

# GM Solid Groove Milling Technical Data

Recommended Grades, Cutting Speeds Vc [m/min], Feed f [mm/tooth]

Material Group	Vargus No.	Material	Hardness Brinell HB	Vc [m/min]	Peripheral Feed	
				VTH	f [mm/tooth]	
<b>P</b> Steel	1	Unalloyed Steel	Low Carbon (C=0.1-0.25 %)	125	100-210	0.07-0.2
	2		Medium Carbon (C=0.25-0.55 %)	150	100-180	0.07-0.2
	3		High Carbon (C=0.55-0.85 %)	170	100-170	0.07-0.2
	4	Low Alloy Steel (alloying elements ≤5%)	Non Hardened	180	60-90	0.07-0.2
	5		Hardened	275	80-150	0.07-0.2
	6		Hardened	350	70-140	0.07-0.2
	7	High Alloy Steel (alloying elements >5%)	Annealed	200	60-130	0.07-0.2
	8		Hardened	325	70-110	0.07-0.2
	9	Cast Steel	Low Alloy (alloying elements <5%)	200	100-170	0.07-0.2
	10		High Alloy (alloying elements >5%)	225	70-120	0.07-0.2
<b>M</b> Stainless Steel	11	Stainless Steel Ferritic	Non Hardened	200	100-170	0.07-0.2
	12		Hardened	330	100-170	0.05-0.15
	13	Stainless Steel Austenitic	Austenitic	180	70-140	0.07-0.2
	14		Super Austenitic	200	70-140	0.07-0.2
	15	Stainless Steel Cast Ferritic	Non Hardened	200	70-140	0.1-0.2
	16		Hardened	330	70-140	0.07-0.2
	17	Stainless Steel Cast Austenitic	Austenitic	200	70-120	0.07-0.2
	18		Hardened	330	70-120	0.07-0.2
<b>K</b> Cast Iron	28	Malleable Cast Iron	Ferritic (short chips)	130	60-130	0.1-0.22
	29		Pearlitic (long chips)	230	60-120	0.07-0.2
	30	Grey Cast Iron	Low Tensile Strength	180	60-130	0.07-0.2
	31		High Tensile Strength	260	60-100	0.07-0.2
	32	Nodular Sg Iron	Ferritic	160	60-125	0.07-0.2
	33		Pearlitic	260	50-90	0.07-0.2
<b>N(K)</b> Non-Ferrous Metals	34	Aluminium Alloys Wrought	Non Aging	60	100-250	0.1-0.25
	35		Aged	100	100-180	0.1-0.25
	36	Aluminium Alloys	Cast	75	150-400	0.1-0.25
	37		Cast & Aged	90	150-280	0.1-0.25
	38		Cast Si 13-22%	130	80-150	0.1-0.25
	39	Copper and Copper Alloys	Brass	90	120-210	0.1-0.25
	40		Bronze and Non Leaded Copper	100	120-210	0.07-0.22
<b>S(M)</b> Heat Resistant Material	23	Titanium Alloys	Pure 99.5 Ti	400Rm	70-140	0.07-0.13
	24		α+β Alloys	1050Rm	20-50	0.07-0.13

## Grades and Their Application

Grade	Application Type	Sample
VTH	A general-purpose, heavy duty groove milling grade TiCN coated for high wear resistance	