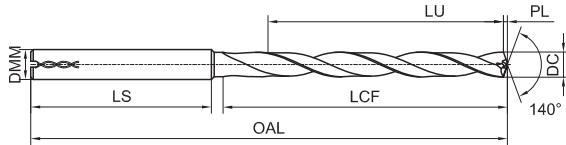


D938-A8C

8D Internal Coolant Twist Drill for Plain Steel Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A8C-0205	2.05	26	66	4	34	22.9	0.37	○
D938-A8C-0215	2.15	26	66	4	34	22.8	0.39	○
D938-A8C-0250	2.50	31	66	4	30	27.3	0.45	○
D938-A8C-0255	2.55	31	66	4	30	27.2	0.46	○
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-0305	3.05	34	72	6	36	29.4	0.56	○
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-0365	3.65	34	72	6	36	28.5	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-0415	4.15	43	81	6	36	36.8	0.76	○
D938-A8C-0420	4.20	43	81	6	36	36.7	0.76	●
D938-A8C-0425	4.25	43	81	6	36	36.6	0.77	○
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	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A8C-0455	4.55	43	81	6	36	36.2	0.83	○
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	●
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	●

● Stock ○ Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

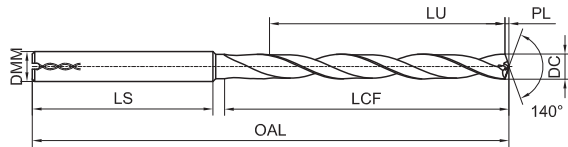
Workpiece Material													
P			M	K		N				S	H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminum Alloy	Cast 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-A8C

8D Internal Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
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	●
D938-A8C-0805	8.05	76	114	8	36	63.9	1.46	○
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	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
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-1070	10.70	114	162	12	45	98.0	1.95	○
D938-A8C-1080	10.80	114	162	12	45	97.8	1.97	●
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-1110	11.10	114	162	12	45	97.4	2.02	○
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	○

● Stock ○ Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

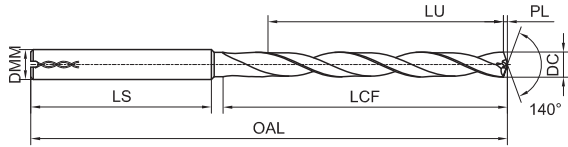
Workpiece Material													
P			M	K		N				S	H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast 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-A8C

8D Internal Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A8C-1250	12.50	133	182	14	45	114.3	2.27	●
D938-A8C-1260	12.60	133	182	14	45	114.1	2.29	○
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-1320	13.20	133	182	14	45	113.2	2.40	○
D938-A8C-1330	13.30	133	182	14	45	113.1	2.42	○
D938-A8C-1350	13.50	133	182	14	45	112.8	2.46	●
D938-A8C-1360	13.60	133	182	14	45	112.6	2.47	○
D938-A8C-1370	13.70	133	182	14	45	112.5	2.49	○
D938-A8C-1380	13.80	133	182	14	45	112.3	2.51	○
D938-A8C-1390	13.90	133	182	14	45	112.2	2.53	○
D938-A8C-1400	14.00	133	182	14	45	112.0	2.55	●
D938-A8C-1405	14.05	133	182	14	45	111.9	2.56	○
D938-A8C-1410	14.10	152	203	16	48	130.9	2.57	○
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	○
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	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A8C-1510	15.10	152	203	16	48	129.4	2.75	○
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-1570	15.70	152	203	16	48	128.5	2.86	○
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-1610	16.10	171	222	18	48	146.9	2.93	○
D938-A8C-1615	16.15	171	222	18	48	146.8	2.94	○
D938-A8C-1650	16.50	171	222	18	48	146.3	3.00	●
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-1740	17.40	171	222	18	48	144.9	3.17	○
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-1980	19.80	190	243	20	50	160.3	3.60	○
D938-A8C-2000	20.00	190	243	20	50	160.0	3.64	○

Unit (mm)

● Stock ○ Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Range of Sizes	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 Steel, Tool Steel	PH and Ferritic/Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium 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 F _n (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.