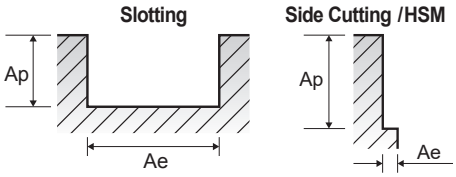
RECOMMENDED CUTTING CONDITIONS – INCH

JAG95 | JAG97 I JAG96 | JAG98 SERIES (COATED)
E5G95 | E5G97 | E5G96 | E5G98 SERIES (UNCOATED)

JAI38 | JAI39 SERIES (COATED)
E5I36 | E5I38 | E5I37 | E5I39 SERIES (UNCOATED)



RPM = rev./min. Feed = in./min.
Vc = ft./min. fz = in./tooth

3-FLUTE - SLOTTING

ISO	VDI 3323	Material Description	Hardness (HB)	Ae	Ap	Parameter	Mill Diameter (Ø) 1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
N	21-22	Aluminum-wrought alloy	60 / 100	1.0D	1.0D	SFM (Vc)	2000	2000	2000	2000	2000	2000	2000	2000	2000
						IPT (fz)	.0010	.0015	.0030	.0038	.0045	.0060	.0066	.0075	.0100
						RPM	61100	40700	30500	24400	20400	15300	12200	10200	7600
						IPM (FEED)	183	183	275	278	275	275	242	230	228
	23-25	Aluminum-cast, alloyed	75 / 90 / 130	1.0D	1.0D	SFM (Vc)	600	600	600	600	600	600	600	600	600
						IPT (fz)	.0010	.0015	.0030	.0038	.0045	.0060	.0066	.0075	.0100
						RPM	18340	12220	9170	7330	6110	4580	3670	3060	2290
						IPM (FEED)	55	55	83	83	83	83	73	69	69
	26-28	Copper and Copper Alloys (Bronze / Brass)	110 / 90 / 100	1.0D	1.0D	SFM (Vc)	880	880	880	880	880	880	880	880	880
						IPT (fz)	.0008	.0012	.0020	.0025	.0040	.0050	.0055	.0060	.0070
						RPM	26890	17930	13450	10760	8960	6720	5380	4480	3360
						IPM (FEED)	65	65	81	81	108	101	89	81	71
	29.1	Non Metallic Materials (Duroplastic)	-	1.0D	1.0D	SFM (Vc)	1670	1670	1670	1670	1670	1670	1670	1670	1670
						IPT (fz)	.0015	.0023	.0040	.0050	.0075	.0100	.0110	.0120	.0140
						RPM	51040	34020	25520	20410	17010	12760	10210	8510	6380
						IPM (FEED)	230	235	306	306	383	383	337	306	268

3-FLUTE - SIDE CUTTING

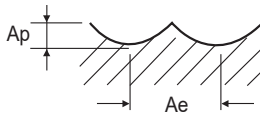
ISO	VDI 3323	Material Description	Hardness (HB)	Ae	Ap	Parameter	Mill Diameter (Ø) 1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
N	21-22	Aluminum-wrought alloy	60 / 100	0.5D	1.5D	SFM (Vc)	3000	3000	3000	3000	3000	3000	3000	3000	2000
						IPT (fz)	.0010	.0015	.0030	.0038	.0045	.0060	.0066	.0075	.0100
						RPM	91700	61100	45800	36700	30600	23000	18300	15300	11500
						IPM (FEED)	275	275	412	418	413	414	362	344	345
	23-25	Aluminum-cast, alloyed	75 / 130	0.5D	1.5D	SFM (Vc)	800	800	800	800	800	800	800	800	800
						IPT (fz)	.0010	.0015	.0030	.0038	.0045	.0060	.0066	.0075	.0100
						RPM	24450	16300	12220	9780	8150	6110	4890	4080	3060
						IPM (FEED)	73	73	110	111	110	110	97	92	92
	26-28	Copper and Copper Alloys (Bronze / Brass)	110 / 90 / 100	0.5D	1.5D	SFM (Vc)	1150	1150	1150	1150	1150	1150	1150	1150	1150
						IPT (fz)	.0008	.0012	.0020	.0025	.0040	.0050	.0055	.0060	.0070
						RPM	35140	23430	17570	14060	11720	8790	7030	5860	4390
						IPM (FEED)	84	84	105	105	141	132	116	105	92
	29.1	Non Metallic Materials (Duroplastic)	-	0.5D	1.5D	SFM (Vc)	2070	2070	2070	2070	2070	2070	2070	2070	2070
						IPT (fz)	.0015	.0023	.0040	.0050	.0075	.0100	.0110	.0120	.0140
						RPM	63260	42170	31630	25300	21090	15820	12650	10540	7910
						IPM (FEED)	230	290	306	380	383	383	337	306	332

3-FLUTE - SIDE CUTTING HSM (Light)

ISO	VDI 3323	Material Description	Hardness (HB)	Ae	Ap	Parameter	Mill Diameter (Ø) 1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
N	21-22	Aluminum-wrought alloy	60 / 100	0.05D	2.0D	SFM (Vc)	8000	8000	8000	8000	8000	8000	8000	8000	8000
						IPT (fz)	.0021	.0032	.0055	.0069	.0105	.0140	.0150	.0165	.0195
						RPM	244500	162900	122200	97800	81500	61100	48900	40700	30600
						IPM (FEED)	1540	1565	2016	2024	2567	2566	2201	2015	1790
	23-25	Aluminum-cast, alloyed	75 /130	0.05D	2.0D	SFM (Vc)	1200	1200	1200	1200	1200	1200	1200	1200	1200
						IPT (fz)	.0021	.0032	.0055	.0069	.0105	.0140	.0150	.0165	.0195
						RPM	36670	24450	18340	14670	12220	9170	7330	6110	4580
						IPM (FEED)	231	235	303	303	385	385	330	303	268
	26-28	Copper and Copper Alloys (Bronze / Brass)	110 / 90 / 100	0.05D	2.0D	SFM (Vc)	1850	1850	1850	1850	1850	1850	1850	1850	1850
						IPT (fz)	.0017	.0026	.0045	.0056	.0085	.0115	.0130	.0140	.0160
						RPM	56540	37690	28270	22610	18850	14130	11310	9420	7070
						IPM (FEED)	288	294	382	380	481	488	441	396	339
	29.1	Non Metallic Materials (Duroplastic)	-	0.05D	2.0D	SFM (Vc)	3350	3350	3350	3350	3350	3350	3350	3350	3350
						IPT (fz)	.0034	.0051	.0090	.0113	.0170	.0230	.0250	.0275	.0320
						RPM	102380	68250	51190	40950	34130	25590	20480	17060	12800
						IPM (FEED)	1044	1044	1382	1388	1740	1766	1536	1408	1229

RECOMMENDED CUTTING CONDITIONS – INCH

JAI58 | JAI59 I JAK92 SERIES (COATED)
E5I58 | E5I59 I E5K92 SERIES (UNCOATED)



3-FLUTE - PROFILING

SFM = Surface Feet per Minute RPM = Revolutions Per Minute Ap: IPT = Inches Per Tooth
IPM = Inches Per Minute Inch (Axial Depth of Cut) Ae: Inch (Radial Depth of Cut)

ISO	VDI 3323	Material Description	Hardness (HB)	Ae	Ap	Parameter	Mill Diameter (Ø)								
							1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
N	21-22	Aluminum-wrought alloy	60 / 100	0.2D	0.1D	SFM (Vc)	3690	3690	3690	3690	3690	3690	3690	3690	3690
						IPT (fz)	.0013	.0019	.0025	.0032	.0038	.0050	.0063	.0075	.0100
						RPM	112770	75180	56380	45110	37590	28190	22550	18790	14100
						IPM (FEED)	440	423	423	429	429	423	426	423	423
	23-25	Aluminum-cast, alloyed	75 / 90 / 130	0.2D	0.1D	SFM (Vc)	2950	2950	2950	2950	2950	2950	2950	2950	2950
						IPT (fz)	.0010	.0015	.0020	.0025	.0030	.0040	.0050	.0060	.0080
						RPM	90150	60100	45080	36060	30050	22540	18030	15030	11270
						IPM (FEED)	270	270	270	270	270	270	270	271	270
	26-28	Copper and Copper Alloys (Bronze / Brass)	110 / 90 / 100	0.2D	0.1D	SFM (Vc)	1700	1700	1700	1700	1700	1700	1700	1700	1700
						IPT (fz)	.0009	.0013	.0018	.0022	.0026	.0035	.0044	.0053	.0070
						RPM	51950	34630	25980	20780	17320	12990	10390	8660	6490
						IPM (FEED)	140	140	140	135	135	136	137	138	136
	29.1	Non Metallic Materials (Duroplastic)	-	0.2D	0.1D	SFM (Vc)	1840	1840	1840	1840	1840	1840	1840	1840	1840
						IPT (fz)	.0011	.0017	.0023	.0028	.0034	.0045	.0056	.0068	.0090
						RPM	56230	37490	28120	22490	18740	14060	11250	9370	7030
						IPM (FEED)	186	194	194	191	191	190	189	191	190

NOTES:
- All cutting data are target values
- Maximum recommended depth shown
- Finish cuts typically require reduced feed rates and/or higher spindle speed, with radial width of 2% x D or less
- Reduce speed and feed recommendations for materials harder than listed
- Reduce cut depth and feed by 50% for long-flute or long-reach tools
- Above recommendations are based on ideal conditions. Adjust parameters accordingly for smaller taper machining centers or less rigid conditions

Tech Tip : The tables above are based on common machining calculations.
We realize that shops may not have **RPM capability** shown in the tables
To adapt the tables to machining conditions available, use the following calculation:
(Recommended Feed (IPM) / Recommended RPM) X Available RPM = IPM Example for 1/8" Side Milling in N21-22 WorkPiece Materials:
(440 IPM /112770 RPM) X 15,000=58 IPM

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