

# SAE-300®

## Processes

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

## Product Numbers

K3003-1

## Output Range

50-390A DC Welding  
3000 Watts AC Power

## Rated Output – Current/Voltage/Duty Cycle

300A DC/32V/60%  
250A DC/30V/100%

## Number of Cylinders

4

## HP @ Speed (RPM)

Perkins® 32.7 HP @ 1800 RPM

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

1,416 Lbs. (642 Kg)

37.1 x 24.0 x 65.0 in.  
(943 x 610 x 1651 mm)

To Top of Exhaust Tube  
45.5 in. (1156 mm)

## Superior Choice for Pipeline Work!™

The SAE-300® combines a rugged design with traditional pure DC generator technology for excellent welding performance in pipe, construction and maintenance applications.

## FEATURES

### ► Dual Continuous Control™ of Output

- Two continuous dials on the control panel allow for a precise setting of both voltage and current for critical pipe welding applications.
- Adjust the arc for a snappy “digging” arc for root and hot passes on pipe with cellulosic electrode, or for a soft “buttery” arc for pipe welding with low hydrogen electrode.

### ► Pure DC Generator Welding Output

- Pipeline operators will enjoy welding with the arc produced from the rotating armature/field coil system manufactured for many years by Lincoln Electric.

### ► All Copper Windings

- Arc stability, dependability and long-life are enhanced with all-copper windings.

### ► 300 Amps Output @ 60% Duty Cycle

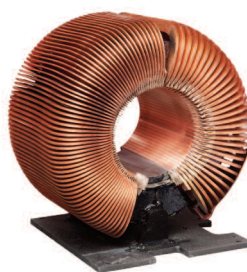
- Welds up to 7/32 in. (5.6 mm) Fleetweld® 5P, Fleetweld® 5P+, Pipeliner® and Excalibur® electrode.

### ► Reliable Industrial Diesel Engine

- 4-cylinder, water-cooled, 1800 RPM Perkins® engine runs smooth and quiet.
- Engine gauges allow you to monitor performance at a glance.

## APPLICATIONS

- Pipeline
- Construction
- Maintenance and Repair



*The reactor – a key component of the Dual Continuous Control™ system: coarse current adjustment without the need for taps.*

## INPUT



## OUTPUT



**Perkins®**



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



(1) With Wire Feed Module.

## THE LINCOLN ELECTRIC COMPANY

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

### Arc Performance

- 300 amp rated output DC arc welding power source with Dual Continuous Control™ provides outstanding characteristics for pipe, construction and maintenance stick welding. 350 amp maximum output.
- Arc gouging with up to 1/4 in. (6.3 mm) carbons.
- 2/0 (70 mm<sup>2</sup>) cable recommended for 200-250 ft. (61-76 m) combined lengths of electrode and work cables.

### AC Power Performance

- 3,000 total watts of AC power from a 115V or 230V duplex receptacle for power tools and lights.
- Circuit breaker protection. 115V AC 20 amp output will operate up to a 9 in. (229 mm) grinder.
- Weather-protected receptacle covers.
- GFCI (Ground Fault Circuit Interrupter) is sealed from moisture for more reliable operation.

### What is Dual Continuous Control™?

Dual Continuous Control™ gives the welding operator a great deal of freedom in the selection of arc characteristics and currents for different welding applications when using the SAE-300®.

#### Coarse Current

Figure 1 shows that as the left side “Coarse Current” dial is adjusted, the welding amperage increases or decreases and the slope of the volt-amp curve changes. The slope of the volt-amp curve establishes the characteristics of the welding arc by determining the change in welding current as the welding voltage changes.

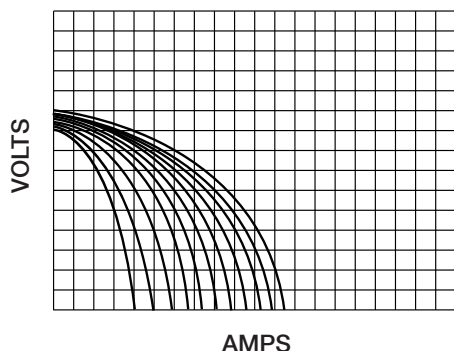


Figure 1 – Coarse Current Dial

#### Fine Current and OCV

Figure 2 shows that as the right side “Fine Current and OCV (Open Circuit Voltage)” dial is adjusted, both the volts and amps move to more or less output. The “Fine Current and OCV” dial can be used to fine tune the welding current.

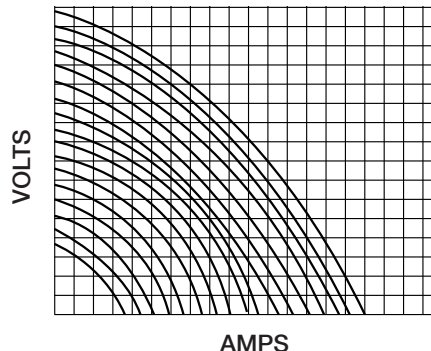


Figure 2 – Fine Current and O.C.V. (Open Circuit Voltage) Dial

#### Output Range

Figure 3 shows the combination of the two controls allows the welder to use the entire output range of the machine.

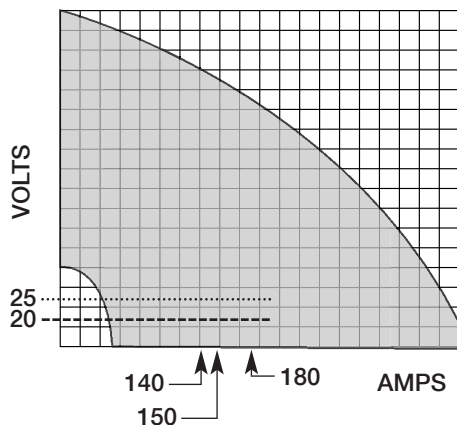


Figure 3 – Output Range

#### Setting the Controls for Stick Welding on the SAE-300®

A suggested method is to set the “Fine Current and O.C.V.” dial to 60 and use the markings on “Coarse Current” knob to preset the welding current. The “Fine Current” control can be changed during welding to set the exact welding current needed.



Figure 4 – Output Controls

## FEATURES

- Industrial 4-cylinder, smooth-running, water-cooled diesel engine:
  - Perkins® 404D-22
  - 98.1 dB sound power (Lwa) at rated load.
  - 73 dBA sound level at 23 ft. (7 m).
- Gauges indicate oil pressure, engine temperature and battery charging amps.
- Engine hour meter to track scheduled maintenance.
- 16 gallon (60.6 ltrs) plastic fuel tank to work an extended day without refueling.
- Oil drain valve and tube are standard.
- Compact size for installation on truck beds.
- Local/Remote switch and receptacle are factory installed for easy connection of the remote control.

## Stick Welding

- Optional K924-4 Remote Control Kit for stick welding. Includes Remote Box and 100 ft. (30 m) cable. Includes local/remote switch and receptacle for older machine control panels. Make fine current adjustments up to 100 ft. (30 m) from the machine.

## Wire Welding

- Optional Wire Feed Module for CV-wire welding. Increases productivity and reduces welding costs. Rated at 300 amps, 35 volts at 60% duty cycle, 325 amps, 34 volts at 35% duty cycle. Recommended wire feeder is the LN-25 Pipe. Other across-the-arc feeders include the LN-25 PRO or LN-15. Module has 14-pin connector for Lincoln Electric wire feeders that use a control cable with 115V AC input: LN-23P, LN-7 GMA and LN-8. Built-in contactor for “cold-tip” electrode. (When CV wire welding with optional Wire Feed Module, idler may need to be set to “high” position for low current processes.) **AVAILABLE MAY 2011**
- Optional K2464-1 remote control kit for stick and wire welding. For machines that have the Wire Feed Module installed. Make output adjustments up to 100 ft. (30 m) from the machine.

## KEY CONTROLS

- Coarse Current Dial
- Engine Hour Meter
- Oil Pressure Gauge  
Engine Temperature Gauge  
Battery Charging Ammeter
- Idler Control
- Run/Stop Switch
- Start Button
- Glow Plug Button
- Engine Protection Light
- 230V Circuit Breaker @ 15 amps
- Sealed GFCI Module
- Local/Remote Control Switch
- Local/Remote Receptacle
- 115V Circuit Breaker @ 20 Amps
- 115V AC Receptacles and Cover
- 230V AC Receptacles and Cover
- Fine Current and O.C.V. Adjustment for Stick Welding



- Engine has glow plugs for cold weather starting.
- Automatic shutdown protection for low oil pressure or high water temperature.
- Electronic engine idler extends engine life and reduces fuel consumption.
- Engine protection/control printed circuit board is trayed and potted to provide a robust environmental shield.
- Single-side engine access for easy routine maintenance.
- Attractive and durable pearlescent gray finish paint.
- Three-year Lincoln warranty (engine is warranted separately by the manufacturer).
- Manufactured under a quality system certified to ISO 9001 requirements and ISO 14001 environmental standards.
- Canadian Standards Association (CSA) certified.



*Cross-country pipe welding.*

### MACHINE SPECIFICATIONS

Product Name	Product Number	Description	Rated DC Output <sup>(1)</sup> Current/Voltage/ Duty Cycle	AC Power <sup>(2)</sup>	Dimensions H x W x L inches (mm)	Weight lbs.(kg)
SAE-300®	K3003-1	300 Amp DC Arc Welder with Dual Continuous Control™ of Output  All Copper Windings  Pure DC Welding Generator	NEMA Ratings 300A/32V/60% 250A/30V/100%  50-390 Amps  Continuous Adjustment of Voltage and Current  98V DC MAX OCV	3,000 Watts 60 Hz, AC  20 Amps @ 115V with Sealed GFCI Module  13 Amps @ 230V	37.1 x 24.0 x 65.0 (943 x 610 x 1651)  <i>To top of exhaust tube:</i> 45.5 (1156)	1416 (642)

<sup>(1)</sup> Based on a 10 minute period. High Altitude: Perkins® – For maximum rating, derate the output 2.5% to 3.5% for every 1,000 ft. (300 m).

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

### ENGINE SPECIFICATIONS

Engine Model	Description	Horsepower & Displacement	Ignition	Dry Capacities	Operating Speeds	Fuel Consumption
Perkins® 404D-22 Diesel <sup>(3)</sup> EPA Tier 4i	4 Cylinder 4 Cycle Water-Cooled Diesel Engine Cast Iron Cylinders Block/Crank Case Mechanical Governor	32.7 HP @ 1800 RPM  135.4 cu in (2.2 Ltrs)	Compression Ignited	FUEL: 16 Gals (60.6 Ltrs)	FULL LOAD 300A (1725 RPM)	1.4 Gals/Hr 5.2 Ltr/Hr
				OIL: 11.2 Qts (10.6 Ltrs)	HIGH IDLE 1,800 RPM	0.4 Gals/Hr 1.6 Ltr/Hr
				COOLANT: 9.5 Qts (9.0 Ltrs)	LOW IDLE 1,400 RPM	0.3 Gals/Hr 1.1 Ltr/Hr

<sup>(3)</sup> Perkins® warranty is 2 years/2,000 hours, all components, 3 years major components. See warranty for details.





115 Volt



#### GENERAL OPTIONS

##### Power Plug Kit

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

Order K802D



##### Spark Arrestor Kit

Attaches to muffler exhaust tube. Virtually eliminates spark emissions.

Order K903-1



##### Medium Welder Trailer

For heavy-duty road, off-road, plant and yard use. Includes pivoting jack stand, safety chains, and 13 in. (330.2 mm) wheels. Stiff .120 in. (3.0 mm) welded rectangular steel tube frame construction is phosphate etched and powder coat painted for superior rust and corrosion resistance. Low sway suspension gives outstanding stability with manageable tongue weight. Wheel bearings are packed with high viscosity, high pressure, low washout Lubriplate® grease. Includes a Duo-Hitch™ — a 2 in. (50.8 mm) Ball/Lunette Eye combination hitch. Overall width: 60 in. (1.5 m)

Order:

K2636-1 Trailer

K2639-1 Fender & Light Kit

K2640-1 Cable Rack



##### Stainless Steel Sheet Metal Kit

Stainless steel roof and doors. Also includes decals (mounted), door latches, door hooks, bumpers and all required mounting hardware. Fits K6090-9 and -10 Pipeliner® 200D, K1643-1 thru -10 Classic® 300D and SAE-300®.

Order K2423-1

#### STICK OPTIONS

##### Accessory Kit

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

Order K704



##### Remote Control

Remote control rheostat permits machine output changes up to 100 ft. (30 m) from the machine. Includes local/remote switch and receptacle for older machine control panels.

Order K924-4



#### TIG OPTIONS

##### PTA-26V TIG Torch

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

Order K1783-9



##### Magnum® Parts Kit for PTA-26V TIG Torch

Magnum® Parts Kit 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 pack.

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 welder and TIG Module controls.

Order K936-4



##### Control Cable Extension

Allows the TIG Module to be operated at distances up to 200 ft. (61.9 m) from the power source. 45 ft. (13.7 m) length.

Order K937-45



##### Arc Start Switch

Needed if an Amptrol™ is not used when TIG welding. Comes with a 25 ft. (7.6 m) cable. Attaches to the TIG torch for convenient finger control.

Order K814



##### Contactor Kit

For use with the TIG Module.

Order K938-1

#### WIRE FEEDER OPTIONS

##### Wire Feed Module

Provides constant voltage (CV) output with excellent arc stability for Innershield® welding and MIG welding. Easy installation. Recommended wire feeder is the LN-25 Pipe.

Order K623-1

AVAILABLE MAY 2011



##### Remote Control Kit (Stick & Wire)

For machines that have the wire feed module. Contains a rheostat for stick output, a potentiometer for wire output and 100 ft. (30 m) of control cable.

Order K2464-1



##### LN-25 Pipe Wire Feeder

Portable CC/CV unit for flux-cored and MIG welding with MAXTRAC® wire drive system. Includes Gas Solenoid & Internal Contactor. Has 83% reduced wire feed speed capability for 6 o'clock pipe welding with Innershield® wire and the K126™-12 gun (see below). Requires Wire Feed Module.

Order K2614-5



##### K126 PRO Innershield® Gun (for LN-25 Pipe)

For self-shielded wire with 15 ft. (4.5 m) cable. For .062-5/64 in. (1.6-2.0 mm) wire. Includes K466-10 Connector Kit.

Order K126-12



##### Drive Roll and Guide Tube Kit (for LN-25 Pipe)

For cored or solid steel wire.

Order KP1697-068

for .068-.072 in. (1.8 mm)

KP1697-5/64

for 5/64 in. (2.0 mm)



##### Magnum® PRO 350 Ready-Pak® 15 ft., .035-5/64 in.

Magnum® PRO MIG/flux-cored welding guns are rated 100% duty cycle. The guns are designed for high amperage, high duty cycle applications in extreme environments where heat-resistance and fast serviceability are key.

Order K2652-2-10-45



##### Drive Roll and Guide Tube Kit (for LN-25 Pipe)

For .035 in. and .045 in. (0.9 mm and 1.1 mm) solid steel wire.

Order KP1696-1



##### Magnum® SG Spool Gun

Hand held semiautomatic wire feeder. Requires SG Control Module.

Order K487-25



##### SG Control Module

The interface between the power source and the spool gun. Provides control of the wire speed and gas flow. For use with a spool gun.

Order K488



##### Input Cable (For SG Control Module)

For Lincoln engine power sources with 14-pin MS-type connection, separate 115V NEMA receptacles and output stud connections.

Order K691-10

## PRODUCT SPECIFICATIONS

Product Name	Product Number	Rated Output Current/Voltage/Duty Cycle	Output Range	Engine Model	Number of Cylinders	HP & Speed (RPM)	H x W x D inches (mm)	Net Weight lbs.(kg)
SAE-300®	K3003-1	250A/30V/100% 300A/32V/60%	50-390A DC 3,000 watts AC Power	Perkins® 404D-22 Diesel EPA Tier 4i	4	32.7 @ 1800	Machine Only 37.1 x 24.0 x 65.0 (943 x 610 x 1651)  <i>To top of exhaust tube:</i> 45.5 (1156)	1416 (642)

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

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