

# Power Wave® S500

## Processes

Stick, DC TIG, Pulsed DC TIG, MIG, Pulsed MIG, Flux-Cored

## Product Number

K2904-1 Power Wave S500  
 K3187-2 Power Wave S500 Ready-PaK  
 K3186-2 Power Wave S500 One-PaK

See back for complete specs

## Input Voltage

200/208/220/230/380/400/415/460/575/  
 3/50/60

## Input Current @ Rated Output

3 Ph / 40% Duty Cycle: 80/73/41/37/29A  
 3 Ph / 100% Duty Cycle: 60/54/30/27/21 A

## Output Range

5-550 Amps

## Rated Output

GMAW: 550A/41.5V/40%  
 GMAW: 450A/36.5V/100%

## Weight/Dimensions (H x W x D)

150 lbs. (68 Kg)

22.5 x 14 x 24.8 in.

(571 x 355 x 630 mm)

## Powerful Multi-Process Capability.

The multi-process Power Wave® S500 is packed with Lincoln Electric performance technology for welding on thicker materials. It provides an extremely fast arc response, includes over 65 standard welding waveforms for optimized performance on almost any application and efficiently converts input power to reduce operational costs.

## FEATURES

- ▶ **PowerConnect™ Technology (Patent-Pending)** – Automatically adjusts to input power from 200-600V, 50 or 60 Hz, three phase. Welding output remains constant through the entire input voltage range.
- ▶ **Tribrid™ Power Module** – Exceptional welding performance with high power factor and efficiency.
- ▶ **CheckPoint™** – A cloud-based system to view or analyze your welding data. Track equipment usage, store weld data, configure fault limits and more.
- ▶ **Standard 115V (10A) AC Duplex Auxiliary Power Receptacle** – Features patent-pending Surge Blocker™ Technology to ensure simultaneous welding performance is not compromised by high starting current devices such as grinders (typically requiring 60A or more peak surge current).
- ▶ **Durable Case** – IP23 rated to withstand harsh environments.
- ▶ **Standard Ethernet** – Allows for effortless software upgrades through [powerwavesoftware.com](http://powerwavesoftware.com)

## APPLICATIONS

- ▶ Construction
- ▶ Aerospace
- ▶ Fabrication
- ▶ Automotive
- ▶ Production



Shown: K2904-1  
 Power Wave S500

## RECOMMENDED WIRE FEEDERS

- ▶ Power Feed® 84 Bench and Boom models
- ▶ Power Feed® 25M

## WAVEFORM CONTROL TECHNOLOGY® PROCESS CAPABILITIES

- ▶ Pulse
- ▶ Pulse-on-Pulse®
- ▶ Power Mode®
- ▶ RapidArc®
- ▶ Rapid X™ (With STT® Module)
- ▶ Upgradable for additional processes to be developed in the future.

## INPUT



## OUTPUT



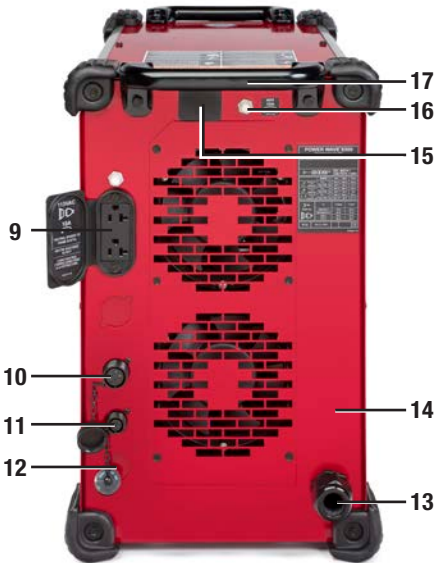
Two Year Extended  
 Warranty Available in  
 the U.S.A. and Canada.



## KEY CONTROLS



Reversible handles shown



### FRONT

1. Optional S-Series User Interface Kit (K3001-2) for Stick, TIG and CV MIG with voltage sensing feeder
2. Status Light
3. Thermal Fault Indicator Light
4. Output Studs
5. Output Control Receptacle Knockout Plate – 12-pin (for optional output control receptacle included with K3001-2 S-Series User Interface Kit)
6. Work Sense Lead Receptacle
7. Main Power Switch
8. Reversible Handles

### BACK

9. Standard 115V (10 Amp) AC Duplex Auxiliary Power Receptacle and Circuit Breaker
10. ArcLink® Welding System Component Communication Cable Receptacle
11. Sync Tandem/STT® Receptacle
12. Optional DeviceNet™ Kit (K2827-2)
13. Input Power Cable Connection
14. TIG Solenoid Kit Knockout Plate (for optional TIG solenoid included with K3001-2 S-Series User Interface Kit)
15. Ethernet Cable Receptacle
16. Circuit Breaker (ArcLink®)
17. Reversible Handles

## OPTIONAL K3001-2 S-SERIES USER INTERFACE KIT

To tap into the Power Wave® S500 stick, TIG and CV MIG process capability without a Power Feed® series wire feeder, add the K3001-2 User Interface Kit. This optional interface provides full control of welding parameters from the front panel of the power source for stick and TIG processes. When used with a Power Feed® series wire feeder, the feeder is typically used for controlling the system and the K3001-2 User Interface Kit meters can be used for viewing amps and volts. Kit also includes 12-pin Universal Remote Receptacle and TIG Gas Solenoid.

### The User Interface Kit allows control over:

- **Volts/Amps Control** – Adjust volts in MIG and flux-cored welding or adjust amperage in stick or TIG welding.
- **Welding Mode** – Select the stick, TIG or CV wire process.
- **Advanced Process Options** – Control pre- and post-weld settings to optimize arc starts and stops.
- **Arc Control** – Adjust arc characteristics to match individual preferences.



## WHAT'S INCLUDED

**Ready-Pak® Packages** are assembled and shipped on one pallet. **One-Pak® Packages** are not assembled. All packages can be ordered using a single Product Number (K#). Welding wire and shielding gas must be ordered separately.

### Power Wave® S500/Power Feed® 84 Bench Feeder Ready-Pak®, includes:

- Power Wave® S500 (K2904-1)
- Power Feed® 84 Bench Model (K3328-13)
  - Wire Reel Stand
  - ArcLink®/Linc-Net™ Control Cable with Weld Power Cable - 8 ft. (2.4 m)
- Magnum® PRO Curve™ 400 Gun and Cable Package (K2952-2-10-45)
- .040-.045 (1.0-1.1 mm) Drive Roll Kit (KP1505-045S)
- Work Lead Package (K2149-1)
- Harris® Flowmeter Regulator and Hose (3100211)
- Inverter and Wire Feeder Cart (K3059-4)

**Order K3187-2**

### Power Wave® S500/Power Feed® 84 Bench Feeder One-Pak®, includes:

- Power Wave® S500 (K2904-1)
- Power Feed® 84 Bench Model (K3328-13)
  - Wire Reel Stand
  - ArcLink®/Linc-Net™ Control Cable with Weld Power Cable - 8 ft. (2.4 m)
- Magnum® PRO Curve™ 400 Gun and Cable Package (K2952-2-10-45)
- .040-.045 (1.0-1.1 mm) Drive Roll Kit (KP1505-045S)
- Work Lead Package (K2149-1)
- Harris® Flowmeter Regulator and Hose (3100211)

**Order K3186-2**



Shown: K3187-1

## TECHNOLOGIES



### Tribrid™ Power Module

Features PowerConnect™ technology, Planar Transformer™ Technology and 120kHz output to provide exceptional welding performance while still maintaining a high power factor and efficiency.



### iARC™ High Speed Digital Controls

iARC™ (Intelligent Architecture for Regulation and Control) digital welding controls are faster, include more RAM, and more memory than the previous generation. It also features 100Mbps Full Duplex Ethernet to support Lincoln Electric's CheckPoint™.



### CheckPoint™

CheckPoint, cloud server-based and mobile delivery solutions, is the welding industry's most advanced weld data collection and monitoring tool, allowing fabricators to analyze their welding operations and processes. These tools can provide necessary data for customer ISO, Six Sigma, statistical process control (SPC), quality cost delivery (QCD), overall equipment effectiveness (OEE) and lean manufacturing efforts. CheckPoint is offered at no charge with every Power Wave purchase.



### Rugged Reliability

Tested under severe conditions:

- Extreme Temperature Ranges
- Extreme Humidity
- Rain
- Dirt and Dust
- IP23 Rated Performance

## RECOMMENDED ACCESSORIES

### GENERAL OPTIONS



**S-Series User Interface Kit**  
This kit allows local control of stick, TIG and wire processes from the power source control panel. Includes TIG Solenoid and Remote Control Connector.  
**Order K3001-2**



**DeviceNet™ Kit**  
The kit allows DeviceNet™ connectivity to control the power source. Includes internal harness and 5-pin DeviceNet™ receptacle for mounting on power source back panel.  
**Order K2827-2**



**Inverter and Wire Feeder Cart**  
Rear-wheeled cart with front casters and gas bottle platform. Convenient handles allow for easy cable storage. Small footprint fits through 30 in. (762 mm) door. Not intended for use with double head wire feeders.  
**Order K3059-4**



**Dual Cylinder Inverter & Wire Feeder Cart**  
Rear-wheeled cart with front casters and dual cylinder platform. Convenient handles allow for easy cable storage. Small footprint fits through 30 inch (762 mm) door.  
**Order K3059-5**



**Work Lead Package**  
15 ft. (4.5 m) 4/0 cable with 1/2 in. stud lug and work clamp.  
**Order K2149-1**



**Work Voltage Sense Lead Kit**  
Required to accurately monitor voltage at the arc.  
**Order K940-25** for 25 ft. (7.6 m)  
**Order K1811-50** for 50 ft. (15.2 m)  
**Order K1811-100** (shown) for 100 ft. (30.5 m)

## RECOMMENDED ACCESSORIES

### GENERAL OPTIONS, CON'T



**Deluxe Adjustable Gas Regulator & Hose Kit**  
Accommodates CO<sub>2</sub>, Argon, or Argon-blend gas cylinders. Includes a cylinder pressure gauge, dual scale flow gauge and 4.3 ft. (1.3 m) gas hose.  
**Order K586-1**



**Weld Fume Control Solutions**  
Lincoln Electric offers a wide variety of weld fume control solutions, ranging from portable systems easily wheeled around the shop to shop-wide central systems servicing many dedicated welding stations.  
**Request Publication MC08-70**

### STICK OPTIONS



**Accessory Kit**  
Complete kit for stick welding. Includes 30 ft. (9.1 m) electrode cable, 25 ft. (7.6 m) work cable, headshield, work clamp and electrode holder. 150 amps.  
**Order K704**



Shown: Cool Arc 55 S

**Cool Arc® 55 Water Cooler**  
Designed to integrate with Power Wave® S350 and S500 power sources to cool water-cooled welding guns or torches rated up to 500 amps. Recommended for robotic and hand-held MIG, TIG and Plasma cutting operations. 115V/1/60. The 55 S model includes an ArcLink® communication flow sensor that detects water flow to prohibit welding when no flow is present.  
**Order K3086-1** for Cool Arc 55  
**Order K3086-2** for Cool Arc 55 S



**Remote Output Control with 12-pin Universal Connector**  
Permits remote adjustment of output. Requires K3001-2 S-Series User Interface Kit.  
**Order K857-2** for 25 ft. (7.6 m)



**12-pin to 6-pin Adapter**  
Allows older 6-pin remote controls (K870, K963-3, K857) to be used with 12-pin Universal Connection.  
**Order K2909-1**



**12-pin to 7-pin Adapter**  
Allows 7-pin push-pull guns to be used with 12-pin Universal Connection.  
**Order K2910-1**

### TIG OPTIONS



**PTA-17 150 Amp Air-Cooled TIG Torch**  
**Order K1782-1** for 12.5 ft. (3.8 m) length, 1-cable  
**Order K1782-3** for 25 ft. (7.6 m) length, 1-cable



**PTA-26 200 Amp Air-Cooled TIG Torch**  
**Order K1783-1** for 12.5 ft. (3.8 m) length, 1-cable  
**Order K1783-3** for 25 ft. (7.6 m) length, 1-cable



**Parts Kits**  
Magnum® Parts Kits provide all the torch accessories you need to start welding. Parts kits provide collets, collet bodies, a back cap, alumina nozzles and tungstens in a variety of sizes, all packaged in an easy to carry reclosable box.  
**Order KP508** for PTA-17  
**Order KP509** for PTA-26



**Foot Ampctrl™ with 12-pin Universal Connector**  
Provides 25 ft. (7.6 m) of remote current control for TIG welding. Requires K3001-2 S-Series User Interface Kit.  
**Order K870-2**



**Hand Ampctrl™ with 12-pin Universal Connector**  
Provides 25 ft. (7.6 m) of remote current control for TIG welding. Requires K3001-2 S-Series User Interface Kit.  
**Order K963-4**

### WIRE FEEDER OPTIONS



**STT® Module**  
This module allows easy connection and fast digital communication with compatible Power Wave® S-Series power sources, Power Feed® wire feeders, and compatible water coolers. Add STT® capability without having to purchase a second power source.  
**Order K2902-1 US/Int'l** (shown)  
**Order K2921-1 CE**



**Power Wave® Advanced Module**  
Provides multi-process reverse polarity (DC+), straight polarity (DC-), AC, high frequency TIG and STT® functionality. Compatible with Power Wave® S350 and S500.  
**Order K2912-1**



**Magnum® PRO AL Air-Cooled & Water-Cooled Push-Pull Guns**  
The Magnum PRO AL gooseneck style guns are designed to optimize a push-pull welding operation for aluminum. Uses Magnum PRO MIG Gun expendables. Available in 7-pin and 12-pin connections.  
**Request Publication E12.14**



**AutoDrive® 19 Controller**  
Relays wire feed commands from Power Wave® S Series power source to any AutoDrive® Series robotic wire drive for automated welding operation. Not compatible with Power Wave® R-Series power sources.  
**Order K3004-1**



**AutoDrive® 19 Tandem Controller**  
Relays wire feed commands from Power Wave® S-Series power source to any AutoDrive® Series robotic wire drive for automated tandem welding operations.  
**Order K3171-1**

## PRODUCT SPECIFICATIONS

Product Name	Product Number	Input Voltage	Input Current @ Rated Output	Rated Output Current/Voltage/Duty Cycle	Output Range	H x W x D inches (mm)	Net Weight lbs. (kg)
Power Wave® S500	K2904-1	200/208/220/230/380/400/415/460/575/3/50/60	3 Ph / 40% Duty Cycle: 80/73/41/37/29 3 Ph / 100% Duty Cycle: 60/54/30/27/21	GMAW: 550A/41.5V/40% GMAW: 450A/36.5V/100% SMAW: 550A/42V/40% SMAW: 450A/38V/100% GTAW-DC: 550A/32V/40% GTAW-DC: 450A/28V/100%	5-550A	22.5 x 14 x 24.8 (571 x 355 x 630)	150 (68)
Power Wave® S500/ Power Feed® 84 Ready-Pak®	K3187-2						
Power Wave® S500/ Power Feed® 84 One-Pak®	K3186-2						

For best welding results with Lincoln Electric equipment, always use Lincoln Electric consumables. Visit [www.lincolnelectric.com](http://www.lincolnelectric.com) for more details.

### CUSTOMER ASSISTANCE POLICY

The business of The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to [www.lincolnelectric.com](http://www.lincolnelectric.com) for any updated information.

**LINCOLN®**  
**ELECTRIC**  
THE WELDING EXPERTS®