

# Spectrum® 625

Issued March 2003 • Index No. PC/9.5

**Air Plasma  
Cutting and Gouging** 

## Quick Specs

### Industrial Applications

Maintenance  
Light Construction  
Prototyping  
Body Shops  
Fabrication

### Process

Air Plasma Cutting  
and Gouging

### Rated Output

40 A at 140 VDC,  
50% Duty Cycle  
at 40° C/104° F

### Input Power

208 or 230 V, Single-Phase

### Cutting Capability

Rated: 1/2 in (13 mm)  
Quality: 5/8 in (16 mm)  
Sever: 7/8 in (22 mm)

### Plasma Gas Flow/Pressure

6 CFM (170 L/min) at 75 PSI (517 kPa)

### Weight

Net: 57 lb (26 kg) Ship: 60 lb (27 kg)

## The Power of Blue.®

**LVC™ line voltage compensation** provides peak performance power under variable input voltage conditions (176–264 V) for steady and cleaner ending cuts.

**Wind Tunnel Technology™** prevents abrasive dust and particles from damaging internal components. Also, the **Fan-On-Demand™** cooling system only operates when needed. In dirty or dusty environments, this feature reduces the amount of airborne dust/dirt pulled through the unit.

**Consumables storage compartment** provides convenient access to consumables and parts.

**Power Factor Correction (PFC) circuitry draws up to 30% less amperage** for the same cutting range as compared to the competition. PFC expands operators work area via extension cord, while minimizing nuisance circuit breaker trips caused by voltage drops.

**Pilot Arc Controller** improves tip life and maintains uninterrupted operation when cutting expanded metal or grating.

**LED indicators for pressure, power, cup and temperature** allow faster troubleshooting, eliminating unnecessary downtime.

**New!**



### Comes Complete With:

- ICE-40C hand-held torch with 25 ft (7.6 m) or 50 ft (15.2 m) cable
- 20 ft (6.1 m) heavy-duty (8 AWG) work cable with clamp
- Extra consumables (3 electrodes, 3 tips and 1 air fitting)
- 12 ft (3.7 m) industrial power cord and plug

**Gas/air filter/regulator inside the power source** provides added protection during transportation. Standard air connection on back panel provides easy gas or air hookup.

**Postflow cooling circuit** extends the life of the consumables and torch by cooling them with postflow air after the trigger is released.

**Ergonomically designed ICE-40C handle** provides increased comfort while cutting. Safety trigger prevents accidental starts.

**Starts without high-frequency** so it will not interfere with or damage controls or computers.

**Compatible with engine-driven welders** capable of cutting 3/8 to 5/8 in mild steel when powered by a Miller engine-driven welder with a 240 V generator power outlet of 8 kW or more (see chart on page 3).

**TRUE BLUE®**  
3YR. WARRANTY

Plasma cutter is warranted for 3 years, parts and labor.  
Torch is warranted for 1 year.

MADE IN **USA**  
APPLETON, WI



**Miller Electric Mfg. Co.**  
An Illinois Tool Works Company  
1635 West Spencer Street  
Appleton, WI 54914 USA

**International Headquarters**  
Phone: 920-735-4505  
USA FAX: 920-735-4134  
Canadian FAX: 920-735-4169  
International FAX: 920-735-4125

**Web Site**  
www.MillerWelds.com



# Specifications (Subject to change without notice.)



Rated Output	Max. Open-Circuit Voltage	Amps Input at Rated Output, 50/60 Hz, 1-Phase				Plasma Gas Flow/Pressure	Dimensions	Net Weight	Ship Weight
		208 V	230 V	KVA	KW				
40 A at 140 VDC, 50% duty cycle	260 VDC	33	30	6.9	6.7	6 CFM (170 L/min) at 75 PSI (517 kPa)	H: 15-1/4 in (387 mm) W: 10-3/8 in (264 mm) D: 17-1/4 in (438 mm)	57 lb* (25.9 kg)	60 lb (27.2 kg)

\*Weight includes torch (25 ft), work clamp and cord, and power cord.

## Mild Steel Cutting Capability (Thickness to scale.)

**Rated**



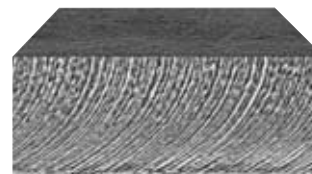
1/2 in (13 mm)

**Quality**



5/8 in (16 mm)

**Sever**



7/8 in (22 mm)

### Cutting Capacity

10 inches per minute (minimum speed at which an operator achieves a smooth, steady cut using a hand-held torch).

### Maximum Quality Cutting Capacity

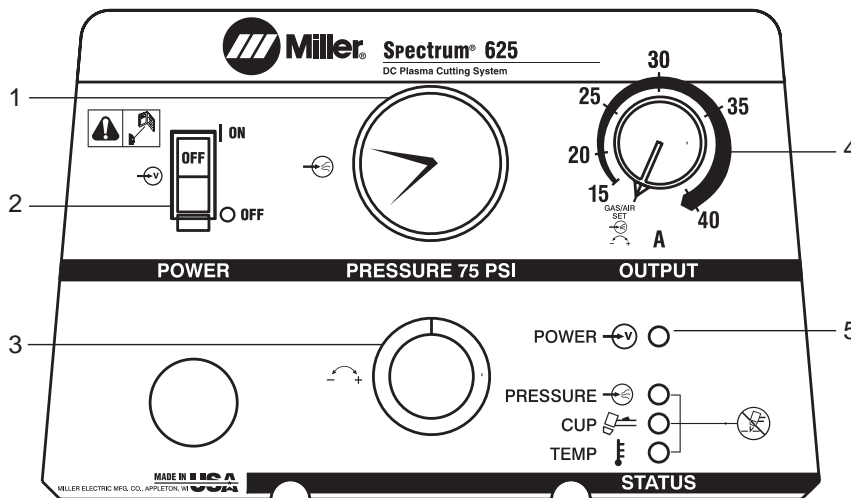
Good-quality cut achieved at lower speeds.

### Sever Cut Capacity

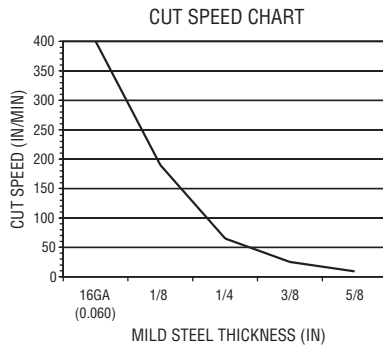
Maximum cut achieved in ideal conditions.

## Control Panel

1. Gas/Air Pressure Gauge
2. Power Switch
3. Gas/Air Pressure Adjustment Control
4. Output Control
5. Status and Troubleshooting Lights



## Cutting Performance



The cutting speed curve shows the recommended maximum cutting speed capabilities of the power source and torch for the mild steel of various thickness.

The best cut quality is achieved by cutting near the chart line. Cutting below the line (too slow) will result in excess dross. Cutting above the line (too fast) will cause blowback and lack of penetration.

## Engine Drive Compatibility

Equipment	KW (Continuous)	Steel Quality Cut	Spectrum Output Amp Setting
Pipe Pro CC/CV	12	5/8 in	40 A, 240 V, full KVA plug
TrailblazerPro 350	10	5/8 in	40 A, 240 V, full KVA plug
Bobcat 225 NT	8	5/8 in	40 A, 240 V, full KVA plug
Bobcat 250	9.5	5/8 in	40 A, 240 V, full KVA plug
Trailblazer 301	9.5	5/8 in	40 A, 240 V, full KVA plug
Trailblazer 300D	9.5	5/8 in	40 A, 240 V, full KVA plug
Legend	5 (while not welding)	3/8 in	30 A, 240 V, full KVA plug
Blue Star 6000	6	3/8 in	30 A, 240 V, full KVA plug

## Genuine Miller Accessories



**Full KVA Plug Kit #119 172**  
240 VAC, 50 amp plug (NEMA 14-50P) to fit full KVA receptacle with a minimum of 8 KVA generator power.



**Plastic Consumables Box with Compartments #127 493**  
For storing additional parts and accessories.



**Plasma Standoff Roller Guide #194 883**  
Helps maintain recommended standoff distance to maximize cutting performance and improve tip life.



**Plasma Circle-Cutting Guide #195 981**  
ICE-12C, 25C, 27C, 40C, 50C, 55C, 80C  
Cut straight lines or circles up to 12 in diameter with ease.



**Suction/Magnetic Pivot Base #195 979**  
Add this to your cutting guide for convenient attachment to all flat surfaces. The extended arm accommodates holes up to 30 in diameter.



**Motor Guard Air Filter #042 306**  
This filter is equipped with a mounting bracket that allows installation on the top, side, or rear panel of most plasma cutters. The filter is equipped with a 1/4 in NPT port to match the fittings on most plasma systems; it has a rated airflow of over 45 SCFM.

**Replacement Filter Element #042 312**  
Carton of four filters for use with motor guard air filter #042 306. Order from Miller Service Parts.



**#30A Economy Running Gear and Cord Wrap #195 093**  
Economical running gear with angle for easy front panel

access provides storage for gloves and tools. (Fits Spectrum®Thunder, 375 CutMate™, 2050 and 3080.)

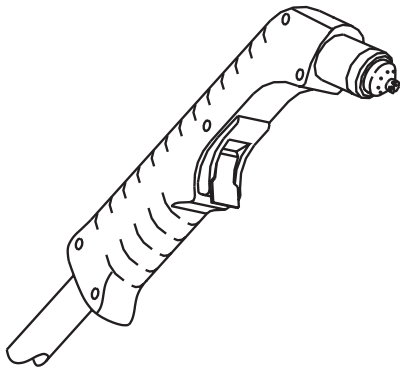
**RTI Filter/Air Dryer #195 188**  
Mounts to the back of most plasma cutters. Features include a heavy-duty metal bowl, automatic drain and easy spin-off of elements. Filter is equipped with a 1/4 in NPT port to match the fittings on most plasma systems.

**RTI Replacement Filter Element #212 771**  
Order from Miller Service Parts.



**Protective Cover #195 145**  
Mildew-resistant, odor-free, waterproof cover protects your machine's finish.

# Replacement Torch and Consumables



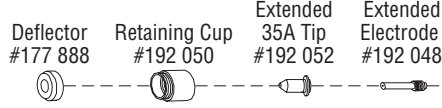
**ICE-40C Hand-Held Torch**  
**#195 110** 25 ft (7.6 m)  
**#195 111** 50 ft (15.2 m)

### Standard Cutting

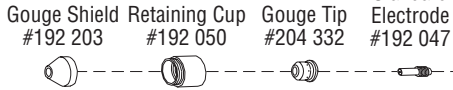


### Extended Cutting

1/8 in (3 mm) stand-off recommended



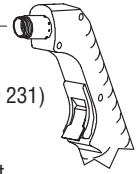
### Gouging



Apply very light coating of silicone grease (#169 231) before installing.

For extended tip use, set amperage control to 35 A.

For best gouging results, set machine air pressure at 55 PSI.



## Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
<b>Power Source</b>				
Spectrum® 625	#907 058	208/230 VAC, 50/60 Hz, with ICE-40C 25 ft (7.6 m) Hand-Held Torch*		
	#907 058-01-1	208/230 VAC, 50/60 Hz, with ICE-40C 50 ft (15.2 m) Hand-Held Torch*		
<b>Torch Accessories</b>				
Silicone Grease	#169 231			
Consumables		See above		
<b>Accessories</b>				
Full KVA Plug Kit	#119 172	Field		
Plastic Consumables Box	#127 493	With compartments		
Plasma Standoff Roller Guide	#194 883			
Plasma Circle-Cutting Guide	#195 981	For ICE-12C, 25C, 27C, 40C, 50C, 55C, 80C		
Suction/Magnetic Pivot Base	#195 979			
Motor Guard Air Filter	#042 306			
Replacement Filter Element	#042 312	Box of four. <i>Order from Miller Service Parts</i>		
#30A Economy Running Gear and Cord Wrap	#195 093			
RTI Filter/Air Dryer	#195 188			
RTI Filter Replacement Element	#212 771	<i>Order from Miller Service Parts</i>		
Protective Cover	#195 145			

Date:

Total Quoted Price:

\*  Certified by Canadian Standards Association to both Canadian and U.S. standards.



Distributed by: