

Big Blue® 500 X and 600 X

**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)

5,500 watts peak, 4,000 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 to 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.

[BUILT TOUGH]



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.

TRUE BLUE®
3YR. WARRANTY

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



Miller Electric Mfg. Co.
An ITW Welding Company
1635 West Spencer Street
P.O. Box 1079
Appleton, WI 54912-1079 USA

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

MillerWelds.com



Specifications (Subject to change without notice.)

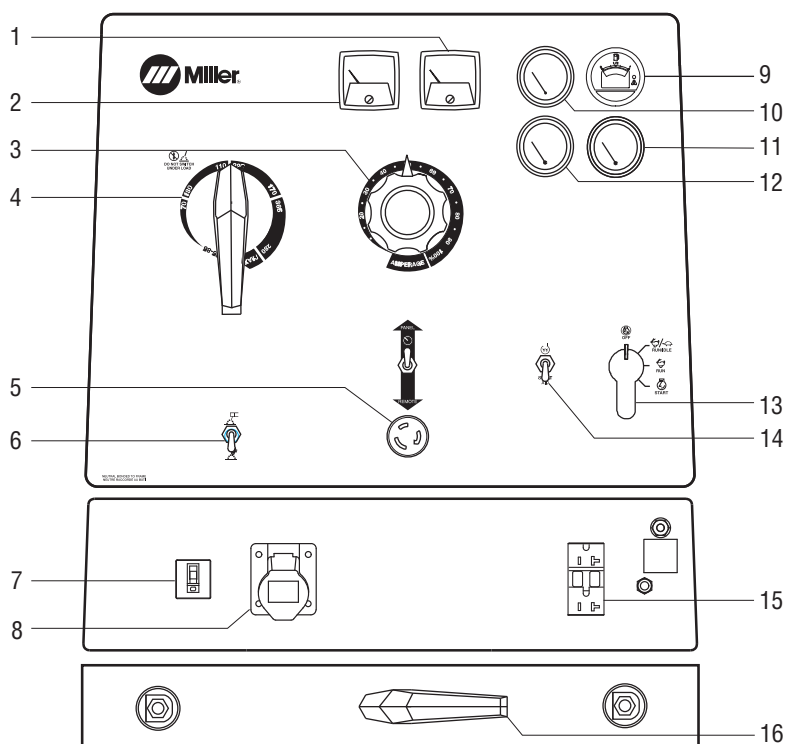


| Model | Weld Mode/ Process | Weld Output Range | Weld Output Rated at 40°C (104°F) | Max. Open-Circuit Voltage | Generator Output Rated at 40°C (104°F) | Dimensions*** | Weight (without fuel)**** |
|-------------------|--------------------|-------------------|---|---------------------------|--|--|--|
| Big Blue 500 X CC | CC/DC (Stick/TIG) | 55–500 A | Deutz and Perkins 400 A at 36 V, 100% duty cycle* 450 A at 38 V, 60% duty cycle 500 A at 30 V, 40% duty cycle | 92 | 5,500 watts peak 4,000 watts continuous 1-phase, 34/17 A, 120/240 VAC, 50/60 Hz while welding | H: 1,092 mm (43 in.) W: 724 mm (28.5 in.) D: 1,654 mm (65.125 in.) | Perkins 404D.22: 701 kg (1,545 lb.) Deutz D2011L03i: 751 kg (1,655 lb.) |
| Big Blue 600 X CC | CC/DC (Stick/TIG) | 55–600 A | Deutz 500 A at 40 V, 100% duty cycle* 550 A at 34 V, 60% duty cycle 600 A at 30 V, 40% duty cycle | | | | Deutz D2011L04i: 769 kg (1,695 lb.) Deutz D912L03: 810 kg (1,785 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

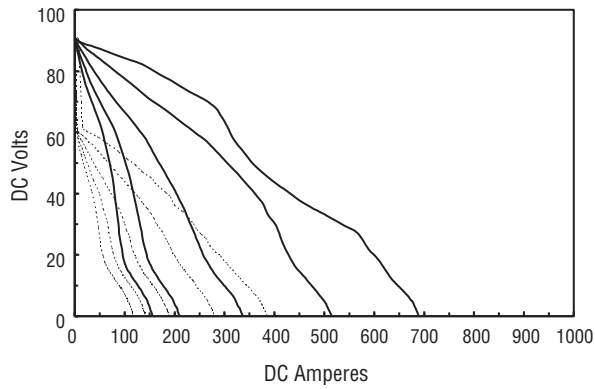
Proven, rugged rheostat control technology that has been in Miller engine drives for over 60 years. Contains no printed control boards.

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.

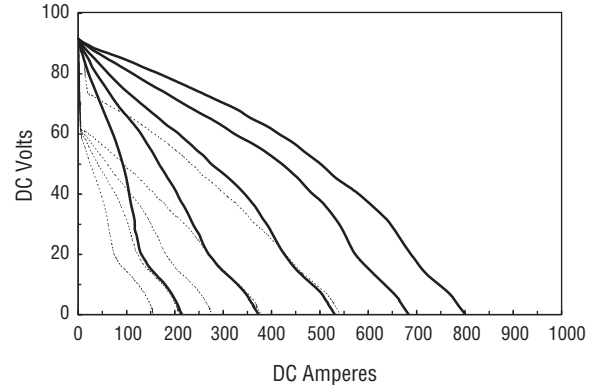
Provisions are provided to plug a **RHC3GD34A remote control** that will allow precise adjustment of amperage without walking back to the machine.

Performance Data

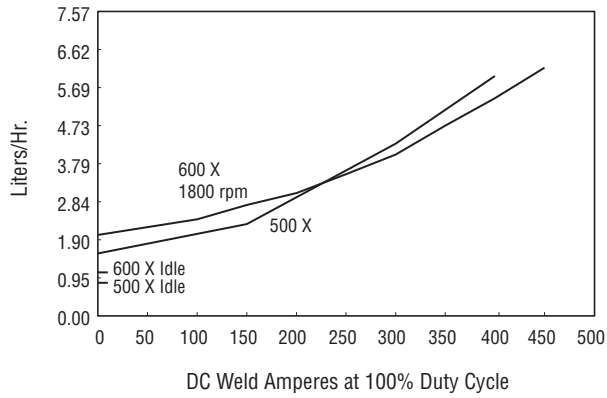
500 X CC
Volt/Amp Curves – Stick Mode



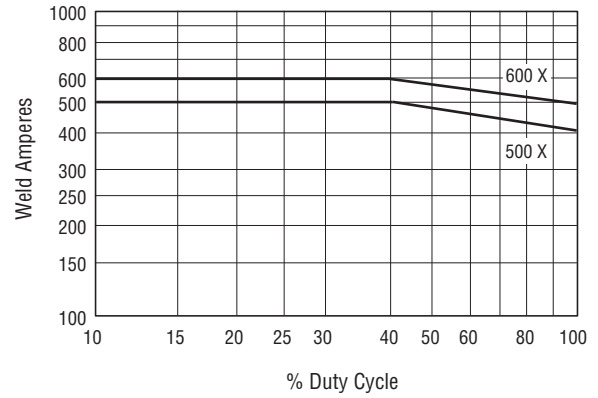
600 X CC
Volt/Amp Curves – Stick Mode



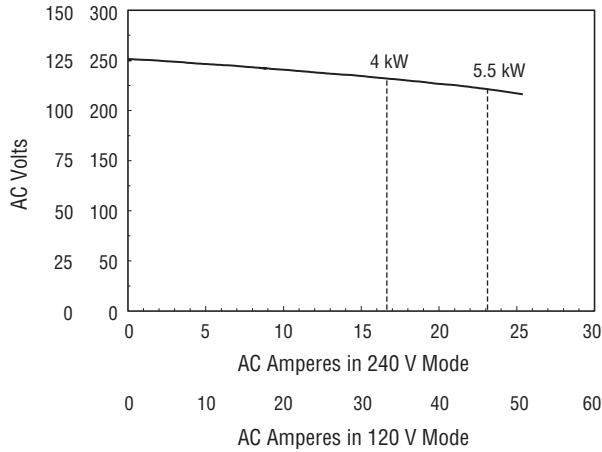
Fuel Consumption Curve



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 sound levels of 73.2 dB at 7 m (97 Lwa). Right-side service access with intervals of 500 hours for oil and filters . | 32.6 | Four-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 sound levels of 76.8 dB at 7 m (101.7 Lwa). Right-side service access with intervals of 1000 hours for oil and filters . Approved underground operation with the purchase of a MSHA (30 CFR part 7) certificate. | 32.0 | Three-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 sound levels of 76 dB at 7 m (101 Lwa). Right-side service access with intervals of 1000 hours for oil and filters . | 48.6 | Four-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 F3L912 | The legendary Tier I, EPA-certified, direct-injected, air-cooled engine with full load sound levels of 81 dB at 7 m (106 Lwa). Right-side service access with intervals of 500 hours for oil and filters . | 41.5 | Three-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

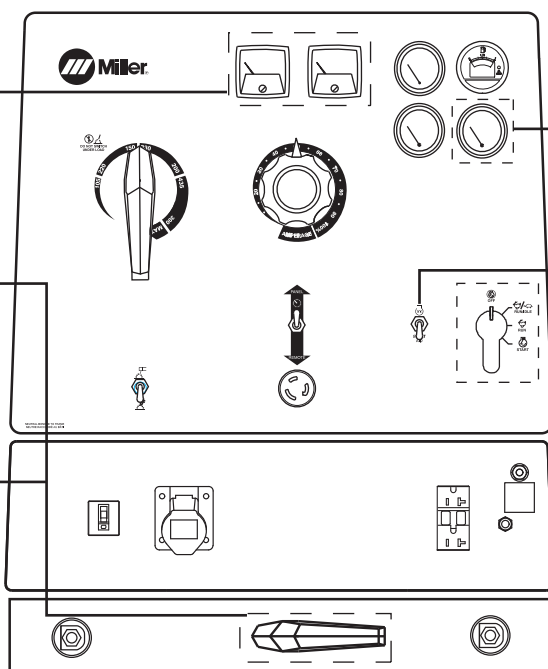
Changes DC polarity without the use of tools.

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-volt block heater.

#195 307 Field

Deutz D2011L03i/ D2011L04i. 12-volt intake manifold heater.

#195 086 Field

Deutz D2011L03i/ D2011L04i. 120-volt oil pan heater.

Genuine Miller® Accessories



International Plug
#255 416 Field
 1-phase, 240 VAC, 16 A plug

Engine Filter Kits

#246 988 Field. For Deutz D2011
#246 989 Field. For Deutz D912
#246 985 Field. For Perkins 404
 Includes all filters required for proper engine maintenance. Oil filter, primary and secondary fuel filter, and primary air filter.



Spark Arrestor Muffler 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
#195 118 Field
 Lockable hinged steel panels cover and protect name plate gauges and ignition switch (padlock included). Also includes engine compartment door lock and key.



Cable Holder
#043 946 Field
 Saddle-bag-style cable holder. Convenient wrap-around storage of coiled cable for transportation. Stores 30.5 m 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
#194 683 Field
 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, 15 m (50 ft.)
#173 851

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

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

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

TIG (GTAW) Welding



Dynasty® 200 Series
 For premium portable AC/DC TIG arc quality. See Lit. Index No. AD/4.8.



HF-251 Series
#042 388
 HF-251D-1, 115 V
#042 387
 HF-251D-2, 230 V
 High-frequency arc starter and stabilizer.

See Accessory Lit. Index No. AY/5.0.

Plasma Cutting



Spectrum® 375 X-TREME™ **#907 529**
 Comes complete with protective X-CASE™ (not shown). See Lit. Index No. PC/9.2.

Remote Control



RHC-3GD34A Remote Hand Control
#041 122
 Allows for precise adjustment of amperage. Includes 6-meter (20 ft.) cord.

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



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

A heavy-duty 1,166-kilogram (2,570 lb.) capacity trailer designed for use in mines, quarries, and other rough terrain. Has narrow 6.7-meter (22 ft.) turning radius. Includes 76-millimeter (3 in.) lunette eye, universal hitch and safety chains.



HWY-224 Trailer

#043 805 For highway use.

OFR-224 Trailer

#043 802 For off-road use.

A 1,202-kilogram (2,650 lb.) capacity trailer. Welded steel tubing frame, heavy-duty axle with roller bearing hubs and leaf-spring suspension. Includes jack stand and 50-millimeter (2 in.) ball hitch. *HWY-224 also includes fenders and lights.*

Cable Tree #043 826

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



Dual Hitch #300 831

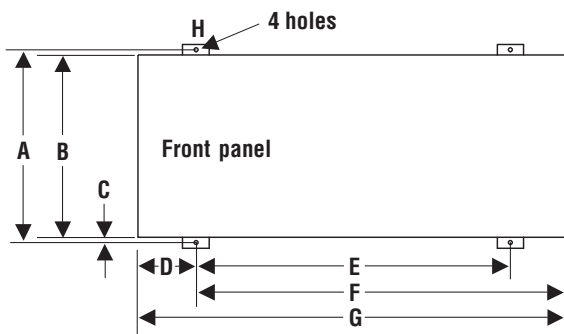
50-millimeter (2 in.) ball hitch and 76-millimeter (3 in.) lunette eye in one reversible assembly.

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 | 907 kg/axle (2,000 lb./axle) | 1,361 kg (3,000 lb.) | 1,166 kg (2,570 lb.) | 540 mm (21.25 in.) | 203 mm (8 in.) | 1,403 mm (55.25 in.) | B78-13 | Length: 2,311 mm (91 in.)* Width: 1,556 mm (61.25 in.) | 195 kg (430 lb.) |
| HWY-224 OFR-224 | 1,588 kg (3,500 lb.) | 1,343 kg (2,960 lb.) | 1,202 kg (2,650 lb.) | 470 mm (18.5 in.) | 184 mm (7.25 in.) | 1,321 mm (52 in.) | B78-13 | Length: 2,667 mm (105 in.) Width: HWY-1,511 mm (59.5 in.)** OFR-1,484 mm (58.437 in.) | 145 kg (320 lb.) |

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

Mounting Specifications



A. 757 mm (29.812 in.)

B. 699 mm (27.5 in.)

C. 25 mm (1 in.)

D. 244 mm (9.625 in.)*

E. 1,181 mm (46.5 in.)*

F. 1,422 mm (56 in.)*

G. 1,654 mm (65.125 in.)

H. 14 mm (.562 in.) diameter

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

Height: 1,270 mm (50 in.)
(to top of exhaust)

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

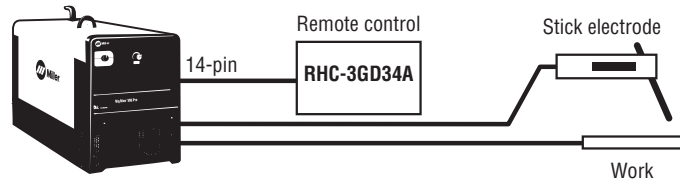
Depth: 1,654 mm (65.125 in.)

Typical Installations

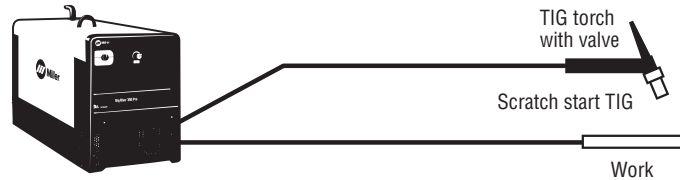
Electrode Hot



Stick (SMAW) Basic Equipment
RHC-3GD34A #041 122



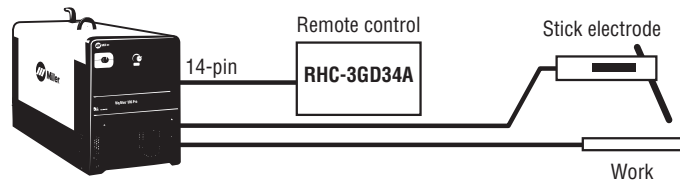
Scratch Start TIG (GTAW) Basic Equipment



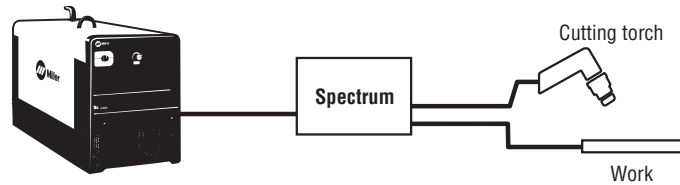
Remote On/Off Required



Stick (SMAW) Basic Equipment
RHC-3GD34A #041 122



Plasma Basic Equipment
Spectrum® 375 X-TREME™ #907 529



Ordering Information

| Equipment and Factory Options | Stock No. | Description | Qty. | Price |
|-------------------------------------|--|---|------|-------|
| Big Blue® 500 X CC | #907 185 #907 185 001 #907 187 #907 187 021 | Deutz D2011L03i with engine gauges Deutz D2011L03i with auto idle, engine gauges, weld and battery meters Perkins 404D.22 with engine gauges Perkins 404D.22 with engine gauges, weld meters and polarity switch | | |
| Big Blue® 600 X CC | #907 193 #907 193 001 #907 189 | Deutz D2011L04i with engine gauges Deutz D2011L04i with auto idle, engine gauges, weld and battery meters Deutz F3L912 with engine gauges | | |
| Field Accessories | | | | |
| Weld Ammeter and Voltmeter Kit | #195 131 | For all models. Analog welding meters | | |
| Polarity Reversing Switch Kit | #043 942 #195 095 | For all models. DC polarity switch For all models. AC/DC polarity switch | | |
| Battery Voltmeter | #195 454 | For all models. Analog | | |
| Cold Weather Starting Aid Kit | #195 056 #195 307 #195 086 | Perkins. 120-volt block heater Deutz D2011L03i and D2011L04i. 12-volt intake manifold heater Deutz D2011L03i and D2011L04i. 120-volt oil pan heater | | |
| International Plug | #255 416 | 1-phase, 240 V, 16 A | | |
| Engine Filter Kit | #246 988 #246 989 #246 985 | Deutz D2011. Includes air, oil and fuel filters Deutz D912. Includes air, oil and fuel filters Perkins 404. Includes air, oil and fuel filters | | |
| Spark Arrestor Muffler Kit | #195 012 | For all models. Horizontal externally mounted | | |
| Lockable Flame Arrestor Fuel Cap | #043 947 | For all models. Padlock not included | | |
| Vandalism Lockout Kit | #195 118 | For all models. Lockable front control panel and engine compartment | | |
| Cable Holder | #043 946 | For all models. Stores up to 61 m (200 ft.) of 2/0 weld cable | | |
| Protective Cover | #194 683 | For all models. Will not fit over machine with cable holder attached | | |
| Stick Welding | | | | |
| Weld Leads | #173 851 #043 952 | 2/0, 350 A, 100% duty cycle, 15 m (50 ft.) stinger, 15 m (50 ft.) work clamp 2/0, 300 A, 100% duty cycle, 30.5 m (100 ft.) stinger, 15 m (50 ft.) work clamp | | |
| TIG Welding | | | | |
| Dynasty® 200 Series | | See Lit. Index No. AD/4.8 | | |
| High Frequency Arc Starters | | 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 | | |
| Remote Control | | | | |
| RHC-3GD34A Hand Control | #041 122 | | | |
| 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 50 mm (2 in.) ball hitch. For highway use | | |
| OFR-224 Trailer | #043 802 | Trailer with 50 mm (2 in.) 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 50 mm (2 in.) ball hitch and 76 mm (3 in.) lunette eye in one reversible assembly. For HWY-224 or OFR-224 | | |

Date:

Total Quoted Price:

Distributed by: