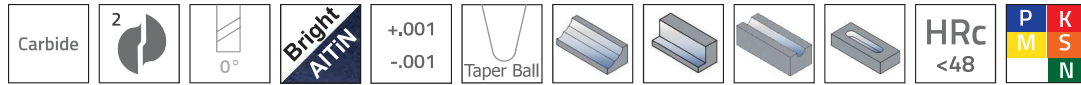


SPECIAL USE CARBIDE END MILLS

2 FLUTE • DIE SINKING END MILLS



SERIES: AMGDS

DEG/ SIDE	TIP RADIUS	SHK	LOC	OAL	LENGTH	TOOL	BRIGHT EDP	ALTIN EDP
3°	.0156	1/8	7/8	2	std	AMGDS-401-3B	16998	56998
3°	.0313	1/8	9/16	2	std	AMGDS-402-3B	16999	56999
3°	.0469	3/16	7/8	2	std	AMGDS-603-3B	17607	57607
3°	.0625	1/4	1	2-1/2	std	AMGDS-804-3B	17608	57608
3°	.0781	5/16	1	2-1/2	std	AMGDS-1005-3B	17609	57609
3°	.0938	3/8	1	2-1/2	std	AMGDS-1206-3B	17610	57610
3°	.1094	7/16	1	2-3/4	std	AMGDS-1407-3B	17611	57611
3°	.1250	1/2	1	3	std	AMGDS-1608-3B	17612	57612

DEG/ SIDE	TIP RADIUS	SHK	LOC	OAL	LENGTH	TOOL	BRIGHT EDP	ALTIN EDP
5°	.0156	1/8	1/2	2	std	AMGDS-401-5B	17613	57613
5°	.0313	1/8	5/16	2	std	AMGDS-402-5B	17614	57614
5°	.0469	3/16	1/2	2	std	AMGDS-603-5B	17615	57615
5°	.0625	1/4	11/16	2-1/2	std	AMGDS-804-5B	17616	57616
5°	.0781	5/16	7/8	2-1/2	std	AMGDS-1005-5B	17617	57617
5°	.0938	3/8	1	2-1/2	std	AMGDS-1206-5B	17618	57618
5°	.1094	7/16	1	2-3/4	std	AMGDS-1407-5B	17619	57619
5°	.1250	1/2	1	3	std	AMGDS-1608-5B	17620	57620

DEG/ SIDE	TIP RADIUS	SHK	LOC	OAL	LENGTH	TOOL	BRIGHT EDP	ALTIN EDP
7°	.0156	1/8	3/8	1-1/2	std	AMGDS-401-7B	17621	57621
7°	.0313	1/8	1/4	1-1/2	std	AMGDS-402-7B	17622	57622
7°	.0469	3/16	3/8	2	std	AMGDS-603-7B	17623	57623
7°	.0625	1/4	1/2	2-1/2	std	AMGDS-804-7B	17624	57624
7°	.0781	5/16	5/8	2-1/2	std	AMGDS-1005-7B	17625	57625
7°	.0938	3/8	3/4	2-1/2	std	AMGDS-1206-7B	17626	57626
7°	.1094	7/16	7/8	2-3/4	std	AMGDS-1407-7B	17627	57627
7°	.1250	1/2	1	3	std	AMGDS-1608-7B	17628	57628

DEG/ SIDE	TIP RADIUS	SHK	LOC	OAL	LENGTH	TOOL	BRIGHT EDP	ALTIN EDP
10°	.0156	1/8	1/4	1-1/2	std	AMGDS-401-10B	17629	57629
10°	.0313	1/8	3/16	1-1/2	std	AMGDS-402-10B	17630	57630
10°	.0469	3/16	1/4	2	std	AMGDS-603-10B	17631	57631
10°	.0625	1/4	5/16	2-1/2	std	AMGDS-804-10B	17632	57632
10°	.0781	5/16	7/16	2-1/2	std	AMGDS-1005-10B	17633	57633
10°	.0938	3/8	9/16	2-1/2	std	AMGDS-1206-10B	17634	57634
10°	.1094	7/16	5/8	2-3/4	std	AMGDS-1407-10B	17635	57635
10°	.1250	1/2	11/16	3	std	AMGDS-1608-10B	17636	57636

General Purpose Carbide End Mills

SERIES: General Purpose Carbide End Mills

MATERIAL		CONDITIONS		CUTTING DIAMETER							
				1/8"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
		Under 32 HRc	Over 32 HRc	CHIP PER TOOTH							
STAINLESS STEELS		ISO-M									
Precipitation 13-8, 15-5, 17-4PH	Slotting .5 x Dia.	110-200	80-115	0.0005	0.0010	0.0012	0.0014	0.0020	0.0025	0.0030	0.0040
	Profiling ≤ .5 x Dia.	110-200	80-115	0.0006	0.0012	0.0015	0.0018	0.0025	0.0031	0.0038	0.0050
Austenitic 302, 303, 304L, 316L	Slotting .5 x Dia.	150-275	80-180	0.0005	0.0011	0.0014	0.0016	0.0023	0.0029	0.0035	0.0046
	Profiling ≤ .5 x Dia.	150-275	80-180	0.0007	0.0014	0.0018	0.0021	0.0030	0.0038	0.0045	0.0060
Martensitic 403, 410, 416	Slotting .5 x Dia.	200-400	80-160	0.0005	0.0011	0.0014	0.0016	0.0023	0.0029	0.0035	0.0046
	Profiling ≤ .5 x Dia.	200-400	80-160	0.0007	0.0014	0.0018	0.0021	0.0030	0.0038	0.0045	0.0060
HIGH TEMP ALLOYS		ISO-S									
Cobalt Base Stellite, Haynes 25, 188, X-40, L-605	Slotting .5 x Dia.	60-125	60-125	0.0004	0.0007	0.0009	0.0011	0.0015	0.0019	0.0023	0.0030
	Profiling ≤ .5 x Dia.	60-125	60-125	0.0005	0.0010	0.0012	0.0014	0.0020	0.0025	0.0030	0.0040
Nickel Base Inconel 600, 625, 718, Nickel 200, 270, Invar, Monel 400, 405, K-Monel, PermaNickel 300, Incoly 600	Slotting .5 x Dia.	60-125	60-125	0.0004	0.0007	0.0009	0.0011	0.0015	0.0019	0.0023	0.0030
	Profiling ≤ .5 x Dia.	60-125	60-125	0.0005	0.0010	0.0012	0.0014	0.0020	0.0025	0.0030	0.0040
Iron Base Incoloy 800-802, Multimet N-155, Timken 16-26-6	Slotting .5 x Dia.	60-125	60-125	0.0004	0.0007	0.0009	0.0011	0.0015	0.0019	0.0023	0.0030
	Profiling ≤ .5 x Dia.	60-125	60-125	0.0005	0.0010	0.0012	0.0014	0.0020	0.0025	0.0030	0.0040
STEELS		ISO-P									
High Strength Steels 4140, 4340, 52100	Slotting .5 x Dia.	150-300	80-180	0.0005	0.0010	0.0012	0.0014	0.0020	0.0025	0.0030	0.004
	Profiling ≤ .5 x Dia.	150-300	80-180	0.0006	0.0010	0.0012	0.0018	0.0025	0.0031	0.0038	0.005
High Alloy Steels - Mold & Die A-2, P20, 01, 02, D2, H-13	Slotting .5 x Dia.	150-275	80-185	0.0005	0.0010	0.0012	0.0014	0.0020	0.0025	0.0030	0.004
	Profiling ≤ .5 x Dia.	150-275	80-185	0.0006	0.0010	0.0012	0.0018	0.0025	0.0031	0.0038	0.005
Medium Alloy Steels 200, 250, 300	Slotting .5 x Dia.	175-350	100-225	0.0005	0.0010	0.0012	0.0014	0.0020	0.0025	0.0030	0.004
	Profiling ≤ .5 x Dia.	175-350	100-225	0.0006	0.0010	0.0012	0.0018	0.0025	0.0031	0.0038	0.005
Low Alloy Steels-Maraging 10XX, 11XX, 13XX	Slotting .5 x Dia.	200-450	100-250	0.0006	0.0012	0.0015	0.0018	0.0025	0.0031	0.0038	0.005
	Profiling ≤ .5 x Dia.	200-450	100-250	0.0007	0.0014	0.0018	0.0021	0.0030	0.0038	0.0045	0.006
CAST IRONS		ISO-K									
Ductile Iron Ductile Cast Iron	Slotting .5 x Dia.	120-325	80-140	0.0005	0.0010	0.0012	0.0014	0.0020	0.0025	0.0030	0.0040
	Profiling ≤ .5 x Dia.	120-325	80-140	0.0006	0.0012	0.0015	0.0018	0.0025	0.0031	0.0038	0.0050
Cast Iron Grey Cast Iron	Slotting .5 x Dia.	250-425	125-285	0.0005	0.0010	0.0012	0.0014	0.0020	0.0025	0.0030	0.0040
	Profiling ≤ .5 x Dia.	250-425	125-285	0.0006	0.0012	0.0015	0.0018	0.0025	0.0031	0.0038	0.0050
TITANIUMS		ISO-S									
Titanium Alloys 6AL-4V, ASTM 1, 2, 3, 6AL-2S For 5553, decrease SFM and IPM by 25%	Slotting .5 x Dia.	140-200	90-145	0.0005	0.0010	0.0012	0.0014	0.0020	0.0025	0.0030	0.0040
	Profiling ≤ .5 x Dia.	140-200	90-145	0.0006	0.0012	0.0015	0.0018	0.0025	0.0031	0.0038	0.0050
ALUMINUM		ISO-N									
Aluminum Alloys 6061-T6, 7075	Slotting .5 x Dia.	600-1000	NA	0.0006	0.0012	0.0015	0.0018	0.003	0.005	0.006	0.0080
	Profiling ≤ .5 x Dia.	600-1000	NA	0.0007	0.0014	0.0018	0.0025	0.0035	0.006	0.0068	0.0100

All technical data provided are suggested starting points. They may be increased or decreased depending on machine condition, depth of cut, finish required, coolant, etc. Call our TECHNICAL SERVICE TEAM with questions.

SPEED & FEED INFORMATION

Calculations

End mill speed & feed formulas are the various individual equations that determine the proper overall machining setup or more specifically the speed of the cutting tool and the rate which it is fed into the work piece. Each individual formula is distinct in what it determines but coordinates with the others to ensure successful cutting tool application. You can visit the **TECHNICAL** section on www.melintool.com for more information.

INCH

$$\text{RPM} = \frac{\text{Revolutions Per Minute}}{3.82 \times \text{SFM} / \text{Tool Dia}}$$

$$\text{SFM} = \frac{\text{Surface Foot Per Minute}}{.262 \times \text{RPM} \times \text{Tool Dia}}$$

$$\text{CPT or IPT} = \frac{\text{Chip-Load Per Tooth}}{\text{IPM} / \text{RPM} / \text{No. Of Flutes}}$$

$$\text{IPM} = \frac{\text{Inches Per Minute}}{\text{CPT} \times \text{RPM} \times \text{No. Of Flutes}}$$

$$\text{MRRCI} = \frac{\text{Metal Removal Rate Cubic Inches}}{\text{IPM} \times \text{Axial Doc} \times \text{Radial Woc}}$$

$$\text{IPR} = \frac{\text{Inches Per Revolution}}{\text{IPM} / \text{RPM}}$$

METRIC

$$\text{RPM} = \frac{\text{Revolutions Per Minute}}{1000 \times \text{M/MIN} / (3.14 \times \text{D})}$$

$$\text{M/MIN} = \frac{\text{Meters Per Minute}}{(3.14 \times \text{D} \times \text{RPM}) / 1000}$$

$$\text{Fz OR CPT} = \frac{\text{Chip-Load Per Tooth}}{\text{Feedrate (mm) per MIN} / (\text{Z} \times \text{RPM})}$$

$$\text{VF OR FPM} = \frac{\text{Feedrate (mm) Per Minute}}{\text{Feedrate (mm) per Tooth} \times \text{Z} \times \text{RPM}}$$

$$\begin{aligned} \text{D} &= \text{Cutter Dia.} \\ \text{Z} &= \text{No. Of Teeth.} \end{aligned}$$

EQUIVALENTS & CONVERSIONS:

ABBREVIATIONS	
RPM	Revolutions Per Minute
SFM	Surface Feet Per Minute
CPT	Chip Load Per Tooth
IPM	Inches Per Minute
V_f	Millimeters Per Minute
ae	Radial Width of Cut
ap	Axial Depth of Cut
Vc	Surface Meters Per Minute
Fz	Metric Chip Load Per Tooth

$$\text{N, n or Min}^{-1} = \text{RPM}$$

$$\text{Vc or M/MIN} = \text{SFM}$$

$$\text{Fz or mm/TOOTH} = \text{CPT}$$

$$\text{V}_f \text{ or mm/MIN} = \text{IPM}$$

$$\text{SFM} / 3.281 = \text{M/MIN}$$

$$\text{M/MIN} \times 3.281 = \text{SFM}$$

$$\text{mm/MIN} / 25.4 = \text{IPM}$$

$$\text{mm/TOOTH} / 25.4 = \text{CPT}$$



IMPERIAL

METRIC

$$\text{Inch} \times 25.4 = \text{Millimeter}$$

$$\text{Millimeter} \times .03937 = \text{Inch}$$