



A Cut Above the Rest

Blade Information

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Blade Chart for Extrusion and Cutoff Machine

Thin Wall Profiles **6061 Aluminum**

Height of Material	Blade Diameter	Number of Teeth	Recommended Carriage Speed
.25" - 1"	14"	120	200 IPM
1" - 2"	16"	120	175 IPM
2" - 3"	18"	120	150 IPM
3" - 4"	20"	120	125 IPM
4" - 5"	22"	120	125 IPM
5" - 6"	24"	120	100 IPM
6" - 7"	26"	120	100 IPM
7" - 8"	28"	120	100 IPM

Heavy Wall Profiles and Solids

Height of Material	Blade Diameter	Number of Teeth	Recommended Carriage Speed
.25" - 1"	14"	60	150 IPM
1" - 2"	16"	60	100 IPM
2" - 3"	18"	60	75 IPM
3" - 4"	20"	60	60 IPM
4" - 5"	22"	60	50 IPM
5" - 6"	24"	60	40 IPM
6" - 7"	26"	60	35 IPM
7" - 8"	28"	60	25 IPM

Note:

Please keep in mind the recommended carriage speeds and number of teeth are generalized. The actual carriage speed and number of teeth for your particular application may vary depending on type and shape of the profile or solid being cut. The finish and tolerance you wish to achieve is also a factor in determining the best carriage speed.



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**Extrusion and Cutoff Machine
Speeds and Feeds 6061 Aluminum
Solids or Plate**

Blade Size/Teeth	Material Thickness	Carriage Speed
14" - 60 Teeth	.25" - 1"	150 IPM
16" - 60 Teeth	1" - 2"	100 IPM
18" - 60 Teeth	2" - 3"	75 IPM
20" - 60 Teeth	3" - 4"	60 IMP
22" - 60 Teeth	4" - 5"	50 IPM
24" - 60 Teeth	5" - 6"	40 IPM
26" - 60 Teeth	6" - 7"	35 IPM
28" - 60 Teeth	7" - 8"	35 IPM

Note:

These speeds and feeds may vary slightly due to blade condition and internal stress of the material.

Following is a listing of full arbor amperage for 3 phase 480 VAC motors. We recommend that you do not exceed 80 percent of the full rated capacities.

Motor HP	Full Rated Amps	80% of Full
20 HP	27 amps	22 amps
30 HP	40 amps	32 amps
50 HP	65 amps	52 amps



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**Extrusion and Cutoff Machine
Speeds and Feeds **7075 Aluminum**
Solid or Plate**

Blade Size/Teeth	Material Thickness	Carriage Speed
14" - 60 Teeth	.25" - 1"	125 IPM
16" - 60 Teeth	1" - 2"	100 IPM
18" - 60 Teeth	2" - 3"	70 IPM
20" - 60 Teeth	3" - 4"	40 IMP
22" - 60 Teeth	4" - 5"	35 IPM
24" - 60 Teeth	5" - 6"	25 IPM
26" - 60 Teeth	6" - 7"	20 IPM
28" - 60 Teeth	7" - 8"	20 IPM

Note:

These speeds and feeds may vary slightly due to blade condition and internal stress of the material.

Following is a listing of full arbor amperage for 3 phase 480 VAC motors. We recommend that you do not exceed 80 percent of the full rated capacities.

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20 HP	27 amps	22 amps
30 HP	40 amps	32 amps
50 HP	65 amps	52 amps



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Blade Chart for NF Series

NF 6

Height of Material	Blade Diameter	Number of Teeth	Body Size	Blade Kerf
Up to 2 inches	18	72	0.095	0.150
2 to 4 inches	22	60	0.148	0.175
4 to 6 inches	26	60	0.165	0.200
6 to 8 inches	30	80	0.16	0.200
8 to 10 inches	34	50	0.185	0.225

Note:

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Height of Material	Blade Diameter	Number of Teeth	Body Size	Blade Kerf
Up to 2 inches	18	72	0.095	0.150
2 to 4 inches	22	60	0.148	0.175
4 to 6 inches	26	60	0.165	0.200
6 to 8 inches	30	80	0.16	0.200
8 to 10 inches	34	50	0.185	0.225
10 to 12 inches	39	50	0.185	0.225



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NF Series Machine

Speeds and Feeds **6061 Aluminum**

Blade Size/Teeth	Blade Kerf	Thickness	Carriage Speed 30 HP	Carriage Speed 50 HP
18" - 60 Teeth	0.145	up to 2 inches	100 IPM	150 IPM
22" - 60 Teeth	0.175	2 to 4 inches	50 IPM	100 IPM
26" - 60 Teeth	0.195	4 to 6 inches	30 IPM	50 IPM
30" - 60 Teeth	0.210	6 to 8 inches	15 IMP	30 IPM
34" - 60 Teeth	0.220	8 to 10 inches	N/A	30 IPM
39" - 60 Teeth	0.230	10 to 12 inches	N/A	25 IPM

Note:

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Following is a listing of full arbor amperage for 3 phase 480 VAC motors. We recommend that you do not exceed 80 percent of the full rated capacities.

Motor HP	Full Rated Amps	80% of Full
30 HP	40 amps	32 amps
50 HP	65 amps	52 amps



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NF Series Machine

Speeds and Feeds **7075 Aluminum**

Blade Size/Teeth	Blade Kerf	Thickness	Carriage Speed	
			30 HP	50 HP
18" - 60 Teeth	0.145	up to 2 inches	100 IPM	150 IPM
22" - 60 Teeth	0.175	2 to 4 inches	50 IPM	100 IPM
26" - 60 Teeth	0.195	4 to 6 inches	30 IPM	50 IPM
30" - 60 Teeth	0.210	6 to 8 inches	15 IMP	30 IPM
34" - 60 Teeth	0.220	8 to 10 inches	N/A	30 IPM
39" - 60 Teeth	0.230	10 to 12 inches	N/A	30 IPM

Note:

These speeds and feeds may vary slightly due to blade condition and internal stress of the material.

Following is a listing of full arbor amperage for 3 phase 480 VAC motors. We recommend that you do not exceed 80 percent of the full rated capacities.

Motor HP	Full Rated Amps	80% of Full
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50 HP	65 amps	52 amps



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Infeeds/Speeds for Alloys/Ferrous Material Formual

Blade RPM = A

½ of Teeth on Blade = B

$A \times B = C$

Chip Load = D

To Find IMP: $A \times B = C \times D = E$

To Find Chip Load: $E / C = D$

By knowing PRM and blade info you can either determine what type of chop load you are creating or if you know the maximum chip load for a material you can determine the IPM you should operate at.

Sample: 4" thick S.S. and you want to have a chip load of .004 using a 30" blade with 72 teeth

Assume 20 RPM to start:

A = 20

B = 36

C = 720

D = 0.004

E =

$D = E / C$ D = 0.004

$E = C \times S$ E = 2.88 IPM



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Estimated Weight of Aluminum Plate

Thickness	Size	Weight
1"	48" X 144"	691 lbs
1"	60" X 144"	864 lbs
2"	48" X 144"	1,382 lbs
2"	60" X 144"	1,728 lbs
3"	48" X 144"	2,074 lbs
3"	60" X 144"	2,592 lbs
4"	48" X 144"	2,765 lbs
4"	60" X 144"	3,456 lbs
5"	48" X 144"	3,456 lbs
5"	60" X 144"	4,320 lbs
6"	48" X 144"	4,147 lbs
6"	60" X 144"	5,184 lbs
	144" X 144"	10,368 lbs
8"	48" X 144"	5,530 lbs
8"	60" X 144"	6,912 lbs
8"	144" X 144"	16,589 lbs
10"	48" X 144"	6,912 lbs
10"	60" X 144"	8,640 lbs
10"	144" X 144"	20,376 lbs
12"	48" X 144"	8,294 lbs
12"	60" X 144"	10,368 lbs
12"	144" X 144"	20,736 lbs



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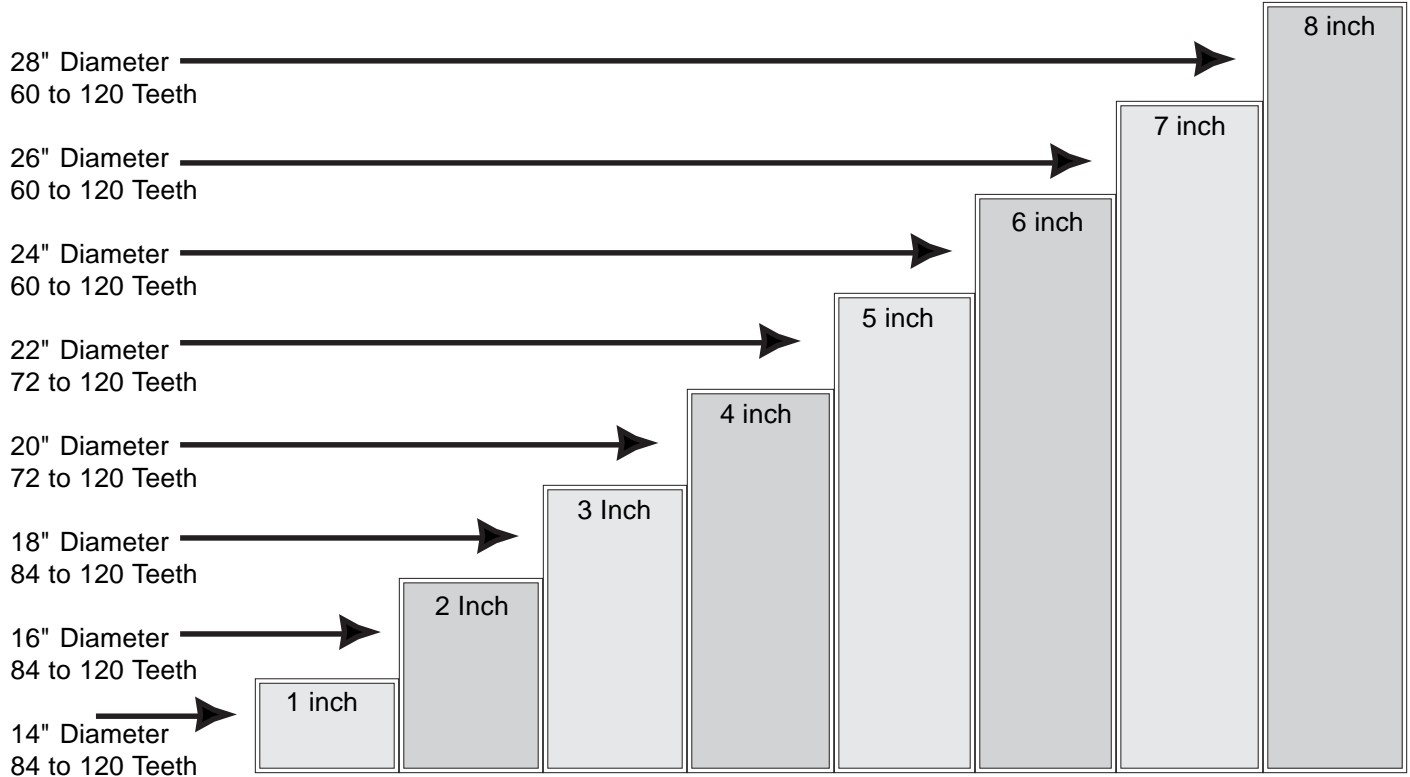
Estimated Weight of Aluminum Round, Hex and Square

Size	Round	Hex	Square
1"	12 lbs	13 lbs	15 lbs
2"	46 lbs	51 lbs	59 lbs
3"	104 lbs	114 lbs	132 lbs
4"	185 lbs	204 lbs	235 lbs
5"	288 lbs	318 lbs	367 lbs
6"	415 lbs	458 lbs	529 lbs
7"	565 lbs	623 lbs	720 lbs
8"	738 lbs	814 lbs	940 lbs

Conversion Factors for other metals:

Copper:	multiply by 3.2
Brass:	multiply by 3.0
Steel:	multiply by 2.8

Mics Blade Information



Blade Sharpening Specifications

Concentricity of Blade O.D.	0.005 T.I.R.
Flatness of Blade Body	0.00025 T.I.R. per 25 mm of Diameter
	10" = .00250
	20" = .005
Hook (face) Angle:	14" - 20" 0' up to +3'
	20" - 32" +3' up to +5'
Radial Side Clearance:	0.001 / 0.002 over length of tooth
Tangential (side) Clearance:	0.0015 / 0.002
Top Grind (back)	
Clearance Angle:	12' up to 15'