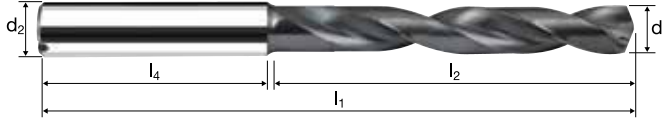
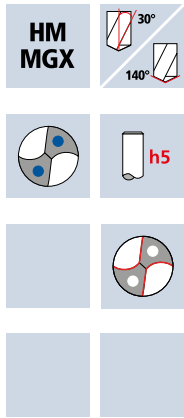


# Spiral flute drills XDrill®

5xd

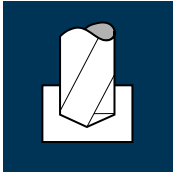



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)
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Example: Order-N°.							DURO-X <b>B72015</b>	
Article-N°.		ø-Code						
<b>B72015 0300</b>								
Ø Code	d <sub>1</sub> m7	d <sub>2</sub> h5	l <sub>1</sub>	l <sub>2</sub>	l <sub>4</sub>	L <sub>max</sub>		
0300	3.00	6.0	66.0	28.0	36	20.2		●
0310	3.10	6.0	66.0	28.0	36	20.2		●
0320	3.20	6.0	66.0	28.0	36	20.0		●
0330	3.30	6.0	66.0	28.0	36	20.0		●
0340	3.40	6.0	66.0	28.0	36	19.8		●
0350	3.50	6.0	66.0	28.0	36	19.8		●
0360	3.60	6.0	66.0	28.0	36	19.6		●
0370	3.70	6.0	66.0	28.0	36	19.6		●
0380	3.80	6.0	74.0	36.0	36	27.4		●
0390	3.90	6.0	74.0	36.0	36	27.3		●
0400	4.00	6.0	74.0	36.0	36	26.9		●
0410	4.10	6.0	74.0	36.0	36	26.8		●
0420	4.20	6.0	74.0	36.0	36	26.7		●
0430	4.30	6.0	74.0	36.0	36	26.7		●
0440	4.40	6.0	74.0	36.0	36	26.6		●
0450	4.50	6.0	74.0	36.0	36	26.6		●
0460	4.60	6.0	74.0	36.0	36	26.5		●
0470	4.70	6.0	74.0	36.0	36	26.5		●
0480	4.80	6.0	82.0	44.0	36	34.3		●
0490	4.90	6.0	82.0	44.0	36	34.3		●
0500	5.00	6.0	82.0	44.0	36	34.7		●
0510	5.10	6.0	82.0	44.0	36	34.7		●
0520	5.20	6.0	82.0	44.0	36	34.6		●


## Application

## Material




Material
Steel < 500 N/mm <sup>2</sup>



d <sub>1</sub> [mm]	v <sub>c</sub> [m/min]	f [mm]	n [min <sup>-1</sup> ]	v <sub>f</sub> [mm/min]	Q [cm <sup>3</sup> /min]
3.00	180	0.1350	19100	2579	18.2
3.30	180	0.1450	17360	2517	21.5
3.50	180	0.1550	16370	2537	24.4
3.80	180	0.1700	15080	2564	29.1
4.00	180	0.1850	14325	2650	33.3
4.20	180	0.2000	13640	2728	37.8
4.50	180	0.2300	12730	2928	46.6
4.80	180	0.2450	11935	2924	52.9
5.00	180	0.2550	11460	2922	57.4

Material
Steel 500 - 850 N/mm <sup>2</sup>


3.00	160	0.1150	16975	1952	13.8
3.30	160	0.1250	15435	1929	16.5
3.50	160	0.1350	14550	1964	18.9
3.80	160	0.1450	13405	1944	22.0
4.00	160	0.1600	12730	2037	25.6
4.20	160	0.1700	12125	2061	28.6
4.50	160	0.1950	11320	2207	35.1
4.80	160	0.2100	10610	2228	40.3
5.00	160	0.2150	10185	2190	43.0

Material
Steel 850 - 1100 N/mm <sup>2</sup>



3.00	140	0.1050	14855	1560	11.0
3.30	140	0.1150	13505	1553	13.3
3.50	140	0.1250	12730	1591	15.3
3.80	140	0.1350	11725	1583	18.0
4.00	140	0.1450	11140	1615	20.3
4.20	140	0.1550	10610	1645	22.8
4.50	140	0.1800	9905	1783	28.4
4.80	140	0.1900	9285	1764	31.9
5.00	140	0.2000	8915	1783	35.0

Material
Steel 1100 - 1300 N/mm <sup>2</sup>



3.00	100	0.0800	10610	849	6.0
3.30	100	0.0900	9645	868	7.4
3.50	100	0.0950	9095	864	8.3
3.80	100	0.1000	8375	838	9.5
4.00	100	0.1100	7960	876	11.0
4.20	100	0.1200	7580	910	12.6
4.50	100	0.1350	7075	955	15.2
4.80	100	0.1450	6630	961	17.4
5.00	100	0.1500	6365	955	18.7

Material
Steel 1300 - 1500 N/mm <sup>2</sup>


3.00	55	0.0600	5835	350	2.5
3.30	55	0.0700	5305	371	3.2
3.50	55	0.0700	5000	350	3.4
3.80	55	0.0800	4605	368	4.2
4.00	55	0.0850	4375	372	4.7
4.20	55	0.0900	4170	375	5.2
4.50	55	0.1050	3890	409	6.5
4.80	55	0.1100	3645	401	7.3
5.00	55	0.1150	3500	403	7.9

Material
Cold work tool steel (12% Cr), high alloyed [1.2379]


3.00	70	0.0600	7425	446	3.1
3.30	70	0.0700	6750	473	4.0
3.50	70	0.0700	6365	446	4.3
3.80	70	0.0800	5865	469	5.3
4.00	70	0.0850	5570	474	6.0
4.20	70	0.0900	5305	478	6.6
4.50	70	0.1050	4950	520	8.3
4.80	70	0.1100	4640	510	9.2
5.00	70	0.1150	4455	512	10.1

Material
Titanium alloys > 300 HB [Ti6Al4V]


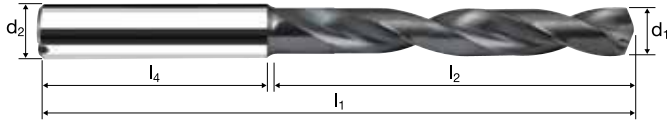
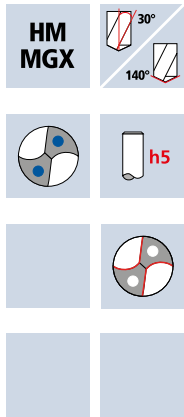
3.00	40	0.0600	4245	255	1.8
3.30	40	0.0700	3860	270	2.3
3.50	40	0.0700	3640	255	2.5
3.80	40	0.0800	3350	268	3.0
4.00	40	0.0850	3185	271	3.4
4.20	40	0.0900	3030	273	3.8
4.50	40	0.1050	2830	297	4.7
4.80	40	0.1100	2655	292	5.3
5.00	40	0.1150	2545	293	5.7

Material
Cast iron (lamellar / spheroidal)

3.00	240	0.1200	25465	3056	21.6
3.30	240	0.1350	23150	3125	26.7
3.50	240	0.1400	21825	3056	29.4
3.80	240	0.1550	20105	3116	35.3
4.00	240	0.1650	19100	3152	39.6
4.20	240	0.1800	18190	3274	45.4
4.50	240	0.2050	16975	3480	55.3
4.80	240	0.2200	15915	3501	63.4
5.00	240	0.2300	15280	3514	69.0

# Spiral flute drills XDrill®

5xd

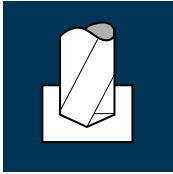


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)
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Example: Order-N°.							DURO-X <b>B72015</b>	
∅ Code	d <sub>1</sub> m7	d <sub>2</sub> h5	l <sub>1</sub>	l <sub>2</sub>	l <sub>4</sub>	L <sub>max</sub>		
0530	5.30	6.0	82.0	44.0	36	34.6		●
0540	5.40	6.0	82.0	44.0	36	34.5		●
0550	5.50	6.0	82.0	44.0	36	34.4		●
0560	5.60	6.0	82.0	44.0	36	34.3		●
0570	5.70	6.0	82.0	44.0	36	34.4		●
0580	5.80	6.0	82.0	44.0	36	34.3		●
0590	5.90	6.0	82.0	44.0	36	34.3		●
0600	6.00	6.0	82.0	44.0	36	34.3		●
0610	6.10	8.0	91.0	53.0	36	41.3		●
0620	6.20	8.0	91.0	53.0	36	41.2		●
0630	6.30	8.0	91.0	53.0	36	41.2		●
0640	6.40	8.0	91.0	53.0	36	41.1		●
0650	6.50	8.0	91.0	53.0	36	41.0		●
0660	6.60	8.0	91.0	53.0	36	40.9		●
0670	6.70	8.0	91.0	53.0	36	40.9		●
0680	6.80	8.0	91.0	53.0	36	40.8		●
0690	6.90	8.0	91.0	53.0	36	40.8		●
0700	7.00	8.0	91.0	53.0	36	40.7		●
0710	7.10	8.0	91.0	53.0	36	40.7		●
0720	7.20	8.0	91.0	53.0	36	40.6		●
0730	7.30	8.0	91.0	53.0	36	40.5		●
0740	7.40	8.0	91.0	53.0	36	40.4		●
0750	7.50	8.0	91.0	53.0	36	40.4		●

## Application

## Material



Steel  
< 500 N/mm<sup>2</sup>



Steel  
500 - 850 N/mm<sup>2</sup>



Steel  
850 - 1100 N/mm<sup>2</sup>



Steel  
1100 - 1300 N/mm<sup>2</sup>



Steel  
1300 - 1500 N/mm<sup>2</sup>



Cold work tool steel  
(12% Cr),  
high alloyed  
[1.2379]



Titanium alloys  
> 300 HB  
[Ti6Al4V]



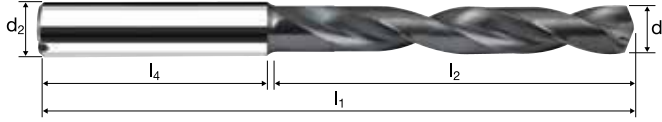
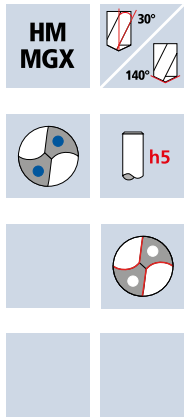
Cast iron  
(lamellar / spheroidal)



d <sub>1</sub> [mm]	v <sub>c</sub> [m/min]	f [mm]	n [min <sup>-1</sup> ]	v <sub>f</sub> [mm/min]	Q [cm <sup>3</sup> /min]
5.50	180	0.2800	10415	2916	69.3
5.80	180	0.2950	9880	2915	77.0
6.00	180	0.3150	9550	3008	85.1
6.20	180	0.3350	9240	3095	93.5
6.50	180	0.3500	8815	3085	102.4
6.80	180	0.3650	8425	3075	111.7
7.00	180	0.3800	8185	3110	119.7
7.20	180	0.3900	7960	3104	126.4
7.50	180	0.4050	7640	3094	136.7
5.50	160	0.2400	9260	2222	52.8
5.80	160	0.2500	8780	2195	58.0
6.00	160	0.2700	8490	2292	64.8
6.20	160	0.2850	8215	2341	70.7
6.50	160	0.3000	7835	2351	78.0
6.80	160	0.3150	7490	2359	85.7
7.00	160	0.3250	7275	2364	91.0
7.20	160	0.3350	7075	2370	96.5
7.50	160	0.3450	6790	2343	103.5
5.50	140	0.2200	8100	1782	42.3
5.80	140	0.2300	7685	1768	46.7
6.00	140	0.2500	7425	1856	52.5
6.20	140	0.2650	7190	1905	57.5
6.50	140	0.2750	6855	1885	62.6
6.80	140	0.2900	6555	1901	69.0
7.00	140	0.3000	6365	1910	73.5
7.20	140	0.3050	6190	1888	76.9
7.50	140	0.3200	5940	1901	84.0
5.50	100	0.1650	5785	955	22.7
5.80	100	0.1750	5490	961	25.4
6.00	100	0.1900	5305	1008	28.5
6.20	100	0.2000	5135	1027	31.0
6.50	100	0.2100	4895	1028	34.1
6.80	100	0.2200	4680	1030	37.4
7.00	100	0.2250	4545	1023	39.4
7.20	100	0.2350	4420	1039	42.3
7.50	100	0.2450	4245	1040	45.9
5.50	55	0.1300	3185	414	9.8
5.80	55	0.1350	3020	408	10.8
6.00	55	0.1450	2920	423	12.0
6.20	55	0.1550	2825	438	13.2
6.50	55	0.1600	2695	431	14.3
6.80	55	0.1700	2575	438	15.9
7.00	55	0.1750	2500	438	16.8
7.20	55	0.1800	2430	437	17.8
7.50	55	0.1850	2335	432	19.1
5.50	70	0.1300	4050	527	12.5
5.80	70	0.1350	3840	518	13.7
6.00	70	0.1450	3715	539	15.2
6.20	70	0.1550	3595	557	16.8
6.50	70	0.1600	3430	549	18.2
6.80	70	0.1700	3275	557	20.2
7.00	70	0.1750	3185	557	21.5
7.20	70	0.1800	3095	557	22.7
7.50	70	0.1850	2970	550	24.3
5.50	40	0.1300	2315	301	7.2
5.80	40	0.1350	2195	296	7.8
6.00	40	0.1450	2120	307	8.7
6.20	40	0.1550	2055	319	9.6
6.50	40	0.1600	1960	314	10.4
6.80	40	0.1700	1870	318	11.5
7.00	40	0.1750	1820	319	12.3
7.20	40	0.1800	1770	319	13.0
7.50	40	0.1850	1700	315	13.9
5.50	240	0.2550	13890	3542	84.2
5.80	240	0.2650	13170	3490	92.2
6.00	240	0.2850	12730	3628	102.6
6.20	240	0.3050	12320	3758	113.4
6.50	240	0.3200	11755	3762	124.8
6.80	240	0.3350	11235	3764	136.7
7.00	240	0.3450	10915	3766	144.9
7.20	240	0.3550	10610	3767	153.4
7.50	240	0.3700	10185	3769	166.5

# Spiral flute drills XDrill®

5xd

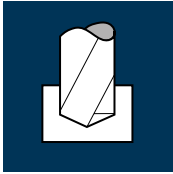


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)
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Example: Order-N°.							DURO-X <b>B72015</b>		
Article-N°.		σ-Code							
<b>B72015 0760</b>									
Ø Code	d <sub>1</sub> m7	d <sub>2</sub> h5	l <sub>1</sub>	l <sub>2</sub>	l <sub>4</sub>	L <sub>max</sub>			
0760	7.60	8.0	91.0	53.0	36	40.3	●		
0770	7.70	8.0	91.0	53.0	36	40.3	●		
0780	7.80	8.0	91.0	53.0	36	40.3	●		
0790	7.90	8.0	91.0	53.0	36	40.3	●		
0800	8.00	8.0	91.0	53.0	36	40.3	●		
0810	8.10	10.0	103.0	61.0	40	46.3	●		
0820	8.20	10.0	103.0	61.0	40	46.2	●		
0830	8.30	10.0	103.0	61.0	40	46.2	●		
0840	8.40	10.0	103.0	61.0	40	46.0	●		
0850	8.50	10.0	103.0	61.0	40	46.0	●		
0860	8.60	10.0	103.0	61.0	40	45.9	●		
0870	8.70	10.0	103.0	61.0	40	45.9	●		
0880	8.80	10.0	103.0	61.0	40	45.8	●		
0890	8.90	10.0	103.0	61.0	40	45.8	●		
0900	9.00	10.0	103.0	61.0	40	45.7	●		
0910	9.10	10.0	103.0	61.0	40	45.6	●		
0920	9.20	10.0	103.0	61.0	40	45.5	●		
0930	9.30	10.0	103.0	61.0	40	45.5	●		
0940	9.40	10.0	103.0	61.0	40	45.4	●		
0950	9.50	10.0	103.0	61.0	40	45.4	●		
0960	9.60	10.0	103.0	61.0	40	45.3	●		
0970	9.70	10.0	103.0	61.0	40	45.3	●		
0980	9.80	10.0	103.0	61.0	40	45.2	●		

## Application

## Material



Steel < 500 N/mm <sup>2</sup>

d <sub>1</sub> [mm]	v <sub>c</sub> [m/min]	f [mm]	n [min <sup>-1</sup> ]	v <sub>f</sub> [mm/min]	Q [cm <sup>3</sup> /min]
7.60	180	0.4100	7540	3091	140.2
8.00	180	0.4300	7160	3079	154.8
8.20	180	0.4450	6985	3108	164.1
8.50	180	0.4600	6740	3100	175.9
8.80	180	0.4750	6510	3092	188.1
9.00	180	0.4850	6365	3087	196.4
9.20	180	0.4950	6230	3084	205.0
9.50	180	0.5150	6030	3106	220.1
9.80	180	0.5300	5845	3098	233.7

Steel 500 - 850 N/mm <sup>2</sup>

7.60	160	0.3500	6700	2345	106.4
8.00	160	0.3700	6365	2355	118.4
8.20	160	0.3800	6210	2360	124.6
8.50	160	0.3950	5990	2366	134.3
8.80	160	0.4050	5785	2343	142.5
9.00	160	0.4150	5660	2349	149.4
9.20	160	0.4250	5535	2352	156.4
9.50	160	0.4400	5360	2358	167.2
9.80	160	0.4550	5195	2364	178.3

Steel 850 - 1100 N/mm <sup>2</sup>

7.60	140	0.3250	5865	1906	86.5
8.00	140	0.3400	5570	1894	95.2
8.20	140	0.3500	5435	1902	100.5
8.50	140	0.3600	5245	1888	107.1
8.80	140	0.3750	5065	1899	115.5
9.00	140	0.3850	4950	1906	121.2
9.20	140	0.3900	4845	1890	125.6
9.50	140	0.4050	4690	1900	134.6
9.80	140	0.4200	4545	1909	144.0

Steel 1100 - 1300 N/mm <sup>2</sup>

7.60	100	0.2450	4190	1027	46.6
8.00	100	0.2600	3980	1035	52.0
8.20	100	0.2650	3880	1028	54.3
8.50	100	0.2750	3745	1030	58.4
8.80	100	0.2850	3615	1030	62.7
9.00	100	0.2900	3535	1025	65.2
9.20	100	0.3000	3460	1038	69.0
9.50	100	0.3100	3350	1039	73.6
9.80	100	0.3200	3250	1040	78.4

Steel 1300 - 1500 N/mm <sup>2</sup>

7.60	55	0.1900	2305	438	19.9
8.00	55	0.2000	2190	438	22.0
8.20	55	0.2050	2135	438	23.1
8.50	55	0.2100	2060	433	24.5
8.80	55	0.2200	1990	438	26.6
9.00	55	0.2250	1945	438	27.8
9.20	55	0.2300	1905	438	29.1
9.50	55	0.2350	1845	434	30.7
9.80	55	0.2450	1785	437	33.0

Cold work tool steel (12% Cr), high alloyed [1.2379]

7.60	70	0.1900	2930	557	25.3
8.00	70	0.2000	2785	557	28.0
8.20	70	0.2050	2715	557	29.4
8.50	70	0.2100	2620	550	31.2
8.80	70	0.2200	2530	557	33.9
9.00	70	0.2250	2475	557	35.4
9.20	70	0.2300	2420	557	37.0
9.50	70	0.2350	2345	551	39.1
9.80	70	0.2450	2275	557	42.0

Titanium alloys > 300 HB [Ti6Al4V]

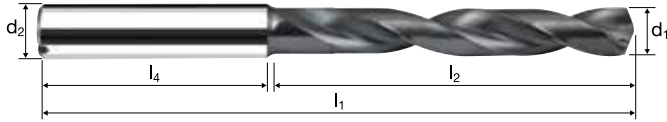
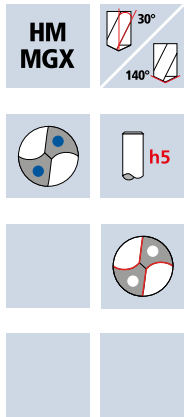
7.60	40	0.1900	1675	318	14.4
8.00	40	0.2000	1590	318	16.0
8.20	40	0.2050	1555	319	16.8
8.50	40	0.2100	1500	315	17.9
8.80	40	0.2200	1445	318	19.3
9.00	40	0.2250	1415	318	20.3
9.20	40	0.2300	1385	319	21.2
9.50	40	0.2350	1340	315	22.3
9.80	40	0.2450	1300	319	24.0

Cast iron (lamellar / spheroidal)

7.60	240	0.3750	10050	3769	171.0
8.00	240	0.3950	9550	3772	189.6
8.20	240	0.4050	9315	3773	199.2
8.50	240	0.4150	8990	3731	211.7
8.80	240	0.4300	8680	3732	227.0
9.00	240	0.4400	8490	3736	237.6
9.20	240	0.4500	8305	3737	248.4
9.50	240	0.4650	8040	3739	265.0
9.80	240	0.4800	7795	3742	282.2

# Spiral flute drills XDrill®

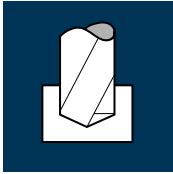
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)
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Example: Order-Nº.							DURO-X <b>B72015</b>		
Article-Nº.		ø-Code							
<b>B72015 0990</b>									
Ø Code	d <sub>1</sub> m7	d <sub>2</sub> h5	l <sub>1</sub>	l <sub>2</sub>	l <sub>4</sub>	L <sub>max</sub>			
0990	9.90	10.0	103.0	61.0	40	45.3	●		
1000	10.00	10.0	103.0	61.0	40	45.2	●		
1010	10.10	12.0	118.0	71.0	45	53.2	●		
1020	10.20	12.0	118.0	71.0	45	53.1	●		
1030	10.30	12.0	118.0	71.0	45	53.1	●		
1040	10.40	12.0	118.0	71.0	45	53.0	●		
1050	10.50	12.0	118.0	71.0	45	53.0	●		
1060	10.60	12.0	118.0	71.0	45	52.9	●		
1070	10.70	12.0	118.0	71.0	45	52.9	●		
1080	10.80	12.0	118.0	71.0	45	52.8	●		
1090	10.90	12.0	118.0	71.0	45	52.7	●		
1100	11.00	12.0	118.0	71.0	45	52.6	●		
1110	11.10	12.0	118.0	71.0	45	52.6	●		
1120	11.20	12.0	118.0	71.0	45	52.5	●		
1130	11.30	12.0	118.0	71.0	45	52.5	●		
1140	11.40	12.0	118.0	71.0	45	52.4	●		
1150	11.50	12.0	118.0	71.0	45	52.4	●		
1160	11.60	12.0	118.0	71.0	45	52.3	●		
1170	11.70	12.0	118.0	71.0	45	52.3	●		
1180	11.80	12.0	118.0	71.0	45	52.2	●		
1190	11.90	12.0	118.0	71.0	45	52.2	●		
1200	12.00	12.0	118.0	71.0	45	52.2	●		

## Application



## Material

Steel  
< 500 N/mm<sup>2</sup>



Steel  
500 - 850 N/mm<sup>2</sup>



Steel  
850 - 1100 N/mm<sup>2</sup>



Steel  
1100 - 1300 N/mm<sup>2</sup>



Steel  
1300 - 1500 N/mm<sup>2</sup>



Cold work tool steel  
(12% Cr),  
high alloyed  
[1.2379]



Titanium alloys  
> 300 HB  
[Ti6Al4V]



Cast iron  
(lamellar / spheroidal)

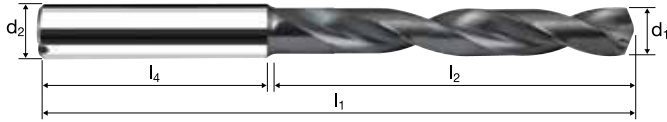
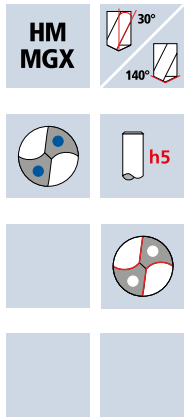


d <sub>1</sub> [mm]	v <sub>c</sub> [m/min]	f [mm]	n [min <sup>-1</sup> ]	v <sub>f</sub> [mm/min]	Q [cm <sup>3</sup> /min]
10.00	180	0.5400	5730	3094	243.0
10.20	180	0.5450	5615	3060	250.1
10.50	180	0.5650	5455	3082	266.9
10.80	180	0.5750	5305	3050	279.4
11.00	180	0.5850	5210	3048	289.7
11.20	180	0.5850	5115	2992	294.8
11.50	180	0.5900	4980	2938	305.2
11.80	180	0.6000	4855	2913	318.6
12.00	180	0.6100	4775	2913	329.4
10.00	160	0.4650	5095	2369	186.1
10.20	160	0.4700	4995	2348	191.8
10.50	160	0.4850	4850	2352	203.7
10.80	160	0.4950	4715	2334	213.8
11.00	160	0.5000	4630	2315	220.0
11.20	160	0.5000	4545	2273	223.9
11.50	160	0.5050	4430	2237	232.4
11.80	160	0.5100	4315	2201	240.7
12.00	160	0.5200	4245	2207	249.7
10.00	140	0.4250	4455	1893	148.7
10.20	140	0.4300	4370	1879	153.5
10.50	140	0.4450	4245	1889	163.6
10.80	140	0.4550	4125	1877	171.9
11.00	140	0.4600	4050	1863	177.0
11.20	140	0.4650	3980	1851	182.3
11.50	140	0.4650	3875	1802	187.2
11.80	140	0.4700	3775	1774	194.0
12.00	140	0.4800	3715	1783	201.7
10.00	100	0.3250	3185	1035	81.3
10.20	100	0.3300	3120	1030	84.1
10.50	100	0.3400	3030	1030	89.2
10.80	100	0.3450	2945	1016	93.1
11.00	100	0.3500	2895	1013	96.3
11.20	100	0.3500	2840	994	97.9
11.50	100	0.3550	2770	983	102.1
11.80	100	0.3600	2700	972	106.3
12.00	100	0.3650	2655	969	109.6
10.00	55	0.2500	1750	438	34.4
10.20	55	0.2550	1715	437	35.7
10.50	55	0.2600	1665	433	37.5
10.80	55	0.2650	1620	429	39.3
11.00	55	0.2700	1590	429	40.8
11.20	55	0.2700	1565	423	41.6
11.50	55	0.2700	1520	410	42.6
11.80	55	0.2750	1485	408	44.7
12.00	55	0.2800	1460	409	46.2
10.00	70	0.2500	2230	558	43.8
10.20	70	0.2550	2185	557	45.5
10.50	70	0.2600	2120	551	47.7
10.80	70	0.2650	2065	547	50.1
11.00	70	0.2700	2025	547	52.0
11.20	70	0.2700	1990	537	52.9
11.50	70	0.2700	1940	524	54.4
11.80	70	0.2750	1890	520	56.8
12.00	70	0.2800	1855	519	58.7
10.00	40	0.2500	1275	319	25.0
10.20	40	0.2550	1250	319	26.1
10.50	40	0.2600	1215	316	27.4
10.80	40	0.2650	1180	313	28.6
11.00	40	0.2700	1155	312	29.6
11.20	40	0.2700	1135	307	30.2
11.50	40	0.2700	1105	298	31.0
11.80	40	0.2750	1080	297	32.5
12.00	40	0.2800	1060	297	33.6
10.00	240	0.4900	7640	3744	294.0
10.20	240	0.5000	7490	3745	306.0
10.50	240	0.5100	7275	3710	321.3
10.80	240	0.5250	7075	3714	340.3
11.00	240	0.5300	6945	3681	349.8
11.20	240	0.5350	6820	3649	359.5
11.50	240	0.5350	6645	3555	369.3
11.80	240	0.5450	6475	3529	385.9
12.00	240	0.5550	6365	3533	399.5



# Spiral flute drills XDrill®

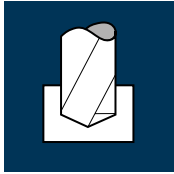
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)
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Example: Order-Nº.							DURO-X B72015	
Article-Nº.		σ-Code						
B72015		1210						
Ø Code	d1 m7	d2 h5	l1	l2	l4	Lmax		
1210	12.10	14.0	124.0	77.0	45	56.2	●	
1220	12.20	14.0	124.0	77.0	45	56.1	●	
1230	12.30	14.0	124.0	77.0	45	56.1	●	
1240	12.40	14.0	124.0	77.0	45	56.0	●	
1250	12.50	14.0	124.0	77.0	45	56.0	●	
1260	12.60	14.0	124.0	77.0	45	55.9	●	
1270	12.70	14.0	124.0	77.0	45	55.8	●	
1280	12.80	14.0	124.0	77.0	45	55.7	●	
1290	12.90	14.0	124.0	77.0	45	55.7	●	
1300	13.00	14.0	124.0	77.0	45	55.6	●	
1310	13.10	14.0	124.0	77.0	45	55.6	●	
1320	13.20	14.0	124.0	77.0	45	55.5	●	
1330	13.30	14.0	124.0	77.0	45	55.5	●	
1340	13.40	14.0	124.0	77.0	45	55.4	●	
1350	13.50	14.0	124.0	77.0	45	55.3	●	
1360	13.60	14.0	124.0	77.0	45	55.2	●	
1370	13.70	14.0	124.0	77.0	45	55.2	●	
1380	13.80	14.0	124.0	77.0	45	55.1	●	
1390	13.90	14.0	124.0	77.0	45	55.2	●	
1400	14.00	14.0	124.0	77.0	45	55.1	●	

## Application



## Material

Steel  
< 500 N/mm<sup>2</sup>



Steel  
500 - 850 N/mm<sup>2</sup>



Steel  
850 - 1100 N/mm<sup>2</sup>



Steel  
1100 - 1300 N/mm<sup>2</sup>



Steel  
1300 - 1500 N/mm<sup>2</sup>



Cold work tool steel  
(12% Cr),  
high alloyed  
[1.2379]



Titanium alloys  
> 300 HB  
[Ti6Al4V]



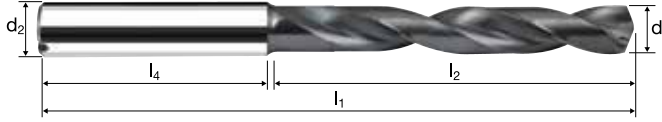
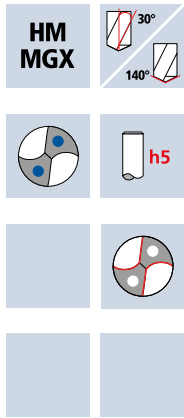
Cast iron  
(lamellar / spheroidal)



d <sub>1</sub> [mm]	v <sub>c</sub> [m/min]	f [mm]	n [min <sup>-1</sup> ]	v <sub>f</sub> [mm/min]	Q [cm <sup>3</sup> /min]
12.20	180	0.6200	4695	2911	340.3
12.50	180	0.6350	4585	2912	357.3
12.60	180	0.6400	4545	2909	362.7
12.80	180	0.6500	4475	2909	374.3
13.00	180	0.6600	4405	2907	385.9
13.20	180	0.6700	4340	2908	397.9
13.50	180	0.6750	4245	2865	410.1
13.80	180	0.6750	4150	2801	419.0
14.00	180	0.6800	4095	2785	428.7
12.20	160	0.5300	4175	2213	258.7
12.50	160	0.5450	4075	2221	272.5
12.60	160	0.5450	4040	2202	274.5
12.80	160	0.5550	3980	2209	284.2
13.00	160	0.5650	3920	2215	294.0
13.20	160	0.5750	3860	2220	303.7
13.50	160	0.5800	3775	2190	313.4
13.80	160	0.5800	3690	2140	320.1
14.00	160	0.5850	3640	2129	327.8
12.20	140	0.4900	3655	1791	209.4
12.50	140	0.5000	3565	1783	218.7
12.60	140	0.5050	3535	1785	222.6
12.80	140	0.5100	3480	1775	228.4
13.00	140	0.5200	3430	1784	236.7
13.20	140	0.5300	3375	1789	244.8
13.50	140	0.5350	3300	1766	252.7
13.80	140	0.5350	3230	1728	258.5
14.00	140	0.5400	3185	1720	264.8
12.20	100	0.3700	2610	966	112.9
12.50	100	0.3800	2545	967	118.7
12.60	100	0.3850	2525	972	121.2
12.80	100	0.3900	2485	969	124.7
13.00	100	0.3950	2450	968	128.5
13.20	100	0.4000	2410	964	131.9
13.50	100	0.4050	2360	956	136.8
13.80	100	0.4050	2305	934	139.6
14.00	100	0.4100	2275	933	143.6
12.20	55	0.2850	1435	409	47.8
12.50	55	0.2900	1400	406	49.8
12.60	55	0.2950	1390	410	51.1
12.80	55	0.3000	1370	411	52.9
13.00	55	0.3050	1345	410	54.4
13.20	55	0.3100	1325	411	56.2
13.50	55	0.3100	1295	402	57.5
13.80	55	0.3100	1270	394	58.9
14.00	55	0.3150	1250	394	60.6
12.20	70	0.2850	1825	520	60.8
12.50	70	0.2900	1785	518	63.5
12.60	70	0.2950	1770	522	65.1
12.80	70	0.3000	1740	522	67.2
13.00	70	0.3050	1715	523	69.4
13.20	70	0.3100	1690	524	71.7
13.50	70	0.3100	1650	512	73.2
13.80	70	0.3100	1615	501	74.9
14.00	70	0.3150	1590	501	77.1
12.20	40	0.2850	1045	298	34.8
12.50	40	0.2900	1020	296	36.3
12.60	40	0.2950	1010	298	37.2
12.80	40	0.3000	995	299	38.4
13.00	40	0.3050	980	299	39.7
13.20	40	0.3100	965	299	40.9
13.50	40	0.3100	945	293	41.9
13.80	40	0.3100	925	287	42.9
14.00	40	0.3150	910	287	44.1
12.20	240	0.5600	6260	3506	409.8
12.50	240	0.5750	6110	3513	431.1
12.60	240	0.5800	6065	3518	438.6
12.80	240	0.5900	5970	3522	453.2
13.00	240	0.6000	5875	3525	467.9
13.20	240	0.6100	5785	3529	482.9
13.50	240	0.6150	5660	3481	498.3
13.80	240	0.6150	5535	3404	509.1
14.00	240	0.6200	5455	3382	520.6

# Spiral flute drills XDrill®

5xd

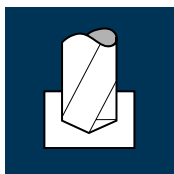


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)
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Example: Order-N°.							DURO-X <b>B72015</b>	
		Article-N°.		ø-Code				
		<b>B72015 1410</b>						
Ø Code	d <sub>1</sub> m7	d <sub>2</sub> h5	l <sub>1</sub>	l <sub>2</sub>	l <sub>4</sub>	L <sub>max</sub>		
1410	14.10	16.0	133.0	83.0	48	59.2	●	
1420	14.20	16.0	133.0	83.0	48	59.1	●	
1430	14.30	16.0	133.0	83.0	48	59.1	●	
1440	14.40	16.0	133.0	83.0	48	59.0	●	
1450	14.50	16.0	133.0	83.0	48	59.0	●	
1460	14.60	16.0	133.0	83.0	48	58.8	●	
1470	14.70	16.0	133.0	83.0	48	58.8	●	
1480	14.80	16.0	133.0	83.0	48	58.7	●	
1490	14.90	16.0	133.0	83.0	48	58.7	●	
1500	15.00	16.0	133.0	83.0	48	58.6	●	
1510	15.10	16.0	133.0	83.0	48	58.6	●	
1520	15.20	16.0	133.0	83.0	48	58.5	●	
1530	15.30	16.0	133.0	83.0	48	58.5	●	
1540	15.40	16.0	133.0	83.0	48	58.3	●	
1550	15.50	16.0	133.0	83.0	48	58.3	●	
1560	15.60	16.0	133.0	83.0	48	58.2	●	
1570	15.70	16.0	133.0	83.0	48	58.2	●	
1580	15.80	16.0	133.0	83.0	48	58.1	●	
1590	15.90	16.0	133.0	83.0	48	58.1	●	
1600	16.00	16.0	133.0	83.0	48	58.1	●	

## Application

## Material




Steel  
< 500 N/mm<sup>2</sup>




d <sub>1</sub> [mm]	v <sub>c</sub> [m/min]	f [mm]	n [min <sup>-1</sup> ]	v <sub>f</sub> [mm/min]	Q [cm <sup>2</sup> /min]
14.20	180	0.6850	4035	2764	437.7
14.50	180	0.6900	3950	2726	450.1
14.80	180	0.7000	3870	2709	466.0
15.00	180	0.7100	3820	2712	479.3
15.20	180	0.7200	3770	2714	492.6
15.50	180	0.7250	3695	2679	505.5
15.70	180	0.7250	3650	2646	512.3
15.80	180	0.7300	3625	2646	518.9
16.00	180	0.7350	3580	2631	529.1

Steel  
500 - 850 N/mm<sup>2</sup>




14.20	160	0.5900	3585	2115	335.0
14.50	160	0.5900	3510	2071	342.0
14.80	160	0.6000	3440	2064	355.1
15.00	160	0.6100	3395	2071	366.0
15.20	160	0.6150	3350	2060	373.9
15.50	160	0.6200	3285	2037	384.3
15.70	160	0.6250	3245	2028	392.6
15.80	160	0.6250	3225	2016	395.2
16.00	160	0.6300	3185	2007	403.5

Steel  
850 - 1100 N/mm<sup>2</sup>




14.20	140	0.5400	3140	1696	268.5
14.50	140	0.5450	3075	1676	276.7
14.80	140	0.5550	3010	1671	287.4
15.00	140	0.5600	2970	1663	293.9
15.20	140	0.5700	2930	1670	303.1
15.50	140	0.5700	2875	1639	309.2
15.70	140	0.5750	2840	1633	316.1
15.80	140	0.5800	2820	1636	320.7
16.00	140	0.5800	2785	1615	324.8

Steel  
1100 - 1300 N/mm<sup>2</sup>




14.20	100	0.4100	2240	918	145.4
14.50	100	0.4150	2195	911	150.4
14.80	100	0.4200	2150	903	155.3
15.00	100	0.4250	2120	901	159.2
15.20	100	0.4300	2095	901	163.5
15.50	100	0.4350	2055	894	168.7
15.70	100	0.4350	2025	881	170.5
15.80	100	0.4400	2015	887	173.8
16.00	100	0.4400	1990	876	176.0

Steel  
1300 - 1500 N/mm<sup>2</sup>




14.20	55	0.3150	1235	389	61.6
14.50	55	0.3200	1205	386	63.7
14.80	55	0.3250	1185	385	66.3
15.00	55	0.3300	1165	385	67.9
15.20	55	0.3300	1150	380	68.9
15.50	55	0.3350	1130	379	71.4
15.70	55	0.3350	1115	374	72.3
15.80	55	0.3400	1110	377	74.0
16.00	55	0.3400	1095	372	74.9

Cold work tool steel  
(12% Cr),  
high alloyed  
[1.2379]




14.20	70	0.3150	1570	495	78.3
14.50	70	0.3200	1535	491	81.1
14.80	70	0.3250	1505	489	84.1
15.00	70	0.3300	1485	490	86.6
15.20	70	0.3300	1465	484	87.7
15.50	70	0.3350	1440	482	91.0
15.70	70	0.3350	1420	476	92.1
15.80	70	0.3400	1410	479	94.0
16.00	70	0.3400	1395	474	95.4

Titanium alloys  
> 300 HB  
[Ti6Al4V]



14.20	40	0.3150	895	282	44.6
14.50	40	0.3200	880	282	46.5
14.80	40	0.3250	860	280	48.1
15.00	40	0.3300	850	281	49.6
15.20	40	0.3300	840	277	50.3
15.50	40	0.3350	820	275	51.8
15.70	40	0.3350	810	271	52.5
15.80	40	0.3400	805	274	53.7
16.00	40	0.3400	795	270	54.3

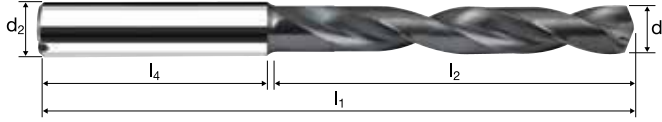
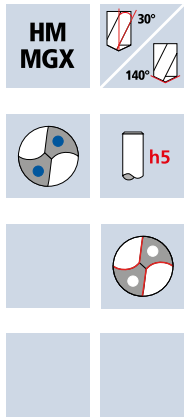
Cast iron  
(lamellar / spheroidal)



14.20	240	0.6250	5380	3363	532.5
14.50	240	0.6300	5270	3320	548.2
14.80	240	0.6350	5160	3277	563.7
15.00	240	0.6450	5095	3286	580.7
15.20	240	0.6550	5025	3291	597.3
15.50	240	0.6600	4930	3254	614.0
15.70	240	0.6600	4865	3211	621.6
15.80	240	0.6650	4835	3215	630.4
16.00	240	0.6700	4775	3199	643.3

# Spiral flute drills XDrill®

5xd

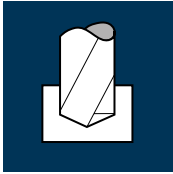


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56		Inox Stainless	Ti Titanium	GG(G)
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Example: Order-N°.							DURO-X <b>B72015</b>	
∅ Code	d <sub>1</sub> m7	d <sub>2</sub> h5	l <sub>1</sub>	l <sub>2</sub>	l <sub>4</sub>	L <sub>max</sub>		
1610	16.10	18.0	143.0	93.0	48	66.2	●	
1620	16.20	18.0	143.0	93.0	48	66.1	●	
1630	16.30	18.0	143.0	93.0	48	66.1	●	
1640	16.40	18.0	143.0	93.0	48	65.9	●	
1650	16.50	18.0	143.0	93.0	48	65.9	●	
1660	16.60	18.0	143.0	93.0	48	65.8	●	
1670	16.70	18.0	143.0	93.0	48	65.8	●	
1680	16.80	18.0	143.0	93.0	48	65.7	●	
1690	16.90	18.0	143.0	93.0	48	65.7	●	
1700	17.00	18.0	143.0	93.0	48	65.6	●	
1710	17.10	18.0	143.0	93.0	48	65.5	●	
1720	17.20	18.0	143.0	93.0	48	65.4	●	
1730	17.30	18.0	143.0	93.0	48	65.4	●	
1740	17.40	18.0	143.0	93.0	48	65.3	●	
1750	17.50	18.0	143.0	93.0	48	65.3	●	
1760	17.60	18.0	143.0	93.0	48	65.2	●	
1770	17.70	18.0	143.0	93.0	48	65.2	●	
1780	17.80	18.0	143.0	93.0	48	65.1	●	
1790	17.90	18.0	143.0	93.0	48	65.1	●	
1800	18.00	18.0	143.0	93.0	48	65.0	●	

## Application

## Material



Steel  
< 500 N/mm<sup>2</sup>



Steel  
500 - 850 N/mm<sup>2</sup>



Steel  
850 - 1100 N/mm<sup>2</sup>



Steel  
1100 - 1300 N/mm<sup>2</sup>



Steel  
1300 - 1500 N/mm<sup>2</sup>



Cold work tool steel  
(12% Cr),  
high alloyed  
[1.2379]



Titanium alloys  
> 300 HB  
[Ti6Al4V]



Cast iron  
(lamellar / spheroidal)

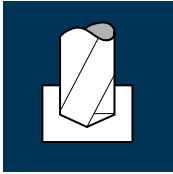


d <sub>1</sub> [mm]	v <sub>c</sub> [m/min]	f [mm]	n [min <sup>-1</sup> ]	v <sub>f</sub> [mm/min]	Q [cm <sup>3</sup> /min]
16.20	180	0.7400	3535	2616	539.2
16.40	180	0.7500	3495	2621	553.7
16.50	180	0.7550	3470	2620	560.2
16.80	180	0.7550	3410	2575	570.7
17.00	180	0.7600	3370	2561	581.3
17.20	180	0.7650	3330	2548	591.9
17.50	180	0.7700	3275	2522	606.6
17.70	180	0.7750	3235	2507	616.9
18.00	180	0.7800	3185	2484	632.2
16.20	160	0.6350	3145	1997	411.6
16.40	160	0.6400	3105	1987	419.8
16.50	160	0.6450	3085	1990	425.5
16.80	160	0.6500	3030	1970	436.6
17.00	160	0.6500	2995	1947	441.9
17.20	160	0.6550	2960	1939	450.5
17.50	160	0.6600	2910	1921	462.0
17.70	160	0.6600	2875	1898	466.9
18.00	160	0.6700	2830	1896	482.5
16.20	140	0.5850	2750	1609	331.6
16.40	140	0.5900	2715	1602	338.4
16.50	140	0.5950	2700	1607	343.5
16.80	140	0.5950	2655	1580	350.2
17.00	140	0.6000	2620	1572	356.8
17.20	140	0.6000	2590	1554	361.1
17.50	140	0.6100	2545	1553	373.4
17.70	140	0.6100	2520	1537	378.2
18.00	140	0.6150	2475	1522	387.3
16.20	100	0.4450	1965	874	180.2
16.40	100	0.4500	1940	873	184.4
16.50	100	0.4500	1930	869	185.7
16.80	100	0.4550	1895	862	191.1
17.00	100	0.4550	1870	851	193.1
17.20	100	0.4600	1850	851	197.7
17.50	100	0.4600	1820	837	201.4
17.70	100	0.4650	1800	837	206.0
18.00	100	0.4700	1770	832	211.7
16.20	55	0.3400	1080	367	75.7
16.40	55	0.3450	1070	369	78.0
16.50	55	0.3500	1060	371	79.3
16.80	55	0.3500	1040	364	80.7
17.00	55	0.3500	1030	361	81.8
17.20	55	0.3500	1020	357	82.9
17.50	55	0.3550	1000	355	85.4
17.70	55	0.3550	990	352	86.5
18.00	55	0.3600	975	351	89.3
16.20	70	0.3400	1375	468	96.4
16.40	70	0.3450	1360	469	99.1
16.50	70	0.3500	1350	473	101.0
16.80	70	0.3500	1325	464	102.8
17.00	70	0.3500	1310	459	104.1
17.20	70	0.3500	1295	453	105.3
17.50	70	0.3550	1275	453	108.9
17.70	70	0.3550	1260	447	110.1
18.00	70	0.3600	1240	446	113.6
16.20	40	0.3400	785	267	55.0
16.40	40	0.3450	775	267	56.5
16.50	40	0.3500	770	270	57.6
16.80	40	0.3500	760	266	59.0
17.00	40	0.3500	750	263	59.6
17.20	40	0.3500	740	259	60.2
17.50	40	0.3550	730	259	62.3
17.70	40	0.3550	720	256	62.9
18.00	40	0.3600	705	254	64.6
16.20	240	0.6750	4715	3183	656.0
16.40	240	0.6800	4660	3169	669.4
16.50	240	0.6850	4630	3172	678.2
16.80	240	0.6850	4545	3113	690.1
17.00	240	0.6900	4495	3102	704.0
17.20	240	0.6950	4440	3086	717.0
17.50	240	0.7000	4365	3056	734.9
17.70	240	0.7050	4315	3042	748.5
18.00	240	0.7100	4245	3014	767.0



## Application

## Material



Steel  
< 500 N/mm<sup>2</sup>



d <sub>1</sub> [mm]	v <sub>c</sub> [m/min]	f [mm]	n [min <sup>-1</sup> ]	v <sub>f</sub> [mm/min]	Q [cm <sup>3</sup> /min]
18.50	180	0.7850	3095	2430	653.1
18.70	180	0.7850	3065	2406	660.8
19.00	180	0.7900	3015	2382	675.3
19.20	180	0.7950	2985	2373	687.1
19.30	180	0.8000	2970	2376	695.1
19.50	180	0.8050	2940	2367	706.8
19.70	180	0.8100	2910	2357	718.5
19.80	180	0.8100	2895	2345	722.0
20.00	180	0.8200	2865	2349	738.1

Steel  
500 - 850 N/mm<sup>2</sup>



18.50	160	0.6700	2755	1846	496.2
18.70	160	0.6750	2725	1839	505.2
19.00	160	0.6800	2680	1822	516.7
19.20	160	0.6800	2655	1805	522.7
19.30	160	0.6850	2640	1808	529.1
19.50	160	0.6900	2610	1801	537.8
19.70	160	0.6900	2585	1784	543.7
19.80	160	0.6950	2570	1786	550.0
20.00	160	0.7050	2545	1794	563.7

Steel  
850 - 1100 N/mm<sup>2</sup>



18.50	140	0.6200	2410	1494	401.6
18.70	140	0.6200	2385	1479	406.1
19.00	140	0.6250	2345	1466	415.5
19.20	140	0.6250	2320	1450	419.8
19.30	140	0.6300	2310	1455	425.8
19.50	140	0.6350	2285	1451	433.3
19.70	140	0.6400	2260	1446	440.9
19.80	140	0.6400	2250	1440	443.4
20.00	140	0.6450	2230	1438	451.9

Steel  
1100 - 1300 N/mm<sup>2</sup>



18.50	100	0.4700	1720	808	217.3
18.70	100	0.4700	1700	799	219.4
19.00	100	0.4750	1675	796	225.6
19.20	100	0.4750	1660	789	228.3
19.30	100	0.4800	1650	792	231.7
19.50	100	0.4850	1630	791	236.1
19.70	100	0.4850	1615	783	238.8
19.80	100	0.4850	1610	781	240.4
20.00	100	0.4900	1590	779	244.8

Steel  
1300 - 1500 N/mm<sup>2</sup>



18.50	55	0.3600	945	340	91.4
18.70	55	0.3600	935	337	92.4
19.00	55	0.3650	920	336	95.2
19.20	55	0.3650	910	332	96.2
19.30	55	0.3700	905	335	98.0
19.50	55	0.3700	900	333	99.4
19.70	55	0.3750	890	334	101.7
19.80	55	0.3750	885	332	102.2
20.00	55	0.3800	875	333	104.5

Cold work tool steel  
(12% Cr),  
high alloyed  
[1.2379]



18.50	70	0.3600	1205	434	116.6
18.70	70	0.3600	1190	428	117.7
19.00	70	0.3650	1175	429	121.6
19.20	70	0.3650	1160	423	122.6
19.30	70	0.3700	1155	427	125.0
19.50	70	0.3700	1145	424	126.5
19.70	70	0.3750	1130	424	129.2
19.80	70	0.3750	1125	422	129.9
20.00	70	0.3800	1115	424	133.1

Titanium alloys  
> 300 HB  
[Ti6Al4V]



18.50	40	0.3600	690	248	66.8
18.70	40	0.3600	680	245	67.2
19.00	40	0.3650	670	245	69.4
19.20	40	0.3650	665	243	70.3
19.30	40	0.3700	660	244	71.4
19.50	40	0.3700	655	242	72.4
19.70	40	0.3750	645	242	73.7
19.80	40	0.3750	645	242	74.5
20.00	40	0.3800	635	241	75.8

Cast iron  
(lamellar / spheroidal)



18.50	240	0.7100	4130	2932	788.2
18.70	240	0.7150	4085	2921	802.2
19.00	240	0.7200	4020	2894	820.6
19.20	240	0.7200	3980	2866	829.7
19.30	240	0.7250	3960	2871	839.9
19.50	240	0.7350	3920	2881	860.5
19.70	240	0.7350	3880	2852	869.2
19.80	240	0.7400	3860	2856	879.5
20.00	240	0.7450	3820	2846	894.1