



Carbide Recommended Drilling Data | Metric (mm)

Material	Hardness (BHN)	Insert Grade	Speed (m/min)	Feed Rate (mm/rev) by Diameter				
				Y / Z Series (9.50 - 12.69)	0 Series (12.70 - 17.64)	1 Series (17.65 - 24.37)	2 Series (24.38 - 35.04)	3 Series (35.05 - 47.80)
P Free-Machining Steel 1118, 1215, 12L14, etc. Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc. Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc. Alloy Steel 4140, 5140, 8640, etc. High-Strength Alloy 4340, 4330V, 300M, etc. Structural Steel A36, A285, A516, etc. Tool Steel H-13, H-21, A-4, S-3, etc.	100 - 150	P	145	0.18	0.25	0.33	0.410	0.51
	150 - 200	P	135	0.18	0.25	0.33	0.41	0.51
	200 - 250	P	125	0.15	0.25	0.33	0.41	0.51
	85 - 125	P	130	0.15 ❖	0.23	0.30	0.38	0.48
	125 - 175	P	125	0.15 ❖	0.23	0.30	0.38	0.48
	175 - 225	P	115	0.13 ❖	0.20	0.25	0.36	0.46
	225 - 275	P	110	0.13 ❖	0.20	0.25	0.36	0.46
	125 - 175	P	125	0.15	0.23	0.30	0.38	0.48
	175 - 225	P	115	0.13	0.20	0.25	0.36	0.46
	225 - 275	P	110	0.13	0.20	0.25	0.36	0.46
	275 - 325	P	100	0.10	0.18	0.23	0.30	0.41
	125 - 175	P	130	0.15	0.23	0.30	0.36	0.43
	175 - 225	P	120	0.13	0.20	0.28	0.36	0.43
	225 - 275	P	110	0.13	0.20	0.28	0.36	0.43
	275 - 325	P	105	0.10	0.18	0.25	0.30	0.38
	325 - 375	P	95	0.08	0.18	0.25	0.30	0.38
	225 - 300	P	105	0.10	0.18	0.25	0.33	0.38
	300 - 350	P	100	0.08	0.15	0.23	0.30	0.36
	350 - 400	P	90	0.08	0.15	0.20	0.28	0.33
	100 - 150	P	120	0.15 ❖	0.25	0.30	0.36	0.46
S High-Temp Alloy Hastelloy B, Inconel 600, etc. Titanium Alloy Aerospace Alloy S82	150 - 250	P	105	0.13 ❖	0.23	0.25	0.30	0.41
	250 - 350	P	85	0.10 ❖	0.20	0.23	0.25	0.36
	150 - 200	P	65	0.10	0.15	0.20	0.25	0.30
	200 - 250	P	55	0.10	0.15	0.20	0.25	0.30
	140 - 220	M	35	0.05 ❖	0.13	0.18	0.20	0.23
	220 - 310	M	25	0.05 ❖	0.08	0.13	0.15	0.18
	140 - 220	M	45	0.08 ❖	0.10	0.18	0.20	0.23
	220 - 310	M	36	0.08 ❖	0.08	0.13	0.15	0.18
	185 - 275	M	35	0.08 ❖	0.10	0.18	0.20	0.23
	275 - 350	M	36	0.08 ❖	0.08	0.13	0.15	0.18

❖ Contact our Application Engineering department for assistance when machining these materials.

7xD and 10xD Adjustment Example (0.80 Adjustment)

Data • Adjustment Value	Speed/Feed (7xD)
100 m/min • 0.80	= 80 m/min
0.2 mm/rev • 0.80	= 0.16 mm/rev

12xD and 15xD Adjustment Example (0.70 Adjustment)

Speed • Adjustment Value	Speed/Feed (12xD)
100 m/min • 0.70	= 70 m/min
0.2 mm/rev • 0.70	= 0.14 mm/rev

Coolant Recommendations

Series	Stub, 3xD, 5xD		7xD, 10xD		12xD, 15xD	
	Pressure BAR	Flow Rate LPM	Pressure BAR	Flow Rate LPM	Pressure BAR	Flow Rate LPM
Y	31	15	34	55	45	30
Z	31	15	34	22	45	30
0	24	22	31	34	34	45
1	21	30	27	38	34	45
2	17	38	24	49	31	60
3	14	45	21	53	27	68

⚠ WARNING Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short T-A Pro holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures.Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com**IMPORTANT:** The speeds and feeds listed above are a general starting point for all applications. Refer to the coolant recommendation chart for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is available through our Application Engineering department. For 7xD, 10xD, 12xD, and 15xD holder lengths, see adjustment example above.