

Big Blue® 600 Series

**Diesel Engine-Driven
Welder** 

Quick Specs

Heavy Industrial Applications

Maintenance and repair rigs
Heavy construction
Mining maintenance
Railroad maintenance
Pipe welding

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 DC stick/TIG 20–600 A
DC MIG/FCAW 15–50 V

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

3-phase 27,000 watts peak, 20,000 watts continuous
1-phase 15,000 watts peak, 12,000 watts continuous

*With wire feeder.

**ArcReach models only with ArcReach Smart Feeder.



Heavy-duty low-speed T4F industrial diesel engines. The cleanest, greenest diesel power available. Utilizes diesel oxidation catalyst (DOC) technology to keep the air clean with **NO** exhaust aftertreatment maintenance.

WIRELESS INTERFACE CONTROL



Full control of your machine in the palm of your hand. See page 3.



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



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



Big Blue 600 Pro

Tackle tough jobs that require high-output for welding, gouging, and auxiliary power.

Big Blue 600 Air Pak™

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.



Engine-driven welder is warranted for three years, parts and labor.
Engine is warranted separately by engine manufacturer.
Air compressor is warranted separately by Ingersoll Rand.



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MillerWelds.com



Big Blue® 600 Series 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.

Optional vandalism lockout (standard on Deluxe and Welder Truck Specific models). Lockable hinged steel panels cover and protect name plate, gauges and ignition switch (padlock included).

Optional polarity reversing switch (standard on Deluxe model). Quickly change welding polarity without having to change over cables.



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.



Big Blue 600 Pro Deluxe model shown



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.

Electronic engine display simultaneously displays fuel level, engine hours, coolant temperature, oil pressure, battery volts, engine rpm, and air pressure. It also tracks oil change intervals, compressor hours, and displays engine diagnostics for quick and easy servicing.



20,000 watts of pure auxiliary power. Plug in an extra Miller® inverter-based power source for a second welding arc.

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



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

Standard features include adjustable Hot Start™, output contactor control, automatic idle, thermal overload protection, 120-volt block heater and Dynamic DIG™.

Welder Truck Specific Models

The Big Blue 600 Series is available in welder truck specific models, which have the critical controls located within easy reach of a ground-based operator when the machine is mounted on the bed of a large-body truck. These versions also include standard hardware upgrades including ArcReach® remote control technology, air cleaner restriction indicators, vandalism lockout doors, FA-1D lockable flame arrestor fuel cap **043947** and spark arrestor **195012**. The rear-mounted desiccant air dryer system **195117001** is available as a field installation option.



Big Blue 600 Air Pak model shown

The lower control panel has the following controls: electronic engine display, air compressor on/off switch and engine control switch.

Pair any Miller® ArcReach accessory for complete remote control of welding processes and parameters right at the weld joint.

Big Blue® 600 Series 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 (option)



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 Smart Feeder
- ArcReach Stick/TIG Remote

See pages 6 and 7 for more information.

Wireless interface control (option)



Work hassle-free with full engine-driven welder control in the palm of your hand.

With wireless interface control, you can remotely switch between welding processes, adjust parameters, select and save preset programs, turn the machine and air compressor on/off, get service reminders and more from wherever you are on the jobsite — for a more productive day.

Extend time between fill ups and maintenance intervals while eliminating the need to go back to your machine or climb into the truck to make adjustments.

Wireless interface control is a factory-installed option available on the Big Blue 600 Series.

VIEW STATUS

View engine status, fuel level, battery charge level of remote and air compressor on/off.

SELECT PROCESSES

View and select between all available processes.

CONTACTOR ON/OFF

Turn contactor on/off manually in remote welding mode.

ENGINE ON/OFF

Turn engine on/off with remote.



CUSTOM PROGRAMS

Save custom presets in up to four programs and easily switch between pre-programmed settings.

FINE-TUNE ARC

Quickly adjust and save arc control settings including DIG, DIG range inductance and Auto-Stop™.

AMP/VOLT ADJUST

Adjust amperage or voltage, by increments or percentage while welding.

Big Blue® 600 Series 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 to download the latest software updates.

Less noise



Quiet operation of the Big Blue 600 helps improve jobsite productivity because work crews can communicate easier. Optional wireless interface control makes it easier

to shut off your machine when it's not in use, so you can lower jobsite noise levels and hear what's going on around you.

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.

Specifications (Subject to change without notice.)



Weld Mode/ Process	Weld Output Range	Weld Output 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)	20–600 A	600 Pro 500 A at 40 V, 100% duty cycle* 550 A at 42 V, 60% duty cycle* 600 A at 42 V, 40% duty cycle	92 VDC 30 VDC**	3-phase: 27,000 watts peak 20,000 watts continuous 1-phase: 15,000 watts peak 12,000 watts continuous	H: 46 in. (1,168 mm) W: 28.5 in. (724 mm) D: 69.5 in. (1,765 mm) <i>Add 7.5 in. (191 mm) to height for exhaust pipe</i>	600 Pro 1,750 lb. (793.8 kg) 600 Air Pak 2,040 lb. (925.3 kg) <i>Add 165 lb. (75 kg) when fuel tank is full</i>
CV/DC (MIG/FCAW)	15–50 V	600 Air Pak 500 A at 40 V, 100% duty cycle* 575 A at 43 V, 100% duty cycle* 600 A at 44 V, 60% duty cycle				

*Meets NEMA and IEC ratings. **Sense voltage for stick and Lift-Arc™ TIG. ***Will operate either 60 hertz or 50/60 hertz power tools, lights, etc.

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

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

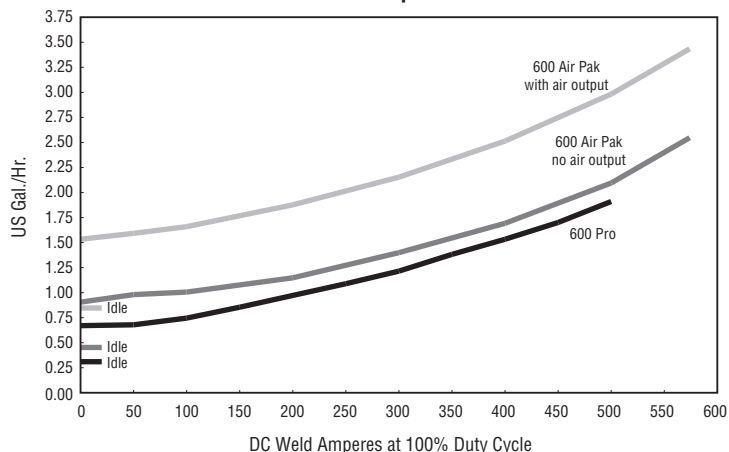
Model	Engine Brand	Features	HP	Type	Engine Speeds	Sound Levels at 23 ft. (7 m)	Capacities	Automatic Engine Shutdown
Big Blue 600 Pro	Kubota V2403	EPA Tier 4 Final compliant, includes 120 V block heater and automatic glow plugs	48.9	Turbo-charged four-cylinder, liquid-cooled industrial diesel	Idle: 1,350 rpm Weld: 1,800 rpm	Idle: 65.9 dB (90.7 Lwa) Weld: 74.3 dB (99.1 Lwa)	Fuel: 25 gal. (95 L) Oil: 10 qt. (9.5 L) Coolant: 9 qt. (8.5 L)	Low oil pressure, high coolant temperature, low fuel level
Big Blue 600 Air Pak	Deutz TD2.9 L4	EPA Tier 4 Final compliant, includes 120 V block heater and automatic glow plugs	65.7	Turbo-charged four-cylinder, liquid-cooled industrial diesel	Idle: 1,350 rpm Weld: 1,800 rpm	Idle: 71.3 dB (96.1 Lwa) Weld: 78.9 dB (103.7 Lwa)	Fuel: 25 gal. (95 L) Oil: 8.5 qt. (8 L) Coolant: 16 qt. (15.2 L)	Low oil pressure, high coolant temperature, low fuel level

Air Compressor (Air Pak™ models only. Air compressor warranted separately by Ingersoll Rand.)

Compressor Brand	Features	Free Air Delivery	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.	Idle: 40 cfm (1.13 m³/min.) Run: 60 cfm (1.70 m³/min.)	100 psig (7 bar)	100%	4 qt. (3.79 L)	Oil temperature

Performance Data

Fuel Consumption Curve



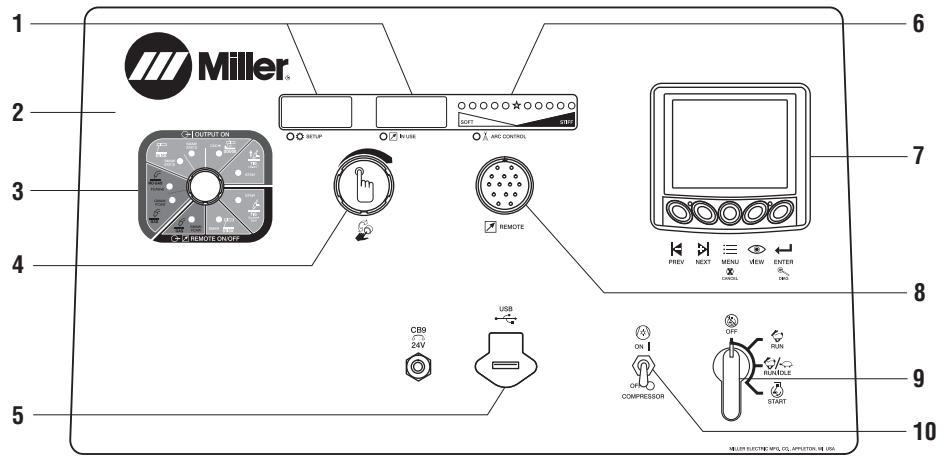
Simultaneous Welding and Power

Weld Amperes	Total Aux. Power Available (Watts)	
	1-Phase*	3-Phase
No Weld Output	16,000	20,000
200 A at 28 V	16,000	20,000
300 A at 32 V	13,000	18,000
400 A at 36 V	9,000	12,500
500 A at 40 V	4,500	5,750
600 A at 42 V	4,000	0

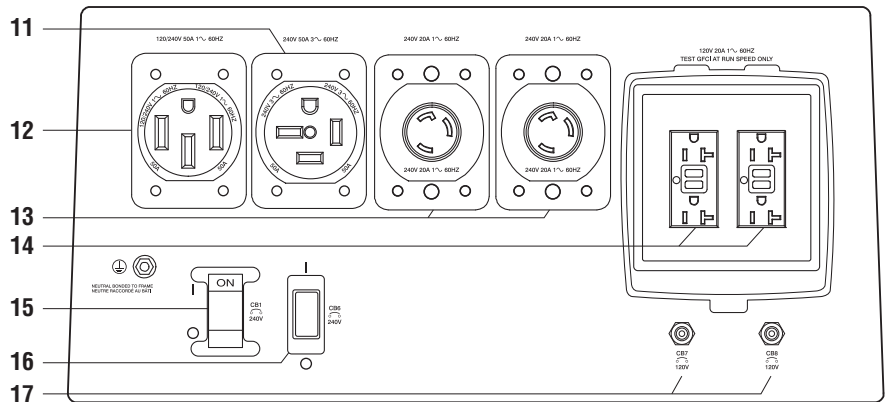
*Single-phase listings include 4,000 watts from the exciter stator.

Function Guide

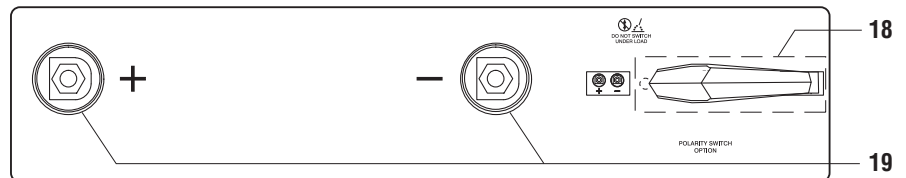
1. **Self-calibrating digital weld meters with fault code indication** display preset or actual weld parameters.
2. **Weatherproof Lexan® nameplate** is super durable and resists cracking and fading.
3. **Weld process selection switch**
4. **Pushbutton main control knob** used for adjusting amperage/voltage, adjusting arc control, and accessing the service menu.
5. **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.
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. **Electronic engine display** can display fuel level, engine hours, coolant temperature, oil pressure, battery volts, engine rpm, air pressure, and compressor hours simultaneously or one at a time. Also tracks oil change intervals and displays engine diagnostics for service technicians.
8. **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.
9. **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.
10. **Air compressor on/off switch** (Air Pak models only)
11. **50 A, 240 V, three-phase receptacle**
Note: For matching plug, order 254140.
12. **50 A, 120/240 V receptacle**
Note: For matching plug, order 119172.
13. **20 A, 240 V receptacles**
14. **20 A, 120 V receptacles with ground fault**
15. **50 A circuit breaker**
16. **20 A, 240 V circuit breaker**
17. **20 A, 120 V circuit breakers**
18. **Optional polarity reversing switch** changes DC polarity without the use of tools.
19. **Weld output terminals**



Controls and meters



Receptacles and circuit breakers



Terminal panel

Genuine Miller® Accessories

Wireless Interface Control Replacement Kit

288137 Field

Replacement kit for wireless interface control machines. NOT compatible with machines that are not equipped with wireless interface control. Includes replacement remote, magnetic lanyard, USB charger, 110-volt adapter, and two screen protectors.

Wireless Interface Control Protective Covers

287594 Field

Five-pack of screen protectors for wireless interface control remote.



Desiccant Air Dryer System

195117 Side mount

195117001 Rear mount

For Air Pak™ models only. 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.

Polarity Reversing Switch Kit

301112 Field
Standard on Deluxe model. Changes DC polarity without the use of tools.

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.



Full KVA Plug Kit

119172 1-phase, 120/240 V,
50 A plug (NEMA 14-50P)

254140 3-phase, 240 V,
50 A plug (NEMA 15-50P)

Engine Filter Kits

273293 For Kubota engine

262459 For Deutz engine

Includes all filters required for proper engine maintenance. Oil filter, primary and secondary fuel filter, primary air filter, and safety element.

Compressor Kit

279121 Field
For Air Pak models only. Includes oil and all filters required for proper compressor maintenance. Oil filter, air filter and coalescing filter.



Spark Arrestor Kit

195012 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.

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.



Vandalism Lockout Kit

399802 Field
Standard on Deluxe and Welder Truck Specific models. Lockable hinged steel panels cover and protect name plate gauges and ignition switch (padlock included).



Big Blue 500-800 Pro Cold Weather Kit

301482 Field
Adjustable, steel-hinged cover for operating in extremely cold conditions.



Protective Cover

Field
301495 Kubota
301113 Deutz
Blue water-resistant canvas cover resists stains and mildew, and protects the finish of your welder.

Note: Protective cover cannot be used with cable holder.

MIG/Flux-cored Welding



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

For use with ArcReach models only (see page 3 for more information).

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.

Genuine Miller® Accessories (Continued)

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.

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

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 30158

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)

Trailers and Hitches (Note: Trailers are 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.

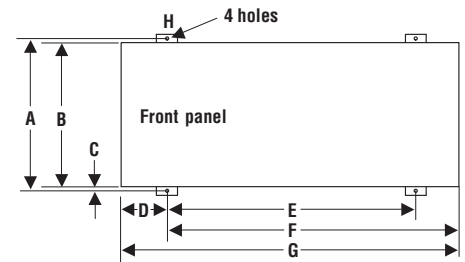


2-In-1 Document/Fire Extinguisher Holder 301236

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
Big Blue® 600 Pro Kubota EPA Tier 4 Final-compliant engine	907737	Base model with 240-volt 3-phase power		
	907737001	Deluxe model with ArcReach®, polarity reversing switch and vandalism lockout kit		
	907737004	Welder truck specific model with wireless interface control and ArcReach®. See page 2 for more information		
Big Blue® 600 Air Pak™ Deutz EPA Tier 4 Final-compliant engine	907750	Base model with 240-volt 3-phase power and ArcReach®		
	907750001	Welder truck specific model with ArcReach®. See page 2 for more information		
	907750004	Welder truck specific model with wireless interface control and ArcReach®. See page 2 for more information		
Field Accessories				
Wireless Interface Control Replacement Kit	288137	See page 6 for items included		
Wireless Interface Control Protective Covers	287594	Five-pack of screen protectors for wireless interface control remote		
Desiccant Air Dryer System (Air Pak models only)	195117	Side mount		
	195117001	Rear mount		
Polarity Reversing Switch Kit	301112	Changes DC polarity without the use of tools		
Full KVA Adapter Cord	300517			
Full KVA Plug Kits		See page 6		
Engine Filter Kits		See page 6		
Compressor Kit (Air Pak models only)	246991	Includes oil, plus air, oil and coalescing filters		
Spark Arrestor Kit	195012			
FA-1D Lockable Flame Arrestor Fuel Cap	043947	Padlock NOT included		
Remote Output Panel Kit	951850	For truck-mounted engine-driven welders. Includes auxiliary power and weld output remote panel		
Vandalism Lockout Kit	399802	Lockable front control panel and engine compartment		
Big Blue 500–800 Pro Cold Weather Kit	301482	For use in extreme cold		
Cable Holder	043946	Stores up to 200 feet of 2/0 cable		
Protective Cover		See page 6. Canvas cover — will not fit over machine with cable holder attached		
MIG/Flux-cored Welding				
Wire Feeders		See page 6		
MIG (GMAW) and Flux-cored (FCAW) Guns		See Bernard® literature SP-BTB and SP-DF		
Spoolmatic® 30A Spool Gun	130831	Requires WC-24 Control. See literature M/1.73		
WC-24 Control	137549	See literature M/1.73		
XR™ Wire Feeder Control and Guns		See literature M/1.7 through M/1.74		
TIG Welding				
		See page 6		
Plasma Cutting				
		See page 7		
Stick/TIG Remote Controls				
ArcReach® Stick/TIG Remote	301325	For use with ArcReach models only		
Wireless Remote Hand Control	301582	Wireless antenna kit 300749 recommended		
RHC-14 Hand Control	242211020			
Extension Cables		See page 7		
Trailers and Hitches				
HWY-225 Trailer	301338	Trailer with lights, fenders and dual hitch. For highway use		
Cable Tree	043826	Trailer-mounted cable holder for HWY-225		
Dual Hitch	301441	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	301236	Stores documents and holds a 5-pound fire extinguisher for HWY-225		

Date:

Total Quoted Price:

Distributed by:

