

# Spectrum® 625 X-TREME™

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**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

### Cutting Capability

Rated: 5/8 in (16 mm)

### Weight

With 12 ft torch: 21 lb (9.5 kg)  
With 20 ft torch: 23 lb (10.4 kg)

### Required Input Pressure/Flow

6 SCFM (170 L/min) at  
90 PSI MIN (621 kPa)  
120 PSI MAX (828 kPa)

## The Power of Blue.®

### High Performance Cooling System with Fan-On-Demand™

High Performance Thermal Management System features new high-speed fan which only operates when torch trigger is engaged for improved reliability.

**X-CASE™** provides ultimate protection during transport and storage. Additional space ideal for consumable box, as well as gloves, eye protection, etc.

**Portable**—In the shop or at the job site—at 21 lb the shoulder strap allows the user to easily move from location to location.

**Auto-Refire™ 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.

**Heavy-duty clamp included.**

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

**Wind Tunnel Technology™** prevents abrasive dust and particles from damaging internal components.

**Can be powered by any Miller engine drive** with generator power (e.g. Bobcat™) or equivalent competitive equipment. See page 2 for engine drive compatibility and recommended settings.



**TRUE BLUE®**  
3YR WARRANTY

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

**SIZE  
DOES  
MATTER**

Big cutting power in a small package! See more at [MillerWelds.com/sizematters](http://MillerWelds.com/sizematters)

### Comes Complete With:

- ICE-40T hand-held torch with 12 ft (3.7 m) or 20 ft (6.1 m) cable
- Heavy-duty work clamp with 12 ft (3.7 m) or 20 ft (6.1 m) cable
- X-CASE™ provides protection in transport and storage
- 12 ft (3.7 m) power cord
- Shoulder strap
- Consumables box with 2 standard electrodes, 1 extended electrode, 2 standard tips, 1 extended tip, and deflector

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

**Auto Postflow** calculates the length of postflow time based on the amount of cutting time to optimize consumable life and eliminate excessive air usage.

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

**Ergonomic design ICE-40T torch** with increased comfort, safety trigger, and improved swirl ring and cup.

**Automatic Air Regulation**—The unit automatically compensates for input pressure variation to provide constant recommended torch pressure for optimum cutting performance.

**Automatic Consumable Detection**—detects consumable type installed and adjusts gas pressure to optimize cutting performance, eliminating the need for a manual regulator.



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

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**Web Site**  
[www.MillerWelds.com](http://www.MillerWelds.com)



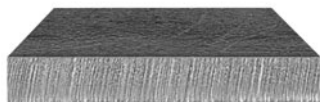
**MADE IN USA**  
APPLETON, WI

# Specifications (Subject to change without notice.)



Rated Output	Max. Open-Circuit Voltage	Amps Input at Rated Output, 50/60 Hz, 1-Phase				Plasma Gas	Dimensions	System Weight
		208 V	230 V	KVA	KW			
40 A at 140 VDC, 50% duty cycle	400 VDC	33	30	6.8	6.6	Air or Nitrogen only	H: 9 in (229 mm) W: 5-1/2 in (140 mm) D: 13-1/4 in (337 mm)	<b>With 12 ft (3.7 m) Torch</b> Net: 21 lb (9.5 kg) Ship: 37 lb (17.5 kg)  <b>With 20 ft (6.1 m) Torch</b> Net: 23 lb (10.5 kg) Ship: 40 lb (18 kg)

# Mild Steel Cutting Capability (Thickness to scale.)



1/4 in (6.4 mm) at 60 IPM



5/8 in (15.9 mm) at 12 IPM

Note: Recommended maximum piercing capacity for hand-held applications is 5/16 in (7.9 mm).  
 Maximum Sever cut of 7/8 in (22.2 mm) at 5 IPM  
 For aluminum and other metals with high thermal conductivity, cutting capacities may be reduced as much as 30%.

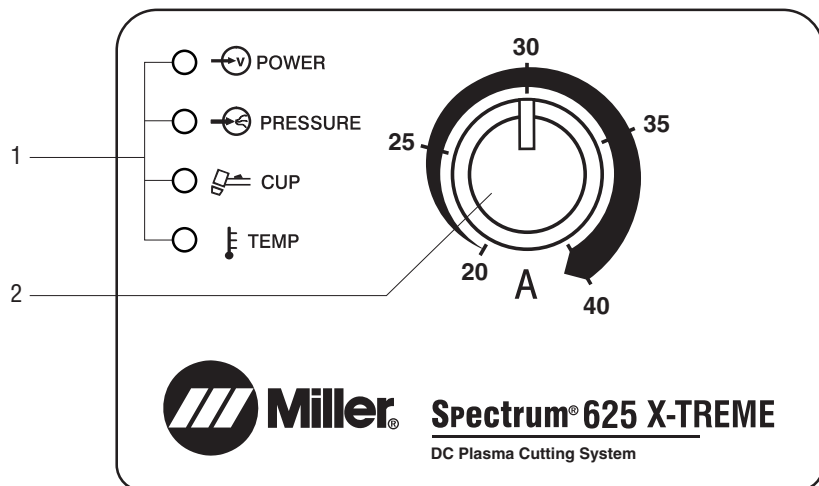
## Mild Steel Recommended Cut Speeds

Thickness	Approximate Travel Speeds*
1/8 (3.2 mm)	149 IPM (3785 mm/min)
1/4 in (6.4 mm)	60 IPM (1524 mm/min)
3/8 in (9.5 mm)	34 IPM (864 mm/min)
1/2 in (12.7 mm)	21 IPM (533 mm/min)
5/8 in (15.9 mm)	12 IPM (305 mm/min)

\* Travel speeds are approximately 80% of maximum.

Rated cut capacity is based on traveling approximately 12 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



1. Status and Troubleshooting Lights
2. Output Control

# Engine Drive Compatibility

Equipment	Generator Power	Steel Quality Cut (Approximate)	Spectrum Output Amp Setting
Wildcat® 200	6.5 kW	3/8 in	30 A, 240 V, full KVA plug
Bobcat™, Trailblazer®	11 kW	5/8 in	40 A, 240 V, full KVA plug
PipePro® 304, Big Blue® 300 Pro	12 kW	5/8 in	40 A, 240 V, full KVA plug
Big 40® CC/CV	15 kW (optional)	5/8 in	40 A, 240 V, full KVA plug
Big Blue® 500 CC/CV	20 kW (optional)	5/8 in	40 A, 240 V, full KVA plug



# Genuine Miller Accessories



## 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: 13 in H x 10-1/2 in W x 30-5/8 in D (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.*



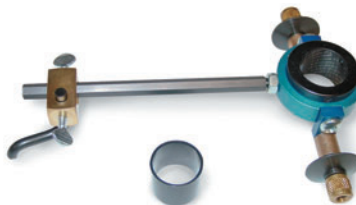
## ICE-40C/T Consumable Kit #222 940

Consumable kit includes 3 standard electrodes, 3 standard tips, 1 ext electrode, 1 ext tip, 1 gouge tip, 1 gouge shield, 1 swirl ring, 1 retaining cup, 1 o-ring and silicone grease.



## 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

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.



**Torch Cable Covers #239 642**  
20 ft (6.1 m)

## 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.



## In-Line Air Filter Kit #228 926

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

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

Includes 1 replacement filter for in-line filter #228 926.



## MIG Gloves

#227 821 Small  
#227 822 Medium  
#227 823 Large  
#227 824 X-Large  
*For medium-duty MIG welding and metalworking tasks.*

Combination of durable top grain cowhide palm and abrasion-resistant pig split back sewn with Kevlar® thread.

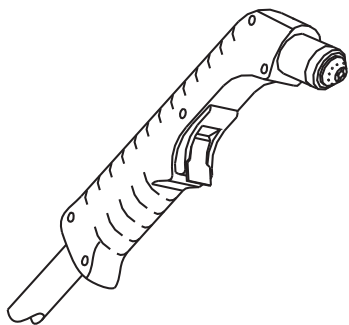


## Metalworker Gloves

#227 817 Small  
#227 818 Medium  
#227 819 Large  
#227 820 X-Large  
*Designed for the daily demands of the metalworker and material handler.*

Padded, goatskin palm with textured G-Grip™ patch for excellent grip. Neoprene wrist with Velcro® closure for improved fit. NOT intended for use while welding.

# Replacement Torch and Consumables

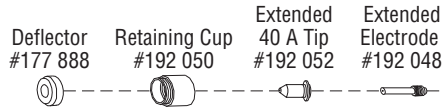


## Standard Cutting



## Extended Cutting

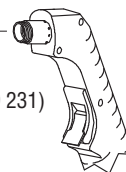
1/8 in (3 mm) stand-off recommended



## Gouging



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



### ICE-40T Hand-Held Torch

#237 502 12 ft (3.7 m)

#237 504 20 ft (6.1 m)

# Ordering Information

Power Source and Options	Stock No.	Description	Qty.	Price
Spectrum® 625 X-TREME™ with X-CASE™	#907 404*	208/230 VAC, 60 Hz, with ICE-40T 12 ft (3.7 m) Hand-Held Torch and X-CASE™		
	#907 404-01-1*	208/230 VAC, 60 Hz, with ICE-40T 20 ft (6.1 m) Hand-Held Torch and X-CASE™		
<b>Replacement Torch and Consumables</b>				
ICE-40T Hand-Held Torch	#237 502	12 ft (3.7 m). <i>Order from Miller Service Parts</i>		
	#237 504	20 ft (6.1 m). <i>Order from Miller Service Parts</i>		
Consumables		See above. <i>Order from Miller Service Parts</i>		
<b>Accessories</b>				
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		
ICE-40C/T Consumable Kit	#222 940	Includes 3 standard electrodes, 3 standard tips, 1 ext electrode, 1 ext tip, 1 gouge tip, 1 gouge shield, 1 swirl ring, 1 retaining cup, 1 o-ring and silicone grease. <i>Order from Miller Service Parts</i>		
Silicone Grease	#169 231	<i>Order from Miller Service Parts</i>		
Plasma Standoff Roller Guide	#194 883	<i>Order from Miller Service Parts</i>		
Plasma Circle-Cutting Guide	#195 981	<i>Order from Miller Service Parts</i>		
Suction/Magnetic Pivot Base	#195 979	<i>Order from Miller Service Parts</i>		
Torch Cable Covers	#239 642	20 ft (6.1 m). <i>Order from Miller Service Parts</i>		
Full KVA Plug Kit	#119 172	<i>Order from Miller Service Parts</i>		
In-Line Air Filter Kit	#228 926	<i>Order from Miller Service Parts</i>		
In-Line Air Filter Replacement Element	#228 928	<i>Order from Miller Service Parts</i>		
MIG Gloves		See page 3. <i>Order from Miller Service Parts</i>		
Metalworker Gloves		See page 3. <i>Order from Miller Service Parts</i>		

Date:

Total Quoted Price:

\* Certified to both the Canadian and U.S. Standards for welding and plasma cutting equipment.

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