

105 A Shielded consumables



Hypertherm

MACHINE TORCH SETUP

105 A Shielded cutting (Mild Steel)

Air flow rate - slpm/scfh	
Hot	217 / 460
Cold	250 / 530

Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings		
					Cut Speed	Voltage	Cut Speed	Voltage	
mm	mm	mm	%	seconds	(mm/min)	Volts	(mm/min)	Volts	
6	3.2	6.4	200	0.5	4140	144	5090	145	
8				0.75	3140	145	3870	145	
10					2260	145	2790	145	
12					1690	145	2060	148	
16				1.0	1060	149	1310	149	
20					780	152	940	152	
25		Edge Start			550	159	580	158	
30					370	162	410	161	
32					350	166	370	161	
35					290	168	320	165	
40					190	173	210	170	

English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings		
					Cut Speed	Voltage	Cut Speed	Voltage	
inches	inches	inches	%	seconds	ipm	Volts	ipm	Volts	
1/4	0.125	0.25	200	0.5	156	144	192	145	
3/8				0.75	94	145	116	145	
1/2					62	146	76	148	
5/8				1.0	42	149	52	149	
3/4					33	151	40	150	
7/8				1.25	26	154	30	157	
1		Edge Start			21	160	22	158	
1-1/8					15	162	17	160	
1-1/4					14	166	15	161	
1-1/2					9	171	10	168	

MACHINE TORCH SETUP

105 A Shielded cutting (Stainless Steel)

Air flow rate - slpm/scfh	
Hot	217 / 460
Cold	250 / 530

Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
		mm	%		Cut Speed (mm/min)	Voltage	Cut Speed (mm/min)	Voltage
6	3.2	6.4	200	0.5	4870	139	6000	141
8					3460	141	4210	142
10					2240	144	2670	142
12				0.6	1490	148	1860	144
16				0.75	950	149	1080	149
20		8.0	250	1.25	660	154	810	152
25		Edge Start			440	158	530	156
30					340	164	360	160
32					300	166	320	163

English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
		inches	%		Cut Speed ipm	Voltage	Cut Speed ipm	Voltage
1/4	0.125	0.25	200	0.5	185	139	224	141
3/8					94	143	112	142
1/2					55	148	68	145
5/8				0.75	38	149	43	149
3/4		0.31	250	1.25	28	153	34	151
7/8		Edge Start			22	156	27	153
1					17	158	20	156
1-1/8					14	162	16	159
1-1/4					12	166	13	163

MACHINE TORCH SETUP

105 A Shielded cutting (Aluminum)

Air flow rate - slpm/scfh	
Hot	217 / 460
Cold	250 / 530

Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
mm	mm	mm	%	seconds	(mm/min)	Volts	(mm/min)	Volts
6	3.2	6.4	200	0.5	5980	145	7090	144
8				0.75	4170	149	5020	148
10					2640	152	3280	151
12				1.0	1910	156	2450	154
16					1290	157	1660	155
20				1.25	1020	163	1190	162
25		Edge Start			660	166	790	165
30					490	173	570	171
32					340	175	490	173

English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
inches	inches	inches	%	seconds	ipm	Volts	ipm	Volts
1/4	0.125	0.25	200	0.5	223	146	265	145
3/8				0.75	110	151	136	150
1/2				1.0	71	156	91	154
5/8					51	157	66	155
3/4				1.25	43	162	50	161
7/8		Edge Start			34	164	40	163
1					25	166	30	165
1-1/8					20	171	25	169
1-1/4					15	175	20	173

85 A Shielded consumables



Hypertherm

MACHINE TORCH SETUP

85 A Shielded cutting (Mild Steel)

Air flow rate - slpm/scfh	
Hot	194 / 412
Cold	236 / 500

Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
mm	mm	mm	%	seconds	(mm/min)	Volts	(mm/min)	Volts
3	1.5	3.8	250	0.1	6800	122	9200	120
4				0.2	5650	122	7900	122
6				0.5	3600	123	4400	125
8					2500	125	3100	127
10					1680	127	2070	128
12		4.5	300	0.7	1280	130	1600	130
16				1.0	870	134	930	133
20		6.0	400	1.5	570	137	680	136
25		Edge Start			350	142	450	141
30					200	146	300	144

English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
inches	inches	inches	%	seconds	ipm	Volts	ipm	Volts
10GA	0.06	0.15	250	0.0	250	122	336	121
3/16				0.2	185	123	220	123
1/4				0.5	130	123	160	126
3/8					70	126	86	127
1/2					45	131	56	131
5/8		0.18	300	1.0	35	134	37	133
3/4		0.24	400	1.5	24	136	29	135
7/8		Edge Start			19	139	22	138
1					13	142	17	141
1-1/8					9	145	13	143
1-1/4					7	148	10	146

MACHINE TORCH SETUP

85 A Shielded cutting (Stainless Steel)

Air flow rate - slpm/scfh	
Hot	194 / 412
Cold	236 / 500

Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
mm	mm	mm	%	seconds	(mm/min)	Volts	(mm/min)	Volts
3	1.5	3.8	250	0.1	7500	122	9200	120
4				0.2	6100	122	7500	120
6				0.5	3700	122	4600	122
8					2450	124	3050	124
10		4.5	300	1550	127	1900	126	
12				1100	131	1400	130	
16				1.0	700	135	760	134
20					Edge Start			480
25					300	143	370	141

English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings			
					Cut Speed	Voltage	Cut Speed	Voltage		
inches	inches	inches	%	seconds	ipm	Volts	ipm	Volts		
10GA	0.06	0.15	250	0.2	275	122	336	120		
3/16					200	122	240	121		
1/4					130	122	164	122		
3/8				0.5	65	126	80	125		
1/2		0.18	300	1.0	36	132	48	131		
5/8					28	135	30	134		
3/4		Edge Start			20	137	24	136		
7/8					16	140	19	139		
1					11	143	14	141		

MACHINE TORCH SETUP

85 A Shielded cutting (Aluminum)

Air flow rate - slpm/scfh	
Hot	194 / 412
Cold	236 / 500

Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
mm	mm	mm	%	seconds	(mm/min)	Volts	(mm/min)	Volts
3	1.5	3.8	250	0.1	8000	122	9400	121
4				0.2	6500	123	8000	123
6				0.5	3800	126	4900	126
8					2650	130	3470	129
10		4.5	300	1920	132	2500	131	
12				1450	134	1930	133	
16				1.0	950	139	1200	137
20				Edge Start			600	143
25		380	146				540	144

English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
inches	inches	inches	%	seconds	ipm	Volts	ipm	Volts
1/8	0.06	0.15	250	0.2	300	122	360	121
1/4				0.5	130	127	172	127
3/8					80	132	104	131
1/2		0.18	300	1.0	50	135	68	133
5/8					38	139	48	137
3/4				Edge Start	25	142	37	140
7/8					20	144	29	142
1					14	146	20	144

65 A Shielded consumables

Hypertherm

MACHINE TORCH SETUP

65 A Shielded cutting (Mild Steel)

Air flow rate - slpm/scfh	
Hot	175 / 370
Cold	209 / 443

Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
mm	mm	mm	%	seconds	(mm/min)	Volts	(mm/min)	Volts
2	1.5	3.8	250	0.1	6050	124	7000	121
3				0.2	5200	125	6100	123
4				0.5	4250	125	5100	124
6					2550	127	3240	127
8					1700	129	2230	128
10		4.5	300	0.7	1100	131	1500	129
12				1.2	850	134	1140	131
16		6.0	400	2.0	560	138	650	136
20		Edge Start			350	142	450	142
25					210	145	270	145

English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
inches	inches	inches	%	seconds	ipm	Volts	ipm	Volts
16GA	0.06	0.15	250	0.1	260	123	294	121
10GA				0.2	190	125	224	123
3/16				0.5	140	126	168	125
1/4				0.7	90	127	116	127
3/8				1.2	45	130	62	129
1/2		0.18	300	2.0	30	135	40	132
5/8		0.24	400		23	138	26	136
3/4		Edge Start			15	141	19	141
7/8					12	143	14	143
1					8	145	10	145

MACHINE TORCH SETUP

65 A Shielded cutting (Stainless Steel)

Air flow rate - slpm/scfh	
Hot	175 / 370
Cold	209 / 443

Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
mm	mm	mm	%	seconds	(mm/min)	Volts	(mm/min)	Volts
2	1.5	3.8	250	0.1	8100	125	10000	121
3				0.2	6700	125	8260	123
4				0.5	5200	125	6150	124
6					2450	126	2850	126
8				0.7	1500	129	1860	129
10		960	132		1250	132		
12		750	135		920	134		
16		4.5	300	1.2	500	139	500	139
20					Edge Start			300

English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
inches	inches	inches	%	seconds	ipm	Volts	ipm	Volts
16GA	0.06	0.15	250	0.1	345	124	426	121
10GA				0.2	240	125	296	123
3/16				0.5	155	126	168	125
1/4					80	126	96	126
3/8		0.18	300	0.7	40	131	52	131
1/2				1.2	26	136	32	135
5/8				Edge Start	20	139	20	139
3/4					14	142	15	142

MACHINE TORCH SETUP

65 A Shielded cutting (Aluminum)

Air flow rate - slpm/scfh	
Hot	175 / 370
Cold	209 / 443

Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings			
					Cut Speed	Voltage	Cut Speed	Voltage		
mm	mm	mm	%	seconds	(mm/min)	Volts	(mm/min)	Volts		
2	1.5	3.8	250	0.1	8800	121	10300	122		
3				0.2	7400	124	8800	124		
4				0.5	6000	126	7350	125		
6					3200	130	4400	128		
8				0.7	1950	133	2750	130		
10					1200	136	1650	132		
12		4.5	300	1.2	1000	138	1330	136		
16				Edge Start			650	143	800	141
20							380	147	560	145

English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
inches	inches	inches	%	seconds	ipm	Volts	ipm	Volts
1/16	0.06	0.15	250	0.1	365	121	428	121
1/8					280	124	336	124
1/4				0.5	105	131	152	128
3/8				0.7	50	135	68	131
1/2		0.18	300	1.2	35	139	48	138
5/8		Edge Start			26	143	32	141
3/4					16	146	24	144

45 A Shielded consumables



Hypertherm

MACHINE TORCH SETUP

45 A Shielded cutting (Mild Steel)

Air flow rate - slpm/scfh	
Hot	177 / 376
Cold	201 / 427

Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
mm	mm	mm	%	seconds	(mm/min)	Volts	(mm/min)	Volts
0.5	1.5	3.8	250	0.0	9000	128	12500	126
1					9000	128	10800	128
1.5					9000	130	10200	129
2				0.4	6600	130	7800	129
3					3850	133	4900	131
4					2200	134	3560	131
6					1350	137	2050	132

English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
inches	inches	inches	%	seconds	ipm	Volts	ipm	Volts
26GA	0.02	0.08	400	0.0	350	128	500	128
22GA					350	128	450	128
18GA				0.1	350	129	400	128
16GA					350	130	400	129
14GA	0.06	0.15	250	0.2	270	130	320	129
12GA				0.4	190	133	216	131
10GA					100	134	164	131
3/16				0.5	70	135	108	132
1/4				0.6	48	137	73	132

MACHINE TORCH SETUP

45 A Shielded cutting (Stainless Steel)

Air flow rate - slpm/scfh	
Hot	177 / 376
Cold	201 / 427

Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
mm	mm	mm	%	seconds	(mm/min)	Volts	(mm/min)	Volts
0.5	1.5	3.8	250	0.0	9000	130	12500	129
1					9000	130	10800	130
1.5					9000	130	10200	130
2				0.3	6000	132	8660	131
3				0.4	3100	132	4400	132
4					2000	134	2600	134
6				0.5	900	140	1020	139

English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
inches	inches	inches	%	seconds	ipm	Volts	ipm	Volts
26GA	0.02	0.08	400	0.0	350	130	500	129
22GA					350	130	450	129
18GA					350	130	400	130
16GA				0.1	350	130	400	130
14GA	0.06	0.15	250	0.2	250	132	360	131
12GA				0.4	140	132	206	131
10GA					100	133	134	134
3/16				0.5	52	135	58	135
1/4				0.6	30	141	35	140

MACHINE TORCH SETUP

45 A Shielded cutting (Aluminum)

Air flow rate - slpm/scfh	
Hot	177 / 376
Cold	201 / 427

Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
mm	mm	mm	%	seconds	(mm/min)	Volts	(mm/min)	Volts
1	1.5	3.8	250	0.0	8250	136	11000	136
2				0.1	6600	136	9200	135
3				0.2	3100	139	6250	134
4				0.4	2200	141	4850	135
6				0.5	1500	142	2800	137

English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings	
					Cut Speed	Voltage	Cut Speed	Voltage
inches	inches	inches	%	seconds	ipm	Volts	ipm	Volts
1/32	0.06	0.15	250	0.0	325	136	450	136
1/16				0.1	325	136	400	136
3/32				0.2	200	136	328	134
1/8				0.4	100	140	224	134
1/4				0.5	54	142	96	137

FineCut® consumables

Note: The cut charts in this section apply to both shielded and unshielded consumables.



Hypertherm

MACHINE TORCH SETUP

FineCut (Mild Steel)

Air flow rate - slpm/scfh	
Hot	181 / 384
Cold	191 / 404

Metric

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Recommended		
						Cut Speed	Voltage	
mm	A	mm	mm	%	seconds	(mm/min)	Volts	
0.5	40	1.5	2.25	150	0.0	8250	78	
0.6						8250	78	
0.8						8250	78	
1	45				0.1	8250	78	
1.5						0.2	8250	78
2							0.4	6400
3					4800			78
4					0.5	2750		78
						0.6	1900	78

English

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Recommended				
						Cut Speed	Voltage			
	A	inches	inches	%	seconds	ipm	Volts			
26GA	40	0.06	0.09	150	0.0	325	78			
24GA						325	78			
22GA						325	78			
20GA						325	78			
18GA	45				0.06	0.09	150	0.1	325	78
16GA								0.2	325	78
14GA								0.4	250	78
12GA									200	78
10GA								0.5	120	78
									95	78

MACHINE TORCH SETUP

FineCut (Stainless Steel)

Air flow rate - slpm/scfh	
Hot	181 / 384
Cold	191 / 404

Metric

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Recommended	
						Cut Speed	Voltage
mm	A	mm	mm	%	seconds	(mm/min)	Volts
0.5	40	0.5	2.0	400	0.0	8250	68
0.6						8250	68
0.8						8250	68
1	45				0.1	8250	68
1.5					0.15	8250	68
2					0.4	6150	70
3						4800	71
4					0.5	2550	80
					0.6	1050	80

English

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Recommended	
						Cut Speed	Voltage
	A	inches	inches	%	seconds	ipm	Volts
26GA	40	0.02	0.08	400	0.0	325	68
24GA						325	68
22GA					0.1	325	68
20GA						325	68
18GA	45				0.2	325	68
16GA						0.4	240
14GA					200		70
12GA					0.5		120
10GA						0.6	75

MACHINE TORCH SETUP

Low Speed FineCut (Mild Steel)

Air flow rate - slpm/scfh	
Hot	181 / 384
Cold	191 / 404

Metric

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Recommended	
						Cut Speed	Voltage
mm	A	mm	mm	%	seconds	(mm/min)	Volts
0.5	30	1.5	2.25	150	0.0	3800	69
0.6						3800	68
0.8						3800	70
1 *	40				0.2	3800	72
1.5 *					0.4	3800	75
2						3700	76
3	45					0.5	2750
4					1900	78	

English

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Recommended							
						Cut Speed	Voltage						
	A	inches	inches	%	seconds	ipm	Volts						
26GA	30	0.06	0.09	150	0.0	150	70						
24GA						150	68						
22GA					0.1	150	70						
20GA						150	71						
18GA	40				0.06	0.09	150	0.2	150	73			
16GA *								0.4	150	75			
14GA *									150	76			
12GA	45							0.06	0.09	150	0.5	120	78
10GA												95	78

*Not a dross-free cut.

MACHINE TORCH SETUP

Low Speed FineCut (Stainless Steel)

Air flow rate - slpm/scfh	
Hot	181 / 384
Cold	191 / 404

Metric

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Recommended	
						Cut Speed	Voltage
mm	A	mm	mm	%	seconds	(mm/min)	Volts
0.5	30	0.5	2.0	400	0.0	3800	69
0.6						3800	69
0.8						3800	69
1	40				0.1	3800	69
1.5					0.15	3800	69
2					0.4	2900	69
3	2750					69	
4	45				0.5	2550	80
		0.6	1050	80			

English

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Recommended							
						Cut Speed	Voltage						
	A	in	in	%	seconds	ipm	Volts						
26GA	30	0.02	0.08	400	0.0	150	69						
24GA						150	69						
22GA						150	69						
20GA						150	69						
18GA	40				0.02	0.08	400	0.2	145	69			
16GA								0.4	115	69			
14GA									110	69			
12GA	45							0.02	0.08	400	0.5	120	80
10GA											0.6	75	80