



Series
47M, 47MB,
47ML, 47MLB
Metric

Material	Hardness	Ae x DC	Ap x DC	Vc (m/min)	DC • mm							
					3	6	10	12	16	20	25	
ALUMINUM ALLOYS 2024, 5052, 5086, 6061, 6073, 7075	≤ 150 Bhn or ≤ 7 HRc	Slot 1	≤ 1	490	RPM	52022	26011	15607	13005	9754	7803	6243
				(392-588)	Fz	0.022	0.060	0.120	0.144	0.166	0.187	0.213
				Feed (mm/min)	2247	3121	3746	3745	3246	2913	2653	
	Profile ≤ 0.5	≤ 1.5	610	RPM	64762	32381	19429	16190	12143	9714	7771	
			(488-732)	Fz	0.022	0.060	0.120	0.144	0.166	0.187	0.213	
			Feed (mm/min)	2797	3885	4663	4662	4041	3627	3303		
	HSM ≤ 0.05	≤ 2	1005	RPM	106698	53349	32009	26674	20006	16005	12804	
			(804-1206)	Fz	0.050	0.132	0.280	0.336	0.384	0.440	0.488	
			Feed (mm/min)	10754	14083	17925	17924	15364	14084	12484		
ALUMINUM DIE CAST ALLOYS (HIGH SILICONE) A-390, A-392, B- 390	≤ 125 Bhn or ≤ 77 HRb	Slot 1	≤ 1	185	RPM	19641	9820	5892	4910	3683	2946	2357
				(148-222)	Fz	0.022	0.060	0.120	0.144	0.166	0.187	0.213
				Feed (mm/min)	848	1178	1414	1414	1226	1100	1002	
	Profile ≤ 0.5	≤ 1.5	230	RPM	24418	12209	7326	6105	4578	3663	2930	
			(184-276)	Fz	0.022	0.060	0.120	0.144	0.166	0.187	0.213	
			Feed (mm/min)	1055	1465	1758	1758	1524	1367	1245		
	HSM ≤ 0.05	≤ 2	380	RPM	40343	20172	12103	10086	7564	6052	4841	
			(304-456)	Fz	0.050	0.132	0.280	0.336	0.384	0.440	0.488	
			Feed (mm/min)	4066	5325	6778	6777	5809	5325	4720		
COPPER ALLOYS Aluminum Bronze Brass Naval Brass Red Brass	≤ 140 Bhn or ≤ 3 HRc	Slot 1	≤ 1	265	RPM	28134	14067	8440	7034	5275	4220	3376
				(212-318)	Fz	0.019	0.048	0.107	0.120	0.141	0.160	0.175
				Feed (mm/min)	1080	1350	1801	1688	1485	1350	1182	
	Profile ≤ 0.5	≤ 1.5	330	RPM	35035	17518	10511	8759	6569	5255	4204	
			(264-396)	Fz	0.019	0.048	0.107	0.120	0.141	0.160	0.175	
			Feed (mm/min)	1345	1682	2242	2102	1850	1682	1472		
	HSM ≤ 0.05	≤ 2	545	RPM	57861	28930	17358	14465	10849	8679	6943	
			(436-654)	Fz	0.041	0.108	0.227	0.276	0.320	0.373	0.400	
			Feed (mm/min)	4721	6248	7869	7984	6943	6480	5555		
COPPER ALLOYS Beryllium Copper C110, Manganese Bronze, Tin Bronze	≤ 200 Bhn or ≤ 23 HRc	Slot 1	≤ 1	105	RPM	11148	5574	3344	2787	2090	1672	1338
				(84-126)	Fz	0.019	0.048	0.107	0.120	0.141	0.160	0.175
				Feed (mm/min)	428	535	713	669	589	535	468	
	Profile ≤ 0.5	≤ 1.5	130	RPM	13802	6901	4141	3450	2588	2070	1656	
			(104-156)	Fz	0.019	0.048	0.107	0.120	0.141	0.160	0.175	
			Feed (mm/min)	530	662	883	828	729	662	580		
	HSM ≤ 0.05	≤ 2	215	RPM	22826	11413	6848	5706	4280	3424	2739	
			(172-258)	Fz	0.041	0.108	0.227	0.276	0.320	0.373	0.400	
			Feed (mm/min)	1862	2465	3104	3150	2739	2556	2191		
PLASTICS ABS, Polycarbonate, PVC, Polypropylene	≤ 150 Bhn or ≤ 7 HRc	Slot 1	≤ 1	490	RPM	52022	26011	15607	13005	9754	7803	6243
				(392-588)	Fz	0.036	0.096	0.200	0.240	0.282	0.320	0.350
				Feed (mm/min)	3745	4994	6243	6242	5493	4994	4370	
	Profile ≤ 0.5	≤ 1.5	610	RPM	64762	32381	19429	16190	12143	9714	7771	
			(488-732)	Fz	0.036	0.096	0.200	0.240	0.282	0.320	0.350	
			Feed (mm/min)	4662	6217	7771	7771	6839	6217	5440		
	HSM ≤ 0.05	≤ 2	1005	RPM	106698	53349	32009	26674	20006	16005	12804	
			(804-1206)	Fz	0.082	0.216	0.453	0.552	0.640	0.733	0.800	
			Feed (mm/min)	17412	23045	29022	29446	25607	23473	20487		

Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B) HSM (High Speed Machining)
 $rpm = (Vc \times 1000) / (DC \times 3.14)$
 $mm/min = Fz \times 2 \times rpm$
 reduce speed and feed for materials harder than listed
 reduce cut depth and feed by 50% for long flute and long reach tools
 reduce feed and Ae when finish milling (.02 x DC maximum)
 refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)