

# Spectrum® 625 X-TREME™ 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  
27 A at 91 VDC, 20% Duty Cycle

### Cutting Capability

Rated: 5/8 in. (16 mm)

### Weight

With 12-ft. hand-held torch: 21 lb. (9.5 kg)  
With 20-ft. hand-held torch: 23 lb. (10.4 kg)  
With 25-ft. machine torch: 24 lb. (10.7 kg)

### Required Input Pressure/Flow

6 SCFM (170 L/min.)  
at 90 PSI minimum (621 kPa), 120 PSI maximum (828 kPa)

**X-TREME Versatility** — Auto-Line™ circuitry automatically connects to 120–240 VAC, single-phase power, 60 Hz, without making internal changes. (Output amperage is automatically reduced to 27 A for 120 V input.)

**X-TREME Protection** — X-CASE™ provides ultimate protection and additional space for MVP adapters, consumable box, gloves, and eye protection, etc.

**X-TREME Portability** — at just 21 pounds the shoulder strap allows the end user to easily move from location to location.

**Auto postflow** calculates the optimum length of postflow time to optimize consumable life and eliminate excessive air usage.

**Heavy-duty work clamp** with flexible cable and quick connect.

**LVC™ line voltage compensation** provides peak performance power under variable conditions (187–264 V) for steady cuts and cleaner ending cuts.

**Auto-Retire™ technology** controls the pilot arc when cutting expanded metal or multiple pieces of metal. The pilot arc will switch in and out as fast as needed when cutting expanded metal and provides maximum power for cutting thicker metal — all automatically! No need for manual re-triggering.

**Can be powered by any Miller engine drive** with generator power (e.g. Bobcat™) or equivalent equipment. See page 3 for engine drive compatibility.



**NEW! Ultra-Quick Connect™ XT40 torch** with an ergonomic handle to help prevent operator fatigue and a flexible cable that makes maneuvering easier (see page 4 for more detail).

**NEW! Now available with XT40M long body or short body machine torches (see page 4).**



Power source is warranted for 3 years, parts and labor.  
XT torch is warranted for 1 year, parts only.

### Comes complete with:

- XT40 hand-held torch with 12-ft. (3.7 m) or 20-ft. (6.1 m) cable; or XT40M long body or short body machine torch with 25-ft. (7.6 m) cable. Torches include a complete set of 40 A consumables
- Heavy-duty work clamp and flexible cable with quick connect
- X-CASE™ provides protection during transport and storage
- 12-ft. (3.7 m) power cord with 240 V L6-30P twist lock plug for MVP™ adapters
- MVP™ adapters with 240 V, 50A (6-50P) plug and 120 V, 15 A (5-15P) plug
- Shoulder strap
- Consumables box with 2 electrodes, 2 tips (40 A), 1 tip (30 A), drag shield (30 A), deflector, and air fitting
- Machine torch packages include 20-ft. (6.1 m) automation control cable, shield sense tab, and a front panel with built-in remote control cable receptacle for remote trigger, ok-to-move signal, and voltage sensing

**MVP™ adapters** allow connection to 120 or 240 V receptacles without tools — choose the adapter cord with the right plug that fits the receptacle and connect it to the power cord with the L6-30R twist lock.

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

**Automatic air regulation** compensates for input pressure variation to provide constant recommended torch pressure for optimum cutting performance.

**Automatic gouging consumable detection** adjusts gas pressure to optimize performance, eliminating the need for a manual regulator.



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# Specifications (Subject to change without notice.)



Input Power	Rated Output	Amps Input at Rated Output, 60 Hz, 1-Phase	KVA	KW	Plasma Gas	Dimensions	Net Weight with Torch*
240 V	40 A at 140 VDC, 50% Duty Cycle	27	6.4	6.3	Air or Nitrogen only	H: 9 in. (229 mm) W: 5.5 in. (140 mm) D: 13.25 in. (337 mm)	<b>With Hand-Held Torch</b> 12 ft. (3.7 m): 21 lb. (9.5 kg) 20 ft. (6.1 m): 23 lb. (10.5 kg) <b>With Machine Torch</b> 25 ft. (7.6 m): 24 lb. (10.7 kg)
120 V (20 A)	27 A at 91 VDC, 20% Duty Cycle	26	3.0	2.9			
120 V (15 A)	20 A at 88 VDC, 35% Duty Cycle	18	2.2	2.1			

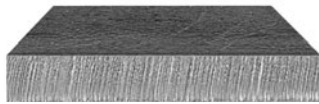
\*Add 18 lb. (8.2 kg) for shipping weight.



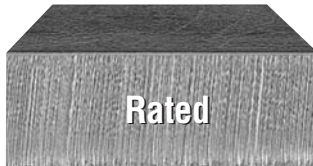
Certified by Canadian Standards Association to both the Canadian and U.S. Standards.

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

### Cutting at 40 Amps (240 V)



1/4 in. (6.4 mm) at 64 IPM



5/8 in. (15.9 mm) at 13 IPM

Note: Recommended maximum piercing capacity for hand-held applications is 5/16 inch (7.9 mm). Maximum sever cut of 7/8 inch (22.2 mm) at approximately 5 IPM.

For aluminum and other metals with high thermal conductivity, cutting capacities may be reduced as much as 30%.

### Mild Steel Recommended Cut Speeds at 40 Amps

Thickness	Approximate Travel Speeds*
1/8 in. (3.2 mm)	156 IPM (3963 mm/min.)
1/4 in. (6.4 mm)	64 IPM (1626 mm/min.)
3/8 in. (9.5 mm)	36 IPM (915 mm/min.)
1/2 in. (12.7 mm)	22 IPM (559 mm/min.)
5/8 in. (15.9 mm)	13 IPM (330 mm/min.)

\*Travel speeds are approximately 80% of maximum.

### Cutting at 27 Amps (120 V)

Output amperage is automatically reduced to 27 A for 120 V input.



1/8 in. (3.2 mm) at 88 IPM



3/8 in. (9.5 mm) at 15 IPM

Note: Recommended maximum piercing capacity for hand-held applications is 1/8 inch (3.2 mm).

For aluminum and other metals with high thermal conductivity, cutting capabilities will be derated as much as 30%.

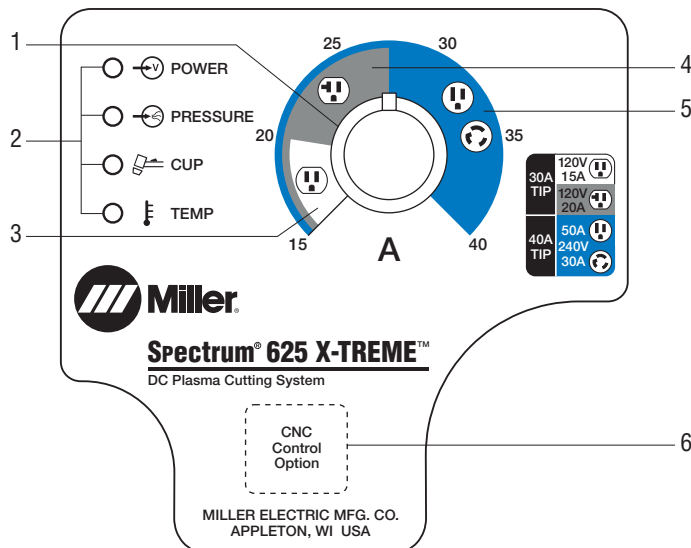
### Mild Steel Recommended Cut Speeds at 27 Amps

Thickness	Approximate Travel Speeds*
12 ga. (2.8 mm)	115 IPM (2921 mm/min.)
1/8 in. (3.2 mm)	88 IPM (2235 mm/min.)
3/16 in. (4.8 mm)	50 IPM (1280 mm/min.)
1/4 in. (6.4 mm)	28 IPM (711 mm/min.)
3/8 in. (9.5 mm)	15 IPM (386 mm/min.)
1/2 in. (12.7 mm)	8 IPM (203 mm/min.)
5/8 in. (15.9 mm)	5 IPM (126 mm/min.)

\*Travel speeds are approximately 80% of maximum.

Rated cut capacity is based on traveling approximately 15 inches per minute to achieve a steady, precise cut. This is the key rating that should meet or exceed your typical cutting thickness requirements.

## Control Panel



Automation Kit Panel

1. Output Control
2. Status and Troubleshooting Lights
3. Range for 30 A Tip, 120 V/15 A, 5-15P MVP™ Adapter
4. Range for 30 A Tip, 120 V/20 A, 5-20P MVP™ Adapter
5. Range for 40 A Tip, 240 V/30 A/50 A, 6-50P MVP™ Adapter
6. CNC Automation Receptacle. This receptacle is installed on panel in optional Automation Kit (page 3) or is factory-installed in machine torch packages (page 4).

# Engine Drive Compatibility

Equipment	Generator Power	Steel Quality Cut (Approximate)	Spectrum Output Amp Setting
Bobcat™ 225 and 250	11 kW	5/8 in.	40 A (240 V full KVA adapter cord)
Bobcat™ 250 with EFI, Trailblazer®	12 kW	5/8 in.	40 A (240 V full KVA adapter cord)
Big Blue® 400 Pro	10 kW	5/8 in.	40 A (240 V full KVA adapter cord)
Big Blue® 500 Pro	15 kW	5/8 in.	40 A (240 V full KVA adapter cord)

## Genuine Miller® Accessories



### Automation Kit #301 158

Includes front panel, remote control cable and shield sense tab. Panel has built-in remote control cable receptacle for remote trigger, ok-to-move signal, and voltage sensing. Only available for Spectrum® 625 X-TREME™ models with quick-connect torch feature.



### X-CASE™ #300 184

Sturdy case provides ultimate protection for transport and storage. Also features convenient top carrying handle and

side recessed hand grips. Store the Spectrum 625 X-TREME, accessories and gear in this generous case to be ready to go at any time. Dimensions (H x W x D): 13 x 10.5 x 30.625 in. (330 x 267 x 778 mm).



Female Receptacle

**Adapter Cord, Full KVA #300 517** Field NEMA 14-50P to NEMA 6-50R. Adapts engine drive 120/240 V plug to Spectrum® 240 V plug.

### Miller Service Parts Accessories

*The following accessories must be ordered from Miller Service Parts.*



### XT40 Consumable Kit #253 521

Consumable kit includes 5 electrodes, 5 tips (40 A), 3 tips (30 A), 1 drag shield (40 A), 1 drag shield (30 A),

1 deflector, 1 o-ring, 1 swirl ring, 1 retaining cup, 1 gouge tip (40 A), 1 gouge shield and silicone grease.



### Plasma Standoff Roller Guide #253 054

Helps maintain recommended standoff distance to maximize cutting performance and improve tip life.



### Plasma Circle-Cutting Guide #253 055

Cut straight lines or circles up to 12-inch 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-inch diameter.



### In-Line Air Filter Kit #228 926

Mounts to the back of the Spectrum® 375 X-TREME™, 375, 625 X-TREME™, 875 and 875 Auto-Line™. Includes male and female 1/4-inch NPT quick disconnect fittings and hose for easy on/off connection. The replaceable filter element filters to .85 microns for removal of 99.9 percent of water, dirt and oil.

### In-Line Air Filter Replacement Element #228 928

For in-line filter #228 926.



### Torch Cable Covers #239 642 20 ft. (6.1 m) #231 867 25 ft. (7.6 m)



### Flexible Work Cable with Heavy-Duty Clamp #263 799 12 ft. (3.7 m) #263 800 20 ft. (6.1 m)

12- or 20-ft. cable with quick connect.



### Safety Glasses

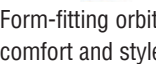
#235 662 Black, shade 3.0



#235 661 Blue, shade 3.0



#235 663 Orng, shade 3.0



#235 658 Black, shade 5.0



#235 657 Blue, shade 5.0



#235 659 Orng, shade 5.0

Form-fitting orbital eye coverage with increased comfort and style. Choice of black, blue or orange frame. Meets ANSI Z87.1 standards.

### MVP™ Adapters

Order from Miller Service Parts.



Female Receptacle

#254 328 For connection to 6-50P receptacle (240 V/50 A). Included with machine.

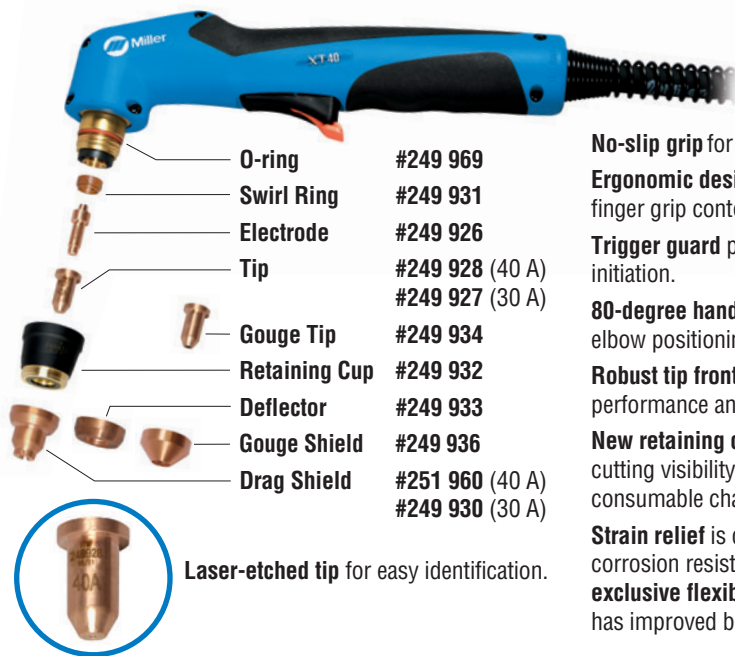


#254 330 For connection to 5-15P receptacle (120 V/15 A). Included with machine.



#254 331 For connection to 5-20P receptacle (120 V/20 A). Optional.

# XT40 and XT40M Replacement Torches and Consumables



- O-ring #249 969
- Swirl Ring #249 931
- Electrode #249 926
- Tip #249 928 (40 A)  
#249 927 (30 A)
- Gouge Tip #249 934
- Retaining Cup #249 932
- Deflector #249 933
- Gouge Shield #249 936
- Drag Shield #251 960 (40 A)  
#249 930 (30 A)

Laser-etched tip for easy identification.

- XT40 Hand-Held Torch**
- #260 633 12 ft. (3.7 m)
- #260 635 20 ft. (6.1 m)

**No-slip grip** for easy control and torch dexterity.

**Ergonomic design** with unique thumb guide and finger grip contours.

**Trigger guard** protects against inadvertent arc initiation.

**80-degree handle** provides natural arm and elbow positioning while cutting.

**Robust tip front end design** optimizes arc performance and tip life.

**New retaining cup design** provides increased cutting visibility and quick turn for easy consumable change.

**Strain relief** is durable and corrosion resistant, and **exclusive flexible cable** has improved bend radius.



- XT40M Machine Torch**
- #259 305 25 ft. (7.6 m), long body
- #257 462 25 ft. (7.6 m), short body



**Shield Sense Tab #263 310**  
Included in Automation Kit, not included with torches.

**Machine Shield (40 A) #249 937**

Note: The XT40 can be configured for cutting at either 30 A or 40 A by installing the appropriate cutting tip and drag shield. Replacing drag shield with deflector offers improved arc visibility while maintaining 1/16-inch standoff. For gouging, replace the tip and drag shield with gouge tip and gouge shield. The rest of the XT40 consumables are common.

Note: The XT40M consumables are the same as the XT40 consumables, except for the machine shield.

## Ordering Information

Power Source	Stock No.	Description	Qty.	Price
<b>Spectrum® 625 X-TREME™ with X-CASE™</b> 120–240 VAC, 60 Hz, 1-Phase	#907 579	With 12-ft. (3.7 m) XT40 hand-held torch and X-CASE™		
	#907 579 001	With 20-ft. (6.1 m) XT40 hand-held torch and X-CASE™		
	#907 579 002	With 25-ft. (7.6 m) XT40M long body machine torch and X-CASE™		
	#907 579 003	With 25-ft. (7.6 m) XT40M short body machine torch and X-CASE™		
<b>Replacement Torches and Consumables</b>				
XT40 Hand-Held Torch	(See above)	Order from Miller Service Parts		
XT40M Machine Torch	(See above)	Order from Miller Service Parts		
Consumables	(See above)	Order from Miller Service Parts		
<b>Accessories</b>				
Automation Kit	#301 158	Cable kit for automation upgrade. Only for models with quick-connect torch		
X-CASE™ (only)	#300 184	Carrying case for Spectrum® 625 X-TREME™		
Adapter Cord, Full KVA	#300 517	Adapts engine drive 120/240 V plug to Spectrum® 240 V plug		
XT40 Consumable Kit	#253 521	See page 3 for contents. Order from Miller Service Parts		
Plasma Standoff Roller Guide	#253 054	Order from Miller Service Parts		
Plasma Circle-Cutting Guide	#253 055	Order from Miller Service Parts		
Suction/Magnetic Pivot Base	#195 979	Order from Miller Service Parts		
In-Line Air Filter Kit	#228 926	Order from Miller Service Parts		
In-Line Air Filter Replacement Element	#228 928	Order from Miller Service Parts		
Torch Cable Covers	#239 642 #231 867	20 ft. (6.1 m). Order from Miller Service Parts 25 ft. (7.6 m)		
Flexible Work Cable w/Heavy-Duty Clamp	#263 799 #263 800	12-ft. (3.7 m) cable with quick connect. Order from Miller Service Parts 20-ft. (6.1 m) cable with quick connect.		
Safety Glasses		See page 3. Order from Miller Service Parts		
MVP™ Adapters		See page 3. Order from Miller Service Parts		

Date: \_\_\_\_\_ Total Quoted Price: \_\_\_\_\_

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