

# 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)

### Net 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

6.0 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 V, 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 (power fluctuations up to ±15 percent) for steady cuts and cleaner ending cuts.

**Auto-Retire™ technology** provides ultimate customer convenience by automatically controlling 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 which reduces user hand fatigue.

**Can be powered by Miller engine drives with generator power.** See page 3 for engine drive compatibility and recommended settings.



### Comes complete with:

- XT40 hand-held torch with 12 ft. (3.7 m) or 20 ft. (6.1 m) cable **OR** XT40M long 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
- 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
- X-CASE™ provides protection during transport and storage
- Shoulder strap
- Consumables box with 2 electrodes, 2 tips (40 A), one tip (30 A), drag shield (30 A), deflector and air fitting
- Machine torch package includes corresponding automation kit

**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.



**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).

**Also available with an XT40M long body machine torch. Short body machine torch can only be ordered separately (see page 4).**

**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.



Power source is warranted for three years, parts and labor.  
XT torch is warranted for one year, parts only.



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f t y o i n



# 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*
240 V	40 A at 140 VDC, 50% duty cycle	26.7	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	25.1	3.0	2.9			
120 V (15 A)	20 A at 88 VDC, 35% duty cycle	18.1	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%.

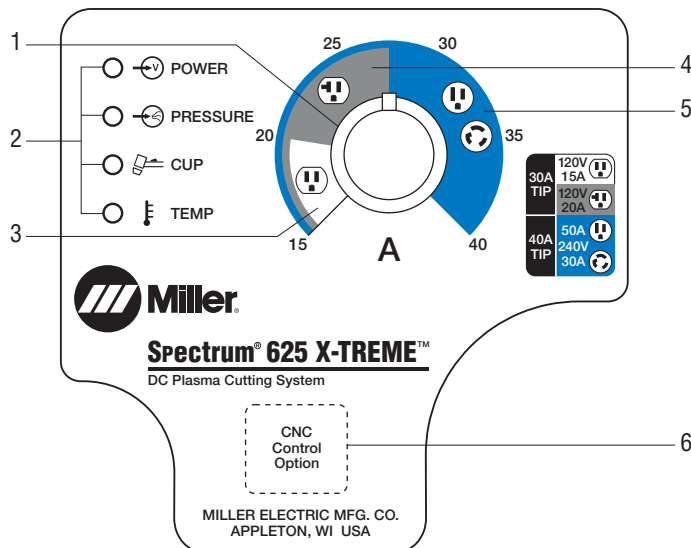
### Mild Steel Recommended Cut Speeds at 27 Amps

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 package (page 4).

# Engine Drive Compatibility

Engine-Driven Welder/Generator	Continuous Generator Power	Steel Quality Cut (approximate)	Spectrum Output Amp Setting (240 V full KVA adapter cord)
Bobcat™ 225 and 250, 3 Phase and Trailblazer® Series	9,500 watts/10,500 watts	5/8 in.	40 A
Big Blue® 400 Pro, 400 PipePro®, and 450 Duo CST™	10,000 watts	5/8 in.	40 A
Big Blue® 500 Pro, 600 Series and 800 Series	1-phase: 12,000 watts 3-phase: 20,000 watts	5/8 in.	40 A

## Genuine Miller® Accessories



### Automation Kit 301158

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 Ultra-Quick Connect™ torch feature.



### X-CASE™ 300184

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).

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

**Full KVA Adapter Cord 300517** 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 253521

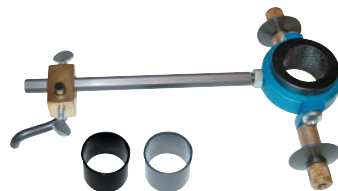
Consumable kit includes 5 electrodes, 5 tips (40 A), 3 tips (30 A), 1 drag shield (40 A), 2 drag shields (30 A),

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



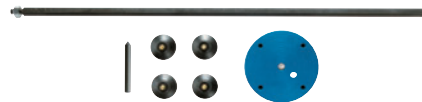
### Plasma Standoff Roller Guide 253054

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



### Plasma Circle-Cutting Guide 253055

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



### Suction/Magnetic Pivot Base 195979

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 228926

Mounts to the back of the Spectrum® 625 X-TREME™. 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 228928

For in-line filter 228926.



### Torch Cable Covers

**239642** 20 ft. (6.1 m)  
**231867** 25 ft. (7.6 m)



### Flexible Work Cable

**263799** 12 ft. (3.7 m)  
**263800** 20 ft. (6.1 m)  
Work cable with quick connect and heavy-duty clamp.

### Safety Glasses (shade 5 lenses, recommended)



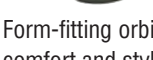
**235658** Black frame



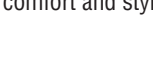
**235657** Blue frame



**235659** Orange frame



**272205** Slag™ black frame



**272209** Slag™ white frame

Form-fitting orbital eye coverage with increased comfort and style. Meets ANSI Z87.1 standards.

## MVP™ Adapters

*Order from Miller Service Parts.*



Female Receptacle



**254328** For connection to 6-50P receptacle (240 V/50 A). Included with machine.



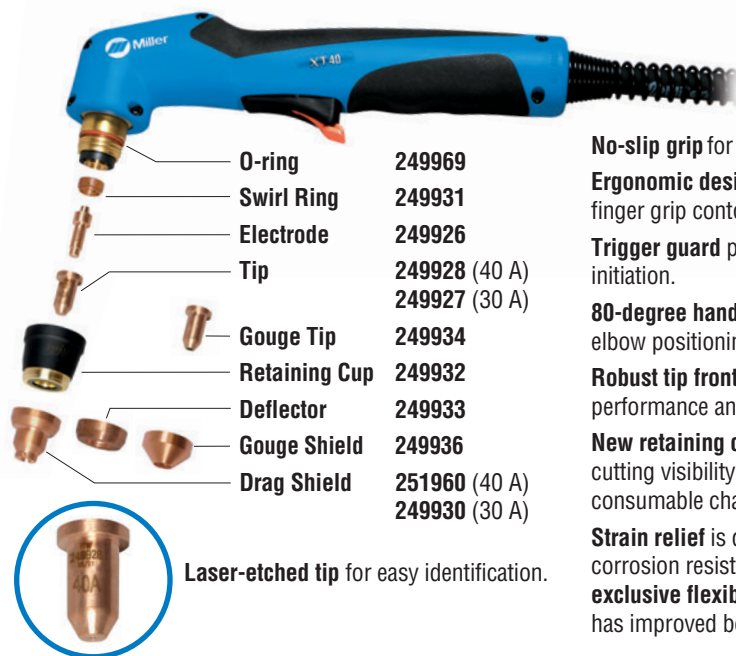
**254330** For connection to 5-15P receptacle (120 V/15 A). Included with machine.



**254331** For connection to 5-20P receptacle (120 V/20 A). Optional.



# XT40 and XT40M Replacement Torches and Consumables



- O-ring 249969
- Swirl Ring 249931
- Electrode 249926
- Tip 249928 (40 A)  
249927 (30 A)
- Gouge Tip 249934
- Retaining Cup 249932
- Deflector 249933
- Gouge Shield 249936
- Drag Shield 251960 (40 A)  
249930 (30 A)

Laser-etched tip for easy identification.

- XT40 Hand-Held Torch**
- 260633 12 ft. (3.7 m)
- 260635 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**
- 259305 25 ft. (7.6 m), long body
- 257462 25 ft. (7.6 m), short body



**Shield Sense Tab 263310**  
Included in Automation Kit, not included with torches.

**Machine Shield (40 A) 249937**

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
Spectrum® 625 X-TREME™ with X-CASE™ 120–240 V, 60 Hz, 1-Phase	907579	With 12 ft. (3.7 m) XT40 hand-held torch and X-CASE™		
	907579001	With 20 ft. (6.1 m) XT40 hand-held torch and X-CASE™		
	907579002	With 25 ft. (7.6 m) XT40M long body machine torch and X-CASE™		
<b>Replacement Torches and Consumables</b>	(See above)	Order from Miller Service Parts		
<b>Accessories</b>				
Automation Kit	301158	Cable kit for automation upgrade. Only for models with quick-connect torch		
X-CASE™ (only)	300184	Carrying case for Spectrum® 625 X-TREME™		
Full KVA Adapter Cord	300517	Adapts engine drive 120/240 V plug to Spectrum® 240 V plug		
XT40 Consumable Kit	253521	See page 3 for contents. Order from Miller Service Parts		
Plasma Standoff Roller Guide	253054	Order from Miller Service Parts		
Plasma Circle-Cutting Guide	253055	Order from Miller Service Parts		
Suction/Magnetic Pivot Base	195979	Order from Miller Service Parts		
In-Line Air Filter Kit	228926	Order from Miller Service Parts		
In-Line Air Filter Replacement Element	228928	Order from Miller Service Parts		
Torch Cable Covers	239642	20 ft. (6.1 m). Order from Miller Service Parts		
	231867	25 ft. (7.6 m). Order from Miller Service Parts		
Flexible Work Cable w/Heavy-Duty Clamp	263799	12 ft. (3.7 m) cable with quick connect. Order from Miller Service Parts		
	263800	20 ft. (6.1 m) cable with quick connect. Order from Miller Service Parts		
Safety Glasses		See page 3. Order from Miller Service Parts		
MVP™ Adapters		See page 3. Order from Miller Service Parts		

Date:

Total Quoted Price:

Distributed by:

