

# Big Blue® 600X Duo Air Pak™ 50Hz Diesel Engine-Driven Welder

## Quick Specs



### Heavy Industrial Applications

Pipe welding  
Maintenance and repair rigs  
Mechanical contractor  
Construction  
Mining maintenance  
Railroad maintenance

### Processes

Stick (SMAW)  
MIG (GMAW)\*  
Flux-cored (FCAW)\*  
RMD®\*\*  
Pulsed MIG (GMAW-P)\*\*  
DC TIG (GTAW)  
Submerged arc (SAW)  
Air carbon arc (CAC-A)  
3/8-inch (9.5 mm) carbons  
Air plasma cutting and gouging  
with optional Spectrum® models

### Output Range

**Single weld mode**  
CC: 40–600 A, CV: 15–50 V  
**Dual weld mode**  
CC: 20–300 A, CV: 15–50 V

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

**3-phase** 18,000 watts continuous  
**1-phase** 3,000 watts continuous

\*With wire feeder. \*\*With ArcReach Smart Feeder.

## The most versatile diesel engine-driven welder in the industry.

The Big Blue 600X Duo Air Pak 50Hz offers 600 amps of weld power and 18,000 watts of continuous auxiliary power, and is ideal for dual-operator applications on labor intensive jobsites or jobsites with limited space.



### Heavy-duty low-speed industrial diesel engines.

Capable of running on a wide variety of globally available diesel fuels with **NO** exhaust aftertreatment maintenance.



**Optimized arc control for stick welding applications.**  
See page 3.

**Multiple arcs from a single power solution.** Multioperator work platform delivers two arcs (up to 300 amps each), allowing welding operators to work independently with no arc interaction.



**50 Hz auxiliary power** meets the regional/job requirements. This unit generates 50 Hz auxiliary power while offering heavy weld and air output capabilities.

## ArcReach®

**Parameter control at the wire feeder or pendant without needing a control cord.** See page 3.

**All-in-one engine-driven welder**  
Eliminates the need for an auxiliary air compressor. The industrial Ingersoll Rand screw-type air compressor is ideal for gouging and running pneumatic tools.

**Low OCV stick (VRD)** reduces open-circuit voltage to 30 volts when the welding power source is not in use, increasing operator safety without compromising arc starts.



Engine-driven welder is warrantied for three years, parts and labor.

Engine is warrantied separately by engine manufacturer.

Air compressor is warrantied separately by Ingersoll Rand.



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**MillerWelds.com**



# Big Blue® 600X Duo Air Pak™ 50Hz Features

**Digital meters** with SunVision™ technology enable welding parameters to be viewed with greater clarity than analog meters — at virtually any angle. Meters can be seen clearly even in direct sunlight.

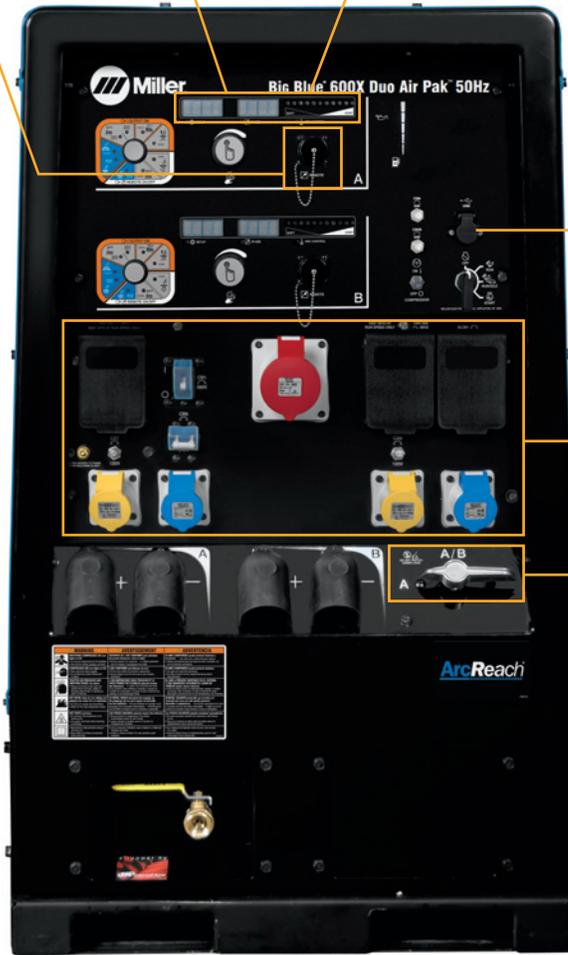
**Standard 14-pin receptacle with Auto-Remote Sense™** for simple connection of remote controls and wire feeders.



**Vandalism lockout.** Lockable hinged steel panels cover and protect name plate, gauges and ignition switch (padlock included).



**Ingersoll Rand ultra-reliable industrial rotary screw compressor (Air Pak™ models only).** 30,000-hour life expectancy. Independent on/off control for applications not requiring compressed air — allows greater fuel savings and longer compressor service intervals.



**Standard features** include ArcReach® technology, digital preset weld meters, automatic idle and 120-volt block heater.



**Arc control** is beneficial when welding with stick and solid wires for easier fine-tuning of tough-to-weld materials and out-of-position applications.



**Industrial USB port.** Quickly upload the latest software and download machine log files.

**18,000 watts of pure auxiliary power.** Plug in an extra Miller® inverter-based power source for a second welding arc.

**Simple paralleling switch** makes switching from a single operator to dual operators a breeze. Weld up to 300 amps per side when set up in dual-operator mode, or up to 600 amps in single-operator mode.

**HD powder coat** with zinc-rich primer protects sheet metal from rust and corrosion.

**Superior welding arcs.** Two welding arcs with no interaction. Features enhanced SMAW processes with Dynamic DIG™ and Hot Start™, CV processes with inductance control, and Lift-Arc™ TIG with Auto-Crater™ and Auto-Stop™.

# Big Blue® 600X Duo Air Pak™ 50Hz Technologies

## Dynamic DIG™ technology



**Ultra-adaptive arc control.** Unlike conventional DIG that provides a preset amount of short-clearing current, Miller-exclusive Dynamic DIG technology works on a time-based algorithm to optimize metal

deposition. Dynamic DIG provides independent control of the fluidity of the weld puddle (arc control) and the drive of the arc (DIG range). This delivers a tailorable and user-friendly arc to match the application, material, fit-up and welder technique.

## ArcReach® technology



**Parameter control at the wire feeder or pendant without needing a control cord.**

An ArcReach system allows you to change weld settings from your ArcReach feeder or stick/TIG remote, saving a trip to the power supply. ArcReach technology uses the existing weld cable to communicate welding control information between the feeder or stick/TIG remote and the power source. This technology eliminates the need for control cords, and their associated problems and costs.

ArcReach-equipped power sources work with non-ArcReach accessories; however the ArcReach benefit is only realized with the complete ArcReach system. This includes an ArcReach-equipped machine and one or more of the following accessories:

- ArcReach SuitCase feeder
- ArcReach Stick/TIG Remote
- ArcReach Smart Feeder
- ArcReach Heater

See pages 6 and 7 for more information.

# Big Blue® 600X Duo Air Pak™ 50Hz Benefits

## Easily update technology



With the industrial USB port, you can easily upload the latest software and download machine log files to retrieve in-depth information from your machine such as diagnostics and statistics.

Visit [MillerWelds.com/support](http://MillerWelds.com/support) to download the latest software updates.

## Multi-arc welding



Multiprocess welding has never been easier or more versatile. One dependable engine, two independent arcs with up to 300 amps each. Or plug in additional inverters for a true multiprocess work platform. For example, you can add an XMT® multiprocess machine to allow a third

operator to weld up to 200 amps each. Quality arcs allow operators to work independently with no arc interaction.

More arcs provide better fuel economy, improve efficiency and increase profits. You can save about 34 percent with a dual-operator unit versus two single-operator units.

## Jobsite safety



Reduce the need to walk back to or climb into the truck bed to make process and parameter changes, or turn your machine on/off. ArcReach® technology provides

parameter control at the wire feeder or stick/TIG remote and optional wireless interface control provides full front panel control in the palm of your hand, so you can lower the risk of encountering potential jobsite hazards.

## ArcReach Heater compatibility



Take charge of your field preheat and bakeout applications up to 600 degrees Fahrenheit (315°C). This system uses induction heating to generate heat in

workpieces, so welders can do their own preheating quickly and safely. A part of the ArcReach technology platform, the ArcReach Heater is an accessory for select ArcReach welding power sources.

# Specifications (Subject to change without notice.)



Weld Mode/ Process	Output Mode	Weld Output Range	Weld Output at 100% Duty Cycle Rated at 104°F (40°C)	Max. Open-Circuit Voltage	Auxiliary Power Output Rated at 104°F (40°C)	Dimensions	Net Weight
CC/DC (Stick/TIG)	Paralleled (combined)	40–600 A	600 A at 38 V 550 A at 42 V <sup>1</sup>	90 VDC 30 VDC (VRD enabled)	3-phase: 18,000 watts continuous  1-phase: 3,000 watts continuous	H: 46 in. (1,168 mm) W: 28.5 in. (724 mm) D: 69.5 in. (1,765 mm) Add 7.5 in. (191 mm) to height for exhaust pipe	2,020 lb. (916 kg) Add 165 lb. (75 kg) when fuel tank is full
	Separate (dual outputs)	20–300 A	300 A at 32 V <sup>1</sup> (each side)				
CV/DC (MIG/FCAW)	Paralleled (combined)	15–50 V	600 A at 38 V 550 A at 41.5 V <sup>1</sup>				
	Separate (dual outputs)	15–50 V	300 A at 29 V <sup>1</sup> (each side)				

<sup>1</sup>Meets NEMA and IEC ratings.

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

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

Engine Brand	Features	HP	Type	Engine Speeds	Sound Levels at 23 ft. (7 m)	Capacities	Automatic Engine Shutdown
Deutz TD2011L04w	EPA Tier 4i compliant, includes oil pan and intake manifold heater	65.7	Turbo-charged four-cylinder, liquid-cooled industrial diesel	Idle: 1,350 rpm Weld: 1,500 rpm	Idle: 71.3 dB (96.1 Lwa) Weld (600 A load): 76.1 dB (101.0 Lwa)	Fuel: (95 L) 25 gal. Oil: (10.4 L) 11 qt. Coolant: integrated oil	Low oil pressure, high coolant temperature, low fuel level

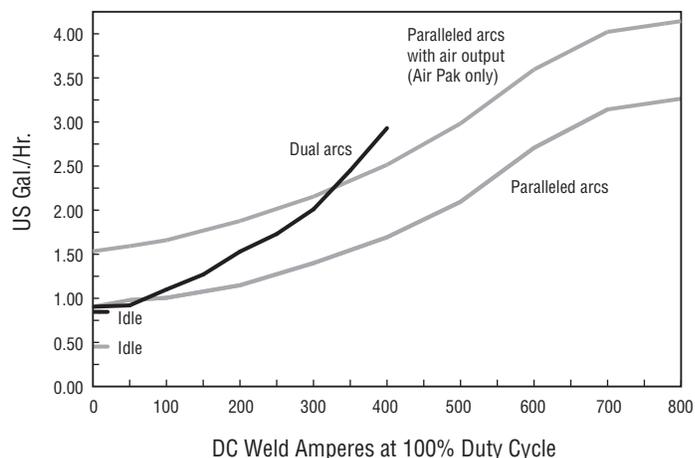
Note: Big Blue models are rated at IP23S.

## Air Compressor (Air compressor warranted separately by Ingersoll Rand.)

Compressor Brand	Features	Air Output at Effective Working Pressure	Working Pressure Constant	Duty Cycle	Oil Capacity	Automatic Compressor Shutdowns
Ingersoll Rand CE55 G1	Rotary screw with electric clutch for on/off. Oil change intervals of 500 hours. Life expectancy of 30,000 hours.	45 cfm (1.3 m <sup>3</sup> /min.) 100 psi (690 kPa), 100% duty cycle	100 psig (7 bar)	100%	4 qt. (3.79 L)	Oil temperature

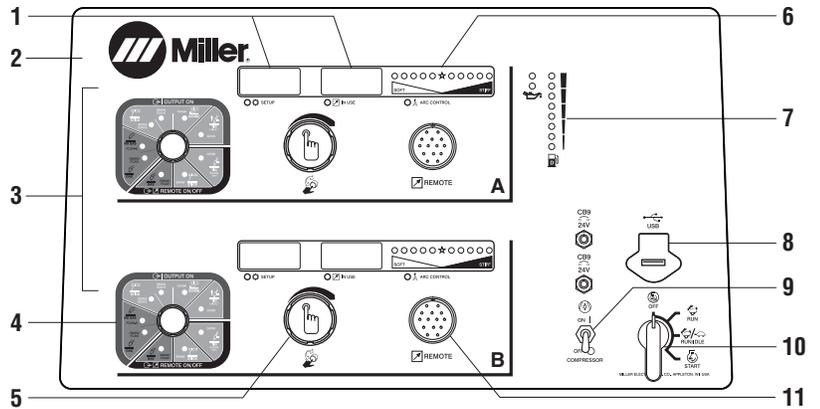
# Performance Data

Fuel Consumption Curve

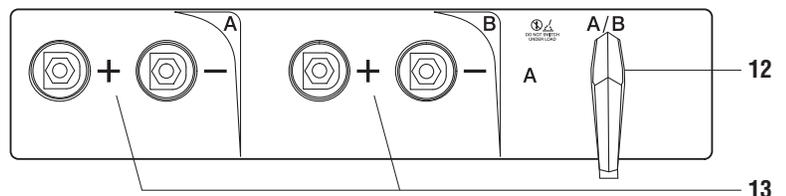


# Function Guide

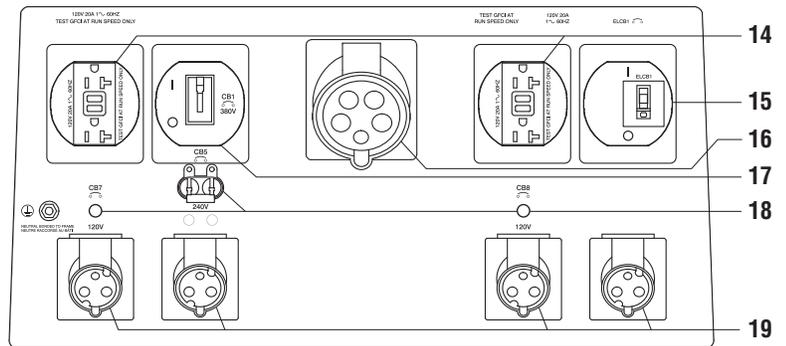
1. **Self-calibrating digital weld meters with fault code indication** display preset or actual weld parameters.
2. **Weatherproof Lexan® nameplate** is super durable and resists cracking and fading.
3. **Operator controls.** Independent controls for multi-arc welding. “A” controls are for single operator and “B” controls are for a second operator.
4. **Weld process selection switch**
5. **Pushbutton main control knob** used for adjusting amperage/voltage, adjusting arc control, and accessing the service menu.
6. **Adjustable fine arc settings** adjusts arc control when in stick processes or inductance when in CV/wire processes to change the weld puddle fluidity. In TIG, Auto-Stop adjusts the arc length at which the arc will terminate. The fine settings assist the operator to get a more tailored arc for their application.
7. **Fuel indicator gauge.** Low fuel shutdown shuts engine off prior to running out of fuel to prevent loss of fuel in the system, and make restarts easy.
8. **USB port** allows software updates from a USB drive. A summary file of recorded data from the unit will be saved to a USB drive that is inserted.
9. **Air compressor on/off switch (Air Pak™ models only)**
10. **Engine control switch** is used to start engine and then select between auto idle and high speed lock. Glow plug operation is controlled by the engine control module and automatically occurs as needed by ambient conditions.
11. **Standard 14-pin receptacle** for simple connection of remote controls and wire feeders. Includes **Auto Remote Sense™** which automatically switches from panel to remote amperage/voltage (A/V) control with remote connected. Eliminates confusion of a panel/remote switch.
12. **Separate/parallel switch.** Use switch to select single operator mode (A) or dual operator mode (A/B).
13. **Weld output terminals**
14. **20 A, 120 V receptacles with ground fault**
15. **240 V earth leakage circuit breaker**
16. **32 A, 400 V three-phase receptacle**  
*Note: For matching plug, order 255421.*
17. **30 A, three-phase circuit breaker**
18. **120 and 240 V circuit breakers**
19. **16 A, 120/240 V receptacles**  
*Note: For matching plugs, order 255419 for 120 V and 255416 for 240 V.*



Control panel



Terminal panel



Receptacles and circuit breakers

# Genuine Miller® Accessories



**Desiccant Air Dryer System** Field  
**195117** Side mount  
**195117001** Rear mount

A regenerating inline air dryer system that eliminates moisture in the air stream to prevent air tool freeze-ups in cold climates. Internal thermostat and heating elements ensure good air quality in all climates. The system can be mounted on the side or on the rear of the machine to meet your installation requirements.



**International Plugs** Field  
**255416** 1-phase, 240 V,  
 16 A plug  
**255421** 3-phase, 400 V,  
 32 A plug

**Engine Filter Kit 246988** Field  
 For International models. Includes all filters required for proper engine maintenance. Oil filter, primary and secondary fuel filter, and primary air filter.

**Compressor Kit 279121** Field  
 Includes oil and all filters required for proper compressor maintenance. Oil filter, air filter and coalescing filter.



**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.



**Spark Arrester Kit 195012** Field  
 Prevents particles from leaving the muffler that could potentially start a fire.

**Remote Output Panel Kit 951850** Field  
 If your engine-driven welder is mounted on a truck, easily locate the outputs at the point of use with the auxiliary power and weld output remote panel. See literature AY/20.5.



**Big Blue 500–800 Pro Cold Weather Kit 301482** Field  
 Adjustable, steel-hinged cover for operating in extremely cold conditions.

## MIG (GMAW) or Flux-cored (FCAW)



**ArcReach® 16**  
**301619** Base feeder (not shown)  
**301664** With shop cart  
**951000065** With shop cart and Bernard® BTB Gun 400 A  
**301663** With field roller  
**951000066** With field roller and Bernard® IronPro™ flux-cored gun

Portable wire feeder for shop or field use accommodating a variety of wires up to 3/32-inch diameter. When paired with an ArcReach power source, provides remote control of the power source without a control cord — saving time and money. See literature M/6.55.



**ArcReach® SuitCase® 8**  
**951726001** With Bernard® BTB Gun 300 A  
**951727** With Bernard® S-Gun™  
**951728** With Bernard® Dura-Flux™ gun

**ArcReach® SuitCase® 12**  
**951729001** With Bernard® BTB Gun 300 A  
**951730** With Bernard® S-Gun™  
**951731** With Bernard® Dura-Flux™ gun

**ArcReach® SuitCase® 12 Heavy Duty 301604** Feeder only — for 3/32-inch cored wire  
 Portable feeder designed to run off of arc voltage. When paired with an ArcReach power source, provides remote control of the power source without a control cord — saving time and money. See literature M/6.55.



**ArcReach® Smart Feeder 951733**  
 Includes drive rolls and Bernard® PipeWorx 300-15 MIG gun. For MIG, FCAW, and advanced RMD® and pulse processes. See literature M/6.55.



**SuitCase® 12RC Wire Feeder 951580001**  
 Lightweight and flexible enough to run wires up to .062-inch diameter. Includes remote voltage control, drive roll kit and Bernard® BTB Gun 300 A. See literature M/6.5.

**MIG (GMAW)/Flux-cored (FCAW) Guns**  
 See Bernard® literature SP-BTB for BTB air-cooled MIG guns, and SP-DF for Dura-Flux™ self-shielded flux-cored guns.



**Spoolmatic® 30A Spool Gun 130831**  
 Air-cooled, 200-amp, spool gun for aluminum and stainless MIG. See literature M/1.73. Requires WC-24 Control **137549**.

**XR™ Wire Feeders and Guns**  
 Push-pull system designed to handle difficult-to-feed soft alloy wires such as aluminum. See literature DC/34.0 and M/1.71 through M/1.74.

## TIG (GTAW) Welding



**Dynasty® 210 Series**  
 For portable AC/DC TIG. See literature AD/4.81.

## Plasma Cutting



*Spectrum 375 X-TREME and 625 X-TREME shown.*

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

**Spectrum® 625 X-TREME™ 907579**  
 See literature PC/9.6.

**Spectrum® 875 907583**  
 See literature PC/9.8.

# Genuine Miller® Accessories (Continued)

## Stick/TIG Remote Controls



### ArcReach® Stick/TIG Remote 301325

When paired with an ArcReach power source, provides remote control of the power source without a cord —

saving time and money. See literature AY/14.5.



### Wireless Remote Hand Control 301582

For remote current, voltage and contactor control.

Receiver plugs directly into the 14-pin receptacle of Miller machine. 300-foot (91.4 m) operating range.

Wireless antenna kit **300749** is recommended.

### Wireless Antenna Kit 300749

Optional when improved reception is desired.



### RHC-14 Hand Control 242211020

Miniature hand control for remote current, voltage and contactor 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.

### Extension Cables for 14-Pin Remote Controls or 24 VAC Wire Feeders

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

## ArcReach® Heater System



### ArcReach Heater Only 301390

CSA model **301591**  
CE model

### ArcReach Heater Packages

**951848** ArcReach Heater CSA model and extension cable

**951849** ArcReach Heater CSA model, extension cable and two air-cooled quick wraps

The ArcReach Heater is equipped with built-in temperature control allowing for either manual or computer-loaded programming using up to six thermocouples. The ArcReach Heater can run either one or two heating tools (air-cooled cable or air-cooled quick wrap) at the same time. Requires ArcReach Heater extension cable to operate. See literature IN/16.0.

*Note: Weld cables are not included.*

## Trailer and Hitches (Note: Trailer is shipped unassembled.)



### HWY-225 Trailer 301338

A 2,700-pound (1,225 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

For use with HWY-225. Provides an area to conveniently wrap weld cables and extension cords.



### Dual Hitch 301441

For use with HWY-225. 2-inch (50 mm) ball hitch and 3-inch (76 mm) lunette eye in one reversible assembly.

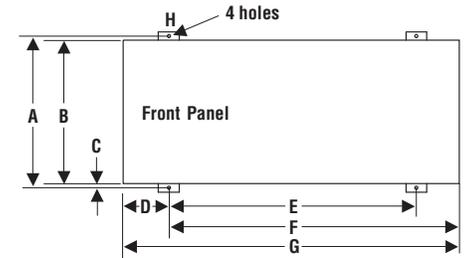


### 2-In-1 Document/Fire Extinguisher Holder 301236

For use with HWY-225. Stores documents and holds a 5-pound fire extinguisher.

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

## Mounting Specifications



- A. 29.812 in. (757 mm)
- B. 27.5 in. (699 mm)
- C. 1 in. (25 mm)
- D. 11.625 in. (295 mm)\*
- E. 46.375 in. (1,178 mm)\*
- F. 58 in. (1,473 mm)\*
- G. 69.5 in. (1,765 mm)
- H. .562 in. (14 mm) dia.

### Height:

46 in. (1,168 mm) to top of cover  
Add 7.5 in. (191 mm) to heights for exhaust pipe  
(Exhaust measurement subject to change.)

### Width:

28.5 in. (724 mm) (mounting brackets turned in)  
30.75 in. (781 mm) (mounting brackets turned out)

\*With mounting brackets in center position.  
Dimensions vary with location of mounting brackets.

## 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-225	3,500 lb. (1,588 kg)	2,999 lb. (1,360 kg)	2,700 lb. (1,225 kg)	19 in. (483 mm)	7.5 in. (191 mm)	50 in. (1,270 mm)	ST175/80R-13 Load Range D	Length: 105.5 in. (2,680 mm) Width: 56.5 in. (1,435 mm)*	280 lb. (127 kg)

\*Width at outside of fenders.

# Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
<b>Big Blue® 600X Duo Air Pak™ 50Hz</b> (NOT available for sale in the USA)	<b>907763001</b>	International model with EPA Tier 4i compliant engine, 400-volt 3-phase power, ArcReach® and vandalism lockout kit		
<b>Field Accessories</b>				
Desiccant Air Dryer System	<b>195117</b> <b>195117001</b>	Side mount — will NOT fit with HWY-225 trailer Rear mount		
International Plugs		See page 6		
Engine Filter Kit	<b>246988</b>	Includes oil filter, primary and secondary fuel filter, and primary air filter		
Compressor Kit	<b>279121</b>	Includes oil, plus air, oil and coalescing filters		
FA-1D Lockable Flame Arrestor Fuel Cap	<b>043947</b>	Padlock NOT included		
Spark Arrestor Kit	<b>195012</b>			
Remote Output Panel Kit	<b>951850</b>	For truck-mounted engine-driven welders. Includes auxiliary power and weld output remote panel		
Big Blue 500–800 Pro Cold Weather Kit	<b>301482</b>	For use in extreme cold		
<b>MIG/Flux-cored Welding</b>				
Wire Feeders		See page 6		
MIG (GMAW) and Flux-cored (FCAW) Guns		See Bernard® literature SP-BTB and SP-DF		
Spoolmatic® 30A Spool Gun	<b>130831</b>	Requires WC-24 Control. See literature M/1.73		
WC-24 Control	<b>137549</b>	See literature M/1.73		
XR™ Wire Feeder Control and Guns		See literature DC/34.0 and M/1.71 through M/1.74		
<b>TIG Welding</b>				
		See page 6		
<b>Plasma Cutting</b>				
		See page 7		
<b>Stick/TIG Remote Controls</b>				
ArcReach® Stick/TIG Remote	<b>301325</b>	For use with ArcReach models only		
Wireless Remote Hand Control	<b>301582</b>	Wireless antenna kit <b>300749</b> recommended		
RHC-14 Hand Control	<b>242211020</b>			
Extension Cables		See page 7		
<b>ArcReach® Heater System</b>				
		See page 7		
<b>Trailers and Hitches</b>				
HWY-225 Trailer	<b>301338</b>	Trailer with lights, fenders and dual hitch. For highway use		
Cable Tree	<b>043826</b>	Trailer-mounted cable holder for HWY-225		
Dual Hitch	<b>301441</b>	Combination 2-inch (50 mm) ball hitch and 3-inch (76 mm) lunette eye in one reversible assembly for HWY-225		
2-In-1 Document/Fire Extinguisher Holder	<b>301236</b>	Stores documents and holds a 5-pound fire extinguisher for HWY-225		

Date:

Total Quoted Price:

Distributed by:

