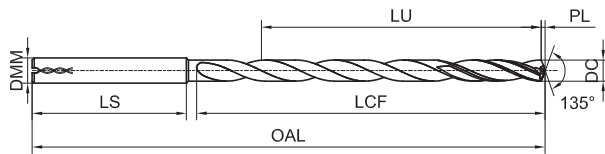


D938-A12C

D938 12D Deep Hole Twist Drill for Plain Steel Machining



Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A12C-0300	3.00	54	92	6	36	49.5	0.62	●
D938-A12C-0310	3.10	54	92	6	36	49.4	0.64	○
D938-A12C-0320	3.20	54	92	6	36	49.2	0.66	○
D938-A12C-0330	3.30	54	92	6	36	49.1	0.68	●
D938-A12C-0340	3.40	54	92	6	36	48.9	0.70	○
D938-A12C-0350	3.50	54	92	6	36	48.8	0.72	●
D938-A12C-0360	3.60	54	92	6	36	48.6	0.75	○
D938-A12C-0370	3.70	54	92	6	36	48.5	0.77	○
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-0410	4.10	64	102	6	36	57.9	0.85	○
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-0440	4.40	64	102	6	36	57.4	0.91	○
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-0490	4.90	83	121	6	36	75.7	1.01	○
D938-A12C-0500	5.00	83	121	6	36	75.5	1.04	●
D938-A12C-0510	5.10	83	121	6	36	75.4	1.06	○
D938-A12C-0520	5.20	83	121	6	36	75.2	1.08	○
D938-A12C-0530	5.30	83	121	6	36	75.1	1.10	○
D938-A12C-0540	5.40	83	121	6	36	74.9	1.12	○

Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A12C-0550	5.50	83	121	6	36	74.8	1.14	●
D938-A12C-0560	5.60	83	121	6	36	74.6	1.16	○
D938-A12C-0570	5.70	83	121	6	36	74.5	1.18	○
D938-A12C-0580	5.80	83	121	6	36	74.3	1.20	○
D938-A12C-0590	5.90	83	121	6	36	74.2	1.22	○
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-0620	6.20	110	148	8	36	100.7	1.28	○
D938-A12C-0630	6.30	110	148	8	36	100.6	1.30	○
D938-A12C-0640	6.40	110	148	8	36	100.4	1.33	○
D938-A12C-0650	6.50	110	148	8	36	100.3	1.35	●
D938-A12C-0660	6.60	110	148	8	36	100.1	1.37	○
D938-A12C-0670	6.70	110	148	8	36	100.0	1.39	○
D938-A12C-0680	6.80	110	148	8	36	99.8	1.41	●
D938-A12C-0690	6.90	110	148	8	36	99.7	1.43	○
D938-A12C-0700	7.00	110	148	8	36	99.5	1.45	●
D938-A12C-0710	7.10	110	148	8	36	99.4	1.47	○
D938-A12C-0720	7.20	110	148	8	36	99.2	1.49	○
D938-A12C-0730	7.30	110	148	8	36	99.1	1.51	○
D938-A12C-0740	7.40	110	148	8	36	98.9	1.53	○
D938-A12C-0750	7.50	110	148	8	36	98.8	1.55	○
D938-A12C-0760	7.60	110	148	8	36	98.6	1.57	○
D938-A12C-0770	7.70	110	148	8	36	98.5	1.59	○
D938-A12C-0780	7.80	110	148	8	36	98.3	1.62	○
D938-A12C-0790	7.90	110	148	8	36	98.2	1.64	○

● Stock ○ Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

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

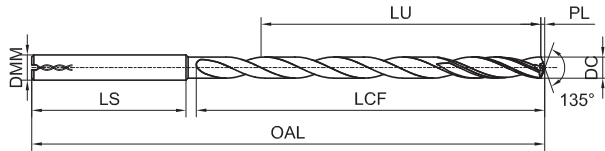
Workpiece Material													
P			M	K			N			S	H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminum Alloy	Cast 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-A12C

D938 12D Deep Hole Twist Drill for Plain Steel Machining



Continued

Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A12C-0800	8.00	110	148	8	36	98.0	1.66	●
D938-A12C-0810	8.10	138	180	10	40	125.9	1.68	○
D938-A12C-0820	8.20	138	180	10	40	125.7	1.70	○
D938-A12C-0830	8.30	138	180	10	40	125.6	1.72	○
D938-A12C-0840	8.40	138	180	10	40	125.4	1.74	○
D938-A12C-0850	8.50	138	180	10	40	125.3	1.76	●
D938-A12C-0860	8.60	138	180	10	40	125.1	1.78	○
D938-A12C-0870	8.70	138	180	10	40	125.0	1.80	●
D938-A12C-0880	8.80	138	180	10	40	124.8	1.82	○
D938-A12C-0890	8.90	138	180	10	40	124.7	1.84	○
D938-A12C-0900	9.00	138	180	10	40	124.5	1.86	●
D938-A12C-0910	9.10	138	180	10	40	124.4	1.88	○
D938-A12C-0920	9.20	138	180	10	40	124.2	1.91	○
D938-A12C-0930	9.30	138	180	10	40	124.1	1.93	○
D938-A12C-0940	9.40	138	180	10	40	123.9	1.95	○
D938-A12C-0950	9.50	138	180	10	40	123.8	1.97	●
D938-A12C-0960	9.60	138	180	10	40	123.6	1.99	○
D938-A12C-0970	9.70	138	180	10	40	123.5	2.01	○
D938-A12C-0980	9.80	138	180	10	40	123.3	2.03	○
D938-A12C-0990	9.90	138	180	10	40	123.2	2.05	○
D938-A12C-1000	10.00	138	180	10	40	123.0	2.07	●
D938-A12C-1010	10.10	158	206	12	45	142.9	2.09	○
D938-A12C-1020	10.20	158	206	12	45	142.7	2.11	○
D938-A12C-1030	10.30	158	206	12	45	142.6	2.13	○
D938-A12C-1050	10.50	158	206	12	45	142.3	2.17	●

Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A12C-1060	10.60	158	206	12	45	142.1	2.20	○
D938-A12C-1080	10.80	158	206	12	45	141.8	2.24	○
D938-A12C-1100	11.00	158	206	12	45	141.5	2.28	○
D938-A12C-1120	11.20	158	206	12	45	141.2	2.32	○
D938-A12C-1150	11.50	158	206	12	45	140.8	2.38	○
D938-A12C-1160	11.60	158	206	12	45	140.6	2.40	○
D938-A12C-1180	11.80	158	206	12	45	140.3	2.44	○
D938-A12C-1190	11.90	158	206	12	45	140.2	2.46	○
D938-A12C-1200	12.00	158	206	12	45	140.0	2.49	●
D938-A12C-1210	12.10	182	230	14	45	163.9	2.51	○
D938-A12C-1220	12.20	182	230	14	45	163.7	2.53	○
D938-A12C-1230	12.30	182	230	14	45	163.6	2.55	○
D938-A12C-1240	12.40	182	230	14	45	163.4	2.57	○
D938-A12C-1250	12.50	182	230	14	45	163.3	2.59	○
D938-A12C-1260	12.60	182	230	14	45	163.1	2.61	○
D938-A12C-1270	12.70	182	230	14	45	163.0	2.63	○
D938-A12C-1280	12.80	182	230	14	45	162.8	2.65	○
D938-A12C-1300	13.00	182	230	14	45	162.5	2.69	○
D938-A12C-1310	13.10	182	230	14	45	162.4	2.71	○
D938-A12C-1320	13.20	182	230	14	45	162.2	2.73	○
D938-A12C-1350	13.50	182	230	14	45	161.8	2.80	○
D938-A12C-1380	13.80	182	230	14	45	161.3	2.86	○
D938-A12C-1400	14.00	182	230	14	45	161.0	2.90	○
D938-A12C-1420	14.20	208	260	16	48	186.7	2.94	○
D938-A12C-1450	14.50	208	260	16	48	186.3	3.00	○

● Stock ○ Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

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

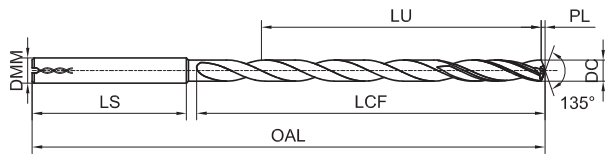
Workpiece Material													
P			M	K		N				S	H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast 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-A12C

D938 12D deep hole twist drill for plain steel machining



Continued

Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A12C-1480	14.80	208	260	16	48	185.8	3.07	○
D938-A12C-1500	15.00	208	260	16	48	185.5	3.11	○
D938-A12C-1550	15.50	208	260	16	48	184.8	3.21	○
D938-A12C-1580	15.80	208	260	16	48	184.3	3.27	○
D938-A12C-1600	16.00	208	260	16	48	184.0	3.31	○
D938-A12C-1750	17.50	234	285	18	48	207.8	3.62	○
D938-A12C-1900	19.00	258	310	20	50	229.5	3.94	○

● Stock ○ Available Upon Order

Notes: Non-standard customization is available for D3-D20 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.