

Big Blue® 600 Pro

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

Quick Specs

Heavy Industrial Applications

Heavy construction
Structural steel
Mining maintenance
Maintenance and repair rigs
Pipe welding

Processes

Stick (SMAW)
MIG (GMAW)
Flux-cored (FCAW)
DC TIG (GTAW)
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 14–44 V

Generator 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

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



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

Low OCV stick (VRD) reduces the open-circuit voltage to 15 volts when the welding power source is not in use. This feature is now built into the Big Blue 600 Pro for increased operator safety without compromising arc starts.

Infinite arc control allows the arc characteristics to be changed for specific applications in stick, MIG and FCAW.

Auto Remote Sense™ (ARS) detects if a remote control is plugged into the 14-pin receptacle and eliminates confusion of a remote/panel switch.

BUILT TOUGH



Deluxe model shown.



Kubota

Heavy-duty low-speed T4F industrial diesel engine.

The cleanest, greenest diesel power available. Utilizes diesel oxidation catalyst (DOC) technology to keep the air clean with **NO** exhaust aftertreatment maintenance.



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

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

Remote oil drain prevents spills and makes servicing easy.

Standard features include digital preset weld meters, automatic idle, 120-volt block heater and automatic glow plugs.



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



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MillerWelds.com



Specifications (Subject to change without notice.)



Weld Mode/ Process	Weld Output Range	Weld Output Rated at 104°F (40°C)	Max. Open-Circuit Voltage	Generator Power Output Rated at 104°F (40°C)***	Dimensions	Weight
CC/DC (Stick/TIG)	20–600 A	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 15 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) Add 7.5 in. (191 mm) to heights for exhaust pipe	Net: 1,750 lb. (793.8 kg) Add 51 lb. (23 kg) for ship weight Add 165 lb. (75 kg) when fuel tank is full
CV/DC (MIG/FCAW)	14–44 V					

*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.

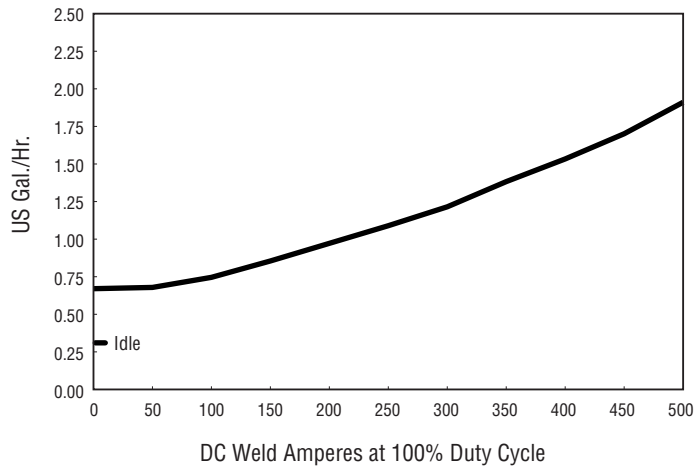
Certified by Canadian Standards Association to both the Canadian and U.S. Standards.

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

Engine Brand	Features	HP	Type	Engine Speeds	Sound Levels at 23 ft. (7 m)	Capacities	Automatic Engine Shutdown
Kubota V2403	EPA Tier 4 Final compliant, includes 120 V block heater	48.9	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

Performance Data

Fuel Consumption Curve



Simultaneous Welding and Power

Weld Amperes	Total Aux. Power Available (Watts)	
	1-Phase*	- or - 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

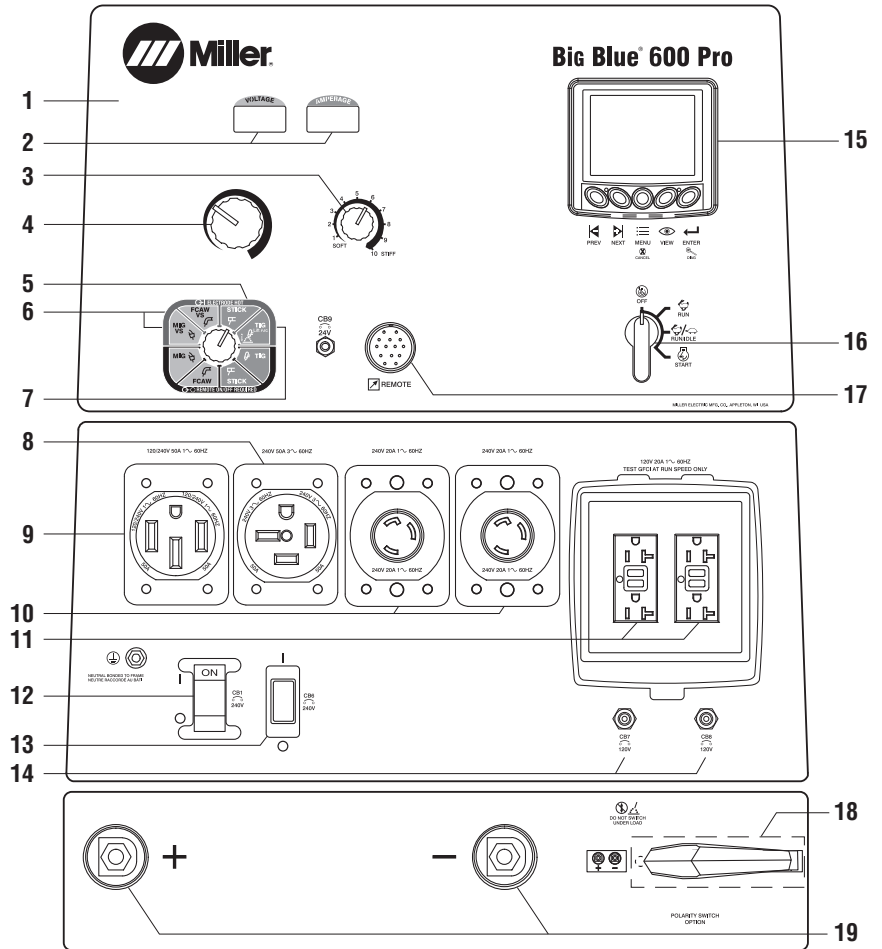
*Single-phase listings include 4,000 watts from the exciter stator.

Function Guide

- Weatherproof Lexan® nameplate** is super durable and resists cracking and fading. Color coded for ease of operation.
- Self-calibrating digital weld meters with fault code indication** display preset or actual weld parameters.
- Adjustable arc control** adjusts DIG when process control is in stick mode and adjusts inductance when process control is in FCAW or MIG mode. The amount of DIG determines how much amperage (heat) varies with stick arc length. Inductance determines the “wetness” of the weld puddle.
- Amperage/voltage adjust control**
- Hot Start™** provides positive stick electrode starts making it easy to start all types of electrodes and it also works great for bead tie-ins.
- Great FCAW/MIG performance and arc starts** make the Big Blue® 600 Pro arc the best in its class. Easy to run all wires from .023-inch solid wires to large-diameter 1/8-inch flux-cored wires.

7. Lift-Arc™ TIG with Auto-Stop™

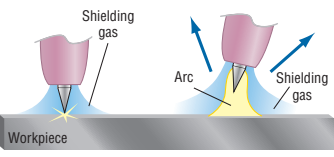
- 50 A, 240 V, three-phase receptacle**
(For matching plug, order #254 140.)
- 50 A, 120/240 V receptacle**
(For matching plug, order #119 172.)
- 20 A, 240 V receptacles**
- 20 A, 120 V receptacles with ground fault**
- 50 A circuit breaker**
- 20 A, 240 V circuit breaker**
- 20 A, 120 V circuit breakers**
- Electronic engine display** can display fuel level, engine hours, coolant temperature, oil pressure, battery volts, and engine rpm simultaneously or one at a time. Also tracks oil change intervals and displays engine diagnostics for service technicians.
- 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.
- Standard 14-pin receptacle** for simple connection of remote controls and wire feeders. 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.
- Optional polarity reversing switch** changes DC polarity without the use of tools.
- Weld output terminals**



Arc Start with Lift-Arc™

Touch or scratch

Lift at any angle

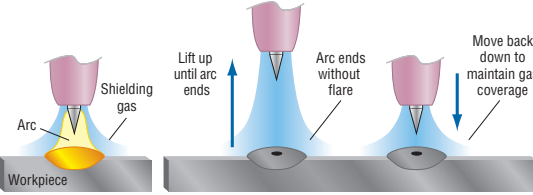


- Reduces or eliminates sticking
- Reduces or eliminates electrode/work contamination
- Low open-circuit voltage

Arc End with Auto-Stop™

While welding

For Auto-Stop, lift up to terminate arc



- Eliminates need for a remote control
- Maintains shielding gas coverage
- Eliminates tungsten and workpiece contamination
- Eliminates unwanted arc strikes outside the weld area

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

Superior circuit board design

Our 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 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.

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 jobsite.

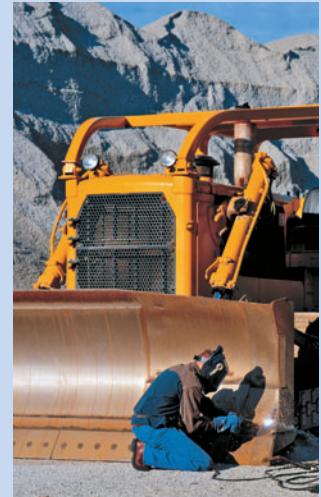
- **Humidity and corrosion.**

Inside our 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 industrial engine drives are tested to ensure performance in scorching heat. All Miller engine-driven machines are weld rated at 104 degrees Fahrenheit, but actual tests are conducted up to 122 degrees Fahrenheit 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 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 reliability is how it performs in the field. Read stories demonstrating our superior reliability at MillerWelds.com.



Genuine Miller® Accessories

Polarity Reversing Switch Kit

#301 112 Field

Changes DC polarity without the use of tools.



Female Receptacle



Full KVA Adapter Cord #300 517 Field

NEMA 14-50P to NEMA 6-50R. Adapts engine drive 120/240 V plug to common Millermatic® and Spectrum® 240 V plug.



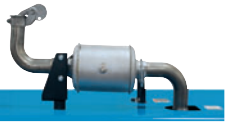
Full KVA Plug Kit Field

#119 172 1-phase, 120/240 VAC, 50 A plug (NEMA 14-50P)

#254 140 3-phase, 240 VAC, 50 A plug (NEMA 15-50P)

Engine Filter Kit #273 293 Field

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



Spark Arrestor Kit

#195 012 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 #043 947 Field

Fuel cap can be padlocked to prevent vandalism. A built-in flame arrestor prevents flames or sparks from entering the fuel tank.



Vandalism Lockout Kit

#399 802 Field Lockable hinged steel panels cover and protect name plate gauges and ignition switch (padlock included).



Cable Holder

#043 946 Field Saddle-bag-style cable holder. Convenient wrap-around storage of coiled cable for transportation. Stores 100 feet of 2/0 cable on each side.

Note: For best results do not weld when cable is coiled! Protective cover cannot be used with cable holder.



Protective Cover

#301 113

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.

Stick (SMAW) Welding

Weld Leads

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

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)

#043 952

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.

MIG (GMAW) or Flux-Cored (FCAW)



SuitCase® X-TREME™ 8VS Wire Feeder

#951 582

SuitCase® X-TREME™ 12VS Wire Feeder

#951 543

Lightweight, voltage-sensing wire feeders include secondary contactor, gas valve, drive roll kit and Bernard™ Q300 MIG gun. See Lit. Index No. M/6.42.



SuitCase® 12RC Wire Feeder #951 580

Lightweight and flexible enough to run a variety of wires up to .062-inch diameter. Includes remote voltage control, drive roll kit and Bernard™ Q300 MIG gun. See Lit. Index No. M/6.5.



Spoolmatic® 30A Spool Gun #130 831

Air-cooled, 200-amp, one-pound spool gun for aluminum MIG. See Lit. Index No. M/1.73.

WC-24 Control #137 549

Use with Spoolmatic 30A.

XR™ Wire Feeders and Guns

Push-pull system designed to handle difficult-to-feed soft alloy wires such as aluminum. See Lit. Index Nos. M/1.7 to M/1.74.

MIG (GMAW)/Flux-Cored (FCAW) Guns

Miller produces a complete line of dependable MIG guns. See Lit. Index Nos. AY/15.0, AY/16.0 and AY/17.0.

TIG (GTAW) Welding



Dynasty® 200 Series

For premium portable AC/DC TIG arc quality. See Lit. Index No. AD/4.8.



HF-251D-1 #042 388

115 V. High-frequency arc starter and stabilizer. See Lit. Index AY/5.0.

Plasma Cutting



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

Spectrum® 375 X-TREME™ #907 529

See Lit. Index No. PC/9.2.

Spectrum® 625 X-TREME™ #907 579

See Lit. Index No. PC/9.6.

Spectrum® 875 #907 583

See Lit. Index No. PC/9.8.

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

Genuine Miller® Accessories (Continued)

Remote Controls



Wireless Remote Hand Control #300 430

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 #300 749 recommended.

Wireless Antenna Kit #300 749

Optional when improved reception is desired.



RHC-14 Hand Control #242 211 020

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

#242 208 025 25 ft. (7.6 m)

#242 208 050 50 ft. (15.2 m)

#242 208 080 80 ft. (24.4 m)

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



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

A heavy-duty 2,570-pound (1,166 kg) capacity trailer designed for use in mines, quarries, and other rough terrain. Has narrow 22-foot (6.7 m) turning radius. Includes 3-inch (76 mm) lunette eye, universal hitch and safety chains.



HWY-224 Trailer #043 805

A 2,650-pound (1,202 kg) capacity trailer for highway use. Welded steel tubing frame, heavy-duty axle with roller bearing hubs and leaf-spring suspension. Includes jack stand, 2-inch (50 mm) ball hitch, fenders and lights.

Cable Tree #043 826

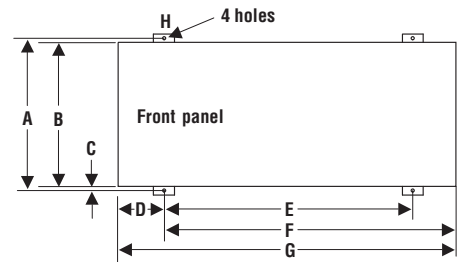
Provides an area to conveniently wrap weld cables and extension cords.



Dual Hitch #300 831

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

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
4 West	2,000 lb./axle (907 kg/axle)	3,000 lb. (1,361 kg)	2,570 lb. (1,166 kg)	21.25 in. (540 mm)	8 in. (203 mm)	55.25 in. (1,403 mm)	B78-13	Length: 91 in. (2,311 mm)* Width: 61.25 in. (1,556 mm)	430 lb. (195 kg)
HWY-224	3,500 lb. (1,588 kg)	2,960 lb. (1,343 kg)	2,650 lb. (1,202 kg)	18.5 in. (470 mm)	7.25 in. (184 mm)	52 in. (1,321 mm)	B78-13	Length: 105 in. (2,667 mm) Width: 59.5 in. (1,511 mm)**	320 lb. (145 kg)

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

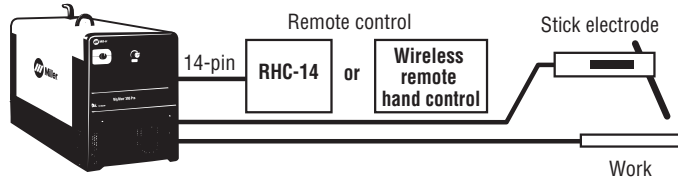
Typical Installations

Electrode Hot



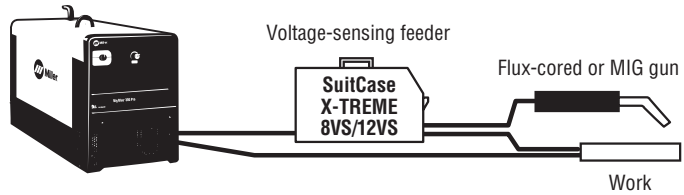
Stick (SMAW) Basic Equipment

RHC-14 #242 211 020
 Wireless remote hand control #300 430
 Wireless antenna kit #300 749

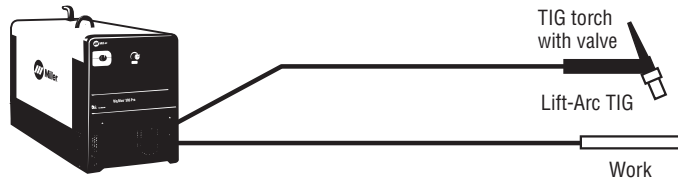


Flux-Cored/MIG (FC) Basic Equipment

SuitCase® X-TREME™ 8VS #951 582
 SuitCase® X-TREME™ 12VS #951 543



Lift-Arc™ TIG (GTAW) Basic Equipment

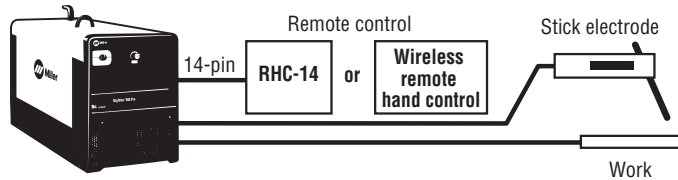


Remote On/Off Required



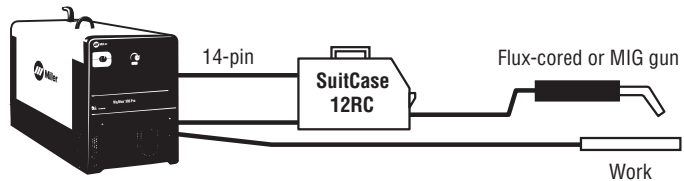
Stick (SMAW) Basic Equipment

RHC-14 #242 211 020
 Wireless remote hand control #300 430
 Wireless antenna kit #300 749



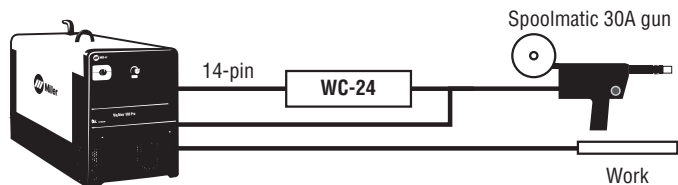
Flux-Cored/MIG (FC) Basic Equipment

SuitCase® 12RC #951 580



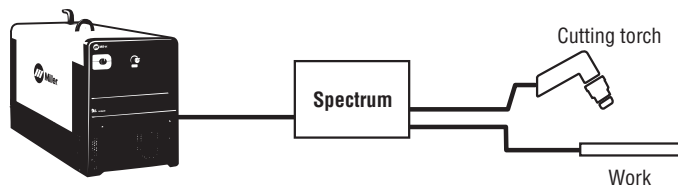
Aluminum MIG (GMAW) Basic Equipment

Spoolmatic® 30A #130 831
 WC-24 #137 549



Plasma Basic Equipment

Spectrum® 375 X-TREME™ #907 529
 Spectrum® 625 X-TREME™ #907 579
 Spectrum® 875 #907 583



Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
Big Blue® 600 Pro	#907 695	Base model with 240-volt 3-phase power		
EPA Tier 4 Final compliant engine	#907 695 001	Deluxe model with polarity reversing switch and vandalism lockout kit		
Field Accessories				
Polarity Reversing Switch Kit	#301 112	Changes DC polarity without the use of tools		
Full KVA Adapter Cord	#300 517			
Full KVA Plug Kits		See page 5		
Engine Filter Kit	#273 293	Includes air, oil and fuel filters		
Spark Arrestor Kit	#195 012			
FA-1D Lockable Flame Arrestor Fuel Cap	#043 947	Padlock NOT included		
Vandalism Lockout Kit	#399 802	Lockable front control panel and engine compartment		
Cable Holder	#043 946	Stores up to 200 feet of 2/0 cable		
Protective Cover	#301 113	Canvas cover — will not fit over machine with cable holder attached		
Stick Welding Leads				
	#173 851	2/0, 350 A, 100% duty cycle, 50 ft. (15 m) stinger, 50 ft. (15 m) work clamp		
	#043 952	2/0, 300 A, 100% duty cycle, 100 ft. (30.5 m) stinger, 50 ft. (15 m) work clamp		
MIG/Flux-Cored Welding				
SuitCase® X-TREME™ 8VS	#951 582	With Bernard™ Q300 MIG gun. See Lit. Index No. M/6.42		
SuitCase® X-TREME™ 12VS	#951 543	With Bernard™ Q300 MIG gun. See Lit. Index No. M/6.42		
SuitCase® 12RC	#951 580	With Bernard™ Q300 MIG gun. See Lit. Index No. M/6.5		
Spoolmatic® 30A Spool Gun	#130 831	Requires WC-24 Control. See Lit. Index No. M/1.73		
WC-24 Control	#137 549	See Lit. Index No. M/1.5		
XR™ Wire Feeder Control and Guns		See Lit. Index Nos. M/1.7 to M/1.74		
MIG (GMAW) and Flux-Cored (FCAW) Guns		See Lit. Index Nos. AY/15.0, AY/16.0 and AY/17.0		
TIG Welding				
Dynasty® 200 Series		See Lit. Index No. AD/4.8		
HF-251D-1	#042 388	115-volt high-frequency arc starter and stabilizer. See Lit. Index No. AY/5.0		
Plasma Cutting				
Spectrum® 375 X-TREME™	#907 529	Includes X-CASE™. See Lit. Index No. PC/9.2		
Spectrum® 625 X-TREME™	#907 579	Includes X-CASE™. See Lit. Index No. PC/9.6		
Spectrum® 875	#907 583	See Lit. Index No. PC/9.8		
Remote Controls				
Wireless Remote Hand Control	#300 430			
Wireless Antenna Kit	#300 749			
RHC-14 Hand Control	#242 211 020			
Extension Cables		See page 6		
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-inch (50 mm) ball hitch. For highway use		
Cable Tree	#043 826	Trailer-mounted cable holder for HWY-224		
Dual Hitch	#300 831	Combination 2-inch (50 mm) ball hitch and 3-inch (76 mm) lunette eye in one reversible assembly for HWY-224		

Date:

Total Quoted Price:

Distributed by:



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