

# Big Blue® 450 Duo CST™

**Diesel Engine-Driven  
Welder**



## Quick Specs

### Heavy Industrial Applications

Pipe welding  
Structural  
General fabrication  
Maintenance and repair  
Rental fleets

### Processes

Stick (SMAW)  
DC TIG (GTAW) Lift-Arc™  
Air carbon arc (CAC-A)  
Rated: 3/16-inch (4.8 mm)  
carbons (paralleled)  
Air plasma cutting and gouging  
with optional Spectrum® models

### Output Range

**Stick** 30–280 A (separate), 60–450 A (parallel)  
**TIG** 5–280 A (separate), 10–450 A (parallel)

### Auxiliary Output Rated at 104°F (40°C)

10,500 watts peak, 8,900 watts continuous

## Durable dual-operator engine-driven welder.

The Big Blue 450 Duo CST delivers proven CST stick/TIG performance with two superior arcs in one compact package, for maximum productivity and efficiency.



**Mitsubishi S4L2 four-cylinder diesel.** Used in industrial applications around the world, the S4L2 is designed to run 10,000 hours before major overhaul.

**Superior stick arc performance** even on the difficult-to-run electrodes like E6010.

**Adaptive Hot Start™ for stick arc starts** automatically increases the output amperage at the start of a weld should the start require it. Prevents the electrode from sticking and creating an inclusion.

**Lift-Arc™ start** for TIG starts without the use of high frequency.

**Digital meter** for more precise control when presetting or monitoring welding amperage.

**Remote amperage control** provided through 14-pin receptacle on front of the machine permits the use of standard and wireless amperage control devices.

**Vandalism lockout kit (steel panel flipped up on image shown).** Lockable hinged steel panel protects front control panel and ignition switch.



**Quiet operation.** At just 71 decibels at 23 feet (7 m), it's quieter than most single-operator models, improving jobsite communication and safety.

**Thermal overload protection** prevents machine damage if the duty cycle is exceeded or airflow is blocked.

**High efficiency.** Three-phase, rotating-field auxiliary requires less fuel and horsepower to operate.



**Universal connector system** allows the machine to be quickly configured to either Tweco®- or Dinse-style receptacles. Extra receptacles and wrench shown are sold separately as Universal Connector Kits (see page 3).

### Meter maintenance displays.

- Hour meter function
- Oil change interval
- High coolant temperature and low oil pressure shutdowns
- Low fuel shutdown—engine shuts down before system runs out of fuel, making restarts easy



Engine-driven welder is warranted for three years, parts and labor.  
Engine is warranted separately by the engine manufacturer.



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f t y i n



# Specifications (Subject to change without notice.)



Weld Mode/Process	Output Mode	Weld Output Range	Weld Output Rated at 122°F (50°C)	Max. Open-Circuit Voltage	Auxiliary Power Output Rated at 122°F (50°C)	Sound Levels at Rated Output, 23 ft. (7 m)	Dimensions	Net Weight (without fuel)*
CC/DC (Stick/TIG)	Separate (dual outputs)	5–225 A (each side) 5–280 A (one side only)	175 A at 27 V, 100% duty cycle	77	10,500 watts peak, 8,900 watts continuous 1-phase, 120/240 VAC, 60 Hz	71 dB (96 Lwa)	H: 32 in. (813 mm) W: 26.25 in. (667 mm) D: 56 in. (1,422 mm)	1,064 lb. (483 kg)
	Paralleled (combined)	10–450 A	350 A at 27 V, 100% duty cycle					

\*Additional 71 lb. (32 kg) when fuel tank is full.

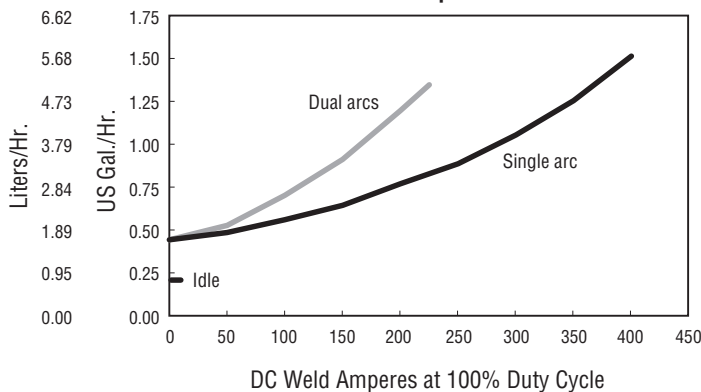
Certified by Canadian Standards Association to both the Canadian and U.S. Standards. Meets NEMA and IEC output ratings.

## Engine Specifications (Engines warranted separately by the engine manufacturer.)

Engine Brand	Features	HP	Type	Engine Speeds	Capacities	Automatic Engine Shutdown
Mitsubishi S4L2	EPA Tier 4 Final compliant	24.7	Four-cylinder, liquid-cooled industrial diesel	Weld: 1,800 rpm	Fuel: 10 gal. (37.8 L) Oil: 5.8 qt. (5.5 L) Coolant: 10 qt. (9.5 L)	Low oil pressure, high coolant temperature, low fuel level

## Performance Data

Fuel Consumption Curve



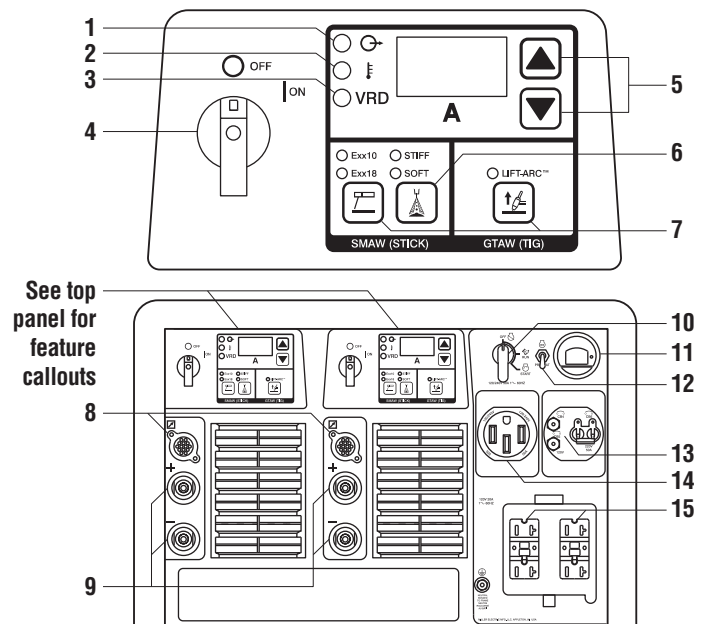
Simultaneous Welding and Power

Weld Amperes	Total 1-Phase Aux. Power Available (Watts)
No Weld Output	> 8,900
200 A	> 4,450
300 A	> 2,200
400 A	0

## Function Guide

- Output light
- High temperature shutdown light
- VRD indicator light\*
- Power switch
- Amperage adjustment buttons
- Arc control select
- Weld process selector buttons
- Standard 14-pin receptacles for simple connection of remote controls.
- Weld output terminals
- Engine control switch is used to start and stop the engine.
- Meter maintenance displays show fuel level, engine hours, oil change interval and high temp/low pressure/low fuel shutdown information.
- Glow plugs assist in cold weather starting.
- 120 and 240 V circuit breakers
- 50 A, 120/240 V receptacle  
*Note: For matching plug, order 119172.*
- 20 A, 120 V GFCI receptacles

\*Voltage Reducing Device (VRD) — see owner's manual for more information.



# Genuine Miller® Accessories



**Full KVA Plug Kit 119172** Field  
1-phase, 120/240 V, 50 A plug (NEMA 14-50P) to fit full KVA receptacle.



Female Receptacle 

**Full KVA Adapter Cord 300517** Field  
NEMA 14-50P to NEMA 6-50R. Adapts engine drive 120/240 V plug to common Millermatic® and Spectrum® 240 V plug.

**Engine Filter Kit 252782** Field  
Includes all filters required for proper engine maintenance. Oil filter, primary and secondary fuel filter, and primary air filter.



**Spark Arrestor (Muffler) Kit 300585** Field  
Prevents particles from leaving the muffler that could potentially start a fire. Mandatory when

operating on California grasslands, brush, or forest-covered land, and in all national forests. For other areas, check your state and local laws. Meets U.S. Forest Service Standard 5100-1B.



**FA-1D Lockable Flame Arrestor Fuel Cap 043947** Field  
Fuel cap can be padlocked to prevent vandalism. A built-in flame arrestor prevents flames or sparks from entering the fuel tank.



**Protective Cover 195301** Field  
Blue water-resistant cover with Miller logo resists stains and mildew, and protects the finish of your welder.

## Stick (SMAW) Welding

### Weld Leads

**No. 2 Stick Cable Set, 15 ft. (4.6 m) 195196**  
Consists of 15-foot (4.6 m) No. 2 electrode cable with holder, and 15-foot (4.6 m) work cable with clamp. 200 A, 100% duty cycle.

**No. 2 Stick Cable Set, 50 ft. (15 m) 300836**  
Consists of 50-foot (15 m) No. 2 electrode cable with holder, and 50-foot (15 m) work cable with clamp. 200 A, 100% duty cycle.

**2/0 Stick Cable Set, 50 ft. (15 m) 173851**  
Consists of 50-foot (15 m) 2/0 electrode cable with holder, and 50-foot (15 m) work cable with clamp. 350 A, 100% duty cycle.

**2/0 Stick Cable Set, 100/50 ft. (30.5/15 m) 043952**  
Consists of 100-foot (30.5 m) 2/0 electrode cable with holder, and 50-foot (15 m) work cable with clamp. 300 A, 100% duty cycle.

## TIG (GTAW) Torches



**Weldcraft® TIG Torches WP-17V-12-2**  
150 A, 12 ft. (3.7 m)  
Air-cooled torch with valve, two-piece cable.

**WP-17V-25-2** 150 A, 25 ft. (7.6 m)  
Air-cooled torch with valve, two-piece cable.

**WP-26V-25-2** 200 A, 25 ft. (7.6 m)  
Air-cooled torch with valve.

*Two-cable TIG torches require the installation of Tweco-style connector 191981.*

## Plasma Cutting



**Spectrum® 375 X-TREME™ 907529**  
See literature PC/9.2.

**Spectrum® 625 X-TREME™ 907579** with 12-foot (3.7 m) torch  
**907579001** with 20-foot (6.1 m) torch  
See literature PC/9.6.

The Spectrum 375 X-TREME and 625 X-TREME come complete with protective X-CASE™ (not shown).

## Remote Controls



**Wireless Remote Hand Control\* 301582**  
For remote current, voltage and contactor control. Receiver plugs directly into the 14-pin receptacle of Miller machine. Up to 300-foot (91.4 m) operating range.

Wireless antenna kit **300749** is recommended.



**Wireless Remote Foot Control\* 301580**  
For remote current control. Receiver plugs directly into the 14-pin receptacle of Miller

machine. 90-foot (27.4 m) operating range. Wireless antenna kit **300749** is recommended.



**PRHC-14 Hand Control\* 195511**

Complete current control brings 120 volts of GFCI power to work area in a single cord. Housed in a durable and light aluminum case and includes 125-foot (38 m) cord with plugs.



**RHC-14 Hand Control\* 242211020**

Miniature hand current control. Dimensions: 4 x 4 x 3.25 inches (102 x 102 x 82 mm). Includes 20-foot (6 m) cord and 14-pin plug.



**RCC-14 Remote Current Control\* 151086**

East/west rotary-motion fingertip control attaches to TIG torch using two hook-and-loop fasteners. Includes 26.5-foot (8 m) cord and 14-pin plug.



**RCCS-14 Remote Current Control\* 043688**

North/south rotary-motion fingertip control attaches to TIG torch using two hook-and-loop fasteners. Includes 26.5-foot (8 m) cord and 14-pin plug.

**RFCS-14 HD Foot Control\* 194744**

Heavy-duty foot current control. Includes 20-foot (6 m) cord and 14-pin plug.

**Extension Cables for 14-Pin Remote Controls**

**242208025** 25 ft. (7.6 m)  
**242208050** 50 ft. (15.2 m)  
**242208080** 80 ft. (24.4 m)

*\*Controls only amperage on the Big Blue 450 Duo CST—electrode always hot.*

## Cable Connectors and Adapters

### Universal Connector Kits

**301611** Tweco®-style receptacles  
**301595** Dinse-style receptacles  
Includes receptacles, wrench and electrical joint compound.



**Tweco®-Style Connector 191981**  
Accepts #1/0 to #2/0

AWG cable. Kit includes one male Tweco-style plug which attaches to the work and/or weld cables and plugs into the Tweco-style receptacles on the power source.



**Tweco®/Dinse Adapter 210061**

One-piece adapter with a male Tweco-style plug (to power source) on one end and a female Dinse-style receptacle (for weld cable connection) on other end.

**Dinse-Style Connector Kit 042418**

Accepts #4 to #1/0 AWG cable. Kit includes one male Dinse-style plug which attaches to the work and/or weld cables and plugs into the Dinse-style receptacles on the power source.

**Extension Kit for Dinse-Style Cable Connectors 042419**

Accepts #4 to #1/0 AWG cable. Used to adapt or extend weld and/or work cables. Kit includes one male Dinse-style plug and one in-line female Dinse-style receptacle.

## Trailers and Hitches (Note: Trailers are shipped unassembled.)



### HWY-Mid Frame Trailer 301438

1,424-pound (646 kg) capacity highway trailer with welded steel tubing frame, heavy-duty axle with roller bearing hubs and leaf-spring suspension. Includes jack stand, fenders, lights, and dual hitch with 2-inch (50 mm) ball hitch and 3-inch (76 mm) lunette eye.

### Cable Tree 043826

Provides an area to conveniently wrap weld cables and extension cords.



### Dual Hitch 301441

Combination 2-inch (50 mm) ball hitch and 3-inch (76 mm) lunette eye in one reversible assembly.

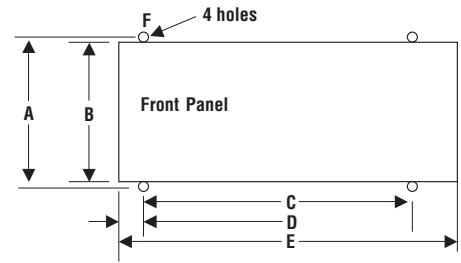


### 2-In-1 Document/ Fire Extinguisher Holder 301236

Stores documents and holds a 5-pound fire extinguisher.

*Note: Holder shown mounted on trailer. Fire extinguisher not included.*

## Mounting Specifications



- A. 27.75 in. (705 mm)
- B. 26.25 in. (667 mm)
- C. 52.25 in. (1,327 mm)
- D. 2 in. (51 mm)
- E. 56 in. (1,422 mm)
- F. .562 in. (14 mm) diameter

**Height:** 32 in. (813 mm)  
**Width:** 26.25 in. (667 mm)  
**Depth:** 56 in. (1,422 mm)

## Trailer Specifications (Subject to change without notice.)

Model	Gross Axle Weight Rating	Gross Vehicle Weight Rating	Net Payload	Height of Bed	Road Clearance	Track (Center to center of tires)	Standard Tires (Standard rating or P-size rating)	Dimensions	Net Weight
HWY-Mid Frame	1,605 lb. (728 kg)	1,424 lb. (646 kg)	1,424 lb. (646 kg)	19.5 in. (495 mm)	8 in. (203 mm)	46 in. (1,168 mm)	ST175/80D-13 Load Range C	Length: 101 in. (2,565 mm) Width: 55 in. (1,397 mm)*	181 lb. (82 kg)

\*Width at outside of fenders.

## Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
<b>Big Blue® 450 Duo CST™</b>	<b>907866</b>	With Tweco®-style connectors		
<b>Field Accessories</b>				
Full KVA Plug Kit	<b>119172</b>	1-phase, 120/240 V, 50 A		
Engine Filter Kit	<b>252782</b>	Includes air, oil and fuel filters		
Spark Arrestor (Muffler) Kit	<b>300585</b>			
FA-1D Lockable Flame Arrestor Fuel Cap	<b>043947</b>			
Protective Cover	<b>195301</b>			
<b>Stick Welding Leads</b>		See page 3		
<b>Weldcraft® TIG Torches</b>		See page 3		
<b>Plasma Cutting</b>				
Spectrum® 375 X-TREME™	<b>907529</b>	12 ft. (3.7 m) torch. Includes X-CASE™ See literature PC/9.2		
Spectrum® 625 X-TREME™	<b>907579</b>	12 ft. (3.7 m) torch. Includes X-CASE™ See literature PC/9.6		
	<b>907579001</b>	20 ft. (6.1 m) torch. Includes X-CASE™ See literature PC/9.6		
<b>Remote Controls</b>		See page 3		
<b>Cable Connectors and Adapters</b>		See page 3		
<b>Trailers and Hitches</b>		See above		

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

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