CRAZYDRILL by Mikron Tool Flex STEEL

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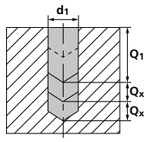
DRILLING TOOLS
CRAZYDRILL FLEX

Steel - 20 x d - uncoated

RECOMMENDATION FOR USE
● Excellent | ◐ Good | ○ Acceptable | ⊠ Not recommended

P	N	S_3
●	●	⊠
M	S_1	H_1
⊠	⊠	⊠
K	S_2	H_2
●	⊠	⊠

DRILLING WITH EXTERNAL COOLING | CUTTING DATA OVERVIEW



Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	v_c [m/min] | [SFM] Ød1 ≤ 0.4 | .016" Mid	Ød1 ≤ 0.4 | .016" High	Ød1 > 0.4 | .016" Mid	Ød1 > 0.4 | .016" High	Q_1	Q_x	f [mm/rev] | [IPR] Ød1 0.1 mm | .004" f	0.2 mm | .008" f	0.3 mm | .012" f	1/64" 0.4 mm | .016" f	0.6 mm | .024" f	1/32" 0.8 mm | .032" f	1.0–1.2 mm | .039"–.047" f
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301	C10	AISI 1010	5 | **16**	40 | **131**	40 | **131**	60 | **197**	2xd1	0.5xd1	0.002 **.00008**	0.005 **.0002**	0.010 **.0004**	0.015 **.0006**	0.030 **.0012**	0.040 **.0016**	0.060 **.0024**
		1.0401	C15	AISI 1015													
		1.1191	C45E/CK45	AISI 1045													
		1.0044	S275JR	AISI 1020													
		1.0715	11SMn30	AISI 1215													
	Low alloyed steel Rm > 900 N/mm²	1.5752	15NiCr13	ASTM 3415 / AISI 3310	5 | **16**	25 | **82**	25 | **82**	50 | **164**	2xd1	0.5xd1	0.002 **.00008**	0.003 – 0.005 **.00012 – .00020**	0.008 – 0.010 **.0003 – .0004**	0.012 – 0.015 **.0005 – .0006**	0.020 – 0.025 **.0008 – .0010**	0.035 **.0014**	0.050 **.0020**
		1.7131	16MnCr5	AISI 5115													
		1.3505	100Cr6	AISI 52100													
		1.7225	42CrMo4	AISI 4140													
		1.2842	90MnCrV8	AISI O2													
	High alloyed tool steel Rm < 1200 N/mm²	1.2379	X153CrMoV12	AISI D2	5 | **16**	20 | **66**	20 | **66**	35 | **115**	2xd1	1xd1	0.0005 **.00002**	0.004 **.00016**	0.008 **.0003**	0.010 **.0004**	0.015 **.0006**	0.025 **.0010**	0.040 **.0016**
		1.2436	X210CrW12	AISI D4/D6													
		1.3343	HS6-5-2C	AISI M2 / UNS T11302													
		1.3355	HS18-0-1	AISI T1 / UNS T12001													
M	Stainless steel ferritic	1.4016	X6Cr17	AISI 430 / UNS S43000							Recommended: CrazyDrill Flex SST-Inox 30 x d1						
		1.4105	X6CrMoS17	AISI 430F													
	Stainless steel martensitic	1.4034	X46Cr13	AISI 420C													
		1.4112	X90CrMoV18	AISI 440B													
	Stainless steel martensitic – PH	1.4542	X5CrNiCuNb 16-4	AISI 630 / ASTM 17-4 PH													
		1.4545	X5CrNiCuNb 15-5	ASTM 15-5 PH													
	Stainless steel austenitic	1.4301	X5CrNi 18-10	AISI 304													
		1.4435	X2CrNiMo 18-14-3	AISI 316L													
		1.4441	X2CrNiMo 18-15-3	AISI 316LM													
		1.4539	X1NiCrMoCu 25-20-5	AISI 904L													
K	Cast iron	0.6020	GG20	ASTM 30	5 | **16**	40 | **131**	5 | **164**	100 | **328**	2xd1	1xd1	0.002 **.00008**	0.005 **.0002**	0.010 **.0004**	0.015 **.0006**	0.020 **.0008**	0.035 **.0014**	0.050 **.0020**
		0.6030	GG30	ASTM 40B													
		0.7040	GGG40	ASTM 60-40-18			40 | **131**	80 | **262**									
		0.7060	GGG60	ASTM 80-60-03													
N	Aluminium alloy wrought	3.2315	AlMgSi1	ASTM 6351	5 | **16**	40 | **131**	60 | **197**	120 | **394**	2xd1	1xd1	0.003 **.00012**	0.015 **.0006**	0.040 **.0016**	0.050 **.0020**	0.080 **.0031**	0.100 **.0039**	0.120 **.0047**
		3.4365	AlZnMgCu1.5	ASTM 7075													
	Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380	5 | **16**	40 | **131**	50 | **164**	80 | **262**	2xd1	1xd1	0.003 **.00012**	0.015 **.0006**	0.040 **.0016**	0.050 **.0020**	0.080 **.0031**	0.100 **.0039**	0.120 **.0047**
		3.2381	GD-AlSi10Mg	UNS A03590													
	Copper	2.004	Cu-OF / CW008A	UNS C10100							Recommended: CrazyDrill Flex Titanium 30 x d1						
		2.0065	Cu-ETP / CW004A	UNS C11000													
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400							Recommended: CrazyDrill Flex SST-Inox 30 x d1						
		2.036	CuZn40 CW509L	UNS C28000													
	Brass, Bronze Rm < 400 N/mm²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	5 | **16**	40 | **131**	60 | **197**	100 | **328**	2xd1	1xd1	0.004 **.00016**	0.010 **.0004**	0.030 **.0012**	0.040 **.0016**	0.060 **.0024**	0.080 **.0031**	0.100 **.0039**
		2.102	CuSn6	UNS C51900			40 | **131**	60 | **197**									
	Bronze Rm < 600 N/mm²	2.0966	CuAl10Ni5Fe4	UNS C63000	5 | **16**	20 | **66**	20 | **66**	40 | **131**	2xd1	0.5xd1	0.002 **.00008**	0.004 **.00016**	0.006 **.00024**	0.010 **.0004**	0.015 **.0006**	0.025 **.0010**	0.040 **.0016**
		2.096	CuAl9Mn2	UNS C63200													
S_1	Super alloys	2.4856		Inconel 625							Recommended: CrazyDrill Flex SST-Inox 30 x d1						
		2.4668		Inconel 718													
		2.4617	NiMo28	Hastelloy B-2													
		2.4665	NiCr22Fe18Mo	Hastelloy X													
S_2	Titanium pure	3.7035	Gr.2	ASTM B348 / F67							Recommended: CrazyDrill Flex Titanium 30 x d1						
		3.7065	Gr.4	ASTM B348 / F68													
	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136							Recommended: CrazyDrill Flex Titanium 30 x d1						
		9.9367	TiAl6Nb7	ASTM F1295													
S_3	CrCo alloys	2.4964	CoCr20W15Ni	Haynes 25							Recommended: CrazyDrill Flex SST-Inox 30 x d1						
			CrCoMo28	ASTM F1537													
H_1	Hardened steel < 55 HRC	1.2510	100MnCrMoW4	AISI O1													
H_2	Hardened steel ≥ 55 HRC	1.2379	X153CrMoV12	AISI D2													