

# Big Blue® 500X and 600X Diesel Engine-Driven Welder/Generator

## Quick Specs



### Heavy Industrial Applications

Heavy Construction  
Structural Steel  
Maintenance and Repair Rigs  
Mining Maintenance  
Process Piping  
Sheet Metal

### Processes

Stick (SMAW)  
DC TIG (GTAW)  
Air Carbon Arc (CAC-A)

#### 500 X:

Rated: 8-mm (5/16 in.) carbons  
Capable: 9.5-mm (3/8 in.) carbons

#### 600 X:

Rated: 9.5-mm (3/8 in.) carbons

### Output Range

**500 X CC:** DC Stick 55–500 A DC/TIG 55–500 A  
**600 X CC:** DC Stick 55–600 A DC/TIG 55–600 A

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

5500 Watts Peak—4000 Watts Continuous

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

**Designed for fleet owners** that demand the ultimate in reliability and performance.

**Three-phase rotating field generator** efficiently produces smooth DC weld output using 20–30 percent less fuel than a rotating armature-type DC generator.

**Enclosed robust case design** protects internal components from impact and allows air flow to cool and prolong the life of the engine. Also reduces sound levels.

**Quick and easy maintenance** with single-side access to oil level check, oil fill, oil filter, fuel filter and air cleaner.

**Remote toolless oil drain** allows oil to be drained without getting under the engine and reduces the chance of oil spillage.

**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.



Big Blue 600 X CC shown.



**Perkins**

**Heavy-duty low-speed industrial diesel engines** are designed, built and proven to operate over 10,000 hours before the first basic overhaul.

### 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.

**Arc-Drive™** makes welding easy. Automatically enhances Stick welding, especially on pipe, by focusing the arc and preventing the electrode from going out.

**Weatherproof Lexan® nameplate** resists cracking and fading, and is color-coded for ease of operation.

**GFCI receptacle** as required on most jobsites to protect operators from electrical hazards.

**CSA, IEC and NEMA compliant for welders.** Degree of protection provided by enclosure IP23.



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



**Miller Electric Mfg. Co.**  
An ITW Welding Company  
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**MillerWelds.com**



# Specifications (Subject to change without notice.)

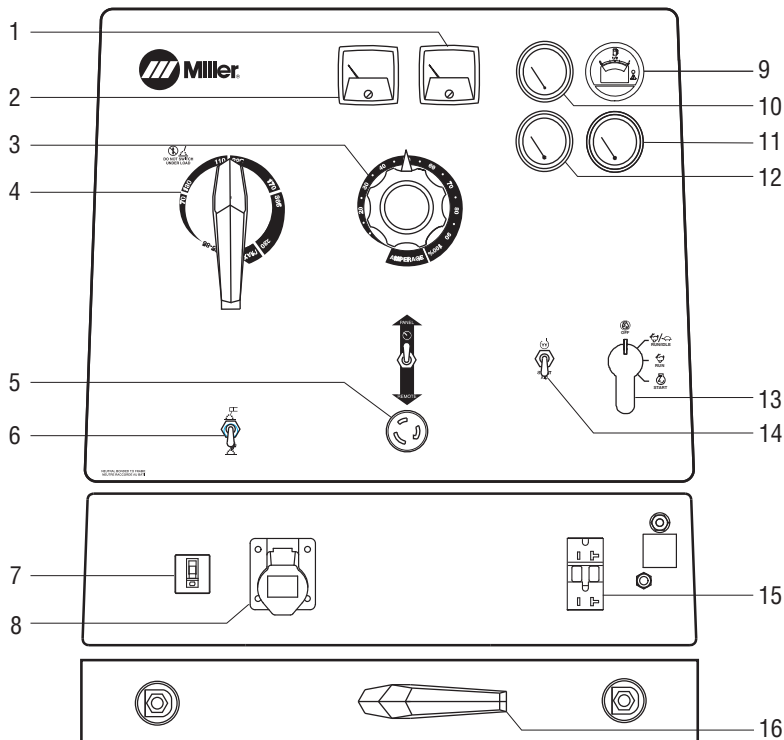


Model	Weld Mode/ Process	Weld Output Range	Weld Output Rated at 40° C (104° F)	Max. Open-Circuit Voltage	Generator Output Rated at 40° C (104° F)	Dimensions***	Weight (without fuel)****
Big Blue 500 X CC	CC/DC (Stick/TIG)	55–500 A	<b>Deutz and Perkins</b> 400 A at 36 V, 100% duty cycle* 450 A at 33 V, 60% duty cycle 500 A at 30 V, 40% duty cycle <b>Perkins (at CE Ratings)**</b> 300 A at 32 V, 100% duty cycle* 400 A at 25 V, 60% duty cycle 500 A at 20 V, 40% duty cycle	95	<b>Peak:</b> 5500 watts <b>Continuous:</b> 4000 watts, 1-phase, 34/17 A, 120/240 VAC, 50/60 Hz while welding	H: 1092 mm (43 in.) W: 724 mm (28.5 in.) D: 1654 mm (65.125 in.)	<b>Perkins 404D.22:</b> 701 kg (1545 lb.) <b>Deutz D2011L03i:</b> 751 kg (1655 lb.)
Big Blue 600 X CC	CC/DC (Stick/TIG)	55–600 A	<b>Deutz</b> 500 A at 40 V, 100% duty cycle* 550 A at 34 V, 60% duty cycle 600 A at 30 V, 40% duty cycle				<b>Deutz D2011L04i:</b> 769 kg (1695 lb.) <b>Deutz D912L03:</b> 810 kg (1785 lb.)

\*Meets NEMA and IEC output ratings. \*\*Perkins powered model with lowered ratings to meet CE sound ratings.

\*\*\*Additional 178 mm (7 in.) to top of exhaust. \*\*\*\*Additional 86 kg (190 lb.) when fuel tank is full.

## Control Panel



1. DC Ammeter\*
2. DC Voltmeter\*
3. Amperage Adjust Control
4. Amperage Range Switch
5. Amperage Adjust Switch and Remote Amperage Adjust Receptacle
6. Stick/TIG Selector Switch
7. Earth Leakage Circuit Breaker
8. 230 VAC, 16 A Pin and Sleeve Receptacle
9. Fuel Gauge/Hour Meter/Oil Change Interval/Engine Shutdown Indicator
10. Engine Oil Pressure Gauge
11. Battery/Voltmeter\*
12. Engine Coolant Temperature Gauge
13. Engine Control Switch
14. Starting Aid Switch (standard on Perkins model)
15. 120 VAC, 20 A GFCI Duplex Receptacle
16. Polarity Switch\*

\*Optional.

## Additional Features

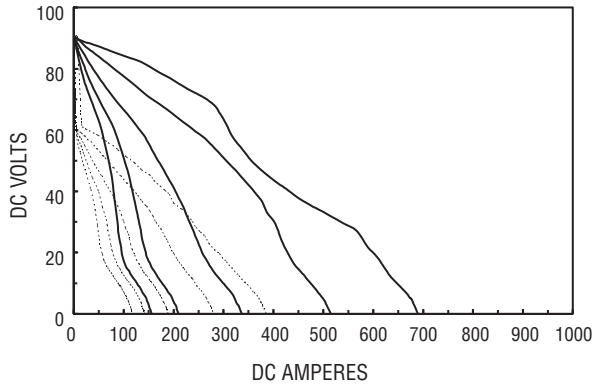
**Proven, rugged rheostat control technology** that has been in Miller engine drives for over 60 years. Contains no printed control boards.

A **Stick/TIG switch** optimizes open-circuit voltage for Stick welding and allows the open-circuit voltage to be lowered for scratch start TIG welding.

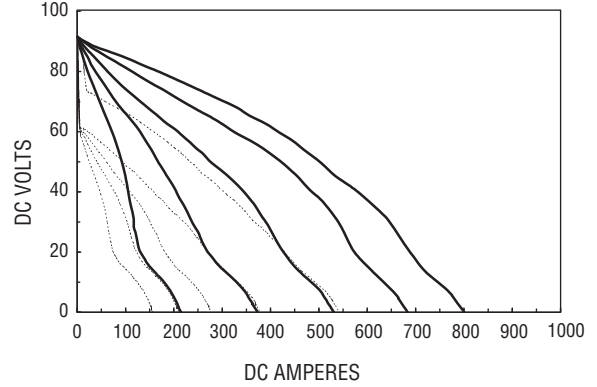
Provisions are provided to plug a **RHC3GD34A remote control** that will allow precise adjustment of amperage without walking back to the machine.

# Performance Data

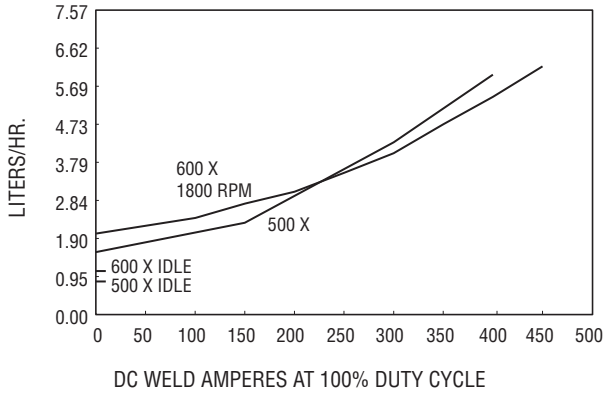
**500 X CC  
VOLT/AMP CURVES – STICK MODE**



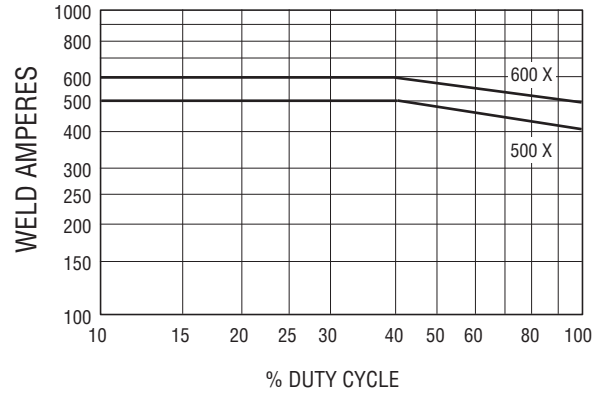
**600 X CC  
VOLT/AMP CURVES – STICK MODE**



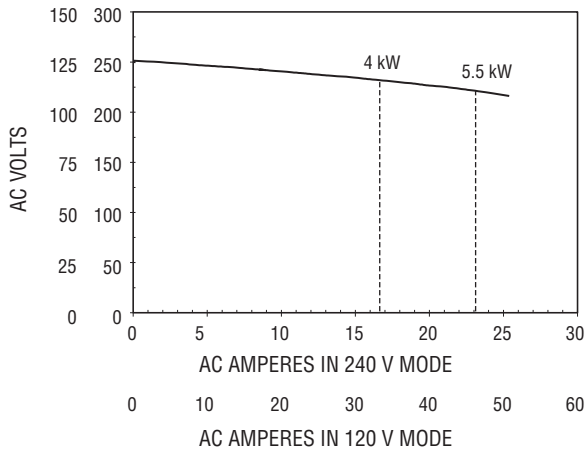
**FUEL CONSUMPTION CURVE**



**DUTY CYCLE CURVE**



**GENERATOR POWER CURVE**



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

Model	Engine Brand	Features	HP	Type	Engine Speeds (RPM)	Capacities	Automatic Engine Shutdowns
Big Blue 500 X	Perkins 404D.22	EPA Tier 4i compliant, indirect-injected, liquid-cooled engine with rated <b>sound levels of 73.2 dB @ 7 m (97 Lwa)</b> . Right-side service access with intervals of <b>500 hours for oil and filters</b> .	32.6	4-cylinder, industrial, liquid-cooled diesel	Weld: 1850	Fuel: 95 L (25 gal.) Oil: 8.5 L (9 qt.) Coolant: 8.5 L (9 qt.)	Low oil pressure, high coolant temperature, low fuel level
	Deutz D2011L03i	EPA Tier 4i compliant, direct-injected, air/oil-cooled engine with full load <b>sound levels of 76.8 dB @ 7 m (101.7 Lwa)</b> . Right-side service access with intervals of <b>1000 hours for oil and filters</b> . Approved <b>underground</b> operation with the purchase of a <b>MSHA</b> (30 CFR part 7) certificate.	32.0	3-cylinder, industrial, air/oil-cooled diesel	Weld: 1850	Fuel: 95 L (25 gal.) Oil: 5.9 L (6.2 qt.) Coolant: Integrated oil	Low oil pressure, high coolant temperature, low fuel level
Big Blue 600 X	Deutz D2011L04i	EPA Tier 4i compliant, direct-injected, air/oil-cooled engine with full load <b>sound levels of 76 dB @ 7 m (101 Lwa)</b> . Right-side service access with intervals of <b>1000 hours for oil and filters</b> .	48.6	4-cylinder, industrial, air/oil-cooled diesel	Weld: 1850	Fuel: 95 L (25 gal.) Oil: 8.5 L (9 qt.) Coolant: Integrated oil	Low oil pressure, high coolant temperature, low fuel level
	Deutz D912L03	The legendary Tier 1, EPA-certified, direct-injected, air-cooled engine with full load <b>sound levels of 81 dB @ 7 m (106 Lwa)</b> . Right-side service access with intervals of <b>500 hours for oil and filters</b> .	41.5	3-cylinder, industrial, air-cooled diesel	Weld: 1850	Fuel: 95 L (25 gal.) Oil: 8.5 L (9 qt.) Coolant: Air	Low oil pressure, high coolant temperature, low fuel level

## Genuine Miller® Options

**Weld Ammeter and Voltmeter Kit #195 131** Field  
Panel-mounted analog meters monitor welding output.  
*Installation time: 35 minutes*

**Polarity Reversing Switch Kit #043 942** Field  
Changes DC polarity without the use of tools.  
*Installation time: 35 minutes*

**AC/DC Polarity Reversing Switch Kit #195 095** Field  
Select AC output or DC polarity without the use of tools.

**Battery Voltmeter #195 454** Field  
Monitors battery-charging circuit.

**Cold Weather Starting Aid Kit**  
*Note: Perkins 404D.22 models come standard with glow plugs.*  
#195 056 Field  
Perkins. 120 V block heater.  
#195 307 Field  
Deutz D2011L03i/ D2011L04i.  
12 V intake manifold heater.  
#195 086 Field  
Deutz D2011L03i/ D2011L04i.  
120 V oil pan heater.