

# SAE-400

## Diesel Engine Driven Welder — Manual Processes

For demanding jobs that call for high amperage capabilities, the SAE-400 offers 400 amps for DC stick welding and 3,000 watts of AC power. Designed especially for pipeliners and field welders, the SAE-400 is powered by a heavy duty Perkins industrial diesel engine, which offers low maintenance and long life for hassle-free operation. Add CV wire welding with the optional CV Adapter.

### Processes

Stick, TIG, Flux-Cored<sup>(1)</sup>, Gouging



### Output



### Input



## Advantage Lincoln

- Rugged Construction
    - Withstands rough field handling, protecting internal parts.
  - Dual Continuous Output Control
    - Select either a soft "buttering" arc or snappy "digging" arc for fast, high-quality welding.
  - High Duty Cycle Welding Output
    - 100% duty cycle at 400 amps for demanding applications. Also rated at 500 amps. **NEW!**
  - Remote Control Included
    - 100 ft. (30.5m) remote control is included – not a separate kit.
  - Industrial Diesel Engine
    - Perkins 4-cylinder, water-cooled industrial diesel engine offers low maintenance and long life.
  - Multiple Arcs
    - Large-capacity DC weld output makes the SAE-400 the #1 choice for multiple arcs with the Multi-Weld 350 system. (See recommended options section.)
  - ISO 9001
    - Manufactured under a quality system certified to ISO 9001 requirements and ISO 14001 environmental standards.
  - Three-year Lincoln Warranty
    - Three-year Lincoln warranty. (Engine is warranted separately by the manufacturer.)
- (1) With CV Adapter.

## TECHNICAL SPECIFICATIONS

Product Name	Rated Output Current/Voltage/Duty Cycle	Output Range	Type of Engine	No. of Cyl.	HP & Speed (rpm)	Dimensions H x W x D in. (mm)	Net Weight lbs (kg)
SAE-400	400A DC/40V/100% 500A DC/40V/35%	80-575A DC 3000 watts	Perkins 1104C-44 Diesel	4	68.4 @ 1725	50 x 28 x 83 (1270 x 711 x 2109)	2157 (978)

**PERFORMANCE**

- 400 amp rated output DC arc welding power source with outstanding characteristics for pipe, construction and maintenance stick welding. 575 amp maximum output.
- Dual continuous output control. Select either a soft “buttering” arc or a snappy “digging” arc for fast, high-quality welding.
- Arc gouging with up to a 3/8" carbon.
- Scratch start DC TIG welding. (See TIG module in recommended options section for high frequency starting.)
- Delivers 3,000 watts of 115V/230V AC power for a grinder, lights or other power tools.
- Add CV wire welding capability with optional CV Adapter. Use with LN-25, LN-15 Across-The-Arc, LN-23P wire feeders.
- Large capacity DC welding output make the SAE-400 the #1 choice for multiple arcs with the Multi-Weld 350 system.

**FEATURES**

- Polarity switch for selecting DC+, DC- welding output.
- 100 ft. (30.5m) remote control included – not a separate kit.
- Powered by a heavy duty, industrial Perkins diesel engine.
- Pressure lubrication system with replaceable filter assures lubrication to all critical areas of the engine.
- Engine gauges indicate oil pressure, temperature and battery charging amps.
- All day welding with 22.5 gallon fuel capacity. Lead plated tank resists corrosion. Sediment bowl and a filter in the fuel line help keep the fuel clean.
- Pushbutton starting is powered by two 12V batteries.
- Glow Plugs for starting the engine at low ambient temperatures, 32° F (0° C) to -5° F (-21° C).
- Combination muffler/spark arrestor is standard on the machine.
- Single-side engine access for routine maintenance.
- Oil drain system includes ball valve, hose and clamp to direct oil beyond the base of the machine.
- Engine hour meter for scheduling maintenance.

**Key Controls**

1. Polarity Switch
2. Current Control
3. 115V Receptacles with Covers
4. Engine Hour Meter
5. Local/Remote Control
6. Engine Idler
7. Remote Control Receptacle
8. Engine Protection Light
9. Glow Plug Button
10. Pushbutton Start
11. On/Off Switch
12. Oil Pressure, Temperature, and Battery Charging Amps Gauges
13. Circuit Breakers
14. 230V Receptacles with Covers
15. Job Selector



**QUALITY AND RELIABILITY**

- Designed especially for pipeliners and field welders on demanding jobs, Lincoln's SAE-400 offers reliable DC arc welding performance.
- The SAE-400 is built in a heavy gauge steel case and is designed for durability on the job site. Rugged construction withstands rough field handling, protecting internal parts.
- Perkins 4-cylinder, water-cooled industrial diesel engine offers low maintenance and long life.
- Automatic shutdown protection for low oil pressure or high coolant temperature.
- Two 12 volt batteries paralleled for 1130 cold cranking amps of engine starting.
- Printed circuit board for idler and engine protection is potted to provide a robust environment shield.
- Manufactured under a quality system certified to ISO 9001 requirements and ISO 14001 environmental standards.
- Approved by the Canadian Standards Association (CSA).
- Three-year Lincoln warranty. (Engine is warranted separately by the manufacturer.)

**MACHINE SPECIFICATIONS**

**NEW!**

Product Name	Ordering Information	Description	CC Rated Output (1) Current/Voltage/Duty Cycle	Generator AC Power(2)	Dimensions H <sup>(3)</sup> xWxL in (mm)	Weight lbs (kg)
SAE-400	K1278-7	400 Amp DC Arc Welder with 3,000 Watts of AC Power & 100 ft (30.5m) Remote Control	<b>NEW!</b> Lincoln Rating 400A/40V/100% 500A/40V/35%  80-575 Amps  Continuous Adjustment of Voltage and Current	3,000 Watts 60 Hz, AC (2)  26 Amps @ 115V  13 Amps @ 230V	50 x 28 x 83 (1270 x 711 x 2109)	2157 (978)

(1) Based on 10 minute period.

(2) 115V will operate either 60 Hz or 50/60 Hz power tools, lights, etc.

(3) Height is to top of lift bale; 46 in. (1168mm) case height.

**ENGINE SPECIFICATIONS**

Engine Model	Description	Horsepower & Displacement	Capacities	Operating Speeds	Fuel Consumption
Perkins Diesel (4) 1104C-44	4 Cylinder, 4 Cycle Water-cooled Diesel Engine with Dry Cartridge Air Filter	68.4 HP @ 1,725 RPM  269 cu in (4.4 ltrs)	<b>Fuel:</b> 22.5 gals (85.2 ltrs)  <b>Oil:</b> 10.1 qts (9.6 ltrs)  <b>Radiator Coolant:</b> 3.4 gals (12.8 ltrs)	<b>Full Load: 1,725 RPM</b> (400A)  <b>High Idle: 1,800 RPM</b>  <b>Low Idle: 1,100 RPM</b>	1.8 gals/hr 6.8 ltrs/hr  0.7 gals/hr 2.6 ltrs/hr  0.3 gals/hr 1.1 ltrs/hr

(4) Engine warranty is 2 years/3,000 hours.



**SYSTEM SELECTION**

**One-Pak™ Welding Packages**

Order a Lincoln One-Pak™ and get everything you need to complete a welding package — all with one order number. **(Packages require assembly.)**

**Each UNASSEMBLED Package Contains:**

- SAE-400 (K1278-7)
- Large Welder Trailer (K956-1)
- Hitch (See Order Number Below)
- Fender and Light Kit (K959-1)
- Cable Rack (K965-1)
- Cable Connectors - two (K2487-1)
- Electrode Cable 3/0, two 50 ft. (15.3m) lengths (K2485-3)
- Electrode Cable 3/0, 10 ft. (3m) (K2483-3)
- Work Cable 3/0, 50 ft. (15.3m) (K2484-3)
- 400A Electrode Holder (K909-8)
- 500A Work Clamp (K910-2)

**Order:**

**K1866-1** SAE-400 One-Pak™ with Ball Hitch

**K1866-2** SAE-400 One-Pak™ with Lunette Eye Hitch



*K1278-7 Shield Arc® SAE-400*



*K956-1 Large Welder Trailer*



*K958-1 2" Ball Hitch*



*K958-2 Lunette Eye Hitch*

**Ready-Pak™ Welding Packages**

Order a Lincoln Ready-Pak™ and get an **assembled** welding package.

**Each COMPLETELY ASSEMBLED Package Contains:**

- SAE-400 (K1278-7)
- Large Welder Trailer (K956-1)
- Hitch (See Order Number Below)
- Fender and Light Kit (K959-1)
- Cable Rack (K965-1)
- Cable Connectors - two (K2487-1)
- Electrode Cable 3/0, two 50 ft. (15.3m) lengths (K2485-3)
- Electrode Cable 3/0, 10 ft. (3m) (K2483-3)
- Work Cable 3/0, 50 ft. (15.3m) (K2484-3)
- 400A Electrode Holder (K909-8)
- 500A Work Clamp (K910-2)
- 1/8" Excalibur™ 7018 — Six 10 lb. Easy Open Cans (ED028482)

**Order:**

**K2388-1** SAE-400 Ready-Pak™ with Ball Hitch

**K2388-2** SAE-400 Ready-Pak™ with Lunette Eye Hitch



*Completely Assembled Ready-Pak*



**GENERAL OPTIONS**

**Power Plug Kit**

Provides two 115V plugs rated at 20 amps each, and two 230V plugs rated at 15 amps each. 120V plug may not be compatible with common household receptacles.  
**Order K802D**



**GFCI Receptacle Kit**

Includes one UL approved 115V ground fault circuit interrupter duplex type receptacle and installation instructions. Replaces the factory installed 115V duplex receptacle. Each receptacle of the GFCI duplex is rated at 20 amps. Maximum total current from the GFCI duplex is limited to 20 amps.  
**Order K1690-1**



**Large Welder Trailer**

For heavy duty road, off-road, plant and yard use. Includes wheeled-jack, safety chains, 14" wheels and large rear bumper. Stiff 3/16" steel frame is prime painted using three-coat process and finished with powder coating technology for superior rust and corrosion resistance. Low sway suspension gives outstanding stability with manageable tongue weight. E-Z Lube™ Axle - pack wheel bearings with a grease gun. 57" max. width for stability with easy tracking.  
**Order:**  
**K956-1 Trailer**  
**K958-1 Ball Hitch**  
**K958-2 Lunette Eye Hitch**  
**K959-1 Light and Fender Kit**  
**K965-1 Cable Rack**  
*E-Z Lube is a trademark of Dexter Axle.*



**Four-Wheeled Steerable Yard Trailer**

For in-plant and yard towing. Includes lunette eye towbar.  
**Order:**  
**K767-1 Trailer**  
**K958-1 2" Ball Hitch (Optional)**



**GENERAL OPTIONS CONT.**

**Multi-Weld 350**

For multiple arcs from the DC output of a welding power source. See bulletin E5.300 for Multi-Weld 350 and distribution system.  
**Order K1735-1**



**STICK OPTIONS**

**Accessory Kit**

For stick welding. Includes 35 ft. (10.7m) 2/0 electrode cable with lug, 30 ft. (9.1m) 2/0 work cable with lugs, headshield, filter plate, work clamp and electrode holder. 400 amp capacity.  
**Order K704**



**TIG OPTIONS**

**Pro-Torch® PTA-26V TIG Torch**

Air-cooled 200 amp torch equipped with valve for gas flow control. 25 ft. (7.6m) length  
**Order K1783-9**



**Magnum Parts Kit for PTA-26V TIG Torch**

Provides all the torch accessories you need to start welding. Parts kit provides collets, collet bodies, a back cap, alumina nozzles and tungstens in a variety of sizes, all packaged in an easy to carry reclosable sack.  
**Order KP509**



**TIG Module**

Portable, high frequency unit with gas valve for TIG welding. Rated at 300 amps/60% duty cycle.  
**Order K930-2**



**Control Cable**

Connects TIG Module to the SAE-400.  
**Order K936-4**

**TIG OPTIONS CONT.**



**Arc Start Switch**  
Comes with a 25 ft. (7.6m) cable. Attaches to the TIG torch for convenient finger control.  
**Order K814**



**Contactor Kit**  
For use with TIG Module.  
**Order K938-1**



**Control Cable Extension**  
Allows the TIG Module to be operated at distances up to 200 ft. from the power source. Available in 45 ft. (13.7m) sections.  
**Order K937-45**



**Water Valve Kit**  
For use with a water-cooled TIG torch. Installs inside of TIG module.  
**Order K844-1**

**WIRE FEEDER OPTIONS**



**CV Adapter**  
Provides constant voltage output for semiautomatic wire welding. Includes connector for 14-pin control cable and local/remote switch. Mounts inside SAE-400.  
**Order K385-2**



**LN-25 Wire Feeder**  
Portable CC/CV unit for flux-cored and MIG welding. Includes gas solenoid and internal contactor. For spools up to 44 lbs (20kg).  
**Order K449**



**LN-15 Across-The-Arc Wire Feeder**  
Portable, lightweight, compact CC/CV unit for flux-cored and MIG welding. Includes gas solenoid, adjustable flow meter and internal contactor. For 10-15 lb (4.5-6.8kg) spools.  
**Order K1870-1**

**WIRE FEEDER OPTIONS CONT.**



**LN-23P Wire Feeder**  
Portable CV unit for Innershield pipe welding. Requires LN-23P K2379-1 Interface Kit and Gun and Cable Assembly.  
**Order K316L-2**



**LN-23P Interface Kit**  
Required for connecting an LN-23P Wire Feeder to the K385-2 CV Adapter.  
**Order K2379-1**



**Magnum® 350 Innershield® Gun (for LN-25, LN-15)**  
For self-shielded wire with 15 ft. (4.5m) cable. For .062-3/32" (1.6-2.4mm) wire.  
**Order K126-2**



**Magnum® 250 Innershield Gun (for LN-23P)**  
For lighter weight and easier handling. Rated 250 amps, 60% duty cycle. For .068 through 5/64" (1.7 through 2.0 mm) Innershield wire and includes reduced speed switch. For pipewelding, the K1909-1 gun tube is recommended.  
**Order K355-10**



**Gun Tube Assembly**  
Features a 68 degree gun tube angle that is well suited for pipewelding.  
**Order K1909-1**



**Drive Roll and Guide Tube Kit (for LN-25, LN-23P)**  
For .068-3/32" (1.8-2.4mm) cored or solid steel wire.  
**Order KP653-3/32**



**Drive Roll and Wire Guide Kit (for LN-15)**  
For 1/16" (1.6mm) cored wire.  
**Order KP1697-1/16C**

**WIRE FEEDER OPTIONS CONT.**



**Gun Receiver Bushing**  
For LN-15 and K126-2.  
**Order K1500-1**



**Magnum® 300 MIG Gun**  
For .035-.045 (0.9-1.2mm) gas-  
shielded wire with 15 ft. (4.5m)  
cable.  
**LN-25**  
**Order K1802-1**  
(includes Connector Kit)  
**LN-25**  
**Order:**  
**K470-2** Magnum 300 MIG Gun  
**K466-10** Connector Kit



**Drive Roll and Guide Tube Kit**  
(for LN-25)  
For .035-.040" (0.9-1.0mm) solid  
steel wire.  
**Order KP653-035S**



**Drive Roll and Wire Guide Kit**  
(for LN-15)  
For .035 (0.9mm) solid steel wire.  
**Order KP1696-035S**

**SAE-400 ORDER FORM**

**NEW!**

PRODUCT DESCRIPTION	ORDER NUMBER	QUANTITY	PRICE
<b>SAE-400</b>	<b>K1278-7</b>		
<b>SAE-400 ONE-PAK PKG. W/BALL HITCH</b>	<b>K1866-1</b>		
<b>SAE-400 ONE-PAK PKG. W/LUNETTE EYE HITCH</b>	<b>K1866-2</b>		
<b>SAE-400 READY-PAK PKG. W/BALL HITCH</b>	<b>K2388-1</b>		
<b>SAE-400 READY-PAK PKG. W/LUNETTE EYE HITCH</b>	<b>K2388-2</b>		
<b>RECOMMENDED GENERAL OPTIONS</b>			
Power Plug Kit	K802D		
GFCI Receptacle Kit	K1690-1		
Large Welder Trailer	K956-1		
- 2" Ball Hitch	K958-1		
- Lunette Eye Hitch	K958-2		
- Fender and Light Kit	K959-1		
- Cable Rack	K965-1		
Large Four-Wheeled Yard Trailer (with lunette eye towbar)	K767-1		
- 2" Ball Hitch (optional)	K958-1		
Multi-Weld 350 (See Bulletin E5.302)	K1735-1		
<b>RECOMMENDED STICK OPTIONS</b>			
Accessory Kit	K704		
<b>RECOMMENDED TIG OPTIONS</b>			
Pro-Torch® PTA-26V TIG Torch	K1783-9		
Magnum Parts Kit for PTA-26V TIG Torch	KP509		
TIG Module	K930-2		
Control Cable	K936-4		
Arc Start Switch	K814		
Contact Kit	K938-1		
Control Cable Extension	K937-45		
Water Valve Kit	K844-1		
<b>RECOMMENDED WIRE FEEDER OPTIONS</b>			
CV Adapter	K385-2		
LN-25 Wire Feeder	K449		
LN-15 Across-The-Arc Wire Feeder	K1870-1		
LN-23P Wire Feeder	K316L-2		
LN-23P Interface Kit	K2379-1		
Magnum 350 Innershield Gun (For LN-25, LN-15)	K126-2		
Magnum 250 Innershield Gun (For LN-23P)	K355-10		
Gun Tube Assembly	K1909-1		
Drive Roll and Guide Tube Kit (For LN-25, LN-23P)	KP653-3/32		
Drive Roll and Wire Guide Kit (For LN-15)	KP1697-1/16C		
Gun Receiver Bushing (for LN-15 and K126-2)	K1500-1		
Magnum® 300 MIG Gun			
- for LN-25 (includes Connector Kit)	K1802-1		
- Magnum 300 MIG Gun (for LN-15)	K470-2		
- Connector Kit (for LN-15)	K466-10		
Drive Roll and Guide Tube Kit (for LN-25)	KP653-035S		
Drive Roll and Wire Guide Kit (for LN-15)	KP1696-035S		
	<b>TOTAL:</b>		

**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 advice or information about their use of our products. We respond to our customers based on the best information in our possession at that time. Lincoln Electric is not in a position to warrant or guarantee such advice, and assumes no liability, with respect to such information or advice. We expressly disclaim any warranty of any kind, including any warranty of fitness for any customer's particular purpose, with respect to such information or advice. As a matter of practical consideration, we also cannot assume any responsibility for updating or correcting any such information or advice once it has been given, nor does the provision of information or advice create, expand or alter any warranty with respect to the sale of our products.

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.

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.



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22801 St. Clair Ave., Cleveland, OH 44117-1199 • 216.481.8100 • [www.lincolnelectric.com](http://www.lincolnelectric.com)