

**CARBIDE, 2 FLUTE DRILL MILLS**

- **VOLLHARTMETALL, 2 SCHNEIDEN BOHRNUTEN FRÄSER**
- **Fraise foret carbure, 2 dents, multi-fonctions**
- **2 TAGLIENTI, FRESA IN MD A 90°**



CARBIDE
YG STD
2
30°
DIN 6535HA
TiAIN
p.C580-582

	Flat Shank	Page	Plain Shank	Page
⊙	END MILL HOLDER	D118 - 137	HYDRAULIC CHUCK POWER MILLING CHUCK	D15 - 46 D161 - 176
⊙	-	-	SHRINK FIT HOLDER	D47 - 72
○	-	-	ER COLLET CHUCK SK SLIM CHUCK	D73 - 118 D183 - 201

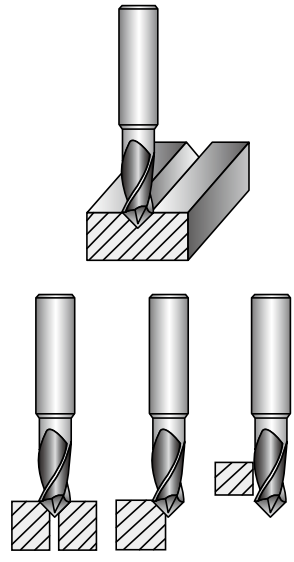
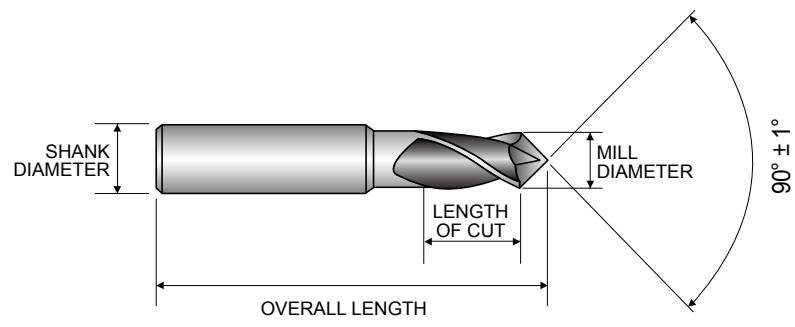
Recommended ToolHolder

Unit : mm

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
G9400030	3.0	4	6	50
G9400040	4.0	5	8	50
G9400050	5.0	6	10	50
G9400060	6.0	8	12	60
G9400080	8.0	10	16	70
G9400100	10.0	12	18	70
G9400120	12.0	12	20	70
G9400140	14.0	14	24	80
G9400160	16.0	16	26	80
G9400200	20.0	20	32	100

▶TiN, TiCN and TiAIN Coatings are available on your request.

- Performs many drilling and milling operations that are not presently done with the standard end mill.
- Among the many vertical milling machine operations, applications for the Drill Mill are: Drilling, Slotting, NC Milling, Drilling & Slotting, Profile Milling and Chamfering.



Mill Dia. Tolerance(mm)	Shank Dia. Tolerance
Ø3 ~ Ø10=h9	h5
Ø12 ~ Ø20=d9	

⊙ : Excellent ○ : Good

ISO Material Description	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommend	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○	
ISO Material Description	N										S							H			
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○	○	○	○	○																

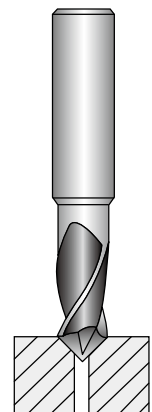
**G9400** SERIES

**2 FLUTE DRILL MILLS - CHAMFERING**

Vc = m/min.  
fz = mm/tooth  
RPM = rev./min.  
FEED = mm/min.

ISO	VDI 3323	Material Description	Parameter	Mill Diameter (Ø)									
				3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0	
P	1-2	Non-alloy steel	Vc	60	65	65	60	60	65	70	70	85	
			fz	0.025	0.031	0.04	0.052	0.071	0.083	0.1	0.125	0.137	
			RPM	6366	5173	4138	3183	2387	2069	1857	1393	1353	
	FEED		318	321	331	331	339	343	371	348	371		
	3-4		Vc	45	55	55	55	55	55	60	65	65	
			fz	0.023	0.027	0.036	0.043	0.058	0.073	0.091	0.105	0.14	
		RPM	4775	4377	3501	2918	2188	1751	1592	1293	1035		
	5	Vc	40	45	45	40	40	50	50	50	55		
		fz	0.023	0.028	0.035	0.044	0.06	0.066	0.083	0.115	0.134		
		RPM	4244	3581	2865	2122	1592	1592	1326	995	875		
	6	Vc	60	65	65	60	60	65	70	70	85		
		fz	0.025	0.031	0.04	0.052	0.071	0.083	0.1	0.125	0.137		
RPM		6366	5173	4138	3183	2387	2069	1857	1393	1353			
7	Vc	45	55	55	55	55	55	60	65	65			
	fz	0.023	0.027	0.036	0.043	0.058	0.073	0.091	0.105	0.14			
	RPM	4775	4377	3501	2918	2188	1751	1592	1293	1035			
8-9	Vc	40	45	45	40	40	50	50	50	55			
	fz	0.023	0.028	0.035	0.044	0.06	0.066	0.083	0.115	0.134			
	RPM	4244	3581	2865	2122	1592	1592	1326	995	875			
10	Vc	60	65	65	60	60	65	70	70	85			
	fz	0.025	0.031	0.04	0.052	0.071	0.083	0.1	0.125	0.137			
	RPM	6366	5173	4138	3183	2387	2069	1857	1393	1353			
11.1	Vc	40	45	45	40	40	50	50	50	55			
	fz	0.023	0.028	0.035	0.044	0.06	0.066	0.083	0.115	0.134			
	RPM	4244	3581	2865	2122	1592	1592	1326	995	875			
M	14.1	Stainless steel	Vc	30	35	40	35	35	40	40	40	45	
			fz	0.021	0.025	0.029	0.037	0.055	0.064	0.078	0.11	0.122	
			RPM	3183	2785	2546	1857	1393	1273	1061	796	716	
N	21~22	Aluminum-wrought alloy	Vc	145	160	150	150	155	175	185	195	195	
			fz	0.025	0.032	0.045	0.057	0.075	0.085	0.1	0.134	0.175	
			RPM	15385	12732	9549	7958	6167	5570	4907	3879	3104	
N	23~25	Aluminum-cast, alloyed	Vc	145	160	150	150	155	175	185	195	195	
			fz	0.025	0.032	0.045	0.057	0.075	0.085	0.1	0.134	0.175	
			RPM	15385	12732	9549	7958	6167	5570	4907	3879	3104	

※ The FEED, in long & extra long types, should be reduced by around 50%

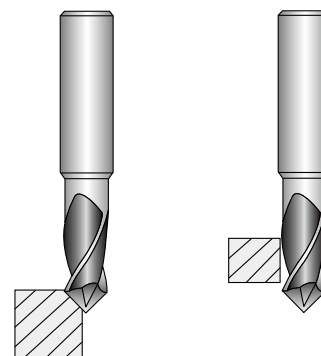


**G9400 SERIES**
**2 FLUTE DRILL MILLS - CHAMFERING & SIDE CUTTING**

Vc = m/min.  
fz = mm/tooth  
RPM = rev./min.  
FEED = mm/min.

ISO	VDI 3323	Material Description	Parameter	Mill Diameter (Ø)										
				3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0		
<b>P</b>	1-2	Non-alloy steel	Vc	80	85	85	80	80	90	95	90	95		
			fz	0.008	0.01	0.013	0.018	0.025	0.03	0.037	0.054	0.063		
			RPM	8488	6764	5411	4244	3183	2865	2520	1790	1512		
			FEED	136	135	141	153	159	172	186	193	191		
			3-4	Vc	50	55	55	55	55	55	60	65	60	
				fz	0.008	0.01	0.013	0.018	0.024	0.03	0.041	0.05	0.064	
				RPM	5305	4377	3501	2918	2188	1751	1592	1293	955	
				FEED	85	88	91	105	105	105	131	129	122	
			5	Vc	45	50	50	50	45	55	55	55	55	
				fz	0.008	0.009	0.012	0.017	0.025	0.027	0.036	0.046	0.06	
				RPM	4775	3979	3183	2653	1790	1751	1459	1094	875	
				FEED	76	72	76	90	90	95	105	101	105	
	6	Low alloy steel	Vc	80	85	85	80	80	90	95	90	95		
			fz	0.008	0.01	0.013	0.018	0.025	0.03	0.037	0.054	0.063		
			RPM	8488	6764	5411	4244	3183	2865	2520	1790	1512		
			FEED	136	135	141	153	159	172	186	193	191		
			7	Vc	50	55	55	55	55	55	60	65	60	
				fz	0.008	0.01	0.013	0.018	0.024	0.03	0.041	0.05	0.064	
				RPM	5305	4377	3501	2918	2188	1751	1592	1293	955	
				FEED	85	88	91	105	105	105	131	129	122	
			8-9	Vc	45	50	50	50	45	55	55	55	55	
				fz	0.008	0.009	0.012	0.017	0.025	0.027	0.036	0.046	0.06	
				RPM	4775	3979	3183	2653	1790	1751	1459	1094	875	
				FEED	76	72	76	90	90	95	105	101	105	
	10	High alloyed steel, and tool steel	Vc	80	85	85	80	80	90	95	90	95		
			fz	0.008	0.01	0.013	0.018	0.025	0.03	0.037	0.054	0.063		
			RPM	8488	6764	5411	4244	3183	2865	2520	1790	1512		
			FEED	136	135	141	153	159	172	186	193	191		
11.1			Vc	45	50	50	50	45	55	55	55	55		
			fz	0.008	0.009	0.012	0.017	0.025	0.027	0.036	0.046	0.06		
			RPM	4775	3979	3183	2653	1790	1751	1459	1094	875		
			FEED	76	72	76	90	90	95	105	101	105		
<b>M</b>			14.1	Stainless steel	Vc	30	35	40	35	40	45	45	45	40
					fz	0.008	0.01	0.013	0.018	0.024	0.027	0.036	0.046	0.069
					RPM	3183	2785	2546	1857	1592	1432	1194	895	637
					FEED	51	56	66	67	76	77	86	82	88
<b>N</b>	21~22	Aluminum-wrought alloy	Vc	185	210	210	205	205	225	230	230	230		
			fz	0.008	0.01	0.013	0.019	0.03	0.037	0.045	0.05	0.064		
			RPM	19629	16711	13369	10876	8157	7162	6101	4576	3661		
			FEED	314	334	348	413	489	530	549	458	469		
	23~25	Aluminum-cast, alloyed	Vc	185	210	210	205	205	225	230	230	230		
			fz	0.008	0.01	0.013	0.019	0.03	0.037	0.045	0.05	0.064		
			RPM	19629	16711	13369	10876	8157	7162	6101	4576	3661		
			FEED	314	334	348	413	489	530	549	458	469		
	<b>S</b>	36-37	Titanium Alloys	Vc	30	35	40	35	40	45	45	45	40	
				fz	0.008	0.01	0.013	0.018	0.024	0.027	0.036	0.046	0.069	
				RPM	3183	2785	2546	1857	1592	1432	1194	895	637	
				FEED	51	56	66	67	76	77	86	82	88	

※ The FEED, in long & extra long types, should be reduced by around 50%



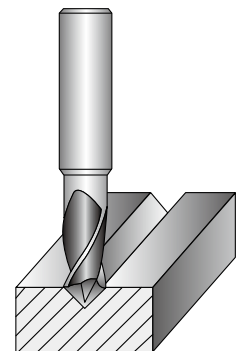
**G9400** SERIES

**2 FLUTE DRILL MILLS - V-GROOVING**

Vc = m/min.  
fz = mm/tooth  
RPM = rev./min.  
FEED = mm/min.

ISO	VDI 3323	Material Description	Parameter	Mill Diameter (Ø)									
				3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0	
P	1-2	Non-alloy steel	Vc	80	85	85	80	80	90	95	100	95	
			fz	0.005	0.006	0.008	0.01	0.014	0.016	0.018	0.023	0.029	
			RPM	8488	6764	5411	4244	3183	2865	2520	1989	1512	
	FEED		85	81	87	85	89	92	91	92	88		
	3-4		Non-alloy steel	Vc	55	60	55	55	55	55	55	65	60
				fz	0.004	0.004	0.006	0.007	0.012	0.014	0.02	0.022	0.028
		RPM		5836	4775	3501	2918	2188	1751	1459	1293	955	
	FEED	47		38	42	41	53	49	58	57	53		
	5	Non-alloy steel		Vc	45	50	50	50	45	55	55	55	55
				fz	0.004	0.004	0.006	0.008	0.014	0.015	0.018	0.023	0.03
			RPM	4775	3979	3183	2653	1790	1751	1459	1094	875	
	FEED		38	32	38	42	50	53	53	50	53		
6	Low alloy steel		Vc	80	85	85	80	80	90	95	100	95	
			fz	0.005	0.006	0.008	0.01	0.014	0.016	0.018	0.023	0.029	
		RPM	8488	6764	5411	4244	3183	2865	2520	1989	1512		
FEED		85	81	87	85	89	92	91	92	88			
7		Low alloy steel	Vc	55	60	55	55	55	55	55	65	60	
			fz	0.004	0.004	0.006	0.007	0.012	0.014	0.02	0.022	0.028	
	RPM		5836	4775	3501	2918	2188	1751	1459	1293	955		
FEED	47		38	42	41	53	49	58	57	53			
8-9	Low alloy steel		Vc	45	50	50	50	45	55	55	55	55	
			fz	0.004	0.004	0.006	0.008	0.014	0.015	0.018	0.023	0.03	
		RPM	4775	3979	3183	2653	1790	1751	1459	1094	875		
FEED		38	32	38	42	50	53	53	50	53			
10		High alloyed steel, and tool steel	Vc	80	85	85	80	80	90	95	100	95	
			fz	0.005	0.006	0.008	0.01	0.014	0.016	0.018	0.023	0.029	
	RPM		8488	6764	5411	4244	3183	2865	2520	1989	1512		
FEED	85		81	87	85	89	92	91	92	88			
11.1	High alloyed steel, and tool steel		Vc	45	50	50	50	45	55	55	55	55	
			fz	0.004	0.004	0.006	0.008	0.014	0.015	0.018	0.023	0.03	
		RPM	4775	3979	3183	2653	1790	1751	1459	1094	875		
FEED		38	32	38	42	50	53	53	50	53			
M		14.1	Stainless steel	Vc	30	35	40	35	40	45	45	45	40
				fz	0.004	0.005	0.006	0.008	0.01	0.011	0.013	0.019	0.028
	RPM			3183	2785	2546	1857	1592	1432	1194	895	637	
	FEED			25	28	31	30	32	32	31	34	36	
N	21~22	Aluminum-wrought alloy	Vc	185	210	210	205	205	220	230	230	230	
			fz	0.008	0.01	0.013	0.016	0.022	0.026	0.03	0.041	0.052	
			RPM	19629	16711	13369	10876	8157	7003	6101	4576	3661	
	23~25	Aluminum-cast, alloyed	Vc	185	210	210	205	205	220	230	230	230	
			fz	0.008	0.01	0.013	0.016	0.022	0.026	0.03	0.041	0.052	
			RPM	19629	16711	13369	10876	8157	7003	6101	4576	3661	
S	36-37	Titanium Alloys	Vc	30	35	40	35	40	45	45	45	40	
			fz	0.004	0.005	0.006	0.008	0.01	0.011	0.013	0.019	0.028	
			RPM	3183	2785	2546	1857	1592	1432	1194	895	637	
			FEED	25	28	31	30	32	32	31	34	36	

※ The FEED, in long & extra long types, should be reduced by around 50%



SELECTION GUIDE

HSS

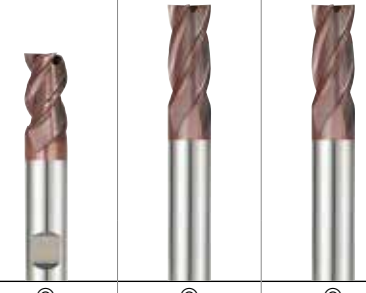


SERIES	G9G49	G9432	G9G50
FLUTE	3	4	4
HELIX ANGLE	45°	30°	30°
CUTTING EDGE SHAPE	SQUARE	SQUARE	SQUARE
SIZE MIN	D3.0	D1.0	D3.0
SIZE MAX	D20.0	D20.0	D20.0
PAGE	C551	C552	C553

**SOLID CARBIDE**  
**K-2**  
**END MILLS**

General Purpose with Coating  
Conventional or High Speed Milling, Wet or Dry Cutting

LONG LENGTH with CHAMFER	SHORT LENGTH	SHORT LENGTH with CHAMFER
TiAIN	TiAIN	TiAIN



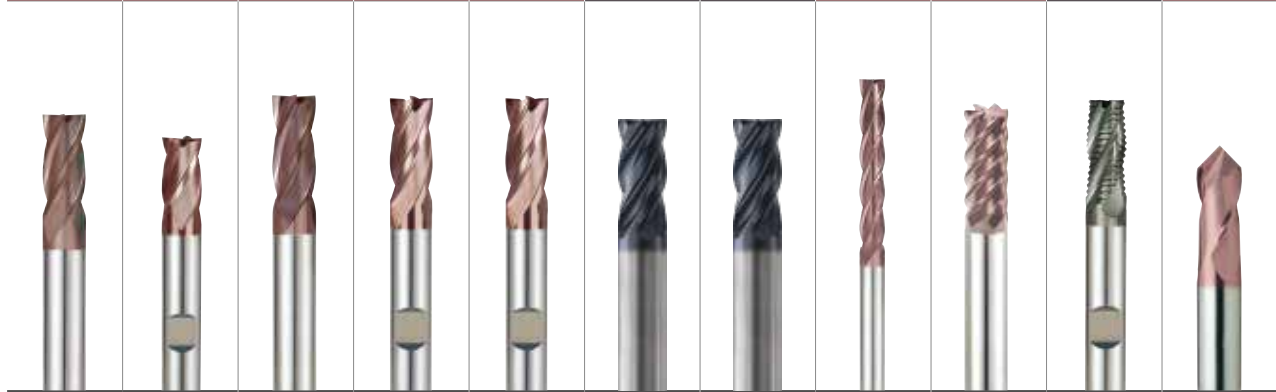
Please visit [globalyg1.com/mat](http://globalyg1.com/mat) for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : p. C565

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc			
P	1	Non-alloy steel	About 0.15% C Annealed	125		◎	◎	◎
	2		About 0.45% C Annealed	190	13	◎	◎	◎
	3		About 0.45% C Quenched & Tempered	250	25	◎	◎	◎
	4		About 0.75% C Annealed	270	28	◎	◎	◎
	5		About 0.75% C Quenched & Tempered	300	32	◎	◎	◎
	6	Low alloy steel	Annealed	180	10	◎	◎	◎
	7		Quenched & Tempered	275	29	◎	◎	◎
	8		Quenched & Tempered	300	32	◎	◎	◎
	9		Quenched & Tempered	350	38	◎	◎	◎
	10		High alloyed steel, and tool steel	Annealed	200	15	◎	◎
	11	Quenched & Tempered		325	35	◎	◎	◎
M	12	Stainless steel	Ferritic / Martensitic Annealed	200	15	○	○	○
	13		Martensitic Quenched & Tempered	240	23	○	○	○
	14		Austenitic	180	10	○	○	○
K	15	Grey cast iron	Pearlitic / ferritic	180	10	○	○	○
	16		Pearlitic (Martensitic)	260	26	○	○	○
	17	Nodular cast iron	Ferritic	160	3	○	○	○
	18		Pearlitic	250	25	○	○	○
	19	Malleable cast iron	Ferritic	130		○	○	○
	20		Pearlitic	230	21	○	○	○
N	21	Aluminum-wrought alloy	Not Curable	60		○	○	○
	22		Curable Hardened	100		○	○	○
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable	75		○	○	○
	24		≤ 12% Si, Curable Hardened	90		○	○	○
	25		> 12% Si, Not Curable	130		○	○	○
	26	Copper and Copper Alloys	Cutting Alloys, PB>1%	110		○	○	○
	27		CuZn, CuSnZn (Brass)	90		○	○	○
	28	Non Metallic Materials	CuSn, lead-free copper and electrolytic copper	100		○	○	○
	29		Duroplastic, Fiber Reinforced Plastic			○	○	○
	30	Rubber, Wood, etc.				○	○	○
S	31	Heat Resistant Super Alloys	Fe Based Annealed	200	15	○	○	○
	32		Cured	280	30	○	○	○
	33		Annealed	250	25	○	○	○
	34		Ni or Co Based Cured	350	38	○	○	○
	35		Cast	320	34	○	○	○
	36	Titanium Alloys	Pure Titanium	400 Rm		○	○	○
	37		Alpha + Beta Alloys Hardened	1050 Rm		○	○	○
H	38	Hardened steel	Hardened	550	55			
	39		Hardened	630	60			
	40	Chilled Cast Iron	Cast	400	42	○	○	○
	41	Hardened Cast Iron	Hardened	550	55			

G9A69	G9448	G9540	G9449	G9G51	G9H73 G9H74	G9H75 G9H76	G9453	G9F45 G9F46	G9A42	G9400
4	4	4	4	4	4	4	4	4&6	Multi Flute	2
30°	≈ 30°	≈ 30°	≈ 30°	≈ 30°	Multiple Helix	Multiple Helix	30°	45°	30°	30°
SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	ROUGHING	DRILL MILL
D1.0	D2.0	D3.5	D2.0	D3.0	D3.0	D3.0	D3.0	D3.0	D6.0	D3.0
D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	D25.0	D20.0
<b>C554</b>	<b>C555</b>	<b>C556</b>	<b>C557</b>	<b>C558</b>	<b>C559</b>	<b>C560</b>	<b>C561</b>	<b>C562</b>	<b>C563</b>	<b>C564</b>
SHORT LENGTH	SHORT LENGTH	LONG LENGTH	LONG LENGTH	LONG LENGTH with CHAMFER	SHORT LENGTH	LONG LENGTH	EXTRA LONG LENGTH	SHORT LENGTH LONG LENGTH	LONG LENGTH	-
TiAIN	TiAIN	TiAIN	TiAIN	TiAIN	X-Coating	X-Coating	TiAIN	TiAIN	X-Coating	TiAIN



○	○	○	○	○	○	○	○	○	○	○	1
○	○	○	○	○	○	○	○	○	○	○	2
○	○	○	○	○	○	○	○	○	○	○	3
○	○	○	○	○	○	○	○	○	○	○	4
○	○	○	○	○	○	○	○	○	○	○	5
○	○	○	○	○	○	○	○	○	○	○	6 P
○	○	○	○	○	○	○	○	○	○	○	7
○	○	○	○	○	○	○	○	○	○	○	8
○	○	○	○	○	○	○	○	○	○	○	9
○	○	○	○	○	○	○	○	○	○	○	10
○	○	○	○	○	○	○	○	○	○	○	11
○	○	○	○	○	○	○	○	○	○	○	12
○	○	○	○	○	○	○	○	○	○	○	13 M
○	○	○	○	○	○	○	○	○	○	○	14
○	○	○	○	○	○	○	○	○	○	○	15
○	○	○	○	○	○	○	○	○	○	○	16
○	○	○	○	○	○	○	○	○	○	○	17 K
○	○	○	○	○	○	○	○	○	○	○	18
○	○	○	○	○	○	○	○	○	○	○	19
○	○	○	○	○	○	○	○	○	○	○	20
○	○	○	○	○	○	○	○	○	○	○	21
○	○	○	○	○	○	○	○	○	○	○	22
○	○	○	○	○	○	○	○	○	○	○	23
○	○	○	○	○	○	○	○	○	○	○	24
○	○	○	○	○	○	○	○	○	○	○	25 N
○	○	○	○	○	○	○	○	○	○	○	26
○	○	○	○	○	○	○	○	○	○	○	27
○	○	○	○	○	○	○	○	○	○	○	28
○	○	○	○	○	○	○	○	○	○	○	29
○	○	○	○	○	○	○	○	○	○	○	30
○	○	○	○	○	○	○	○	○	○	○	31
○	○	○	○	○	○	○	○	○	○	○	32
○	○	○	○	○	○	○	○	○	○	○	33
○	○	○	○	○	○	○	○	○	○	○	34 S
○	○	○	○	○	○	○	○	○	○	○	35
○	○	○	○	○	○	○	○	○	○	○	36
○	○	○	○	○	○	○	○	○	○	○	37
○	○	○	○	○	○	○	○	○	○	○	38
○	○	○	○	○	○	○	○	○	○	○	39 H
○	○	○	○	○	○	○	○	○	○	○	40
○	○	○	○	○	○	○	○	○	○	○	41

HSS

CBN  
END MILLS

i-Xmill  
END MILLS

i-SMART  
MODULAR  
END MILLS

X5070  
END MILLS

4G MILL  
END MILLS

X-POWER  
PRO  
END MILLS

TitaNox-  
POWER  
END MILLS

JET-POWER  
END MILLS

V7 PLUS  
END MILLS

ALU-POWER  
HPC  
END MILLS

ALU-  
POWER  
END MILLS

D-POWER  
GRAPHITE  
END MILLS

CRX S  
END MILLS

K-2  
END MILLS

ONLY ONE  
COATED PM60  
END MILLS

TANK-  
POWER  
END MILLS

GENERAL  
HSS  
END MILLS

MILLING  
CUTTERS

TECHNICAL  
DATA