

Guideline for cutting conditions of Metal borers and holesaws

Recommended rotation speed

The recommended rotation speeds given below are calculated on the basis of data with carbide tips, but vary depending on the electric drill you use and work material. When using the cutter, select recommended conditions.

<Formula to obtain recommended rotation speed>

$$\text{Rotation speed (rpm)} = \frac{1000 \times \text{Peripheral speed (m/min)}}{\pi (3.14) \times \text{Cutter size (mm)}}$$

* The expression "rotation speed" is used instead of the "rotation number" in accordance with the SI unit system.

Peripheral speed (m/min)	90	1790	1685	1591	1507	1432	1145	954	818	716	636	572	520	477	440	409	358	318	286	260	238	220	204	190	(Carbide) Cast iron		
	85	1691	1591	1503	1424	1352	1082	901	773	676	601	541	491	450	416	386	338	300	270	245	225	208	193	180			
	80	1591	1497	1414	1340	1273	1018	848	727	636	565	509	462	424	391	363	318	282	254	231	212	195	181	169			
	75	1492	1404	1326	1256	1193	954	795	682	596	530	477	434	397	367	341	298	265	238	217	198	183	170	159			
	70	1392	1310	1237	1172	1114	891	742	636	557	495	445	405	371	342	318	278	247	222	202	185	171	159	148			
	65	1293	1217	1149	1088	1034	827	689	691	517	459	413	376	344	318	295	258	229	206	188	172	159	147	137			
	60	1193	1123	1061	1005	954	763	636	545	477	424	381	347	318	293	272	238	212	190	173	159	146	136	127		(Carbide) Ordinary steel	
	55	1094	1029	972	921	875	700	583	500	437	389	350	318	291	269	250	218	194	175	159	145	134	125	116			
	50	994	936	884	837	795	636	530	454	397	353	318	289	265	244	227	198	176	159	144	132	122	113	106			
	45	895	842	795	753	716	572	477	409	358	318	285	260	238	220	204	179	159	143	130	119	110	102	95			
	40	795	748	707	670	636	509	424	363	318	282	254	231	212	195	181	159	141	127	115	106	97	90	84			
	35	696	655	618	586	557	445	371	318	278	247	222	202	185	171	159	139	123	111	101	92	85	79	74	(Carbide) Stainless steel		
	30	596	561	530	502	477	381	318	272	238	212	190	173	159	146	136	119	106	95	86	79	73	68	63			
	25	497	468	442	418	397	318	265	227	198	176	159	144	132	122	113	99	88	79	72	66	61	56	53			
	20	397	374	353	335	318	254	212	181	159	141	127	115	106	97	90	79	70	63	57	53	48	45	42			
	15	296	280	265	251	238	190	159	136	119	106	95	86	79	73	68	59	53	47	43	39	36	34	31			
	10	198	187	176	167	159	127	106	90	79	70	63	57	53	48	45	39	35	31	28	26	24	22	21		(Bi) Stainless steel	

Cutter size (mm)

(Carbide) When carbide cutter is used
(Bi) When Bi-metal Holesaw is used

<How to use the recommended rotation speed table>

(Example) What is the recommended rotation speed when drilling a hole in ordinary steel with a 50mm cutter?

- First, locate the column of "50" in cutter size.
- Locate the range of "(Carbide) Ordinary steel" in that column, if you use a carbide cutter.
- The range is between 254 and 381. Adjust the rotation speed of the electric drill to this range.

Recommended feed rate

(mm/revolution)

Metal borers	Ordinary steel	Stainless steel	Cast iron
DLMB350/500	0.05 to 0.1	0.05 to 0.1	0.05 to 0.1
DLMB350A/500A			
350/500LT			
250/350/500	0.01 to 0.05	0.01 to 0.05	0.01 to 0.05
350A/500A			
M500	0.08 to 0.12	0.08 to 0.12	0.10 to 0.20