HYPERTHERM®
A Hypertherm Associates Brand

Hypertherm SYNC Training for CML USA

April 2025

PLASMA | LASER | WATERJET | AUTOMATION | SOFTWARE | CONSUMABLES

HYPERTHERM ASSOCIATES™
SHAPING POSSIBILITY®

Hypertherm History

- Founded in 1968 in Hanover, NH on a patent for radial water injection plasma cutting
- Founding principles of customer-focused innovation
- Over 1400 associates world wide
- More than 10% of associates dedicated to research and development

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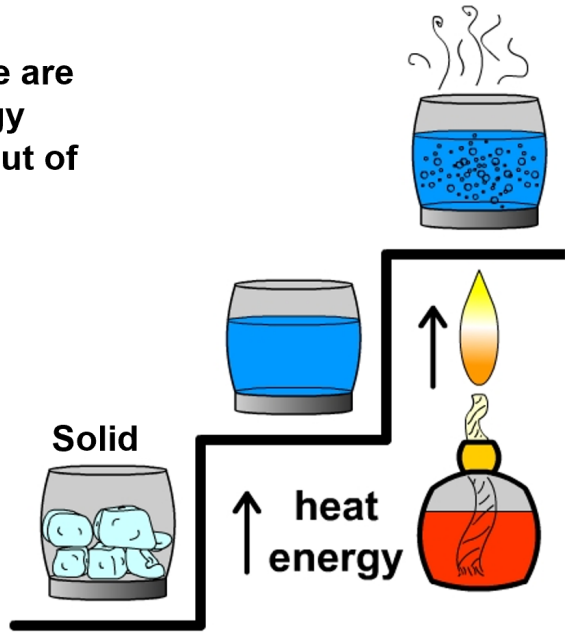
What is Plasma

Changes of state are caused by energy flowing into or out of a substance.



Hypertherm SYNC

Introducing the Powermax SYNC™

The world's best-selling plasma system just got smarter and easier. Powermax SYNC technology is designed to eliminate common operation errors and reduce service calls.

Powermax65 SYNC

Powermax85 SYNC

Powermax105 SYNC

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Warranty

Hypertherm has doubled our Powermax power supply warranty from 3 Years to 6 Years

The extension covers all systems sold in 2025 and going forward.

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How it Works

How it works

RFID

Cartridge DATA ⟷ **SmartSYNC™ torch** DATA ⟷ **Auto-set Plasma Power Supply**

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Consumable Comparison

Consumable Comparison

Traditional Consumable Set

- ✓ Five Piece
- ✓ Identification can be challenging
- ✓ Different wear rates

Cartridge

- ✓ Single-piece design
- ✓ Easy to identify
- ✓ Optimized for performance
- ✓ Automated setup

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Hypertherm SYNC Mechanized Cartridges

Hypertherm cartridges	
Process	**Cartridge**
105 A	428936
85 A	428934
65 A	428930
45 A	428925
FineCut® mechanized cutting	428926
Ohmic ring kit	428895 (contains 3 #420580 ohmic rings)

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Optimal Cut Quality

About the cut charts

The cut charts in this guide are a good starting point. Adjust the variables in the cut charts as needed to get optimal results for your cutting equipment and environment.

Cut charts are included for the following:

- Cutting mild steel, stainless steel, and aluminum at 45 A – 105 A with air using standard cutting cartridges
- Cutting mild steel and stainless steel with air using FineCut cartridges (Hypertherm does **not** recommend cutting aluminum with FineCut cartridges)
- Cutting stainless steel at 45 A – 105 A with F5 using standard cutting cartridges (Hypertherm does **not** recommend cutting with F5 using FineCut cartridges)

Hypertherm collected the cut chart data using new cartridges and obeying all requirements for electric supply, gas supply, and site conditions.

Select the best cartridge for the material you want to cut

	Metric material thickness (mm)											
	0.5	1	2	3	5	8	10	12	15	20	25	30
FineCut	■	■	■	■	■							
45 A	■	■	■	■	■	■	■					
65 A			■	■	■	■	■	■	■	■	■	
85 A				■	■	■	■	■	■	■	■	■
105 A						■	■	■	■	■	■	■

Optimal cut quality

Near to optimal cut quality

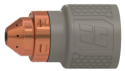
Decreased cut quality or speed

	English material thickness (in.)										
	0.02	0.06	1/8	1/4	3/8	1/2	5/8	3/4	1	1-1/4	1-1/2
FineCut	■	■	■								
45 A	■	■	■	■	■	■					
65 A		■	■	■	■	■	■	■	■		
85 A			■	■	■	■	■	■	■	■	
105 A				■	■	■	■	■	■	■	■

Mild Steel 105 AMP Cut Speed

Mild Steel – 105 A – Air (Powermax105 SYNC)

428895
ohmic sensing ring



428936

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
6	3.2	6.4	200	0.5	3960	143	4880	143	2.2
8	3.2	6.4	200	0.5	3020	144	3730	144	2.3
10	3.2	6.4	200	0.8	2240	145	2740	145	2.4
12	3.2	6.4	200	0.8	1700	146	2080	146	2.5
16	3.2	6.4	200	1.0	1090	149	1320	149	2.7
20	3.2	6.4	200	1.0	790	153	940	152	2.8
22	3.2	6.4	200	1.3	660	155	762	154	2.8
25	3.2	Edge Start			530	157	580	156	2.9
30	3.2				380	162	410	161	3.3
32	3.2				330	164	360	163	3.6
35	3.2				280	167	300	166	4.0
40	3.2				200	172	250	170	5.1

English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
1/4	0.125	0.250	200	0.5	156	143	192	143	0.086
3/8	0.125	0.250	200	0.8	94	145	116	145	0.095
1/2	0.125	0.250	200	0.8	61	147	75	146	0.101
5/8	0.125	0.250	200	1.0	43	149	53	149	0.105
3/4	0.125	0.250	200	1.0	33	152	40	151	0.108
7/8	0.125	0.250	200	1.3	26	155	30	154	0.111
1	0.125	Edge Start			20	158	22	157	0.117
1-1/8	0.125				16	161	18	160	0.126
1-1/4	0.125				13	164	14	163	0.139
1-1/2	0.125				9	170	10	168	0.183

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Stainless Steel 105 Amp Cut Speeds

Stainless Steel – 105 A – Air (Powermax105 SYNC)

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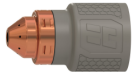


428936

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
6	3.2	6.4	200	0.5	4700	139	5690	139	1.9
8	3.2	6.4	200	0.5	3250	142	3890	142	2.1
10	3.2	6.4	200	0.5	2180	144	2620	144	2.2
12	3.2	6.4	200	0.5	1550	147	1880	146	2.4
16	3.2	7.9	250	0.8	940	151	1120	150	2.6
20	3.2	7.9	250	1.3	660	155	790	154	2.8
22	3.2	Edge Start			559	157	686	156	2.9
25	3.2				460	159	530	158	2.9
30	3.2				330	162	360	162	2.8
32	3.2				300	163	330	163	2.8

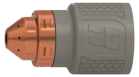
English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
1/4	0.125	0.250	200	0.5	185	140	224	140	0.075
3/8	0.125	0.250	200	0.5	94	144	112	143	0.086
1/2	0.125	0.250	200	0.5	55	148	67	147	0.096
5/8	0.125	0.250	200	0.8	37	151	45	150	0.103
3/4	0.125	0.310	250	1.3	28	154	34	153	0.109
7/8	0.125	Edge Start			22	157	27	156	0.113
1	0.125				17	160	20	159	0.114
1-1/8	0.125				14	161	16	161	0.113
1-1/4	0.125				12	163	13	163	0.110

Aluminum 105 Amp Cut Chart

Aluminum – 105 A – Air (Powermax105 SYNC)

428895
ohmic sensing ring



428936

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
6	3.2	6.4	200	0.5	5660	146	6730	146	2.3
8	3.2	6.4	200	0.5	3760	148	4500	147	2.4
10	3.2	6.4	200	0.8	2590	149	3230	148	2.4
12	3.2	6.4	200	0.8	1930	151	2490	149	2.5
16	3.2	6.4	250	1.0	1320	156	1650	153	2.5
20	3.2	6.4	250	1.3	1020	160	1190	157	2.6
22	3.2	Edge Start			864	162	1016	159	2.7
25	3.2				660	166	810	163	2.7
30	3.2				430	172	560	168	3.0
32	3.2				380	174	510	170	3.1

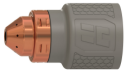
English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
1/4	0.125	0.250	200	0.5	223	146	265	146	0.093
3/8	0.125	0.250	200	0.8	110	149	136	148	0.096
1/2	0.125	0.250	200	1.0	70	152	91	150	0.098
5/8	0.125	0.250	200	1.0	52	155	66	153	0.100
3/4	0.125	0.250	200	1.3	43	159	50	156	0.102
7/8	0.125	Edge Start			34	162	40	159	0.105
1	0.125				26	166	31	163	0.109
1-1/8	0.125				19	170	24	167	0.114
1-1/4	0.125				15	174	20	170	0.122

Mild Steel 85 Amp Cut Chart

Mild Steel – 85 A – Air (Powermax85/105 SYNC)

428895
ohmic sensing ring



428934

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
3	3.2	3.8	120	0.0	6930	134	9580	131	1.5
4	3.2	3.8	120	0.2	5560	134	7140	132	1.7
6	3.2	3.8	120	0.2	3560	135	4220	134	1.9
8	3.2	3.8	120	0.5	2360	136	2820	135	2.1
10	3.2	4.8	150	0.5	1630	137	2030	137	2.3
12	3.2	4.8	150	0.5	1240	138	1520	138	2.4
16	3.2	4.8	150	1.0	840	142	970	142	2.6
20	3.2	6.4	200	1.5	580	147	660	145	2.8
22	3.2	Edge Start			483	147	559	147	2.9
25	3.2				360	153	430	150	3.0
30	3.2				200	159	300	155	3.4

English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
10 GA	0.125	0.150	120	0.2	250	134	334	132	0.063
3/16	0.125	0.150	120	0.2	185	134	226	133	0.070
1/4	0.125	0.150	120	0.5	130	135	153	134	0.077
3/8	0.125	0.150	120	0.5	70	136	86	136	0.088
1/2	0.125	0.188	150	0.5	46	139	55	139	0.096
5/8	0.125	0.188	150	1.0	34	142	39	142	0.103
3/4	0.125	0.250	200	1.5	25	146	28	144	0.108
7/8	0.125	Edge Start			19	150	22	147	0.114
1	0.125				13	153	17	150	0.120
1-1/8	0.125				9	157	13	153	0.128
1-1/4	0.125				6	161	10	157	0.139

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Stainless Steel 85 Amp Cut Chart

Stainless Steel – 85 A – Air (Powermax85/105 SYNC)

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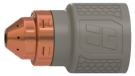
ohmic sensing ring



428934

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
3	3.2	3.8	120	0.2	8100	132	9860	131	1.3
4	3.2	3.8	120	0.2	6220	133	7570	132	1.6
6	3.2	3.8	120	0.2	3630	135	4470	134	2.0
8	3.2	3.8	120	0.5	2260	137	2790	136	2.3
10	3.2	4.8	150	0.5	1500	139	1880	138	2.4
12	3.2	4.8	150	0.5	1040	142	1350	140	2.5
16	3.2	4.8	150	1.0	690	147	790	144	2.5
20	3.2	Edge Start			480	151	530	148	2.7
22	3.2				406	153	457	150	2.9
25	3.2				300	155	380	152	3.5

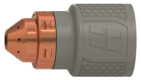
English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
10 GA	0.125	0.150	120	0.2	275	133	335	131	0.060
3/16	0.125	0.150	120	0.2	199	134	243	133	0.071
1/4	0.125	0.150	120	0.5	131	135	161	134	0.082
3/8	0.125	0.150	120	0.5	65	139	81	137	0.094
1/2	0.125	0.188	150	0.5	36	142	47	141	0.098
5/8	0.125	0.188	150	1.0	27	146	32	144	0.098
3/4	0.125	Edge Start			21	150	23	147	0.102
7/8	0.125				16	153	18	150	0.114
1	0.125				11	155	15	152	0.141

Aluminum 85 Amp Cut Chart

Aluminum – 85 A – Air (Powermax85/105 SYNC)

428895
ohmic sensing ring



428934

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
3	3.2	3.8	120	0.2	7980	137	9520	135	1.9
4	3.2	3.8	120	0.2	6050	138	7470	136	2.0
6	3.2	3.8	120	0.2	3630	140	4750	138	2.2
8	3.2	3.8	120	0.5	2440	142	3250	141	2.4
10	3.2	4.8	150	0.5	1780	145	2390	143	2.5
12	3.2	4.8	150	0.5	1400	148	1850	146	2.6
16	3.2	4.8	150	1.0	940	154	1190	150	2.7
20	3.2	Edge Start			580	158	890	155	2.8
22	3.2				483	160	737	157	2.9
25	3.2				380	162	530	159	3.0

English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
1/8	0.125	0.150	120	0.2	300	137	360	136	0.076
1/4	0.125	0.150	120	0.5	133	140	174	139	0.089
3/8	0.125	0.150	120	0.5	75	144	101	143	0.097
1/2	0.125	0.188	150	0.5	51	149	68	146	0.102
5/8	0.125	0.188	150	1.0	38	153	48	150	0.106
3/4	0.125	Edge Start			26	157	37	154	0.109
7/8	0.125				19	160	29	157	0.113
1	0.125				15	162	20	159	0.119

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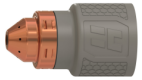
Mild Steel 65 Amp Cut Chart

Mild Steel – 65 A – Air (Powermax65/85/105 SYNC)

428895
ohmic sensing ring



428930

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
3	3.2	3.8	120	0.1	5330	133	6250	132	1.3
4	3.2	3.8	120	0.1	4220	133	5000	131	1.4
6	3.2	3.8	120	0.2	2570	133	3200	132	1.5
8	3.2	3.8	120	0.5	1550	135	2130	133	1.7
10	3.2	3.8	120	0.7	1040	137	1500	135	1.9
12	3.2	3.8	120	1.2	840	139	1120	137	2.0
16	3.2	6.4	200	2.0	560	145	660	143	2.3
20	3.2	Edge Start			380	151	430	148	2.5
25	3.2				200	155	280	153	2.8

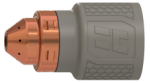
English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
10 GA	0.125	0.150	120	0.1	191	133	225	132	0.053
3/16	0.125	0.150	120	0.2	138	133	166	131	0.057
1/4	0.125	0.150	120	0.5	93	133	117	132	0.062
3/8	0.125	0.150	120	0.7	44	136	64	134	0.072
1/2	0.125	0.150	120	1.2	30	140	40	138	0.081
5/8	0.125	0.250	200	2.0	22	145	27	143	0.089
3/4	0.125	Edge Start			16	150	19	147	0.097
7/8	0.125				11	153	14	151	0.104
1	0.125				8	155	10	153	0.110

Stainless Steel 65 Amp Cut Chart

Stainless Steel – 65 A – Air (Powermax65/85/105 SYNC)

428895
ohmic sensing ring



428930

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
2	3.2	3.8	120	0.1	8760	132	10820	131	0.8
3	3.2	3.8	120	0.1	7650	132	9730	131	1.1
4	3.2	3.8	120	0.1	5160	133	6120	131	1.3
6	3.2	3.8	120	0.2	2440	133	2720	132	1.6
8	3.2	3.8	120	0.5	1350	135	1550	134	1.8
10	3.2	4.8	150	0.7	940	137	1120	136	2.0
12	3.2	4.8	150	1.2	740	139	890	138	2.1
16	3.2	Edge Start			480	144	510	143	2.2
20	3.2				330	149	360	148	2.5

English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
10 GA	0.125	0.150	120	0.1	241	132	295	131	0.047
3/16	0.125	0.150	120	0.2	150	133	171	132	0.055
1/4	0.125	0.150	120	0.5	86	134	95	133	0.064
3/8	0.125	0.150	120	0.7	40	136	47	135	0.075
1/2	0.125	0.188	150	1.2	27	140	31	139	0.082
5/8	0.125	Edge Start			19	144	21	143	0.087
3/4	0.125				14	148	15	147	0.096

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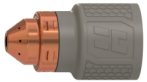
Aluminum 65 Amp Cut Chart

Aluminum – 65 A – Air (Powermax65/85/105 SYNC)

428895
ohmic sensing ring



428930

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
2	3.2	3.8	120	0.1	9270	134	10800	133	1.4
3	3.2	3.8	120	0.1	7540	134	8920	133	1.5
4	3.2	3.8	120	0.1	5380	135	6880	133	1.5
6	3.2	3.8	120	0.2	2900	137	4110	135	1.6
8	3.2	3.8	120	0.5	1780	139	2590	137	1.7
10	3.2	4.8	150	0.7	1220	142	1750	139	1.8
12	3.2	4.8	150	1.2	940	145	1320	142	1.9
16	3.2	Edge Start			610	151	810	148	2.1
20	3.2				380	157	530	153	2.4

English

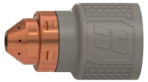
Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
1/16	0.125	0.150	120	0.1	365	134	428	133	0.056
1/8	0.125	150	120	0.1	280	134	337	133	0.059
1/4	0.125	150	120	0.5	104	137	149	135	0.064
3/8	0.125	150	120	0.7	52	141	75	138	0.069
1/2	0.125	0.188	150	1.2	34	146	48	143	0.076
5/8	0.125	Edge Start			25	151	33	147	0.083
3/4	0.125				17	155	23	152	0.092

HYPERTHERM
A Hypertherm Associates Brand

Mild Steel 45 Amp Cut Chart

Mild Steel – 45 A – Air (Powermax65/85/105 SYNC)

428895
ohmic sensing ring



428925

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
0.5	3.2	3.8	120	0.0	8890	137	12500	135	1.1
1	3.2	3.8	120	0.1	8890	138	10670	138	1.4
1.5	3.2	3.8	120	0.1	8890	138	10190	139	1.5
2	3.2	3.8	120	0.2	6600	139	7620	140	1.7
3	3.2	3.8	120	0.4	3630	141	4830	139	1.8
4	3.2	3.8	120	0.4	2260	142	3400	138	1.9
6	3.2	3.8	120	0.6	1240	141	2010	140	1.9

English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
26 GA	0.125	0.150	120	0.0	350	137	501	135	0.044
22 GA	0.125	0.150	120	0.0	350	137	445	137	0.049
18 GA	0.125	0.150	120	0.1	350	138	408	138	0.057
16 GA	0.125	0.150	120	0.1	350	138	398	139	0.061
14 GA	0.125	0.150	120	0.2	278	139	318	140	0.065
12 GA	0.125	0.150	120	0.4	173	140	219	140	0.071
10 GA	0.125	0.150	120	0.4	115	141	162	139	0.073
3/16	0.125	0.150	120	0.5	68	142	107	138	0.074
1/4	0.125	0.150	120	0.6	46	141	74	141	0.075

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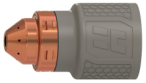
Stainless Steel 45 Amp Cut Chart

Stainless Steel – 45 A – Air (Powermax65/85/105 SYNC)

428895
ohmic sensing ring



428925

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
0.5	3.2	3.8	120	0.0	8890	127	12700	125	1.1
1	3.2	3.8	120	0.1	8890	134	10770	132	0.8
1.5	3.2	3.8	120	0.1	8890	138	10110	137	0.7
2	3.2	3.8	120	0.2	6220	140	8990	139	0.8
3	3.2	3.8	120	0.4	3230	141	4620	140	1.4
4	3.2	3.8	120	0.5	1960	140	2410	139	2.2
6	3.2	3.8	120	0.6	860	142	970	141	2.4

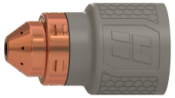
English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
26 GA	0.125	0.150	120	0.0	350	127	501	125	0.045
22 GA	0.125	0.150	120	0.0	350	131	445	130	0.035
18 GA	0.125	0.150	120	0.1	350	136	408	135	0.027
16 GA	0.125	0.150	120	0.1	350	138	401	137	0.026
14 GA	0.125	0.150	120	0.2	248	140	357	139	0.030
12 GA	0.125	0.150	120	0.4	145	141	214	140	0.048
10 GA	0.125	0.150	120	0.4	94	141	124	140	0.072
3/16	0.125	0.150	120	0.5	55	139	63	138	0.102
1/4	0.125	0.150	120	0.6	30	144	35	144	0.082

Aluminum 45 Amp Cut Chart

Aluminum – 45 A – Air (Powermax65/85/105 SYNC)

428895
ohmic sensing ring



428925

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
1	3.2	3.8	120	0.0	8260	131	11400	128	1.6
2	3.2	3.8	120	0.1	5970	140	9040	137	1.8
3	3.2	3.8	120	0.1	3350	146	6400	143	1.9
4	3.2	3.8	120	0.1	2210	150	4600	146	1.9
6	3.2	3.8	120	0.2	1240	151	2570	145	2.0

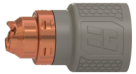
English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
1/32	0.125	0.150	120	0.0	325	129	449	126	0.062
1/16	0.125	0.150	120	0.0	325	137	406	134	0.069
3/32	0.125	0.150	120	0.1	183	143	312	140	0.073
1/8	0.125	0.150	120	0.1	121	147	238	144	0.074
1/4	0.125	0.150	120	0.2	46	150	93	143	0.081

Mild Steel FineCut High Speed

Mild Steel – FineCut High Speed – Air (Powermax65/85/105 SYNC)

428895
ohmic sensing ring



428926

Metric

Material Thickness	Current	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Kerf Width
						Cut Speed	Arc Voltage	
mm	A	mm	mm	%	seconds	mm/min	volts	mm
0.5	40	3.5	3.5	100	0.0	8900	90	0.8
0.6	40	3.5	3.5	100	0.0	8900	90	0.8
0.8	40	3.5	3.5	100	0.0	8900	90	0.6
1	40	3.5	3.5	100	0.0	8890	90	0.6
1.5	45	3.5	3.5	100	0.2	6550	88	0.5
2	45	3.5	3.5	100	0.3	5260	88	0.5
3	45	3.5	3.5	100	0.4	2750	90	0.8
4	45	3.5	3.5	100	0.6	2250	88	0.8

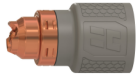
English

Material Thickness	Current	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Kerf Width
						Cut Speed	Arc Voltage	
inches	A	inches	inches	%	seconds	in/min	volts	inches
26 GA	40	0.14	0.14	100	0.0	350	90	0.033
24 GA	40	0.14	0.14	100	0.0	350	90	0.032
22 GA	40	0.14	0.14	100	0.0	350	90	0.026
20 GA	40	0.14	0.14	100	0.0	350	90	0.024
18 GA	45	0.14	0.14	100	0.1	350	89	0.020
16 GA	45	0.14	0.14	100	0.2	250	88	0.021
14 GA	45	0.14	0.14	100	0.3	220	88	0.021
12 GA	45	0.14	0.14	100	0.4	115	91	0.032
10 GA	45	0.14	0.14		0.5	100	89	0.031

Stainless Steel FineCut High Speed

Stainless Steel – FineCut High Speed – Air (Powermax65/85/105 SYNC)

428895
ohmic sensing ring



428926

Metric

Material Thickness	Current	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Kerf Width
						Cut Speed	Arc Voltage	
mm	A	mm	mm	%	seconds	mm/min	volts	mm
0.5	40	0.5	3.5	700	0.0	8900	64	0.7
0.6	40	0.5	3.5	700	0.0	8900	65	0.6
0.8	40	0.5	3.5	700	0.0	8900	65	0.5
1	40	0.5	3.5	700	0.1	8890	64	0.4
1.5	45	0.5	3.5	700	0.3	6320	64	0.4
2	45	0.5	3.5	700	0.4	4830	65	0.4
3	45	0.5	3.5	700	0.5	2550	71	0.6
4	45	0.5	3.5	700	0.7	1050	71	0.5

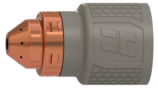
English

Material Thickness	Current	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Kerf Width
						Cut Speed	Arc Voltage	
inches	A	inches	inches	%	seconds	in/min	volts	inches
26 GA	40	0.02	0.14	700	0.0	350	64	0.028
24 GA	40	0.02	0.14	700	0.0	350	65	0.024
22 GA	40	0.02	0.14	700	0.0	350	65	0.020
20 GA	40	0.02	0.14	700	0.1	350	65	0.016
18 GA	45	0.02	0.14	700	0.2	350	62	0.012
16 GA	45	0.02	0.14	700	0.3	240	64	0.017
14 GA	45	0.02	0.14	700	0.4	200	65	0.017
12 GA	45	0.02	0.14	700	0.5	120	71	0.026
10 GA	45	0.02	0.14	700	0.6	75	71	0.023

Stainless Steel 105 Amp F5 Cut Chart

Stainless Steel – 105 A – F5 (Powermax105 SYNC)

428895
ohmic sensing ring



428936

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
6	3.2	6.4	200	0.5	2800	155	3600	153	1.2
8	3.2	6.4	200	0.5	2300	157	3100	155	1.2
10	3.2	6.4	200	0.7	1500	159	2300	157	1.2
12	3.2	6.4	200	0.8	1100	162	1500	159	1.3
16	3.2	8.0	250	1.3	700	165	1000	161	1.5
20	3.2	Edge start			500	173	700	168	1.8
25	4.4				400	181	500	172	2.2

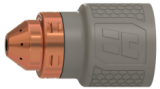
English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
1/4	0.125	0.250	200	0.5	117	155	150	153	0.047
3/8	0.125	0.250	200	0.5	65	158	99	156	0.045
1/2	0.125	0.250	200	0.5	36	163	48	160	0.053
5/8	0.125	0.250	200	0.8	28	165	38	161	0.047
3/4	0.125	0.310	250	1.3	20	174	28	167	0.067
7/8	0.125	Edge start			21	171	23	169	0.054
1	0.175				15	183	18	172	0.090

Stainless Steel 85 Amp F5 Cut Chart

Stainless Steel – 85 A – F5 (Powermax85/105 SYNC)

428895
ohmic sensing ring



428934

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
4	3.2	3.8	120	0.2	4100	137	5400	142	1.8
6	3.2	3.8	120	0.2	2200	142	2900	141	1.1
8	3.2	3.8	120	0.5	1600	146	2100	142	1.3
10	3.2	3.8	120	0.5	1300	149	1700	143	1.4
12	3.2	4.8	150	0.8	1000	152	1200	146	1.4
16	3.2	6.4	200	1.0	600	156	800	150	1.5
20	3.2	Edge start			300	157	400	156	1.9

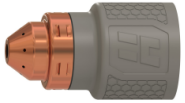
English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
10 GA	0.125	0.150	120	0.2	183	136	238	142	0.073
1/4	0.125	0.150	120	0.5	74	143	98	141	0.045
3/8	0.125	0.150	120	0.5	54	148	70	142	0.054
1/2	0.125	0.188	150	0.8	33	153	42	147	0.056
5/8	0.125	0.250	200	1.0	25	156	31	150	0.060
3/4	0.125	Edge start			17	157	20	155	0.071

Stainless Steel 65 Amp F5 Cut Chart

Stainless Steel – 65 A – F5 (Powermax65/85/105 SYNC)

428895
ohmic sensing ring



428930

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
4	3.2	3.8	120	0.1	3200	142	4200	143	0.8
6	3.2	3.8	120	0.2	1800	144	2400	145	1.0
8	3.2	3.8	120	0.5	1100	148	1500	148	1.1
10	3.2	3.8	120	0.7	700	153	900	152	1.3
12	5.0	6.0	120	1.2	500	157	700	154	1.5

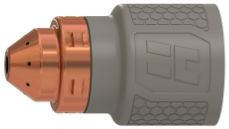
English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
10 GA	0.125	0.150	120	0.2	142	142	185	143	0.029
1/4	0.125	0.150	120	0.5	60	144	80	145	0.040
3/8	0.125	0.150	120	0.7	30	152	38	151	0.048
1/2	0.200	0.240	120	1.2	19	159	26	155	0.062

Stainless Steel 45 Amp F5 Cut Chart

Stainless Steel – 45 A – F5 (Powermax65/85/105 SYNC)

428895
ohmic sensing ring



428925

Metric

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
6	3.2	4.8	150	0.6	1200	154	1200	154	0.8
7	3.2	4.8	150	0.6	1100		1100		

English

Material Thickness	Cut Height	Initial Pierce Height		Pierce Delay	Best Quality		Highest Production		Kerf Width
					Cut Speed	Arc Voltage	Cut Speed	Arc Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
1/4	0.125	0.18	150	0.6	46	154	46	154	0.030

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