

GUHRING NAVIGATOR Milling cutters

Tools with **bold** feed column no. (FC no.) are preferred choice.

a_e = Width of cut

a_p = Depth of cut

SL Milling cutters

Roughing

Article no.	Tool material	Sol. carb.	
		N	
		N	N
DIN 6527	HA	5735*	5582
DIN 6527	HB	5535*	5534*
Company std.	HA		

* With this application, optimal chip evacuation must be ensured. Slot milling only recommended > Ø 5 mm.

** In the event of excessive edge wear through vibration, the feed rate should be reduced by 30%.

RF100
54HRC

RF100



$a_e = 0,5-1,0xD$

$a_e = 0,25xD$



$a_p = 1xD$



$a_p = 2xD$

Cutter-Ø mm	Feed column no.															
	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
	f_z (mm/tooth)															
2,00	0,001	0,001	0,001	0,002	0,002	0,004	0,005	0,006	0,007	0,008	0,010	0,012	0,014	0,016	0,018	0,020
3,00	0,002	0,002	0,003	0,003	0,004	0,007	0,010	0,010	0,010	0,015	0,016	0,013	0,019	0,022	0,024	0,030
5,00	0,005	0,006	0,007	0,009	0,010	0,014	0,020	0,020	0,022	0,025	0,026	0,026	0,028	0,030	0,032	0,038
6,00	0,006	0,008	0,009	0,011	0,013	0,017	0,024	0,025	0,027	0,031	0,029	0,033	0,039	0,036	0,041	0,047
8,00	0,010	0,012	0,014	0,016	0,019	0,024	0,032	0,032	0,035	0,042	0,042	0,047	0,053	0,052	0,058	0,064
10,00	0,013	0,015	0,018	0,021	0,025	0,030	0,038	0,039	0,044	0,050	0,053	0,059	0,065	0,066	0,073	0,080
12,00	0,010	0,018	0,022	0,026	0,030	0,036	0,046	0,048	0,052	0,059	0,063	0,072	0,079	0,085	0,090	0,100
16,00	0,020	0,023	0,027	0,032	0,038	0,045	0,054	0,058	0,063	0,071	0,079	0,088	0,095	0,100	0,110	0,120
20,00	0,023	0,028	0,033	0,038	0,045	0,057	0,066	0,073	0,080	0,090	0,097	0,100	0,110	0,120	0,130	0,140
25,00	0,030	0,035	0,040	0,045	0,055	0,065	0,075	0,100	0,120	0,130	0,140	0,150	0,165	0,170	0,180	0,190

Material group	Material examples	Tensile str. N/mm ²	Hardness	V_c m/min	Feed col. no.	V_c m/min	Feed col. no.
Common structural steels	1.0035 S185, 1.0486 P275N, 1.0345 P235GH, 1.0425 P265GH	≤500		170 - 208	51	110 - 136	47
	1.0050 E295, 1.0070 E360, 1.8937 P500NH	≤1000		157 - 193	50	102 - 126	46
Free-cutting steels	1.0718 11SMnPb30, 1.0736 11SMn37	≤850		170 - 208	50	110 - 136	46
	1.0727 46 S20, 1.0728 60 S20, 1.0757 46SPb20	≤1000		126 - 154	49	81 - 101	45
Unalloyed heat-treatable steels	1.0402 C22, 1.1178 C30E	≤700		170 - 208	50	110 - 136	46
	1.0503 C45, 1.1191 C45E	≤850		151 - 185	50	98 - 120	46
	1.0601 C60, 1.1221 C60E	≤1000		126 - 154	49	81 - 101	45
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4	≤1000		151 - 185	49	98 - 120	45
	1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	≤1400		126 - 154	48	81 - 101	44
Unalloyed case hard. steels	1.0301 C10, 1.1121 C10E	≤850		189 - 231	50	123 - 151	46
Alloyed case hardened steels	1.7043 38Cr4	≤1000		151 - 185	50	98 - 120	46
	1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	≤1400		113 - 139	49	73 - 91	45
Nitriding steels	1.8504 34CrAl6	≤1000		170 - 208	50	110 - 136	46
	1.8519 31CrMoV9, 1.8550 34CrAlNi7	≤1400		151 - 185	48	98 - 120	44
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9	≤850		151 - 185	50	98 - 120	46
	1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6	≤1400		126 - 154	48	81 - 101	44
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≤1400		94 - 116	49	61 - 75	45
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4		≤350 HB	94 - 116	48		
Hardened steels	-		≤48 HRC	44 - 54	46		
	-		≤66 HRC				
Stainless steels, sulphured austenitic	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17	≤900		80 - 100	49	60 - 80	45
	1.4301 X5CrNi18-10, 1.4541 X6CrNiTi18-10	≤1100		70 - 90	48	55 - 75	44
Stainless steels, martensitic	1.4057 X20CrNi17-2, 1.4122 X39CrMo17-1	≤1500		65 - 70	49	50 - 65	45
Cast iron	0.6010 EN-GJL-100(GG10), 0.6020 EN-GJL-200(GG20)		≤240 HB	220 - 270	50	143 - 175	46
	0.6025 EN-GJL-250(GG25), 0.6035 EN-GJL-350(GG35)		≤350 HB	201 - 247	49	131 - 161	45
Spheroidal graphite iron and malleable cast iron	0.7050 EN-GJS-500-7(GGG50), 0.8035 EN-GJMW-350-4(GTW35)		≤240 HB	182 - 224	50	118 - 146	46
	0.7070 EN-GJS-700-2(GGG70), 0.8170 EN-GJMB-700-2(GTS70)		≤350 HB	157 - 193	49	102 - 126	45
Chilled cast iron	-		≤350 HB	107 - 131	47	69 - 85	43
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		56 - 70	48		
Ti and Ti-alloys	3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2	≤850		54 - 86	43	61 - 75	44
	3.7154 TiAl6Zr5, 3.7164 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5	≤1400		44 - 72	42	49 - 61	43
Aluminium and Al-alloys	3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1	≤400				300 - 380	47
Al wrought alloys	3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si	≤650				370 - 440	47
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600				150 - 185	45
	3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600				115 - 145	46
Magnesium alloys	3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5612.05 G-MgAl6Zn1	≤400				175 - 215	47
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb	≤500				80 - 100	46
Brass, short-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2	≤600				75 - 95	45
	2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5	≤600				60 - 75	45
Bronze, short-chipping	2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn	≤600				75 - 95	45
	2.0790 CuNi18Zn19Pb	≤850				55 - 70	44
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					

a_p 1,5xD = 50% a_p 0,5xD = 75%
 a_e 0,25xD = 150% a_p 2xD = 50%