Speeds and Feeds

HSAM2 End Mills With Chip Breaker										
Material			Recommended Cutting Values (metric) - Slotting							
Group		Material Description	Width of Cut, ae	Depth of Cut, ap (Maximum)	Parameter	Cutting Diameter (mm)				
ISO	VDI 3323					6	10	12	16	20
N	21	Aluminum-wrought alloy	1.0D	1.0D	Vc, SMM	488	488	488	488	488
					Fz, MMPT	0.076	0.114	0.152	0.168	0.191
					n, RPM	25870	15520	12940	9700	7760
					Vf, MMPM	5918	5334	5918	4877	4445
	22		1.0D	1.0D	Vc, SMM	488	488	488	488	488
					Fz, MMPT	0.076	0.114	0.152	0.168	0.191
					n, RPM	25870	15520	12940	9700	7760
					Vf, MMPM	5918	5334	5918	4877	4445
	23	Aluminum-cast, alloyed	1.0D	1.0D	Vc, SMM	183	183	183	183	183
					Fz, MMPT	0.076	0.114	0.152	0.168	0.191
					n, RPM	9700	5820	4850	3640	2910
					Vf, MMPM	2218	1997	2218	1830	1664
	24		1.0D	1.0D	Vc, SMM	183	183	183	183	183
					Fz, MMPT	0.076	0.114	0.152	0.168	0.191
					n, RPM	9700	5820	4850	3640	2910
					Vf, MMPM	2218	1997	2218	1830	1664
	25		1.0D	1.0D	Vc, SMM	183	183	183	183	183
					Fz, MMPT	0.076	0.114	0.152	0.168	0.191
					n, RPM	9700	5820	4850	3640	2910
					Vf, MMPM	2218	1997	2218	1830	1664
	26	Copper and Copper Alloys (Bronze / Brass)	1.0D	1.0D	Vc, SMM	268	268	268	268	268
					Fz, MMPT	0.051	0.102	0.127	0.140	0.152
					n, RPM	14230	8540	7110	5340	4270
					Vf, MMPM	2169	2603	2711	2237	1952
	27		1.0D	1.0D	Vc, SMM	268	268	268	268	268
					Fz, MMPT	0.051	0.102	0.127	0.140	0.152
					n, RPM	14230	8540	7110	5340	4270
					Vf, MMPM	2169	2603	2711	2237	1952
	28		1.0D	1.0D	Vc, SMM	268	268	268	268	268
					Fz, MMPT	0.051	0.102	0.127	0.140	0.152
					n, RPM	14230	8540	7110	5340	4270
					Vf, MMPM	2169	2603	2711	2237	1952
	29.1	Non Metallic Materials	1.0D	1.0D	Vc, SMM	503	503	503	503	503
					Fz, MMPT	0.102	0.191	0.254	0.279	0.305
					n, RPM	26680	16010	13340	10010	8000
					Vf, MMPM	8134	9151	10168	8389	7321

SMM = Surface meters per minute
MMPT = Millimeters per tooth
RPM = Revolutions per minute
MMPM = Millimeters per minute

Finish cuts should use reduced feed rate and 0.02xD radial width of cut.

Reduce feed rate and depth of cut by approximately 50% for long reach tools.

Speeds and feeds shown are based on rigid setup. Cut parameters may need to change on small-taper machines or less rigid setup.

Speeds and Feeds

HSAM2 End Mills With Chip Breaker

Material			Recommended Cutting Values (metric) - Side Cutting								
Group		Material Description	Width of Cut, ae (Recommended Max.)	Depth of Cut, ap (Maximum)	Parameter	Cutting Diameter (mm)				
ISO	VDI 3323					6	10	12	16	20
N	21	Aluminum-wrought alloy	0.5D	1.5D	Vc, SMM	610	610	610	610	610
					Fz, MMPT	0.076	0.114	0.152	0.168	0.191
					n, RPM	32340	19400	16170	12130	9700
					Vf, MMPM	7395	6655	7395	6101	5546
	22		0.5D	1.5D	Vc, SMM	610	610	610	610	610
					Fz, MMPT	0.076	0.114	0.152	0.168	0.191
					n, RPM	32340	19400	16170	12130	9700
					Vf, MMPM	7395	6655	7395	6101	5546
	23	Aluminum-cast, alloyed	0.5D	1.5D	Vc, SMM	244	244	244	244	244
					Fz, MMPT	0.076	0.114	0.152	0.168	0.191
					n, RPM	12940	7760	6470	4850	3880
					Vf, MMPM	2958	2662	2958	2440	2218
	24		0.5D	1.5D	Vc, SMM	244	244	244	244	244
					Fz, MMPT	0.076	0.114	0.152	0.168	0.191
					n, RPM	12940	7760	6470	4850	3880
					Vf, MMPM	2958	2662	2958	2440	2218
	25		0.5D	1.5D	Vc, SMM	244	244	244	244	244
					Fz, MMPT	0.076	0.114	0.152	0.168	0.191
					n, RPM	12940	7760	6470	4850	3880
					Vf, MMPM	2958	2662	2958	2440	2218
	26	Copper and Copper Alloys (Bronze / Brass)	0.5D	1.5D	Vc, SMM	351	351	351	351	351
					Fz, MMPT	0.051	0.102	0.127	0.140	0.152
					n, RPM	18600	11160	9300	6970	5580
					Vf, MMPM	2835	3402	3543	2923	2551
	27		0.5D	1.5D	Vc, SMM	351	351	351	351	351
					Fz, MMPT	0.051	0.102	0.127	0.140	0.152
					n, RPM	18600	11160	9300	6970	5580
					Vf, MMPM	2835	3402	3543	2923	2551
	28		0.5D	1.5D	Vc, SMM	351	351	351	351	351
					Fz, MMPT	0.051	0.102	0.127	0.140	0.152
					n, RPM	18600	11160	9300	6970	5580
					Vf, MMPM	2835	3402	3543	2923	2551
	29.1	Non Metallic Materials	0.5D	1.5D	Vc, SMM	625	625	625	625	625
					Fz, MMPT	0.102	0.191	0.254	0.279	0.305
					n, RPM	33150	19890	16570	12430	9940
					Vf, MMPM	10106	11370	12633	10422	9096

SMM = Surface meters per minute
MMPT = Millimeters per tooth
RPM = Revolutions per minute
MMPM = Millimeters per minute

Finish cuts should use reduced feed rate and 0.02xD radial width of cut.

Reduce feed rate and depth of cut by approximately 50% for long reach tools.

Speeds and feeds shown are based on rigid setup. Cut parameters may need to change on small-taper machines or less rigid setup.