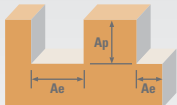


Series 51M, 51MCR Metric	Hardness BRINELL				Diameter (D ₁) (mm)							
		Ae x D ₁	Ap x D ₁	Vc (m/min)	6	8	10	12	16	20		
S	≤ 300	 Profile	≤ 0.1	≤ 1	32	RPM	1696	1272	1018	848	636	509
					(26-38)	Fz	0.034	0.057	0.071	0.085	0.100	0.110
						Feed (mm/min)	346	435	434	433	382	336
		 HSM	≤ 0.05	≤ 2	40	RPM	2100	1575	1260	1050	788	630
					(32-48)	Fz	0.046	0.077	0.097	0.120	0.140	0.150
						Feed (mm/min)	580	728	733	756	662	567
S	> 300	 Profile	≤ 0.1	≤ 1	24	RPM	1293	969	776	646	485	388
					(20-29)	Fz	0.023	0.039	0.049	0.059	0.068	0.077
						Feed (mm/min)	178	227	228	229	198	179
		 HSM	≤ 0.05	≤ 2	30	RPM	1616	1212	969	808	606	485
					(24-37)	Fz	0.032	0.054	0.068	0.081	0.095	0.110
						Feed (mm/min)	310	393	396	393	345	320
S	≤ 350	 Profile	≤ 0.1	≤ 1	85	RPM	4524	3393	2714	2262	1696	1357
					(68-102)	Fz	0.023	0.039	0.049	0.059	0.068	0.077
						Feed (mm/min)	624	794	798	801	692	627
		 HSM	≤ 0.05	≤ 2	108	RPM	5736	4302	3441	2868	2151	1721
					(87-130)	Fz	0.032	0.054	0.068	0.081	0.095	0.110
						Feed (mm/min)	1101	1394	1404	1394	1226	1136
S	> 350 ≤ 440	 Profile	≤ 0.1	≤ 1	47	RPM	2504	1878	1503	1252	939	751
					(38-57)	Fz	0.023	0.039	0.049	0.059	0.068	0.077
						Feed (mm/min)	346	440	442	443	383	347
		 HSM	≤ 0.05	≤ 2	61	RPM	3231	2424	1939	1616	1212	969
					(49-73)	Fz	0.032	0.054	0.068	0.081	0.095	0.110
						Feed (mm/min)	620	785	791	785	691	640

rpm = (1000 x m/min) / (3.14 x D₁)

mm / min = (mm / flute) x 6 x rpm

HSM (high speed machining)

reduce speed and feed for materials harder than listed

reduce feed and Ae when finish milling (.02 x D₁ maximum)

refer to the SGS Tool Wizard for complete technical information ()