YG K-2 END MILLS

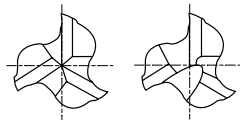
FLAT SHANK **G9410 SERIES**
PLAIN SHANK **G9553 SERIES**

CARBIDE, 3 FLUTE SHORT LENGTH THROW AWAY

VOLLHARTMETALL, 3 SCHNEIDEN KURZ EINWEGFRÄSER
Fraise carbure, 3 dents, à jeter, courte
3 TAGLIENTI, SERIE EXTRA CORTA

- Suitable for dry milling applications at high temperatures.
- Excellent high-performance end mills.
- 3 flute design possesses the advantage of 2 flute and 4 flute end mill.

- Für die Trockenbearbeitung.
- Hervorragendes Preis - Leistungsverhältnis.
- 3 Schneiden verbinden die Vorteile von 2 - und 4 - schneidigen Schaftfräsern.



CARBIDE | 3 | 30° | PLAIN | FLAT

P.606-607

Unit : mm

EDP No. PLAIN	EDP No. FLAT	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
G9553005	-	0.5	3	1.5	38
G9553006	-	0.6	3	1.5	38
G9553008	-	0.8	3	2	38
G9553010	-	1.0	3	2	38
G9553012	-	1.2	3	2	38
G9553015	-	1.5	3	2	38
G9553018	-	1.8	3	2	38
-	G9410020	2.0	6	4	35
-	G9410025	2.5	6	5	36
-	G9410030	3.0	6	5	36
-	G9410035	3.5	6	6	37
-	G9410040	4.0	6	7	38
-	G9410045	4.5	6	8	38
-	G9410050	5.0	6	8	39
-	G9410055	5.5	6	8	39
-	G9410957	5.8	6	8	39
-	G9410060	6.0	6	8	39
-	G9410967	6.8	8	10	42
-	G9410070	7.0	8	10	42
-	G9410977	7.8	8	10	42
-	G9410080	8.0	8	11	43
-	G9410087	8.7	10	11	48
-	G9410090	9.0	10	11	48
-	G9410097	9.7	10	11	48

▶ NEXT PAGE

Mill Dia. Tolerance(mm)	Shank Dia. Tolerance
0 ~ - 0.03	h5

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	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	N										S							H			
Material Description	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	○	○	○	○	○	○	○	○	○		○	○	○	○	○	○	○			○	

K-2 END MILLS

FLAT SHANK **G9410** SERIES
PLAIN SHANK **G9553** SERIES

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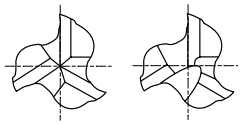


under Ø2mm from Ø2mm

CARBIDE | 3 | 30° | PLAIN | FLAT

P.606-607

Unit : mm

EDP No. PLAIN	EDP No. FLAT	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
-	G9410100	10.0	10	13	50
-	G9410120	12.0	12	15	55
-	G9410140	14.0	14	15	58
-	G9410160	16.0	16	18	62
-	G9410180	18.0	18	20	70
-	G9410200	20.0	20	22	75

Mill Dia. Tolerance(mm)	Shank Dia. Tolerance
0 ~ - 0.03	h5

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	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	N										S							H			
Material Description	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	○	○	○	○	○	○	○	○	○		○	○	○	○	○	○	○			○	

K-2 END MILLS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

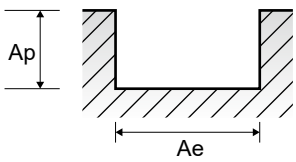
G9553, G9G46, G9410, G9425, G9G47, G9439 G9528, G9433, G9G48, G9447, G9G49 SERIES

3 FLUTE - SLOTTING

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

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Mill Diameter (Ø) 1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	20.0
P	1-4	Non-alloy steel	1.0D	0.5D (Up to Ø3 : 0.2D)	Vc	45	60	50	55	65	70	70	70	70	70	75	75	70
					fz	0.002	0.003	0.005	0.007	0.012	0.015	0.018	0.027	0.03	0.031	0.029	0.029	0.029
					RPM	14324	12732	7958	5836	5173	4456	3714	2785	2228	1857	1705	1492	1114
					FEED	86	115	119	123	186	201	201	226	201	173	148	130	97
	5		1.0D	0.5D (Up to Ø3 : 0.2D)	Vc	25	25	30	35	40	40	45	45	40	45	45	50	45
					fz	0.002	0.004	0.005	0.007	0.012	0.014	0.02	0.024	0.023	0.022	0.022	0.023	0.024
					RPM	7958	5305	4775	3714	3183	2546	2387	1790	1273	1194	1023	995	716
					FEED	48	64	72	78	115	107	143	129	88	79	68	69	52
	6-7	Low alloy steel	1.0D	0.5D (Up to Ø3 : 0.2D)	Vc	45	60	50	55	65	70	70	70	70	70	75	75	70
					fz	0.002	0.003	0.005	0.007	0.012	0.015	0.018	0.027	0.03	0.031	0.029	0.029	0.029
					RPM	14324	12732	7958	5836	5173	4456	3714	2785	2228	1857	1705	1492	1114
					FEED	86	115	119	123	186	201	201	226	201	173	148	130	97
	8-9		1.0D	0.5D (Up to Ø3 : 0.2D)	Vc	25	25	30	35	40	40	45	45	40	45	45	50	45
					fz	0.002	0.004	0.005	0.007	0.012	0.014	0.02	0.024	0.023	0.022	0.022	0.023	0.024
					RPM	7958	5305	4775	3714	3183	2546	2387	1790	1273	1194	1023	995	716
					FEED	48	64	72	78	115	107	143	129	88	79	68	69	52
	10	High alloyed steel, and tool steel	1.0D	0.5D (Up to Ø3 : 0.2D)	Vc	45	60	50	55	65	70	70	70	70	70	75	75	70
					fz	0.002	0.003	0.005	0.007	0.012	0.015	0.018	0.027	0.03	0.031	0.029	0.029	0.029
					RPM	14324	12732	7958	5836	5173	4456	3714	2785	2228	1857	1705	1492	1114
					FEED	86	115	119	123	186	201	201	226	201	173	148	130	97
	11.1 - 11.2		1.0D	0.5D (Up to Ø3 : 0.2D)	Vc	25	25	30	35	40	40	45	45	40	45	45	50	45
					fz	0.002	0.004	0.005	0.007	0.012	0.014	0.02	0.024	0.023	0.022	0.022	0.023	0.024
					RPM	7958	5305	4775	3714	3183	2546	2387	1790	1273	1194	1023	995	716
					FEED	48	64	72	78	115	107	143	129	88	79	68	69	52
M	14.1	Stainless steel	1.0D	0.5D (Up to Ø3 : 0.2D)	Vc	20	25	25	30	35	35	35	35	35	35	35	35	35
					fz	0.002	0.003	0.004	0.007	0.011	0.015	0.019	0.025	0.028	0.026	0.027	0.031	0.03
					RPM	6366	5305	3979	3183	2785	2228	1857	1393	1114	928	796	696	557
					FEED	38	48	48	67	92	100	106	104	94	72	64	65	50
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	1.0D	1.0D	Vc	60	55	60	55	60	55	55	55	60	55	55	55	55
					fz	0.003	0.005	0.007	0.011	0.013	0.018	0.026	0.036	0.046	0.063	0.073	0.086	0.115
					RPM	19099	11671	9549	5836	4775	3501	2918	2188	1910	1459	1251	1094	875
					FEED	172	175	201	193	186	189	228	236	264	276	274	282	302
N	21~22	Aluminum-wrought alloy	1.0D	1.0D	Vc	140	130	140	145	140	145	145	145	145	140	145	145	140
					fz	0.002	0.004	0.006	0.009	0.013	0.015	0.019	0.026	0.032	0.038	0.043	0.05	0.065
					RPM	44563	27587	22282	15385	11141	9231	7692	5769	4615	3714	3297	2885	2228
					FEED	267	331	401	415	434	415	438	450	443	423	425	433	434
	23~25	Aluminum-cast, alloyed	1.0D	1.0D	Vc	140	130	140	145	140	145	145	145	145	140	145	145	140
					fz	0.002	0.004	0.006	0.009	0.013	0.015	0.019	0.026	0.032	0.038	0.043	0.05	0.065
					RPM	44563	27587	22282	15385	11141	9231	7692	5769	4615	3714	3297	2885	2228
					FEED	267	331	401	415	434	415	438	450	443	423	425	433	434
	26-28	Copper and Copper Alloys (Bronze / Brass)	1.0D	1.0D	Vc	80	95	105	105	110	105	105	110	105	105	105	110	105
					fz	0.002	0.004	0.006	0.009	0.012	0.015	0.02	0.025	0.032	0.039	0.046	0.05	0.065
					RPM	25465	20160	16711	11141	8754	6685	5570	4377	3342	2785	2387	2188	1671
					FEED	153	242	301	301	315	301	334	328	321	326	329	328	326
	29.1	Non Metallic Materials	1.0D	1.0D	Vc	80	95	105	105	110	105	105	110	105	105	105	110	105
					fz	0.002	0.004	0.006	0.009	0.012	0.015	0.02	0.025	0.032	0.039	0.046	0.05	0.065
					RPM	25465	20160	16711	11141	8754	6685	5570	4377	3342	2785	2387	2188	1671
					FEED	153	242	301	301	315	301	334	328	321	326	329	328	326
H	40	Chilled Cast Iron	1.0D	0.5D (Up to Ø3 : 0.2D)	Vc	25	25	30	35	40	40	45	45	40	45	45	50	45
					fz	0.002	0.004	0.005	0.007	0.012	0.014	0.02	0.024	0.023	0.022	0.022	0.023	0.024
					RPM	7958	5305	4775	3714	3183	2546	2387	1790	1273	1194	1023	995	716
					FEED	48	64	72	78	115	107	143	129	88	79	68	69	52

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



RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

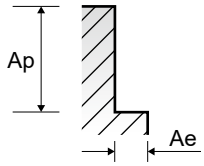
G9553, G9G46, G9410, G9425, G9G47, G9439 G9528, G9433, G9G48, G9447, G9G49 SERIES

3 FLUTE - SIDE CUTTING

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

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Mill Diameter (Ø) 1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	20.0
P	1-4	Non-alloy steel	0.1D	1.0D	Vc	55	55	60	70	80	85	90	90	85	90	90	95	90
					fz	0.002	0.005	0.006	0.009	0.019	0.024	0.03	0.042	0.047	0.047	0.047	0.048	0.047
					RPM	17507	11671	9549	7427	6366	5411	4775	3581	2706	2387	2046	1890	1432
					FEED	105	175	172	201	363	390	430	451	381	337	289	272	202
	5		0.1D	1.0D	Vc	30	35	40	45	50	50	55	55	55	55	55	60	55
					fz	0.002	0.004	0.006	0.009	0.019	0.024	0.031	0.038	0.038	0.037	0.037	0.038	0.037
					RPM	9549	7427	6366	4775	3979	3183	2918	2188	1751	1459	1251	1194	875
					FEED	57	89	115	129	227	229	271	249	200	162	139	136	97
	6-7	Low alloy steel	0.1D	1.0D	Vc	55	55	60	70	80	85	90	90	85	90	90	95	90
					fz	0.002	0.005	0.006	0.009	0.019	0.024	0.03	0.042	0.047	0.047	0.047	0.048	0.047
					RPM	17507	11671	9549	7427	6366	5411	4775	3581	2706	2387	2046	1890	1432
					FEED	105	175	172	201	363	390	430	451	381	337	289	272	202
	8-9		0.1D	1.0D	Vc	30	35	40	45	50	50	55	55	55	55	55	60	55
					fz	0.002	0.004	0.006	0.009	0.019	0.024	0.031	0.038	0.038	0.037	0.037	0.038	0.037
					RPM	9549	7427	6366	4775	3979	3183	2918	2188	1751	1459	1251	1194	875
					FEED	57	89	115	129	227	229	271	249	200	162	139	136	97
	10	High alloyed steel, and tool steel	0.1D	1.0D	Vc	55	55	60	70	80	85	90	90	85	90	90	95	90
					fz	0.002	0.005	0.006	0.009	0.019	0.024	0.03	0.042	0.047	0.047	0.047	0.048	0.047
					RPM	17507	11671	9549	7427	6366	5411	4775	3581	2706	2387	2046	1890	1432
					FEED	105	175	172	201	363	390	430	451	381	337	289	272	202
	11.1 - 11.2		0.1D	1.0D	Vc	30	35	40	45	50	50	55	55	55	55	55	60	55
					fz	0.002	0.004	0.006	0.009	0.019	0.024	0.031	0.038	0.038	0.037	0.037	0.038	0.037
					RPM	9549	7427	6366	4775	3979	3183	2918	2188	1751	1459	1251	1194	875
					FEED	57	89	115	129	227	229	271	249	200	162	139	136	97
M	14.1	Stainless steel	0.1D	1.0D	Vc	25	35	35	35	40	40	45	45	45	45	45	45	45
					fz	0.002	0.004	0.006	0.009	0.018	0.024	0.03	0.042	0.045	0.045	0.044	0.048	0.048
					RPM	7958	7427	5570	3714	3183	2546	2387	1790	1432	1194	1023	895	716
					FEED	48	89	100	100	172	183	215	226	193	161	135	129	103
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.1D	1.5D	Vc	60	55	60	55	60	55	55	55	60	55	55	55	55
					fz	0.008	0.013	0.017	0.026	0.035	0.044	0.064	0.093	0.115	0.154	0.181	0.22	0.285
					RPM	19099	11671	9549	5836	4775	3501	2918	2188	1910	1459	1251	1094	875
					FEED	458	455	487	455	501	462	560	611	659	674	679	722	748
N	21~22	Aluminum-wrought alloy	0.1D	1.5D	Vc	140	130	140	145	140	145	145	145	145	140	145	145	140
					fz	0.006	0.01	0.016	0.021	0.031	0.037	0.048	0.064	0.08	0.098	0.111	0.129	0.167
					RPM	44563	27587	22282	15385	11141	9231	7692	5769	4615	3714	3297	2885	2228
					FEED	802	828	1070	969	1036	1025	1108	1108	1108	1092	1098	1116	1116
	23~25	Aluminum-cast, alloyed	0.1D	1.5D	Vc	140	130	140	145	140	145	145	145	145	140	145	145	140
					fz	0.006	0.01	0.016	0.021	0.031	0.037	0.048	0.064	0.08	0.098	0.111	0.129	0.167
					RPM	44563	27587	22282	15385	11141	9231	7692	5769	4615	3714	3297	2885	2228
					FEED	802	828	1070	969	1036	1025	1108	1108	1108	1092	1098	1116	1116
	26-28	Copper and Copper Alloys (Bronze / Brass)	0.1D	1.5D	Vc	80	95	105	105	110	105	105	110	105	105	105	110	105
					fz	0.006	0.011	0.016	0.023	0.029	0.037	0.048	0.063	0.081	0.096	0.115	0.125	0.162
					RPM	25465	20160	16711	11141	8754	6685	5570	4377	3342	2785	2387	2188	1671
					FEED	458	665	802	769	762	742	802	827	812	802	824	821	812
	29.1	Non Metallic Materials	0.1D	1.5D	Vc	80	95	105	105	110	105	105	110	105	105	105	110	105
					fz	0.006	0.011	0.016	0.023	0.029	0.037	0.048	0.063	0.081	0.096	0.115	0.125	0.162
					RPM	25465	20160	16711	11141	8754	6685	5570	4377	3342	2785	2387	2188	1671
					FEED	458	665	802	769	762	742	802	827	812	802	824	821	812
H	40	Chilled Cast Iron	0.1D	1.0D	Vc	30	35	40	45	50	50	55	55	55	55	55	60	55
					fz	0.002	0.004	0.006	0.009	0.019	0.024	0.031	0.038	0.038	0.037	0.037	0.038	0.037
					RPM	9549	7427	6366	4775	3979	3183	2918	2188	1751	1459	1251	1194	875
					FEED	57	89	115	129	227	229	271	249	200	162	139	136	97

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



SELECTION GUIDE

YG MILLING TOOLS

SOLID CARBIDE
K-2
END MILLS

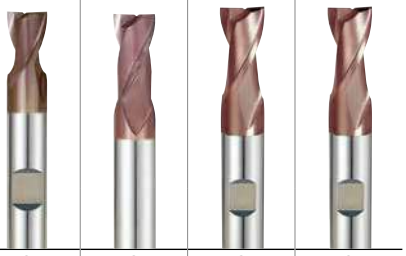
General Purpose with Coating
Conventional or High Speed Milling, Wet or Dry Cutting

Please visit globalyg1.com/mat for material search

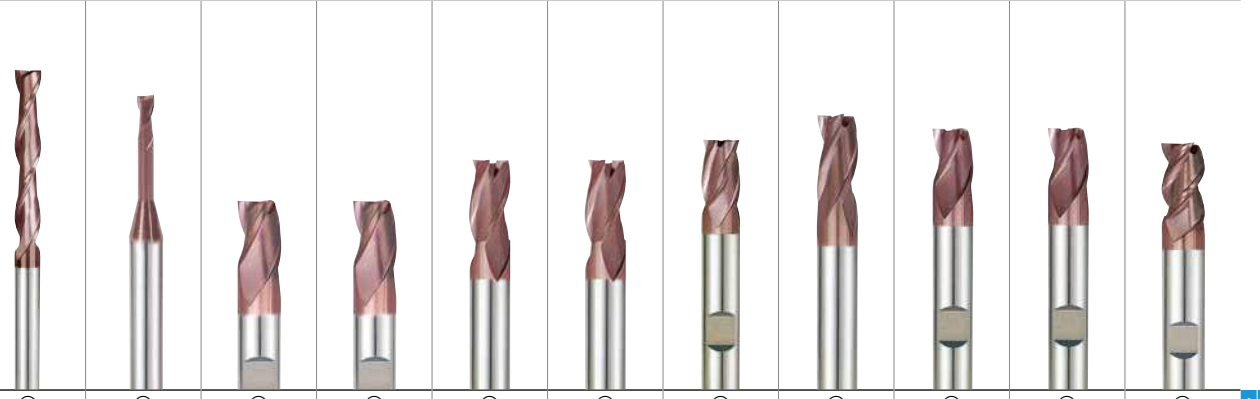
◎ : Excellent ○ : Good

Recommended cutting conditions : P 597

SERIES	G9444	G9527	G9445	G9G45
FLUTE	2	2	2	2
HELIX ANGLE	≈ 30°	≈ 30°	≈ 30°	≈ 30°
CUTTING EDGE SHAPE	SQUARE	SQUARE	SQUARE	SQUARE
SIZE MIN	D2.0	D3.5	D2.0	D3.0
SIZE MAX	D20.0	D20.0	D20.0	D20.0
PAGE	566	567	568	570
	SHORT LENGTH	LONG LENGTH	LONG LENGTH	LONG LENGTH with CHAMFER
	TiAlN based	TiAlN based	TiAlN based	TiAlN based



ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc	G9444	G9527	G9445	G9G45
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 (Bronze / Brass)	Cutting Alloys, PB>1%		110		○	○	○	○
	27		CuZn, CuSnZn (Brass)		90		○	○	○	○
	28		CuSn, lead-free copper and electrolytic copper		100		○	○	○	○
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic				○	○	○	○
	30		Rubber, Wood, etc.							
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15	○	○	○	○
	32			Cured	280	30	○	○	○	○
	33		Ni or Co Based	Annealed	250	25	○	○	○	○
	34			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				

G9452	G9B80	G9410 G9553	G9G46	G9425	G9G47	G9439	G9528	G9433	G9G48	G9447	
2	2	3	3	3	3	3	3	3	3	3	
30°	30°	30°	30°	30°	30°	≈ 30°	≈ 30°	≈ 30°	≈ 30°	45°	
SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	
D3.0	D0.4	D0.5	D3.0	D1.0	D3.0	D2.0	D3.5	D3.0	D3.0	D3.0	
D20.0	D4.0	D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	
571	**572**	**575**	**577**	**578**	**579**	**580**	**581**	**582**	**583**	**584**	
EXTRA LONG LENGTH	RIB PROCESSING	THROW AWAY	THROW AWAY with CHAMFER	SHORT LENGTH	SHORT LENGTH with CHAMFER	SHORT LENGTH	LONG LENGTH	LONG LENGTH	LONG LENGTH with CHAMFER	LONG LENGTH	
TiAlN based	TiAlN based	TiAlN based	TiAlN based	TiAlN based	TiAlN based	TiAlN based	TiAlN based	TiAlN based	TiAlN based	TiAlN based	
											
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