

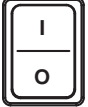



TORCH SETUP

Choose the consumables (cut charts)

		<p style="text-align: center;">WARNING INSTANT-ON TORCHES PLASMA ARC CAN CAUSE INJURY AND BURNS</p>
		<p>The plasma arc comes on immediately when the torch trigger is activated. Make sure the power is OFF before changing consumables.</p>

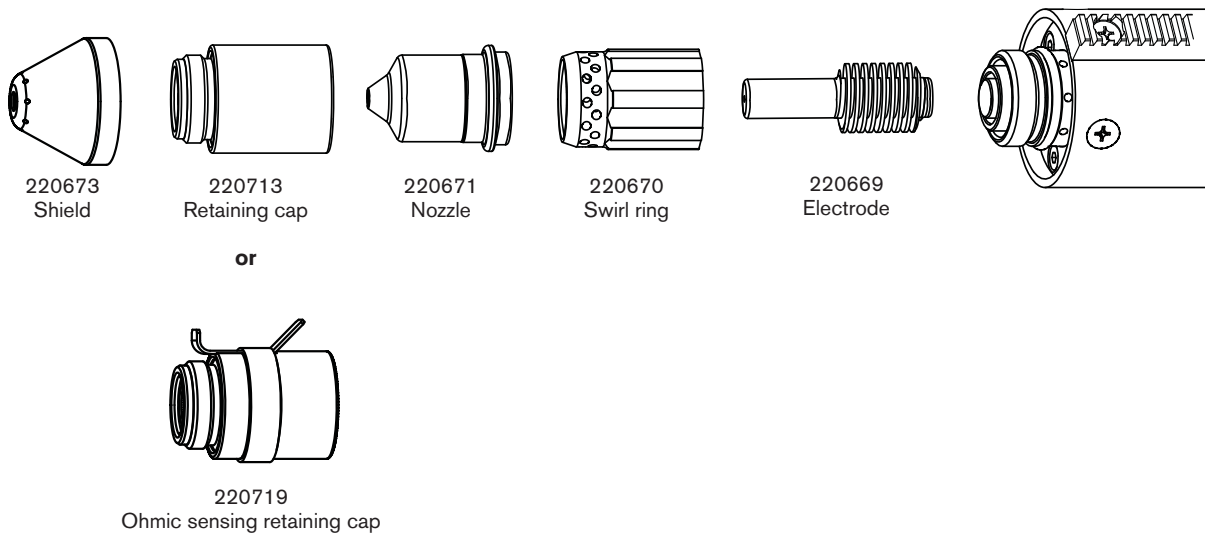
A complete set of shielded consumables is shipped with the T45m machine torch. In addition, an ohmic sensing retaining cap is available for use with the T45m shielded consumables. Unshielded consumables and the T30v (Powermax30) 30 A consumables are also available for use with the T45m.

Using the cut charts

The following sections provide illustrations of the consumable sets and cut charts for each set. Maximum cut speeds are the fastest speeds possible to cut material without regard to cut quality. Recommended cut speeds are a good starting point for finding the best quality cut (best angle, least dross, and best cut surface finish). You will need to adjust the speeds for your application and your table to obtain the desired cut quality.

When cutting thin metal (3 mm/10 Ga or thinner), you may achieve a higher cut quality by using the T30v (Powermax30) 30 A consumables and cut charts.

T45m shielded consumables



The cut charts for these consumables are shown on the following pages.

T45m shielded consumables

**Mild steel
Metric**

Air flowrate (lpm)	
Hot	151
Cold	165.2

Arc current (amps)	Material thickness (mm)	Torch-to-work distance (mm)	Initial pierce height		Pierce time delay (sec)	Recommended		Maximum	
						Cut Speed (mm/min)	Voltage (V)	Cut Speed (mm/min)	Voltage (V)
30	0.5	1.5	3.8 mm	250%	0.0	9150	117	10160*	118
	0.8					8650	116	10160*	117
	0.9					8100	115	10160*	117
	1.5				0.2	5650	111	7100	115
45	0.9	1.5	3.8 mm	250%	0.0	9652	115	10160*	112
	1.5					8890	116	10160*	115
	1.9				0.1	7100	117	9144	115
	2.7				0.3	4800	117	6096	115
	3.4				0.4	3550	117	4445	115
	4.8				0.5	2150	118	2794	115
	6.4				0.6	1500	120	1905	116
	9.5				0.9	510	122	1016	116
	12.7				Edge start recommended				510
	15.9	280	138	356					127
	19.1	200	140	254					131
	25.4	100	146	127					142

* Maximum cut speed is limited by the test table's maximum speed (10160 mm/min).

TORCH SETUP

T45m shielded consumables

Mild steel
English

Air flowrate (scfh)	
Hot	320
Cold	360

Arc current (amps)	Material thickness	Torch-to-work distance (in)	Initial pierce height		Pierce time delay (sec)	Recommended		Maximum	
						Cut Speed (ipm)	Voltage (V)	Cut Speed (ipm)	Voltage (V)
30	0.018 in (26 Ga)	0.06	0.15 in	250%	0.0	360	117	400*	118
	0.030 in (22 Ga)					340	116	400*	117
	0.036 in (20 Ga)					320	115	400*	117
	0.060 in (16 Ga)				0.2	225	111	280	115
45	0.036 in (20 Ga)	0.06	0.15 in	250%	0.0	380	115	400*	112
	0.060 in (16 Ga)					350	116	400*	115
	0.075 in (14 Ga)					280	117	360	115
	0.105 in (12 Ga)				0.3	190	117	240	115
	0.135 in (10 Ga)				0.4	140	117	175	115
	0.188 in (3/16 in)				0.5	85	118	110	115
	0.250 in (1/4 in)				0.6	60	120	75	116
	0.375 in (3/8 in)				0.9	32	122	40	116
	0.500 in (1/2 in)				Edge start recommended	20	132	25	125
	0.625 in (5/8 in)					11	138	14	127
	0.750 in (3/4 in)					8	140	10	131
	1.000 in (1 in)					4	146	5	142

* Maximum cut speed is limited by the test table's maximum speed (400 ipm).

T45m shielded consumables

**Stainless steel
Metric**

Air flowrate (lpm)	
Hot	151
Cold	165.2

					Recommended		Maximum					
Arc current (amps)	Material thickness (mm)	Torch-to-work distance (mm)	Initial pierce height		Pierce time delay (sec)	Cut Speed (mm/min)	Voltage (V)	Cut Speed (mm/min)	Voltage (V)			
30	0.5	1.5	3.8 mm	250%	0.0	9150	119	10160*	123			
	0.8					8650	117	10160*	121			
	0.9					8100	115	10160*	119			
	1.5				0.2	3750	113	4700	118			
45	0.9	1.5	3.8 mm	250%	0.0	7600	112	10160*	109			
	1.5					8100	112	10160*	125			
	1.9				0.1	7100	118	9144	115			
	2.7				0.3	4050	118	5080	116			
	3.4				0.4	3050	121	3810	118			
	4.8				0.5	1780	122	2159	118			
	6.4				0.6	1100	124	1397	120			
	9.5				0.8	760	126	813	121			
	12.7				Edge start recommended				350	132	457	128
	19.1				Edge start recommended				175	136	229	131

* Maximum cut speed is limited by the test able's maximum speed (10160 mm/min).

TORCH SETUP

T45m shielded consumables

Stainless steel
English

Air flowrate (scfh)	
Hot	320
Cold	360

					Recommended		Maximum			
Arc current (amps)	Material thickness	Torch-to-work distance (in)	Initial pierce height		Pierce time delay (sec)	Cut Speed (ipm)	Voltage (V)	Cut Speed (ipm)	Voltage (V)	
30	0.018 in (26 Ga)	0.06	0.15 in	250%	0.0	360	117	400*	123	
	0.030 in (22 Ga)					340	116	400*	121	
	0.036 in (20 Ga)					320	115	400*	119	
	0.060 in (16 Ga)				0.2	145	111	185	118	
45	0.036 in (20 Ga)	0.06	0.15 in	250%	0.0	300	115	400*	109	
	0.060 in (16 Ga)					320	116	400*	125	
	0.075 in (14 Ga)				0.1	280	117	360	115	
	0.105 in (12 Ga)				0.3	160	117	200	116	
	0.135 in (10 Ga)				0.4	120	117	150	118	
	0.188 in (3/16 in)				0.5	70	118	85	118	
	0.250 in (1/4 in)				0.6	44	120	55	120	
	0.375 in (3/8 in)				0.8	30	122	32	121	
	0.500 in (1/2 in)				Edge start recommended		14	132	18	128
	0.750 in (3/4 in)						7	140	9	131

* Maximum cut speed is limited by the test table's maximum speed (400 ipm).

T45m shielded consumables

**Aluminum
Metric**

Air flowrate (lpm)	
Hot	151
Cold	165.2

Arc current (amps)	Material thickness (mm)	Torch-to-work distance (mm)	Initial pierce height		Pierce time delay (sec)	Recommended		Maximum				
						Cut Speed (mm/min)	Voltage (V)	Cut Speed (mm/min)	Voltage (V)			
30	1.2	1.5	3.8 mm	250%	0.0	9150	117	10160*	120			
	1.5				0.2	8650	118	10160*	121			
	1.9					5450	118	6860	121			
45	1.5	1.5	3.8 mm	250%	0.0	9150	116	10160*	114			
	1.9					8650	117	10160	116			
	2.7					7100	120	9144	119			
	3.4				0.1	5600	122	7112	120			
	4.8					2550	123	3302	120			
	6.4					2050	123	2540	120			
	9.5					840	130	1067	125			
	12.7				Edge start recommended				510	134	635	130
	19.1				Edge start recommended				200	143	254	138

* Maximum cut speed is limited by the test table's maximum speed (10160 mm/min).

TORCH SETUP

T45m shielded consumables

Aluminum
English

Air flowrate (scfh)	
Hot	320
Cold	360

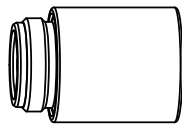
Arc current (amps)	Material thickness	Torch-to-work distance (in)	Initial pierce height		Pierce time delay (sec)	Recommended		Maximum		
						Cut Speed (ipm)	Voltage (V)	Cut Speed (ipm)	Voltage (V)	
30	0.018 in (26 Ga)	0.06	0.15 in	250%	0.0	360	117	400*	120	
	0.060 in (16 Ga)				0.2	340	118	400*	121	
	0.075 in (14 Ga)					215	118	270	121	
45	0.060 in (16 Ga)	0.06	0.15 in	250%	0.0	360	116	400*	114	
	0.075 in (14 Ga)					340	117	400*	116	
	0.105 in (12 Ga)					280	120	360	119	
	0.135 in (10 Ga)				0.1	220	122	280	120	
	0.188 in (3/16 in)				0.2	100	123	130	120	
	0.250 in (1/4 in)				0.3	80	123	100	120	
	0.375 in (3/8 in)				0.5	33	130	42	125	
	0.500 in (1/2 in)				Edge start recommended		20	134	25	130
	0.750 in (3/4 in)						8	143	10	138

* Maximum cut speed is limited by the test table's maximum speed (400 ipm).

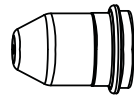
T45m unshielded consumables



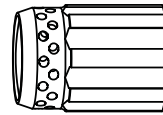
220717
Deflector



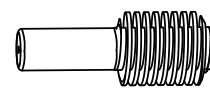
220713
Retaining cap



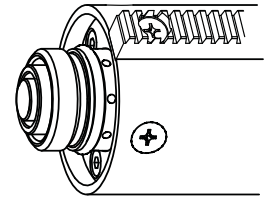
220718
Nozzle



220670
Swirl ring



220669
Electrode



**Mild steel
Metric**

Air flowrate (lpm)	
Hot	151
Cold	165.2

Arc current (amps)	Material thickness (mm)	Torch-to-work distance (mm)	Initial pierce height		Pierce time delay (sec)	Recommended		Maximum				
						Cut Speed (mm/min)	Voltage (V)	Cut Speed (mm/min)	Voltage (V)			
30	0.5	2.0	5.0 mm	250%	0.0	9150	118	10160*	114			
	0.8					8650	118	10160*	116			
	0.9					8100	117	10160*	120			
	1.5				0.2	5800	113	7250	119			
45	0.9	2.0	5.0 mm	250%	0.0	9650	118	10160*	110			
	1.5					8900	114	10160*	113			
	1.9					6100	114	7620	114			
	2.7				0.3	4450	116	5588	114			
	3.4				0.4	3400	118	4318	116			
	4.8				0.4	2150	118	2794	116			
	6.4				0.5	1500	118	1905	118			
	9.5				0.7	810	120	1016	118			
	12.7				Edge start recommended				510	130	635	124
	15.9								280	132	356	126
	19.1								200	138	254	132
	25.4								100	145	127	140

* Maximum cut speed is limited by the test table's maximum speed (10160 mm/min).

TORCH SETUP

T45m unshielded consumables

Mild steel
English

Air flowrate (scfh)	
Hot	320
Cold	360

					Recommended		Maximum		
Arc current (amps)	Material thickness	Torch-to-work distance (in)	Initial pierce height		Pierce time delay (sec)	Cut Speed (ipm)	Voltage (V)	Cut Speed (ipm)	Voltage (V)
30	0.018 in (26 Ga)	0.08	0.2 in	250%	0.0	360	118	400*	114
	0.030 in (22 Ga)					340	118	400*	116
	0.036 in (20 Ga)					320	117	400*	120
	0.060 in (16 Ga)				0.2	225	113	285	119
45	0.036 in (20 Ga)	0.08	0.2 in	250%	0.0	380	118	400*	110
	0.060 in (16 Ga)					350	114	400*	113
	0.075 in (14 Ga)					240	114	300	114
	0.105 in (12 Ga)				0.3	175	116	220	114
	0.135 in (10 Ga)				0.4	135	118	170	116
	0.188 in (3/16 in)				0.4	85	118	110	116
	0.250 in (1/4 in)				0.5	60	118	75	118
	0.375 in (3/8 in)				0.7	32	120	40	118
	0.500 in (1/2 in)				Edge start recommended			20	130
	0.625 in (5/8 in)	11	132	14				126	
	0.750 in (3/4 in)	8	138	10				132	
	1.000 in (1 in)	4	145	5				140	

* Maximum cut speed is limited by the test table's maximum speed (400 ipm).

T45m unshielded consumables

**Stainless steel
Metric**

Air flowrate (lpm)	
Hot	151
Cold	165.2

					Recommended		Maximum				
Arc current (amps)	Material thickness (mm)	Torch-to-work distance (mm)	Initial pierce height		Pierce time delay (sec)	Cut Speed (mm/min)	Voltage (V)	Cut Speed (mm/min)	Voltage (V)		
30	0.5	2.0	5.0 mm	250%	0.0	9144	113	10160*	125		
	0.8					8128	115	10160*	128		
	0.9					7000	114	9000	125		
	1.5				0.2	3650	112	4800	118		
45	0.9	2.0	5.0 mm	250%	0.0	8900	112	10160*	110		
	1.5					8100	115	10160*	113		
	1.9				0.1	7112	116	9144	114		
	2.7				0.3	4100	118	5080	116		
	3.4				0.4	2800	120	3556	118		
	4.8				0.5	1650	120	2032	118		
	6.4				0.6	1010	121	1270	118		
	9.5				0.8	610	125	762	120		
	12.7				Edge start recommended			355	130	457	126
	19.1				Edge start recommended			175	133	229	138

* Maximum cut speed is limited by the test table's maximum speed (10160 mm/min).

TORCH SETUP

T45m unshielded consumables

Stainless steel
English

Air flowrate (scfh)	
Hot	320
Cold	360

Arc current (amps)	Material thickness	Torch-to-work distance (in)	Initial pierce height		Pierce time delay (sec)	Recommended		Maximum		
						Cut Speed (ipm)	Voltage (V)	Cut Speed (ipm)	Voltage (V)	
30	0.018 in (26 Ga)	0.08	0.2 in	250%	0.0	400*	113	400*	125	
	0.030 in (22 Ga)					400*	115	400*	128	
	0.036 in (20 Ga)					345	114	345	125	
	0.060 in (16 Ga)				0.2	145	112	180	118	
45	0.036 in (20 Ga)	0.08	0.2 in	250%	0.0	350	112	400*	110	
	0.060 in (16 Ga)					320	115	400*	113	
	0.075 in (14 Ga)					280	116	360	114	
	0.105 in (12 Ga)				0.3	160	118	200	116	
	0.135 in (10 Ga)				0.4	110	120	140	118	
	0.188 in (3/16 in)				0.5	64	120	80	118	
	0.250 in (1/4 in)				0.6	40	121	50	118	
	0.375 in (3/8 in)				0.8	24	125	30	120	
	0.500 in (1/2 in)				Edge start recommended		14	130	18	126
	0.750 in (3/4 in)						7	133	9	138

* Maximum cut speed is limited by the test table's maximum speed (400 ipm).

T45m unshielded consumables

**Aluminum
Metric**

Air flowrate (lpm)	
Hot	151
Cold	165.2

Arc current (amps)	Material thickness (mm)	Torch-to-work distance (mm)	Initial pierce height		Pierce time delay (sec)	Recommended		Maximum				
						Cut Speed (mm/min)	Voltage (V)	Cut Speed (mm/min)	Voltage (V)			
30	1.2	2.0	5.0 mm	250%	0.0	8900	122	10160*	121			
	0.1				8100	120	10160*	118				
	0.2				5700	121	7100	119				
45	1.5	2.0	5.0 mm	250%	0.0	8900	120	10160*	116			
	8100					120	10160*	116				
	7200					122	9144	118				
	3.4				0.1	5500	123	6858	118			
	4.8				0.3	2540	123	3175	118			
	6.4				0.3	1820	128	2286	124			
	9.5				0.5	710	130	914	124			
	12.7				Edge start recommended				510	131	635	125
	19.1				Edge start recommended				200	148	254	143

* Maximum cut speed is limited by the test table's maximum speed (10160 mm/min).

TORCH SETUP

T45m unshielded consumables

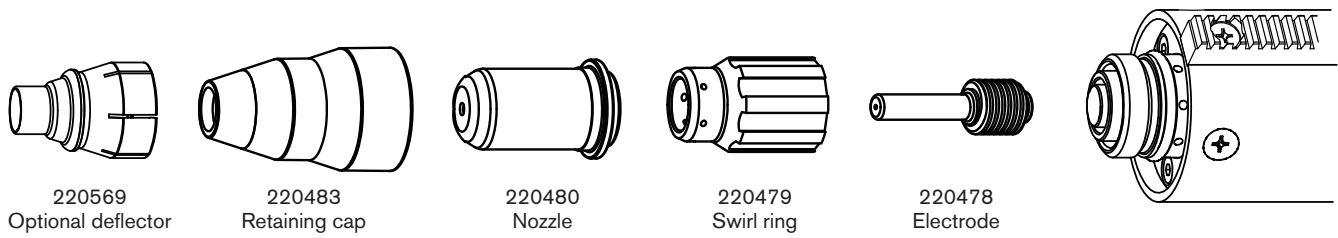
Aluminum
English

Air flowrate (scfh)	
Hot	320
Cold	360

					Recommended		Maximum								
Arc current (amps)	Material thickness	Torch-to-work distance (in)	Initial pierce height		Pierce time delay (sec)	Cut Speed (ipm)	Voltage (V)	Cut Speed (ipm)	Voltage (V)						
30	0.018 in (26 Ga)	0.08	0.20 in	250%	0.0	350	122	400*	121						
	0.1				320	120	400*	118							
	0.2				225	121	280	119							
45	0.060 in (16 Ga)	0.08	0.20 in	250%	0.0	350	120	400*	116						
	320					120	400*	116							
	285					122	360	118							
	0.135 in (10 Ga)				0.08	0.20 in	250%	0.1	215	123	270	118			
	0.3							100	123	125	118				
	0.3							72	128	90	124				
	0.5							28	130	36	124				
	Edge start recommended							20	131	25	125				
	Edge start recommended							8	148	10	143				
0.500 in (1/2 in)	0.08	0.20 in	250%	0.5	20	131	25	125							
0.750 in (3/4 in)					8	148	10	143							

* Maximum cut speed is limited by the test table's maximum speed (400 ipm).

T30v (Powermax30) 30 A consumables



Mild steel
Metric

Air flowrate (lpm)	
Hot	131.2
Cold	146.3

Arc current (amps)	Material thickness (mm)	Torch-to-work distance (mm)	Initial pierce height		Pierce time delay (sec)	Recommended		Maximum	
						Cut Speed (mm/min)	Voltage (V)	Cut Speed (mm/min)	Voltage (V)
30	0.5	0.5	2.5 mm	500%	0.0	8900	105	10160*	98
	0.8					8100	102	10160*	103
	0.9					7100	101	8900	100
	1.5				0.2	4450	97	5600	100
	1.9				0.4	3050	98	3800	97
	2.7					2050	96	2550	96
	3.4					1270	100	1650	101

* Maximum cut speed is limited by the test table's maximum speed (10160 mm/min).

TORCH SETUP

T30v (Powermax30) 30 A consumables

Mild steel
English

Air flowrate (scfh)	
Hot	280
Cold	310

Arc current (amps)	Material thickness (in)	Torch-to-work distance (in)	Initial pierce height		Pierce time delay (sec)	Recommended		Maximum				
						Cut Speed (ipm)	Voltage (V)	Cut Speed (ipm)	Voltage (V)			
30	0.018 (26 Ga)	0.02	0.1 in	500%	0.0	350	105	400*	98			
	0.030 (22 Ga)					320	102	400*	103			
	0.036 (20 Ga)					280	101	350	100			
	0.060 (16 Ga)				0.02	0.1 in	500%	0.2	175	97	220	100
	0.075 (14 Ga)							0.4	120	98	150	97
	0.105 (12 Ga)								80	96	100	96
	0.135 (10 Ga)								50	100	65	101

T30v (Powermax30) 30 A consumables

Stainless steel
Metric

Air flowrate (lpm)	
Hot	131.2
Cold	146.3

Arc current (amps)	Material thickness (mm)	Torch-to-work distance (mm)	Initial pierce height		Pierce time delay (sec)	Recommended		Maximum				
						Cut Speed (mm/min)	Voltage (V)	Cut Speed (mm/min)	Voltage (V)			
30	0.5	0.5	2.5 mm	500%	0.0	8900	103	10160*	102			
	0.8					8100	98	10160*	100			
	0.9					7600	97	6850	98			
	1.5				0.5	2.5 mm	500%	0.2	3800	99	4800	98
	1.9							0.4	2800	101	3450	97
	2.7								1500	101	1900	98
	3.4								1150	102	1400	97

* Maximum cut speed is limited by the test table's maximum speed (400 ipm or 10160 mm/min).

T30v (Powermax30) 30 A consumables

**Stainless steel
English**

Air flowrate (scfh)	
Hot	280
Cold	310

Arc current (amps)	Material thickness (in)	Torch-to-work distance (in)	Initial pierce height		Pierce time delay (sec)	Recommended		Maximum		
						Cut Speed (ipm)	Voltage (V)	Cut Speed (ipm)	Voltage (V)	
30	0.018 (26 Ga)	0.02	0.1 in	500%	0.0	350	103	400*	102	
	0.030 (22 Ga)					320	98	400*	100	
	0.036 (20 Ga)					300	97	380	98	
	0.060 (16 Ga)				0.2	150	99	190	98	
	0.075 (14 Ga)					0.4	110	101	135	97
	0.105 (12 Ga)						60	101	75	98
	0.135 (10 Ga)						45	102	55	97

T30v (Powermax30) 30 A consumables

**Aluminum
Metric**

Air flowrate (lpm)	
Hot	131.2
Cold	146.3

Arc current (amps)	Material thickness (mm)	Torch-to-work distance (mm)	Initial pierce height		Pierce time delay (sec)	Recommended		Maximum	
						Cut Speed (mm/min)	Voltage (V)	Cut Speed (mm/min)	Voltage (V)
30	0.5	0.5	2.5 mm	500%	0.0	8100	107	10160*	105
	0.8					6100	104	7650	103
	0.9					4800	104	6100	103
	1.5				0.2	3700	103	4550	103
	1.9					2400	101	3050	101

* Maximum cut speed is limited by the test table's maximum speed (400 ipm or 10160 mm/min).

TORCH SETUP

T30v (Powermax30) 30 A consumables

Aluminum
English

Air flowrate (scfh)	
Hot	280
Cold	310

Arc current (amps)	Material thickness (in)	Torch-to-work distance (in)	Initial pierce height		Pierce time delay (sec)	Recommended		Maximum	
						Cut Speed (ipm)	Voltage (V)	Cut Speed (ipm)	Voltage (V)
30	0.036 (20 Ga)	0.02	0.10 in	500%	0.0	320	107	400*	105
	0.060 (16 Ga)					240	104	300	103
	0.075 (14 Ga)					190	104	240	103
	0.105 (12 Ga)				0.2	145	103	180	103
	0.135 (10 Ga)					95	101	120	101

* Maximum cut speed is limited by the test table's maximum speed (400 ipm).

Align the torch

Mount the machine torch perpendicular to the workpiece in order to get a vertical cut. Use a square to align the torch at 0° and 90°.

