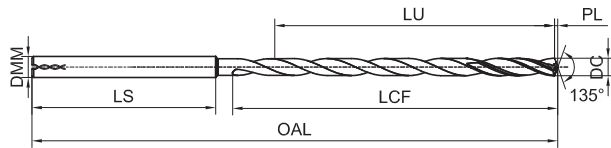


D938-A20C

D938 20D Internal Coolant Twist Drill for Plain Steel Machining



Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A20C-0300	3.00	70	110	6	36	65.5	0.62	○
D938-A20C-0310	3.10	83	123	6	36	78.4	0.64	○
D938-A20C-0320	3.20	83	123	6	36	78.2	0.66	○
D938-A20C-0330	3.30	83	123	6	36	78.1	0.68	○
D938-A20C-0350	3.50	96	136	6	36	90.8	0.72	○
D938-A20C-0370	3.70	96	136	6	36	90.5	0.77	○
D938-A20C-0375	3.75	96	136	6	36	90.4	0.78	○
D938-A20C-0380	3.80	96	136	6	36	90.3	0.79	○
D938-A20C-0390	3.90	96	136	6	36	90.2	0.81	○
D938-A20C-0400	4.00	96	136	6	36	90.0	0.83	●
D938-A20C-0410	4.10	118	158	6	36	111.9	0.85	○
D938-A20C-0420	4.20	118	158	6	36	111.7	0.87	○
D938-A20C-0450	4.50	118	158	6	36	111.3	0.93	●
D938-A20C-0500	5.00	118	158	6	36	110.5	1.04	●
D938-A20C-0510	5.10	140	180	6	36	132.4	1.06	○
D938-A20C-0520	5.20	140	180	6	36	132.2	1.08	○
D938-A20C-0530	5.30	140	180	6	36	132.1	1.10	○
D938-A20C-0550	5.50	140	180	6	36	131.8	1.14	●

Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A20C-0580	5.80	140	180	6	36	131.3	1.20	○
D938-A20C-0595	5.95	140	180	6	36	131.1	1.23	○
D938-A20C-0600	6.00	140	180	6	36	131.0	1.24	●
D938-A20C-0635	6.35	162	202	8	36	152.5	1.32	○
D938-A20C-0650	6.50	162	202	8	36	152.3	1.35	●
D938-A20C-0675	6.75	162	202	8	36	151.9	1.40	○
D938-A20C-0680	6.80	162	202	8	36	151.8	1.41	○
D938-A20C-0700	7.00	162	202	8	36	151.5	1.45	○
D938-A20C-0710	7.10	183	223	8	36	172.4	1.47	○
D938-A20C-0750	7.50	183	223	8	36	171.8	1.55	○
D938-A20C-0770	7.70	183	223	8	36	171.5	1.59	○
D938-A20C-0780	7.80	183	223	8	36	171.3	1.62	○
D938-A20C-0790	7.90	183	223	8	36	171.2	1.64	○
D938-A20C-0800	8.00	183	223	8	36	171.0	1.66	●
D938-A20C-0820	8.20	205	249	10	40	192.7	1.70	○
D938-A20C-0830	8.30	205	249	10	40	192.6	1.72	○
D938-A20C-0840	8.40	205	249	10	40	192.4	1.74	○
D938-A20C-0850	8.50	205	249	10	40	192.3	1.76	○

● Stock ○ Available Upon Order

Notes: Non-standard customization is available for D3-D14 tools

Unit (mm)

Notes: The depth drill uses a drill bit of the same specification as D938-A3C as a pilot drill.

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 Steel, Tool Steel	PH and Ferritic/Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminum Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

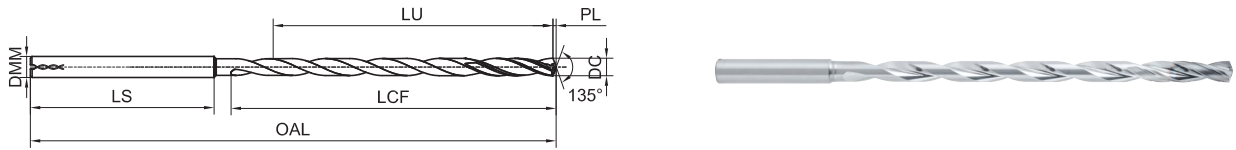
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P129

D938-A20C NEW



D938 20D Internal Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A20C-0870	8.70	205	249	10	40	192.0	1.80	○
D938-A20C-0900	9.00	205	249	10	40	191.5	1.86	○
D938-A20C-0910	9.10	227	271	10	40	213.4	1.88	○
D938-A20C-0950	9.50	227	271	10	40	212.8	1.97	○
D938-A20C-1000	10.00	227	271	10	40	212.0	2.07	●
D938-A20C-1100	11.00	253	302	12	45	236.5	2.28	○
D938-A20C-1150	11.50	274	323	12	45	256.8	2.38	○
D938-A20C-1200	12.00	274	323	12	45	256.0	2.49	●
D938-A20C-1250	12.50	318	367	14	45	299.3	2.59	○
D938-A20C-1380	13.80	318	367	14	45	297.3	2.86	○
D938-A20C-1400	14.00	318	367	14	45	297.0	2.90	○

● Stock ○ Available Upon Order

Notes: Non-standard customization is available for D3-D14 tools

Unit (mm)

Notes: The depth drill uses a drill bit of the same specification as D938-A3C as a pilot drill.

Range of Sizes	DC(h7)	DMM(h6)
≤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	
1	2	3	4	5	6	7	1	2	3	4	5	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminum Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○	○	○								

○ Most Suitable ○ Suitable

Recommended Cutting Data ※ P129

Recommended Cutting Data

D938 Deep Holemaking Twist Drill 8D/12D/15D/20D/25D

Workpiece Material		Cutting Speed Vc (m/min)	Feed Fn (mm/rev)			
			Φ3	Φ4	Φ6	Φ8
P	Low-carbon Steel, Long Chips (<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 Chips, Free Cutting 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	Austenitic Stainless Steels (130- 200HB)	60-50-40	0.04-0.08-0.10	0.04-0.08-0.10	0.06-0.10-0.12	0.06-0.10-0.12
	High Strength Austenitic and Cast Stainless Steel (<25HRC)	60-50-40	0.04-0.06-0.08	0.04-0.06-0.08	0.06-0.08-0.10	0.06-0.08-0.10
	Duplex Stainless Steel (<30HRC)	50-40-30	0.04-0.06-0.08	0.04-0.06-0.08	0.06-0.08-0.10	0.06-0.08-0.10
K	Gray cast iron (<32HRC)	160-120-60	0.13-0.17-0.20	0.15-0.20-0.23	0.17-0.25-0.30	0.20-0.27-0.35
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	140-100-60	0.11-0.15-0.18	0.13-0.17-0.20	0.15-0.20-0.25	0.17-0.25-0.32
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	100-80-50	0.06-0.09-0.11	0.08-0.10-0.13	0.10-0.13-0.16	0.12-0.16-0.20

[Notes]

1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D938 Deep Holemaking Twist Drill 8D/12D/15D/20D/25D

Workpiece Material		Cutting Speed Vc (m/min)	Feed Fn (mm/rev)			
			Φ10	Φ12	Φ14	Φ16
P	Low-carbon Steel, Long Chips (<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 Chips, Free Cutting 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	Austenitic Stainless Steels (130-200HB)	60-50-40	0.08-0.12-0.16	0.08-0.12-0.16	0.10-0.14-0.18	0.10-0.14-0.18
	High Strength Austenitic and Cast Stainless Steel (<25HRC)	60-50-40	0.08-0.10-0.12	0.08-0.10-0.12	0.10-0.12-0.14	0.10-0.12-0.14
	Duplex Stainless Steel (<30HRC)	50-40-30	0.08-0.10-0.12	0.08-0.10-0.12	0.10-0.12-0.14	0.10-0.12-0.14
K	Gray Cast Iron (<32HRC)	160-120-60	0.23-0.30-0.40	0.25-0.33-0.45	0.28-0.36-0.48	0.30-0.40-0.50
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	140-100-60	0.20-0.28-0.36	0.22-0.30-0.42	0.24-0.33-0.45	0.25-0.35-0.48
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	100-80-50	0.14-0.20-0.26	0.16-0.22-0.28	0.18-0.24-0.30	0.20-0.26-0.32

[Notes]

1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.