

HOLEMAKING TOOLS



About GESAC

Xiamen Golden Egret Special Alloy Co., Ltd. (GESAC), founded in 1989, is a Sino-foreign joint venture with national high-tech, affiliated with XTC, which is one of six major rare earth groups in China. GESAC is committed to research & development, production and professional solutions providing of high-quality tungsten powder materials, cemented carbide, precision cutting tools and other tungsten products. Up to now, GESAC has become world-famous manufacturer and supplier of tungsten powder, cemented carbide and precision cutting tools products.

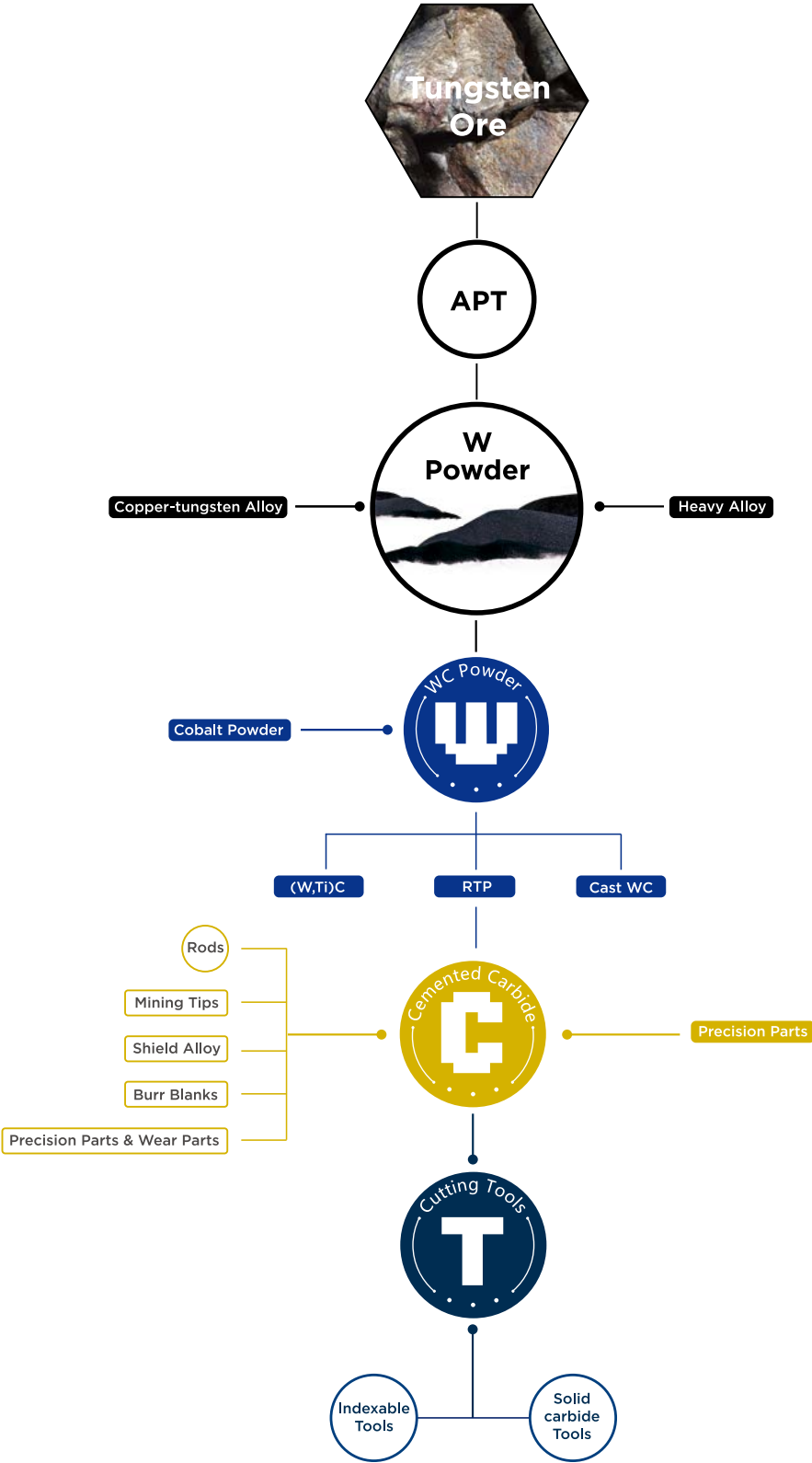
With the Integrated Product Development of complete tungsten industry chain, as well as a pragmatic and innovative management concept, GESAC has always maintained a strong momentum of development, providing the cost effective tungsten powder products and services for global users, offering the excellent products and perfect solutions for solving high hardness, high temperature resistance and wear resistance topics. Our brand "Golden Egret" has become one of the leading brand in the market, enjoying famous reputation in more than 40 countries and regions.

GESAC owns four production headquarters and one national level research center domestically, and three sales branches and one production base overseas. We undertook and completed several development programs independently, including the "National Science and Technology Support Programs", the "National Torch Program Projects", and the "National Key Projects" and so on. GESAC was awarded as "Key Enterprise for Strategic Emerging Industry", "Innovative Enterprise" and "Enterprise with Advanced Technology".



Product Chain

GESAC has a complete tungsten product chain from tungsten ore to tungsten powder, cemented carbide products and cutting tools.





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HOLEMAKING TOOLS INDEX






























Content of Drills Series



Drills Series	Description and profile	Point Angle	Shank Type	Coating/Grade	Drilling Depth L/D	Coolant Type	Tool Type	Dimension Range	Hole accuracy class	Dimension Table Page	Cutting Parameters Page
D918S	3D External Coolant Twist Drill 	140°					D918S-A3N	D3~D20	IT9-10	P015	P069
	3D Internal Coolant Twist Drill 	140°					D918S-A3C	D3~D20	IT9-10	P019	P069
	5D External Coolant Twist Drill 	140°					D918S-A5N	D3~D20	IT9-10	P022	P069
	5D Internal Coolant Twist Drill 	140°					D918S-A5C	D3~D20	IT9-10	P025	P069
D968S	3D External Coolant Twist Drill 	140°					D968S-A3N	D1~D20	IT9-10	P028	P071
	3D Internal Coolant Twist Drill 	140°					D968S-A3C	D3~D20	IT9-10	P032	P071
	5D External Coolant Twist Drill 	140°					D968S-A5N	D1~D20	IT9-10	P035	P071
	5D Internal Coolant Twist Drill 	140°					D968S-A5C	D3~D20	IT9-10	P037	P071
D938	3D External Coolant Twist Drill 	140°					D938-A3N	D1~D20	IT9-10	P040	P073
	3D Internal Coolant Twist Drill 	140°					D938-A3C	D2~D20	IT9-10	P044	P073
	5D External Coolant Twist Drill 	140°					D938-A5N	D1~D20	IT9-10	P048	P073
	5D Internal Coolant Twist Drill 	140°					D938-A5C	D2~D20	IT9-10	P052	P073
	8D Internal Coolant Twist Drill 	140°					D938-A8C	D2.8~D20	IT9-10	P056	P075
	12D Internal Coolant Twist Drill 	135°					D938-A12C	D3~D16	IT9-10	P059	P075
	15D Internal Coolant Twist Drill 	135°					D938-A15C	D3~D14	IT9-10	P060	P075
D928	5D External Coolant Twist Drill 	140°					D928-A5N	D3~D16	IT9-10	P061	P077
	5D Internal Coolant Twist Drill 	140°					D928-A5C	D5~D16	IT9-10	P062	P077
D966	5D External Coolant Twist Drill 	140°					D966-A5N	D3~D16	IT9-10	P063	P079
	5D Internal Coolant Twist Drill 	140°					D966-A5C	D3~D16	IT9-10	P064	P079

● Most Suitable ○ Suitable

WorkPiece Material																	
P			M	K		N				S	H						
1	2	3	4	5	6	7	1	2	3	1	2	3	4	1	2		
Carbon Steels, Alloy Steels				Alloy Steels, Tool Steels	PH and Ferritic/ Martensitic Stainless Steel		Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
(<35HRC)				(35-48HRC)				(<35HRC)	(35-45HRC)	(Si<12%)	(Si>12%)	(<HB 200)		(<HB 450)	(<HB400)	(45-55HRC)	(55-60HRC)
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙								
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Content of Drills Series

Drills Series	Description and profile	Point Angle	Shank Type	Coating/Grade	Drilling Depth L/D	Coolant Type	Tool Type	Dimension Range	Hole accuracy class	Dimension Table Page	Cutting Parameters Page
D998	3D External Coolant Twist Drill 	140°					D998-Y3N	D4~D16	IT9-10	P065	P080
D101	90° NC Centre Drill 	90°					D101-AMN	D4~D20		P066	P081
D102	120° NC Centre Drill 	120°					D102-ANN	D5~D20		P067	P081
D103	145° NC Centre Drill 	145°					D103-APN	D5~D20		P068	P081
GHDS	QPMG Drilling Insert 			GA4230 GM3220 GS4130			QPMG	D14~D40	IT12-13	P085	P103
	GHDS Holder 				2D-5D		GHDS			P087	P103
SPMG/ WCMT	SPMG Cutting Insert 			GA4230 GS4130				D14~D40	IT12-13	P096	-
	WCMT Cutting Insert 			GA4230						P097	-
GSD	MCMG Drilling Insert 			GM3225			MCMG	D13~D36	IT9-IT10	P100	P104
	GSD Holder 				2D-26D		GSD			P101	P104

 Most Suitable
  Suitable

WorkPiece Material																
P			M	K		N				S	H					
1	2	3	4	5	6	7	1	2	3	1	2	3	4	1	2	
Carbon Steels, Alloy Steels		Alloy Steels, Tool Steels	PH and Ferritic/ Martensitic Stainless Steel		Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys		Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
(<35HRC)		(35-48HRC)				(<35HRC)	(35-45HRC)	(Si<12%)	(Si>12%)	(<HB 200)		(<HB 450)	(<HB400)	(45-55HRC)	(55-60HRC)	
			○				○	○							◎	○
	○		○	○			◎		◎	○						
	○		○	○			◎		◎	○						
	○		○	○			◎		◎	○						
	◎		○	○	○		◎	○					○	○		
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	◎		○	○	○		◎	○								
	◎		○	○	○		◎	○								

Explanation

	Sign	Notes
Shank Type		Cylindrical Shank
		DIN6535HA Shank
Coating		TiAlN Coating
		AlTiN NanoCoating
		AlCrN/TiSiN Multiple Coating
Tool Type		External Coolant Twist Drill
		Internal Coolant Twist Drill
		Centre Drill
ISO Material classification		ISO Steel
		ISO Stainless Steel
		ISO Cast Iron
		ISO Nonferrous Metal
		ISO HRSA
		Hardened Material
Length/Diameter Ratio		3D
		5D
		8D
		12D
		15D

	Sign	Notes
Dimension Data	DC	Diameter of Drill
	DMM	Diameter of Shank
	LCF	Flute Length
	LU	Recommend Maximum Drilling Depth
	LS	Shank Length
	OAL	Overall Length
	PL	Drill Tip Height
	LPR	Hangout Length
	DF	Flange Diameter
	IC	Internal Cycle Diameter
	S	Tip Height
	RE	Corner Radius
	D1	Internal Hole Diameter
B	Insert Thickness	

A

SOLID CARBIDE DRILL



Solid Carbide Drills Identification System

D938 —



Workpiece Material	①Drills Series	
Steel	D918S	Twist Drills for Steel
Stainless Steel	D968S	Twist Drills for Stainless Steel
Steel	D938	Twist Drills for Steel
Cast Iron	D928	Twist Drills for Cast Iron
Aluminium Alloy	D966	Twist Drills for Aluminium Alloy
Hardened Steel	D998	Twist Drills for Hardened Steel
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

A 5 C - 1200

②

②Shank Type	
A	DIN6535HA
E	DIN6535HE
B	DIN6535HB
Y	Straight Cylindrical Shank
M	Mose Shank

③

③Drilling Depth	
3	Depth ≤ 3D
5	Depth ≤ 5D
8	Depth ≤ 8D
12	Depth ≤ 12D
15	Depth ≤ 15D
M	90°Point Angle
N	120°Point Angle
P	145°Point Angle

④

④Coolant Type	
C	Internal Coolant
N	External Coolant

⑤

⑤Drill Diameter	
0325	Dia: Φ3.25
0600	Dia: Φ6.00
1200	Dia: Φ12.00

Solid Carbide Drill Product Lineup

D918S Series High Performance Twist Drill for Steel

- Suitable for Drilling mild Steel, Interrupted cutting, defective Coolant 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



D968S Series High Efficient Twist Drill for Stainless Steel

- Suitable for high efficient Drilling of stainless steel, carbon steel, alloy steel, heat-resistant alloys and titanium alloys, etc
- Unique bottom edge design--stronger chip breaking capability and larger chip holding space
- New substrate coating contributes to superior toughness and wear resistance
- Large groove design provides good chip evacuation performance

D938 Series Twist Drill for Steel

- Suitable for Steel ($\leq 48\text{HRC}$) and Cast Iron
- Unique cutting edge treatment, consolidates the cutting edge, improves the Drilling performance and stability
- New AlTiN-nano coating, superior wear-resistance and longer service life
- Straight cutting edge, improves tool strength



D938 Series 12D-15D Deep Hole Internal Coolant Twist Drill

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

Solid Carbide Drill Product Lineup

D928 Series Twist Drill for Cast Iron

- Suitable for Drilling cast iron of automobile industry and other industries
- Wave formed cutting edge, lowers machining torque
- Four margin design, improves hole wall quality and accuracy
- Widened chisel edge design, strengthen Drill point



D966 Series Twist Drill for Aluminium Alloy

- Suitable for the processing of aluminium alloy, copper alloy and other nonferrous alloy
- High precision surface treatment technology for smoother chip removal
- Unique edge design makes cutting easily

D998 Series Twist Drill for Hardened Steel

- Suitable for Drilling hardened steel
- Large core thickness, small helix angle, high rigidity and strength
- X-shaped Drills tip, excellent self-center capability
- Radius Drills point, contributes to excellent hole-wall quality



D101/D102/D103 NC Centre Drill

- Suitable for Drilling the center hole and chamfer
- Suitable for Drilling steel, cast iron, aluminum alloy, copper alloy

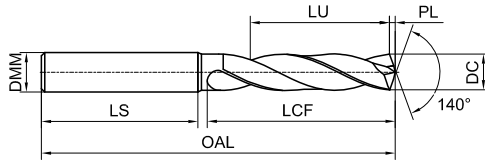
Application Summary of Solid Carbide Drills

ISO Material Group	GESAC Material Group	Internal Coolant Drilling					External Coolant Drilling		
		3*D	5*D	8*D	12*D	15*D	chamfer/ center hole	3*D	5*D
P	Carbon Steel, Alloy Steel (<35HRC)	D938 D918S		D938	D938	D938		D938 D918S	
	Alloy Steel (35-48HRC)								
	PH and Ferritic/ Martensitic (<35HRC)								
M	Stainless Steel	D968S						D968S	
K	Gray Cast Iron, Ductile Cast Iron (<32HRC)	D938 D928						D938 D928	
	High Alloy Cast Iron (35-45HRC)								
N	Forged Aluminium Alloys Cast Aluminium Alloys (Si≤12%)	D966					D101 D102 D103	D966	
	Cast Aluminium Alloys (Si>12%)								
	Copper Alloys (<HB200)								
	复合材料 Composite								
S	Heat Resistant Super Alloys (<HB450)	D968S						D968S	
	Titanium Alloys (<HB400)								
H	Hardened Steels (45-60HRC)							D998	
	Hardened Steels (60-65HRC)								

D918S-A3N NEW



High Performance 3D External Coolant Twist Drills For Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A3N-0300	3.00	20	62	6	36	15.5	0.55	●
D918S-A3N-0310	3.10	20	62	6	36	15.4	0.56	●
D918S-A3N-0320	3.20	20	62	6	36	15.2	0.58	●
D918S-A3N-0330	3.30	20	62	6	36	15.1	0.60	●
D918S-A3N-0340	3.40	20	62	6	36	14.9	0.62	●
D918S-A3N-0350	3.50	20	62	6	36	14.8	0.64	●
D918S-A3N-0360	3.60	20	62	6	36	14.6	0.66	●
D918S-A3N-0370	3.70	20	62	6	36	14.5	0.67	●
D918S-A3N-0380	3.80	24	66	6	36	18.3	0.69	●
D918S-A3N-0390	3.90	24	66	6	36	18.2	0.71	●
D918S-A3N-0400	4.00	24	66	6	36	18.0	0.73	●
D918S-A3N-0410	4.10	24	66	6	36	17.9	0.75	●
D918S-A3N-0415	4.15	24	66	6	36	17.8	0.76	○
D918S-A3N-0420	4.20	24	66	6	36	17.7	0.76	●
D918S-A3N-0430	4.30	24	66	6	36	17.6	0.78	●
D918S-A3N-0440	4.40	24	66	6	36	17.4	0.80	●
D918S-A3N-0450	4.50	24	66	6	36	17.3	0.82	●
D918S-A3N-0460	4.60	24	66	6	36	17.1	0.84	●
D918S-A3N-0470	4.70	24	66	6	36	17.0	0.86	●
D918S-A3N-0480	4.80	28	66	6	36	20.8	0.87	●
D918S-A3N-0490	4.90	28	66	6	36	20.7	0.89	●
D918S-A3N-0500	5.00	28	66	6	36	20.5	0.91	●
D918S-A3N-0510	5.10	28	66	6	36	20.4	0.93	●
D918S-A3N-0520	5.20	28	66	6	36	20.2	0.95	●
D918S-A3N-0530	5.30	28	66	6	36	20.1	0.96	●
D918S-A3N-0540	5.40	28	66	6	36	19.9	0.98	●
D918S-A3N-0550	5.50	28	66	6	36	19.8	1.00	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A3N-0560	5.60	28	66	6	36	19.6	1.02	●
D918S-A3N-0570	5.70	28	66	6	36	19.5	1.04	●
D918S-A3N-0580	5.80	28	66	6	36	19.3	1.06	●
D918S-A3N-0590	5.90	28	66	6	36	19.2	1.07	●
D918S-A3N-0600	6.00	28	66	6	36	19.0	1.09	●
D918S-A3N-0610	6.10	34	79	8	36	24.9	1.11	●
D918S-A3N-0620	6.20	34	79	8	36	24.7	1.13	●
D918S-A3N-0630	6.30	34	79	8	36	24.6	1.15	●
D918S-A3N-0640	6.40	34	79	8	36	24.4	1.16	●
D918S-A3N-0650	6.50	34	79	8	36	24.3	1.18	●
D918S-A3N-0660	6.60	34	79	8	36	24.1	1.20	●
D918S-A3N-0670	6.70	34	79	8	36	24.0	1.22	●
D918S-A3N-0680	6.80	34	79	8	36	23.8	1.24	●
D918S-A3N-0690	6.90	34	79	8	36	23.7	1.26	●
D918S-A3N-0700	7.00	34	79	8	36	23.5	1.27	●
D918S-A3N-0710	7.10	41	79	8	36	30.4	1.29	●
D918S-A3N-0720	7.20	41	79	8	36	30.2	1.31	●
D918S-A3N-0730	7.30	41	79	8	36	30.1	1.33	●
D918S-A3N-0740	7.40	41	79	8	36	29.9	1.35	●
D918S-A3N-0750	7.50	41	79	8	36	29.8	1.36	●
D918S-A3N-0760	7.60	41	79	8	36	29.6	1.38	●
D918S-A3N-0770	7.70	41	79	8	36	29.5	1.40	●
D918S-A3N-0780	7.80	41	79	8	36	29.3	1.42	●
D918S-A3N-0790	7.90	41	79	8	36	29.2	1.44	●
D918S-A3N-0800	8.00	41	79	8	36	29.0	1.46	●
D918S-A3N-0810	8.10	47	89	10	40	34.9	1.47	●
D918S-A3N-0820	8.20	47	89	10	40	34.7	1.49	●

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Workpiece Material													
P			M		K		N			S		H	
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		○	○								

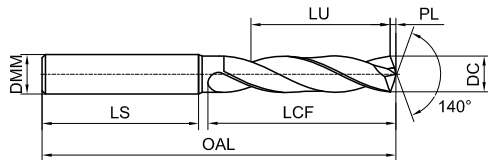
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P069

D918S-A3N NEW



High Performance 3D External Coolant Twist Drills For Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A3N-0830	8.30	47	89	10	40	34.6	1.51	●
D918S-A3N-0840	8.40	47	89	10	40	34.4	1.53	●
D918S-A3N-0850	8.50	47	89	10	40	34.3	1.55	●
D918S-A3N-0860	8.60	47	89	10	40	34.1	1.57	●
D918S-A3N-0870	8.70	47	89	10	40	34.0	1.58	●
D918S-A3N-0880	8.80	47	89	10	40	33.8	1.60	●
D918S-A3N-0890	8.90	47	89	10	40	33.7	1.62	●
D918S-A3N-0900	9.00	47	89	10	40	33.5	1.64	●
D918S-A3N-0910	9.10	47	89	10	40	33.4	1.66	●
D918S-A3N-0920	9.20	47	89	10	40	33.2	1.67	●
D918S-A3N-0930	9.30	47	89	10	40	33.1	1.69	●
D918S-A3N-0940	9.40	47	89	10	40	32.9	1.71	●
D918S-A3N-0950	9.50	47	89	10	40	32.8	1.73	●
D918S-A3N-0960	9.60	47	89	10	40	32.6	1.75	●
D918S-A3N-0970	9.70	47	89	10	40	32.5	1.77	●
D918S-A3N-0980	9.80	47	89	10	40	32.3	1.78	●
D918S-A3N-0990	9.90	47	89	10	40	32.2	1.80	●
D918S-A3N-1000	10.00	47	89	10	40	32.0	1.82	●
D918S-A3N-1010	10.10	55	102	12	45	39.9	1.84	●
D918S-A3N-1020	10.20	55	102	12	45	39.7	1.86	●
D918S-A3N-1030	10.30	55	102	12	45	39.6	1.87	●
D918S-A3N-1040	10.40	55	102	12	45	39.4	1.89	●
D918S-A3N-1050	10.50	55	102	12	45	39.3	1.91	●
D918S-A3N-1060	10.60	55	102	12	45	39.1	1.93	●
D918S-A3N-1070	10.70	55	102	12	45	39.0	1.95	●
D918S-A3N-1080	10.80	55	102	12	45	38.8	1.97	●
D918S-A3N-1085	10.85	55	102	12	45	38.7	1.97	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A3N-1090	10.90	55	102	12	45	38.7	1.98	●
D918S-A3N-1100	11.00	55	102	12	45	38.5	2.00	●
D918S-A3N-1110	11.10	55	102	12	45	38.4	2.02	●
D918S-A3N-1120	11.20	55	102	12	45	38.2	2.04	●
D918S-A3N-1130	11.30	55	102	12	45	38.1	2.06	●
D918S-A3N-1140	11.40	55	102	12	45	37.9	2.07	●
D918S-A3N-1150	11.50	55	102	12	45	37.8	2.09	●
D918S-A3N-1160	11.60	55	102	12	45	37.6	2.11	○
D918S-A3N-1170	11.70	55	102	12	45	37.5	2.13	●
D918S-A3N-1180	11.80	55	102	12	45	37.3	2.15	●
D918S-A3N-1190	11.90	55	102	12	45	37.2	2.17	●
D918S-A3N-1200	12.00	55	102	12	45	37.0	2.18	●
D918S-A3N-1205	12.05	55	102	12	45	36.9	2.19	○
D918S-A3N-1210	12.10	60	107	14	45	41.9	2.20	●
D918S-A3N-1220	12.20	60	107	14	45	41.7	2.22	●
D918S-A3N-1230	12.30	60	107	14	45	41.6	2.24	●
D918S-A3N-1240	12.40	60	107	14	45	41.4	2.26	○
D918S-A3N-1250	12.50	60	107	14	45	41.3	2.27	●
D918S-A3N-1260	12.60	60	107	14	45	41.1	2.29	●
D918S-A3N-1270	12.70	60	107	14	45	41.0	2.31	●
D918S-A3N-1280	12.80	60	107	14	45	40.8	2.33	●
D918S-A3N-1290	12.90	60	107	14	45	40.7	2.35	○
D918S-A3N-1300	13.00	60	107	14	45	40.5	2.37	●
D918S-A3N-1310	13.10	60	107	14	45	40.4	2.38	○
D918S-A3N-1320	13.20	60	107	14	45	40.2	2.40	●
D918S-A3N-1330	13.30	60	107	14	45	40.1	2.42	○
D918S-A3N-1340	13.40	60	107	14	45	39.9	2.44	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○		○	○								

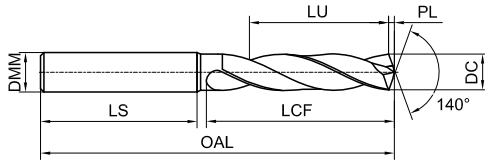
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P069

D918S-A3N NEW



High Performance 3D External Coolant Twist Drills For Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A3N-1350	13.50	60	107	14	45	39.8	2.46	●
D918S-A3N-1360	13.60	60	107	14	45	39.6	2.47	○
D918S-A3N-1370	13.70	60	107	14	45	39.5	2.49	○
D918S-A3N-1380	13.80	60	107	14	45	39.3	2.51	●
D918S-A3N-1390	13.90	60	107	14	45	39.2	2.53	○
D918S-A3N-1400	14.00	60	107	14	45	39.0	2.55	●
D918S-A3N-1410	14.10	65	115	16	48	43.9	2.57	●
D918S-A3N-1420	14.20	65	115	16	48	43.7	2.58	●
D918S-A3N-1425	14.25	65	115	16	48	43.6	2.59	○
D918S-A3N-1430	14.30	65	115	16	48	43.6	2.60	●
D918S-A3N-1440	14.40	65	115	16	48	43.4	2.62	○
D918S-A3N-1450	14.50	65	115	16	48	43.3	2.64	●
D918S-A3N-1460	14.60	65	115	16	48	43.1	2.66	●
D918S-A3N-1470	14.70	65	115	16	48	43.0	2.68	○
D918S-A3N-1480	14.80	65	115	16	48	42.8	2.69	●
D918S-A3N-1490	14.90	65	115	16	48	42.7	2.71	○
D918S-A3N-1500	15.00	65	115	16	48	42.5	2.73	●
D918S-A3N-1510	15.10	65	115	16	48	42.4	2.75	○
D918S-A3N-1520	15.20	65	115	16	48	42.2	2.77	●
D918S-A3N-1530	15.30	65	115	16	48	42.1	2.78	●
D918S-A3N-1540	15.40	65	115	16	48	41.9	2.80	○
D918S-A3N-1550	15.50	65	115	16	48	41.8	2.82	●
D918S-A3N-1560	15.60	65	115	16	48	41.6	2.84	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A3N-1570	15.70	65	115	16	48	41.5	2.86	●
D918S-A3N-1580	15.80	65	115	16	48	41.3	2.88	○
D918S-A3N-1590	15.90	65	115	16	48	41.2	2.89	○
D918S-A3N-1600	16.00	65	115	16	48	41.0	2.91	●
D918S-A3N-1620	16.20	73	123	18	48	48.7	2.95	○
D918S-A3N-1630	16.30	73	123	18	48	48.6	2.97	○
D918S-A3N-1640	16.40	73	123	18	48	48.4	2.98	○
D918S-A3N-1650	16.50	73	123	18	48	48.3	3.00	○
D918S-A3N-1660	16.60	73	123	18	48	48.1	3.02	○
D918S-A3N-1670	16.70	73	123	18	48	48.0	3.04	○
D918S-A3N-1680	16.80	73	123	18	48	47.8	3.06	○
D918S-A3N-1700	17.00	73	123	18	48	47.5	3.09	○
D918S-A3N-1720	17.20	73	123	18	48	47.2	3.13	○
D918S-A3N-1730	17.30	73	123	18	48	47.1	3.15	○
D918S-A3N-1740	17.40	73	123	18	48	46.9	3.17	○
D918S-A3N-1750	17.50	73	123	18	48	46.8	3.18	○
D918S-A3N-1760	17.60	73	123	18	48	46.6	3.20	○
D918S-A3N-1770	17.70	73	123	18	48	46.5	3.22	○
D918S-A3N-1780	17.80	73	123	18	48	46.3	3.24	○
D918S-A3N-1800	18.00	73	123	18	48	46.0	3.28	●
D918S-A3N-1840	18.40	79	131	20	50	51.4	3.35	○
D918S-A3N-1850	18.50	79	131	20	50	51.3	3.37	○
D918S-A3N-1860	18.60	79	131	20	50	51.1	3.38	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		○	○								

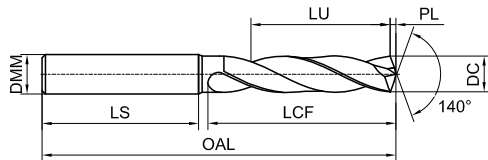
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Recommended Cutting Data ※ P069

D918S-A3N NEW



High Performance 3D External Coolant Twist Drills For Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A3N-1880	18.80	79	131	20	50	50.8	3.42	○
D918S-A3N-1900	19.00	79	131	20	50	50.5	3.46	○
D918S-A3N-1910	19.10	79	131	20	50	50.4	3.48	○
D918S-A3N-1920	19.20	79	131	20	50	50.2	3.49	○
D918S-A3N-1950	19.50	79	131	20	50	49.8	3.55	○
D918S-A3N-1980	19.80	79	131	20	50	49.3	3.60	○
D918S-A3N-1990	19.90	79	131	20	50	49.2	3.62	○
D918S-A3N-2000	20.00	79	131	20	50	49.0	3.64	●

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

Workpiece Material													
P			M	K		N				S	H		
1	2	3	1	2	3	1	2	3	4	5	1	2	3
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		○	○								

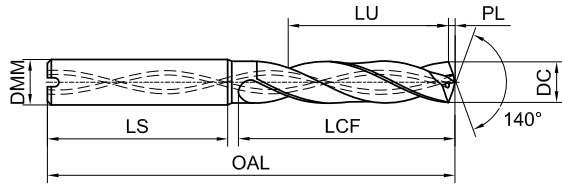
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P069

D918S-A3C NEW



High Performance 3D Internal Coolant Twist Drills For Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A3C-0300	3.00	20	62	6	36	15.5	0.55	●
D918S-A3C-0310	3.10	20	62	6	36	15.4	0.56	●
D918S-A3C-0320	3.20	20	62	6	36	15.2	0.58	●
D918S-A3C-0330	3.30	20	62	6	36	15.1	0.60	●
D918S-A3C-0340	3.40	20	62	6	36	14.9	0.62	●
D918S-A3C-0350	3.50	20	62	6	36	14.8	0.64	●
D918S-A3C-0360	3.60	20	62	6	36	14.6	0.66	●
D918S-A3C-0370	3.70	20	62	6	36	14.5	0.67	●
D918S-A3C-0380	3.80	24	66	6	36	18.3	0.69	●
D918S-A3C-0390	3.90	24	66	6	36	18.2	0.71	●
D918S-A3C-0400	4.00	24	66	6	36	18.0	0.73	●
D918S-A3C-0410	4.10	24	66	6	36	17.9	0.75	●
D918S-A3C-0420	4.20	24	66	6	36	17.7	0.76	●
D918S-A3C-0430	4.30	24	66	6	36	17.6	0.78	●
D918S-A3C-0440	4.40	24	66	6	36	17.4	0.80	●
D918S-A3C-0450	4.50	24	66	6	36	17.3	0.82	●
D918S-A3C-0460	4.60	24	66	6	36	17.1	0.84	●
D918S-A3C-0470	4.70	24	66	6	36	17.0	0.86	●
D918S-A3C-0480	4.80	28	66	6	36	20.8	0.87	●
D918S-A3C-0490	4.90	28	66	6	36	20.7	0.89	●
D918S-A3C-0500	5.00	28	66	6	36	20.5	0.91	●
D918S-A3C-0510	5.10	28	66	6	36	20.4	0.93	●
D918S-A3C-0520	5.20	28	66	6	36	20.2	0.95	●
D918S-A3C-0530	5.30	28	66	6	36	20.1	0.96	●
D918S-A3C-0540	5.40	28	66	6	36	19.9	0.98	●
D918S-A3C-0550	5.50	28	66	6	36	19.8	1.00	●
D918S-A3C-0560	5.60	28	66	6	36	19.6	1.02	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A3C-0570	5.70	28	66	6	36	19.5	1.04	●
D918S-A3C-0580	5.80	28	66	6	36	19.3	1.06	●
D918S-A3C-0590	5.90	28	66	6	36	19.2	1.07	●
D918S-A3C-0600	6.00	28	66	6	36	19.0	1.09	●
D918S-A3C-0610	6.10	34	79	8	36	24.9	1.11	●
D918S-A3C-0620	6.20	34	79	8	36	24.7	1.13	○
D918S-A3C-0630	6.30	34	79	8	36	24.6	1.15	○
D918S-A3C-0640	6.40	34	79	8	36	24.4	1.16	○
D918S-A3C-0650	6.50	34	79	8	36	24.3	1.18	●
D918S-A3C-0660	6.60	34	79	8	36	24.1	1.20	○
D918S-A3C-0670	6.70	34	79	8	36	24.0	1.22	○
D918S-A3C-0680	6.80	34	79	8	36	23.8	1.24	●
D918S-A3C-0690	6.90	34	79	8	36	23.7	1.26	●
D918S-A3C-0700	7.00	34	79	8	36	23.5	1.27	●
D918S-A3C-0710	7.10	41	79	8	36	30.4	1.29	○
D918S-A3C-0720	7.20	41	79	8	36	30.2	1.31	○
D918S-A3C-0730	7.30	41	79	8	36	30.1	1.33	○
D918S-A3C-0740	7.40	41	79	8	36	29.9	1.35	●
D918S-A3C-0750	7.50	41	79	8	36	29.8	1.36	●
D918S-A3C-0760	7.60	41	79	8	36	29.6	1.38	○
D918S-A3C-0770	7.70	41	79	8	36	29.5	1.40	○
D918S-A3C-0780	7.80	41	79	8	36	29.3	1.42	●
D918S-A3C-0790	7.90	41	79	8	36	29.2	1.44	○
D918S-A3C-0800	8.00	41	79	8	36	29.0	1.46	●
D918S-A3C-0810	8.10	47	89	10	40	34.9	1.47	○
D918S-A3C-0820	8.20	47	89	10	40	34.7	1.49	●
D918S-A3C-0830	8.30	47	89	10	40	34.6	1.51	●

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool Unit(mm)

Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

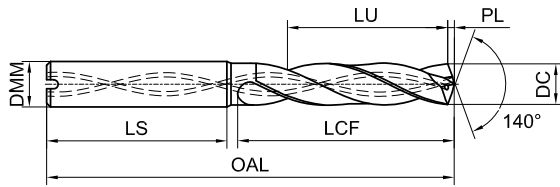
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Recommended Cutting Data ※ P069

D918S-A3C NEW



High Performance 3D Internal Coolant Twist Drills For Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A3C-0840	8.40	47	89	10	40	34.4	1.53	●
D918S-A3C-0850	8.50	47	89	10	40	34.3	1.55	●
D918S-A3C-0860	8.60	47	89	10	40	34.1	1.57	●
D918S-A3C-0870	8.70	47	89	10	40	34.0	1.58	●
D918S-A3C-0880	8.80	47	89	10	40	33.8	1.60	●
D918S-A3C-0890	8.90	47	89	10	40	33.7	1.62	●
D918S-A3C-0900	9.00	47	89	10	40	33.5	1.64	●
D918S-A3C-0910	9.10	47	89	10	40	33.4	1.66	○
D918S-A3C-0920	9.20	47	89	10	40	33.2	1.67	○
D918S-A3C-0930	9.30	47	89	10	40	33.1	1.69	○
D918S-A3C-0940	9.40	47	89	10	40	32.9	1.71	○
D918S-A3C-0950	9.50	47	89	10	40	32.8	1.73	●
D918S-A3C-0960	9.60	47	89	10	40	32.6	1.75	○
D918S-A3C-0970	9.70	47	89	10	40	32.5	1.77	●
D918S-A3C-0980	9.80	47	89	10	40	32.3	1.78	●
D918S-A3C-0990	9.90	47	89	10	40	32.2	1.80	○
D918S-A3C-1000	10.00	47	89	10	40	32.0	1.82	●
D918S-A3C-1010	10.10	55	102	12	45	39.9	1.84	●
D918S-A3C-1020	10.20	55	102	12	45	39.7	1.86	●
D918S-A3C-1030	10.30	55	102	12	45	39.6	1.87	●
D918S-A3C-1040	10.40	55	102	12	45	39.4	1.89	●
D918S-A3C-1050	10.50	55	102	12	45	39.3	1.91	●
D918S-A3C-1060	10.60	55	102	12	45	39.1	1.93	○
D918S-A3C-1070	10.70	55	102	12	45	39.0	1.95	○
D918S-A3C-1080	10.80	55	102	12	45	38.8	1.97	●
D918S-A3C-1090	10.90	55	102	12	45	38.7	1.98	○
D918S-A3C-1100	11.00	55	102	12	45	38.5	2.00	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A3C-1110	11.10	55	102	12	45	38.4	2.02	○
D918S-A3C-1120	11.20	55	102	12	45	38.2	2.04	●
D918S-A3C-1130	11.30	55	102	12	45	38.1	2.06	○
D918S-A3C-1140	11.40	55	102	12	45	37.9	2.07	○
D918S-A3C-1150	11.50	55	102	12	45	37.8	2.09	○
D918S-A3C-1160	11.60	55	102	12	45	37.6	2.11	○
D918S-A3C-1170	11.70	55	102	12	45	37.5	2.13	○
D918S-A3C-1180	11.80	55	102	12	45	37.3	2.15	●
D918S-A3C-1190	11.90	55	102	12	45	37.2	2.17	○
D918S-A3C-1200	12.00	55	102	12	45	37.0	2.18	●
D918S-A3C-1210	12.10	60	107	14	45	41.9	2.20	○
D918S-A3C-1220	12.20	60	107	14	45	41.7	2.22	●
D918S-A3C-1230	12.30	60	107	14	45	41.6	2.24	○
D918S-A3C-1240	12.40	60	107	14	45	41.4	2.26	○
D918S-A3C-1250	12.50	60	107	14	45	41.3	2.27	●
D918S-A3C-1260	12.60	60	107	14	45	41.1	2.29	○
D918S-A3C-1270	12.70	60	107	14	45	41.0	2.31	○
D918S-A3C-1280	12.80	60	107	14	45	40.8	2.33	○
D918S-A3C-1290	12.90	60	107	14	45	40.7	2.35	○
D918S-A3C-1300	13.00	60	107	14	45	40.5	2.37	●
D918S-A3C-1310	13.10	60	107	14	45	40.4	2.38	○
D918S-A3C-1320	13.20	60	107	14	45	40.2	2.40	○
D918S-A3C-1330	13.30	60	107	14	45	40.1	2.42	○
D918S-A3C-1340	13.40	60	107	14	45	39.9	2.44	○
D918S-A3C-1350	13.50	60	107	14	45	39.8	2.46	●
D918S-A3C-1360	13.60	60	107	14	45	39.6	2.47	○
D918S-A3C-1370	13.70	60	107	14	45	39.5	2.49	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

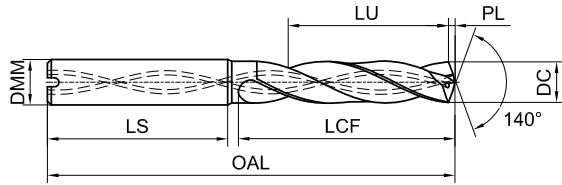
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P069

D918S-A3C NEW



High Performance 3D Internal Coolant Twist Drills For Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A3C-1380	13.80	60	107	14	45	39.3	2.51	○
D918S-A3C-1390	13.90	60	107	14	45	39.2	2.53	○
D918S-A3C-1400	14.00	60	107	14	45	39.0	2.55	●
D918S-A3C-1410	14.10	65	115	16	48	43.9	2.57	○
D918S-A3C-1420	14.20	65	115	16	48	43.7	2.58	●
D918S-A3C-1430	14.30	65	115	16	48	43.6	2.60	○
D918S-A3C-1440	14.40	65	115	16	48	43.4	2.62	○
D918S-A3C-1450	14.50	65	115	16	48	43.3	2.64	●
D918S-A3C-1460	14.60	65	115	16	48	43.1	2.66	○
D918S-A3C-1470	14.70	65	115	16	48	43.0	2.68	○
D918S-A3C-1480	14.80	65	115	16	48	42.8	2.69	○
D918S-A3C-1490	14.90	65	115	16	48	42.7	2.71	○
D918S-A3C-1500	15.00	65	115	16	48	42.5	2.73	●
D918S-A3C-1510	15.10	65	115	16	48	42.4	2.75	○
D918S-A3C-1520	15.20	65	115	16	48	42.2	2.77	○
D918S-A3C-1530	15.30	65	115	16	48	42.1	2.78	●
D918S-A3C-1540	15.40	65	115	16	48	41.9	2.80	○
D918S-A3C-1550	15.50	65	115	16	48	41.8	2.82	○
D918S-A3C-1560	15.60	65	115	16	48	41.6	2.84	○
D918S-A3C-1570	15.70	65	115	16	48	41.5	2.86	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A3C-1580	15.80	65	115	16	48	41.3	2.88	●
D918S-A3C-1590	15.90	65	115	16	48	41.2	2.89	○
D918S-A3C-1600	16.00	65	115	16	48	41.0	2.91	●
D918S-A3C-1650	16.50	73	123	18	48	48.3	3.00	○
D918S-A3C-1670	16.70	73	123	18	48	48.0	3.04	○
D918S-A3C-1680	16.80	73	123	18	48	47.8	3.06	○
D918S-A3C-1700	17.00	73	123	18	48	47.5	3.09	○
D918S-A3C-1750	17.50	73	123	18	48	46.8	3.18	○
D918S-A3C-1770	17.70	73	123	18	48	46.5	3.22	○
D918S-A3C-1780	17.80	73	123	18	48	46.3	3.24	○
D918S-A3C-1800	18.00	73	123	18	48	46.0	3.28	○
D918S-A3C-1850	18.50	79	131	20	50	51.3	3.37	○
D918S-A3C-1870	18.70	79	131	20	50	51.0	3.40	○
D918S-A3C-1880	18.80	79	131	20	50	50.8	3.42	○
D918S-A3C-1900	19.00	79	131	20	50	50.5	3.46	○
D918S-A3C-1950	19.50	79	131	20	50	49.8	3.55	○
D918S-A3C-1960	19.60	79	131	20	50	49.6	3.57	○
D918S-A3C-1980	19.80	79	131	20	50	49.3	3.60	○
D918S-A3C-2000	20.00	79	131	20	50	49.0	3.64	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

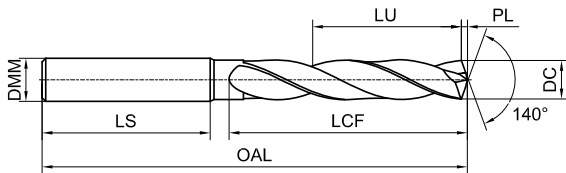
Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P069

D918S-A5N NEW

High Performance 5D External Coolant Twist Drills For Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A5N-0300	3.00	28	66	6	36	23.5	0.55	●
D918S-A5N-0310	3.10	28	66	6	36	23.4	0.56	○
D918S-A5N-0320	3.20	28	66	6	36	23.2	0.58	●
D918S-A5N-0330	3.30	28	66	6	36	23.1	0.60	●
D918S-A5N-0340	3.40	28	66	6	36	22.9	0.62	●
D918S-A5N-0350	3.50	28	66	6	36	22.8	0.64	●
D918S-A5N-0360	3.60	28	66	6	36	22.6	0.66	○
D918S-A5N-0370	3.70	28	66	6	36	22.5	0.67	○
D918S-A5N-0380	3.80	36	74	6	36	30.3	0.69	○
D918S-A5N-0390	3.90	36	74	6	36	30.2	0.71	●
D918S-A5N-0400	4.00	36	74	6	36	30.0	0.73	●
D918S-A5N-0410	4.10	36	74	6	36	29.9	0.75	●
D918S-A5N-0420	4.20	36	74	6	36	29.7	0.76	●
D918S-A5N-0430	4.30	36	74	6	36	29.6	0.78	●
D918S-A5N-0440	4.40	36	74	6	36	29.4	0.80	○
D918S-A5N-0450	4.50	36	74	6	36	29.3	0.82	●
D918S-A5N-0460	4.60	36	74	6	36	29.1	0.84	○
D918S-A5N-0470	4.70	36	74	6	36	29.0	0.86	●
D918S-A5N-0480	4.80	44	82	6	36	36.8	0.87	●
D918S-A5N-0490	4.90	44	82	6	36	36.7	0.89	○
D918S-A5N-0500	5.00	44	82	6	36	36.5	0.91	●
D918S-A5N-0510	5.10	44	82	6	36	36.4	0.93	●
D918S-A5N-0520	5.20	44	82	6	36	36.2	0.95	●
D918S-A5N-0530	5.30	44	82	6	36	36.1	0.96	●
D918S-A5N-0540	5.40	44	82	6	36	35.9	0.98	○
D918S-A5N-0550	5.50	44	82	6	36	35.8	1.00	●
D918S-A5N-0555	5.55	44	82	6	36	35.7	1.01	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A5N-0560	5.60	44	82	6	36	35.6	1.02	●
D918S-A5N-0570	5.70	44	82	6	36	35.5	1.04	●
D918S-A5N-0580	5.80	44	82	6	36	35.3	1.06	●
D918S-A5N-0590	5.90	44	82	6	36	35.2	1.07	●
D918S-A5N-0600	6.00	44	82	6	36	35.0	1.09	●
D918S-A5N-0610	6.10	53	91	8	36	43.9	1.11	○
D918S-A5N-0620	6.20	53	91	8	36	43.7	1.13	○
D918S-A5N-0630	6.30	53	91	8	36	43.6	1.15	●
D918S-A5N-0640	6.40	53	91	8	36	43.4	1.16	●
D918S-A5N-0650	6.50	53	91	8	36	43.3	1.18	●
D918S-A5N-0660	6.60	53	91	8	36	43.1	1.20	●
D918S-A5N-0670	6.70	53	91	8	36	43.0	1.22	●
D918S-A5N-0680	6.80	53	91	8	36	42.8	1.24	●
D918S-A5N-0690	6.90	53	91	8	36	42.7	1.26	●
D918S-A5N-0700	7.00	53	91	8	36	42.5	1.27	●
D918S-A5N-0710	7.10	53	91	8	36	42.4	1.29	●
D918S-A5N-0720	7.20	53	91	8	36	42.2	1.31	●
D918S-A5N-0730	7.30	53	91	8	36	42.1	1.33	●
D918S-A5N-0740	7.40	53	91	8	36	41.9	1.35	●
D918S-A5N-0750	7.50	53	91	8	36	41.8	1.36	●
D918S-A5N-0760	7.60	53	91	8	36	41.6	1.38	●
D918S-A5N-0770	7.70	53	91	8	36	41.5	1.40	●
D918S-A5N-0780	7.80	53	91	8	36	41.3	1.42	●
D918S-A5N-0790	7.90	53	91	8	36	41.2	1.44	○
D918S-A5N-0800	8.00	53	91	8	36	41.0	1.46	●
D918S-A5N-0810	8.10	61	103	10	40	48.9	1.47	●
D918S-A5N-0820	8.20	61	103	10	40	48.7	1.49	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

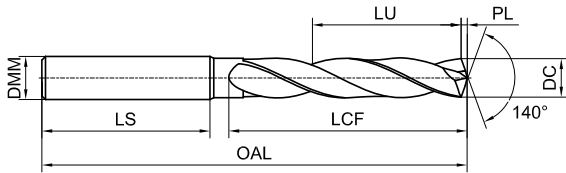
Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P069

D918S-A5N NEW

High Performance 5D External Coolant Twist Drills For Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A5N-0830	8.30	61	103	10	40	48.6	1.51	○
D918S-A5N-0840	8.40	61	103	10	40	48.4	1.53	○
D918S-A5N-0850	8.50	61	103	10	40	48.3	1.55	●
D918S-A5N-0860	8.60	61	103	10	40	48.1	1.57	●
D918S-A5N-0870	8.70	61	103	10	40	48.0	1.58	●
D918S-A5N-0880	8.80	61	103	10	40	47.8	1.60	●
D918S-A5N-0890	8.90	61	103	10	40	47.7	1.62	●
D918S-A5N-0900	9.00	61	103	10	40	47.5	1.64	●
D918S-A5N-0910	9.10	61	103	10	40	47.4	1.66	○
D918S-A5N-0920	9.20	61	103	10	40	47.2	1.67	●
D918S-A5N-0930	9.30	61	103	10	40	47.1	1.69	●
D918S-A5N-0940	9.40	61	103	10	40	46.9	1.71	○
D918S-A5N-0950	9.50	61	103	10	40	46.8	1.73	●
D918S-A5N-0960	9.60	61	103	10	40	46.6	1.75	●
D918S-A5N-0970	9.70	61	103	10	40	46.5	1.77	○
D918S-A5N-0980	9.80	61	103	10	40	46.3	1.78	●
D918S-A5N-0990	9.90	61	103	10	40	46.2	1.80	●
D918S-A5N-1000	10.00	61	103	10	40	46.0	1.82	●
D918S-A5N-1010	10.10	71	118	12	45	55.9	1.84	○
D918S-A5N-1020	10.20	71	118	12	45	55.7	1.86	●
D918S-A5N-1030	10.30	71	118	12	45	55.6	1.87	●
D918S-A5N-1040	10.40	71	118	12	45	55.4	1.89	○
D918S-A5N-1050	10.50	71	118	12	45	55.3	1.91	●
D918S-A5N-1060	10.60	71	118	12	45	55.1	1.93	●
D918S-A5N-1070	10.70	71	118	12	45	55.0	1.95	●
D918S-A5N-1080	10.80	71	118	12	45	54.8	1.97	○
D918S-A5N-1090	10.90	71	118	12	45	54.7	1.98	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A5N-1100	11.00	71	118	12	45	54.5	2.00	●
D918S-A5N-1110	11.10	71	118	12	45	54.4	2.02	○
D918S-A5N-1120	11.20	71	118	12	45	54.2	2.04	●
D918S-A5N-1130	11.30	71	118	12	45	54.1	2.06	○
D918S-A5N-1140	11.40	71	118	12	45	53.9	2.07	●
D918S-A5N-1150	11.50	71	118	12	45	53.8	2.09	●
D918S-A5N-1160	11.60	71	118	12	45	53.6	2.11	●
D918S-A5N-1170	11.70	71	118	12	45	53.5	2.13	○
D918S-A5N-1180	11.80	71	118	12	45	53.3	2.15	●
D918S-A5N-1190	11.90	71	118	12	45	53.2	2.17	○
D918S-A5N-1200	12.00	71	118	12	45	53.0	2.18	●
D918S-A5N-1210	12.10	77	124	14	45	58.9	2.20	○
D918S-A5N-1220	12.20	77	124	14	45	58.7	2.22	●
D918S-A5N-1230	12.30	77	124	14	45	58.6	2.24	●
D918S-A5N-1240	12.40	77	124	14	45	58.4	2.26	○
D918S-A5N-1250	12.50	77	124	14	45	58.3	2.27	●
D918S-A5N-1260	12.60	77	124	14	45	58.1	2.29	●
D918S-A5N-1270	12.70	77	124	14	45	58.0	2.31	○
D918S-A5N-1280	12.80	77	124	14	45	57.8	2.33	●
D918S-A5N-1290	12.90	77	124	14	45	57.7	2.35	○
D918S-A5N-1300	13.00	77	124	14	45	57.5	2.37	●
D918S-A5N-1310	13.10	77	124	14	45	57.4	2.38	○
D918S-A5N-1320	13.20	77	124	14	45	57.2	2.40	○
D918S-A5N-1330	13.30	77	124	14	45	57.1	2.42	○
D918S-A5N-1340	13.40	77	124	14	45	56.9	2.44	○
D918S-A5N-1350	13.50	77	124	14	45	56.8	2.46	●
D918S-A5N-1360	13.60	77	124	14	45	56.6	2.47	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

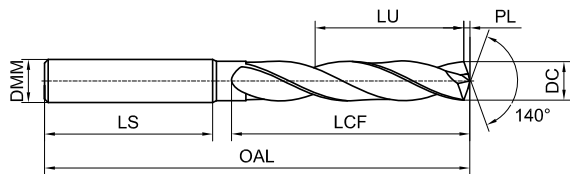
Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P069

D918S-A5N NEW

High Performance 5D External Coolant Twist Drills For Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A5N-1370	13.70	77	124	14	45	56.5	2.49	○
D918S-A5N-1380	13.80	77	124	14	45	56.3	2.51	○
D918S-A5N-1390	13.90	77	124	14	45	56.2	2.53	○
D918S-A5N-1400	14.00	77	124	14	45	56.0	2.55	●
D918S-A5N-1410	14.10	83	133	16	48	61.9	2.57	○
D918S-A5N-1420	14.20	83	133	16	48	61.7	2.58	●
D918S-A5N-1430	14.30	83	133	16	48	61.6	2.60	○
D918S-A5N-1440	14.40	83	133	16	48	61.4	2.62	○
D918S-A5N-1450	14.50	83	133	16	48	61.3	2.64	●
D918S-A5N-1460	14.60	83	133	16	48	61.1	2.66	●
D918S-A5N-1470	14.70	83	133	16	48	61.0	2.68	○
D918S-A5N-1480	14.80	83	133	16	48	60.8	2.69	○
D918S-A5N-1490	14.90	83	133	16	48	60.7	2.71	○
D918S-A5N-1500	15.00	83	133	16	48	60.5	2.73	●
D918S-A5N-1510	15.10	83	133	16	48	60.4	2.75	○
D918S-A5N-1520	15.20	83	133	16	48	60.2	2.77	○
D918S-A5N-1530	15.30	83	133	16	48	60.1	2.78	○
D918S-A5N-1540	15.40	83	133	16	48	59.9	2.80	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A5N-1550	15.50	83	133	16	48	59.8	2.82	○
D918S-A5N-1560	15.60	83	133	16	48	59.6	2.84	○
D918S-A5N-1570	15.70	83	133	16	48	59.5	2.86	○
D918S-A5N-1580	15.80	83	133	16	48	59.3	2.88	○
D918S-A5N-1590	15.90	83	133	16	48	59.2	2.89	○
D918S-A5N-1600	16.00	83	133	16	48	59.0	2.91	●
D918S-A5N-1650	16.50	93	143	18	48	68.3	3.00	○
D918S-A5N-1660	16.60	93	143	18	48	68.1	3.02	○
D918S-A5N-1680	16.80	93	143	18	48	67.8	3.06	○
D918S-A5N-1700	17.00	93	143	18	48	67.5	3.09	○
D918S-A5N-1750	17.50	93	143	18	48	66.8	3.18	○
D918S-A5N-1780	17.80	93	143	18	48	66.3	3.24	○
D918S-A5N-1800	18.00	93	143	18	48	66.0	3.28	○
D918S-A5N-1850	18.50	101	153	20	50	73.3	3.37	○
D918S-A5N-1860	18.60	101	153	20	50	73.1	3.38	○
D918S-A5N-1900	19.00	101	153	20	50	72.5	3.46	○
D918S-A5N-1950	19.50	101	153	20	50	71.8	3.55	○
D918S-A5N-2000	20.00	101	153	20	50	71.0	3.64	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Nominal Size Range	DC (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

Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		○	○								

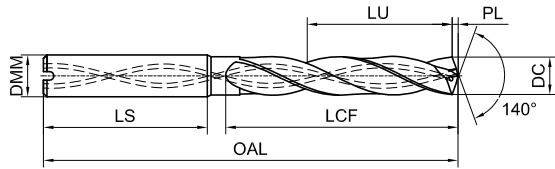
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P069

D918S-A5C NEW



High Performance 5D Internal Coolant Twist Drills For Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A5C-0300	3.00	28	66	6	36	23.5	0.55	●
D918S-A5C-0310	3.10	28	66	6	36	23.4	0.56	●
D918S-A5C-0320	3.20	28	66	6	36	23.2	0.58	●
D918S-A5C-0330	3.30	28	66	6	36	23.1	0.60	●
D918S-A5C-0340	3.40	28	66	6	36	22.9	0.62	●
D918S-A5C-0350	3.50	28	66	6	36	22.8	0.64	●
D918S-A5C-0360	3.60	28	66	6	36	22.6	0.66	●
D918S-A5C-0370	3.70	28	66	6	36	22.5	0.67	●
D918S-A5C-0380	3.80	36	74	6	36	30.3	0.69	●
D918S-A5C-0390	3.90	36	74	6	36	30.2	0.71	●
D918S-A5C-0400	4.00	36	74	6	36	30.0	0.73	●
D918S-A5C-0410	4.10	36	74	6	36	29.9	0.75	●
D918S-A5C-0420	4.20	36	74	6	36	29.7	0.76	●
D918S-A5C-0430	4.30	36	74	6	36	29.6	0.78	●
D918S-A5C-0440	4.40	36	74	6	36	29.4	0.80	●
D918S-A5C-0450	4.50	36	74	6	36	29.3	0.82	●
D918S-A5C-0460	4.60	36	74	6	36	29.1	0.84	●
D918S-A5C-0470	4.70	36	74	6	36	29.0	0.86	●
D918S-A5C-0480	4.80	44	82	6	36	36.8	0.87	●
D918S-A5C-0490	4.90	44	82	6	36	36.7	0.89	●
D918S-A5C-0500	5.00	44	82	6	36	36.5	0.91	●
D918S-A5C-0510	5.10	44	82	6	36	36.4	0.93	●
D918S-A5C-0520	5.20	44	82	6	36	36.2	0.95	●
D918S-A5C-0530	5.30	44	82	6	36	36.1	0.96	●
D918S-A5C-0540	5.40	44	82	6	36	35.9	0.98	●
D918S-A5C-0550	5.50	44	82	6	36	35.8	1.00	●
D918S-A5C-0560	5.60	44	82	6	36	35.6	1.02	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A5C-0570	5.70	44	82	6	36	35.5	1.04	●
D918S-A5C-0580	5.80	44	82	6	36	35.3	1.06	●
D918S-A5C-0590	5.90	44	82	6	36	35.2	1.07	●
D918S-A5C-0600	6.00	44	82	6	36	35.0	1.09	●
D918S-A5C-0610	6.10	53	91	8	36	43.9	1.11	●
D918S-A5C-0620	6.20	53	91	8	36	43.7	1.13	●
D918S-A5C-0630	6.30	53	91	8	36	43.6	1.15	●
D918S-A5C-0640	6.40	53	91	8	36	43.4	1.16	○
D918S-A5C-0650	6.50	53	91	8	36	43.3	1.18	●
D918S-A5C-0660	6.60	53	91	8	36	43.1	1.20	●
D918S-A5C-0670	6.70	53	91	8	36	43.0	1.22	●
D918S-A5C-0680	6.80	53	91	8	36	42.8	1.24	●
D918S-A5C-0690	6.90	53	91	8	36	42.7	1.26	●
D918S-A5C-0700	7.00	53	91	8	36	42.5	1.27	●
D918S-A5C-0710	7.10	53	91	8	36	42.4	1.29	●
D918S-A5C-0720	7.20	53	91	8	36	42.2	1.31	○
D918S-A5C-0730	7.30	53	91	8	36	42.1	1.33	○
D918S-A5C-0740	7.40	53	91	8	36	41.9	1.35	●
D918S-A5C-0750	7.50	53	91	8	36	41.8	1.36	●
D918S-A5C-0760	7.60	53	91	8	36	41.6	1.38	○
D918S-A5C-0770	7.70	53	91	8	36	41.5	1.40	○
D918S-A5C-0780	7.80	53	91	8	36	41.3	1.42	●
D918S-A5C-0790	7.90	53	91	8	36	41.2	1.44	●
D918S-A5C-0800	8.00	53	91	8	36	41.0	1.46	●
D918S-A5C-0810	8.10	61	103	10	40	48.9	1.47	●
D918S-A5C-0820	8.20	61	103	10	40	48.7	1.49	○
D918S-A5C-0830	8.30	61	103	10	40	48.6	1.51	●

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool Unit(mm)

Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

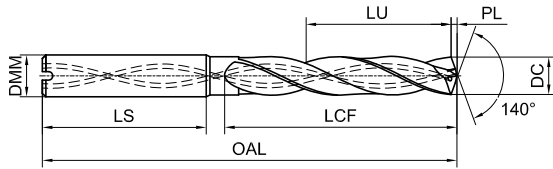
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P069

D918S-A5C NEW



High Performance 5D Internal Coolant Twist Drills For Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A5C-0840	8.40	61	103	10	40	48.4	1.53	●
D918S-A5C-0850	8.50	61	103	10	40	48.3	1.55	●
D918S-A5C-0860	8.60	61	103	10	40	48.1	1.57	●
D918S-A5C-0870	8.70	61	103	10	40	48.0	1.58	●
D918S-A5C-0880	8.80	61	103	10	40	47.8	1.60	●
D918S-A5C-0890	8.90	61	103	10	40	47.7	1.62	●
D918S-A5C-0900	9.00	61	103	10	40	47.5	1.64	●
D918S-A5C-0910	9.10	61	103	10	40	47.4	1.66	●
D918S-A5C-0920	9.20	61	103	10	40	47.2	1.67	○
D918S-A5C-0930	9.30	61	103	10	40	47.1	1.69	●
D918S-A5C-0940	9.40	61	103	10	40	46.9	1.71	●
D918S-A5C-0950	9.50	61	103	10	40	46.8	1.73	●
D918S-A5C-0960	9.60	61	103	10	40	46.6	1.75	○
D918S-A5C-0970	9.70	61	103	10	40	46.5	1.77	●
D918S-A5C-0980	9.80	61	103	10	40	46.3	1.78	●
D918S-A5C-0990	9.90	61	103	10	40	46.2	1.80	●
D918S-A5C-1000	10.00	61	103	10	40	46.0	1.82	●
D918S-A5C-1010	10.10	71	118	12	45	55.9	1.84	●
D918S-A5C-1020	10.20	71	118	12	45	55.7	1.86	●
D918S-A5C-1030	10.30	71	118	12	45	55.6	1.87	●
D918S-A5C-1040	10.40	71	118	12	45	55.4	1.89	●
D918S-A5C-1050	10.50	71	118	12	45	55.3	1.91	●
D918S-A5C-1060	10.60	71	118	12	45	55.1	1.93	○
D918S-A5C-1070	10.70	71	118	12	45	55.0	1.95	●
D918S-A5C-1080	10.80	71	118	12	45	54.8	1.97	●
D918S-A5C-1090	10.90	71	118	12	45	54.7	1.98	○
D918S-A5C-1100	11.00	71	118	12	45	54.5	2.00	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A5C-1110	11.10	71	118	12	45	54.4	2.02	●
D918S-A5C-1120	11.20	71	118	12	45	54.2	2.04	●
D918S-A5C-1130	11.30	71	118	12	45	54.1	2.06	○
D918S-A5C-1140	11.40	71	118	12	45	53.9	2.07	●
D918S-A5C-1150	11.50	71	118	12	45	53.8	2.09	●
D918S-A5C-1160	11.60	71	118	12	45	53.6	2.11	○
D918S-A5C-1170	11.70	71	118	12	45	53.5	2.13	●
D918S-A5C-1180	11.80	71	118	12	45	53.3	2.15	●
D918S-A5C-1190	11.90	71	118	12	45	53.2	2.17	●
D918S-A5C-1200	12.00	71	118	12	45	53.0	2.18	●
D918S-A5C-1210	12.10	77	124	14	45	58.9	2.20	○
D918S-A5C-1220	12.20	77	124	14	45	58.7	2.22	●
D918S-A5C-1230	12.30	77	124	14	45	58.6	2.24	○
D918S-A5C-1240	12.40	77	124	14	45	58.4	2.26	○
D918S-A5C-1250	12.50	77	124	14	45	58.3	2.27	●
D918S-A5C-1260	12.60	77	124	14	45	58.1	2.29	○
D918S-A5C-1270	12.70	77	124	14	45	58.0	2.31	●
D918S-A5C-1280	12.80	77	124	14	45	57.8	2.33	○
D918S-A5C-1290	12.90	77	124	14	45	57.7	2.35	○
D918S-A5C-1300	13.00	77	124	14	45	57.5	2.37	●
D918S-A5C-1310	13.10	77	124	14	45	57.4	2.38	○
D918S-A5C-1320	13.20	77	124	14	45	57.2	2.40	○
D918S-A5C-1330	13.30	77	124	14	45	57.1	2.42	○
D918S-A5C-1340	13.40	77	124	14	45	56.9	2.44	○
D918S-A5C-1350	13.50	77	124	14	45	56.8	2.46	●
D918S-A5C-1360	13.60	77	124	14	45	56.6	2.47	○
D918S-A5C-1370	13.70	77	124	14	45	56.5	2.49	●

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

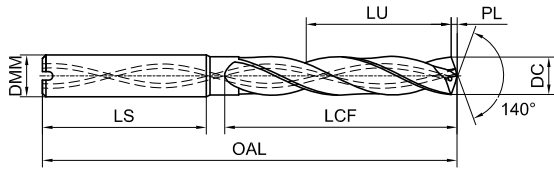
Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P069

D918S-A5C NEW

High Performance 5D Internal Coolant Twist Drills For Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A5C-1380	13.80	77	124	14	45	56.3	2.51	●
D918S-A5C-1390	13.90	77	124	14	45	56.2	2.53	○
D918S-A5C-1400	14.00	77	124	14	45	56.0	2.55	●
D918S-A5C-1410	14.10	83	133	16	48	61.9	2.57	○
D918S-A5C-1420	14.20	83	133	16	48	61.7	2.58	●
D918S-A5C-1430	14.30	83	133	16	48	61.6	2.60	○
D918S-A5C-1440	14.40	83	133	16	48	61.4	2.62	○
D918S-A5C-1450	14.50	83	133	16	48	61.3	2.64	●
D918S-A5C-1460	14.60	83	133	16	48	61.1	2.66	○
D918S-A5C-1470	14.70	83	133	16	48	61.0	2.68	○
D918S-A5C-1480	14.80	83	133	16	48	60.8	2.69	○
D918S-A5C-1490	14.90	83	133	16	48	60.7	2.71	○
D918S-A5C-1500	15.00	83	133	16	48	60.5	2.73	●
D918S-A5C-1510	15.10	83	133	16	48	60.4	2.75	●
D918S-A5C-1520	15.20	83	133	16	48	60.2	2.77	●
D918S-A5C-1530	15.30	83	133	16	48	60.1	2.78	○
D918S-A5C-1540	15.40	83	133	16	48	59.9	2.80	○
D918S-A5C-1550	15.50	83	133	16	48	59.8	2.82	●
D918S-A5C-1560	15.60	83	133	16	48	59.6	2.84	○
D918S-A5C-1570	15.70	83	133	16	48	59.5	2.86	○
D918S-A5C-1580	15.80	83	133	16	48	59.3	2.88	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D918S-A5C-1590	15.90	83	133	16	48	59.2	2.89	○
D918S-A5C-1600	16.00	83	133	16	48	59.0	2.91	●
D918S-A5C-1650	16.50	93	143	18	48	68.3	3.00	○
D918S-A5C-1670	16.70	93	143	18	48	68.0	3.04	○
D918S-A5C-1680	16.80	93	143	18	48	67.8	3.06	○
D918S-A5C-1690	16.90	93	143	18	48	67.7	3.08	○
D918S-A5C-1700	17.00	93	143	18	48	67.5	3.09	○
D918S-A5C-1720	17.20	93	143	18	48	67.2	3.13	○
D918S-A5C-1750	17.50	93	143	18	48	66.8	3.18	○
D918S-A5C-1770	17.70	93	143	18	48	66.5	3.22	○
D918S-A5C-1780	17.80	93	143	18	48	66.3	3.24	○
D918S-A5C-1800	18.00	93	143	18	48	66.0	3.28	○
D918S-A5C-1850	18.50	101	153	20	50	73.3	3.37	○
D918S-A5C-1860	18.60	101	153	20	50	73.1	3.38	○
D918S-A5C-1880	18.80	101	153	20	50	72.8	3.42	○
D918S-A5C-1900	19.00	101	153	20	50	72.5	3.46	○
D918S-A5C-1930	19.30	101	153	20	50	72.1	3.51	○
D918S-A5C-1950	19.50	101	153	20	50	71.8	3.55	○
D918S-A5C-1980	19.80	101	153	20	50	71.3	3.60	○
D918S-A5C-2000	20.00	101	153	20	50	71.0	3.64	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Nominal Size Range	DC (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

Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

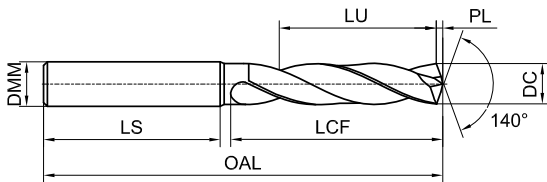
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P069

D968S-A3N NEW



High Efficient 3D External Coolant Twist Drills for Stainless Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A3N-0100	1.00	7	45	4	30	5.5	0.18	●
D968S-A3N-0110	1.10	7	45	4	30	5.4	0.20	●
D968S-A3N-0120	1.20	7	45	4	30	5.2	0.22	●
D968S-A3N-0130	1.30	7	45	4	30	5.1	0.24	●
D968S-A3N-0140	1.40	7	45	4	30	4.9	0.25	●
D968S-A3N-0150	1.50	9	55	4	38	6.8	0.27	●
D968S-A3N-0160	1.60	9	55	4	38	6.6	0.29	●
D968S-A3N-0175	1.75	9	55	4	38	6.4	0.32	●
D968S-A3N-0180	1.80	9	55	4	38	6.3	0.33	●
D968S-A3N-0190	1.90	9	55	4	38	6.2	0.35	●
D968S-A3N-0200	2.00	13	55	4	36	10.0	0.36	●
D968S-A3N-0210	2.10	13	55	4	36	9.9	0.38	●
D968S-A3N-0220	2.20	13	55	4	36	9.7	0.40	●
D968S-A3N-0230	2.30	13	55	4	36	9.6	0.42	●
D968S-A3N-0240	2.40	17	55	4	33	13.4	0.44	●
D968S-A3N-0250	2.50	17	55	4	33	13.3	0.45	●
D968S-A3N-0260	2.60	17	55	4	33	13.1	0.47	●
D968S-A3N-0270	2.70	17	55	4	33	13.0	0.49	●
D968S-A3N-0280	2.80	17	55	4	33	12.8	0.51	●
D968S-A3N-0290	2.90	17	55	4	33	12.7	0.53	●
D968S-A3N-0295	2.95	17	55	4	33	12.6	0.54	○
D968S-A3N-0300	3.00	20	62	6	36	15.5	0.55	●
D968S-A3N-0305	3.05	20	62	6	36	15.4	0.56	○
D968S-A3N-0310	3.10	20	62	6	36	15.4	0.56	●
D968S-A3N-0315	3.15	20	62	6	36	15.3	0.57	○
D968S-A3N-0320	3.20	20	62	6	36	15.2	0.58	●
D968S-A3N-0325	3.25	20	62	6	36	15.1	0.59	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A3N-0330	3.30	20	62	6	36	15.1	0.60	●
D968S-A3N-0340	3.40	20	62	6	36	14.9	0.62	●
D968S-A3N-0350	3.50	20	62	6	36	14.8	0.64	●
D968S-A3N-0360	3.60	20	62	6	36	14.6	0.66	●
D968S-A3N-0370	3.70	20	62	6	36	14.5	0.67	●
D968S-A3N-0380	3.80	24	66	6	36	18.3	0.69	●
D968S-A3N-0390	3.90	24	66	6	36	18.2	0.71	●
D968S-A3N-0400	4.00	24	66	6	36	18.0	0.73	●
D968S-A3N-0410	4.10	24	66	6	36	17.9	0.75	●
D968S-A3N-0420	4.20	24	66	6	36	17.7	0.76	●
D968S-A3N-0430	4.30	24	66	6	36	17.6	0.78	●
D968S-A3N-0440	4.40	24	66	6	36	17.4	0.80	●
D968S-A3N-0450	4.50	24	66	6	36	17.3	0.82	●
D968S-A3N-0460	4.60	24	66	6	36	17.1	0.84	●
D968S-A3N-0465	4.65	24	66	6	36	17.0	0.85	●
D968S-A3N-0470	4.70	24	66	6	36	17.0	0.86	●
D968S-A3N-0480	4.80	28	66	6	36	20.8	0.87	●
D968S-A3N-0490	4.90	28	66	6	36	20.7	0.89	●
D968S-A3N-0500	5.00	28	66	6	36	20.5	0.91	●
D968S-A3N-0510	5.10	28	66	6	36	20.4	0.93	●
D968S-A3N-0515	5.15	28	66	6	36	20.3	0.94	●
D968S-A3N-0520	5.20	28	66	6	36	20.2	0.95	●
D968S-A3N-0530	5.30	28	66	6	36	20.1	0.96	●
D968S-A3N-0540	5.40	28	66	6	36	19.9	0.98	●
D968S-A3N-0550	5.50	28	66	6	36	19.8	1.00	●
D968S-A3N-0555	5.55	28	66	6	36	19.7	1.01	●
D968S-A3N-0560	5.60	28	66	6	36	19.6	1.02	●

● Stock ○ Available upon Order Note: Accept customization from D1 to D20 tool

Unit(mm)

Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			○							○	○		

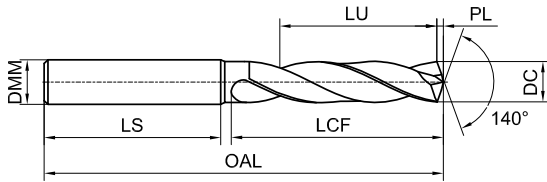
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P071

D968S-A3N NEW



High Efficient 3D External Coolant Twist Drills for Stainless Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A3N-0570	5.70	28	66	6	36	19.5	1.04	○
D968S-A3N-0580	5.80	28	66	6	36	19.3	1.06	●
D968S-A3N-0590	5.90	28	66	6	36	19.2	1.07	●
D968S-A3N-0600	6.00	28	66	6	36	19.0	1.09	●
D968S-A3N-0605	6.05	34	79	8	36	24.9	1.10	○
D968S-A3N-0610	6.10	34	79	8	36	24.9	1.11	●
D968S-A3N-0620	6.20	34	79	8	36	24.7	1.13	●
D968S-A3N-0630	6.30	34	79	8	36	24.6	1.15	●
D968S-A3N-0640	6.40	34	79	8	36	24.4	1.16	●
D968S-A3N-0650	6.50	34	79	8	36	24.3	1.18	●
D968S-A3N-0660	6.60	34	79	8	36	24.1	1.20	●
D968S-A3N-0670	6.70	34	79	8	36	24.0	1.22	●
D968S-A3N-0680	6.80	34	79	8	36	23.8	1.24	●
D968S-A3N-0690	6.90	34	79	8	36	23.7	1.26	●
D968S-A3N-0700	7.00	34	79	8	36	23.5	1.27	●
D968S-A3N-0710	7.10	41	79	8	36	30.4	1.29	●
D968S-A3N-0720	7.20	41	79	8	36	30.2	1.31	●
D968S-A3N-0730	7.30	41	79	8	36	30.1	1.33	○
D968S-A3N-0740	7.40	41	79	8	36	29.9	1.35	●
D968S-A3N-0745	7.45	41	79	8	36	29.8	1.36	●
D968S-A3N-0750	7.50	41	79	8	36	29.8	1.36	●
D968S-A3N-0755	7.55	41	79	8	36	29.7	1.37	○
D968S-A3N-0760	7.60	41	79	8	36	29.6	1.38	●
D968S-A3N-0770	7.70	41	79	8	36	29.5	1.40	○
D968S-A3N-0780	7.80	41	79	8	36	29.3	1.42	●
D968S-A3N-0790	7.90	41	79	8	36	29.2	1.44	○
D968S-A3N-0800	8.00	41	79	8	36	29.0	1.46	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A3N-0810	8.10	47	89	10	40	34.9	1.47	○
D968S-A3N-0820	8.20	47	89	10	40	34.7	1.49	○
D968S-A3N-0830	8.30	47	89	10	40	34.6	1.51	●
D968S-A3N-0840	8.40	47	89	10	40	34.4	1.53	●
D968S-A3N-0850	8.50	47	89	10	40	34.3	1.55	●
D968S-A3N-0860	8.60	47	89	10	40	34.1	1.57	●
D968S-A3N-0870	8.70	47	89	10	40	34.0	1.58	○
D968S-A3N-0880	8.80	47	89	10	40	33.8	1.60	●
D968S-A3N-0890	8.90	47	89	10	40	33.7	1.62	●
D968S-A3N-0900	9.00	47	89	10	40	33.5	1.64	●
D968S-A3N-0910	9.10	47	89	10	40	33.4	1.66	●
D968S-A3N-0920	9.20	47	89	10	40	33.2	1.67	●
D968S-A3N-0930	9.30	47	89	10	40	33.1	1.69	○
D968S-A3N-0935	9.35	47	89	10	40	33.0	1.70	○
D968S-A3N-0940	9.40	47	89	10	40	32.9	1.71	○
D968S-A3N-0945	9.45	47	89	10	40	32.8	1.72	○
D968S-A3N-0950	9.50	47	89	10	40	32.8	1.73	●
D968S-A3N-0955	9.55	47	89	10	40	32.7	1.74	○
D968S-A3N-0960	9.60	47	89	10	40	32.6	1.75	●
D968S-A3N-0970	9.70	47	89	10	40	32.5	1.77	○
D968S-A3N-0980	9.80	47	89	10	40	32.3	1.78	●
D968S-A3N-0990	9.90	47	89	10	40	32.2	1.80	○
D968S-A3N-1000	10.00	47	89	10	40	32.0	1.82	●
D968S-A3N-1010	10.10	55	102	12	45	39.9	1.84	○
D968S-A3N-1020	10.20	55	102	12	45	39.7	1.86	●
D968S-A3N-1025	10.25	55	102	12	45	39.6	1.87	●
D968S-A3N-1030	10.30	55	102	12	45	39.6	1.87	●

● Stock ○ Available upon Order Note: Accept customization from D1 to D20 tool

Unit(mm)

Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			○							○	○		

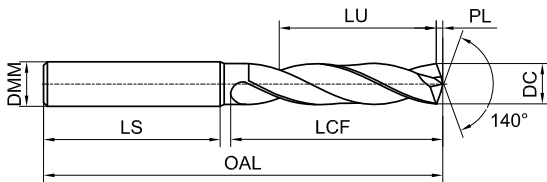
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P071

D968S-A3N NEW



High Efficient 3D External Coolant Twist Drills for Stainless Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A3N-1040	10.40	55	102	12	45	39.4	1.89	●
D968S-A3N-1050	10.50	55	102	12	45	39.3	1.91	●
D968S-A3N-1060	10.60	55	102	12	45	39.1	1.93	●
D968S-A3N-1070	10.70	55	102	12	45	39.0	1.95	○
D968S-A3N-1080	10.80	55	102	12	45	38.8	1.97	○
D968S-A3N-1090	10.90	55	102	12	45	38.7	1.98	○
D968S-A3N-1100	11.00	55	102	12	45	38.5	2.00	●
D968S-A3N-1110	11.10	55	102	12	45	38.4	2.02	●
D968S-A3N-1120	11.20	55	102	12	45	38.2	2.04	○
D968S-A3N-1130	11.30	55	102	12	45	38.1	2.06	○
D968S-A3N-1140	11.40	55	102	12	45	37.9	2.07	●
D968S-A3N-1150	11.50	55	102	12	45	37.8	2.09	●
D968S-A3N-1160	11.60	55	102	12	45	37.6	2.11	○
D968S-A3N-1170	11.70	55	102	12	45	37.5	2.13	○
D968S-A3N-1180	11.80	55	102	12	45	37.3	2.15	●
D968S-A3N-1190	11.90	55	102	12	45	37.2	2.17	○
D968S-A3N-1200	12.00	55	102	12	45	37.0	2.18	●
D968S-A3N-1210	12.10	60	107	14	45	41.9	2.20	○
D968S-A3N-1220	12.20	60	107	14	45	41.7	2.22	○
D968S-A3N-1225	12.25	60	107	14	45	41.6	2.23	○
D968S-A3N-1230	12.30	60	107	14	45	41.6	2.24	○
D968S-A3N-1240	12.40	60	107	14	45	41.4	2.26	○
D968S-A3N-1250	12.50	60	107	14	45	41.3	2.27	●
D968S-A3N-1260	12.60	60	107	14	45	41.1	2.29	○
D968S-A3N-1270	12.70	60	107	14	45	41.0	2.31	○
D968S-A3N-1275	12.75	60	107	14	45	40.9	2.32	○
D968S-A3N-1280	12.80	60	107	14	45	40.8	2.33	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A3N-1290	12.90	60	107	14	45	40.7	2.35	○
D968S-A3N-1300	13.00	60	107	14	45	40.5	2.37	●
D968S-A3N-1310	13.10	60	107	14	45	40.4	2.38	●
D968S-A3N-1320	13.20	60	107	14	45	40.2	2.40	○
D968S-A3N-1330	13.30	60	107	14	45	40.1	2.42	○
D968S-A3N-1340	13.40	60	107	14	45	39.9	2.44	○
D968S-A3N-1350	13.50	60	107	14	45	39.8	2.46	○
D968S-A3N-1370	13.70	60	107	14	45	39.5	2.49	○
D968S-A3N-1380	13.80	60	107	14	45	39.3	2.51	○
D968S-A3N-1390	13.90	60	107	14	45	39.2	2.53	○
D968S-A3N-1400	14.00	60	107	14	45	39.0	2.55	●
D968S-A3N-1410	14.10	65	115	16	48	43.9	2.57	○
D968S-A3N-1420	14.20	65	115	16	48	43.7	2.58	○
D968S-A3N-1425	14.25	65	115	16	48	43.6	2.59	○
D968S-A3N-1430	14.30	65	115	16	48	43.6	2.60	○
D968S-A3N-1440	14.40	65	115	16	48	43.4	2.62	○
D968S-A3N-1450	14.50	65	115	16	48	43.3	2.64	●
D968S-A3N-1460	14.60	65	115	16	48	43.1	2.66	○
D968S-A3N-1470	14.70	65	115	16	48	43.0	2.68	○
D968S-A3N-1475	14.75	65	115	16	48	42.9	2.68	○
D968S-A3N-1480	14.80	65	115	16	48	42.8	2.69	○
D968S-A3N-1490	14.90	65	115	16	48	42.7	2.71	○
D968S-A3N-1500	15.00	65	115	16	48	42.5	2.73	●
D968S-A3N-1510	15.10	65	115	16	48	42.4	2.75	○
D968S-A3N-1520	15.20	65	115	16	48	42.2	2.77	●
D968S-A3N-1530	15.30	65	115	16	48	42.1	2.78	○
D968S-A3N-1540	15.40	65	115	16	48	41.9	2.80	○

● Stock ○ Available upon Order Note: Accept customization from D1 to D20 tool

Unit(mm)

Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			○							○	○		

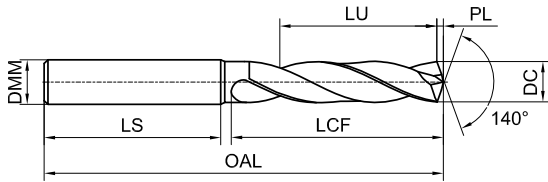
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P071

D968S-A3N NEW



High Efficient 3D External Coolant Twist Drills for Stainless Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A3N-1550	15.50	65	115	16	48	41.8	2.82	○
D968S-A3N-1570	15.70	65	115	16	48	41.5	2.86	○
D968S-A3N-1580	15.80	65	115	16	48	41.3	2.88	○
D968S-A3N-1590	15.90	65	115	16	48	41.2	2.89	○
D968S-A3N-1600	16.00	65	115	16	48	41.0	2.91	○
D968S-A3N-1620	16.20	73	123	18	48	48.7	2.95	○
D968S-A3N-1630	16.30	73	123	18	48	48.6	2.97	○
D968S-A3N-1640	16.40	73	123	18	48	48.4	2.98	○
D968S-A3N-1650	16.50	73	123	18	48	48.3	3.00	○
D968S-A3N-1660	16.60	73	123	18	48	48.1	3.02	○
D968S-A3N-1670	16.70	73	123	18	48	48.0	3.04	○
D968S-A3N-1675	16.75	73	123	18	48	47.9	3.05	○
D968S-A3N-1680	16.80	73	123	18	48	47.8	3.06	○
D968S-A3N-1700	17.00	73	123	18	48	47.5	3.09	○
D968S-A3N-1720	17.20	73	123	18	48	47.2	3.13	○
D968S-A3N-1730	17.30	73	123	18	48	47.1	3.15	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A3N-1740	17.40	73	123	18	48	46.9	3.17	○
D968S-A3N-1750	17.50	73	123	18	48	46.8	3.18	○
D968S-A3N-1760	17.60	73	123	18	48	46.6	3.20	○
D968S-A3N-1770	17.70	73	123	18	48	46.5	3.22	○
D968S-A3N-1780	17.80	73	123	18	48	46.3	3.24	○
D968S-A3N-1800	18.00	73	123	18	48	46.0	3.28	○
D968S-A3N-1840	18.40	79	131	20	50	51.4	3.35	○
D968S-A3N-1850	18.50	79	131	20	50	51.3	3.37	○
D968S-A3N-1860	18.60	79	131	20	50	51.1	3.38	○
D968S-A3N-1880	18.80	79	131	20	50	50.8	3.42	○
D968S-A3N-1900	19.00	79	131	20	50	50.5	3.46	○
D968S-A3N-1910	19.10	79	131	20	50	50.4	3.48	○
D968S-A3N-1950	19.50	79	131	20	50	49.8	3.55	○
D968S-A3N-1980	19.80	79	131	20	50	49.3	3.60	○
D968S-A3N-1990	19.90	79	131	20	50	49.2	3.62	○
D968S-A3N-2000	20.00	79	131	20	50	49.0	3.64	○

● Stock ○ Available upon Order Note: Accept customization from D1 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

Workpiece Material													
P			M	K			N			S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎							○	○		

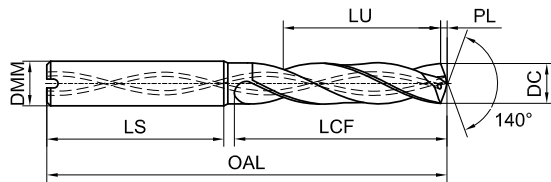
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P071

D968S-A3C NEW



High Efficient 3D Internal Coolant Twist Drills for Stainless Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A3C-0300	3.00	20	62	6	36	15.5	0.55	●
D968S-A3C-0310	3.10	20	62	6	36	15.4	0.56	○
D968S-A3C-0320	3.20	20	62	6	36	15.2	0.58	○
D968S-A3C-0325	3.25	20	62	6	36	15.1	0.59	○
D968S-A3C-0330	3.30	20	62	6	36	15.1	0.60	●
D968S-A3C-0340	3.40	20	62	6	36	14.9	0.62	○
D968S-A3C-0350	3.50	20	62	6	36	14.8	0.64	○
D968S-A3C-0360	3.60	20	62	6	36	14.6	0.66	○
D968S-A3C-0370	3.70	20	62	6	36	14.5	0.67	○
D968S-A3C-0380	3.80	24	66	6	36	18.3	0.69	●
D968S-A3C-0390	3.90	24	66	6	36	18.2	0.71	○
D968S-A3C-0400	4.00	24	66	6	36	18.0	0.73	●
D968S-A3C-0410	4.10	24	66	6	36	17.9	0.75	○
D968S-A3C-0420	4.20	24	66	6	36	17.7	0.76	●
D968S-A3C-0430	4.30	24	66	6	36	17.6	0.78	○
D968S-A3C-0440	4.40	24	66	6	36	17.4	0.80	○
D968S-A3C-0450	4.50	24	66	6	36	17.3	0.82	●
D968S-A3C-0460	4.60	24	66	6	36	17.1	0.84	○
D968S-A3C-0465	4.65	24	66	6	36	17.0	0.85	○
D968S-A3C-0470	4.70	24	66	6	36	17.0	0.86	○
D968S-A3C-0480	4.80	28	66	6	36	20.8	0.87	○
D968S-A3C-0490	4.90	28	66	6	36	20.7	0.89	○
D968S-A3C-0500	5.00	28	66	6	36	20.5	0.91	●
D968S-A3C-0510	5.10	28	66	6	36	20.4	0.93	○
D968S-A3C-0515	5.15	28	66	6	36	20.3	0.94	●
D968S-A3C-0520	5.20	28	66	6	36	20.2	0.95	●
D968S-A3C-0530	5.30	28	66	6	36	20.1	0.96	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A3C-0540	5.40	28	66	6	36	19.9	0.98	○
D968S-A3C-0550	5.50	28	66	6	36	19.8	1.00	●
D968S-A3C-0555	5.55	28	66	6	36	19.7	1.01	○
D968S-A3C-0560	5.60	28	66	6	36	19.6	1.02	○
D968S-A3C-0570	5.70	28	66	6	36	19.5	1.04	○
D968S-A3C-0580	5.80	28	66	6	36	19.3	1.06	○
D968S-A3C-0590	5.90	28	66	6	36	19.2	1.07	○
D968S-A3C-0600	6.00	28	66	6	36	19.0	1.09	●
D968S-A3C-0610	6.10	34	79	8	36	24.9	1.11	●
D968S-A3C-0620	6.20	34	79	8	36	24.7	1.13	○
D968S-A3C-0630	6.30	34	79	8	36	24.6	1.15	○
D968S-A3C-0640	6.40	34	79	8	36	24.4	1.16	○
D968S-A3C-0650	6.50	34	79	8	36	24.3	1.18	●
D968S-A3C-0660	6.60	34	79	8	36	24.1	1.20	○
D968S-A3C-0670	6.70	34	79	8	36	24.0	1.22	○
D968S-A3C-0680	6.80	34	79	8	36	23.8	1.24	●
D968S-A3C-0690	6.90	34	79	8	36	23.7	1.26	○
D968S-A3C-0700	7.00	34	79	8	36	23.5	1.27	●
D968S-A3C-0710	7.10	41	79	8	36	30.4	1.29	○
D968S-A3C-0720	7.20	41	79	8	36	30.2	1.31	○
D968S-A3C-0730	7.30	41	79	8	36	30.1	1.33	○
D968S-A3C-0740	7.40	41	79	8	36	29.9	1.35	○
D968S-A3C-0745	7.45	41	79	8	36	29.8	1.36	○
D968S-A3C-0750	7.50	41	79	8	36	29.8	1.36	○
D968S-A3C-0755	7.55	41	79	8	36	29.7	1.37	○
D968S-A3C-0760	7.60	41	79	8	36	29.6	1.38	○
D968S-A3C-0770	7.70	41	79	8	36	29.5	1.40	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			○			○	○	○		○	○		

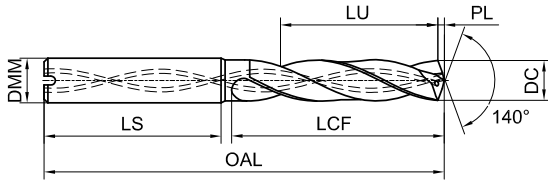
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P071

D968S-A3C NEW



High Efficient 3D Internal Coolant Twist Drills for Stainless Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A3C-0775	7.75	41	79	8	36	29.4	1.41	○
D968S-A3C-0780	7.80	41	79	8	36	29.3	1.42	○
D968S-A3C-0790	7.90	41	79	8	36	29.2	1.44	●
D968S-A3C-0800	8.00	41	79	8	36	29.0	1.46	●
D968S-A3C-0810	8.10	47	89	10	40	34.9	1.47	○
D968S-A3C-0815	8.15	47	89	10	40	34.8	1.48	○
D968S-A3C-0820	8.20	47	89	10	40	34.7	1.49	●
D968S-A3C-0830	8.30	47	89	10	40	34.6	1.51	●
D968S-A3C-0840	8.40	47	89	10	40	34.4	1.53	○
D968S-A3C-0850	8.50	47	89	10	40	34.3	1.55	●
D968S-A3C-0860	8.60	47	89	10	40	34.1	1.57	○
D968S-A3C-0870	8.70	47	89	10	40	34.0	1.58	○
D968S-A3C-0880	8.80	47	89	10	40	33.8	1.60	○
D968S-A3C-0890	8.90	47	89	10	40	33.7	1.62	○
D968S-A3C-0900	9.00	47	89	10	40	33.5	1.64	●
D968S-A3C-0910	9.10	47	89	10	40	33.4	1.66	○
D968S-A3C-0920	9.20	47	89	10	40	33.2	1.67	●
D968S-A3C-0925	9.25	47	89	10	40	33.1	1.68	○
D968S-A3C-0930	9.30	47	89	10	40	33.1	1.69	○
D968S-A3C-0935	9.35	47	89	10	40	33.0	1.70	○
D968S-A3C-0940	9.40	47	89	10	40	32.9	1.71	○
D968S-A3C-0950	9.50	47	89	10	40	32.8	1.73	●
D968S-A3C-0955	9.55	47	89	10	40	32.7	1.74	○
D968S-A3C-0960	9.60	47	89	10	40	32.6	1.75	○
D968S-A3C-0970	9.70	47	89	10	40	32.5	1.77	○
D968S-A3C-0980	9.80	47	89	10	40	32.3	1.78	○
D968S-A3C-0990	9.90	47	89	10	40	32.2	1.80	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A3C-1000	10.00	47	89	10	40	32.0	1.82	●
D968S-A3C-1010	10.10	55	102	12	45	39.9	1.84	○
D968S-A3C-1020	10.20	55	102	12	45	39.7	1.86	●
D968S-A3C-1030	10.30	55	102	12	45	39.6	1.87	●
D968S-A3C-1040	10.40	55	102	12	45	39.4	1.89	○
D968S-A3C-1050	10.50	55	102	12	45	39.3	1.91	●
D968S-A3C-1060	10.60	55	102	12	45	39.1	1.93	○
D968S-A3C-1070	10.70	55	102	12	45	39.0	1.95	○
D968S-A3C-1080	10.80	55	102	12	45	38.8	1.97	●
D968S-A3C-1090	10.90	55	102	12	45	38.7	1.98	○
D968S-A3C-1100	11.00	55	102	12	45	38.5	2.00	●
D968S-A3C-1110	11.10	55	102	12	45	38.4	2.02	○
D968S-A3C-1120	11.20	55	102	12	45	38.2	2.04	○
D968S-A3C-1130	11.30	55	102	12	45	38.1	2.06	○
D968S-A3C-1140	11.40	55	102	12	45	37.9	2.07	○
D968S-A3C-1150	11.50	55	102	12	45	37.8	2.09	○
D968S-A3C-1160	11.60	55	102	12	45	37.6	2.11	○
D968S-A3C-1170	11.70	55	102	12	45	37.5	2.13	○
D968S-A3C-1180	11.80	55	102	12	45	37.3	2.15	●
D968S-A3C-1190	11.90	55	102	12	45	37.2	2.17	○
D968S-A3C-1200	12.00	55	102	12	45	37.0	2.18	●
D968S-A3C-1210	12.10	60	107	14	45	41.9	2.20	○
D968S-A3C-1220	12.20	60	107	14	45	41.7	2.22	○
D968S-A3C-1230	12.30	60	107	14	45	41.6	2.24	○
D968S-A3C-1240	12.40	60	107	14	45	41.4	2.26	○
D968S-A3C-1250	12.50	60	107	14	45	41.3	2.27	●
D968S-A3C-1260	12.60	60	107	14	45	41.1	2.29	●

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Workpiece Material													
P			M	K			N			S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			○			○	○	○		○	○		

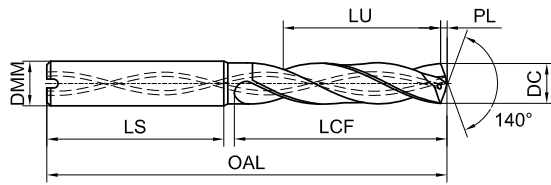
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P071

D968S-A3C NEW



High Efficient 3D Internal Coolant Twist Drills for Stainless Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A3C-1270	12.70	60	107	14	45	41.0	2.31	○
D968S-A3C-1280	12.80	60	107	14	45	40.8	2.33	○
D968S-A3C-1285	12.85	60	107	14	45	40.7	2.34	○
D968S-A3C-1290	12.90	60	107	14	45	40.7	2.35	○
D968S-A3C-1300	13.00	60	107	14	45	40.5	2.37	●
D968S-A3C-1310	13.10	60	107	14	45	40.4	2.38	○
D968S-A3C-1340	13.40	60	107	14	45	39.9	2.44	○
D968S-A3C-1350	13.50	60	107	14	45	39.8	2.46	○
D968S-A3C-1360	13.60	60	107	14	45	39.6	2.47	○
D968S-A3C-1370	13.70	60	107	14	45	39.5	2.49	○
D968S-A3C-1375	13.75	60	107	14	45	39.4	2.50	○
D968S-A3C-1380	13.80	60	107	14	45	39.3	2.51	○
D968S-A3C-1400	14.00	60	107	14	45	39.0	2.55	●
D968S-A3C-1405	14.05	60	107	14	45	38.9	2.56	○
D968S-A3C-1420	14.20	65	115	16	48	43.7	2.58	○
D968S-A3C-1430	14.30	65	115	16	48	43.6	2.60	○
D968S-A3C-1450	14.50	65	115	16	48	43.3	2.64	●
D968S-A3C-1460	14.60	65	115	16	48	43.1	2.66	○
D968S-A3C-1470	14.70	65	115	16	48	43.0	2.68	○
D968S-A3C-1480	14.80	65	115	16	48	42.8	2.69	○
D968S-A3C-1500	15.00	65	115	16	48	42.5	2.73	●
D968S-A3C-1520	15.20	65	115	16	48	42.2	2.77	○
D968S-A3C-1530	15.30	65	115	16	48	42.1	2.78	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A3C-1550	15.50	65	115	16	48	41.8	2.82	○
D968S-A3C-1570	15.70	65	115	16	48	41.5	2.86	○
D968S-A3C-1580	15.80	65	115	16	48	41.3	2.88	○
D968S-A3C-1600	16.00	65	115	16	48	41.0	2.91	○
D968S-A3C-1630	16.30	73	123	18	48	48.6	2.97	○
D968S-A3C-1650	16.50	73	123	18	48	48.3	3.00	○
D968S-A3C-1660	16.60	73	123	18	48	48.1	3.02	○
D968S-A3C-1680	16.80	73	123	18	48	47.8	3.06	○
D968S-A3C-1700	17.00	73	123	18	48	47.5	3.09	○
D968S-A3C-1750	17.50	73	123	18	48	46.8	3.18	○
D968S-A3C-1760	17.60	73	123	18	48	46.6	3.20	○
D968S-A3C-1770	17.70	73	123	18	48	46.5	3.22	○
D968S-A3C-1780	17.80	73	123	18	48	46.3	3.24	○
D968S-A3C-1800	18.00	73	123	18	48	46.0	3.28	○
D968S-A3C-1840	18.40	79	131	20	50	51.4	3.35	○
D968S-A3C-1850	18.50	79	131	20	50	51.3	3.37	○
D968S-A3C-1880	18.80	79	131	20	50	50.8	3.42	○
D968S-A3C-1900	19.00	79	131	20	50	50.5	3.46	○
D968S-A3C-1950	19.50	79	131	20	50	49.8	3.55	○
D968S-A3C-1960	19.60	79	131	20	50	49.6	3.57	○
D968S-A3C-1980	19.80	79	131	20	50	49.3	3.60	○
D968S-A3C-2000	20.00	79	131	20	50	49.0	3.64	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			○			○	○	○		○	○		

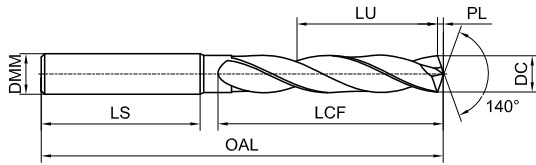
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P071

D968S-A5N NEW



High Efficient 5D External Coolant Twist Drills for Stainless Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A5N-0170	1.70	12	55	4	35	9.5	0.31	●
D968S-A5N-0180	1.80	12	55	4	35	9.5	0.31	●
D968S-A5N-0200	2.00	18	62	4	38	15.0	0.36	●
D968S-A5N-0205	2.05	18	62	4	38	14.9	0.37	●
D968S-A5N-0220	2.20	18	62	4	38	14.7	0.40	●
D968S-A5N-0250	2.50	22	62	4	34	18.3	0.45	●
D968S-A5N-0260	2.60	22	62	4	34	18.1	0.47	●
D968S-A5N-0300	3.00	28	66	6	36	23.5	0.55	●
D968S-A5N-0310	3.10	28	66	6	36	23.4	0.56	●
D968S-A5N-0320	3.20	28	66	6	36	23.2	0.58	○
D968S-A5N-0330	3.30	28	66	6	36	23.1	0.60	●
D968S-A5N-0340	3.40	28	66	6	36	22.9	0.62	●
D968S-A5N-0350	3.50	28	66	6	36	22.8	0.64	●
D968S-A5N-0360	3.60	28	66	6	36	22.6	0.66	○
D968S-A5N-0370	3.70	28	66	6	36	22.5	0.67	○
D968S-A5N-0380	3.80	36	74	6	36	30.3	0.69	○
D968S-A5N-0400	4.00	36	74	6	36	30.0	0.73	●
D968S-A5N-0420	4.20	36	74	6	36	29.7	0.76	●
D968S-A5N-0430	4.30	36	74	6	36	29.6	0.78	●
D968S-A5N-0450	4.50	36	74	6	36	29.3	0.82	●
D968S-A5N-0480	4.80	44	82	6	36	36.8	0.87	●
D968S-A5N-0490	4.90	44	82	6	36	36.7	0.89	●
D968S-A5N-0500	5.00	44	82	6	36	36.5	0.91	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A5N-0510	5.10	44	82	6	36	36.4	0.93	●
D968S-A5N-0540	5.40	44	82	6	36	35.9	0.98	●
D968S-A5N-0550	5.50	44	82	6	36	35.8	1.00	●
D968S-A5N-0560	5.60	44	82	6	36	35.6	1.02	●
D968S-A5N-0600	6.00	44	82	6	36	35.0	1.09	●
D968S-A5N-0650	6.50	53	91	8	36	43.3	1.18	○
D968S-A5N-0660	6.60	53	91	8	36	43.1	1.20	●
D968S-A5N-0670	6.70	53	91	8	36	43.0	1.22	○
D968S-A5N-0680	6.80	53	91	8	36	42.8	1.24	●
D968S-A5N-0700	7.00	53	91	8	36	42.5	1.27	●
D968S-A5N-0730	7.30	53	91	8	36	42.1	1.33	○
D968S-A5N-0800	8.00	53	91	8	36	41.0	1.46	●
D968S-A5N-0820	8.20	61	103	10	40	48.7	1.49	●
D968S-A5N-0850	8.50	61	103	10	40	48.3	1.55	●
D968S-A5N-0860	8.60	61	103	10	40	48.1	1.57	●
D968S-A5N-0900	9.00	61	103	10	40	47.5	1.64	●
D968S-A5N-0950	9.50	61	103	10	40	46.8	1.73	○
D968S-A5N-0980	9.80	61	103	10	40	46.3	1.78	●
D968S-A5N-1000	10.00	61	103	10	40	46.0	1.82	●
D968S-A5N-1020	10.20	71	118	12	45	55.7	1.86	○
D968S-A5N-1030	10.30	71	118	12	45	55.6	1.87	●
D968S-A5N-1050	10.50	71	118	12	45	55.3	1.91	○
D968S-A5N-1100	11.00	71	118	12	45	54.5	2.00	●

● Stock ○ Available upon Order Note: Accept customization from D1 to D20 tool Unit(mm)

Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎										

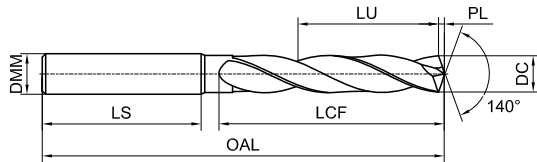
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P071

D968S-A5N NEW



High Efficient 5D External Coolant Twist Drills for Stainless Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A5N-1180	11.80	71	118	12	45	53.3	2.15	●
D968S-A5N-1200	12.00	71	118	12	45	53.0	2.18	●
D968S-A5N-1250	12.50	77	124	14	45	58.3	2.27	○
D968S-A5N-1300	13.00	77	124	14	45	57.5	2.37	●
D968S-A5N-1400	14.00	77	124	14	45	56.0	2.55	●
D968S-A5N-1450	14.50	83	133	16	48	61.3	2.64	○
D968S-A5N-1500	15.00	83	133	16	48	60.5	2.73	○
D968S-A5N-1600	16.00	83	133	16	48	59.0	2.91	○

● Stock ○ Available upon Order Note: Accept customization from D1 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

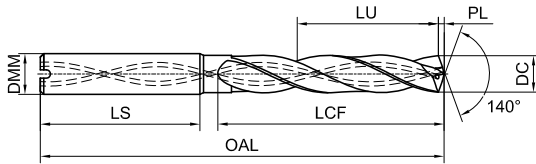
Workpiece Material													
P			M	K			N				S	H	
1	2	3	1	2	3	1	2	3	4	5	1	2	3
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			○										

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P071

D968S-A5C NEW

High Efficient 5D Internal Coolant Twist Drills for Stainless Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A5C-0300	3.00	28	66	6	36	23.5	0.55	●
D968S-A5C-0310	3.10	28	66	6	36	23.4	0.56	○
D968S-A5C-0320	3.20	28	66	6	36	23.2	0.58	○
D968S-A5C-0330	3.30	28	66	6	36	23.1	0.60	●
D968S-A5C-0340	3.40	28	66	6	36	22.9	0.62	●
D968S-A5C-0350	3.50	28	66	6	36	22.8	0.64	●
D968S-A5C-0360	3.60	28	66	6	36	22.6	0.66	○
D968S-A5C-0370	3.70	28	66	6	36	22.5	0.67	○
D968S-A5C-0380	3.80	36	74	6	36	30.3	0.69	○
D968S-A5C-0390	3.90	36	74	6	36	30.2	0.71	●
D968S-A5C-0400	4.00	36	74	6	36	30.0	0.73	●
D968S-A5C-0410	4.10	36	74	6	36	29.9	0.75	○
D968S-A5C-0420	4.20	36	74	6	36	29.7	0.76	●
D968S-A5C-0430	4.30	36	74	6	36	29.6	0.78	●
D968S-A5C-0440	4.40	36	74	6	36	29.4	0.80	○
D968S-A5C-0450	4.50	36	74	6	36	29.3	0.82	●
D968S-A5C-0460	4.60	36	74	6	36	29.1	0.84	○
D968S-A5C-0470	4.70	36	74	6	36	29.0	0.86	○
D968S-A5C-0480	4.80	44	82	6	36	36.8	0.87	○
D968S-A5C-0490	4.90	44	82	6	36	36.7	0.89	○
D968S-A5C-0500	5.00	44	82	6	36	36.5	0.91	●
D968S-A5C-0510	5.10	44	82	6	36	36.4	0.93	●
D968S-A5C-0520	5.20	44	82	6	36	36.2	0.95	●
D968S-A5C-0530	5.30	44	82	6	36	36.1	0.96	○
D968S-A5C-0540	5.40	44	82	6	36	35.9	0.98	○
D968S-A5C-0550	5.50	44	82	6	36	35.8	1.00	●
D968S-A5C-0555	5.55	44	82	6	36	35.7	1.01	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A5C-0560	5.60	44	82	6	36	35.6	1.02	○
D968S-A5C-0570	5.70	44	82	6	36	35.5	1.04	○
D968S-A5C-0580	5.80	44	82	6	36	35.3	1.06	○
D968S-A5C-0590	5.90	44	82	6	36	35.2	1.07	○
D968S-A5C-0600	6.00	44	82	6	36	35.0	1.09	●
D968S-A5C-0610	6.10	53	91	8	36	43.9	1.11	○
D968S-A5C-0620	6.20	53	91	8	36	43.7	1.13	●
D968S-A5C-0630	6.30	53	91	8	36	43.6	1.15	○
D968S-A5C-0640	6.40	53	91	8	36	43.4	1.16	○
D968S-A5C-0650	6.50	53	91	8	36	43.3	1.18	●
D968S-A5C-0660	6.60	53	91	8	36	43.1	1.20	○
D968S-A5C-0670	6.70	53	91	8	36	43.0	1.22	○
D968S-A5C-0680	6.80	53	91	8	36	42.8	1.24	●
D968S-A5C-0690	6.90	53	91	8	36	42.7	1.26	○
D968S-A5C-0700	7.00	53	91	8	36	42.5	1.27	●
D968S-A5C-0710	7.10	53	91	8	36	42.4	1.29	○
D968S-A5C-0720	7.20	53	91	8	36	42.2	1.31	○
D968S-A5C-0730	7.30	53	91	8	36	42.1	1.33	○
D968S-A5C-0735	7.35	53	91	8	36	42.0	1.34	○
D968S-A5C-0740	7.40	53	91	8	36	41.9	1.35	○
D968S-A5C-0750	7.50	53	91	8	36	41.8	1.36	●
D968S-A5C-0760	7.60	53	91	8	36	41.6	1.38	○
D968S-A5C-0770	7.70	53	91	8	36	41.5	1.40	○
D968S-A5C-0780	7.80	53	91	8	36	41.3	1.42	●
D968S-A5C-0790	7.90	53	91	8	36	41.2	1.44	○
D968S-A5C-0800	8.00	53	91	8	36	41.0	1.46	●
D968S-A5C-0810	8.10	61	103	10	40	48.9	1.47	●

● Stock ○ Available upon Order Note: Accept customization from D2 to D20 tool Unit(mm)

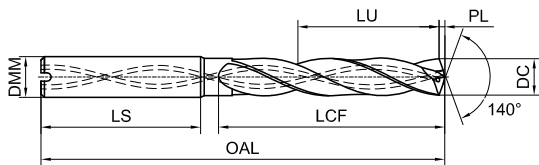
Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎			○	○	○		○	○		

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P071

D968S-A5C NEW

High Efficient 5D Internal Coolant Twist Drills for Stainless Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A5C-0820	8.20	61	103	10	40	48.7	1.49	○
D968S-A5C-0830	8.30	61	103	10	40	48.6	1.51	○
D968S-A5C-0840	8.40	61	103	10	40	48.4	1.53	○
D968S-A5C-0850	8.50	61	103	10	40	48.3	1.55	●
D968S-A5C-0860	8.60	61	103	10	40	48.1	1.57	●
D968S-A5C-0870	8.70	61	103	10	40	48.0	1.58	●
D968S-A5C-0880	8.80	61	103	10	40	47.8	1.60	○
D968S-A5C-0890	8.90	61	103	10	40	47.7	1.62	○
D968S-A5C-0900	9.00	61	103	10	40	47.5	1.64	●
D968S-A5C-0910	9.10	61	103	10	40	47.4	1.66	○
D968S-A5C-0920	9.20	61	103	10	40	47.2	1.67	○
D968S-A5C-0930	9.30	61	103	10	40	47.1	1.69	○
D968S-A5C-0940	9.40	61	103	10	40	46.9	1.71	○
D968S-A5C-0950	9.50	61	103	10	40	46.8	1.73	○
D968S-A5C-0960	9.60	61	103	10	40	46.6	1.75	○
D968S-A5C-0970	9.70	61	103	10	40	46.5	1.77	○
D968S-A5C-0980	9.80	61	103	10	40	46.3	1.78	●
D968S-A5C-0990	9.90	61	103	10	40	46.2	1.80	○
D968S-A5C-1000	10.00	61	103	10	40	46.0	1.82	●
D968S-A5C-1010	10.10	71	118	12	45	55.9	1.84	○
D968S-A5C-1020	10.20	71	118	12	45	55.7	1.86	●
D968S-A5C-1025	10.25	71	118	12	45	55.6	1.87	○
D968S-A5C-1030	10.30	71	118	12	45	55.6	1.87	○
D968S-A5C-1040	10.40	71	118	12	45	55.4	1.89	○
D968S-A5C-1050	10.50	71	118	12	45	55.3	1.91	●
D968S-A5C-1060	10.60	71	118	12	45	55.1	1.93	○
D968S-A5C-1070	10.70	71	118	12	45	55.0	1.95	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A5C-1080	10.80	71	118	12	45	54.8	1.97	○
D968S-A5C-1090	10.90	71	118	12	45	54.7	1.98	○
D968S-A5C-1100	11.00	71	118	12	45	54.5	2.00	●
D968S-A5C-1110	11.10	71	118	12	45	54.4	2.02	○
D968S-A5C-1120	11.20	71	118	12	45	54.2	2.04	○
D968S-A5C-1130	11.30	71	118	12	45	54.1	2.06	○
D968S-A5C-1140	11.40	71	118	12	45	53.9	2.07	○
D968S-A5C-1150	11.50	71	118	12	45	53.8	2.09	○
D968S-A5C-1160	11.60	71	118	12	45	53.6	2.11	○
D968S-A5C-1170	11.70	71	118	12	45	53.5	2.13	○
D968S-A5C-1180	11.80	71	118	12	45	53.3	2.15	○
D968S-A5C-1190	11.90	71	118	12	45	53.2	2.17	●
D968S-A5C-1200	12.00	71	118	12	45	53.0	2.18	●
D968S-A5C-1210	12.10	77	124	14	45	58.9	2.20	○
D968S-A5C-1220	12.20	77	124	14	45	58.7	2.22	○
D968S-A5C-1230	12.30	77	124	14	45	58.6	2.24	○
D968S-A5C-1240	12.40	77	124	14	45	58.4	2.26	○
D968S-A5C-1250	12.50	77	124	14	45	58.3	2.27	●
D968S-A5C-1260	12.60	77	124	14	45	58.1	2.29	○
D968S-A5C-1270	12.70	77	124	14	45	58.0	2.31	○
D968S-A5C-1280	12.80	77	124	14	45	57.8	2.33	○
D968S-A5C-1290	12.90	77	124	14	45	57.7	2.35	○
D968S-A5C-1300	13.00	77	124	14	45	57.5	2.37	●
D968S-A5C-1310	13.10	77	124	14	45	57.4	2.38	○
D968S-A5C-1320	13.20	77	124	14	45	57.2	2.40	○
D968S-A5C-1330	13.30	77	124	14	45	57.1	2.42	○
D968S-A5C-1340	13.40	77	124	14	45	56.9	2.44	○

● Stock ○ Available upon Order Note: Accept customization from D2 to D20 tool

Unit(mm)

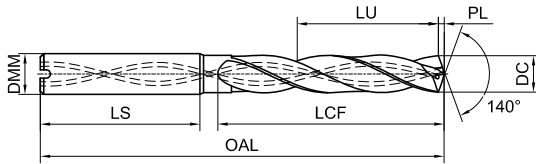
Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			○			○	○	○		○	○		

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P071

D968S-A5C NEW

High Efficient 5D Internal Coolant Twist Drills for Stainless Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A5C-1350	13.50	77	124	14	45	56.8	2.46	○
D968S-A5C-1360	13.60	77	124	14	45	56.6	2.47	○
D968S-A5C-1370	13.70	77	124	14	45	56.5	2.49	○
D968S-A5C-1380	13.80	77	124	14	45	56.3	2.51	○
D968S-A5C-1390	13.90	77	124	14	45	56.2	2.53	○
D968S-A5C-1400	14.00	77	124	14	45	56.0	2.55	●
D968S-A5C-1410	14.10	83	133	16	48	61.9	2.57	○
D968S-A5C-1420	14.20	83	133	16	48	61.7	2.58	○
D968S-A5C-1430	14.30	83	133	16	48	61.6	2.60	○
D968S-A5C-1450	14.50	83	133	16	48	61.3	2.64	●
D968S-A5C-1460	14.60	83	133	16	48	61.1	2.66	○
D968S-A5C-1470	14.70	83	133	16	48	61.0	2.68	○
D968S-A5C-1480	14.80	83	133	16	48	60.8	2.69	○
D968S-A5C-1490	14.90	83	133	16	48	60.7	2.71	○
D968S-A5C-1500	15.00	83	133	16	48	60.5	2.73	●
D968S-A5C-1510	15.10	83	133	16	48	60.4	2.75	○
D968S-A5C-1520	15.20	83	133	16	48	60.2	2.77	○
D968S-A5C-1530	15.30	83	133	16	48	60.1	2.78	○
D968S-A5C-1550	15.50	83	133	16	48	59.8	2.82	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D968S-A5C-1570	15.70	83	133	16	48	59.5	2.86	○
D968S-A5C-1580	15.80	83	133	16	48	59.3	2.88	○
D968S-A5C-1600	16.00	83	133	16	48	59.0	2.91	●
D968S-A5C-1650	16.50	93	143	18	48	68.3	3.00	○
D968S-A5C-1680	16.80	93	143	18	48	67.8	3.06	○
D968S-A5C-1690	16.90	93	143	18	48	67.7	3.08	○
D968S-A5C-1700	17.00	93	143	18	48	67.5	3.09	○
D968S-A5C-1720	17.20	93	143	18	48	67.2	3.13	○
D968S-A5C-1750	17.50	93	143	18	48	66.8	3.18	○
D968S-A5C-1770	17.70	93	143	18	48	66.5	3.22	○
D968S-A5C-1780	17.80	93	143	18	48	66.3	3.24	○
D968S-A5C-1800	18.00	93	143	18	48	66.0	3.28	○
D968S-A5C-1850	18.50	101	153	20	50	73.3	3.37	○
D968S-A5C-1860	18.60	101	153	20	50	73.1	3.38	○
D968S-A5C-1880	18.80	101	153	20	50	72.8	3.42	○
D968S-A5C-1900	19.00	101	153	20	50	72.5	3.46	○
D968S-A5C-1950	19.50	101	153	20	50	71.8	3.55	○
D968S-A5C-1980	19.80	101	153	20	50	71.3	3.60	○
D968S-A5C-2000	20.00	101	153	20	50	71.0	3.64	○

● Stock ○ Available upon Order Note: Accept customization from D2 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

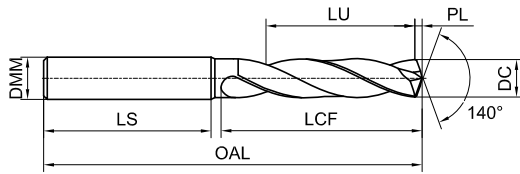
Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			○			○	○	○		○	○		

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P071

D938-A3N

3D External Coolant Twist Drills for Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3N-0100	1.00	7	45	4	30	5.5	0.18	●
D938-A3N-0110	1.10	7	45	4	30	5.4	0.20	○
D938-A3N-0120	1.20	7	45	4	30	5.2	0.22	○
D938-A3N-0130	1.30	7	45	4	30	5.1	0.24	○
D938-A3N-0140	1.40	7	45	4	30	4.9	0.25	○
D938-A3N-0150	1.50	9	55	4	38	6.8	0.27	○
D938-A3N-0160	1.60	9	55	4	38	6.6	0.29	●
D938-A3N-0170	1.70	9	55	4	38	6.5	0.31	○
D938-A3N-0180	1.80	9	55	4	38	6.3	0.33	●
D938-A3N-0190	1.90	9	55	4	38	6.2	0.35	○
D938-A3N-0200	2.00	13	55	4	36	10.0	0.36	○
D938-A3N-0210	2.10	13	55	4	36	9.9	0.38	○
D938-A3N-0220	2.20	13	55	4	36	9.7	0.40	○
D938-A3N-0230	2.30	13	55	4	36	9.6	0.42	○
D938-A3N-0240	2.40	17	55	4	33	13.4	0.44	○
D938-A3N-0250	2.50	17	55	4	33	13.3	0.45	○
D938-A3N-0260	2.60	17	55	4	33	13.1	0.47	○
D938-A3N-0270	2.70	17	55	4	33	13.0	0.49	○
D938-A3N-0280	2.80	17	55	4	33	12.8	0.51	○
D938-A3N-0290	2.90	17	55	4	33	12.7	0.53	○
D938-A3N-0300	3.00	20	62	6	36	15.5	0.55	●
D938-A3N-0305	3.05	20	62	6	36	15.4	0.56	○
D938-A3N-0310	3.10	20	62	6	36	15.4	0.56	●
D938-A3N-0320	3.20	20	62	6	36	15.2	0.58	●
D938-A3N-0325	3.25	20	62	6	36	15.1	0.59	○
D938-A3N-0330	3.30	20	62	6	36	15.1	0.60	●
D938-A3N-0340	3.40	20	62	6	36	14.9	0.62	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3N-0350	3.50	20	62	6	36	14.8	0.64	●
D938-A3N-0360	3.60	20	62	6	36	14.6	0.66	●
D938-A3N-0370	3.70	20	62	6	36	14.5	0.67	●
D938-A3N-0380	3.80	24	66	6	36	18.3	0.69	●
D938-A3N-0390	3.90	24	66	6	36	18.2	0.71	●
D938-A3N-0400	4.00	24	66	6	36	18.0	0.73	●
D938-A3N-0410	4.10	24	66	6	36	17.9	0.75	●
D938-A3N-0415	4.15	24	66	6	36	17.8	0.76	○
D938-A3N-0420	4.20	24	66	6	36	17.7	0.76	●
D938-A3N-0430	4.30	24	66	6	36	17.6	0.78	●
D938-A3N-0440	4.40	24	66	6	36	17.4	0.80	●
D938-A3N-0450	4.50	24	66	6	36	17.3	0.82	●
D938-A3N-0460	4.60	24	66	6	36	17.1	0.84	●
D938-A3N-0465	4.65	24	66	6	36	17.0	0.85	●
D938-A3N-0470	4.70	24	66	6	36	17.0	0.86	●
D938-A3N-0480	4.80	28	66	6	36	20.8	0.87	●
D938-A3N-0490	4.90	28	66	6	36	20.7	0.89	●
D938-A3N-0500	5.00	28	66	6	36	20.5	0.91	●
D938-A3N-0510	5.10	28	66	6	36	20.4	0.93	●
D938-A3N-0520	5.20	28	66	6	36	20.2	0.95	●
D938-A3N-0530	5.30	28	66	6	36	20.1	0.96	●
D938-A3N-0540	5.40	28	66	6	36	19.9	0.98	●
D938-A3N-0550	5.50	28	66	6	36	19.8	1.00	●
D938-A3N-0555	5.55	28	66	6	36	19.7	1.01	●
D938-A3N-0560	5.60	28	66	6	36	19.6	1.02	●
D938-A3N-0570	5.70	28	66	6	36	19.5	1.04	●
D938-A3N-0580	5.80	28	66	6	36	19.3	1.06	●

● Stock ○ Available upon Order Note: Accept customization from D1 to D20 tool

Unit(mm)

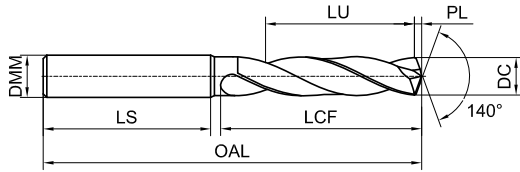
Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A3N

3D External Coolant Twist Drills for Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3N-0590	5.90	28	66	6	36	19.2	1.07	●
D938-A3N-0600	6.00	28	66	6	36	19.0	1.09	●
D938-A3N-0610	6.10	34	79	8	36	24.9	1.11	●
D938-A3N-0620	6.20	34	79	8	36	24.7	1.13	●
D938-A3N-0630	6.30	34	79	8	36	24.6	1.15	●
D938-A3N-0640	6.40	34	79	8	36	24.4	1.16	●
D938-A3N-0650	6.50	34	79	8	36	24.3	1.18	●
D938-A3N-0660	6.60	34	79	8	36	24.1	1.20	●
D938-A3N-0670	6.70	34	79	8	36	24.0	1.22	●
D938-A3N-0680	6.80	34	79	8	36	23.8	1.24	●
D938-A3N-0690	6.90	34	79	8	36	23.7	1.26	●
D938-A3N-0700	7.00	34	79	8	36	23.5	1.27	●
D938-A3N-0710	7.10	41	79	8	36	30.4	1.29	●
D938-A3N-0720	7.20	41	79	8	36	30.2	1.31	●
D938-A3N-0730	7.30	41	79	8	36	30.1	1.33	●
D938-A3N-0740	7.40	41	79	8	36	29.9	1.35	●
D938-A3N-0745	7.45	41	79	8	36	29.8	1.36	○
D938-A3N-0750	7.50	41	79	8	36	29.8	1.36	●
D938-A3N-0755	7.55	41	79	8	36	29.7	1.37	○
D938-A3N-0760	7.60	41	79	8	36	29.6	1.38	●
D938-A3N-0770	7.70	41	79	8	36	29.5	1.40	●
D938-A3N-0780	7.80	41	79	8	36	29.3	1.42	●
D938-A3N-0790	7.90	41	79	8	36	29.2	1.44	●
D938-A3N-0800	8.00	41	79	8	36	29.0	1.46	●
D938-A3N-0810	8.10	47	89	10	40	34.9	1.47	●
D938-A3N-0820	8.20	47	89	10	40	34.7	1.49	●
D938-A3N-0830	8.30	47	89	10	40	34.6	1.51	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3N-0840	8.40	47	89	10	40	34.4	1.53	●
D938-A3N-0850	8.50	47	89	10	40	34.3	1.55	●
D938-A3N-0860	8.60	47	89	10	40	34.1	1.57	●
D938-A3N-0870	8.70	47	89	10	40	34.0	1.58	●
D938-A3N-0880	8.80	47	89	10	40	33.8	1.60	●
D938-A3N-0890	8.90	47	89	10	40	33.7	1.62	●
D938-A3N-0900	9.00	47	89	10	40	33.5	1.64	●
D938-A3N-0910	9.10	47	89	10	40	33.4	1.66	●
D938-A3N-0920	9.20	47	89	10	40	33.2	1.67	●
D938-A3N-0925	9.25	47	89	10	40	33.1	1.68	○
D938-A3N-0930	9.30	47	89	10	40	33.1	1.69	●
D938-A3N-0935	9.35	47	89	10	40	33.0	1.70	●
D938-A3N-0940	9.40	47	89	10	40	32.9	1.71	●
D938-A3N-0950	9.50	47	89	10	40	32.8	1.73	●
D938-A3N-0955	9.55	47	89	10	40	32.7	1.74	○
D938-A3N-0960	9.60	47	89	10	40	32.6	1.75	●
D938-A3N-0970	9.70	47	89	10	40	32.5	1.77	●
D938-A3N-0980	9.80	47	89	10	40	32.3	1.78	●
D938-A3N-0990	9.90	47	89	10	40	32.2	1.80	●
D938-A3N-1000	10.00	47	89	10	40	32.0	1.82	●
D938-A3N-1010	10.10	55	102	12	45	39.9	1.84	●
D938-A3N-1020	10.20	55	102	12	45	39.7	1.86	●
D938-A3N-1025	10.25	55	102	12	45	39.6	1.87	○
D938-A3N-1030	10.30	55	102	12	45	39.6	1.87	●
D938-A3N-1035	10.35	55	102	12	45	39.5	1.88	●
D938-A3N-1040	10.40	55	102	12	45	39.4	1.89	●
D938-A3N-1050	10.50	55	102	12	45	39.3	1.91	●

● Stock ○ Available upon Order Note: Accept customization from D1 to D20 tool

Unit(mm)

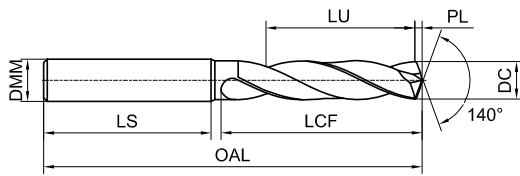
Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A3N

3D External Coolant Twist Drills for Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3N-1060	10.60	55	102	12	45	39.1	1.93	●
D938-A3N-1070	10.70	55	102	12	45	39.0	1.95	●
D938-A3N-1080	10.80	55	102	12	45	38.8	1.97	●
D938-A3N-1085	10.85	55	102	12	45	38.7	1.97	●
D938-A3N-1090	10.90	55	102	12	45	38.7	1.98	●
D938-A3N-1100	11.00	55	102	12	45	38.5	2.00	●
D938-A3N-1110	11.10	55	102	12	45	38.4	2.02	●
D938-A3N-1120	11.20	55	102	12	45	38.2	2.04	●
D938-A3N-1130	11.30	55	102	12	45	38.1	2.06	●
D938-A3N-1140	11.40	55	102	12	45	37.9	2.07	●
D938-A3N-1150	11.50	55	102	12	45	37.8	2.09	●
D938-A3N-1160	11.60	55	102	12	45	37.6	2.11	○
D938-A3N-1170	11.70	55	102	12	45	37.5	2.13	●
D938-A3N-1180	11.80	55	102	12	45	37.3	2.15	●
D938-A3N-1190	11.90	55	102	12	45	37.2	2.17	●
D938-A3N-1200	12.00	55	102	12	45	37.0	2.18	●
D938-A3N-1210	12.10	60	107	14	45	41.9	2.20	●
D938-A3N-1215	12.15	60	107	14	45	41.8	2.21	○
D938-A3N-1220	12.20	60	107	14	45	41.7	2.22	●
D938-A3N-1225	12.25	60	107	14	45	41.6	2.23	○
D938-A3N-1230	12.30	60	107	14	45	41.6	2.24	●
D938-A3N-1240	12.40	60	107	14	45	41.4	2.26	○
D938-A3N-1250	12.50	60	107	14	45	41.3	2.27	●
D938-A3N-1260	12.60	60	107	14	45	41.1	2.29	●
D938-A3N-1270	12.70	60	107	14	45	41.0	2.31	●
D938-A3N-1280	12.80	60	107	14	45	40.8	2.33	●
D938-A3N-1290	12.90	60	107	14	45	40.7	2.35	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3N-1300	13.00	60	107	14	45	40.5	2.37	●
D938-A3N-1310	13.10	60	107	14	45	40.4	2.38	○
D938-A3N-1320	13.20	60	107	14	45	40.2	2.40	●
D938-A3N-1325	13.25	60	107	14	45	40.1	2.41	○
D938-A3N-1330	13.30	60	107	14	45	40.1	2.42	○
D938-A3N-1340	13.40	60	107	14	45	39.9	2.44	○
D938-A3N-1350	13.50	60	107	14	45	39.8	2.46	●
D938-A3N-1370	13.70	60	107	14	45	39.5	2.49	○
D938-A3N-1380	13.80	60	107	14	45	39.3	2.51	●
D938-A3N-1400	14.00	60	107	14	45	39.0	2.55	●
D938-A3N-1410	14.10	65	115	16	48	43.9	2.57	●
D938-A3N-1420	14.20	65	115	16	48	43.7	2.58	●
D938-A3N-1430	14.30	65	115	16	48	43.6	2.60	●
D938-A3N-1440	14.40	65	115	16	48	43.4	2.62	○
D938-A3N-1450	14.50	65	115	16	48	43.3	2.64	●
D938-A3N-1460	14.60	65	115	16	48	43.1	2.66	●
D938-A3N-1470	14.70	65	115	16	48	43.0	2.68	○
D938-A3N-1480	14.80	65	115	16	48	42.8	2.69	●
D938-A3N-1490	14.90	65	115	16	48	42.7	2.71	○
D938-A3N-1500	15.00	65	115	16	48	42.5	2.73	●
D938-A3N-1510	15.10	65	115	16	48	42.4	2.75	○
D938-A3N-1520	15.20	65	115	16	48	42.2	2.77	●
D938-A3N-1525	15.25	65	115	16	48	42.1	2.78	○
D938-A3N-1530	15.30	65	115	16	48	42.1	2.78	●
D938-A3N-1540	15.40	65	115	16	48	41.9	2.80	○
D938-A3N-1550	15.50	65	115	16	48	41.8	2.82	●
D938-A3N-1570	15.70	65	115	16	48	41.5	2.86	●

● Stock ○ Available upon Order Note: Accept customization from D1 to D20 tool

Unit(mm)

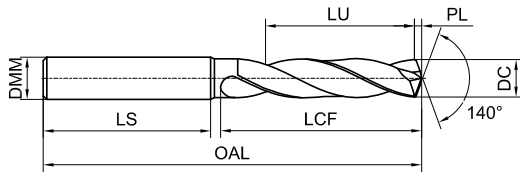
Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎		○	○								

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A3N

3D External Coolant Twist Drills for Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3N-1580	15.80	65	115	16	48	41.3	2.88	○
D938-A3N-1590	15.90	65	115	16	48	41.2	2.89	○
D938-A3N-1600	16.00	65	115	16	48	41.0	2.91	●
D938-A3N-1610	16.10	73	123	18	48	48.9	2.93	○
D938-A3N-1620	16.20	73	123	18	48	48.7	2.95	○
D938-A3N-1630	16.30	73	123	18	48	48.6	2.97	○
D938-A3N-1640	16.40	73	123	18	48	48.4	2.98	●
D938-A3N-1650	16.50	73	123	18	48	48.3	3.00	●
D938-A3N-1660	16.60	73	123	18	48	48.1	3.02	●
D938-A3N-1670	16.70	73	123	18	48	48.0	3.04	○
D938-A3N-1680	16.80	73	123	18	48	47.8	3.06	○
D938-A3N-1690	16.90	73	123	18	48	47.7	3.08	●
D938-A3N-1700	17.00	73	123	18	48	47.5	3.09	●
D938-A3N-1720	17.20	73	123	18	48	47.2	3.13	○
D938-A3N-1730	17.30	73	123	18	48	47.1	3.15	○
D938-A3N-1740	17.40	73	123	18	48	46.9	3.17	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3N-1750	17.50	73	123	18	48	46.8	3.18	●
D938-A3N-1760	17.60	73	123	18	48	46.6	3.20	○
D938-A3N-1770	17.70	73	123	18	48	46.5	3.22	○
D938-A3N-1780	17.80	73	123	18	48	46.3	3.24	○
D938-A3N-1800	18.00	73	123	18	48	46.0	3.28	●
D938-A3N-1820	18.20	79	131	20	50	51.7	3.31	○
D938-A3N-1840	18.40	79	131	20	50	51.4	3.35	○
D938-A3N-1850	18.50	79	131	20	50	51.3	3.37	●
D938-A3N-1860	18.60	79	131	20	50	51.1	3.38	○
D938-A3N-1880	18.80	79	131	20	50	50.8	3.42	○
D938-A3N-1900	19.00	79	131	20	50	50.5	3.46	●
D938-A3N-1910	19.10	79	131	20	50	50.4	3.48	○
D938-A3N-1950	19.50	79	131	20	50	49.8	3.55	●
D938-A3N-1980	19.80	79	131	20	50	49.3	3.60	○
D938-A3N-1990	19.90	79	131	20	50	49.2	3.62	○
D938-A3N-2000	20.00	79	131	20	50	49.0	3.64	●

● Stock ○ Available upon Order Note: Accept customization from D1 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

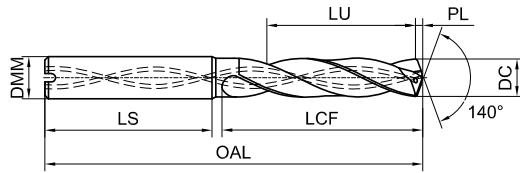
Workpiece Material													
P			M	K		N				S	H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A3C

3D Internal Coolant Twist Drills for Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3C-0200	2.00	13	55	4	36	10.0	0.36	○
D938-A3C-0210	2.10	13	55	4	36	9.9	0.38	○
D938-A3C-0220	2.20	13	55	4	36	9.7	0.40	○
D938-A3C-0230	2.30	13	55	4	36	9.6	0.42	○
D938-A3C-0240	2.40	17	55	4	33	13.4	0.44	○
D938-A3C-0250	2.50	17	55	4	33	13.3	0.45	○
D938-A3C-0260	2.60	17	55	4	33	13.1	0.47	○
D938-A3C-0270	2.70	17	55	4	33	13.0	0.49	○
D938-A3C-0280	2.80	17	55	4	33	12.8	0.51	○
D938-A3C-0290	2.90	17	55	4	33	12.7	0.53	○
D938-A3C-0300	3.00	20	62	6	36	15.5	0.55	●
D938-A3C-0310	3.10	20	62	6	36	15.4	0.56	●
D938-A3C-0320	3.20	20	62	6	36	15.2	0.58	○
D938-A3C-0325	3.25	20	62	6	36	15.1	0.59	○
D938-A3C-0330	3.30	20	62	6	36	15.1	0.60	●
D938-A3C-0340	3.40	20	62	6	36	14.9	0.62	●
D938-A3C-0350	3.50	20	62	6	36	14.8	0.64	●
D938-A3C-0360	3.60	20	62	6	36	14.6	0.66	○
D938-A3C-0370	3.70	20	62	6	36	14.5	0.67	●
D938-A3C-0380	3.80	24	66	6	36	18.3	0.69	●
D938-A3C-0390	3.90	24	66	6	36	18.2	0.71	○
D938-A3C-0400	4.00	24	66	6	36	18.0	0.73	●
D938-A3C-0410	4.10	24	66	6	36	17.9	0.75	●
D938-A3C-0420	4.20	24	66	6	36	17.7	0.76	●
D938-A3C-0430	4.30	24	66	6	36	17.6	0.78	●
D938-A3C-0440	4.40	24	66	6	36	17.4	0.80	○
D938-A3C-0450	4.50	24	66	6	36	17.3	0.82	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3C-0460	4.60	24	66	6	36	17.1	0.84	●
D938-A3C-0465	4.65	24	66	6	36	17.0	0.85	○
D938-A3C-0470	4.70	24	66	6	36	17.0	0.86	○
D938-A3C-0480	4.80	28	66	6	36	20.8	0.87	●
D938-A3C-0490	4.90	28	66	6	36	20.7	0.89	○
D938-A3C-0500	5.00	28	66	6	36	20.5	0.91	●
D938-A3C-0510	5.10	28	66	6	36	20.4	0.93	●
D938-A3C-0520	5.20	28	66	6	36	20.2	0.95	●
D938-A3C-0530	5.30	28	66	6	36	20.1	0.96	●
D938-A3C-0540	5.40	28	66	6	36	19.9	0.98	●
D938-A3C-0550	5.50	28	66	6	36	19.8	1.00	●
D938-A3C-0555	5.55	28	66	6	36	19.7	1.01	○
D938-A3C-0560	5.60	28	66	6	36	19.6	1.02	●
D938-A3C-0570	5.70	28	66	6	36	19.5	1.04	○
D938-A3C-0580	5.80	28	66	6	36	19.3	1.06	●
D938-A3C-0590	5.90	28	66	6	36	19.2	1.07	○
D938-A3C-0600	6.00	28	66	6	36	19.0	1.09	●
D938-A3C-0605	6.05	34	79	8	36	24.9	1.10	○
D938-A3C-0610	6.10	34	79	8	36	24.9	1.11	●
D938-A3C-0620	6.20	34	79	8	36	24.7	1.13	○
D938-A3C-0630	6.30	34	79	8	36	24.6	1.15	○
D938-A3C-0640	6.40	34	79	8	36	24.4	1.16	○
D938-A3C-0650	6.50	34	79	8	36	24.3	1.18	●
D938-A3C-0660	6.60	34	79	8	36	24.1	1.20	○
D938-A3C-0670	6.70	34	79	8	36	24.0	1.22	○
D938-A3C-0680	6.80	34	79	8	36	23.8	1.24	●
D938-A3C-0690	6.90	34	79	8	36	23.7	1.26	●

● Stock ○ Available upon Order Note: Accept customization from D2 to D20 tool

Unit(mm)

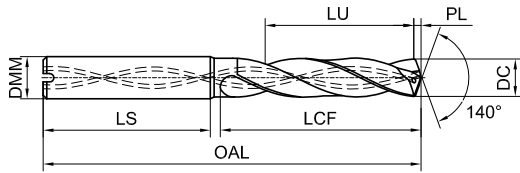
Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A3C

3D Internal Coolant Twist Drills for Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3C-0700	7.00	34	79	8	36	23.5	1.27	●
D938-A3C-0710	7.10	41	79	8	36	30.4	1.29	○
D938-A3C-0720	7.20	41	79	8	36	30.2	1.31	○
D938-A3C-0730	7.30	41	79	8	36	30.1	1.33	○
D938-A3C-0740	7.40	41	79	8	36	29.9	1.35	●
D938-A3C-0745	7.45	41	79	8	36	29.8	1.36	○
D938-A3C-0750	7.50	41	79	8	36	29.8	1.36	●
D938-A3C-0755	7.55	41	79	8	36	29.7	1.37	○
D938-A3C-0760	7.60	41	79	8	36	29.6	1.38	○
D938-A3C-0770	7.70	41	79	8	36	29.5	1.40	○
D938-A3C-0775	7.75	41	79	8	36	29.4	1.41	○
D938-A3C-0780	7.80	41	79	8	36	29.3	1.42	●
D938-A3C-0790	7.90	41	79	8	36	29.2	1.44	○
D938-A3C-0800	8.00	41	79	8	36	29.0	1.46	●
D938-A3C-0810	8.10	47	89	10	40	34.9	1.47	○
D938-A3C-0820	8.20	47	89	10	40	34.7	1.49	●
D938-A3C-0825	8.25	47	89	10	40	34.6	1.50	○
D938-A3C-0830	8.30	47	89	10	40	34.6	1.51	●
D938-A3C-0840	8.40	47	89	10	40	34.4	1.53	●
D938-A3C-0850	8.50	47	89	10	40	34.3	1.55	●
D938-A3C-0860	8.60	47	89	10	40	34.1	1.57	●
D938-A3C-0870	8.70	47	89	10	40	34.0	1.58	●
D938-A3C-0880	8.80	47	89	10	40	33.8	1.60	●
D938-A3C-0890	8.90	47	89	10	40	33.7	1.62	●
D938-A3C-0900	9.00	47	89	10	40	33.5	1.64	●
D938-A3C-0910	9.10	47	89	10	40	33.4	1.66	○
D938-A3C-0920	9.20	47	89	10	40	33.2	1.67	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3C-0925	9.25	47	89	10	40	33.1	1.68	○
D938-A3C-0930	9.30	47	89	10	40	33.1	1.69	○
D938-A3C-0935	9.35	47	89	10	40	33.0	1.70	○
D938-A3C-0940	9.40	47	89	10	40	32.9	1.71	○
D938-A3C-0950	9.50	47	89	10	40	32.8	1.73	●
D938-A3C-0955	9.55	47	89	10	40	32.7	1.74	○
D938-A3C-0960	9.60	47	89	10	40	32.6	1.75	○
D938-A3C-0970	9.70	47	89	10	40	32.5	1.77	●
D938-A3C-0980	9.80	47	89	10	40	32.3	1.78	●
D938-A3C-0990	9.90	47	89	10	40	32.2	1.80	○
D938-A3C-1000	10.00	47	89	10	40	32.0	1.82	●
D938-A3C-1010	10.10	55	102	12	45	39.9	1.84	●
D938-A3C-1020	10.20	55	102	12	45	39.7	1.86	●
D938-A3C-1025	10.25	55	102	12	45	39.6	1.87	○
D938-A3C-1030	10.30	55	102	12	45	39.6	1.87	●
D938-A3C-1040	10.40	55	102	12	45	39.4	1.89	●
D938-A3C-1050	10.50	55	102	12	45	39.3	1.91	●
D938-A3C-1060	10.60	55	102	12	45	39.1	1.93	○
D938-A3C-1070	10.70	55	102	12	45	39.0	1.95	○
D938-A3C-1080	10.80	55	102	12	45	38.8	1.97	●
D938-A3C-1085	10.85	55	102	12	45	38.8	1.97	○
D938-A3C-1090	10.90	55	102	12	45	38.7	1.98	○
D938-A3C-1100	11.00	55	102	12	45	38.5	2.00	●
D938-A3C-1110	11.10	55	102	12	45	38.4	2.02	○
D938-A3C-1120	11.20	55	102	12	45	38.2	2.04	○
D938-A3C-1130	11.30	55	102	12	45	38.1	2.06	○
D938-A3C-1140	11.40	55	102	12	45	37.9	2.07	○

● Stock ○ Available upon Order Note: Accept customization from D2 to D20 tool

Unit(mm)

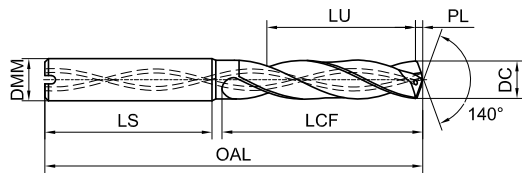
Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A3C

3D Internal Coolant Twist Drills for Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3C-1150	11.50	55	102	12	45	37.8	2.09	○
D938-A3C-1160	11.60	55	102	12	45	37.6	2.11	○
D938-A3C-1170	11.70	55	102	12	45	37.5	2.13	○
D938-A3C-1180	11.80	55	102	12	45	37.3	2.15	●
D938-A3C-1190	11.90	55	102	12	45	37.2	2.17	○
D938-A3C-1200	12.00	55	102	12	45	37.0	2.18	●
D938-A3C-1210	12.10	60	107	14	45	41.9	2.20	○
D938-A3C-1220	12.20	60	107	14	45	41.7	2.22	●
D938-A3C-1230	12.30	60	107	14	45	41.6	2.24	○
D938-A3C-1250	12.50	60	107	14	45	41.3	2.27	●
D938-A3C-1260	12.60	60	107	14	45	41.1	2.29	○
D938-A3C-1270	12.70	60	107	14	45	41.0	2.31	○
D938-A3C-1280	12.80	60	107	14	45	40.8	2.33	○
D938-A3C-1285	12.85	60	107	14	45	40.7	2.34	○
D938-A3C-1300	13.00	60	107	14	45	40.5	2.37	●
D938-A3C-1310	13.10	60	107	14	45	40.4	2.38	○
D938-A3C-1340	13.40	60	107	14	45	39.9	2.44	○
D938-A3C-1350	13.50	60	107	14	45	39.8	2.46	●
D938-A3C-1360	13.60	60	107	14	45	39.6	2.47	○
D938-A3C-1370	13.70	60	107	14	45	39.5	2.49	○
D938-A3C-1375	13.75	60	107	14	45	39.4	2.50	○
D938-A3C-1380	13.80	60	107	14	45	39.3	2.51	○
D938-A3C-1400	14.00	60	107	14	45	39.0	2.55	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3C-1405	14.05	60	107	14	45	38.9	2.56	○
D938-A3C-1420	14.20	65	115	16	48	43.7	2.58	●
D938-A3C-1430	14.30	65	115	16	48	43.6	2.60	○
D938-A3C-1450	14.50	65	115	16	48	43.3	2.64	●
D938-A3C-1460	14.60	65	115	16	48	43.1	2.66	○
D938-A3C-1470	14.70	65	115	16	48	43.0	2.68	○
D938-A3C-1480	14.80	65	115	16	48	42.8	2.69	○
D938-A3C-1500	15.00	65	115	16	48	42.5	2.73	●
D938-A3C-1520	15.20	65	115	16	48	42.2	2.77	○
D938-A3C-1530	15.30	65	115	16	48	42.1	2.78	●
D938-A3C-1550	15.50	65	115	16	48	41.8	2.82	○
D938-A3C-1570	15.70	65	115	16	48	41.5	2.86	○
D938-A3C-1580	15.80	65	115	16	48	41.3	2.88	●
D938-A3C-1600	16.00	65	115	16	48	41.0	2.91	●
D938-A3C-1650	16.50	73	123	18	48	48.3	3.00	●
D938-A3C-1680	16.80	73	123	18	48	47.8	3.06	○
D938-A3C-1690	16.90	73	123	18	48	47.7	3.08	○
D938-A3C-1700	17.00	73	123	18	48	47.5	3.09	○
D938-A3C-1750	17.50	73	123	18	48	46.8	3.18	●
D938-A3C-1770	17.70	73	123	18	48	46.5	3.22	○
D938-A3C-1780	17.80	73	123	18	48	46.3	3.24	○
D938-A3C-1800	18.00	73	123	18	48	46.0	3.28	●
D938-A3C-1830	18.30	79	131	20	50	51.6	3.33	○

● Stock ○ Available upon Order Note: Accept customization from D2 to D20 tool

Unit(mm)

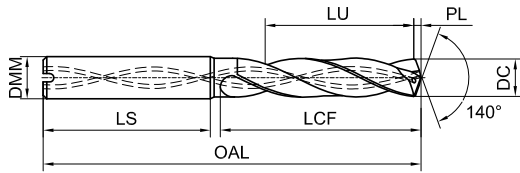
Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A3C

3D Internal Coolant Twist Drills for Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A3C-1850	18.50	79	131	20	50	51.3	3.37	○
D938-A3C-1880	18.80	79	131	20	50	50.8	3.42	○
D938-A3C-1900	19.00	79	131	20	50	50.5	3.46	○
D938-A3C-1930	19.30	79	131	20	50	50.1	3.51	○
D938-A3C-1950	19.50	79	131	20	50	49.8	3.55	○
D938-A3C-1960	19.60	79	131	20	50	49.6	3.57	○
D938-A3C-1970	19.70	79	131	20	50	49.5	3.59	○
D938-A3C-1980	19.80	79	131	20	50	49.3	3.60	○
D938-A3C-2000	20.00	79	131	20	50	49.0	3.64	●

● Stock ○ Available upon Order Note: Accept customization from D2 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

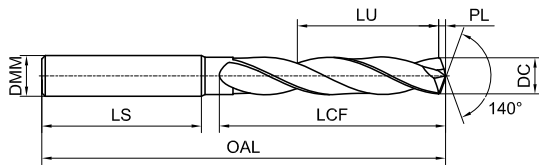
Workpiece Material													
P			M	K			N				S	H	
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A5N

5D External Coolant Twist Drills for Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A5N-0100	1.00	9	45	4	28	7.5	0.18	○
D938-A5N-0160	1.60	12	55	4	35	9.6	0.29	○
D938-A5N-0165	1.65	12	55	4	35	9.5	0.30	○
D938-A5N-0190	1.90	12	55	4	35	9.2	0.35	○
D938-A5N-0200	2.00	18	62	4	38	15.0	0.36	●
D938-A5N-0210	2.10	18	62	4	38	14.9	0.38	○
D938-A5N-0230	2.30	18	62	4	38	14.6	0.42	○
D938-A5N-0235	2.35	18	62	4	38	14.5	0.43	○
D938-A5N-0240	2.40	22	62	4	35	18.4	0.44	○
D938-A5N-0250	2.50	22	62	4	35	18.3	0.45	●
D938-A5N-0260	2.60	22	62	4	35	18.1	0.47	●
D938-A5N-0270	2.70	22	62	4	35	18.0	0.49	○
D938-A5N-0280	2.80	22	62	4	35	17.8	0.51	○
D938-A5N-0290	2.90	22	62	4	35	17.7	0.53	○
D938-A5N-0300	3.00	28	66	6	36	23.5	0.55	●
D938-A5N-0310	3.10	28	66	6	36	23.4	0.56	○
D938-A5N-0315	3.15	28	66	6	36	23.3	0.57	○
D938-A5N-0320	3.20	28	66	6	36	23.2	0.58	●
D938-A5N-0325	3.25	28	66	6	36	23.1	0.59	○
D938-A5N-0330	3.30	28	66	6	36	23.1	0.60	●
D938-A5N-0340	3.40	28	66	6	36	22.9	0.62	●
D938-A5N-0350	3.50	28	66	6	36	22.8	0.64	●
D938-A5N-0360	3.60	28	66	6	36	22.6	0.66	○
D938-A5N-0365	3.65	28	66	6	36	22.5	0.66	○
D938-A5N-0370	3.70	28	66	6	36	22.5	0.67	○
D938-A5N-0380	3.80	36	74	6	36	30.3	0.69	○
D938-A5N-0390	3.90	36	74	6	36	30.2	0.71	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A5N-0400	4.00	36	74	6	36	30.0	0.73	●
D938-A5N-0405	4.05	36	74	6	36	29.9	0.74	○
D938-A5N-0410	4.10	36	74	6	36	29.9	0.75	●
D938-A5N-0420	4.20	36	74	6	36	29.7	0.76	●
D938-A5N-0430	4.30	36	74	6	36	29.6	0.78	●
D938-A5N-0440	4.40	36	74	6	36	29.4	0.80	○
D938-A5N-0450	4.50	36	74	6	36	29.3	0.82	●
D938-A5N-0460	4.60	36	74	6	36	29.1	0.84	○
D938-A5N-0465	4.65	36	74	6	36	29.0	0.85	○
D938-A5N-0470	4.70	36	74	6	36	29.0	0.86	●
D938-A5N-0480	4.80	44	82	6	36	36.8	0.87	●
D938-A5N-0490	4.90	44	82	6	36	36.7	0.89	○
D938-A5N-0500	5.00	44	82	6	36	36.5	0.91	●
D938-A5N-0505	5.05	44	82	6	36	36.4	0.92	○
D938-A5N-0510	5.10	44	82	6	36	36.4	0.93	●
D938-A5N-0520	5.20	44	82	6	36	36.2	0.95	●
D938-A5N-0530	5.30	44	82	6	36	36.1	0.96	●
D938-A5N-0540	5.40	44	82	6	36	35.9	0.98	○
D938-A5N-0550	5.50	44	82	6	36	35.8	1.00	●
D938-A5N-0555	5.55	44	82	6	36	35.7	1.01	○
D938-A5N-0560	5.60	44	82	6	36	35.6	1.02	●
D938-A5N-0570	5.70	44	82	6	36	35.5	1.04	●
D938-A5N-0580	5.80	44	82	6	36	35.3	1.06	●
D938-A5N-0590	5.90	44	82	6	36	35.2	1.07	●
D938-A5N-0600	6.00	44	82	6	36	35.0	1.09	●
D938-A5N-0610	6.10	53	91	8	36	43.9	1.11	○
D938-A5N-0620	6.20	53	91	8	36	43.7	1.13	○

● Stock ○ Available upon Order Note: Accept customization from D1 to D20 tool

Unit(mm)

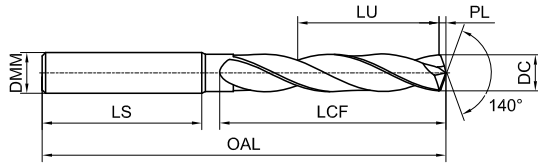
Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A5N

5D External Coolant Twist Drills for Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A5N-0630	6.30	53	91	8	36	43.6	1.15	●
D938-A5N-0640	6.40	53	91	8	36	43.4	1.16	○
D938-A5N-0650	6.50	53	91	8	36	43.3	1.18	●
D938-A5N-0660	6.60	53	91	8	36	43.1	1.20	●
D938-A5N-0670	6.70	53	91	8	36	43.0	1.22	●
D938-A5N-0680	6.80	53	91	8	36	42.8	1.24	●
D938-A5N-0690	6.90	53	91	8	36	42.7	1.26	●
D938-A5N-0700	7.00	53	91	8	36	42.5	1.27	●
D938-A5N-0710	7.10	53	91	8	36	42.4	1.29	●
D938-A5N-0720	7.20	53	91	8	36	42.2	1.31	○
D938-A5N-0730	7.30	53	91	8	36	42.1	1.33	○
D938-A5N-0740	7.40	53	91	8	36	41.9	1.35	●
D938-A5N-0745	7.45	53	91	8	36	41.8	1.36	○
D938-A5N-0750	7.50	53	91	8	36	41.8	1.36	○
D938-A5N-0755	7.55	53	91	8	36	41.7	1.37	○
D938-A5N-0760	7.60	53	91	8	36	41.6	1.38	○
D938-A5N-0770	7.70	53	91	8	36	41.5	1.40	○
D938-A5N-0780	7.80	53	91	8	36	41.3	1.42	●
D938-A5N-0790	7.90	53	91	8	36	41.2	1.44	○
D938-A5N-0800	8.00	53	91	8	36	41.0	1.46	●
D938-A5N-0810	8.10	61	103	10	40	48.9	1.47	●
D938-A5N-0815	8.15	61	103	10	40	48.8	1.48	○
D938-A5N-0820	8.20	61	103	10	40	48.7	1.49	○
D938-A5N-0830	8.30	61	103	10	40	48.6	1.51	○
D938-A5N-0840	8.40	61	103	10	40	48.4	1.53	○
D938-A5N-0850	8.50	61	103	10	40	48.3	1.55	●
D938-A5N-0860	8.60	61	103	10	40	48.1	1.57	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A5N-0870	8.70	61	103	10	40	48.0	1.58	●
D938-A5N-0880	8.80	61	103	10	40	47.8	1.60	●
D938-A5N-0890	8.90	61	103	10	40	47.7	1.62	●
D938-A5N-0900	9.00	61	103	10	40	47.5	1.64	●
D938-A5N-0910	9.10	61	103	10	40	47.4	1.66	○
D938-A5N-0920	9.20	61	103	10	40	47.2	1.67	●
D938-A5N-0925	9.25	61	103	10	40	47.1	1.68	○
D938-A5N-0930	9.30	61	103	10	40	47.1	1.69	●
D938-A5N-0935	9.35	61	103	10	40	47.0	1.70	○
D938-A5N-0940	9.40	61	103	10	40	46.9	1.71	○
D938-A5N-0950	9.50	61	103	10	40	46.8	1.73	●
D938-A5N-0955	9.55	61	103	10	40	46.7	1.74	○
D938-A5N-0960	9.60	61	103	10	40	46.6	1.75	●
D938-A5N-0970	9.70	61	103	10	40	46.5	1.77	○
D938-A5N-0980	9.80	61	103	10	40	46.3	1.78	●
D938-A5N-0990	9.90	61	103	10	40	46.2	1.80	●
D938-A5N-1000	10.00	61	103	10	40	46.0	1.82	●
D938-A5N-1005	10.05	61	103	10	40	45.9	1.83	○
D938-A5N-1010	10.10	71	118	12	45	55.9	1.84	○
D938-A5N-1020	10.20	71	118	12	45	55.7	1.86	●
D938-A5N-1025	10.25	71	118	12	45	55.6	1.87	○
D938-A5N-1030	10.30	71	118	12	45	55.6	1.87	●
D938-A5N-1040	10.40	71	118	12	45	55.4	1.89	○
D938-A5N-1050	10.50	71	118	12	45	55.3	1.91	●
D938-A5N-1060	10.60	71	118	12	45	55.1	1.93	●
D938-A5N-1070	10.70	71	118	12	45	55.0	1.95	●
D938-A5N-1080	10.80	71	118	12	45	54.8	1.97	○

● Stock ○ Available upon Order Note: Accept customization from D1 to D20 tool

Unit(mm)

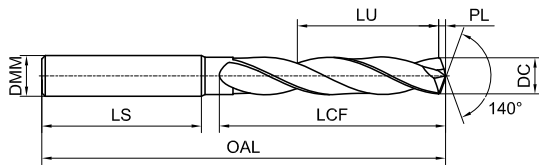
Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎		○	○								

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A5N

5D External Coolant Twist Drills for Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A5N-1085	10.85	71	118	12	45	54.7	1.97	○
D938-A5N-1090	10.90	71	118	12	45	54.7	1.98	○
D938-A5N-1100	11.00	71	118	12	45	54.5	2.00	●
D938-A5N-1110	11.10	71	118	12	45	54.4	2.02	○
D938-A5N-1120	11.20	71	118	12	45	54.2	2.04	○
D938-A5N-1130	11.30	71	118	12	45	54.1	2.06	○
D938-A5N-1140	11.40	71	118	12	45	53.9	2.07	●
D938-A5N-1150	11.50	71	118	12	45	53.8	2.09	●
D938-A5N-1160	11.60	71	118	12	45	53.6	2.11	●
D938-A5N-1170	11.70	71	118	12	45	53.5	2.13	○
D938-A5N-1180	11.80	71	118	12	45	53.3	2.15	●
D938-A5N-1190	11.90	71	118	12	45	53.2	2.17	○
D938-A5N-1200	12.00	71	118	12	45	53.0	2.18	●
D938-A5N-1210	12.10	77	124	14	45	58.9	2.20	○
D938-A5N-1220	12.20	77	124	14	45	58.7	2.22	●
D938-A5N-1230	12.30	77	124	14	45	58.6	2.24	●
D938-A5N-1240	12.40	77	124	14	45	58.4	2.26	○
D938-A5N-1250	12.50	77	124	14	45	58.3	2.27	●
D938-A5N-1260	12.60	77	124	14	45	58.1	2.29	●
D938-A5N-1270	12.70	77	124	14	45	58.0	2.31	○
D938-A5N-1280	12.80	77	124	14	45	57.8	2.33	●
D938-A5N-1290	12.90	77	124	14	45	57.7	2.35	○
D938-A5N-1300	13.00	77	124	14	45	57.5	2.37	●
D938-A5N-1320	13.20	77	124	14	45	57.2	2.40	○
D938-A5N-1350	13.50	77	124	14	45	56.8	2.46	●
D938-A5N-1355	13.55	77	124	14	45	56.7	2.47	○
D938-A5N-1370	13.70	77	124	14	45	56.5	2.49	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A5N-1375	13.75	77	124	14	45	56.4	2.50	○
D938-A5N-1380	13.80	77	124	14	45	56.3	2.51	○
D938-A5N-1390	13.90	77	124	14	45	56.2	2.53	○
D938-A5N-1400	14.00	77	124	14	45	56.0	2.55	●
D938-A5N-1410	14.10	83	133	16	48	61.9	2.57	○
D938-A5N-1420	14.20	83	133	16	48	61.7	2.58	●
D938-A5N-1430	14.30	83	133	16	48	61.6	2.60	○
D938-A5N-1450	14.50	83	133	16	48	61.3	2.64	●
D938-A5N-1460	14.60	83	133	16	48	61.1	2.66	●
D938-A5N-1480	14.80	83	133	16	48	60.8	2.69	○
D938-A5N-1500	15.00	83	133	16	48	60.5	2.73	●
D938-A5N-1510	15.10	83	133	16	48	60.4	2.75	○
D938-A5N-1525	15.25	83	133	16	48	60.1	2.78	○
D938-A5N-1550	15.50	83	133	16	48	59.8	2.82	○
D938-A5N-1570	15.70	83	133	16	48	59.5	2.86	○
D938-A5N-1580	15.80	83	133	16	48	59.3	2.88	○
D938-A5N-1600	16.00	83	133	16	48	59.0	2.91	●
D938-A5N-1650	16.50	93	143	18	48	68.3	3.00	●
D938-A5N-1660	16.60	93	143	18	48	68.1	3.02	●
D938-A5N-1680	16.80	93	143	18	48	67.8	3.06	○
D938-A5N-1695	16.95	93	143	18	48	67.6	3.08	○
D938-A5N-1700	17.00	93	143	18	48	67.5	3.09	●
D938-A5N-1730	17.30	93	143	18	48	67.1	3.15	○
D938-A5N-1750	17.50	93	143	18	48	66.8	3.18	●
D938-A5N-1780	17.80	93	143	18	48	66.3	3.24	○
D938-A5N-1795	17.95	93	143	18	48	66.1	3.27	○
D938-A5N-1800	18.00	93	143	18	48	66.0	3.28	○

● Stock ○ Available upon Order Note: Accept customization from D1 to D20 tool

Unit(mm)

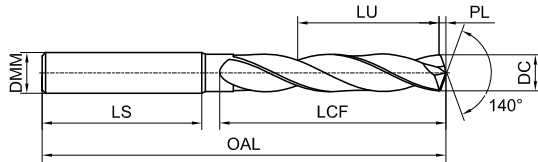
Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A5N

5D External Coolant Twist Drills for Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A5N-1850	18.50	101	153	20	50	73.3	3.37	○
D938-A5N-1860	18.60	101	153	20	50	73.1	3.38	○
D938-A5N-1900	19.00	101	153	20	50	72.5	3.46	○
D938-A5N-1950	19.50	101	153	20	50	71.8	3.55	●
D938-A5N-2000	20.00	101	153	20	50	71.0	3.64	○

● Stock ○ Available upon Order Note: Accept customization from D1 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

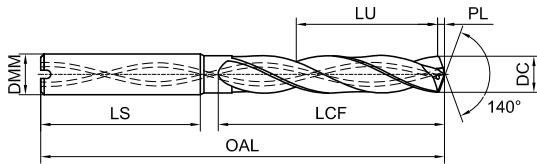
Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A5C

5D Internal Coolant Twist Drills for Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A5C-0200	2.00	18	62	4	38	15.0	0.36	○
D938-A5C-0250	2.50	22	62	4	35	18.3	0.45	○
D938-A5C-0260	2.60	22	62	4	35	18.1	0.47	○
D938-A5C-0280	2.80	22	62	4	35	17.8	0.51	○
D938-A5C-0300	3.00	28	66	6	36	23.5	0.55	●
D938-A5C-0305	3.05	28	66	6	36	23.4	0.56	●
D938-A5C-0310	3.10	28	66	6	36	23.4	0.56	●
D938-A5C-0320	3.20	28	66	6	36	23.2	0.58	●
D938-A5C-0325	3.25	28	66	6	36	23.1	0.59	○
D938-A5C-0330	3.30	28	66	6	36	23.1	0.60	●
D938-A5C-0340	3.40	28	66	6	36	22.9	0.62	●
D938-A5C-0350	3.50	28	66	6	36	22.8	0.64	●
D938-A5C-0360	3.60	28	66	6	36	22.6	0.66	●
D938-A5C-0365	3.65	28	66	6	36	22.5	0.66	○
D938-A5C-0370	3.70	28	66	6	36	22.5	0.67	●
D938-A5C-0380	3.80	36	74	6	36	30.3	0.69	●
D938-A5C-0390	3.90	36	74	6	36	30.2	0.71	●
D938-A5C-0400	4.00	36	74	6	36	30.0	0.73	●
D938-A5C-0405	4.05	36	74	6	36	29.9	0.74	○
D938-A5C-0410	4.10	36	74	6	36	29.9	0.75	●
D938-A5C-0420	4.20	36	74	6	36	29.7	0.76	●
D938-A5C-0430	4.30	36	74	6	36	29.6	0.78	●
D938-A5C-0440	4.40	36	74	6	36	29.4	0.80	●
D938-A5C-0450	4.50	36	74	6	36	29.3	0.82	●
D938-A5C-0460	4.60	36	74	6	36	29.1	0.84	●
D938-A5C-0465	4.65	36	74	6	36	29.0	0.85	●
D938-A5C-0470	4.70	36	74	6	36	29.0	0.86	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A5C-0480	4.80	44	82	6	36	36.8	0.87	●
D938-A5C-0490	4.90	44	82	6	36	36.7	0.89	●
D938-A5C-0500	5.00	44	82	6	36	36.5	0.91	●
D938-A5C-0505	5.05	44	82	6	36	36.4	0.92	○
D938-A5C-0510	5.10	44	82	6	36	36.4	0.93	●
D938-A5C-0520	5.20	44	82	6	36	36.2	0.95	●
D938-A5C-0530	5.30	44	82	6	36	36.1	0.96	●
D938-A5C-0540	5.40	44	82	6	36	35.9	0.98	●
D938-A5C-0550	5.50	44	82	6	36	35.8	1.00	●
D938-A5C-0555	5.55	44	82	6	36	35.7	1.01	●
D938-A5C-0560	5.60	44	82	6	36	35.6	1.02	●
D938-A5C-0570	5.70	44	82	6	36	35.5	1.04	●
D938-A5C-0580	5.80	44	82	6	36	35.3	1.06	●
D938-A5C-0590	5.90	44	82	6	36	35.2	1.07	●
D938-A5C-0600	6.00	44	82	6	36	35.0	1.09	●
D938-A5C-0605	6.05	44	82	6	36	34.9	1.10	○
D938-A5C-0610	6.10	53	91	8	36	43.9	1.11	●
D938-A5C-0620	6.20	53	91	8	36	43.7	1.13	●
D938-A5C-0630	6.30	53	91	8	36	43.6	1.15	●
D938-A5C-0640	6.40	53	91	8	36	43.4	1.16	○
D938-A5C-0650	6.50	53	91	8	36	43.3	1.18	●
D938-A5C-0660	6.60	53	91	8	36	43.1	1.20	●
D938-A5C-0670	6.70	53	91	8	36	43.0	1.22	●
D938-A5C-0680	6.80	53	91	8	36	42.8	1.24	●
D938-A5C-0690	6.90	53	91	8	36	42.7	1.26	●
D938-A5C-0700	7.00	53	91	8	36	42.5	1.27	●
D938-A5C-0705	7.05	53	91	8	36	42.4	1.28	○

● Stock ○ Available upon Order Note: Accept customization from D2 to D20 tool

Unit(mm)

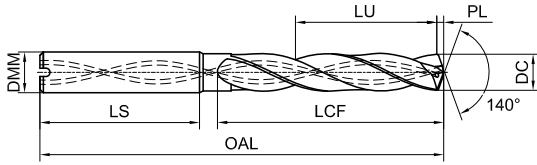
Workpiece Material													
P			M	K			N			S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
⊙	⊙	⊙	○	○	○								

⊙ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A5C

5D Internal Coolant Twist Drills for Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A5C-0710	7.10	53	91	8	36	42.4	1.29	●
D938-A5C-0720	7.20	53	91	8	36	42.2	1.31	○
D938-A5C-0730	7.30	53	91	8	36	42.1	1.33	○
D938-A5C-0740	7.40	53	91	8	36	41.9	1.35	●
D938-A5C-0745	7.45	53	91	8	36	41.8	1.36	●
D938-A5C-0750	7.50	53	91	8	36	41.8	1.36	●
D938-A5C-0755	7.55	53	91	8	36	41.7	1.37	○
D938-A5C-0760	7.60	53	91	8	36	41.6	1.38	○
D938-A5C-0770	7.70	53	91	8	36	41.5	1.40	○
D938-A5C-0780	7.80	53	91	8	36	41.3	1.42	●
D938-A5C-0790	7.90	53	91	8	36	41.2	1.44	●
D938-A5C-0800	8.00	53	91	8	36	41.0	1.46	●
D938-A5C-0805	8.05	53	91	8	36	40.9	1.46	○
D938-A5C-0810	8.10	61	103	10	40	48.9	1.47	●
D938-A5C-0820	8.20	61	103	10	40	48.7	1.49	○
D938-A5C-0830	8.30	61	103	10	40	48.6	1.51	●
D938-A5C-0840	8.40	61	103	10	40	48.4	1.53	●
D938-A5C-0850	8.50	61	103	10	40	48.3	1.55	●
D938-A5C-0860	8.60	61	103	10	40	48.1	1.57	●
D938-A5C-0870	8.70	61	103	10	40	48.0	1.58	●
D938-A5C-0880	8.80	61	103	10	40	47.8	1.60	●
D938-A5C-0890	8.90	61	103	10	40	47.7	1.62	●
D938-A5C-0900	9.00	61	103	10	40	47.5	1.64	●
D938-A5C-0910	9.10	61	103	10	40	47.4	1.66	●
D938-A5C-0920	9.20	61	103	10	40	47.2	1.67	○
D938-A5C-0925	9.25	61	103	10	40	47.1	1.68	○
D938-A5C-0930	9.30	61	103	10	40	47.1	1.69	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A5C-0935	9.35	61	103	10	40	47.0	1.70	●
D938-A5C-0940	9.40	61	103	10	40	46.9	1.71	●
D938-A5C-0950	9.50	61	103	10	40	46.8	1.73	●
D938-A5C-0955	9.55	61	103	10	40	46.7	1.74	○
D938-A5C-0960	9.60	61	103	10	40	46.6	1.75	○
D938-A5C-0970	9.70	61	103	10	40	46.5	1.77	●
D938-A5C-0980	9.80	61	103	10	40	46.3	1.78	●
D938-A5C-0990	9.90	61	103	10	40	46.2	1.80	●
D938-A5C-1000	10.00	61	103	10	40	46.0	1.82	●
D938-A5C-1005	10.05	61	103	10	40	45.9	1.83	●
D938-A5C-1010	10.10	71	118	12	45	55.9	1.84	●
D938-A5C-1020	10.20	71	118	12	45	55.7	1.86	●
D938-A5C-1025	10.25	71	118	12	45	55.6	1.87	○
D938-A5C-1030	10.30	71	118	12	45	55.6	1.87	●
D938-A5C-1040	10.40	71	118	12	45	55.4	1.89	●
D938-A5C-1050	10.50	71	118	12	45	55.3	1.91	●
D938-A5C-1060	10.60	71	118	12	45	55.1	1.93	○
D938-A5C-1070	10.70	71	118	12	45	55.0	1.95	●
D938-A5C-1080	10.80	71	118	12	45	54.8	1.97	●
D938-A5C-1085	10.85	71	118	12	45	54.7	1.97	○
D938-A5C-1090	10.90	71	118	12	45	54.7	1.98	○
D938-A5C-1100	11.00	71	118	12	45	54.5	2.00	●
D938-A5C-1110	11.10	71	118	12	45	54.4	2.02	●
D938-A5C-1120	11.20	71	118	12	45	54.2	2.04	●
D938-A5C-1130	11.30	71	118	12	45	54.1	2.06	○
D938-A5C-1140	11.40	71	118	12	45	53.9	2.07	●
D938-A5C-1150	11.50	71	118	12	45	53.8	2.09	●

● Stock ○ Available upon Order Note: Accept customization from D2 to D20 tool Unit(mm)

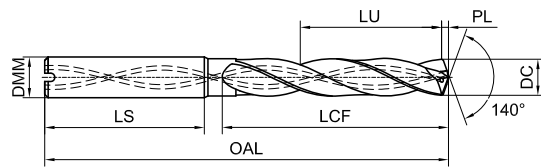
Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A5C

5D Internal Coolant Twist Drills for Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A5C-1160	11.60	71	118	12	45	53.6	2.11	○
D938-A5C-1170	11.70	71	118	12	45	53.5	2.13	●
D938-A5C-1180	11.80	71	118	12	45	53.3	2.15	●
D938-A5C-1190	11.90	71	118	12	45	53.2	2.17	●
D938-A5C-1200	12.00	71	118	12	45	53.0	2.18	●
D938-A5C-1205	12.05	71	118	12	45	52.9	2.19	●
D938-A5C-1210	12.10	77	124	14	45	58.9	2.20	○
D938-A5C-1220	12.20	77	124	14	45	58.7	2.22	●
D938-A5C-1230	12.30	77	124	14	45	58.6	2.24	○
D938-A5C-1240	12.40	77	124	14	45	58.4	2.26	○
D938-A5C-1250	12.50	77	124	14	45	58.3	2.27	●
D938-A5C-1260	12.60	77	124	14	45	58.1	2.29	○
D938-A5C-1270	12.70	77	124	14	45	58.0	2.31	●
D938-A5C-1280	12.80	77	124	14	45	57.8	2.33	○
D938-A5C-1285	12.85	77	124	14	45	57.7	2.34	○
D938-A5C-1300	13.00	77	124	14	45	57.5	2.37	●
D938-A5C-1310	13.10	77	124	14	45	57.4	2.38	○
D938-A5C-1320	13.20	77	124	14	45	57.2	2.40	○
D938-A5C-1325	13.25	77	124	14	45	57.1	2.41	○
D938-A5C-1330	13.30	77	124	14	45	57.1	2.42	○
D938-A5C-1350	13.50	77	124	14	45	56.8	2.46	●
D938-A5C-1360	13.60	77	124	14	45	56.6	2.47	○
D938-A5C-1370	13.70	77	124	14	45	56.5	2.49	●
D938-A5C-1380	13.80	77	124	14	45	56.3	2.51	●
D938-A5C-1390	13.90	77	124	14	45	56.2	2.53	○
D938-A5C-1400	14.00	77	124	14	45	56.0	2.55	●
D938-A5C-1410	14.10	83	133	16	48	61.9	2.57	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A5C-1420	14.20	83	133	16	48	61.7	2.58	●
D938-A5C-1430	14.30	83	133	16	48	61.6	2.60	○
D938-A5C-1440	14.40	83	133	16	48	61.4	2.62	○
D938-A5C-1450	14.50	83	133	16	48	61.3	2.64	●
D938-A5C-1460	14.60	83	133	16	48	61.1	2.66	○
D938-A5C-1470	14.70	83	133	16	48	61.0	2.68	○
D938-A5C-1480	14.80	83	133	16	48	60.8	2.69	○
D938-A5C-1500	15.00	83	133	16	48	60.5	2.73	●
D938-A5C-1510	15.10	83	133	16	48	60.4	2.75	●
D938-A5C-1520	15.20	83	133	16	48	60.2	2.77	●
D938-A5C-1530	15.30	83	133	16	48	60.1	2.78	○
D938-A5C-1550	15.50	83	133	16	48	59.8	2.82	●
D938-A5C-1570	15.70	83	133	16	48	59.5	2.86	○
D938-A5C-1580	15.80	83	133	16	48	59.3	2.88	●
D938-A5C-1600	16.00	83	133	16	48	59.0	2.91	●
D938-A5C-1650	16.50	93	143	18	48	68.3	3.00	●
D938-A5C-1670	16.70	93	143	18	48	68.0	3.04	○
D938-A5C-1680	16.80	93	143	18	48	67.8	3.06	○
D938-A5C-1690	16.90	93	143	18	48	67.7	3.08	○
D938-A5C-1700	17.00	93	143	18	48	67.5	3.09	●
D938-A5C-1720	17.20	93	143	18	48	67.2	3.13	○
D938-A5C-1730	17.30	93	143	18	48	67.1	3.15	○
D938-A5C-1750	17.50	93	143	18	48	66.8	3.18	●
D938-A5C-1770	17.70	93	143	18	48	66.5	3.22	○
D938-A5C-1780	17.80	93	143	18	48	66.3	3.24	○
D938-A5C-1800	18.00	93	143	18	48	66.0	3.28	●
D938-A5C-1850	18.50	101	153	20	50	73.3	3.37	●

● Stock ○ Available upon Order Note: Accept customization from D2 to D20 tool

Unit(mm)

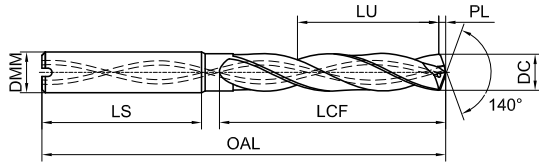
Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A5C

5D Internal Coolant Twist Drills for Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A5C-1860	18.60	101	153	20	50	73.1	3.38	○
D938-A5C-1880	18.80	101	153	20	50	72.8	3.42	●
D938-A5C-1900	19.00	101	153	20	50	72.5	3.46	●
D938-A5C-1950	19.50	101	153	20	50	71.8	3.55	●
D938-A5C-1960	19.60	101	153	20	50	71.6	3.57	○
D938-A5C-1980	19.80	101	153	20	50	71.3	3.60	○
D938-A5C-2000	20.00	101	153	20	50	71.0	3.64	●

● Stock ○ Available upon Order Note: Accept customization from D2 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

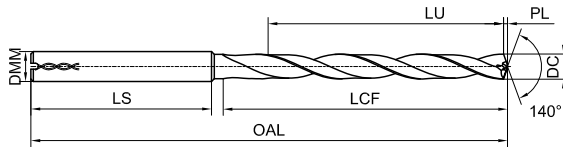
Workpiece Material													
P			M	K			N				S	H	
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P073

D938-A8C

8D Internal Coolant Twist Drills for Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A8C-0280	2.80	31	66	4	30	26.8	0.51	●
D938-A8C-0290	2.90	31	66	4	30	26.7	0.53	○
D938-A8C-0300	3.00	34	72	6	36	29.5	0.55	●
D938-A8C-0310	3.10	34	72	6	36	29.4	0.56	○
D938-A8C-0320	3.20	34	72	6	36	29.2	0.58	○
D938-A8C-0325	3.25	34	72	6	36	29.1	0.59	○
D938-A8C-0330	3.30	34	72	6	36	29.1	0.60	●
D938-A8C-0340	3.40	34	72	6	36	28.9	0.62	○
D938-A8C-0350	3.50	34	72	6	36	28.8	0.64	●
D938-A8C-0360	3.60	34	72	6	36	28.6	0.66	●
D938-A8C-0370	3.70	34	72	6	36	28.5	0.67	○
D938-A8C-0380	3.80	43	81	6	36	37.3	0.69	○
D938-A8C-0390	3.90	43	81	6	36	37.2	0.71	○
D938-A8C-0400	4.00	43	81	6	36	37.0	0.73	●
D938-A8C-0410	4.10	43	81	6	36	36.9	0.75	●
D938-A8C-0420	4.20	43	81	6	36	36.7	0.76	●
D938-A8C-0430	4.30	43	81	6	36	36.6	0.78	●
D938-A8C-0440	4.40	43	81	6	36	36.4	0.80	○
D938-A8C-0450	4.50	43	81	6	36	36.3	0.82	●
D938-A8C-0460	4.60	43	81	6	36	36.1	0.84	●
D938-A8C-0470	4.70	43	81	6	36	36.0	0.86	○
D938-A8C-0480	4.80	57	95	6	36	49.8	0.87	○
D938-A8C-0490	4.90	57	95	6	36	49.7	0.89	○
D938-A8C-0500	5.00	57	95	6	36	49.5	0.91	●
D938-A8C-0510	5.10	57	95	6	36	49.4	0.93	●
D938-A8C-0520	5.20	57	95	6	36	49.2	0.95	●
D938-A8C-0530	5.30	57	95	6	36	49.1	0.96	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A8C-0540	5.40	57	95	6	36	48.9	0.98	○
D938-A8C-0550	5.50	57	95	6	36	48.8	1.00	●
D938-A8C-0560	5.60	57	95	6	36	48.6	1.02	○
D938-A8C-0570	5.70	57	95	6	36	48.5	1.04	○
D938-A8C-0580	5.80	57	95	6	36	48.3	1.06	○
D938-A8C-0590	5.90	57	95	6	36	48.2	1.07	●
D938-A8C-0600	6.00	57	95	6	36	48.0	1.09	●
D938-A8C-0610	6.10	76	114	8	36	66.9	1.11	○
D938-A8C-0620	6.20	76	114	8	36	66.7	1.13	●
D938-A8C-0630	6.30	76	114	8	36	66.6	1.15	○
D938-A8C-0640	6.40	76	114	8	36	66.4	1.16	○
D938-A8C-0650	6.50	76	114	8	36	66.3	1.18	●
D938-A8C-0660	6.60	76	114	8	36	66.1	1.20	○
D938-A8C-0670	6.70	76	114	8	36	66.0	1.22	○
D938-A8C-0680	6.80	76	114	8	36	65.8	1.24	●
D938-A8C-0690	6.90	76	114	8	36	65.7	1.26	○
D938-A8C-0700	7.00	76	114	8	36	65.5	1.27	●
D938-A8C-0710	7.10	76	114	8	36	65.4	1.29	○
D938-A8C-0720	7.20	76	114	8	36	65.2	1.31	○
D938-A8C-0730	7.30	76	114	8	36	65.1	1.33	○
D938-A8C-0740	7.40	76	114	8	36	64.9	1.35	○
D938-A8C-0750	7.50	76	114	8	36	64.8	1.36	○
D938-A8C-0760	7.60	76	114	8	36	64.6	1.38	○
D938-A8C-0770	7.70	76	114	8	36	64.5	1.40	○
D938-A8C-0780	7.80	76	114	8	36	64.3	1.42	●
D938-A8C-0790	7.90	76	114	8	36	64.2	1.44	○
D938-A8C-0800	8.00	76	114	8	36	64.0	1.46	●

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

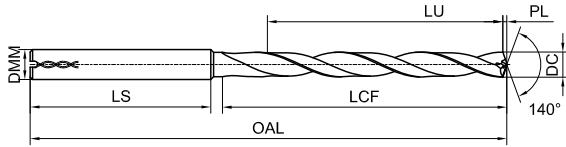
Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P075

D938-A8C

8D Internal Coolant Twist Drills for Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A8C-0810	8.10	95	142	10	40	82.9	1.47	○
D938-A8C-0820	8.20	95	142	10	40	82.7	1.49	●
D938-A8C-0830	8.30	95	142	10	40	82.6	1.51	●
D938-A8C-0840	8.40	95	142	10	40	82.4	1.53	○
D938-A8C-0850	8.50	95	142	10	40	82.3	1.55	●
D938-A8C-0860	8.60	95	142	10	40	82.1	1.57	○
D938-A8C-0870	8.70	95	142	10	40	82.0	1.58	●
D938-A8C-0880	8.80	95	142	10	40	81.8	1.60	○
D938-A8C-0890	8.90	95	142	10	40	81.7	1.62	●
D938-A8C-0900	9.00	95	142	10	40	81.5	1.64	●
D938-A8C-0910	9.10	95	142	10	40	81.4	1.66	○
D938-A8C-0920	9.20	95	142	10	40	81.2	1.67	●
D938-A8C-0930	9.30	95	142	10	40	81.1	1.69	○
D938-A8C-0940	9.40	95	142	10	40	80.9	1.71	○
D938-A8C-0950	9.50	95	142	10	40	80.8	1.73	●
D938-A8C-0960	9.60	95	142	10	40	80.6	1.75	○
D938-A8C-0970	9.70	95	142	10	40	80.5	1.77	○
D938-A8C-0980	9.80	95	142	10	40	80.3	1.78	○
D938-A8C-0990	9.90	95	142	10	40	80.2	1.80	○
D938-A8C-1000	10.00	95	142	10	40	80.0	1.82	●
D938-A8C-1010	10.10	114	162	12	45	98.9	1.84	○
D938-A8C-1020	10.20	114	162	12	45	98.7	1.86	●
D938-A8C-1030	10.30	114	162	12	45	98.6	1.87	○
D938-A8C-1040	10.40	114	162	12	45	98.4	1.89	○
D938-A8C-1050	10.50	114	162	12	45	98.3	1.91	●
D938-A8C-1060	10.60	114	162	12	45	98.1	1.93	○
D938-A8C-1080	10.80	114	162	12	45	97.8	1.97	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A8C-1090	10.90	114	162	12	45	97.7	1.98	○
D938-A8C-1100	11.00	114	162	12	45	97.5	2.00	●
D938-A8C-1120	11.20	114	162	12	45	97.2	2.04	○
D938-A8C-1130	11.30	114	162	12	45	97.1	2.06	○
D938-A8C-1140	11.40	114	162	12	45	96.9	2.07	○
D938-A8C-1150	11.50	114	162	12	45	96.8	2.09	●
D938-A8C-1160	11.60	114	162	12	45	96.6	2.11	○
D938-A8C-1170	11.70	114	162	12	45	96.5	2.13	●
D938-A8C-1180	11.80	114	162	12	45	96.3	2.15	○
D938-A8C-1190	11.90	114	162	12	45	96.2	2.17	○
D938-A8C-1200	12.00	114	162	12	45	96.0	2.18	●
D938-A8C-1210	12.10	133	182	14	45	114.9	2.20	○
D938-A8C-1220	12.20	133	182	14	45	114.7	2.22	○
D938-A8C-1230	12.30	133	182	14	45	114.6	2.24	○
D938-A8C-1240	12.40	133	182	14	45	114.4	2.26	○
D938-A8C-1250	12.50	133	182	14	45	114.3	2.27	○
D938-A8C-1270	12.70	133	182	14	45	114.0	2.31	○
D938-A8C-1280	12.80	133	182	14	45	113.8	2.33	○
D938-A8C-1290	12.90	133	182	14	45	113.7	2.35	○
D938-A8C-1300	13.00	133	182	14	45	113.5	2.37	●
D938-A8C-1350	13.50	133	182	14	45	112.8	2.46	●
D938-A8C-1380	13.80	133	182	14	45	112.3	2.51	○
D938-A8C-1400	14.00	133	182	14	45	112.0	2.55	●
D938-A8C-1420	14.20	152	203	16	48	130.7	2.58	○
D938-A8C-1430	14.30	152	203	16	48	130.6	2.60	○
D938-A8C-1450	14.50	152	203	16	48	130.3	2.64	○
D938-A8C-1460	14.60	152	203	16	48	130.1	2.66	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

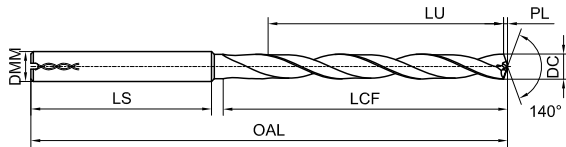
Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P075

D938-A8C

8D Internal Coolant Twist Drills for Steel



» Continue

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A8C-1470	14.70	152	203	16	48	130.0	2.68	○
D938-A8C-1480	14.80	152	203	16	48	129.8	2.69	○
D938-A8C-1500	15.00	152	203	16	48	129.5	2.73	●
D938-A8C-1520	15.20	152	203	16	48	129.2	2.77	○
D938-A8C-1530	15.30	152	203	16	48	129.1	2.78	○
D938-A8C-1550	15.50	152	203	16	48	128.8	2.82	○
D938-A8C-1580	15.80	152	203	16	48	128.3	2.88	○
D938-A8C-1590	15.90	152	203	16	48	128.2	2.89	○
D938-A8C-1600	16.00	152	203	16	48	128.0	2.91	●
D938-A8C-1650	16.50	171	222	18	48	146.3	3.00	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A8C-1670	16.70	171	222	18	48	146.0	3.04	○
D938-A8C-1700	17.00	171	222	18	48	145.5	3.09	○
D938-A8C-1750	17.50	171	222	18	48	144.8	3.18	○
D938-A8C-1780	17.80	171	222	18	48	144.3	3.24	○
D938-A8C-1800	18.00	171	222	18	48	144.0	3.28	●
D938-A8C-1850	18.50	190	243	20	50	162.3	3.37	○
D938-A8C-1900	19.00	190	243	20	50	161.5	3.46	○
D938-A8C-1950	19.50	190	243	20	50	160.8	3.55	○
D938-A8C-2000	20.00	190	243	20	50	160.0	3.64	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

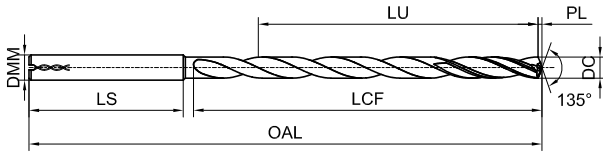
Workpiece Material													
P			M	K			N			S	H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P075

D938-A12C NEW

12D Twist deep Drills for Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A12C-0300	3.00	54	92	6	36	49.5	0.62	○
D938-A12C-0330	3.30	54	92	6	36	49.1	0.68	○
D938-A12C-0350	3.50	54	92	6	36	48.8	0.72	○
D938-A12C-0380	3.80	64	102	6	36	58.3	0.79	○
D938-A12C-0390	3.90	64	102	6	36	58.2	0.81	○
D938-A12C-0400	4.00	64	102	6	36	58.0	0.83	●
D938-A12C-0420	4.20	64	102	6	36	57.7	0.87	○
D938-A12C-0430	4.30	64	102	6	36	57.6	0.89	○
D938-A12C-0450	4.50	64	102	6	36	57.3	0.93	○
D938-A12C-0460	4.60	64	102	6	36	57.1	0.95	○
D938-A12C-0470	4.70	64	102	6	36	57.0	0.97	○
D938-A12C-0480	4.80	83	121	6	36	75.8	0.99	○
D938-A12C-0500	5.00	83	121	6	36	75.5	1.04	○
D938-A12C-0550	5.50	83	121	6	36	74.8	1.14	○
D938-A12C-0600	6.00	83	121	6	36	74.0	1.24	○
D938-A12C-0610	6.10	110	148	8	36	100.9	1.26	●
D938-A12C-0650	6.50	110	148	8	36	100.3	1.35	○
D938-A12C-0680	6.80	110	148	8	36	99.8	1.41	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A12C-0700	7.00	110	148	8	36	99.5	1.45	○
D938-A12C-0800	8.00	110	148	8	36	98.0	1.66	○
D938-A12C-0850	8.50	138	180	10	40	125.3	1.76	○
D938-A12C-0870	8.70	138	180	10	40	125.0	1.80	○
D938-A12C-0900	9.00	138	180	10	40	124.5	1.86	○
D938-A12C-0950	9.50	138	180	10	40	123.8	1.97	○
D938-A12C-1000	10.00	138	180	10	40	123.0	2.07	●
D938-A12C-1050	10.50	158	206	12	45	142.3	2.17	○
D938-A12C-1100	11.00	158	206	12	45	141.5	2.28	○
D938-A12C-1180	11.80	158	206	12	45	140.3	2.44	○
D938-A12C-1200	12.00	158	206	12	45	140.0	2.49	○
D938-A12C-1250	12.50	182	230	14	45	163.3	2.59	○
D938-A12C-1300	13.00	182	230	14	45	162.5	2.69	○
D938-A12C-1400	14.00	182	230	14	45	161.0	2.90	○
D938-A12C-1450	14.50	208	260	16	48	186.3	3.00	○
D938-A12C-1500	15.00	208	260	16	48	185.5	3.11	○
D938-A12C-1600	16.00	208	260	16	48	184.0	3.31	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D16 tool

Unit(mm)

Note: Deep hole drilling D938-A3C use same specification as the guide drill

Nominal Size Range	DC(h7)	DMM(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

Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

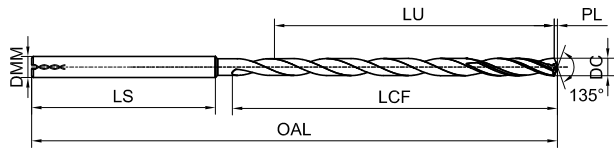
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P075

D938-A15C NEW



15D Twist deep Drills for Steel



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A15C-0300	3.00	55	95	6	36	50.5	0.62	○
D938-A15C-0330	3.30	67	106	6	36	62.1	0.68	○
D938-A15C-0350	3.50	76	116	6	36	70.8	0.72	○
D938-A15C-0400	4.00	76	116	6	36	70.0	0.83	○
D938-A15C-0420	4.20	93	133	6	36	86.7	0.87	○
D938-A15C-0450	4.50	93	133	6	36	86.3	0.93	○
D938-A15C-0500	5.00	93	133	6	36	85.5	1.04	○
D938-A15C-0510	5.10	110	150	6	36	102.4	1.06	○
D938-A15C-0550	5.50	110	150	6	36	101.8	1.14	○
D938-A15C-0600	6.00	110	150	6	36	101.0	1.24	●
D938-A15C-0650	6.50	127	167	8	36	117.3	1.35	○
D938-A15C-0680	6.80	127	167	8	36	116.8	1.41	○
D938-A15C-0700	7.00	127	167	8	36	116.5	1.45	●

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D938-A15C-0750	7.50	143	183	8	36	131.8	1.55	○
D938-A15C-0800	8.00	143	183	8	36	131.0	1.66	○
D938-A15C-0850	8.50	160	204	10	40	147.3	1.76	○
D938-A15C-0900	9.00	160	204	10	40	146.5	1.86	○
D938-A15C-0950	9.50	177	221	10	40	162.8	1.97	○
D938-A15C-1000	10.00	177	221	10	40	162.0	2.07	●
D938-A15C-1050	10.50	198	247	12	45	182.3	2.17	○
D938-A15C-1100	11.00	198	247	12	45	181.5	2.28	○
D938-A15C-1200	12.00	214	263	12	45	196.0	2.49	○
D938-A15C-1250	12.50	248	297	14	45	229.3	2.59	○
D938-A15C-1300	13.00	248	297	14	45	228.5	2.69	○
D938-A15C-1400	14.00	248	297	14	45	227.0	2.90	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D14 tool

Unit(mm)

Note: Deep hole drilling D938-A3C use same specification as the guide drill

Nominal Size Range	DC(h7)	DMM(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

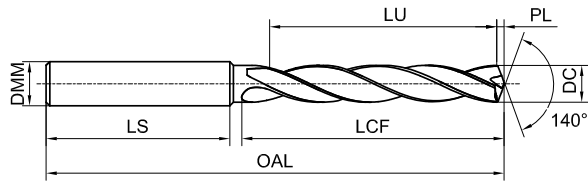
Workpiece Material													
P			M	K			N			S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P075

D928-A5N

5D External Coolant Twist Drills for Cast Iron



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D928-A5N-0300	3.00	28	66	6	36	23.5	0.55	○
D928-A5N-0330	3.30	28	66	6	36	23.1	0.60	○
D928-A5N-0400	4.00	36	74	6	36	30.0	0.73	○
D928-A5N-0420	4.20	36	74	6	36	29.7	0.76	○
D928-A5N-0500	5.00	44	82	6	36	36.5	0.91	○
D928-A5N-0600	6.00	44	82	6	36	35.0	1.09	○
D928-A5N-0680	6.80	53	91	8	36	42.8	1.24	○
D928-A5N-0700	7.00	53	91	8	36	42.5	1.27	○
D928-A5N-0800	8.00	53	91	8	36	41.0	1.46	○
D928-A5N-0850	8.50	61	103	10	40	48.3	1.55	○
D928-A5N-0900	9.00	61	103	10	40	47.5	1.64	○
D928-A5N-0910	9.10	61	103	10	40	47.5	1.64	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D928-A5N-1000	10.00	61	103	10	40	46.0	1.82	○
D928-A5N-1025	10.25	71	118	12	45	55.6	1.87	○
D928-A5N-1050	10.50	71	118	12	45	55.3	1.91	○
D928-A5N-1100	11.00	71	118	12	45	54.5	2.00	○
D928-A5N-1200	12.00	71	118	12	45	53.0	2.18	○
D928-A5N-1250	12.50	77	124	14	45	58.3	2.27	○
D928-A5N-1300	13.00	77	124	14	45	57.5	2.37	○
D928-A5N-1380	13.80	77	124	14	45	57.5	2.37	○
D928-A5N-1400	14.00	77	124	14	45	56.0	2.55	○
D928-A5N-1450	14.50	83	133	16	48	61.3	2.64	○
D928-A5N-1500	15.00	83	133	16	48	60.5	2.73	○
D928-A5N-1600	16.00	83	133	16	48	59.0	2.91	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

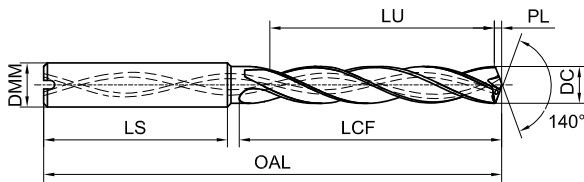
Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○				◎	◎								

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P077

D928-A5C

5D Internal Coolant Twist Drills for Cast Iron



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D928-A5C-0500	5.00	44	82	6	36	36.5	0.91	○
D928-A5C-0600	6.00	44	82	6	36	35.0	1.09	○
D928-A5C-0680	6.80	53	91	8	36	42.8	1.24	○
D928-A5C-0700	7.00	53	91	8	36	42.5	1.27	○
D928-A5C-0800	8.00	53	91	8	36	41.0	1.46	○
D928-A5C-0850	8.50	61	103	10	40	48.3	1.55	○
D928-A5C-0860	8.60	61	103	10	40	48.3	1.55	○
D928-A5C-0900	9.00	61	103	10	40	47.5	1.64	○
D928-A5C-1000	10.00	61	103	10	40	46	1.82	○
D928-A5C-1025	10.25	71	118	12	45	55.6	1.87	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D928-A5C-1050	10.50	71	118	12	45	55.25	1.91	○
D928-A5C-1100	11.00	71	118	12	45	54.5	2.00	○
D928-A5C-1200	12.00	71	118	12	45	53	2.18	○
D928-A5C-1250	12.50	77	124	14	45	58.25	2.27	○
D928-A5C-1300	13.00	77	124	14	45	57.5	2.37	○
D928-A5C-1400	14.00	77	124	14	45	56	2.55	○
D928-A5C-1450	14.50	83	133	16	48	61.3	2.64	○
D928-A5C-1500	15.00	83	133	16	48	60.5	2.73	○
D928-A5C-1600	16.00	83	133	16	48	59.0	2.91	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

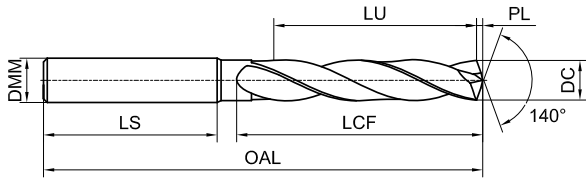
Workpiece Material													
P			M	K			N			S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○				◎	◎	○	○						

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P077

D966-A5N

5D External Coolant Twist Drills for Aluminium Alloy



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D966-A5N-0300	3.00	28	66	6	36	23.5	0.55	○
D966-A5N-0330	3.30	28	66	6	36	23.1	0.60	○
D966-A5N-0400	4.00	36	74	6	36	30.0	0.73	○
D966-A5N-0420	4.20	36	74	6	36	29.7	0.76	○
D966-A5N-0500	5.00	44	82	6	36	36.5	0.91	○
D966-A5N-0550	5.50	44	82	6	36	36.5	0.91	○
D966-A5N-0600	6.00	44	82	6	36	35.0	1.09	○
D966-A5N-0680	6.80	53	91	8	36	42.8	1.24	○
D966-A5N-0700	7.00	53	91	8	36	42.5	1.27	○
D966-A5N-0800	8.00	53	91	8	36	41.0	1.46	○
D966-A5N-0850	8.50	61	103	10	40	48.3	1.55	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D966-A5N-0900	9.00	61	103	10	40	47.5	1.64	○
D966-A5N-1000	10.00	61	103	10	40	46.0	1.82	○
D966-A5N-1050	10.50	71	118	12	45	55.3	1.91	○
D966-A5N-1100	11.00	71	118	12	45	54.5	2.00	○
D966-A5N-1200	12.00	71	118	12	45	53.0	2.18	○
D966-A5N-1250	12.50	77	124	14	45	58.3	2.27	○
D966-A5N-1300	13.00	77	124	14	45	57.5	2.37	○
D966-A5N-1400	14.00	77	124	14	45	56.0	2.55	○
D966-A5N-1450	14.50	83	133	16	48	61.3	2.64	○
D966-A5N-1500	15.00	83	133	16	48	60.5	2.73	○
D966-A5N-1600	16.00	83	133	16	48	59.0	2.91	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

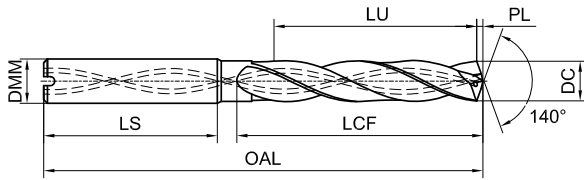
Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						○	○	○	○				

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P079

D966-A5C

5D Internal Coolant Twist Drills for Aluminium Alloy



Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D966-A5C-0300	3.00	28	66.0	6	36	23.5	0.55	○
D966-A5C-0330	3.30	28	66.0	6	36	23.1	0.60	○
D966-A5C-0400	4.00	36	74.0	6	36	30.0	0.73	○
D966-A5C-0420	4.20	36	74.0	6	36	29.7	0.76	○
D966-A5C-0500	5.00	44	82.0	6	36	36.5	0.91	○
D966-A5C-0600	6.00	44	82.0	6	36	35.0	1.09	○
D966-A5C-0680	6.80	53	91.0	8	36	42.8	1.24	○
D966-A5C-0700	7.00	53	91.0	8	36	42.5	1.27	○
D966-A5C-0800	8.00	53	91.0	8	36	41.0	1.46	○
D966-A5C-0850	8.50	61	103.0	10	40	48.3	1.55	○
D966-A5C-0900	9.00	61	103.0	10	40	47.5	1.64	○

Ordering Code	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	Stock
D966-A5C-1000	10.00	61	103.0	10	40	46.0	1.82	○
D966-A5C-1050	10.50	71	118.0	12	45	55.3	1.91	○
D966-A5C-1100	11.00	71	118.0	12	45	54.5	2.00	○
D966-A5C-1200	12.00	71	118.0	12	45	53.0	2.18	○
D966-A5C-1250	12.50	77	124.0	14	45	58.3	2.27	○
D966-A5C-1300	13.00	77	124.0	14	45	57.5	2.37	○
D966-A5C-1400	14.00	77	124.0	14	45	56.0	2.55	○
D966-A5C-1450	14.50	83	133.0	16	48	61.3	2.64	○
D966-A5C-1500	15.00	83	133.0	16	48	60.5	2.73	○
D966-A5C-1600	16.00	83	133.0	16	48	59.0	2.91	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Nominal Size Range	DC(m7)	DMM(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

Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						○	○	○	○				

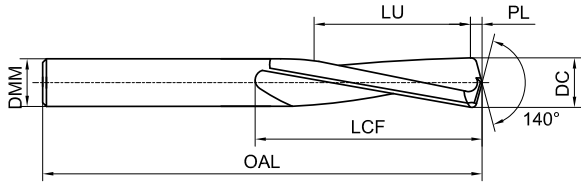
○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P079

D998-Y3N



3D External Coolant Twist Drills for Hardened Steel



Ordering Code	DC (h7)	LCF	OAL	DMM (h6)	LU	PL	Stock
D998-Y3N-0400	4.00	22	55	4	16.0	0.73	○
D998-Y3N-0500	5.00	26	62	5	18.5	0.91	○
D998-Y3N-0600	6.00	28	66	6	19.0	1.09	○
D998-Y3N-0700	7.00	34	74	7	23.5	1.27	○
D998-Y3N-0800	8.00	37	79	8	25.0	1.46	○
D998-Y3N-0900	9.00	40	84	9	26.5	1.64	○
D998-Y3N-1000	10.00	43	89	10	28.0	1.82	○

Ordering Code	DC (h7)	LCF	OAL	DMM (h6)	LU	PL	Stock
D998-Y3N-1100	11.00	47	95	11	30.5	2.00	○
D998-Y3N-1200	12.00	51	102	12	33.0	2.18	○
D998-Y3N-1300	13.00	51	102	13	31.5	2.37	○
D998-Y3N-1400	14.00	54	107	14	33.0	2.55	●
D998-Y3N-1500	15.00	56	111	15	33.5	2.73	○
D998-Y3N-1600	16.00	58	115	16	34.0	2.91	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

Nominal Size Range	DC(h7)	DMM(h6)
≥2-3	0.000/-0.010	0.000/-0.006
≥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

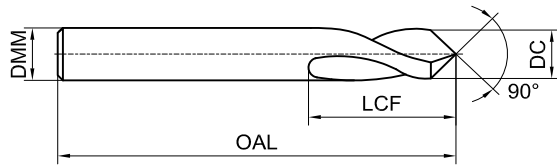
Workpiece Material													
P			M	K		N			S	H			
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
	○			○	○							◎	○

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P079

D101-AMN

90°NC Centre Drills



Ordering Code	DC	LCF	OAL	DMM(h6)	Stock
D101-AMN-0400	4	8	50	4	○
D101-AMN-0500	5	10	62	5	●
D101-AMN-0600	6	15	66	6	●
D101-AMN-0800	8	17	79	8	●
D101-AMN-1000	10	20	89	10	●
D101-AMN-1200	12	25	102	12	●
D101-AMN-1400	14	30	107	14	○
D101-AMN-1600	16	35	115	16	●
D101-AMN-1800	18	38	123	18	○
D101-AMN-2000	20	40	131	20	●

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

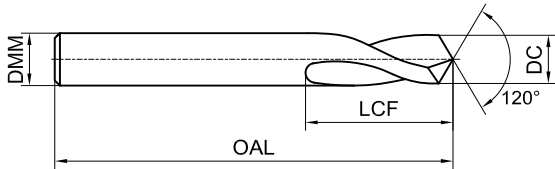
Workpiece Material													
P			M	K		N				S	H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		◎		◎	○						

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P081

D102-ANN

120°NC Centre Drills



Ordering Code	DC	LCF	OAL	DMM(h6)	Stock
D102-ANN-0500	5	10	62	5	○
D102-ANN-0600	6	15	66	6	○
D102-ANN-0800	8	17	79	8	○
D102-ANN-1000	10	20	89	10	○
D102-ANN-1200	12	25	102	12	●
D102-ANN-1400	14	30	107	14	○
D102-ANN-1600	16	35	115	16	○
D102-ANN-2000	20	40	131	20	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)

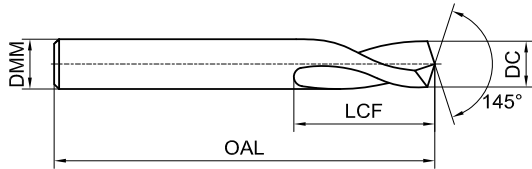
Workpiece Material													
P			M	K		N				S	H		
1234	5	67	123	12	3	12	3	4	5	123	4	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		◎		◎	○						

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P081

D103-APN

145°NC Centre Drills



Ordering Code	DC	LCF	OAL	DMM(h6)	Stock
D103-APN-0500	5	10	62	5	○
D103-APN-0600	6	15	66	6	○
D103-APN-0800	8	17	79	8	○
D103-APN-1000	10	20	89	10	○
D103-APN-1200	12	25	102	12	○
D103-APN-1400	14	30	107	14	○
D103-APN-1600	16	35	115	16	○
D103-APN-2000	20	40	131	20	○

● Stock ○ Available upon Order Note: Accept customization from D3 to D20 tool

Unit(mm)



Workpiece Material														
P			M	K			N				S	H		
1	2	3	1	2	3	1	2	3	4	5	1	2	1	2
Carbon Steel, Alloy Steel	Alloy Steels, Tool Steels	PH and Ferritic/Martensitic Stainless Steel	Stainless Steel	Gray Cast Iron, Ductile Cast Iron	High Alloy Cast Iron	Forged Aluminium Alloys, Cast Aluminium Alloys	Cast Aluminium Alloys	Copper Alloys	Compound Material	Heat Resistant Super Alloys	Titanium Alloys	Hardened Steels	Hardened Steels	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
○	○	○		◎		◎	○							

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P081

Recommended Machining Parameters

D918S Series High Performance Twist Drill for Steel



Workpiece		Cutting Speed Vc (m/min)		Feed Rate fn (mm/rev)				
				Φ3	Φ4	Φ6	Φ8	Φ10
P	Low Carbon Steel, Long Chip (<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 Steel, Short Chip, Automatic Steel (<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 Steel/Medium Carbon Steel (<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 Steel, Tool Steel (<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 Steel, Tool Steel (35-48HRC)	80-60-40	90-60-40	0.09-0.13-0.16	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 Steel (130-200HB)	—	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
	Strength Austenitic /Cast Stainless Steel (<25HRC)	—	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 Steel (<30HRC)	—	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	Gray Cast Iron, Ductile Cast Iron (<28HRC)	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
	Cast Iron Alloy, Ductile 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
	High Cast Iron Alloy, Ductile 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

【Note】

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 Machining Parameters

D918S Series High Performance Twist Drill for Steel



Workpiece		Cutting Speed Vc (m/min)		Feed Rate fn (mm/rev)				
				Φ12	Φ14	Φ16	Φ18	Φ20
P	Low Carbon Steel, Long Chip (<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 Steel, Short Chip, Automatic Steel (<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 Steel/Medium Carbon Steel (<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 Steel, Tool Steel (<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 Steel, Tool Steel (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 Steel (130-200HB)	—	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
	Strength Austenitic /Cast Stainless Steel (<25HRC)	—	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 Steel (<30HRC)	—	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	Gray Cast Iron, Ductile Cast Iron (<28HRC)	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
	Cast Iron Alloy, Ductile 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
	High Cast Iron Alloy, Ductile 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

[Note]

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 Machining Parameters

D968S Series High Efficient Twist drill for Stainless Steel

Workpiece		Cutting Speed Vc (m/min)		Feed Rate fn (mm/rev)				
				Φ3	Φ4	Φ6	Φ8	Φ10
P	Low Carbon Steel, Long Chip (<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 Steel, Short Chip, Automatic Steel (<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 Steel/Medium Carbon Steel (<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 Steel, Tool Steel (<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	Alloy Steel, Tool Steel (35-48HRC)	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
	Austenitic Stainless Steel (130-200HB)	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
	Strength Austenitic /Cast Stainless Steel (<25HRC)	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 Base Superalloy (160-260HB)	25-15-10	35-25-15	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
	Cobalt Base Superalloy (250-450HB)	25-15-10	35-25-15	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
	Nickel Base Superalloy (160-450HB)	25-15-10	35-25-15	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
	Titanium and Titanium Alloy (300-400HB)	40-30-15	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



Note: 5D external Coolant drill is not suitable for machining S-type workpiece material

【Note】

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 Machining Parameters

D968S Series High Efficient Twist drill for Stainless Steel

Workpiece		Cutting Speed Vc (m/min)		Feed Rate fn (mm/rev)				
				Φ12	Φ14	Φ16	Φ18	Φ20
P	Low Carbon Steel, Long Chip (<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 Steel, Short Chip, Automatic Steel (<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 Steel/Medium Carbon Steel (<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 Steel, Tool Steel (<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	Alloy Steel, Tool Steel (35-48HRC)	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
	Austenitic Stainless Steel (130-200HB)	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
	Strength Austenitic /Cast Stainless Steel (<25HRC)	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 Base Superalloy (160-260HB)	25-15-10	35-25-15	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
	Cobalt Base Superalloy (250-450HB)	25-15-10	35-25-15	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
	Nickel Base Superalloy (160-450HB)	25-15-10	35-25-15	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
	Titanium and Titanium Alloy (300-400HB)	40-30-15	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



Note: 5D external Coolant drill is not suitable for machining S-type workpiece material

【Note】

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 Machining Parameters

D938 Twist Drills for Steel 3D\5D



Workpiece		Cutting Speed Vc (m/min)		Feed Rate fn (mm/rev)				
				Φ3	Φ4	Φ6	Φ8	Φ10
P	Low carbon Steel, Long Chip (<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 Steel, Short Chip, Automatic Steel (<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 Steel and Medium Carbon Steel (<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 Steel, Tool Steel (<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 Steel, Tool Steel (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 Ferritic, Martensitic Steel (<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 Ferritic, Martensitic Steel (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
M	Alloy Steel, Tool Steel (35-48HRC)	—	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
	Austenitic Stainless Steel (130-200HB)	—	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
	Strength Austenitic /Cast Stainless Steel (<25HRC)	—	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	Gray Cast Iron, Ductile Cast Iron (<28HRC)	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
	Cast Iron Alloy, Ductile 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
	High Cast Iron Alloy, Ductile 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

【Note】

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 Machining Parameters

D938 Twist Drills for Steel 3D\5D


Workpiece	Cutting Speed Vc (m/min)		Feed Rate fn (mm/rev)					
			Φ12	Φ14	Φ16	Φ18	Φ20	
P	Low carbon Steel, Long Chip (<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 Steel, Short Chip, Automatic Steel (<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 Steel and Medium Carbon Steel (<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 Steel, Tool Steel (<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 Steel, Tool Steel (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 Ferritic, Martensitic Steel (<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 Ferritic, Martensitic Steel (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
M	Alloy Steel, Tool Steel (35-48HRC)	—	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
	Austenitic Stainless Steel (130-200HB)	—	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
	Strength Austenitic /Cast Stainless Steel (<25HRC)	—	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	Gray Cast Iron, Ductile Cast Iron (<28HRC)	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
	Cast Iron Alloy, Ductile 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
	High Cast Iron Alloy, Ductile 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

[Note]

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 Machining Parameters

D938 Twist deep-hole Drills, 8D\12D\15D

Workpiece		Cutting Speed Vc (m/min)	Feed Rate fn (mm/rev)			
				Φ3	Φ4	Φ6
P	Low carbon Steel, Long Chip (<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 Steel, Short Chip, Automatic Steel (<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 Steel and Medium Carbon Steel (<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 Steel, Tool Steel (<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 Steel, Tool Steel (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 Ferritic, Martensitic Steel (<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 Ferritic, Martensitic Steel (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	Alloy Steel, Tool Steel (35-48HRC)	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
	Austenitic Stainless Steel (130- 200HB)	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
	Strength Austenitic /Cast Stainless Steel (<25HRC)	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	Gray Cast Iron, Ductile Cast Iron (<28HRC)	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
	Cast Iron Alloy, Ductile 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
	High Cast Iron Alloy, Ductile 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

【Note】

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 Machining Parameters

D938 Twist deep-hole Drills, 8D\12D\15D



Workpiece		Cutting Speed Vc (m/min)	Feed Rate fn (mm/rev)			
				Φ10	Φ12	Φ14
P	Low carbon Steel, Long Chip (<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 Steel, Short Chip, Automatic Steel (<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 Steel and Medium Carbon Steel (<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 Steel, Tool Steel (<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 Steel, Tool Steel (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 Ferritic, Martensitic Steel (<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 Ferritic, Martensitic Steel (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	Alloy Steel, Tool Steel (35-48HRC)	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
	Austenitic Stainless Steel (130- 200HB)	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
	Strength Austenitic /Cast Stainless Steel (<25HRC)	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	Gray Cast Iron, Ductile Cast Iron (<28HRC)	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
	Cast Iron Alloy, Ductile 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
	High Cast Iron Alloy, Ductile 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

【Note】

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 Machining Parameters

D928 Twist Drill for Cast Iron



Workpiece		Cutting Speed Vc (m/min)		Feed Rate fn (mm/rev)				
				Φ3	Φ4	Φ6	Φ8	Φ10
P	Low Carbon Steel, Long Chip (<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 Steel, Short Chip, Free Cutting Steel (<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 Steel and Medium Carbon Steel (<25HRC)	90-70-45	100-80-60	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 Steel, Tool Steel (<35HRC)	90-70-45	100-80-60	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
K	Gray Cast Iron, Ductile Cast Iron (<28HRC)	100-80-60	160-140-60	0.13-0.17-0.21	0.15-0.20-0.26	0.17-0.26-0.32	0.20-0.32-0.40	0.25-0.36-0.42
	Cast Iron Alloy, Ductile Cast Iron (<28HRC)	100-80-60	140-120-60	0.11-0.15-0.18	0.13-0.18-0.22	0.15-0.23-0.27	0.17-0.26-0.38	0.22-0.28-0.38
	High Cast Iron Alloy, Ductile 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	0.13-0.17-0.21	0.15-0.20-0.26
N	Forged Aluminium Alloys(Si<12%)	—	315-230-90	0.06-0.09-0.11	0.13-0.20-0.26	0.16-0.22-0.28	0.18-0.26-0.32	0.20-0.30-0.38
	Casted Aluminium Alloys(Si<12%)	—	315-230-90	0.06-0.09-0.11	0.13-0.20-0.26	0.16-0.22-0.28	0.18-0.26-0.32	0.20-0.30-0.38
	Casted Aluminium Alloys(Si>12%)	—	270-180-90	0.06-0.09-0.11	0.13-0.20-0.26	0.16-0.22-0.28	0.18-0.26-0.32	0.20-0.30-0.38

【Note】

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 Machining Parameters

D928 Twist Drill for Cast Iron



Workpiece		Cutting Speed Vc (m/min)		Feed Rate fn (mm/rev)				
				Φ12	Φ14	Φ16	Φ18	Φ20
P	Low Carbon Steel, Long Chip (<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 Steel, Short Chip, Free Cutting Steel (<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 Steel and Medium Carbon Steel (<25HRC)	90-70-45	100-80-60	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 Steel, Tool Steel (<35HRC)	90-70-45	100-80-60	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
K	Gray Cast Iron, Ductile Cast Iron (<28HRC)	100-80-60	160-140-60	0.26-0.38-0.46	0.28-0.40-0.50	0.30-0.42-0.52	0.32-0.44-0.54	0.36-0.48-0.56
	Cast Iron Alloy, Ductile Cast Iron (<28HRC)	100-80-60	140-120-60	0.22-0.34-0.42	0.24-0.35-0.44	0.26-0.40-0.48	0.30-0.40-0.46	0.34-0.43-0.50
	High Cast Iron Alloy, Ductile Cast Iron (<45HRC)	90-70-60	100-90-60	0.17-0.22-0.28	0.19-0.26-0.31	0.20-0.27-0.33	0.23-0.28-0.34	0.23-0.29-0.35
N	Forged Aluminium Alloys(Si<12%)	—	315-230-90	0.22-0.34-0.42	0.24-0.36-0.44	0.28-0.38-0.46	0.32-0.40-0.48	0.34-0.42-0.48
	Casted Aluminium Alloys(Si<12%)	—	315-230-90	0.22-0.34-0.42	0.24-0.36-0.44	0.28-0.38-0.46	0.32-0.40-0.48	0.34-0.42-0.48
	Casted Aluminium Alloys(Si>12%)	—	270-180-90	0.22-0.34-0.42	0.24-0.36-0.44	0.28-0.38-0.46	0.32-0.40-0.48	0.34-0.42-0.48



【Note】

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 Machining Parameters

D966 Twist Drill for Aluminium

Workpiece		Cutting Speed Vc (m/min)		Feed Rate fn (mm/rev)				
				Φ3	Φ4	Φ6	Φ8	Φ10
N	Forged Aluminium Alloy (Si<12%)	250-150-80	315-230-90	0.06-0.09-0.11	0.13-0.20-0.26	0.16-0.22-0.28	0.18-0.26-0.32	0.20-0.30-0.38
	Casted Aluminium Alloy (Si<12%)	230-150-80	315-230-90	0.06-0.09-0.11	0.13-0.20-0.26	0.16-0.22-0.28	0.18-0.26-0.32	0.20-0.30-0.38
	Casted Aluminium Alloy (Si>12%)	230-150-80	270-180-90	0.06-0.09-0.11	0.13-0.20-0.26	0.16-0.22-0.28	0.18-0.26-0.32	0.20-0.30-0.38
	Copper, Copper Alloy (<200HB)	160-120-70	180-135-90	0.06-0.09-0.11	0.13-0.20-0.26	0.16-0.22-0.28	0.18-0.26-0.32	0.20-0.30-0.38

Workpiece		Cutting Speed Vc (m/min)		Feed Rate fn (mm/rev)				
				Φ12	Φ14	Φ16	Φ18	Φ20
N	Forged Aluminium Alloy (Si<12%)	250-150-80	315-230-90	0.22-0.34-0.42	0.24-0.36-0.44	0.28-0.38-0.46	0.32-0.40-0.48	0.34-0.42-0.48
	Casted Aluminium Alloy (Si<12%)	230-150-80	315-230-90	0.22-0.34-0.42	0.24-0.36-0.44	0.28-0.38-0.46	0.32-0.40-0.48	0.34-0.42-0.48
	Casted Aluminium Alloy (Si>12%)	230-150-80	270-180-90	0.22-0.34-0.42	0.24-0.36-0.44	0.28-0.38-0.46	0.32-0.40-0.48	0.34-0.42-0.48
	Copper, Copper Alloy (<200HB)	160-120-70	180-135-90	0.22-0.34-0.42	0.24-0.36-0.44	0.28-0.38-0.46	0.32-0.40-0.48	0.34-0.42-0.48


【Note】

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 Machining Parameters

D998 Twist Drill for Hardened Steel

Workpiece		Cutting Speed Vc (m/min)	Feed Rate fn (mm/rev)				
				Φ3	Φ4	Φ6	Φ8
P	Alloy Steel, Tool Steel (35-48HRC)	80-60-30	0.09-0.13-0.16	0.10-0.14-0.17	0.13-0.17-0.22	0.17-0.23-0.29	0.21-0.28-0.35
	Gray Cast Iron, Ductile Cast Iron (<28HRC)	100-80-60	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
K	Cast Iron Alloy, Ductile Cast Iron (<28HRC)	100-80-60	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
	High Cast Iron Alloy, Ductile Cast Iron (<45HRC)	90-70-60	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
	Hardened Steel (45-55HRC)	40-30-20	0.04-0.06-0.08	0.05-0.08-0.10	0.06-0.10-0.13	0.08-0.12-0.15	0.09-0.14-0.16
H	Hardened Steel (55-60HRC)	30-20-15	0.03-0.05-0.07	0.03-0.06-0.08	0.04-0.08-0.12	0.06-0.10-0.13	0.08-0.12-0.15

Workpiece		Cutting Speed Vc (m/min)	Feed Rate fn (mm/rev)				
				Φ12	Φ14	Φ16	—
P	Alloy Steel, Tool Steel (35-48HRC)	80-60-30	0.22-0.30-0.37	0.26-0.35-0.41	0.28-0.37-0.44	—	—
	Gray Cast Iron, Ductile Cast Iron (<28HRC)	100-80-60	0.25-0.33-0.45	0.28-0.36-0.48	0.30-0.40-0.50	—	—
K	Cast Iron Alloy, Ductile Cast Iron (<28HRC)	100-80-60	0.22-0.30-0.42	0.24-0.33-0.45	0.25-0.35-0.48	—	—
	High Cast Iron Alloy, Ductile Cast Iron (<45HRC)	90-70-60	0.16-0.22-0.28	0.18-0.24-0.30	0.20-0.26-0.32	—	—
	Hardened Steel (45-55HRC)	40-30-20	0.10-0.15-0.17	0.10-0.16-0.20	0.10-0.16-0.20	—	—
H	Hardened Steel (55-60HRC)	30-20-15	0.09-0.13-0.16	0.10-0.14-0.17	0.10-0.14-0.17	—	—

【Note】

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 Machining Parameters

D101/D102/D103 NC Centre Drills


Workpiece		Cutting Speed Vc (m/min)	Feed Rate fn (mm/rev)			
				Φ4	Φ6	Φ8
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 Steel and Medium Carbon Steel (<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 Steel, Tool Steel (<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 Steel, Tool Steel (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, Ferritic and Martensitic Steel (<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	Gray Cast Iron, Ductile Cast Iron (<28HRC)	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
	Cast Iron Alloy, Ductile 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
	High Cast Iron Alloy, Ductile 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	Forged Aluminium Alloy (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
	Casted Aluminium Alloy (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
	Casted Aluminium Alloy (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 Alloy (<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

【Note】

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 Machining Parameters

D101/D102/D103 NC Centre Drills

Workpiece		Cutting Speed Vc (m/min)	Feed Rate fn (mm/rev)			
				Φ12	Φ14	Φ16
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 Steel and Medium Carbon Steel (<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 Steel, Tool Steel (<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 Steel, Tool Steel (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, Ferritic and Martensitic Steel (<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	Gray Cast Iron, Ductile Cast Iron (<28HRC)	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
	Cast Iron Alloy, Ductile 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
	High Cast Iron Alloy, Ductile 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	Forged Aluminium Alloy (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
	Casted Aluminium Alloy (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
	Casted Aluminium Alloy (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 Alloy (<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

【Note】

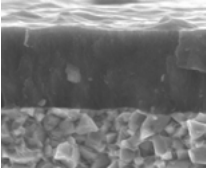
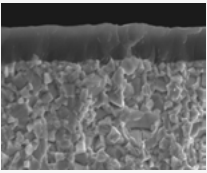
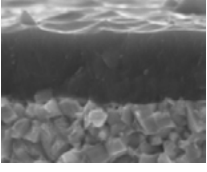
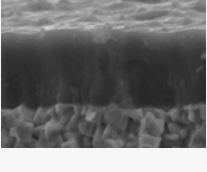
1. Make sure work piece and machine are stable and use a precision holder, use hydraulic chucks, high quality collet chucks
2. Make sure total indicated run-out(TIR) is less than 0.02mm
3. The recommended cutting condition is suitable for apply water soluble
4. If the tool size is not in the table, please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

B

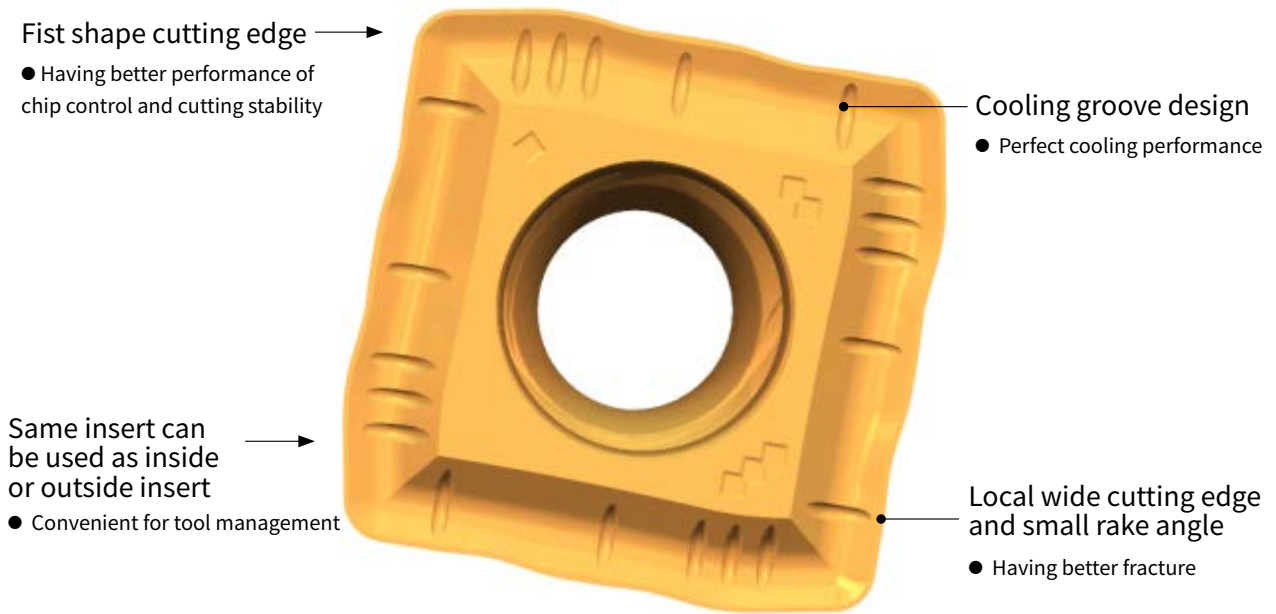
INDEXABLE DRILL



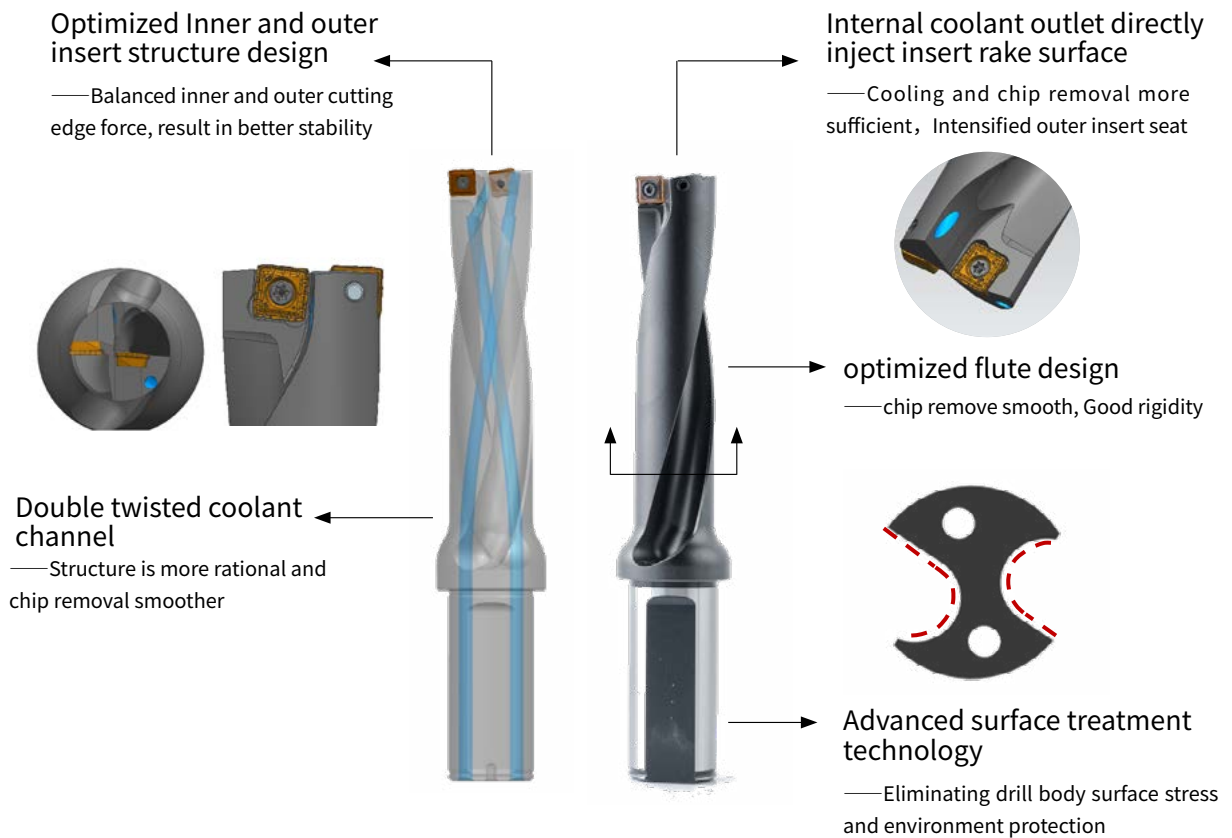
Overview of Drill Grades

Grade	Color	Coating composition	Features
GM3225	Purple gray		<ul style="list-style-type: none"> •The brand-new nano-structured TiAlN coating is combined with the sub-fine grained cemented carbide matrix with high cobalt content, which has excellent anti build-up edge and fragmentation resistance •Applicable to semi-precision to rough machining of stainless steel and thread processing of general materials such as steel and stainless steel
GM3220	Bronze		<ul style="list-style-type: none"> •Double-layer nanostructured PVD coating combine with submicron carbide substrate with high Co content, providing excellent wear resistance and red hardness •Suitable for ISO M & mild steel in general cutting condition with medium or low speed
GA4230	Fuchsia		<ul style="list-style-type: none"> •Upgrade PVD TiAlN coating with good heat resistance And toughness, combined carbide substrate with excellent heat and wear resistance, ensure stable processing
GS4130	Purple gray		<ul style="list-style-type: none"> •Latest TiAlN nanostructured coating with micro carbide substrate, has good wear resistance and rigidness •Suitable for drilling ISO M and titanium alloy materials

QPMG Drilling Insert



GHDS Drill Body



Indexable Drill Body Identification system

GHD-210 -3D - FC 25 - Q 06 S



① Tool Type		③ Aspect Ratio		⑤ Shank Dia.		⑦ Cutting edge length	
GHD	Indexable Drills	3D	3D	25	Φ25.0mm	06	Cutting edge length: 06
② Dia. of drill		④ Shank type		⑥ Insert series		⑧ Internal coolant mode	
210	Φ21.0mm	FC	Flange-Flat	Q	Q series	S	Double-twisted internal coolant

Drilling Insert Identification system

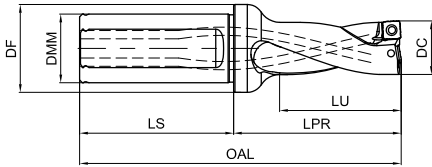
Q P M G 06 02 04-DP-GA4230



① Shape		③ Tolerance		⑤ Cutting Edge Length Symbol		⑧ Chipbreaker Symbol	
Q		M		06	6.5mm	Indicates the cutting properties and chipbreakers	
S		④ Hole/Chipbreaker Symbol		⑥ Thickness		⑨ Grade	
W		G	Double-sided	02	2.38mm	GA4230	
② Relief Angle		T	With hole Single-sided	⑦ Corner Rc Symbol			
C	7°			04	0.4mm		
P	11°						

GHDS-2D

GHDS-2D Indexable Drills

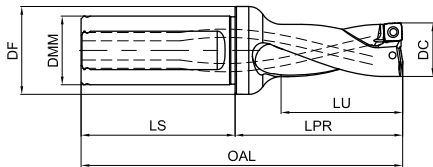


Dia.	Drilling body	Dimension (mm)							Stock	Insert
		DC	DMM	DF	LS	LU	LPR	OAL		
14	GHD-140-2D-FC20-Q04S	14	20	25	50	31	44	94	●	QPMG040204
14.5	GHD-145-2D-FC20-Q04S	14.5	20	25	50	33	46	96	●	
15	GHD-150-2D-FC20-Q04S	15	20	25	50	35	47	97	●	
15.5	GHD-155-2D-FC20-Q04S	15.5	20	25	50	37	49	99	●	
16	GHD-160-2D-FC20-Q05S	16	20	25	50	37	51	101	●	QPMG050204
16.5	GHD-165-2D-FC20-Q05S	16.5	20	25	50	38	52	102	●	
17	GHD-170-2D-FC25-Q05S	17	25	32	56	38	53	109	●	
17.5	GHD-175-2D-FC25-Q05S	17.5	25	32	56	39	55	111	●	
18	GHD-180-2D-FC25-Q05S	18	25	32	56	41	56	112	●	QPMG060204
18.5	GHD-185-2D-FC25-Q05S	18.5	25	32	56	42	57	113	●	
19	GHD-190-2D-FC25-Q06S	19	25	32	56	42	58	114	●	
19.5	GHD-195-2D-FC25-Q06S	19.5	25	32	56	44	60	116	●	
20	GHD-200-2D-FC25-Q06S	20	25	32	56	44	61	117	●	QPMG07T306
20.5	GHD-205-2D-FC25-Q06S	20.5	25	32	56	45	62	118	●	
21	GHD-210-2D-FC25-Q06S	21	25	32	56	47	64	120	●	
21.5	GHD-215-2D-FC25-Q06S	21.5	25	32	56	48	65	121	●	
22	GHD-220-2D-FC25-Q06S	22	25	32	56	49	66	122	●	QPMG07T306
22.5	GHD-225-2D-FC25-Q06S	22.5	25	32	56	51	68	124	●	
23	GHD-230-2D-FC25-Q07S	23	25	32	56	50	69	125	●	
23.5	GHD-235-2D-FC25-Q07S	23.5	25	32	56	51	70	126	●	
24	GHD-240-2D-FC25-Q07S	24	25	32	56	53	71	127	●	QPMG07T306
24.5	GHD-245-2D-FC25-Q07S	24.5	25	32	56	55	73	129	●	
25	GHD-250-2D-FC25-Q07S	25	25	32	56	54	74	130	●	
25.5	GHD-255-2D-FC32-Q07S	25.5	32	40	60	55	76	136	●	
26	GHD-260-2D-FC32-Q07S	26	32	40	60	56	77	137	●	QPMG07T306
26.5	GHD-265-2D-FC32-Q07S	26.5	32	40	60	58	78	138	●	
27	GHD-270-2D-FC32-Q07S	27	32	40	60	59	79	139	●	

● Stock ○ Available upon order

GHDS-2D

GHDS-2D Indexable Drills

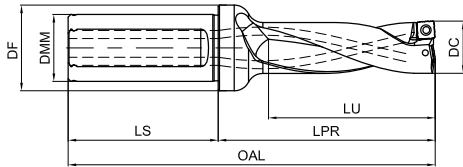


Dia.	Drilling body	Dimension (mm)							Stock	Insert
		DC	DMM	DF	LS	LU	LPR	OAL		
27.5	GHD-275-2D-FC32-Q09S	27.5	32	40	60	61	81	141	●	QPMG09T308
28	GHD-280-2D-FC32-Q09S	28	32	40	60	60	82	142	●	
28.5	GHD-285-2D-FC32-Q09S	28.5	32	40	60	62	83	143	●	
29	GHD-290-2D-FC32-Q09S	29	32	40	60	63	84	144	●	
29.5	GHD-295-2D-FC32-Q09S	29.5	32	40	60	65	86	146	●	
30	GHD-300-2D-FC32-Q09S	30	32	40	60	65	87	147	●	
30.5	GHD-305-2D-FC32-Q09S	30.5	32	40	60	68	89	149	●	
31	GHD-310-2D-FC40-Q09S	31	40	48	70	67	90	160	●	
31.5	GHD-315-2D-FC40-Q09S	31.5	40	48	70	68	91	161	●	
32	GHD-320-2D-FC40-Q09S	32	40	48	70	70	92	162	●	
32.5	GHD-325-2D-FC40-Q09S	32.5	40	48	70	72	94	164	●	
33	GHD-330-2D-FC40-Q09S	33	40	48	70	71	95	165	●	
33.5	GHD-335-2D-FC40-Q11S	33.5	40	48	70	73	97	167	●	
34	GHD-340-2D-FC40-Q11S	34	40	48	70	75	98	168	●	
34.5	GHD-345-2D-FC40-Q11S	34.5	40	48	70	76	99	169	●	
35	GHD-350-2D-FC40-Q11S	35	40	48	70	78	101	171	●	
35.5	GHD-355-2D-FC40-Q11S	35.5	40	48	70	79	102	172	●	
36	GHD-360-2D-FC40-Q11S	36	40	48	70	78	104	174	●	
36.5	GHD-365-2D-FC40-Q11S	36.5	40	48	70	80	105	175	●	
37	GHD-370-2D-FC40-Q11S	37	40	48	70	80	105	175	●	QPMG110408
37.5	GHD-375-2D-FC40-Q11S	37.5	40	48	70	81	106	176	●	
38	GHD-380-2D-FC40-Q11S	38	40	48	70	82	108	178	●	
38.5	GHD-385-2D-FC40-Q11S	38.5	40	48	70	84	109	179	●	
39	GHD-390-2D-FC40-Q11S	39	40	48	70	85	110	180	●	
39.5	GHD-395-2D-FC40-Q11S	39.5	40	48	70	85	112	182	●	
40	GHD-400-2D-FC40-Q11S	40	40	48	70	86	113	183	●	

● Stock ○ Available upon order

GHDS-3D

GHDS-3D Indexable Drills

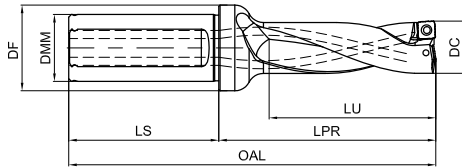


Dia.	Drilling body	Dimension (mm)							Stock	Insert
		DC	DMM	DF	LS	LU	LPR	OAL		
14	GHD-140-3D-FC20-Q04S	14	20	25	50	45	58	108	●	QPMG040204
14.5	GHD-145-3D-FC20-Q04S	14.5	20	25	50	47	60	110	●	
15	GHD-150-3D-FC20-Q04S	15	20	25	50	50	62	112	●	
15.5	GHD-155-3D-FC20-Q04S	15.5	20	25	50	52	64	114	●	
16	GHD-160-3D-FC20-Q05S	16	20	25	50	51	66	116	●	QPMG050204
16.5	GHD-165-3D-FC20-Q05S	16.5	20	25	50	53	68	118	●	
17	GHD-170-3D-FC25-Q05S	17	25	32	56	54	69	125	●	
17.5	GHD-175-3D-FC25-Q05S	17.5	25	32	56	56	72	128	●	
18	GHD-180-3D-FC25-Q05S	18	25	32	56	58	73	129	●	QPMG060204
18.5	GHD-185-3D-FC25-Q05S	18.5	25	32	56	60	75	131	●	
19	GHD-190-3D-FC25-Q06S	19	25	32	56	60	76	132	●	
19.5	GHD-195-3D-FC25-Q06S	19.5	25	32	56	62	79	135	●	
20	GHD-200-3D-FC25-Q06S	20	25	32	56	64	81	137	●	QPMG07T306
20.5	GHD-205-3D-FC25-Q06S	20.5	25	32	56	65	82	138	●	
21	GHD-210-3D-FC25-Q06S	21	25	32	56	67	84	140	●	
21.5	GHD-215-3D-FC25-Q06S	21.5	25	32	56	69	86	142	●	
22	GHD-220-3D-FC25-Q06S	22	25	32	56	69	87	143	●	QPMG07T306
22.5	GHD-225-3D-FC25-Q06S	22.5	25	32	56	72	90	146	●	
23	GHD-230-3D-FC25-Q07S	23	25	32	56	72	91	147	●	
23.5	GHD-235-3D-FC25-Q07S	23.5	25	32	56	75	93	149	●	
24	GHD-240-3D-FC25-Q07S	24	25	32	56	76	95	151	●	QPMG07T306
24.5	GHD-245-3D-FC25-Q07S	24.5	25	32	56	77	97	153	●	
25	GHD-250-3D-FC25-Q07S	25	25	32	56	79	99	155	●	
25.5	GHD-255-3D-FC32-Q07S	25.5	32	40	60	80	100	160	●	
26	GHD-260-3D-FC32-Q07S	26	32	40	60	81	102	162	●	QPMG07T306
26.5	GHD-265-3D-FC32-Q07S	26.5	32	40	60	84	104	164	●	
27	GHD-270-3D-FC32-Q07S	27	32	40	60	85	105	165	●	

● Stock ○ Available upon order

GHDS-3D

GHDS-3D Indexable Drills

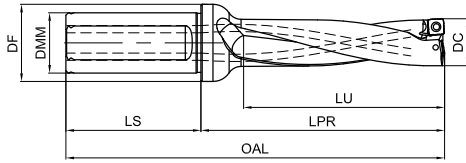


Dia.	Drilling body	Dimension (mm)							Stock	Insert
		DC	DMM	DF	LS	LU	LPR	OAL		
27.5	GHD-275-3D-FC32-Q09S	27.5	32	40	60	88	108	168	●	QPMG09T308
28	GHD-280-3D-FC32-Q09S	28	32	40	60	87	109	169	●	
28.5	GHD-285-3D-FC32-Q09S	28.5	32	40	60	90	111	171	●	
29	GHD-290-3D-FC32-Q09S	29	32	40	60	91	112	172	●	
29.5	GHD-295-3D-FC32-Q09S	29.5	32	40	60	93	115	175	●	
30	GHD-300-3D-FC32-Q09S	30	32	40	60	95	117	177	●	
30.5	GHD-305-3D-FC32-Q09S	30.5	32	40	60	97	118	178	●	
31	GHD-310-3D-FC40-Q09S	31	40	48	70	98	121	191	●	
31.5	GHD-315-3D-FC40-Q09S	31.5	40	48	70	98	122	192	●	
32	GHD-320-3D-FC40-Q09S	32	40	48	70	101	124	194	●	
32.5	GHD-325-3D-FC40-Q09S	32.5	40	48	70	103	126	196	●	
33	GHD-330-3D-FC40-Q09S	33	40	48	70	104	128	198	●	
33.5	GHD-335-3D-FC40-Q11S	33.5	40	48	70	106	130	200	●	
34	GHD-340-3D-FC40-Q11S	34	40	48	70	108	131	201	●	
34.5	GHD-345-3D-FC40-Q11S	34.5	40	48	70	109	134	204	●	
35	GHD-350-3D-FC40-Q11S	35	40	48	70	112	135	205	●	
35.5	GHD-355-3D-FC40-Q11S	35.5	40	48	70	114	137	207	●	
36	GHD-360-3D-FC40-Q11S	36	40	48	70	113	139	209	●	
36.5	GHD-365-3D-FC40-Q11S	36.5	40	48	70	116	141	211	●	
37	GHD-370-3D-FC40-Q11S	37	40	48	70	117	142	212	●	
37.5	GHD-375-3D-FC40-Q11S	37.5	40	48	70	118	144	214	●	
38	GHD-380-3D-FC40-Q11S	38	40	48	70	122	146	216	●	
38.5	GHD-385-3D-FC40-Q11S	38.5	40	48	70	122	148	218	●	
39	GHD-390-3D-FC40-Q11S	39	40	48	70	125	149	219	●	
39.5	GHD-395-3D-FC40-Q11S	39.5	40	48	70	124	151	221	●	
40	GHD-400-3D-FC40-Q11S	40	40	48	70	126	153	223	●	

● Stock ○ Available upon order

GHDS-4D

GHDS-4D Indexable Drills

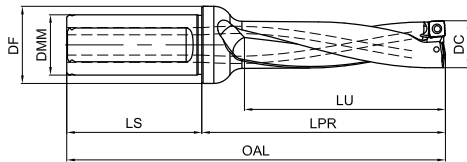


Dia.	Drilling body	Dimension (mm)							Stock	Insert
		DC	DMM	DF	LS	LU	LPR	OAL		
14	GHD-140-4D-FC20-Q04S	14	20	25	50	59	72	122	●	QPMG040204
14.5	GHD-145-4D-FC20-Q04S	14.5	20	25	50	63	75	125	●	
15	GHD-150-4D-FC20-Q04S	15	20	25	50	64	77	127	●	
15.5	GHD-155-4D-FC20-Q04S	15.5	20	25	50	66	79	129	●	
16	GHD-160-4D-FC20-Q05S	16	20	25	50	67	82	132	●	QPMG050204
16.5	GHD-165-4D-FC20-Q05S	16.5	20	25	50	70	84	134	●	
17	GHD-170-4D-FC25-Q05S	17	25	32	56	71	86	142	●	
17.5	GHD-175-4D-FC25-Q05S	17.5	25	32	56	74	89	145	●	
18	GHD-180-4D-FC25-Q05S	18	25	32	56	76	91	147	●	QPMG060204
18.5	GHD-185-4D-FC25-Q05S	18.5	25	32	56	78	93	149	●	
19	GHD-190-4D-FC25-Q06S	19	25	32	56	79	95	151	●	
19.5	GHD-195-4D-FC25-Q06S	19.5	25	32	56	83	99	155	●	
20	GHD-200-4D-FC25-Q06S	20	25	32	56	84	101	157	●	QPMG07T306
20.5	GHD-205-4D-FC25-Q06S	20.5	25	32	56	87	103	159	●	
21	GHD-210-4D-FC25-Q06S	21	25	32	56	88	105	161	●	
21.5	GHD-215-4D-FC25-Q06S	21.5	25	32	56	90	107	163	●	
22	GHD-220-4D-FC25-Q06S	22	25	32	56	92	109	165	●	QPMG07T306
22.5	GHD-225-4D-FC25-Q06S	22.5	25	32	56	95	112	168	●	
23	GHD-230-4D-FC25-Q07S	23	25	32	56	99	114	170	●	
23.5	GHD-235-4D-FC25-Q07S	23.5	25	32	56	102	117	173	●	
24	GHD-240-4D-FC25-Q07S	24	25	32	56	101	119	175	●	QPMG07T306
24.5	GHD-245-4D-FC25-Q07S	24.5	25	32	56	104	122	178	●	
25	GHD-250-4D-FC25-Q07S	25	25	32	56	104	124	180	●	
25.5	GHD-255-4D-FC32-Q07S	25.5	32	40	60	107	126	186	●	
26	GHD-260-4D-FC32-Q07S	26	32	40	60	108	128	188	●	QPMG07T306
26.5	GHD-265-4D-FC32-Q07S	26.5	32	40	60	110	130	190	●	
27	GHD-270-4D-FC32-Q07S	27	32	40	60	112	132	192	●	

● Stock ○ Available upon order

GHDS-4D

GHDS-4D Indexable Drills

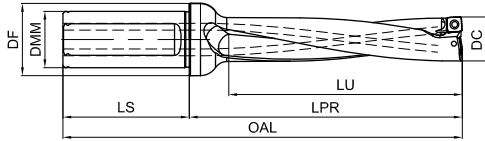


Dia.	Drilling body	Dimension (mm)							Stock	Insert
		DC	DMM	DF	LS	LU	LPR	OAL		
27.5	GHD-275-4D-FC32-Q09S	27.5	32	40	60	113	135	195	●	QPMG09T308
28	GHD-280-4D-FC32-Q09S	28	32	40	60	115	137	197	●	
28.5	GHD-285-4D-FC32-Q09S	28.5	32	40	60	118	139	199	●	
29	GHD-290-4D-FC32-Q09S	29	32	40	60	120	141	201	●	
29.5	GHD-295-4D-FC32-Q09S	29.5	32	40	60	123	144	204	●	
30	GHD-300-4D-FC32-Q09S	30	32	40	60	125	147	207	●	
30.5	GHD-305-4D-FC32-Q09S	30.5	32	40	60	126	148	208	○	
31	GHD-310-4D-FC40-Q09S	31	40	48	70	129	152	222	●	
31.5	GHD-315-4D-FC40-Q09S	31.5	40	48	70	131	154	224	○	
32	GHD-320-4D-FC40-Q09S	32	40	48	70	134	156	226	●	
32.5	GHD-325-4D-FC40-Q09S	32.5	40	48	70	137	159	229	●	QPMG110408
33	GHD-330-4D-FC40-Q09S	33	40	48	70	138	161	231	●	
33.5	GHD-335-4D-FC40-Q11S	33.5	40	48	70	142	163	233	●	
34	GHD-340-4D-FC40-Q11S	34	40	48	70	142	165	235	●	
34.5	GHD-345-4D-FC40-Q11S	34.5	40	48	70	142	168	238	○	
35	GHD-350-4D-FC40-Q11S	35	40	48	70	146	170	240	●	
35.5	GHD-355-4D-FC40-Q11S	35.5	40	48	70	146	173	243	○	
36	GHD-360-4D-FC40-Q11S	36	40	48	70	150	175	245	●	
36.5	GHD-365-4D-FC40-Q11S	36.5	40	48	70	152	177	247	○	
37	GHD-370-4D-FC40-Q11S	37	40	48	70	154	179	249	●	
37.5	GHD-375-4D-FC40-Q11S	37.5	40	48	70	158	182	252	●	
38	GHD-380-4D-FC40-Q11S	38	40	48	70	157	184	254	●	
38.5	GHD-385-4D-FC40-Q11S	38.5	40	48	70	160	186	256	○	
39	GHD-390-4D-FC40-Q11S	39	40	48	70	165	188	258	●	
39.5	GHD-395-4D-FC40-Q11S	39.5	40	48	70	166	191	261	●	
40	GHD-400-4D-FC40-Q11S	40	40	48	70	164	193	263	●	

● Stock ○ Available upon order

GHDS-5D

GHDS-5D Indexable Drills

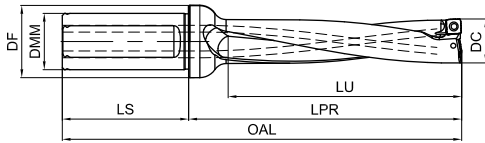


Dia.	Drilling body	Dimension (mm)							Stock	Insert
		DC	DMM	DF	LS	LU	LPR	OAL		
14	GHD-140-5D-FC20-Q04S	14	20	25	50	73	86	136	●	QPMG040204
14.5	GHD-145-5D-FC20-Q04S	14.5	20	25	50	77	90	140	●	
15	GHD-150-5D-FC20-Q04S	15	20	25	50	79	92	142	●	
15.5	GHD-155-5D-FC20-Q04S	15.5	20	25	50	81	95	145	●	
16	GHD-160-5D-FC20-Q05S	16	20	25	50	83	98	148	●	QPMG050204
16.5	GHD-165-5D-FC20-Q05S	16.5	20	25	50	87	101	151	●	
17	GHD-170-5D-FC25-Q05S	17	25	32	56	90	104	160	●	
17.5	GHD-175-5D-FC25-Q05S	17.5	25	32	56	93	107	163	●	
18	GHD-180-5D-FC25-Q05S	18	25	32	56	94	109	165	●	QPMG060204
18.5	GHD-185-5D-FC25-Q05S	18.5	25	32	56	97	112	168	●	
19	GHD-190-5D-FC25-Q06S	19	25	32	56	99	114	170	●	
19.5	GHD-195-5D-FC25-Q06S	19.5	25	32	56	103	118	174	●	
20	GHD-200-5D-FC25-Q06S	20	25	32	56	104	121	177	●	QPMG07T306
20.5	GHD-205-5D-FC25-Q06S	20.5	25	32	56	107	124	180	●	
21	GHD-210-5D-FC25-Q06S	21	25	32	56	109	126	182	●	
21.5	GHD-215-5D-FC25-Q06S	21.5	25	32	56	112	129	185	●	
22	GHD-220-5D-FC25-Q06S	22	25	32	56	113	131	187	●	QPMG07T306
22.5	GHD-225-5D-FC25-Q06S	22.5	25	32	56	116	134	190	●	
23	GHD-230-5D-FC32-Q07S	23	32	40	60	120	138	198	●	
23.5	GHD-235-5D-FC32-Q07S	23.5	32	40	60	122	140	200	●	
24	GHD-240-5D-FC32-Q07S	24	32	40	60	124	143	203	●	QPMG07T306
24.5	GHD-245-5D-FC32-Q07S	24.5	32	40	60	127	146	206	●	
25	GHD-250-5D-FC32-Q07S	25	32	40	60	129	149	209	●	
25.5	GHD-255-5D-FC32-Q07S	25.5	32	40	60	133	153	213	●	
26	GHD-260-5D-FC32-Q07S	26	32	40	60	137	157	217	●	QPMG07T306
26.5	GHD-265-5D-FC32-Q07S	26.5	32	40	60	138	158	218	●	
27	GHD-270-5D-FC32-Q07S	27	32	40	60	139	159	219	●	

● Stock ○ Available upon order

GHDS-5D

GHDS-5D Indexable Drills

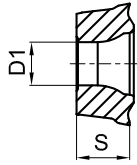
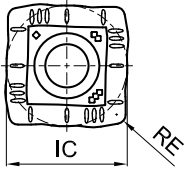


Dia.	Drilling body	Dimension (mm)							Stock	Insert
		DC	DMM	DF	LS	LU	LPR	OAL		
27.5	GHD-275-5D-FC32-Q09S	27.5	32	40	60	142	162	222	●	
28	GHD-280-5D-FC32-Q09S	28	32	40	60	143	165	225	●	
28.5	GHD-285-5D-FC32-Q09S	28.5	32	40	60	147	169	229	●	
29	GHD-290-5D-FC32-Q09S	29	32	40	60	150	171	231	●	
29.5	GHD-295-5D-FC32-Q09S	29.5	32	40	60	153	174	234	●	
30	GHD-300-5D-FC32-Q09S	30	32	40	60	155	177	237	●	QPMG09T308
30.5	GHD-305-5D-FC32-Q09S	30.5	32	40	60	158	180	240	●	
31	GHD-310-5D-FC40-Q09S	31	40	48	70	160	183	253	●	
31.5	GHD-315-5D-FC40-Q09S	31.5	40	48	70	163	186	256	●	
32	GHD-320-5D-FC40-Q09S	32	40	48	70	166	188	258	●	
32.5	GHD-325-5D-FC40-Q09S	32.5	40	48	70	170	192	262	●	

● Stock ○ Available upon order

QPMG

QPMG Insert



Insert Type	Grade			Dimension (mm)				Drilling Dia.
	GA4230	GM3220	GS4130	IC	S	RE	D1	
QPMG040204-DP	●	○	○	4.7	2.3	0.4	2.2	Φ14.0 ~ Φ15.9
QPMG050204-DP	●	○	●	5.7	2.5	0.4	2.6	Φ16.0 ~ Φ18.9
QPMG060204-DP	●	●	●	6.5	2.5	0.4	2.6	Φ19.0 ~ Φ22.5
QPMG07T306-DP	●	○	●	7.94	3.5	0.6	2.85	Φ22.6 ~ Φ27.0
QPMG09T308-DP	●	○	●	9.7	3.97	0.8	3.5	Φ27.1 ~ Φ33.0
QPMG110408-DP	●	○	○	11.5	4.76	0.8	4.4	Φ33.1 ~ Φ40.0

GA4230- Universal Grade

GM3220 - For stainless steel

GS4130-Suitable for HRSA Material, and unstable conditions

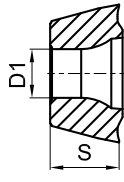
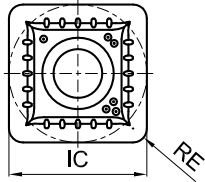
● Stock ○ Available upon order

Spare Parts

Insert	Screw		Wrench	
	Ordering Code	Diagram	Ordering Code	Diagram
QPMG040204	PSI60M020050-02704B		PTT05IPB	
QPMG050204	PSI60M022055-03107B		PTT06IPB	
QPMG060204	PSI60M022055-03107B		PTT06IPB	
QPMG07T306	PSI60M025070-03509B		PTT07IPB	
QPMG09T308	PSI60M030080-04210B		PTT09IPB	
QPMG110408	PSI60M040100-05510B		PTT15IPB	

SPMG

General Drill Insert



Insert Type	Grade		Dimension (mm)				Drilling Dia.
	GA4230	GS4130	IC	S	RE	D1	
SPMG050204-DM	●	●	5	2.38	2.2	0.4	Φ13.0 ~ Φ15.0
SPMG060204-DM	●	●	6	2.38	2.6	0.4	Φ15.5 ~ Φ21.5
SPMG07T308-DM	●	●	7.94	3.97	2.8	0.8	Φ22.0 ~ Φ27.5
SPMG090408-DM	●	●	9.8	4.3	4.2	0.8	Φ28.0 ~ Φ33.0
SPMG110408-DM	●	●	11.5	4.76	4.4	0.8	Φ33.0 ~ Φ41.0
SPMG140512-DM	●	●	14.3	5.2	5.8	1.2	Φ42.0 ~ Φ50.0

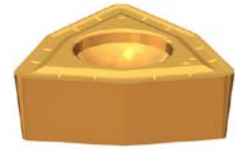
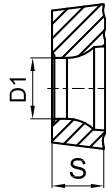
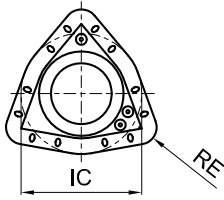
GA4230- Universal Grade

GS4130-Suitable for HRSA Material, and unstable conditions

● Stock ○ Available upon order

WCMT

General Drill Insert



Insert Type	Grade	Dimension (mm)				Drilling Dia.
	GA4230	IC	S	RE	D1	
WCMT030208-DU	●	5.56	2.38	2.8	0.8	Φ15.0 ~ Φ20.5
WCMT040208-DU	●	6.35	2.38	2.9	0.8	Φ21.0 ~ Φ24.5
WCMT050308-DU	●	7.94	3.18	3.4	0.8	Φ25.0 ~ Φ30.0
WCMT06T308-DU	●	9.52	3.97	3.8	0.8	Φ30.5 ~ Φ39.5
WCMT080412-DU	●	12.7	4.76	4.4	1.2	Φ40.0 ~ Φ60.0

● Stock ○ Available upon order

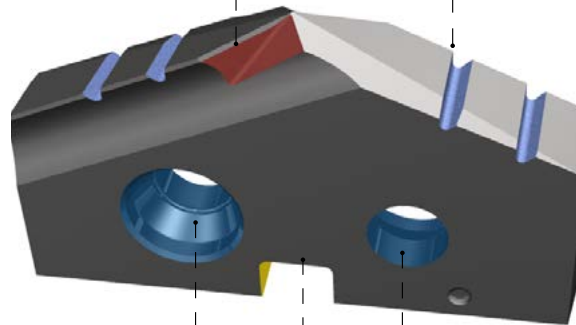
MCMG Spade Drilling insert

XR chisel edge regrinding

- Increase edge strength
- enhance drilling stability

Chip dividing groove

- Reduce chip width
- Smaller drilling torque



Double screw hole

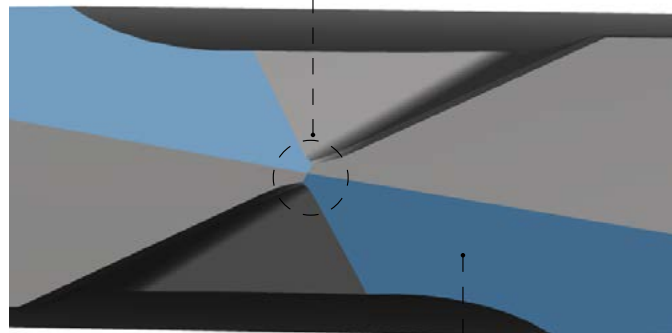
- Safe and reliable installation
- ensure drilling stability

Locating slot

- Ensure radial accuracy

Drilling core

- Thin drilling core, effectively reduce axial resistance
- Good self-centering



Double flank surface of cutting tool

- Reduce the friction with the workpiece

Spade Drill Identification system

GSD – 125 – 08D – FC 20 – (S)

① ② ③ ④ ⑤ ⑥

① Drill Type	
GSD	Indexable Spade Drills

③ Aspect Ratio	
08D	8D

⑤ Shank Dia.	
20	Φ20.0mm


⑥ Groove Type	
-	Helical Groove
S	Straight Groove

② Dia. of drill	
125	The dia. of insert place: Φ12.5mm

④ Shank type	
FC	Flange-Flat

M C M G 0200 T3–DS–GM3225

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Shape	
M	

③ Tolerance	
M	

⑤ Dia.	
0200	20.0mm

⑦ Chip breaker Symbol	
Indicates the cutting properties and chipbreakers	

② Relief Angle	
C	7°

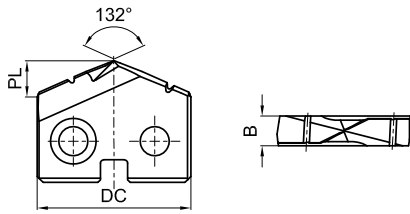
④ Hole/Chipbreaker Symbol	
G	Double-sided

⑥ Thickness	
T3	3.97mm

⑨ Grade	
GM3225	

MCMG

MCMG Insert

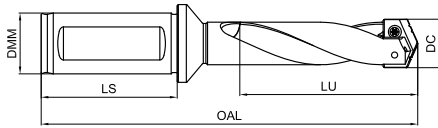


Ordering Code	Dimension (mm)			Grade	Ordering Code	Dimension (mm)			Grade
	DC	B	PL	GM3225		DC	B	PL	GM3225
MCMG013003-DS	13	3.18	2.86	●	MCMG025004-DS	25	4.76	5.5	●
MCMG013503-DS	13.5		2.97	●	MCMG025504-DS	25.5		5.61	●
MCMG014003-DS	14		3.08	●	MCMG026004-DS	26		5.72	●
MCMG014503-DS	14.5		3.19	●	MCMG026504-DS	26.5		5.83	●
MCMG015003-DS	15		3.3	●	MCMG027004-DS	27		5.94	●
MCMG015503-DS	15.5		3.41	●	MCMG027504-DS	27.5		6.05	●
MCMG016003-DS	16		3.52	●	MCMG028004-DS	28		6.16	●
MCMG016503-DS	16.5		3.63	●	MCMG028504-DS	28.5		6.27	●
MCMG017003-DS	17		3.74	●	MCMG029004-DS	29		6.38	●
MCMG017503-DS	17.5		3.85	●	MCMG029504-DS	29.5		6.49	●
MCMG0180T3-DS	18		3.96	●	MCMG030004-DS	30		6.6	●
MCMG0185T3-DS	18.5		4.07	●	MCMG030504-DS	30.5		6.71	●
MCMG0190T3-DS	19	4.18	●	MCMG031004-DS	31	6.82	●		
MCMG0195T3-DS	19.5	4.29	●	MCMG031504-DS	31.5	6.93	●		
MCMG0200T3-DS	20	4.4	●	MCMG032004-DS	32	7.04	●		
MCMG0205T3-DS	20.5	4.51	●	MCMG032504-DS	32.5	7.15	●		
MCMG0210T3-DS	21	4.62	●	MCMG033004-DS	33	7.26	●		
MCMG0215T3-DS	21.5	4.73	●	MCMG033504-DS	33.5	7.37	●		
MCMG0220T3-DS	22	4.84	●	MCMG034004-DS	34	7.48	●		
MCMG0225T3-DS	22.5	4.95	●	MCMG034504-DS	34.5	7.59	●		
MCMG0230T3-DS	23	5.06	●	MCMG035004-DS	35	7.7	●		
MCMG0235T3-DS	23.5	5.17	●	MCMG035504-DS	35.5	7.81	●		
MCMG0240T3-DS	24	5.28	●	MCMG036004-DS	36	7.92	●		
MCMG0245T3-DS	24.5	5.39	●						

● Stock ○ Available upon order

GSD

The Lateral Fixation Type Flange Shank and Helical Flute Holder

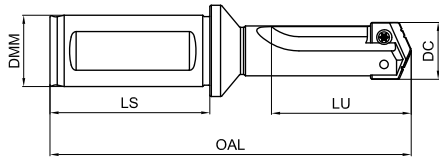


Ordering Code	Dimension (mm)					Stock	Screw	Wrench
	DC	LU	OAL	DMM	LS			
GSD-125-04D-FC20		63.5	142.1	20	50	●	PSI52M025060-03712C	PTT08PC
GSD-125-07D-FC20	13.0 ~ 15.0	114.3	192.9			●		
GSD-125-11D-FC20		177.8	256.4			○		
GSD-150-03D-FC20		63.5	142.1			●		
GSD-150-06D-FC20	15.5 ~ 17.5	114.3	192.9			●		
GSD-150-10D-FC20		177.8	256.4			●		
GSD-175-05D-FC25		117.5	210.8	25	56	●	PSI52M030075-04212C	PTT09PC
GSD-175-07D-FC25	18.0 ~ 21.5	168.3	261.6			●		
GSD-175-12D-FC25		269.9	363.2			●		
GSD-215-04D-FC25		117.5	210.8			○		
GSD-215-07D-FC25	22.0 ~ 24.5	168.3	261.6			●		
GSD-215-11D-FC25		269.9	363.2			●		
GSD-245-04D-FC32		136.5	239.4	32	60	●	PSI52M040095-05218C	PTT15PC
GSD-245-06D-FC32	25.0 ~ 29.0	187.3	290.2			●		
GSD-245-09D-FC32		288.9	391.8			○		
GSD-295-03D-FC32		136.5	239.4			○		
GSD-295-05D-FC32	30.0 ~ 36.0	187.3	290.2			●		
GSD-295-08D-FC32		288.9	391.8			○		

● Stock ○ Available upon order

GSD

The Lateral Fixation Type Flange Shank and Straight Flute Holder



Ordering Code	Dimension (mm)					Stock	Screw	Wrench
	DC	LU	OAL	DMM	LS			
GSD-125-01D-FC20-S	13.0 ~ 15.0	22.2	97.6	20	50	<input type="radio"/>	PSI52M025060-03712C	PTT08PC
GSD-125-02D-FC20-S		34.9	113.5			<input checked="" type="radio"/>		
GSD-125-19D-FC20-S		295	373.9			<input type="radio"/>		
GSD-125-25D-FC20-S		387	466			<input type="radio"/>		
GSD-150-01D-FC20-S	15.5 ~ 17.5	22.2	97.6	20	50	<input type="radio"/>	PSI52M025060-03712C	PTT08PC
GSD-150-02D-FC20-S		34.9	113.5			<input type="radio"/>		
GSD-150-16D-FC20-S		295	373.9			<input type="radio"/>		
GSD-150-22D-FC20-S		387	466			<input type="radio"/>		
GSD-175-02D-FC25-S	18.0 ~ 21.5	47.6	131.8	25	56	<input type="radio"/>	PSI52M030075-04212C	PTT09PC
GSD-175-03D-FC25-S		66.7	163.2			<input checked="" type="radio"/>		
GSD-175-21D-FC25-S		457	550.5			<input type="radio"/>		
GSD-175-26D-FC25-S		569	658.5			<input type="radio"/>		
GSD-215-01D-FC25-S	22.0 ~ 24.5	47.6	131.8	25	56	<input type="radio"/>	PSI52M030075-04212C	PTT09PC
GSD-215-02D-FC25-S		66.7	163.2			<input checked="" type="radio"/>		
GSD-215-19D-FC25-S		457	550.5			<input type="radio"/>		
GSD-215-23D-FC25-S		569	658.5			<input type="radio"/>		
GSD-245-01D-FC32-S	25.0 ~ 29.0	57.2	148.5	32	60	<input type="radio"/>	PSI52M040095-05218C	PTT15PC
GSD-245-02D-FC32-S		85.7	188.6			<input type="radio"/>		
GSD-245-17D-FC32-S		511	614.1			<input type="radio"/>		
GSD-245-23D-FC32-S		692	795.1			<input type="radio"/>		
GSD-295-01D-FC32-S	30.0 ~ 36.0	57.2	148.5	32	60	<input type="radio"/>	PSI52M040095-05218C	PTT15PC
GSD-295-02D-FC32-S		85.7	188.6			<input checked="" type="radio"/>		
GSD-295-14D-FC32-S		511	614.1			<input type="radio"/>		
GSD-295-19D-FC32-S		692	795.1			<input type="radio"/>		

● Stock ○ Available upon order

Spare Parts

Dia of Insert	Screw		Wrench	
	Ordering Code	Diagram	Ordering Code	Diagram
Φ13.0 – Φ17.5	PSI52M025060-03712C		PTT08PC	
Φ18.0 – Φ24.5	PSI52M030075-04212C		PTT09PC	
Φ25.0 – Φ36.0	PSI52M040095-05218C		PTT15PC	

Recommended Cutting Data

GHDS Indexable drill

Workpiece Materials		Cutting Speed Vc(m/min)	Feed (mm/rev)*Refer to Diameter Range *			
			Φ14.0 – 22.5	Φ23.0 – 27.0	Φ27.5 – 33.0	Φ33.5 – 40.0
P	Low-Carbon Steel, Long Chipping (< 125HB)	160–240–300	0.04-0.06	0.04-0.06	0.04-0.08	0.04-0.08
	Low-Carbon Steel, Short Chipping, Free Cutting Steel (< 125HB)	140–180–220	0.04-0.10	0.04-0.12	0.06-0.16	0.08-0.18
	High-carbon Steels, Medium-carbon Steels (< 25HRC)	140–180–220	0.04-0.10	0.04-0.12	0.06-0.16	0.08-0.18
	Alloy Steels, Tool Steels (< 35HRC)	100–160–200	0.04-0.10	0.06-0.12	0.08-0.16	0.08-0.18
	Alloy Steels, Tool Steels (35-48HRC)	80–160–200	0.04-0.10	0.06-0.12	0.08-0.16	0.08-0.18
	PH and Ferrite/Martensitic steel (< 35HRC)	80–160–200	0.03-0.08	0.04-0.12	0.08-0.14	0.08-0.16
	High-Strength PH and Ferrite/Martensitic steel (35-48HRC)	60–140–180	0.03-0.08	0.04-0.12	0.06-0.14	0.06-0.16
M	Austenitic Stainless Steels (130-200HB)	100–140–200	0.04-0.10	0.06-0.12	0.06-0.14	0.06-0.16
	High-Strength Austenitic Stainless Steels and Cast Stainless Steels (< 25HRC)	60–140–180	0.03-0.08	0.04-0.12	0.06-0.14	0.06-0.16
	Duplex Stainless Steels (<30HRC)	60–140–180	0.03-0.08	0.04-0.12	0.06-0.14	0.06-0.16
K	Grey Cast Iron (< 32HRC)	140–180–230	0.04-0.10	0.06-0.14	0.06-0.16	0.08-0.20
	Moderately Difficult Alloy Cast iron, Nodular Cast Iron (< 28HRC)	120–160–200	0.04-0.10	0.06-0.14	0.06-0.16	0.08-0.20
	Difficult High-alloy Cast Iron, Nodular Cast Iron (< 45HRC)	100–160–200	0.04-0.10	0.06-0.12	0.08-0.16	0.08-0.18
S	(Ni+/Fe+/Co+)HRSA	30–50–80	0.03-0.06	0.04-0.08	0.04-0.10	0.06-0.12
	(Ti+)HRSA	30–50–70	0.03-0.08	0.04-0.10	0.04-0.10	0.06-0.12

Recommended Cutting Data

GSD spade drill

Workpiece Materials		Cutting Speed Vc(m/min)	Feed (mm/rev)*Refer to Diameter Range *		
			Ø13.0 – 17.5	Ø18.0 – 24.0	Ø25.0 – 35.0
P	Low-Carbon Steel, Long Chipping (< 125HB)	80—100—120	0.14-0.26	0.18-0.28	0.22-0.32
	Low-Carbon Steel, Short Chipping, Free Cutting Steel (< 125HB)	80—90—105	0.14-0.26	0.18-0.28	0.22-0.32
	High-carbon Steels, Medium-carbon Steels (< 25HRC)	60—80—100	0.12-0.18	0.16-0.24	0.22-0.30
	Alloy Steels, Tool Steels (< 35HRC)	60—80—100	0.12-0.16	0.16-0.22	0.22-0.28
	Alloy Steels, Tool Steels (35-48HRC)	50—70—90	0.12-0.16	0.15-0.20	0.20-0.25
	PH and Ferrite/Martensitic steel (< 35HRC)	40—60—70	0.12-0.16	0.16-0.20	0.18-0.25
	High-Strength PH and Ferrite/Martensitic steel (35-48HRC)	30—50—80	0.10-0.14	0.14-0.20	0.16-0.22
M	Austenitic Stainless Steels (130- 200HB)	30—40—50	0.08-0.14	0.12-0.20	0.14-0.22
	High-Strength Austenitic Stainless Steels and Cast Stainless Steels (< 25HRC)	20—40—50	0.08-0.14	0.12-0.20	0.14-0.22
	Duplex Stainless Steels (<30HRC)	20—40—50	0.08-0.14	0.12-0.20	0.14-0.22
K	Grey Cast Iron (< 32HRC)	80—100—120	0.18-0.25	0.25-0.30	0.30-0.35
	Moderately Difficult Alloy Cast iron, Nodular Cast Iron (< 28HRC)	80—100—120	0.15-0.20	0.18-0.26	0.22-0.32
	Difficult High-alloy Cast Iron, Nodular Cast Iron (< 45HRC)	60—80—100	0.15-0.20	0.18-0.26	0.22-0.32

Holders With different length					
Parameters	Length of different holders				
	Drill Depth < 8D	8D ≥ Drill Depth < 12D	12D ≥ Drill Depth < 16D	16D ≥ Drill Depth < 20D	20D ≥ Drill Depth
Speed	Refer to the above sheet	0.9	0.85	0.8	0.75
Feed	Refer to the above sheet	0.95		0.9	







Note: The parameters recommended in the table are based on the premise of perfect equipment and efficiency. Please according to the actual equipment situation, reduce the speed and feed (speed reduced by 20%, feed reduced by 10%) .

C

APPENDIX



Workpiece Material Table

ISO Material Group	MC	Workpiece Material	Content	Tensile Strength N/mm ²	Brinell Hardness HB	Rockwell Hardness HRC
 Steels	P1	Low-carbon Steels, Long Chipping	C<0.25%	<530	<125	
	P2	Low-carbon Steels, Short Chipping, Freecutting Steels	C<0.25%	<530	<125	
	P3	High-carbon Steels, Medium-carbon Steels	C>0.25%	>530	<220	<25
	P4	Alloy Steels, Tool Steels	C>0.25%	600-850	<330	<35
	P5	Alloy Steels, Tool Steels	C>0.25%	850-1400	340-450	35-48
	P6	Ferritic Stainless Steels, Martensitic Stainless Steels, PH Stainless Steels	C=(0-0.4)%	600-900	<330	<35
	P7	High-strength Ferritic Stainless Steels, Martensitic Stainless Steels, PH Stainless Steels	C=(0.1-0.6)%	900-1350	330-450	35-48
 Stainless Steels	M1	Austenitic Stainless Steels	C=(0.05-0.15)%	<600	130-200	
	M2	High-Strength Austenitic Stainless Steels and Cast Stainless Steels	C=(0.05-0.15)%	600-800	150-230	<25
	M3	Duplex Stainless Steels	C=(0.05-0.20)%	<800	135-275	<30
 Cast Iron	K1	Grey Cast Iron		125-500	120-290	< 32
	K2	Moderately Difficult Alloy Cast iron, Nodular Cast Iron		<600	130-260	< 28
	K3	Difficult High-alloy Cast Iron, Nodular Cast Iron		>600	180-350	< 43
 Non-ferrous Materials	N1	Wrought Aluminium Alloys		<520	60-90	
	N2	Cast Aluminium Alloys	Si<12%	<350	70-100	
	N3	Cast Aluminium Alloys	Si>12%	200-320	60-120	
	N4	Copper, Copper Alloys		200-650	60-200	
	N5	Graphite, CFK, CFRP Graphite, Composite Materials		600-1500		
	N6	GFK, CFK Aluminium-based Composite Materials (MMCs)		<700	<210	
 Heat-resistant SuperAlloys, Titanium Alloys	S1	Iron-based Heat-resistant Alloys		500-1200	160-260	25-48
	S2	Cobalt-based Heat-resistant Alloys		1000-1450	250-450	25-48
	S3	Nickel-based Heat-resistant Alloys		600-1700	160-450	<48
	S4	Titanium and Titanium Alloys		900-1600	300-400	33-48
 Hardened Materials	H1	Hardened Steels				45-55
	H2	Hardened Steels				55-60
	H3	Hardened Steels				60-65
	H4	Hardened Steels				>65

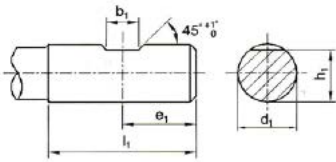
The Structure of Shank-DIN Standard

DIN 6535-HA

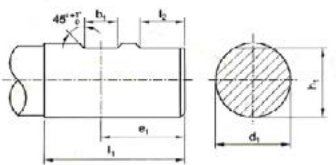


d.h ₆	2	3	4	5	6	8	10	12	14	16	18	20	25	32
l_{+2}^0	28				36		40	45		48		50	56	60

DIN 6535-HB



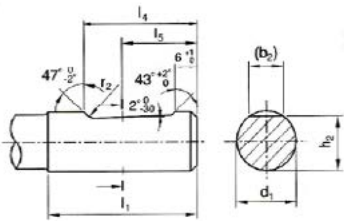
$d_1=6\sim 20\text{mm}$



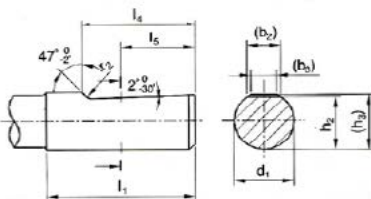
$d_1=25\sim 32\text{mm}$

d_1 h_6	b_1 $+0.05$ 0	e_1 0 -1	h_1 h_{11}	l_1 $+2$ 0	l_2 $+1$ 0
6.0	4.2	18.0	5.1	36.0	
8.0	5.5		6.9		
10	7.0	20.0	8.5	40.0	
12	8.0	22.5	10.4	45.0	
14			12.7		
16	10.0	24.0	14.2	48.0	
18			16.2		
20	11.0	25.0	18.2	50.0	
25	12.0	32.0	23.0	56.0	17.0
32	14.0	36.0	30.0	60.0	19.0

DIN 6535-HE



$d_1=6\sim 20\text{mm}$



$d_1=25\sim 32\text{mm}$

d_1	(b_2)	(b_3)	(h_2)	(h_3)	l_1	l_4	l_5	r_2
6.0	4.3		5.1		36.0	25.0	18.0	1.2
8.0	5.5		6.9					
10	7.1		8.5		40.0	28.0	20.0	
12	8.2		10.4		45.0	33.0	22.5	
14	8.1		12.7					
16	10.1		14.2		48.0	36.0	24.0	
18	10.8	16.2						
20	11.4	18.2	50.0	38.0	25.0	1.6		
25	13.6	9.3	23.0	24.1	56.0		44.0	32.0
32	15.5	9.9	30.0	31.2	60.0		48.0	35.0

Cutting Calculations and Definitions

Parameter and Unit		
D Diameter	(mm)	f_n Feed per Revolution (mm/rev)
a_p Cutting Depth	(mm)	f_z Feeding per Teeth (mm/tooth)
a_e Cutting Width	(mm)	Z Number of Teeth
V_f Feed Rate	(mm/min)	N Spindle Speed (rev/min)
V_c Cutting Speed	(m/min)	L Length (mm)
Q Rate of Metal Removal	(cm^3/min)	T_c Processing Time (min)

General Formula	
n Spindle Speed	$n = \frac{V_c \cdot 1000}{\pi \cdot D} \text{ (rev/min)}$
V_c Cutting Speed	$V_c = \frac{\pi \cdot D \cdot n}{1000} \text{ (m/min)}$
V_f Feed Rate	$V_f = f_z \cdot z \cdot n \text{ (mm/min)}$
f_z Feed per Teeth	$f_z = \frac{V_f}{z \cdot n} \text{ (mm)}$
Q Rate of Metal Removal	$Q = \frac{a_e \cdot a_p \cdot V_f}{1000} \text{ (cm}^3/\text{min)}$
T_c Processing Time	$T_c = \frac{L}{V_f} \text{ (min)}$

Comparison Table for Tensile Strength , Brinell Hardness and Rockwell

N/mm2	HV10	HB	HRC	N/mm2	HV10	HB	HRC
240	75	71		920	287	273	28
255	80	76		940	293	278	29
270	85	81		970	302	287	30
285	90	86		995	310	295	31
305	95	90		1020	317	301	32
320	100	95		1050	327	311	33
335	105	100		1080	336	319	34
350	110	105		1110	345	328	35
370	115	109		1140	355	337	36
385	120	114		1170	364	346	37
400	125	119		1200	373	354	38
415	130	124		1230	382	363	39
430	135	128		1260	392	372	40
450	140	133		1260	403	383	41
465	145	138		1330	413	393	42
480	150	143		1360	423	402	43
495	155	147		1400	434	413	44
510	160	152		1440	446	424	45
530	165	157		1480	458	435	46
545	170	162		1530	473	449	47
560	175	166		1570	484	460	48
575	180	171		1620	497	472	49
595	185	176		1680	514	488	50
610	190	181		1730	527	501	51
625	195	185		1790	544	517	52
640	200	190		1845	560	632	53
660	205	195		1910	578	549	54
675	210	199		1980	596	567	55
690	215	204		2050	615	584	56
705	220	209		2140	639	607	57
720	225	214			655	622	58
740	230	219			675		59
755	235	223			698		60
770	240	228			720		61
785	245	233			745		62
800	250	238	22		773		63
820	255	242	23		800		64
835	260	247	24		829		65
860	268	255	25		864		66
870	272	258	26		900		67
900	280	266	27		940		68

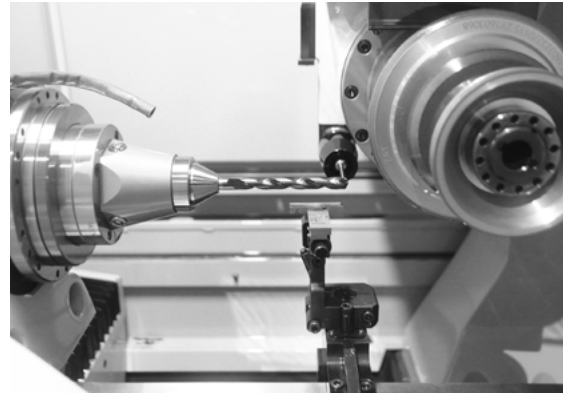
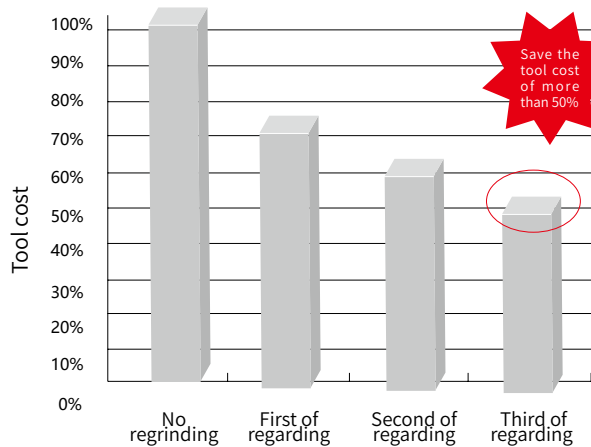
Service of Tool Regrinding

Through the system of grinding process and strict process quality control, Xiamen GESAC will let your wear tool to recover full new state. One more time to regrinding, to extend the tool life. Practical data show, reasonable tool grinding can save more than 50% of the total investment cost of tool.

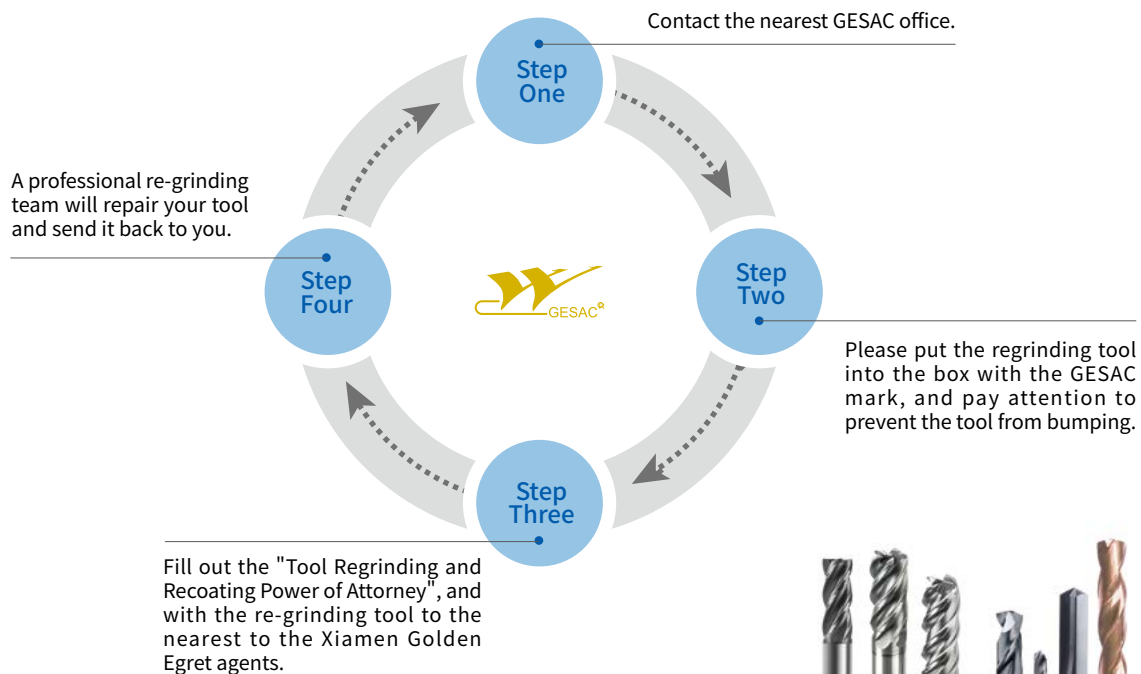
Regrinding process can not only help you save investment, reduce inventory, but also effectively avoid the waste of materials, saving resources and protecting the environment.

Xiamen GESAC cutter grinding service will help you achieve the dream of processing.

You only need to contact the nearest Xiamen GESAC agents to make your tool to restore as new!



► Please follow these steps



► GESAC provides regrinding services for a wide range of tool products, including:

- Solid carbide drill
- Solid carbide endmill
- Solid carbide step drill



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