
D938-A5N-0600	6.0	44	36	82	6	●
D938-A5N-0610	6.1	53	36	91	8	○
D938-A5N-0620	6.2	53	36	91	8	●
D938-A5N-0630	6.3	53	36	91	8	●
D938-A5N-0640	6.4	53	36	91	8	●
D938-A5N-0650	6.5	53	36	91	8	●
D938-A5N-0660	6.6	53	36	91	8	●
D938-A5N-0670	6.7	53	36	91	8	●
D938-A5N-0680	6.8	53	36	91	8	●
D938-A5N-0690	6.9	53	36	91	8	●
D938-A5N-0700	7.0	53	36	91	8	●
D938-A5N-0710	7.1	53	36	91	8	●
D938-A5N-0720	7.2	53	36	91	8	○

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5N-0730	7.3	53	36	91	8	○
D938-A5N-0740	7.4	53	36	91	8	●
D938-A5N-0750	7.5	53	36	91	8	●
D938-A5N-0760	7.6	53	36	91	8	○
D938-A5N-0770	7.7	53	36	91	8	●
D938-A5N-0780	7.8	53	36	91	8	●
D938-A5N-0790	7.9	53	36	91	8	○
D938-A5N-0800	8.0	53	36	91	8	●
D938-A5N-0810	8.1	61	40	103	10	○
D938-A5N-0820	8.2	61	40	103	10	●
D938-A5N-0830	8.3	61	40	103	10	○
D938-A5N-0840	8.4	61	40	103	10	●
D938-A5N-0850	8.5	61	40	103	10	●
D938-A5N-0860	8.6	61	40	103	10	●
D938-A5N-0870	8.7	61	40	103	10	●

Note: Accept non-standard custom from D1 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

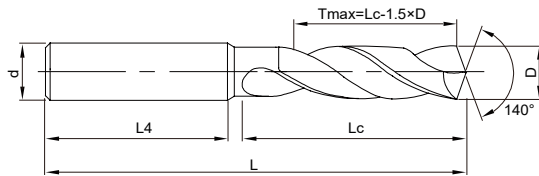
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A5N

5D External Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

» Continue

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5N-0880	8.8	61	40	103	10	●
D938-A5N-0890	8.9	61	40	103	10	○
D938-A5N-0900	9.0	61	40	103	10	●
D938-A5N-0910	9.1	61	40	103	10	●
D938-A5N-0920	9.2	61	40	103	10	○
D938-A5N-0930	9.3	61	40	103	10	●
D938-A5N-0940	9.4	61	40	103	10	○
D938-A5N-0950	9.5	61	40	103	10	●
D938-A5N-0960	9.6	61	40	103	10	●
D938-A5N-0970	9.7	61	40	103	10	○
D938-A5N-0980	9.8	61	40	103	10	●
D938-A5N-0990	9.9	61	40	103	10	●
D938-A5N-1000	10.0	61	40	103	10	●
D938-A5N-1010	10.1	71	45	118	12	○
D938-A5N-1020	10.2	71	45	118	12	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5N-1025	10.25	71	45	118	12	○
D938-A5N-1030	10.3	71	45	118	12	●
D938-A5N-1040	10.4	71	45	118	12	○
D938-A5N-1050	10.5	71	45	118	12	●
D938-A5N-1060	10.6	71	45	118	12	●
D938-A5N-1070	10.7	71	45	118	12	●
D938-A5N-1080	10.8	71	45	118	12	○
D938-A5N-1090	10.9	71	45	118	12	○
D938-A5N-1100	11.0	71	45	118	12	●
D938-A5N-1110	11.1	71	45	118	12	●
D938-A5N-1120	11.2	71	45	118	12	●
D938-A5N-1130	11.3	71	45	118	12	○
D938-A5N-1140	11.4	71	45	118	12	●
D938-A5N-1150	11.5	71	45	118	12	○
D938-A5N-1160	11.6	71	45	118	12	●

Note: Accept non-standard custom from D1 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

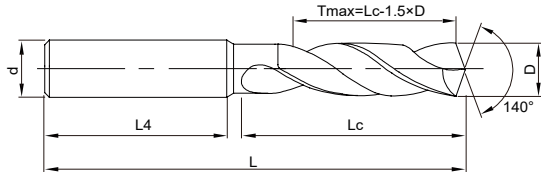
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A5N

5D External Cooling Twist Drills for Steel



T_{max}-Recommended Maximum Depth

» Continue

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5N-1170	11.7	71	45	118	12	○
D938-A5N-1180	11.8	71	45	118	12	●
D938-A5N-1190	11.9	71	45	118	12	●
D938-A5N-1200	12.0	71	45	118	12	●
D938-A5N-1220	12.2	77	45	124	14	○
D938-A5N-1230	12.3	77	45	124	14	●
D938-A5N-1240	12.4	77	45	124	14	○
D938-A5N-1250	12.5	77	45	124	14	●
D938-A5N-1280	12.8	77	45	124	14	○
D938-A5N-1300	13.0	77	45	124	14	●
D938-A5N-1350	13.5	77	45	124	14	○
D938-A5N-1380	13.8	77	45	124	14	○
D938-A5N-1400	14.0	77	45	124	14	●
D938-A5N-1430	14.3	83	48	133	16	●
D938-A5N-1450	14.5	83	48	133	16	●
D938-A5N-1460	14.6	83	48	133	16	○

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5N-1480	14.8	83	48	133	16	○
D938-A5N-1500	15.0	83	48	133	16	○
D938-A5N-1550	15.5	83	48	133	16	○
D938-A5N-1580	15.8	83	48	133	16	○
D938-A5N-1600	16.0	83	48	133	16	●
D938-A5N-1650	16.5	93	48	143	18	○
D938-A5N-1660	16.6	93	48	143	18	●
D938-A5N-1680	16.8	93	48	143	18	○
D938-A5N-1700	17.0	93	48	143	18	●
D938-A5N-1750	17.5	93	48	143	18	●
D938-A5N-1780	17.8	93	48	143	18	○
D938-A5N-1800	18.0	93	48	143	18	○
D938-A5N-1850	18.5	101	50	153	20	○
D938-A5N-1900	19.0	101	50	153	20	○
D938-A5N-1950	19.5	101	50	153	20	○
D938-A5N-2000	20.0	101	50	153	20	○

Note: Accept non-standard custom from D1 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

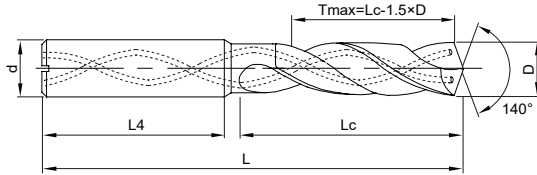
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A5C

5D Inner Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5C-0300	3.00	28	36	66	6	●
D938-A5C-0310	3.10	28	36	66	6	●
D938-A5C-0320	3.20	28	36	66	6	●
D938-A5C-0330	3.30	28	36	66	6	●
D938-A5C-0340	3.40	28	36	66	6	●
D938-A5C-0350	3.50	28	36	66	6	●
D938-A5C-0360	3.60	28	36	66	6	●
D938-A5C-0370	3.70	28	36	66	6	●
D938-A5C-0380	3.80	36	36	74	6	●
D938-A5C-0390	3.90	36	36	74	6	●
D938-A5C-0400	4.00	36	36	74	6	●
D938-A5C-0410	4.10	36	36	74	6	●
D938-A5C-0420	4.20	36	36	74	6	●
D938-A5C-0430	4.30	36	36	74	6	●
D938-A5C-0440	4.40	36	36	74	6	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5C-0450	4.50	36	36	74	6	●
D938-A5C-0460	4.60	36	36	74	6	●
D938-A5C-0465	4.65	36	36	74	6	●
D938-A5C-0470	4.70	36	36	74	6	●
D938-A5C-0480	4.80	44	36	82	6	●
D938-A5C-0490	4.90	44	36	82	6	●
D938-A5C-0500	5.00	44	36	82	6	●
D938-A5C-0510	5.10	44	36	82	6	●
D938-A5C-0520	5.20	44	36	82	6	●
D938-A5C-0530	5.30	44	36	82	6	●
D938-A5C-0540	5.40	44	36	82	6	●
D938-A5C-0550	5.50	44	36	82	6	●
D938-A5C-0555	5.55	44	36	82	6	●
D938-A5C-0560	5.60	44	36	82	6	●
D938-A5C-0570	5.70	44	36	82	6	●

Note: Accept non-standard Customization from D2 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

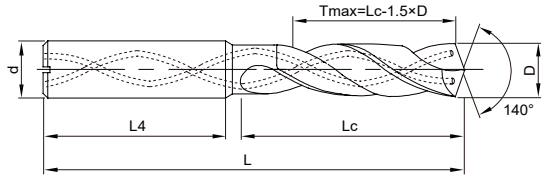
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A5C

5D Inner Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

» Continue

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5C-0580	5.80	44	36	82	6	●
D938-A5C-0590	5.90	44	36	82	6	●
D938-A5C-0600	6.00	44	36	82	6	●
D938-A5C-0610	6.10	53	36	91	8	●
D938-A5C-0620	6.20	53	36	91	8	●
D938-A5C-0630	6.30	53	36	91	8	●
D938-A5C-0640	6.40	53	36	91	8	●
D938-A5C-0650	6.50	53	36	91	8	●
D938-A5C-0660	6.60	53	36	91	8	●
D938-A5C-0670	6.70	53	36	91	8	●
D938-A5C-0680	6.80	53	36	91	8	●
D938-A5C-0690	6.90	53	36	91	8	●
D938-A5C-0700	7.00	53	36	91	8	●
D938-A5C-0710	7.10	53	36	91	8	●
D938-A5C-0720	7.20	53	36	91	8	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5C-0730	7.30	53	36	91	8	●
D938-A5C-0740	7.40	53	36	91	8	●
D938-A5C-0745	7.45	53	36	91	8	●
D938-A5C-0750	7.50	53	36	91	8	●
D938-A5C-0760	7.60	53	36	91	8	●
D938-A5C-0770	7.70	53	36	91	8	●
D938-A5C-0780	7.80	53	36	91	8	●
D938-A5C-0790	7.90	53	36	91	8	●
D938-A5C-0800	8.00	53	36	91	8	●
D938-A5C-0810	8.10	61	40	103	10	●
D938-A5C-0820	8.20	61	40	103	10	●
D938-A5C-0830	8.30	61	40	103	10	●
D938-A5C-0840	8.40	61	40	103	10	●
D938-A5C-0850	8.50	61	40	103	10	●
D938-A5C-0860	8.60	61	40	103	10	●

Note: Accept non-standard Customization from D2 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
>2-3	+0.002/+0.012	0.000/-0.006
>3-6	+0.004/+0.016	0.000/-0.008
>6-10	+0.006/+0.021	0.000/-0.009
>10-18	+0.007/+0.025	0.000/-0.011
>18-20	+0.008/+0.029	0.000/-0.013

Unit(mm)

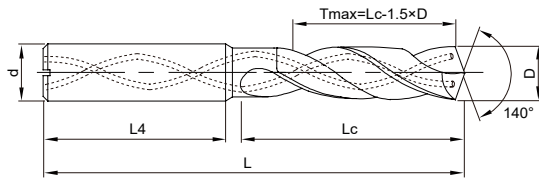
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A5C

5D Inner Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

» Continue

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5C-0870	8.70	61	40	103	10	●
D938-A5C-0880	8.80	61	40	103	10	●
D938-A5C-0890	8.90	61	40	103	10	●
D938-A5C-0900	9.00	61	40	103	10	●
D938-A5C-0910	9.10	61	40	103	10	●
D938-A5C-0920	9.20	61	40	103	10	○
D938-A5C-0930	9.30	61	40	103	10	●
D938-A5C-0935	9.35	61	40	103	10	●
D938-A5C-0940	9.40	61	40	103	10	●
D938-A5C-0950	9.50	61	40	103	10	●
D938-A5C-0960	9.60	61	40	103	10	○
D938-A5C-0970	9.70	61	40	103	10	●
D938-A5C-0980	9.80	61	40	103	10	●
D938-A5C-0990	9.90	61	40	103	10	●
D938-A5C-1000	10.00	61	40	103	10	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5C-1010	10.10	71	45	118	12	●
D938-A5C-1020	10.20	71	45	118	12	●
D938-A5C-1030	10.30	71	45	118	12	●
D938-A5C-1040	10.40	71	45	118	12	●
D938-A5C-1050	10.50	71	45	118	12	●
D938-A5C-1060	10.60	71	45	118	12	●
D938-A5C-1070	10.70	71	45	118	12	●
D938-A5C-1080	10.80	71	45	118	12	●
D938-A5C-1090	10.90	71	45	118	12	●
D938-A5C-1100	11.00	71	45	118	12	●
D938-A5C-1110	11.10	71	45	118	12	●
D938-A5C-1120	11.20	71	45	118	12	●
D938-A5C-1130	11.30	71	45	118	12	●
D938-A5C-1140	11.40	71	45	118	12	●
D938-A5C-1150	11.50	71	45	118	12	●

Note: Accept non-standard Customization from D2 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

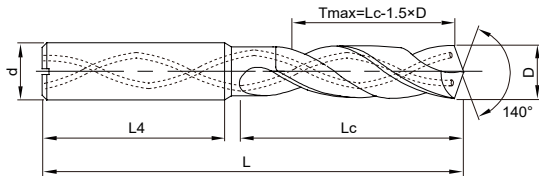
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A5C

5D Inner Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

» Continue

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5C-1160	11.60	71	45	118	12	○
D938-A5C-1170	11.70	71	45	118	12	●
D938-A5C-1180	11.80	71	45	118	12	●
D938-A5C-1190	11.90	71	45	118	12	●
D938-A5C-1200	12.00	71	45	118	12	●
D938-A5C-1250	12.50	77	45	124	14	●
D938-A5C-1280	12.80	77	45	124	14	○
D938-A5C-1300	13.00	77	45	124	14	●
D938-A5C-1350	13.50	77	45	124	14	●
D938-A5C-1380	13.80	77	45	124	14	●
D938-A5C-1400	14.00	77	45	124	14	●
D938-A5C-1450	14.50	83	48	133	16	●
D938-A5C-1480	14.80	83	48	133	16	●
D938-A5C-1500	15.00	83	48	133	16	●
D938-A5C-1510	15.10	83	48	133	16	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A5C-1550	15.50	83	48	133	16	●
D938-A5C-1580	15.80	83	48	133	16	●
D938-A5C-1600	16.00	83	48	133	16	●
D938-A5C-1650	16.50	93	48	143	18	●
D938-A5C-1680	16.80	93	48	143	18	○
D938-A5C-1700	17.00	93	48	143	18	●
D938-A5C-1750	17.50	93	48	143	18	●
D938-A5C-1780	17.80	93	48	143	18	○
D938-A5C-1800	18.00	93	48	143	18	●
D938-A5C-1850	18.50	101	50	153	20	●
D938-A5C-1880	18.80	101	50	153	20	○
D938-A5C-1900	19.00	101	50	153	20	●
D938-A5C-1950	19.50	101	50	153	20	●
D938-A5C-1980	19.80	101	50	153	20	●
D938-A5C-2000	20.00	101	50	153	20	●

Note: Accept non-standard Customization from D2 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

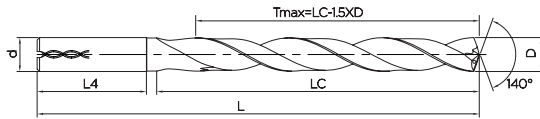
Workpiece Material				
P			K	
1 2 3 4	5	6 7	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P499

D938-A8C

8D Inner Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A8C-0300	3.00	34	36	72	6	●
D938-A8C-0310	3.10	34	36	72	6	●
D938-A8C-0320	3.20	34	36	72	6	●
D938-A8C-0330	3.30	34	36	72	6	●
D938-A8C-0340	3.40	34	36	72	6	●
D938-A8C-0350	3.50	34	36	72	6	●
D938-A8C-0360	3.60	34	36	72	6	●
D938-A8C-0370	3.70	34	36	72	6	○
D938-A8C-0380	3.80	43	36	81	6	○
D938-A8C-0390	3.90	43	36	81	6	●
D938-A8C-0400	4.00	43	36	81	6	●
D938-A8C-0410	4.10	43	36	81	6	●
D938-A8C-0420	4.20	43	36	81	6	●
D938-A8C-0430	4.30	43	36	81	6	○
D938-A8C-0440	4.40	43	36	81	6	○

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A8C-0450	4.50	43	36	81	6	●
D938-A8C-0460	4.60	43	36	81	6	○
D938-A8C-0470	4.70	43	36	81	6	○
D938-A8C-0480	4.80	57	36	95	6	○
D938-A8C-0490	4.90	57	36	95	6	○
D938-A8C-0500	5.00	57	36	95	6	●
D938-A8C-0510	5.10	57	36	95	6	●
D938-A8C-0520	5.20	57	36	95	6	●
D938-A8C-0530	5.30	57	36	95	6	○
D938-A8C-0540	5.40	57	36	95	6	○
D938-A8C-0550	5.50	57	36	95	6	●
D938-A8C-0560	5.60	57	36	95	6	○
D938-A8C-0570	5.70	57	36	95	6	○
D938-A8C-0580	5.80	57	36	95	6	●
D938-A8C-0590	5.90	57	36	95	6	○

Note: Accept non-standard custom from D3 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

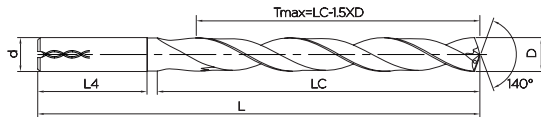
Workpiece Material					
P			M	K	
1 2 3 4	5	6 7	1 2 3	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Stainless Steel	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P501

D938-A8C

8D Inner Cooling Twist Drills for Steel



Tmx-Recommended Maximum Depth

» Continue

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A8C-0600	6.00	57	36	95	6	●
D938-A8C-0610	6.10	76	36	114	8	●
D938-A8C-0620	6.20	76	36	114	8	○
D938-A8C-0630	6.30	76	36	114	8	○
D938-A8C-0640	6.40	76	36	114	8	○
D938-A8C-0650	6.50	76	36	114	8	●
D938-A8C-0660	6.60	76	36	114	8	●
D938-A8C-0670	6.70	76	36	114	8	○
D938-A8C-0680	6.80	76	36	114	8	●
D938-A8C-0690	6.90	76	36	114	8	●
D938-A8C-0700	7.00	76	36	114	8	●
D938-A8C-0710	7.10	76	36	114	8	●
D938-A8C-0720	7.20	76	36	114	8	○
D938-A8C-0730	7.30	76	36	114	8	○

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A8C-0740	7.40	76	36	114	8	●
D938-A8C-0750	7.50	76	36	114	8	●
D938-A8C-0760	7.60	76	36	114	8	○
D938-A8C-0770	7.70	76	36	114	8	○
D938-A8C-0780	7.80	76	36	114	8	○
D938-A8C-0790	7.90	76	36	114	8	●
D938-A8C-0800	8.00	76	36	114	8	●
D938-A8C-0810	8.10	95	40	142	10	○
D938-A8C-0820	8.20	95	40	142	10	●
D938-A8C-0830	8.30	95	40	142	10	○
D938-A8C-0840	8.40	95	40	142	10	○
D938-A8C-0850	8.50	95	40	142	10	●
D938-A8C-0860	8.60	95	40	142	10	○
D938-A8C-0870	8.70	95	40	142	10	●

Note: Accept non-standard custom from D3 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

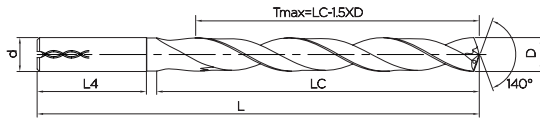
Workpiece Material						
P			M	K		
1 2 3 4	5	6 7	1 2 3	1 2	3	
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Stainless Steel	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)	
○	○	○	○	○	○	

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P501

D938-A8C

8D Inner Cooling Twist Drills for Steel



Tmax-Recommended Maximum Depth

» Continue

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A8C-0880	8.80	95	40	142	10	●
D938-A8C-0890	8.90	95	40	142	10	○
D938-A8C-0900	9.00	95	40	142	10	●
D938-A8C-0930	9.30	95	40	142	10	●
D938-A8C-0950	9.50	95	40	142	10	●
D938-A8C-0980	9.80	95	40	142	10	○
D938-A8C-1000	10.00	95	40	142	10	●
D938-A8C-1020	10.20	114	45	162	12	●
D938-A8C-1030	10.30	114	45	162	12	○
D938-A8C-1050	10.50	114	45	162	12	●
D938-A8C-1080	10.80	114	45	162	12	●
D938-A8C-1100	11.00	114	45	162	12	●
D938-A8C-1120	11.20	114	45	162	12	●
D938-A8C-1150	11.50	114	45	162	12	○
D938-A8C-1180	11.80	114	45	162	12	●

Ordering Code	D(m7)	Lc	L4	L	d(h6)	Stock
D938-A8C-1200	12.00	114	45	162	12	●
D938-A8C-1220	12.20	133	45	182	14	○
D938-A8C-1250	12.50	133	45	182	14	●
D938-A8C-1280	12.80	133	45	182	14	○
D938-A8C-1300	13.00	133	45	182	14	●
D938-A8C-1350	13.50	133	45	182	14	●
D938-A8C-1380	13.80	133	45	182	14	●
D938-A8C-1400	14.00	133	45	182	14	●
D938-A8C-1420	14.20	152	48	203	16	○
D938-A8C-1450	14.50	152	48	203	16	○
D938-A8C-1480	14.80	152	48	203	16	●
D938-A8C-1500	15.00	152	48	203	16	●
D938-A8C-1550	15.50	152	48	203	16	●
D938-A8C-1580	15.80	152	48	203	16	●
D938-A8C-1600	16.00	152	48	203	16	●

Note: Accept non-standard custom from D3 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(m7)	d(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Unit(mm)

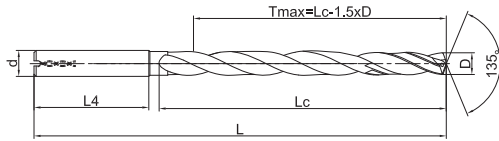
Workpiece Material					
P			M	K	
1 2 3 4	5	6 7	1 2 3	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Stainless Steel	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P501

D938-A12C NEW

12D Twist deep Drills for Steel



Tmax-Recommended Maximum Depth

Ordering Code	D(h7)	Lc	L4	L	d(h6)	Stock
D938-A12C-0300	3	54	36	92	6	○
D938-A12C-0330	3.3	54	36	92	6	○
D938-A12C-0350	3.5	54	36	92	6	●
D938-A12C-0400	4	64	36	102	6	○
D938-A12C-0460	4.6	64	36	102	6	●
D938-A12C-0470	4.7	64	36	102	6	●
D938-A12C-0450	4.8	83	36	121	6	○
D938-A12C-0500	5	83	36	121	6	●
D938-A12C-0550	5.5	83	36	121	6	●
D938-A12C-0560	5.6	83	36	121	6	○
D938-A12C-0600	6	83	36	121	6	○
D938-A12C-0610	6.1	110	36	148	8	○
D938-A12C-0630	6.3	110	36	148	8	○
D938-A12C-0650	6.5	110	36	148	8	○
D938-A12C-0680	6.8	110	36	148	8	○

Ordering Code	D(h7)	Lc	L4	L	d(h6)	Stock
D938-A12C-0700	7	110	36	148	8	○
D938-A12C-0800	8	110	36	148	8	●
D938-A12C-0850	8.5	138	40	180	10	○
D938-A12C-0900	9	138	40	180	10	○
D938-A12C-0980	9.8	138	40	180	10	○
D938-A12C-1000	10	138	40	180	10	○
D938-A12C-1050	10.5	158	45	206	12	○
D938-A12C-1100	11	158	45	206	12	○
D938-A12C-1200	12	158	45	206	12	●
D938-A12C-1250	12.5	182	45	230	14	○
D938-A12C-1300	13	182	45	230	14	○
D938-A12C-1400	14	182	45	230	14	○
D938-A12C-1450	14.5	208	48	230	16	○
D938-A12C-1500	15	208	48	230	16	○
D938-A12C-1600	16	208	48	230	16	○

Note: Accept non-standard custom from D3 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(h7)	d(h6)
>3—6	0.000/-0.012	0.000/-0.008
>6—10	0.000/-0.015	0.000/-0.009
>10—18	0.000/-0.018	0.000/-0.011
>18—20	0.000/-0.021	0.000/-0.013

Unit(mm)

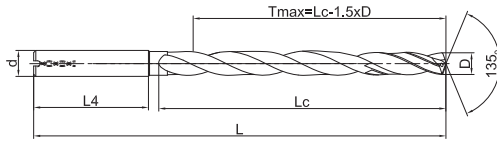
Workpiece Material					
P			M	K	
1 2 3 4	5	6 7	1 2 3	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Stainless Steel	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P501

D938-A15C NEW

15D Twist deep Drills for Steel



Tmax-Recommended Maximum Depth

Ordering Code	D(h7)	Lc	L4	L	d(h6)	Stock
D938-A15C-0300	3	55	36	95	6	○
D938-A15C-0330	3.3	67	36	106	6	○
D938-A15C-0350	3.5	76	36	116	6	○
D938-A15C-0380	3.8	76	36	116	6	○
D938-A15C-0400	4	76	36	116	6	○
D938-A15C-0420	4.2	93	36	133	6	○
D938-A15C-0450	4.5	93	36	133	6	○
D938-A15C-0450	4.8	93	36	133	6	○
D938-A15C-0500	5	93	36	133	6	○
D938-A15C-0550	5.5	110	36	150	6	○
D938-A15C-0560	5.6	110	36	150	6	○
D938-A15C-0600	6	110	36	150	6	○
D938-A15C-0610	6.1	127	36	167	8	○
D938-A15C-0630	6.3	127	36	167	8	○

Ordering Code	D(h7)	Lc	L4	L	d(h6)	Stock
D938-A15C-0650	6.5	127	36	167	8	○
D938-A15C-0680	6.8	127	36	167	8	○
D938-A15C-0700	7	127	36	167	8	○
D938-A15C-0800	8	143	36	183	8	●
D938-A15C-0850	8.5	160	40	204	10	○
D938-A15C-0900	9	160	40	204	10	●
D938-A15C-0980	9.8	177	40	221	10	○
D938-A15C-1000	10	177	40	221	10	○
D938-A15C-1050	10.5	198	45	247	12	○
D938-A15C-1100	11	198	45	247	12	○
D938-A15C-1200	12	214	45	263	12	○
D938-A15C-1250	12.5	248	45	297	14	○
D938-A15C-1300	13	248	45	297	14	○
D938-A15C-1400	14	248	45	297	14	○

Note: Accept non-standard custom from D3 to D20 tool.

● Stock ○ Available upon Order

Nominal Size Range	D(h7)	d(h6)
>3—6	0.000/-0.012	0.000/-0.008
>6—10	0.000/-0.015	0.000/-0.009
>10—18	0.000/-0.018	0.000/-0.011
>18—20	0.000/-0.021	0.000/-0.013

Unit(mm)

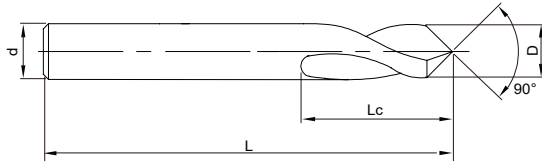
Workpiece Material					
P			M	K	
1 2 3 4	5	6 7	1 2 3	1 2	3
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/Martensitic Stainless (<48HRC)	Stainless Steel	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)
○	○	○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P501

D101-AMN

90°NC Centre Drills



Tmax-Recommended Maximum Depth

Ordering Code	D	Lc	L	d(h6)	Stock
D101-AMN-0500	5.00	10	62	5	●
D101-AMN-0600	6.00	15	66	6	●
D101-AMN-0800	8.00	17	79	8	●
D101-AMN-1000	10.00	20	89	10	●
D101-AMN-1200	12.00	25	102	12	●
D101-AMN-1400	14.00	30	107	14	●
D101-AMN-1600	16.00	35	115	16	●
D101-AMN-2000	20.00	40	131	20	●

Note: Accept non-standard custom from D2 to D20 tool.

Unit(mm)

● Stock ○ Available upon Order

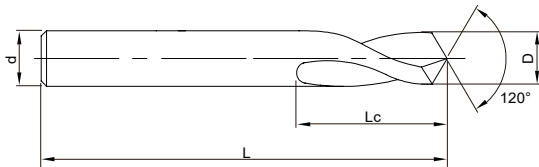
Workpiece Material												
P			M	K			N					
1	2	3	4	5	6	1	2	3	1	2	3	4
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/ Martensitic Stainless (<48HRC)	Stainless Steel	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)	Wrought Aluminium Alloys, Cast Aluminium Alloys (Si<12%)	Cast Aluminium Alloys (Si>12%)	Copper Alloys (<200HB)				
○	○	○			○		○	○			○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P503

D102-ANN

120°NC Centre Drills



Ordering Code	D	Lc	L	d(h6)	Stock
D102-ANN-0500	5.00	10	62	5	○
D102-ANN-0600	6.00	15	66	6	○
D102-ANN-0800	8.00	17	79	8	○
D102-ANN-1000	10.00	20	89	10	○
D102-ANN-1200	12.00	25	102	12	○
D102-ANN-1400	14.00	30	107	14	○
D102-ANN-1600	16.00	35	115	16	○
D102-ANN-2000	20.00	40	131	20	○

Note: Accept non-standard custom from D2 to D20 tool.

Unit(mm)

● Stock ○ Available upon Order

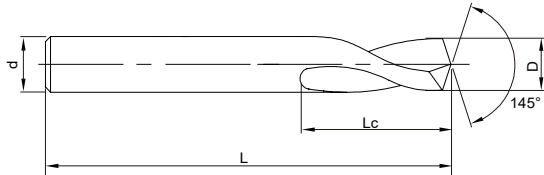
Workpiece Material									
P			M	K			N		
1	2	3	4	5	6	1	2	3	4
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/ Martensitic Stainless (<48HRC)	Stainless Steel	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)	Wrought Aluminium Alloys, Cast Aluminium Alloys (Si<12%)	Cast Aluminium Alloys (Si>12%)	Copper Alloys (<200HB)	
○	○	○		○		○	○	○	○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P503

D103-APN

145°NC Centre Drills



Ordering Code	D	Lc	L	d(h6)	Stock
D103-APN-0500	5.00	10	62	5	○
D103-APN-0600	6.00	15	66	6	○
D103-APN-0800	8.00	17	79	8	○
D103-APN-1000	10.00	20	89	10	○
D103-APN-1200	12.00	25	102	12	○
D103-APN-1400	14.00	30	107	14	○
D103-APN-1600	16.00	35	115	16	○
D103-APN-2000	20.00	40	131	20	○

Note: Accept non-standard custom from D2 to D20 tool.

Unit(mm)

● Stock ○ Available upon Order



Workpiece Material												
P			M	K			N					
1	2	3	4	5	6	1	2	3	1	2	3	4
Carbon Steels, Alloy Steels (<35HRC)	Alloy Steels, Tool Steels (35-48HRC)	PH and Ferrite/ Martensitic Stainless (<48HRC)	Stainless Steel	Grey Cast Iron, Nodular Cast Iron (<32HRC)	High Alloy Cast Iron (35-45HRC)	Wrought Aluminium Alloys, Cast Aluminium Alloys (Si<12%)	Cast Aluminium Alloys (Si>12%)	Copper Alloys (<200HB)				
○	○	○			○		○	○				○

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P503

Recommended Cutting Data

D918S High Performance Twist Drills for Steel



Workpiece		Vc (m/min)		fn (mm/rev)				
				Φ3	Φ4	Φ6	Φ8	Φ10
P	Low-carbon Steels, Long Chipping (<125HB)	100-80-50	140-100-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	Low-carbon Steels, Short Chipping, Free-cutting Steels (<125HB)	100-75-50	140-100-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	High-carbon Steels, Medium-carbon Steels (<25HRC)	90-70-45	120-80-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	Alloy Steels, Tool Steels. (<35HRC)	90-70-45	110-80-50	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	Alloy Steels, Tool Steels. (35-48HRC)	80-60-40	90-60-40	0.09-0.12-0.14	0.10-0.14-0.17	0.13-0.17-0.22	0.17-0.23-0.29	0.21-0.28-0.35
M	Austenitic Stainless Steels (130-200HB)	40-30-20	80-60-40	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.12-0.14	0.08-0.13-0.18	0.09-0.15-0.20
	High-Strength Austenitic Stainless Steels and Cast Stainless Steels (<25HRC)	40-30-20	80-60-40	0.03-0.06-0.08	0.04-0.08-0.10	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.11-0.14
	Duplex Stainless Steels (<30HRC)	35-25-20	60-45-30	0.03-0.06-0.08	0.04-0.08-0.10	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.11-0.14
K	Grey Cast Iron (<32HRC)	100-80-60	140-120-60	0.13-0.17-0.20	0.15-0.20-0.23	0.17-0.25-0.30	0.20-0.27-0.35	0.23-0.30-0.40
	Moderately Difficult Alloy Cast iron, Nodular Cast Iron (<28HRC)	100-80-60	140-120-60	0.11-0.15-0.18	0.13-0.17-0.20	0.15-0.20-0.25	0.17-0.25-0.32	0.20-0.28-0.36
	Difficult High-alloy Cast Iron, Nodular Cast Iron (<45HRC)	90-70-60	100-90-60	0.06-0.09-0.11	0.08-0.10-0.13	0.10-0.13-0.16	0.12-0.16-0.20	0.14-0.20-0.26

Remark:

1. Make sure work piece and machine are stable and use a precision holder, use hydraulic chucks, high quality collet chucks.
2. Make sure total indicated run-out (TIR) is less than 0.02mm.
3. The recommended cutting condition is suitable for apply water soluble.
4. If the tool size is not in the table, please refer to the table closest to the blade diameter size selection of cutting parameters, adjust cutting parameters according to actual working conditions during processing.

Recommended Cutting Data

D918S High Performance Twist Drills for Steel



Workpiece		Vc (m/min)		fn (mm/rev)				
				Φ12	Φ14	Φ16	Φ18	Φ20
P	Low-carbon Steels, Long Chipping (<125HB)	100-80-50	140-100-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	Low-carbon Steels, Short Chipping, Free-cutting Steels (<125HB)	100-75-50	140-100-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	High-carbon Steels, Medium-carbon Steels (<25HRC)	90-70-45	120-80-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	Alloy Steels, Tool Steels. (<35HRC)	90-70-45	110-80-50	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	Alloy Steels, Tool Steels. (35-48HRC)	80-60-40	90-60-40	0.22-0.30-0.37	0.26-0.35-0.41	0.28-0.37-0.44	0.31-0.38-0.46	0.31-0.39-0.47
M	Austenitic Stainless Steels (130-200HB)	40-30-20	80-60-40	0.10-0.17-0.22	0.11-0.18-0.24	0.12-0.20-0.24	0.13-0.22-0.26	0.14-0.24-0.28
	High-Strength Austenitic Stainless Steels and Cast Stainless Steels (<25HRC)	40-30-20	80-60-40	0.08-0.13-0.16	0.09-0.13-0.18	0.10-0.14-0.18	0.10-0.14-0.20	0.12-0.16-0.22
	Duplex Stainless Steels (<30HRC)	35-25-20	60-45-30	0.08-0.13-0.16	0.09-0.13-0.18	0.10-0.14-0.18	0.10-0.14-0.20	0.12-0.16-0.22
K	Grey Cast Iron (<32HRC)	100-80-60	140-120-60	0.25-0.33-0.45	0.28-0.36-0.48	0.30-0.40-0.50	0.32-0.42-0.52	0.35-0.45-0.55
	Moderately Difficult Alloy Cast iron, Nodular Cast Iron (<28HRC)	100-80-60	140-120-60	0.22-0.30-0.42	0.24-0.33-0.45	0.25-0.35-0.48	0.28-0.38-0.48	0.30-0.40-0.50
	Difficult High-alloy Cast Iron, Nodular Cast Iron (<45HRC)	90-70-60	100-90-60	0.16-0.22-0.28	0.18-0.24-0.30	0.20-0.26-0.32	0.22-0.28-0.34	0.23-0.28-0.35

Remark:

1. Make sure work piece and machine are stable and use a precision holder, use hydraulic chucks, high quality collet chucks.
2. Make sure total indicated run-out (TIR) is less than 0.02mm.
3. The recommended cutting condition is suitable for apply water soluble.
4. If the tool size is not in the table, please refer to the table closest to the blade diameter size selection of cutting parameters, adjust cutting parameters according to actual working conditions during processing.

Recommended Cutting Data

D968S High Performance Twist Drills for Stainless Steel



Workpiece		Vc (m/min)		fn (mm/rev)				
				Φ3	Φ4	Φ6	Φ8	Φ10
P	Low-carbon Steels, Long Chipping (<125HB)	100-80-50	140-100-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	Low-carbon Steels, Short Chipping, Free-cutting Steels (<125HB)	100-75-50	140-100-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	High-carbon Steels, Medium-carbon Steels (<25HRC)	90-70-45	120-80-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	Alloy Steels, Tool Steels (<35HRC)	90-70-45	110-80-50	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
M	Austenitic Stainless Steels (130-200HB)	40-30-20	80-60-40	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.12-0.14	0.08-0.13-0.18	0.09-0.15-0.20
	High-Strength Austenitic Stainless Steels and Cast Stainless Steels (<25HRC)	40-30-20	80-60-40	0.03-0.06-0.08	0.04-0.08-0.10	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.11-0.14
	Duplex Stainless Steels (<30HRC)	35-25-20	60-45-30	0.03-0.06-0.08	0.04-0.08-0.10	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.11-0.14
S	Iron-based Heat-resistant Alloys (160-260HB)	-	50-40-25	0.03-0.05-0.08	0.04-0.07-0.10	0.05-0.09-0.10	0.06-0.10-0.12	0.07-0.12-0.14
	Cobalt-based Heat-resistant Alloys Cobalt-based Heat-resistant Alloys (250-450HB)	-	50-40-25	0.03-0.05-0.08	0.04-0.07-0.10	0.05-0.09-0.10	0.06-0.10-0.12	0.07-0.12-0.14
	Nickel-based Heat-resistant Alloys (160-450HB)	-	50-40-25	0.03-0.05-0.07	0.04-0.07-0.09	0.05-0.09-0.10	0.06-0.10-0.12	0.07-0.12-0.14
	Titanium and Titanium Alloys (300-400HB)	-	45-35-20	0.03-0.04-0.06	0.04-0.06-0.08	0.05-0.08-0.10	0.06-0.09-0.11	0.07-0.10-0.12

Remark:

1. Make sure work piece and machine are stable and use a precision holder, use hydraulic chucks, high quality collet chucks.
2. Make sure total indicated run-out (TIR) is less than 0.02mm.
3. The recommended cutting condition is suitable for apply water soluble.
4. If the tool size is not in the table, please refer to the table closest to the blade diameter size selection of cutting parameters, adjust cutting parameters according to actual working conditions during processing.

Recommended Cutting Data

D968S High Performance Twist Drills for Stainless Steel



Workpiece		Vc (m/min)		fn (mm/rev)				
				Φ12	Φ14	Φ16	Φ18	Φ20
P	Low-carbon Steels, Long Chipping (<125HB)	100-80-50	140-100-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	Low-carbon Steels, Short Chipping, Free-cutting Steels (<125HB)	100-75-50	140-100-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	High-carbon Steels, Medium-carbon Steels (<25HRC)	90-70-45	120-80-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	Alloy Steels, Tool Steels (<35HRC)	90-70-45	110-80-50	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
M	Austenitic Stainless Steels (130-200HB)	40-30-20	80-60-40	0.10-0.17-0.22	0.11-0.18-0.24	0.12-0.20-0.24	0.13-0.22-0.26	0.14-0.24-0.28
	High-Strength Austenitic Stainless Steels and Cast Stainless Steels (<25HRC)	40-30-20	80-60-40	0.08-0.13-0.16	0.09-0.13-0.18	0.10-0.14-0.18	0.10-0.14-0.20	0.12-0.16-0.22
	Duplex Stainless Steels (<30HRC)	35-25-20	60-45-30	0.08-0.13-0.16	0.09-0.13-0.18	0.10-0.14-0.18	0.10-0.14-0.20	0.12-0.16-0.22
S	Iron-based Heat-resistant Alloys (160-260HB)	-	50-40-25	0.08-0.14-0.16	0.09-0.15-0.18	0.10-0.17-0.18	0.10-0.16-0.20	0.12-0.18-0.22
	Cobalt-based Heat-resistant Alloys, Cobalt-based Heat-resistant Alloys (250-450HB)	-	50-40-25	0.08-0.14-0.16	0.09-0.15-0.18	0.10-0.17-0.18	0.10-0.16-0.20	0.12-0.18-0.22
	Nickel-based Heat-resistant Alloys (160-450HB)	-	50-40-25	0.08-0.14-0.16	0.09-0.15-0.18	0.10-0.17-0.18	0.10-0.16-0.20	0.12-0.18-0.22
	Titanium and Titanium Alloys (300-400HB)	-	45-35-20	0.08-0.12-0.14	0.09-0.13-0.16	0.10-0.14-0.16	0.10-0.15-0.18	0.12-0.16-0.20

[Remark:

1. Make sure work piece and machine are stable and use a precision holder, use hydraulic chucks, high quality collet chucks.
2. Make sure total indicated run-out (TIR) is less than 0.02mm.
3. The recommended cutting condition is suitable for apply water soluble.
4. If the tool size is not in the table, please refer to the table closest to the blade diameter size selection of cutting parameters, adjust cutting parameters according to actual working conditions during processing.

Recommended Cutting Data

D938 3D/5D Twist Drills for Steel



Workpiece		Vc (m/min)		fn (mm/rev)				
				Φ3	Φ4	Φ6	Φ8	Φ10
P	Low-carbon Steels, Long Chipping (< 125HB)	120-80-50	140-100-60	0.10-0.15-0.20	0.10-0.15-0.20	0.14-0.19-0.25	0.16-0.22-0.32	0.16-0.22-0.35
	Low-carbon Steels, Short Chipping, Free-cutting Steels (< 125HB)	120-75-50	140-100-60	0.10-0.15-0.20	0.10-0.15-0.20	0.14-0.19-0.25	0.16-0.22-0.32	0.16-0.22-0.35
	High-carbon Steels, Medium-carbon Steels (< 25HRC)	120-70-45	120-80-60	0.10-0.15-0.20	0.10-0.15-0.20	0.14-0.19-0.25	0.16-0.22-0.30	0.16-0.22-0.32
	Alloy Steels, Tool Steels. (<35HRC)	100-70-45	110-80-60	0.09-0.13-0.16	0.09-0.13-0.16	0.12-0.17-0.23	0.14-0.20-0.28	0.14-0.20-0.30
	Alloy Steels, Tool Steels. (35-48HRC)	80-60-35	90-60-35	0.08-0.11-0.14	0.08-0.11-0.14	0.08-0.14-0.20	0.09-0.16-0.25	0.09-0.16-0.28
	PH and Ferrite/ Martensitic Steels (<35HRC)	70-50-30	90-60-30	0.05-0.08-0.11	0.05-0.08-0.11	0.07-0.12-0.17	0.08-0.14-0.20	0.08-0.14-0.23
	High-Strength PH and Ferrite/ Martensitic Steels (35-48HRC)	70-45-25	80-50-30	0.04-0.06-0.08	0.04-0.06-0.08	0.06-0.10-0.14	0.08-0.13-0.18	0.08-0.13-0.20
K	Grey Cast Iron (<32HRC)	140-100-60	160-120-60	0.13-0.17-0.20	0.15-0.20-0.23	0.17-0.25-0.30	0.20-0.27-0.35	0.23-0.30-0.40
	Moderately Difficult Alloy Cast iron, Nodular Cast Iron (< 28HRC)	120-80-60	140-100-60	0.11-0.15-0.18	0.13-0.17-0.20	0.15-0.20-0.25	0.17-0.25-0.32	0.20-0.28-0.36
	Difficult High-alloy Cast Iron, Nodular Cast Iron (<45HRC)	100-70-50	100-80-50	0.06-0.09-0.11	0.08-0.10-0.13	0.10-0.13-0.16	0.12-0.16-0.20	0.14-0.20-0.26

Remark:

1. Make sure work piece and machine are stable and use a precision holder, use hydraulic chucks, high quality collet chucks.
2. Make sure total indicated run-out(TIR) is less than 0.02mm.
3. The recommended cutting condition is suitable for apply water soluble.
4. If the tool size is not in the table, please refer to the table closest to the blade diameter size selection of cutting parameters, adjust cutting parameters according to actual working conditions during processing.

Recommended Cutting Data

D938 3D/5D Twist Drills for Steel


Workpiece		Vc (m/min)		fn (mm/rev)				
				Φ 12	Φ 14	Φ 16	Φ 18	Φ 20
P	Low-carbon Steels, Long Chipping (< 125HB)	120-80-50	140-100-60	0.18-0.28-0.40	0.22-0.32-0.45	0.22-0.32-0.45	0.25-0.38-0.50	0.25-0.38-0.50
	Low-carbon Steels, Short Chipping, Free-cutting Steels (< 125HB)	120-75-50	140-100-60	0.18-0.28-0.40	0.22-0.32-0.45	0.22-0.32-0.45	0.25-0.38-0.50	0.25-0.38-0.50
	High-carbon Steels, Medium-carbon Steels (< 25HRC)	120-70-45	120-80-60	0.18-0.28-0.38	0.22-0.32-0.45	0.22-0.32-0.45	0.25-0.38-0.50	0.25-0.38-0.50
	Alloy Steels, Tool Steels. (<35HRC)	100-70-45	110-80-60	0.15-0.23-0.34	0.18-0.25-0.38	0.18-0.25-0.38	0.20-0.30-0.40	0.20-0.30-0.40
	Alloy Steels, Tool Steels. (35-48HRC)	80-60-35	90-60-35	0.11-0.19-0.30	0.12-0.22-0.32	0.12-0.22-0.32	0.14-0.24-0.34	0.14-0.24-0.34
	PH and Ferrite/ Martensitic Steels (<35HRC)	70-50-30	90-60-30	0.10-0.18-0.28	0.12-0.20-0.30	0.12-0.20-0.30	0.14-0.24-0.32	0.14-0.24-0.32
	High-Strength PH and Ferrite/ Martensitic Steels (35-48HRC)	70-45-25	80-50-30	0.10-0.18-0.28	0.12-0.20-0.30	0.12-0.20-0.30	0.14-0.24-0.32	0.14-0.24-0.32
K	Grey Cast Iron (<32HRC)	140-100-60	160-120-60	0.25-0.33-0.45	0.28-0.36-0.48	0.30-0.40-0.50	0.32-0.42-0.52	0.35-0.45-0.55
	Moderately Difficult Alloy Cast iron, Nodular Cast Iron (<28HRC)	120-80-60	140-100-60	0.22-0.30-0.42	0.24-0.33-0.45	0.25-0.35-0.48	0.28-0.38-0.48	0.30-0.40-0.50
	Difficult High-alloy Cast Iron, Nodular Cast Iron (<45HRC)	100-70-50	100-80-50	0.16-0.22-0.28	0.18-0.24-0.30	0.20-0.26-0.32	0.22-0.28-0.34	0.23-0.28-0.35

Remark:

1. Make sure work piece and machine are stable and use a precision holder, use hydraulic chucks, high quality collet chucks.
2. Make sure total indicated run-out(TIR) is less than 0.02mm.
3. The recommended cutting condition is suitable for apply water soluble.
4. If the tool size is not in the table, please refer to the table closest to the blade diameter size selection of cutting parameters, adjust cutting parameters according to actual working conditions during processing.

Recommended Cutting Data

D938 8D/12D/15D Twist Drills for Steel


Workpiece	Vc (m/min)		fn (mm/rev)			
			Φ3	Φ4	Φ6	Φ8
P	Low-carbon Steels, Long Chipping (< 125HB)	140-100-60	0.10-0.15-0.20	0.10-0.15-0.20	0.14-0.19-0.25	0.16-0.22-0.32
	Low-carbon Steels, Short Chipping, Free-cutting Steels (< 125HB)	140-100-60	0.10-0.15-0.20	0.10-0.15-0.20	0.14-0.19-0.25	0.16-0.22-0.32
	High-carbon Steels, Medium-carbon Steels (< 25HRC)	120-80-60	0.10-0.15-0.20	0.10-0.15-0.20	0.14-0.19-0.25	0.16-0.22-0.30
	Alloy Steels, Tool Steels. (<35HRC)	110-80-60	0.09-0.13-0.16	0.09-0.13-0.16	0.12-0.17-0.23	0.14-0.20-0.28
	Alloy Steels, Tool Steels. (35-48HRC)	90-60-35	0.08-0.11-0.14	0.08-0.11-0.14	0.08-0.14-0.20	0.09-0.16-0.25
	PH and Ferrite/Martensitic Steels (<35HRC)	90-60-30	0.05-0.08-0.11	0.05-0.08-0.11	0.07-0.12-0.17	0.08-0.14-0.20
	High-Strength PH and Ferrite/Martensitic Steels (35-48HRC)	80-50-30	0.04-0.06-0.08	0.04-0.06-0.08	0.06-0.10-0.14	0.08-0.13-0.18
M	Austenitic Stainless Steels (130-200HB)	60-50-40	0.04-0.08-0.10	0.04-0.08-0.10	0.06-0.10-0.12	0.06-0.10-0.12
	High-Strength Austenitic Stainless Steels and Cast Stainless Steels (< 25HRC)	60-50-40	0.04-0.06-0.08	0.04-0.06-0.08	0.06-0.08-0.10	0.06-0.08-0.10
	Duplex Stainless Steels (<30HRC)	50-40-30	0.04-0.06-0.08	0.04-0.06-0.08	0.06-0.08-0.10	0.06-0.08-0.10
K	Grey Cast Iron (<32HRC)	160-120-60	0.13-0.17-0.20	0.15-0.20-0.23	0.17-0.25-0.30	0.20-0.27-0.35
	Moderately Difficult Alloy Cast iron, Nodular Cast Iron (<28HRC)	140-100-60	0.11-0.15-0.18	0.13-0.17-0.20	0.15-0.20-0.25	0.17-0.25-0.32
	Difficult High-alloy Cast Iron, Nodular Cast Iron (<45HRC)	100-80-50	0.06-0.09-0.11	0.08-0.10-0.13	0.10-0.13-0.16	0.12-0.16-0.20

Remark:

1. Make sure work piece and machine are stable and use a precision holder, use hydraulic chucks, high quality collet chucks.
2. Make sure total indicated run-out (TIR) is less than 0.02mm.
3. The recommended cutting condition is suitable for apply water soluble.
4. If the tool size is not in the table, please refer to the table closest to the blade diameter size selection of cutting parameters, adjust cutting parameters according to actual working conditions during processing.

Recommended Cutting Data

D938 8D/12D/15D Twist Drills for Steel


Workpiece	Vc (m/min)		fn (mm/rev)			
			Φ 10	Φ 12	Φ 14	Φ 16
P	Low-carbon Steels, Long Chipping (< 125HB)	140-100-60	0.16-0.22-0.35	0.18-0.28-0.40	0.22-0.32-0.45	0.22-0.32-0.45
	Low-carbon Steels, Short Chipping, Free-cutting Steels (< 125HB)	140-100-60	0.16-0.22-0.35	0.18-0.28-0.40	0.22-0.32-0.45	0.22-0.32-0.45
	High-carbon Steels, Medium-carbon Steels (< 25HRC)	120-80-60	0.16-0.22-0.32	0.18-0.28-0.38	0.22-0.32-0.45	0.22-0.32-0.45
	Alloy Steels, Tool Steels. (<35HRC)	110-80-60	0.14-0.20-0.30	0.15-0.23-0.34	0.18-0.25-0.38	0.18-0.25-0.38
	Alloy Steels, Tool Steels. (35-48HRC)	90-60-35	0.09-0.16-0.28	0.11-0.19-0.30	0.12-0.22-0.32	0.12-0.22-0.32
	PH and Ferrite/ Martensitic Steels (<35HRC)	90-60-30	0.08-0.14-0.23	0.10-0.18-0.28	0.12-0.20-0.30	0.12-0.20-0.30
	High-Strength PH and Ferrite/ Martensitic Steels (35-48HRC)	80-50-30	0.08-0.13-0.20	0.10-0.18-0.28	0.12-0.20-0.30	0.12-0.20-0.30
M	Austenitic Stainless Steels(130-200HB)	60-50-40	0.08-0.12-0.16	0.08-0.12-0.16	0.10-0.14-0.18	0.10-0.14-0.18
	High-Strength Austenitic Stainless Steels and Cast Stainless Steels (< 25HRC)	60-50-40	0.08-0.10-0.12	0.08-0.10-0.12	0.10-0.12-0.14	0.10-0.12-0.14
	Duplex Stainless Steels (<30HRC)	50-40-30	0.08-0.10-0.12	0.08-0.10-0.12	0.10-0.12-0.14	0.10-0.12-0.14
K	Grey Cast Iron (<32HRC)	160-120-60	0.23-0.30-0.40	0.25-0.33-0.45	0.28-0.36-0.48	0.30-0.40-0.50
	Moderately Difficult Alloy Cast iron, Nodular Cast Iron (<28HRC)	140-100-60	0.20-0.28-0.36	0.22-0.30-0.42	0.24-0.33-0.45	0.25-0.35-0.48
	Difficult High-alloy Cast Iron, Nodular Cast Iron(<45HRC)	100-80-50	0.14-0.20-0.26	0.16-0.22-0.28	0.18-0.24-0.30	0.20-0.26-0.32

Remark:

1. Make sure work piece and machine are stable and use a precision holder, use hydraulic chucks, high quality collet chucks.
2. Make sure total indicated run-out(TIR) is less than 0.02mm.
3. The recommended cutting condition is suitable for apply water soluble.
4. If the tool size is not in the table, please refer to the table closest to the blade diameter size selection of cutting parameters, adjust cutting parameters according to actual working conditions during processing.

Recommended Cutting Data

D101/D102/D103 NC Centre Drills


Workpiece	V _c (m/min)		f _n (mm/rev)				
			Φ4	Φ6	Φ8	Φ10	
P	Low-carbon Steels, Long Chipping (< 125HB)	130-100-60	-	0.12-0.15-0.18	0.14-0.17-0.20	0.16-0.20-0.26	0.18-0.24-0.3
	Low-carbon Steels, Short Chipping, Free-cutting Steels (<125HB)	120-100-60	-	0.10-0.14-0.18	0.14-0.16-0.20	0.16-0.20-0.24	0.18-0.24-0.3
	High-carbon Steels, Medium-carbon Steels (< 25HRC)	110-80-60	-	0.10-0.13-0.16	0.12-0.15-0.18	0.14-0.18-0.22	0.16-0.20-0.24
	Alloy Steels, Tool Steels. (<35HRC)	110-80-60	-	0.10-0.13-0.16	0.12-0.15-0.18	0.14-0.18-0.22	0.16-0.20-0.24
	Alloy Steels, Tool Steels. (35-48HRC)	100-80-60	-	0.10-0.12-0.16	0.12-0.14-0.18	0.14-0.16-0.20	0.16-0.20-0.24
	PH and Ferrite/ Martensitic Steels (<35HRC)	100-80-60	-	0.10-0.12-0.16	0.12-0.14-0.18	0.14-0.16-0.20	0.16-0.20-0.24
K	Grey Cast Iron (<32HRC)	140-120-60	-	0.12-0.20-0.26	0.17-0.26-0.32	0.20-0.32-0.40	0.25-0.30-0.36
	Moderately Difficult Alloy Cast iron, Nodular Cast Iron (<28HRC)	130-105-60	-	0.12-0.18-0.24	0.15-0.20-0.27	0.17-0.22-0.30	0.20-0.26-0.32
	Difficult High-alloy Cast Iron, Nodular Cast Iron (<45HRC)	120-90-60	-	0.10-0.16-0.22	0.10-0.13-0.16	0.13-0.17-0.21	0.15-0.20-0.26
N	Wrought Aluminium Alloys(Si<12%)	150-120-60	-	0.12-0.20-0.26	0.17-0.26-0.32	0.20-0.32-0.40	0.25-0.30-0.36
	Cast Aluminium Alloys(Si<12%)	150-120-60	-	0.12-0.18-0.24	0.15-0.20-0.27	0.17-0.22-0.30	0.20-0.26-0.32
	Cast Aluminium Alloys(Si>12%)	150-120-60	-	0.10-0.13-0.16	0.12-0.15-0.18	0.14-0.18-0.22	0.16-0.20-0.24
	Copper, Copper Alloys (<200HB)	150-120-60	-	0.10-0.12-0.16	0.12-0.14-0.18	0.14-0.16-0.20	0.16-0.20-0.24

【Remark:

1. Make sure work piece and machine are stable and use a precision holder, use hydraulic chucks, high quality collet chucks.
2. Make sure total indicated run-out(TIR) is less than 0.02mm.
3. The recommended cutting condition is suitable for apply water soluble.
4. If the tool size is not in the table, please refer to the table closest to the blade diameter size selection of cutting parameters, adjust cutting parameters according to actual working conditions during processing.

Recommended Cutting Data

D101/D102/D103 NC Centre Drills

Workpiece		Vc (m/min)		fn (mm/rev)			
				Φ 12	Φ 14	Φ 16	Φ 20
P	Low-carbon Steels, Long Chipping (< 125HB)	130-100-60	-	0.20-0.26-0.32	0.24-0.30-0.35	0.28-0.34-0.4	0.32-0.38-0.45
	Low-carbon Steels, Short Chipping, Free-cutting Steels (<125HB)	120-100-60	-	0.20-0.26-0.32	0.24-0.28-0.34	0.28-0.34-0.4	0.32-0.38-0.45
	High-carbon Steels, Medium-carbon Steels (< 25HRC)	110-80-60	-	0.18-0.24-0.30	0.20-0.26-0.30	0.22-0.28-0.32	0.26-0.32-0.40
	Alloy Steels, Tool Steels. (<35HRC)	110-80-60	-	0.18-0.24-0.30	0.20-0.26-0.30	0.22-0.28-0.32	0.26-0.32-0.40
	Alloy Steels, Tool Steels. (35-48HRC)	100-80-60	-	0.18-0.24-0.30	0.20-0.26-0.30	0.22-0.28-0.32	0.26-0.32-0.40
	PH and Ferrite/ Martensitic Steels (<35HRC)	100-80-60	-	0.18-0.24-0.30	0.20-0.26-0.30	0.22-0.28-0.32	0.26-0.32-0.40
K	Grey Cast Iron (<32HRC)	140-120-60	-	0.26-0.32-0.38	0.28-0.32-0.40	0.30-0.36-0.42	0.32-0.38-0.44
	Moderately Difficult Alloy Cast iron, Nodular Cast Iron (<28HRC)	130-105-60	-	0.22-0.28-0.34	0.24-0.30-0.36	0.26-0.32-0.38	0.30-0.36-0.42
	Difficult High-alloy Cast Iron, Nodular Cast Iron (<45HRC)	120-90-60	-	0.17-0.22-0.28	0.19-0.26-0.31	0.20-0.27-0.33	0.28-0.29-0.35
N	Wrought Aluminium Alloys (Si<12%)	150-120-60	-	0.26-0.32-0.38	0.28-0.32-0.40	0.30-0.36-0.42	0.32-0.38-0.44
	Cast Aluminium Alloys (Si<12%)	150-120-60	-	0.22-0.28-0.34	0.24-0.30-0.36	0.26-0.32-0.38	0.30-0.36-0.42
	Cast Aluminium Alloys (Si>12%)	150-120-60	-	0.18-0.24-0.30	0.20-0.26-0.30	0.22-0.28-0.32	0.26-0.32-0.40
	Copper, Copper Alloys (<200HB)	150-120-60	-	0.18-0.24-0.30	0.20-0.26-0.30	0.22-0.28-0.32	0.26-0.32-0.40

[Remark:

1. Make sure work piece and machine are stable and use a precision holder, use hydraulic chucks, high quality collet chucks.
2. Make sure total indicated run-out (TIR) is less than 0.02mm.
3. The recommended cutting condition is suitable for apply water soluble.
4. If the tool size is not in the table, please refer to the table closest to the blade diameter size selection of cutting parameters, adjust cutting parameters according to actual working conditions during processing.