



List 1700 - V-HO GDR: Coolant-Through

General Drilling Operations

Work Material		Low Carbon Steels 1010, 1018		Carbon Steels 1045, 1050		Tool Steels D2, H13		Tool Steels H13 (20 HRC)		Cast Iron	
Drilling Speed		120-160 SFM		100-140 SFM		83-120 SFM		50-90 SFM		150-200 SFM	
Drill Dia.		Speed	Feed	Speed	Feed	Speed	Feed	Speed	Feed	Speed	Feed
Inch	Decimal	RPM	IPR	RPM	IPR	RPM	IPR	RPM	IPR	RPM	IPR
1/4	0.2500	2,140	0.005-0.007	1,830	0.005-0.007	1,530	0.005-0.007	1,070	0.005-0.007	2,680	0.008-0.010
9/32	0.2813	1,900	0.006-0.008	1,630	0.006-0.008	1,360	0.006-0.008	950	0.006-0.008	2,380	0.008-0.011
5/16	0.3125	1,710	0.007-0.009	1,470	0.007-0.009	1,220	0.007-0.009	860	0.007-0.009	2,140	0.008-0.012
11/32	0.3438	1,560	0.007-0.009	1,330	0.007-0.009	1,110	0.007-0.009	780	0.007-0.009	1,950	0.009-0.013
3/8	0.3750	1,430	0.008-0.011	1,220	0.008-0.011	1,020	0.008-0.011	710	0.008-0.011	1,780	0.010-0.014
13/32	0.4062	1,320	0.008-0.011	1,130	0.008-0.011	940	0.008-0.011	660	0.008-0.011	1,650	0.010-0.014
7/16	0.4375	1,220	0.009-0.012	1,050	0.009-0.012	870	0.009-0.012	610	0.009-0.012	1,530	0.011-0.015
15/32	0.4688	1,140	0.009-0.012	980	0.009-0.012	820	0.009-0.012	570	0.009-0.012	1,430	0.011-0.015
1/2	0.5000	1,070	0.010-0.013	920	0.010-0.013	760	0.010-0.013	540	0.010-0.013	1,340	0.013-0.017
9/16	0.5625	950	0.011-0.014	820	0.011-0.014	680	0.011-0.014	480	0.011-0.014	1,190	0.013-0.017
5/8	0.6250	860	0.012-0.015	730	0.012-0.015	610	0.012-0.015	430	0.011-0.014	1,070	0.014-0.018
11/16	0.6875	780	0.013-0.016	670	0.013-0.016	560	0.013-0.016	390	0.012-0.015	970	0.014-0.018
3/4	0.7500	710	0.014-0.017	610	0.014-0.017	510	0.014-0.017	360	0.013-0.016	890	0.015-0.019
13/16	0.8125	660	0.016-0.021	560	0.016-0.021	470	0.016-0.021	330	0.015-0.020	820	0.017-0.022
7/8	0.8750	610	0.017-0.022	520	0.017-0.022	440	0.017-0.022	310	0.017-0.022	760	0.018-0.023
15/16	0.9375	570	0.018-0.023	490	0.018-0.023	410	0.018-0.023	290	0.018-0.023	710	0.020-0.025
1	1.0000	540	0.019-0.024	460	0.019-0.024	380	0.019-0.024	270	0.019-0.024	670	0.021-0.026
1-1/8	1.1250	480	0.020-0.025	410	0.020-0.025	340	0.020-0.025	240	0.020-0.025	590	0.022-0.027
1-1/4	1.2500	430	0.021-0.026	370	0.021-0.026	310	0.021-0.026	210	0.020-0.025	540	0.023-0.028

1. Speeds and feeds are based on using soluble oil where applicable 1:5 to 1:10 concentration.
2. For deep holes (4 times the drill diameter or deeper) use the lower recommended feed rate as a starting point and increase as needed for the best result.
3. Recommended feeds and speeds are starting points only. Actual performance will be determined by specific material, the condition of equipment being used, and coolant.

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Work Material		Cast Aluminum		Titanium Alloy		Hardened Steel	
				30-35 HRC		35-45 HRC	
Drilling Speed		250-400 SFM		60-80 SFM		30 - 50 SFM	
Drill Dia.		Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Inch	Decimal						
1/4	0.2500	4,970	0.013-0.019	1,070	0.005-0.007	640	0.003-0.004
9/32	0.2813	4,420	0.014-0.020	950	0.006-0.008	570	0.004-0.005
5/16	0.3125	3,970	0.015-0.021	860	0.007-0.009	520	0.004-0.005
11/32	0.3438	3,610	0.016-0.022	780	0.007-0.009	470	0.004-0.005
3/8	0.3750	3,310	0.017-0.025	710	0.008-0.011	430	0.005-0.007
13/32	0.4062	3,060	0.018-0.026	660	0.008-0.011	400	0.005-0.007
7/16	0.4375	2,840	0.019-0.027	610	0.009-0.012	370	0.005-0.007
15/32	0.4688	2,650	0.020-0.028	570	0.009-0.012	340	0.005-0.007
1/2	0.5000	2,480	0.021-0.030	540	0.010-0.013	320	0.006-0.008
9/16	0.5625	2,210	0.022-0.031	480	0.011-0.014	290	0.007-0.008
5/8	0.6250	1,990	0.023-0.032	430	0.011-0.014	260	0.007-0.008
11/16	0.6875	1,810	0.024-0.033	390	0.012-0.015	230	0.007-0.009
3/4	0.7500	1,660	0.025-0.034	360	0.013-0.016	220	0.008-0.01
13/16	0.8125	1,530	0.028-0.040	330	0.015-0.020	200	0.009-0.012
7/8	0.8750	1,420	0.030-0.042	310	0.017-0.022	200	0.009-0.012
15/16	0.9375	1,320	0.032-0.044	290	0.018-0.023	200	0.009-0.012
1	1.0000	1,240	0.033-0.045	270	0.019-0.024	200	0.009-0.012
1-1/8	1.1250	1,100	0.034-0.046	240	0.020-0.025	200	0.009-0.012
1-1/4	1.2500	990	0.035-0.047	210	0.020-0.025	200	0.009-0.012

