

DLC-HSS Drill

List No. 544

Drilling in Wet Condition

Workpiece Material		Aluminum		Aluminum Alloys						Aluminum Alloy Casting		Copper Alloys	
Speed (SFM)		1017		4032, 6061		5052		7075					
Drill Diameter		330 - 390 SFM		210 - 260 SFM		280 - 330 SFM		210 - 260 SFM		210 - 260 SFM		150 - 200 SFM	
Metric mm	Decimal	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)
1	0.0394	30,600	0.001	20,400	0.001	25,500	0.001	20,400	0.001	20,400	0.001	15,300	0.001
2	0.0787	19,100	0.002	12,700	0.002	15,900	0.002	12,700	0.002	12,700	0.002	9,600	0.002
3	0.1181	12,700	0.003	8,500	0.003	10,600	0.003	8,500	0.002	8,500	0.002	6,400	0.002
5	0.1969	7,600	0.005	5,100	0.005	6,400	0.005	5,100	0.004	5,100	0.004	3,800	0.004
8	0.3150	4,800	0.008	3,200	0.008	4,000	0.008	3,200	0.006	3,200	0.006	2,400	0.006
10	0.3937	3,800	0.010	2,500	0.010	3,200	0.010	2,500	0.008	2,500	0.008	1,900	0.008
12	0.4724	3,200	0.012	2,100	0.012	2,700	0.012	2,100	0.009	2,100	0.009	1,600	0.009
16	0.6299	2,400	0.013	1,600	0.013	2,000	0.013	1,600	0.010	1,600	0.010	1,200	0.010
20	0.7874	1,900	0.012	1,300	0.012	1,600	0.012	1,300	0.009	1,300	0.009	1,000	0.009

- 1) The table values are for drilling with water soluble cutting fluid.
- 2) DLC-HSS Drills are used in Nonferrous Metals such as Aluminum or Copper alloys.
- 3) Adjust drilling condition when unusual vibration or different sound occurs.
- 4) If drilling a deep hole over 3 times drill diameter, use pecking.

**DLC Microdrills
DLC Drills Regular**

**List No. 9524
List No. 9520**

Drilling in Wet & Semi Dry (Mist Coolant) Condition

Workpiece Material		Aluminum		Aluminum Alloys						Aluminum Alloy Casting		Copper Alloys	
Speed (SFM)		1017		4032, 6061		5052		7075					
Drill Diameter		650 - 820 SFM		330 - 500 SFM		500 - 650 SFM		500 - 650 SFM		430 - 590 SFM		260 - 330 SFM	
Metric mm	Decimal	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)
0.5	0.0197	60,000	0.0002	58,000	0.0002	60,000	0.0002	60,000	0.0003	60,000	0.0003	38,000	0.0003
1	0.0394	50,000	0.0006	38,000	0.0006	50,000	0.0006	50,000	0.0007	48,000	0.0007	25,000	0.0007
2	0.0787	40,000	0.0014	24,000	0.0014	32,000	0.0015	32,000	0.0016	29,000	0.0016	16,000	0.0016
3	0.1181	26,500	0.0021	16,000	0.0021	21,000	0.0022	21,000	0.0024	19,000	0.0025	10,500	0.0024
5	0.1969	16,000	0.003	9,600	0.004	12,700	0.004	12,700	0.004	11,500	0.004	6,400	0.004
8	0.3150	10,000	0.006	6,000	0.006	8,000	0.006	8,000	0.006	7,200	0.007	4,000	0.006
10	0.3937	8,000	0.007	4,800	0.007	6,400	0.007	6,400	0.008	5,700	0.008	3,200	0.008
12	0.4724	6,600	0.008	4,000	0.008	5,300	0.009	5,300	0.010	4,800	0.010	2,650	0.010

Drilling in Dry Condition

Workpiece Material		Aluminum		Aluminum Alloys						Aluminum Alloy Casting		Copper Alloys	
Speed (SFM)		1017		4032, 6061		5052		7075					
Drill Diameter		-		210 - 260 SFM		280 - 330 SFM		330 - 390 SFM		280 - 330 SFM		164 - 196 SFM	
Metric mm	Decimal	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)
0.5	0.0197	Not Used		30,000	0.0002	38,000	0.0002	45,000	0.0002	38,000	0.0002	22,000	0.0002
1	0.0394		20,000	0.0004	25,000	0.0004	30,000	0.0005	25,000	0.0005	15,000	0.0005	
2	0.0787		12,500	0.0010	16,000	0.0010	19,000	0.0012	16,000	0.0012	9,500	0.0012	
3	0.1181		8,500	0.0015	10,600	0.0016	12,700	0.0018	10,600	0.0018	6,400	0.0017	
5	0.1969		5,100	0.0025	6,400	0.0026	7,600	0.003	6,400	0.003	3,800	0.003	
8	0.3150		3,200	0.004	4,000	0.004	4,800	0.005	4,000	0.005	2,400	0.005	
10	0.3937		2,550	0.005	3,200	0.005	3,800	0.006	3,200	0.006	1,900	0.006	
12	0.4724		2,100	0.006	2,650	0.006	3,200	0.007	2,650	0.007	1,600	0.007	

- 1) DLC Drills are used in Nonferrous Metals such as Aluminum or Copper Alloys.
- 2) Adjust drilling condition when unusual vibration or different sound occurs.
- 3) When using low speed machines, use the maximum speed and adjust the feed rate.