

Application recommendations twist drills

Tools with bold feed column no. are preferred choice.

Drill Ø mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

Coolant:
○ Air
● Neat oil
● Soluble oil

Cutting direction:
Ⓜ right-hand cutting
Ⓛ left-hand cutting

Order-Nr. Ⓜ

Standard/DIN

Tool material

Surface finish

Type

Std. range page

81410	82310	81450	81440	81740	82340	82466
81510	82410		81540	81750	82440	82467
81610			81640	81760		82468
						82469
1869	1870	1869	1869	Std.	1870	Std.
HSS						
Ⓜ	Ⓜ	Ⓜ	Ⓜ	Ⓜ	Ⓜ	Ⓜ
N	N	FW	FN	FN	FN	FN
134/139/ 143	170/173	137	135/140/ 144	145-147	171/174	175-178
①	⑤	③	②	④	④	④

84425	
84426	
1869	
HSS	
Ⓜ	
GT 100	
136/141	
⑥	

81441	
81541	
1869	
HSS-E	
Ⓜ	
FN	
138/142	
②	

82341	
1870	
HSS-E	
Ⓜ	
FN	
172	
④	



Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength N/mm²	Hardness	Coolant
Common structural steels	1.0035 S185(S133), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500)	≤1000		●
Free-cutting steels	1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20)	≤1000		●
Unalloyed heat-treatable steels	1.0402 C22, 1.1178 C30E (Ck30)	≤700		●
	1.0503 C45, 1.1191 C45E (Ck45)	≤850		●
	1.0601 C60, 1.1221 C60E (Ck60)	≤1000		●
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4	≤1000		●
	1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	≤1400		●
Unalloyed case hard. steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤850		●
Alloyed case hardened steels	1.7276 10CrMo11, 1.5125 11MnSi6	≤1000		●
	1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	≤1400		●
Nitriding steels	1.8504 34CrAl6	≤1000		●
	1.8519 31CrMoV9, 1.8550 34CrAlNi7	≤1400		●
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9	≤850		●
	1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4	≤1400		●
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≤1400		●
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4)		≤350 HB	●
Hardened steels	-		≤48 HRC	●
			≤66 HRC	●
Stainless steels, sulphured	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9	≤900		●
austenitic	1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
martensitic	1.4057 X20CrNi172 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2	≤1500		●
Cast iron	0.6010 EN-GJL-100 (GG10), 0.6020 EN-GJL-200 (GG20)		≤240 HB	●○
	0.6025 EN-GJL-250 (GG25), 0.6035 EN-GJL-350 (GG35)		≤350 HB	●○
Spheroidal graphite iron and malleable cast iron	0.7050 EN-GJS-500-7 (GGG50), 0.8035 EN-GJMW-350-4 (GTW35)		≤240 HB	●
	0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)		≤350 HB	●
Chilled cast iron	-		≤350 HB	●
New cast materials GGV	EN-GJV250 (GGV25), EN-GJV350 (GGV35)		≤220 HB	●○
	EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo 6		≤300 HB	●○
New cast materials ADI	EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000)	≤1000		●○
	EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400)	≤1400		●○
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
Ti and Ti-alloys	3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2	≤850		●
	3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
Aluminium and Al-alloys	3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1	≤400		●
Al wrought alloys	3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5	≤650		●
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600		●
≤ 24 % Si	3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
Magnesium alloys	3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5612.05 G-MgAl6Zn1	≤400		○
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPB	≤500		●
Brass, short-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2	≤600		●
long-chipping	2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5	≤600		●
Bronze, short-chipping	2.1090 CuSn7ZnPB, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn	≤600		●●
	2.0790 CuNi18Zn19PB	≤850		●●
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10	≤850		●●
	2.0980 CuAl11Ni, 2.1247 CuBe2	≤1000		●●
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		●○
Kevlar	Kevlar	≤1000		○
Glass, carbon concentr. plastics	GFK/CFK	≤1000		○

Vc m/min	Feed column no.					
22	5	5	5	5	5	5
18	4	4	4	4	4	4
20	5	5	5	5	5	5
20	4	4	4	4	4	4
25	4	4	4	4	4	4
25	4	4	4	4	4	4
12	3	3				
22	5	5	5	5	5	5
10	3	3				
8	3	3				
12	3	3	3	3	3	3
6	2	2	2	2	2	2
6	2	2				
22	5	5	5	5	5	5
18	5	5	5	5	5	5
20	5	5	5	5	5	5
14	5	5	5	5	5	5
55	6					
55	6					
45	6	6	6	6	6	6
36	5	5	5	5	5	5
55	5	5	5	5	5	5
22	4	4	4	4	4	4
45	4	4				
28	4	4	4	4	4	4
22	3	3	3	3	3	3
20	3	3	3	3	3	3
18	3	3	3	3	3	3
12	3	3	3	3	3	3
18	4	4	4	4	4	4

Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.
28	5	30	4	30	4
22	4	25	4	25	4
28	5	33	4	33	4
22	4	30	4	30	4
28	4	33	4	33	4
22	4	33	4	33	4
16	3	20	3	20	3
		14	3	14	3
		10	2	10	2
28	5	29	4	29	4
		14	3	14	3
		10	2	10	2
		10	3	10	3
		8	2	8	2
12	3	11	3	11	3
8	2	8	2	8	2
		8	2	8	2
		5	1	5	1
		3	1	3	1
		10	3	10	3
		8	2	8	2
		10	2	10	2
28	5	20	5	20	5
22	5				
25	5	16	5	16	5
18	5	5	2	5	2
6	1	5	1	5	1
		6	1	6	1
		5	1	5	1
70	6				
70	6				
55	6	50	6	50	6
45	5	40	5	70	5
70	5				
28	4	30	4	30	4
		45	4	45	4
36	4	30	4	30	4
28	3	25	4	25	4
25	3	20	4	20	4
22	3	16	3	16	3
18	3	10	3	10	3
15	3	14	3	14	3
22	4	20	3	20	3

