

Big Blue® 400 Eco Pro

Issued June 2011 • Index No. ED/5.3

**Diesel Engine-Driven
Welder/AC Generator** 

Quick Specs

Heavy Industrial Applications

Pipe Welding
Structural
General Fabrication
Maintenance and Repair
Rental Fleets

Processes

Stick (SMAW)
MIG (GMAW)
Flux Cored (FCAW)
DC TIG (GTAW)
Air Carbon Arc (CAC-A)
thru 5/16 in (8 mm) carbons

Output Range DC CAC-A 20–500 A
DC Stick 20–450 A
DC TIG 20–450 A
MIG/FCAW 14–40 V

Generator Output Rated at 104°F (40°C)
5500 Watts Peak, 4000 Watts Continuous

**Accu-Rated™—Not Inflated
Generator Power**

The Power of Blue.®

The Big Blue 400 Eco Pro is a rugged, compact, fuel-efficient diesel welder/generator that's Eco-friendly and Eco-nomical.

Superior arc performance

- Factory-preset DIG settings (Stick)
- Hot Start™ (Stick)
- MIG and Flux Cored arc performance

An Eco-nomical and Eco-friendly alternative. Designed to be up to 25% more fuel-efficient during typical welding operations than other models. Output of the engine matches the power required, saving operating cost and the environment. The fuel savings really add up when running day-after-day, while producing fewer carbon emissions. Meets tough EPA Tier 4i compliance standards.

Compact package. The Big Blue 400 Eco Pro is up to 44% smaller and 41% lighter than other models—taking less room and reducing transportation costs.



The Vault—ultimate control board reliability. See page 4.

BUILT TOUGH

New!



See page 3 for more machine features/benefits.

**EPA Tier 4i
Compliant**

**MITSUBISHI ENGINE
NORTH AMERICA, INC.**

Mitsubishi S4L2 4-cylinder diesel.

Heavy-duty industrial engine is designed to operate over 10,000 hours before the first basic overhaul. Backed by worldwide support and service.

Simple operation. Operator-friendly control panel is simplified with color-coded terminals to get you connected quickly and correctly.

Meter maintenance displays

- Fuel gauge
- 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.

Quiet operation. In economy mode with 71.5 dBA at 23 ft (7 m), it's quieter than most competitive models, improving work site communication and safety.

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

High efficiency. 3-phase, rotating-field welding generator requires less fuel and horsepower to operate.

TRUE BLUE
3YR. WARRANTY

Welder/generator is warranted by Miller for 3 years, parts and labor.
Engine is warranted separately by engine manufacturer.

MADE IN USA
APPLETON, WI 



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

Equipment Sales US and Canada
Phone: 866-931-9730
FAX: 800-637-2315
International Phone: 920-735-4554
International FAX: 920-735-4125

Web Site
www.MillerWelds.com



Specifications (Subject to change without notice.)



Weld Mode	Weld Output Range	Weld Output Rated at 104°F (40°C)	Max. Open-Circuit Voltage	Generator Power Output Rated at 104°F (40°C)	Sound Levels at Rated Output, 23 ft (7 m)	Dimensions	Weight (without fuel)*
CC/DC (Stick/TIG)	20–450 A	300 A, 32 VDC, 100% Duty Cycle 450 A, 30 VDC, 40% Duty Cycle	85	5500 Watts Peak 4000 Watts Continuous Single-phase, 36/18 A, 120/240 VAC, 60 Hz	Economy Mode: 71.5 dB (96 Lwa); Power Mode: 81.5 dB (106 Lwa)	H: 32 in (813 mm) W: 26-1/4 in (667 mm) D: 56 in (1422 mm)	Net: 1095 lb (497 kg) Ship: 1145 lb (519 kg)
CV/DC (MIG/FCAW)	14–40 V	300 A, 28 VDC, 100% Duty Cycle 450 A, 30 VDC, 40% Duty Cycle					
CC/DC (CAC-A)	40–500 A	400 A, 36 VDC, 100% Duty Cycle 500 A, 30 VDC, 40% Duty Cycle					

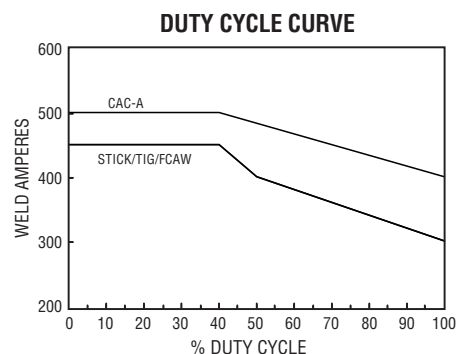
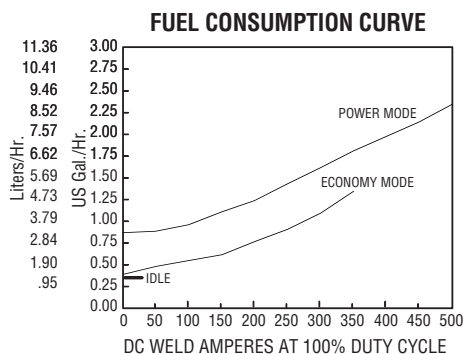
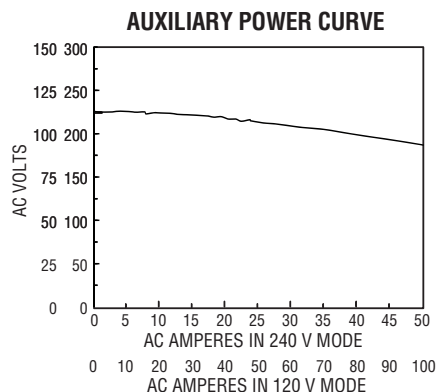
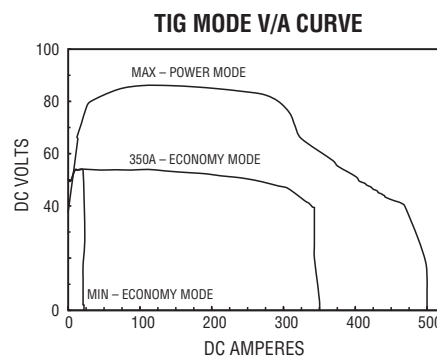
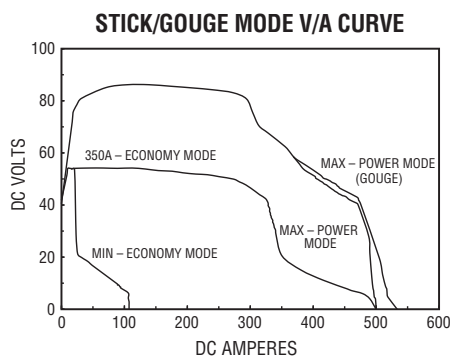
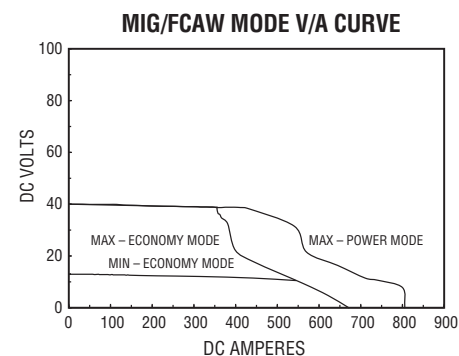
*Additional 95 lb (43 kg) when fuel tank is full.

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	Fuel Capacity	Oil Capacity	Coolant Capacity	Automatic Engine Shutdown
Mitsubishi S4L2	EPA Tier 4i compliant, indirect-injected, liquid-cooled engine. Right-side service access with intervals of 500 hrs for oil and filters.	35	4-cylinder, industrial liquid-cooled, diesel	Idle: 1500 RPM Weld: 1850 RPM Gouge: 3000 RPM	11.5 gal (43.5 L)	6.3 qt (6 L)	10 qt (9.5 L)	Low Oil Pressure, High Coolant Temperature, Low Fuel Level

Performance Data



SIMULTANEOUS WELDING AND POWER TABLE

WELD AMPERES	TOTAL POWER AVAILABLE IN WATTS	120 V RECEPTACLE AMPERES	240 V RECEPTACLE AMPERES
300/500	N/A	—	—
0/300	4000	20	18

Function Guide

1. Optional Self-calibrating Digital Weld Meters with Fault Code Indication (order #195 289) display preset or actual weld parameters.

2. Weld Process Select Switch

3. Amperage/Voltage Adjust Control

4. 14-pin Receptacle* for simple connection of remote controls. It features **Auto Remote Sense™** which automatically switches from panel to remote amperage/voltage (A/V) control with remote connected. Eliminates confusion of the panel/remote A/V switch.

5. Weatherproof Lexan® Nameplate is super durable and resists cracking and fading. Color coded controls for ease of operation.

6. Meter Maintenance Displays show fuel level, engine hours, oil change interval and hi temp/low pressure/low fuel shutdown information.

Low Fuel Shutdown shuts engine off prior to running out of fuel to prevent loss of fuel in the system, and make restarts easy. Display will read noFUEL. Turn the machine off, add fuel, and restart.

7. Engine Control Switch is used to start and stop the engine and select power range. Auto-Idle is standard.

8. Glow Plugs assist in cold weather starting.

9. Receptacle and Circuit Breaker Panel

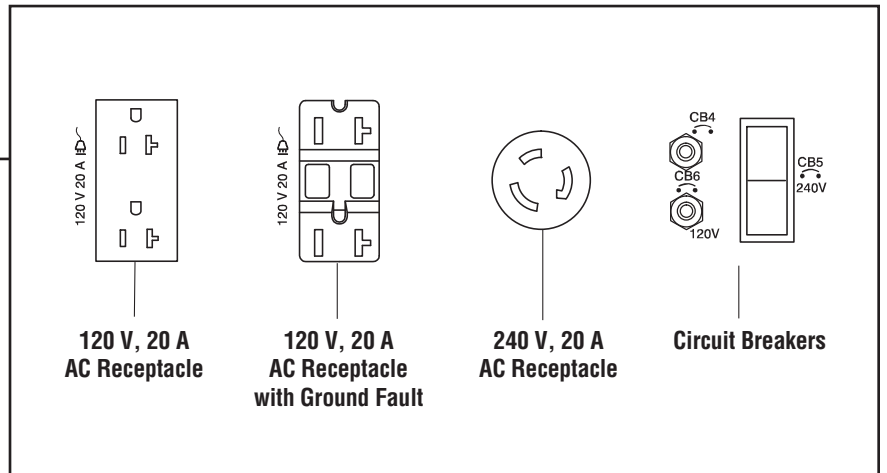
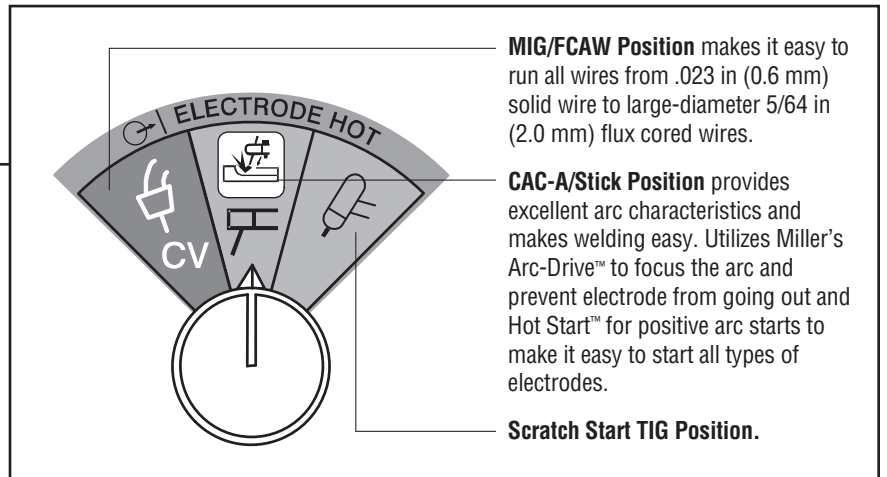
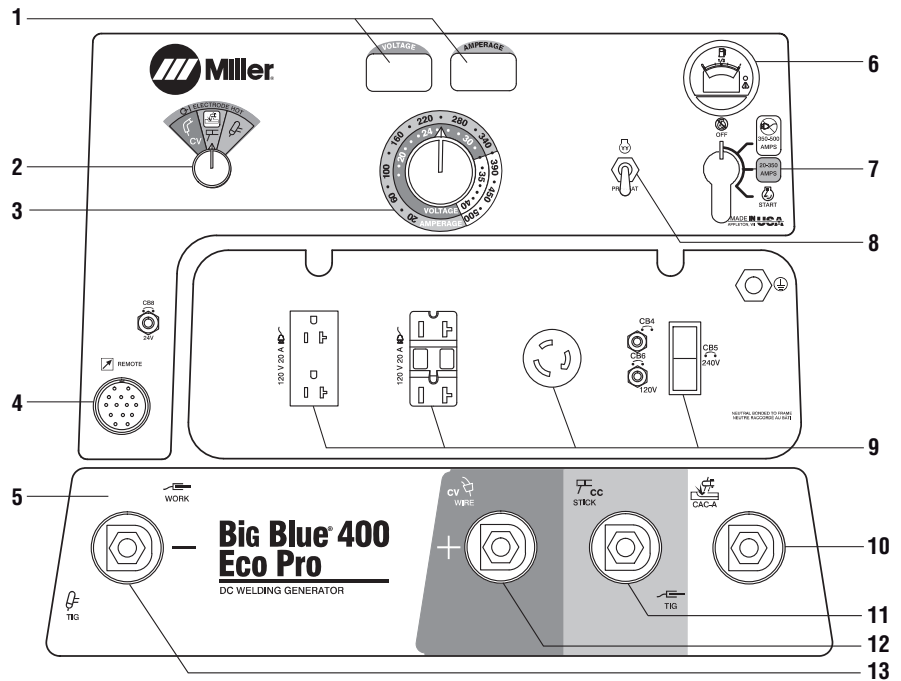
10. CAC-A Positive (+) Gouging Output Terminal

11. Stick/TIG Positive (+) Weld Output Terminal

12. MIG/FCAW Positive (+) Weld Output Terminal

13. Negative (-) Weld Output Terminal

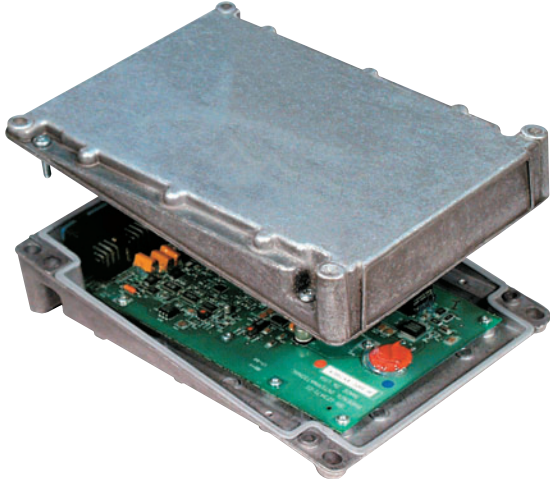
**Controls only amperage or voltage on the Big Blue 400 Eco Pro — electrode always hot.*



What Makes Miller Industrial Engine Drives So **[TOUGH]**?

Superior Circuit Board Design

Miller's critical circuit boards are engineered to carry *low power* and *low heat* to reduce thermal stress and minimize expansion and contraction. In contrast, our competitor's boards carry *high power* and *high heat*, making them more vulnerable to failure.



"The Vault" Makes Upgrading to Miller CC/CV Units Worry-Free

Concerns with circuit board reliability have resulted in some operators steering clear of CC/CV welder/generators — even though they offer a superior arc and multiple welding processes. Miller's circuit board reliability isn't a concern since all Big Blue multiprocess industrial engine drives feature the Vault.

Created out of two aluminum halves sealed with silicone, as well as watertight harness connections, the Vault provides a clean circuit board environment, protecting the electronics — and controlling output — in heavy industrial applications. No other competitor protects their electronics with a sealed vault, leaving critical circuit boards exposed to harsh elements that can disrupt the machine's electronics, and therefore, its operation.

"The Big Blue 400 Eco Pro reduced our fuel costs by about 1.6 gallons a day or more than 31.7 gallons a month, while its smaller size and lighter weight has decreased transportation costs. Plus, its controls are very easy to use, and the stable, smooth arc quality has decreased the need for rework. We're now more productive and cost efficient."



*Mr. Frank Vucic, Structure Superintendent
McConnell Dowell, South East Asia PTE LTD*

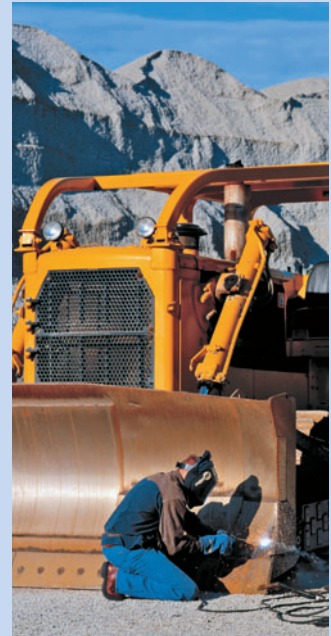
"It's much quieter than our previous machine, making it easier to communicate on the job site, reducing operator fatigue and decreasing noise levels in the surrounding communities."

Mr. RGS Nair, Welding foreman of QCON

Rigorous Testing for Tough, Real-World Conditions

To prove our machines go to the limit, Miller industrial engine drives are put to the test in very extreme environmental conditions.

- **Airborne Dust and Sand** — Critical components are exposed to abusive airborne particles in a special testing chamber for weeks, helping make sure they'll operate while facing extreme levels of dirt, dust or sand on the job site.
- **Humidity and Corrosion** — Inside Miller's Houston testing room, critical components are subjected to extended moisture and corrosive salt exposure to ensure they'll run even when exposed to humid climates, corrosive coastal environments, and driving rain.
- **Temperature Extremes** — Miller's industrial engine drives are tested to ensure performance in scorching heat. All Miller engine driven machines are weld rated at 104°F, but actual tests are conducted up to 122°F to assure peak performance.
- **Jobsite/Over-the-Road Abuse** — Miller industrial engine drives are shaken for hours on transportation bed simulators, subjected to severe vibration, and test-dropped and jerked to ensure they'll withstand the stresses that can shut down competitive machines.
- **Continuous Operation** — Miller's industrial engine drives run day and night, in all weather conditions, to assure they'll perform without interruption in the field.



Why Industrial Engine Drive Customers Choose Miller

The ultimate test of Miller's reliability is how it performs in the field. The quote on the left provides a glimpse of how Miller industrial engine drives perform for customers. Read the full stories, and many others demonstrating Miller's superior reliability, at MillerWelds.com.

Genuine Miller Accessories

Cold Weather Starting Aid #300 664 Field
120 V block heater.

Note: All models come standard with preheaters (glow plugs).

Engine Filter Kit #252 782 Field
Includes all filters required for proper engine maintenance. Oil filter, primary and secondary fuel filter, and primary air filter.

Spark Arrestor (Muffler) Kit #300 585 Field
Prevents particles from leaving the muffler that could potentially start a fire.



FA-1D Lockable Flame Arrestor Fuel Cap #043 947
Fuel cap can be padlocked to prevent vandalism. A built-in flame arrestor prevents flames or sparks from entering the fuel tank.

Chalwyn Safety Valve #300 576 Field
Shuts off air flow to the engine to prevent over-speed condition. Required on many petroleum jobsites, this valve provides both manual and automatic operation giving you two methods of operation to meet jobsite compliance standards.

Protective Cover #195 301 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) #195 196

Consists of 15 ft (4.6 m) No. 2 electrode cable with holder, and 15 ft (4.6 m) work cable with clamp. 200 A, 100% duty cycle.

No. 2 Stick Cable Set, 50 ft (15 m) #300 836

Consists of 50 ft (15 m) No. 2 electrode cable with holder, and 50 ft (15 m) work cable with clamp. 200 A, 100% duty cycle.

2/0 Stick Cable Set, 50 ft (15 m) #173 851

Consists of 50 ft (15 m) 2/0 electrode cable with holder, and 50 ft (15 m) work cable with clamp. 350 A, 100% duty cycle.

2/0 Stick Cable Set, 100/50 ft (30.5/15 m) #043 952

Consists of 100 ft (30.5 m) 2/0 electrode cable with holder, and 50 ft (15 m) work cable with clamp. 300 A, 100% duty cycle.

Plasma Cutting



Spectrum® 375 X-TREME™ #907 339

See Lit. Index No. PC/9.2.

Spectrum® 625 X-TREME™

#907 404 with 12 ft (3.7 m) torch

#907 404-01-1 with 20 ft (6 m) torch

See Lit. Index No. PC/9.6.

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

MIG (GMAW) or Flux Cored (FCAW)



SuitCase® X-TREME™ 8VS Wire Feeder #951 182

SuitCase® X-TREME™ 12VS Wire Feeder #951 184

Lightweight, voltage-sensing wire feeders include secondary contactor, gas valve and drive roll kit. See Lit. Index No. M/6.41.

TIG (GTAW) Welding



HF-251 Series

#042 388

HF-251D-1, 115 VAC

#042 387

HF-251-2, 230 VAC

High-frequency arc starter and stabilizer.

Corresponding Secondary Contactors listed below are recommended when using HF Series with Eco Pro engine drives. See Accessory Lit. Index No. AY/5.0.

Secondary Contactor Kit

#041 969 Field. For HF-251D-1

#041 906 Field. For HF-251-2

For power sources without a contactor. Mounts inside HF-251 cabinet.

Remote Controls



Wireless Remote Foot Control* #300 429

For remote current or voltage control.

Receiver plugs directly into the 14-pin receptacle of Miller machine. 90 ft (27.4 m) operating range. Requires Wireless Antenna Kit #300 749.



Wireless Remote Hand Control* #300 430

For remote current or voltage control. Receiver plugs directly into the

14-pin receptacle of Miller machine. 300 ft (91.4 m) operating range. Requires Wireless Antenna Kit #300 749.

Wireless Antenna Kit #300 749

Required for Pro Series engine drives. Optional on other compatible Miller products where improved reception is desired.

RFCS-14 HD Foot Control* #194 744

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

RHC-14 Hand Control* #242 211 020

Miniature hand current or voltage control. Dimensions: 4 x 4 x 3-1/4 in (102 x 102 x 82 mm). Includes 20 ft (6 m) cord and 14-pin plug.



PRHC-14 Hand Control* #195 511

Complete current or voltage control brings 120 volts GFCI power to work area in

a single cord. Housed in a durable light aluminum case and includes 125 ft (38 m) cord with plugs.



RCC-14 Remote Fingertip Control*

#151 086 14-pin plug

Rotary-motion fingertip control fastens to TIG torch using two Velcro® straps. Includes 28 ft (8.5 m) control cord.

Extension Cords for 14-Pin Remote Controls

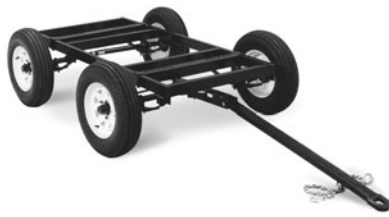
#242 208 025 25 ft (7.6 m)

#242 208 050 50 ft (15.2 m)

#242 208 080 80 ft (24.4 m)

**Controls only amperage or voltage on the Big Blue 400 Eco Pro — electrode always hot.*

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



4 West Four-Wheel Steerable Off-Road Trailer #042 801

A heavy-duty 2570 lb (1166 kg) capacity trailer designed for use in mines, quarries, and other rough terrain. Has narrow 22 ft (6.7 m) turning radius. Includes 3 in (76 mm) lunette eye, universal hitch and safety chains.

Note: Trailer is shipped unassembled.



HWY-224 Trailer #043 805

For highway use.

OFR-224 Trailer #043 802

For off-road use.

A 2650 lb (1202 kg) capacity trailer. Welded steel tubing frame, heavy-duty axle with roller bearing hubs and leaf-spring suspension. Includes jack stand, 2 in (50 mm) ball hitch. *HWY-224 also includes fenders and lights.*

Note: Trailer is shipped unassembled.

Cable Tree #043 826

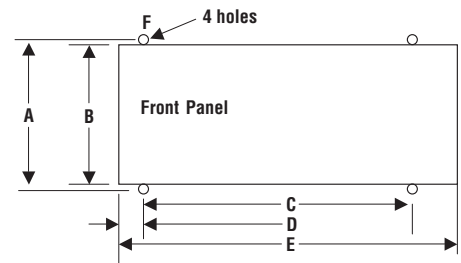
Provides an area to conveniently wrap weld cables and extension cords.



Dual Hitch #300 831

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

Mounting Specifications



A. 27-3/4 in (705 mm)

B. 26-1/4 in (667 mm)

C. 52 in (1321 mm)

D. 2 in (51 mm)

E. 56 in (1422 mm)

F. 9/16 in (14 mm) dia.

Height: 32 in (813 mm)

Width: 26-1/4 in (667 mm)

Depth: 56 in (1422 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
4-West	2000 lb/axle (907 kg/axle)	3000 lb (1361 kg)	2570 lb (1166 kg)	21-1/4 in (540 mm)	8 in (203 mm)	55-1/4 in (1403 mm)	B78-13	Length: 91 in (2311 mm)* Width: 61-1/4 in (1556 mm)	430 lb (195 kg)
HWY-224 OFR-224	3500 lb (1588 kg)	2960 lb (1343 kg)	2650 lb (1202 kg)	18-1/2 in (470 mm)	7-1/2 in (191 mm)	52 in (1321 mm)	B78-13	Length: 105 in (2667 mm) Width: HWY- 59-1/2 in (1511 mm)** OFR-58-7/16 in (1484 mm)	320 lb (145 kg)

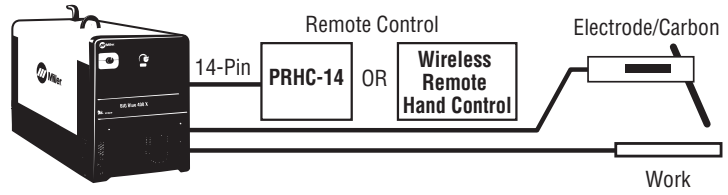
*Does not include tongue. **Width at outside of fenders.

Typical Installations



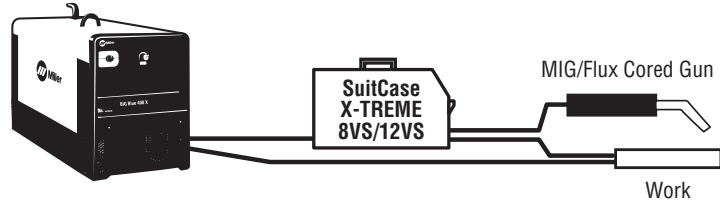
Stick (SMAW) and Air Carbon Arc Cutting and Gouging (CAC-A) Basic Equipment

PRHC-14 #195 511
 Wireless Remote Hand Control #300 430
 Wireless Antenna Kit #300 749

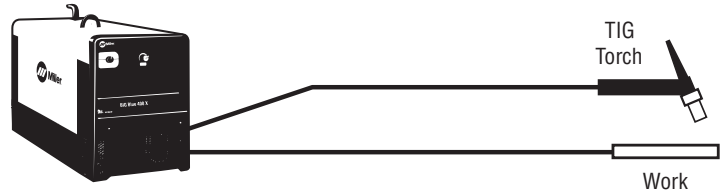


MIG/Flux-Cored (FCAW) Basic Equipment

SuitCase® X-TREME™ 8VS #951 182
 SuitCase® X-TREME™ 12VS #951 184

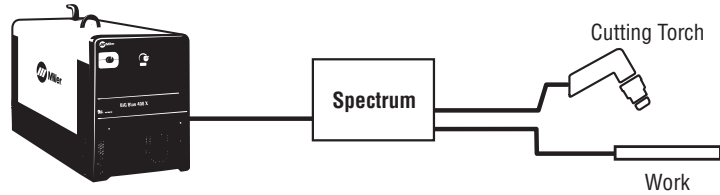


Lift-Arc™ TIG (GTAW) Basic Equipment



Plasma Basic Equipment

Spectrum® 375 X-TREME™ #907 339
 Spectrum® 625 X-TREME™
 #907 404 with 12 ft (3.7 m) torch
 #907 404-01-1 with 20 ft (6 m) torch



Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
Big Blue® 400 Eco Pro (CC/CV)	#907 426	Base machine		
	#907 426-001	With Weld Meters and 120 V Block Heater		
Field Accessories				
Digital Weld Meter Kit	#195 289	Field		
Cold Weather Starting Aid	#300 664	Field. 120 V block heater		
Engine Filter Kit	#252 782	Field. Includes air, oil and fuel filters		
Spark Arrestor Kit	#300 585	Field		
FA-1D Lockable Flame Arrestor Fuel Cap	#043 947	Field		
Chalwyn Safety Valve	#300 576	Field		
Protective Cover	#195 301	Field		
Stick Welding Leads		See page 5		
Plasma Cutting				
Spectrum® 375 X-TREME™	#907 339	Includes X-CASE™. See Lit. Index No. PC/9.2		
Spectrum® 625 X-TREME™	#907 404	With 12 ft (3.7 m) torch and X-CASE™. See Lit. Index No. PC/9.6		
	#907 404-01-1	With 20 ft (6 m) torch and X-CASE™. See Lit. Index No. PC/9.6		
MIG/Flux Cored Welding				
SuitCase® X-TREME™ 8VS	#951 182	See Lit. Index No. M/6.41		
SuitCase® X-TREME™ 12VS	#951 184	See Lit. Index No. M/6.41		
TIG Welding				
HF-251 Series (Secondary Contactor Recommended)	#042 388	HF-251D-1, 115 VAC. See Lit. Index No. AY/5.0		
	#042 387	HF-251-2, 230 VAC. See Lit. Index No. AY/5.0		
Secondary Contactor Kit	#041 969 #041 906	Field. For HF-251D-1 Field. For HF-251-2		
Remote Controls and Switches				
Wireless Remote Foot Control	#300 429	Amperage or voltage control only — electrode always hot. Requires Wireless Antenna Kit		
Wireless Remote Hand Control	#300 430	Amperage or voltage control only — electrode always hot. Requires Wireless Antenna Kit		
Wireless Antenna Kit	#300 749	Required for wireless remotes when using Pro Series engine drives		
RFCS-14 HD Foot Control	#194 744	Amperage or voltage control only — electrode always hot		
RHC-14 Hand Control	#242 211 020	Amperage or voltage control only — electrode always hot		
PRHC-14 Hand Control	#195 511	Amperage or voltage control only — electrode always hot		
RCC-14 Remote Fingertip Control	#151 086	Amperage or voltage control only — electrode always hot		
Extension Cords		See page 5		
Trailers and Hitches				
4-West Four-Wheel Steerable Trailer	#042 801	Trailer with lunette eye, universal hitch and safety chains. For off-road use		
HWY-224 Trailer	#043 805	Trailer with lights, fenders and 2 in (50 mm) ball hitch. For highway use		
OFR-224 Trailer	#043 802	Trailer with 2 in (50 mm) ball hitch. For off-road use		
Cable Tree	#043 826	Trailer-mounted cable holder for HWY-224 or OFR-224		
Dual Hitch	#300 831	Combination 2 in (50 mm) ball hitch and 3 in (76 mm) lunette eye in one reversible assembly. For HWY-224 or OFR-224		

Date:

Total Quoted Price:



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