SA-250 PERKINS

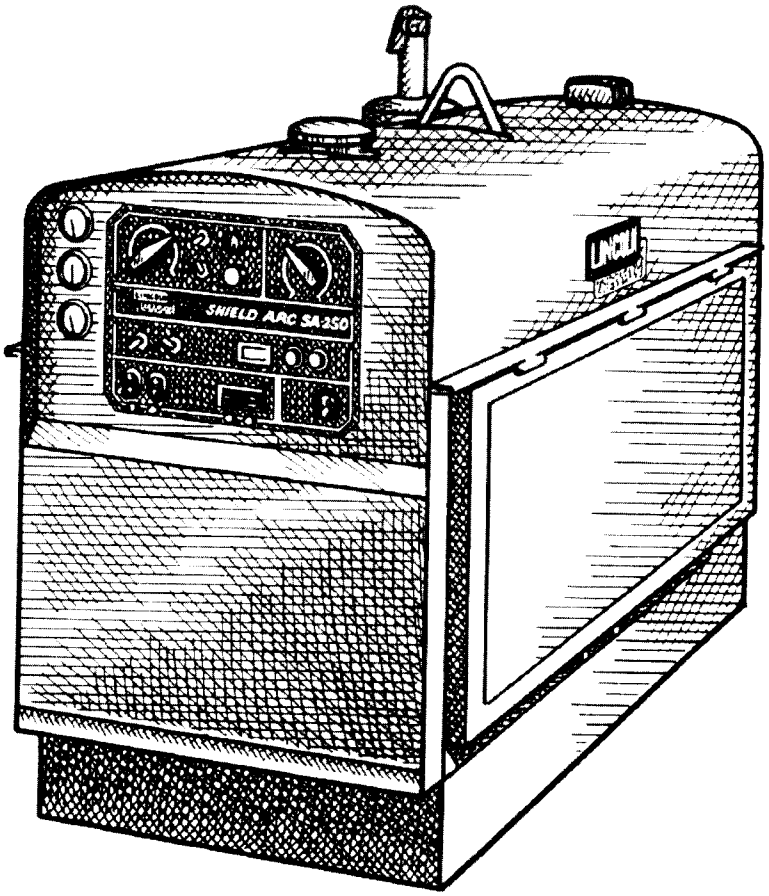
Diesel Engine Driven DC Arc Welding Power Source

IM518-A

March 1994

Safety Depends on You

Lincoln arc welding and cutting equipment is designed and built with safety in mind. However, your overall safety can be increased by proper installation ... and thoughtful operation on your part. **DO NOT INSTALL, OPERATE OR REPAIR THIS EQUIPMENT WITHOUT READING THIS MANUAL AND THE SAFETY PRECAUTIONS CONTAINED THROUGHOUT.** And, most importantly, think before you act and be careful.



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SPECIFICATIONS

Machine

Product Name	Ordering Information	Description	Rated Output Amps / Volts Duty Cycle	Current Range (Fine Adjustments in each Range)	Auxiliary Power	Dimensions & Weight H x W x L
SA-250 Perkins	K1283-4 (WFM Field-Installed)	(250 Amps) Arc Welder Stick / DC TIG Welding Pure DC Power Generator	Lincoln Rating 250A / 40V 60% Duty Cycle NEMA Rating 250A / 30V 60% Duty Cycle	40 - 325 Amps 220 - Max. 160 - 240 120 - 190 80 - 130 Min. - 90	3 kVA 115/230V, 60 Hz	43.1 x 28 x 67 in (1096 x 711 x 1702 mm) 1650 lbs (742.5 kg)
	K1283-5 (WFM Factory-Installed)					

(1) WFM = Wire Feed Module.

(2) Based on a 10 Minute Period.

Engine

Product Name	Description	Horsepower	Operating Speeds	Displacement	Capacities
Perkins D3.152	3 Cylinder, 4 Cycle, Water-Cooled Diesel Engine with Thermostart Glow Plug and Engine Protection	**Full Load:** 38.2 HP @ 1725 RPM	**Full Load:** 1725 RPM **High Idle:** 1800 RPM **Low Idle:** 1350 RPM	**152 Cu. in. (2.5 ltrs)**	**Fuel:** 15 gals (57 ltrs) **Oil:** 7.2 qts (6.9 ltrs) **Water:** 10 qts (9.5 ltrs)

GENERAL DESCRIPTION

The SA-250 is a heavy duty engine-driven DC arc welding power source capable of providing constant current output for stick welding or DC TIG welding. With the addition of the optional Wire Feed Module for K1283-4, the SA-250 will provide constant voltage output for running the LN-25, LN-23P or LN-7 wire feeders. The Wire Feed Module is factory installed on the K1283-5 SA-250.

The SA-250 has a current range of 40 - 325 DC amps with a 60% duty cycle at 250 amps/40 volts. The units are also capable of providing 3 kVA of 115/230 volt, 60 Hertz AC auxiliary power.

DESIGN SUMMARY

Control Panel

Both the engine and the welder controls are located on one recessed panel at the auxiliary power alternator end of the machine. The welder controls consist of a five step "Current Range Selector" switch and a "Fine Current Adjustment" rheostat. Each welder is equipped with a "Start" button and an "Idler Control" switch. The Perkins diesel uses a "Thermostart" button, and has a "Stop" control.

On this panel is also mounted an engine temperature gauge, a battery charging ammeter, an oil pressure gauge, and the three prong grounded type auxiliary power receptacle.

Copper Shunt Windings

For long life and dependable operation.

Engine Idler

The SA-250 is equipped with an electronic automatic engine idler. It automatically increases and decreases engine speed when starting and stopping welder or using auxiliary power. A built-in time delay permits changing electrodes before the engine slows to its low idle speed. The "Idler Control Switch" on the panel locks the idler in full speed position when desired.

Auxiliary Power

3.0 kVA of nominal 115/230V, 60 Hz. AC[1]. (See Optional Features for Power Plug Kits).

(1) Output voltage is within ± 10% at all loads up to rated capacity.

Welder Enclosures

The complete welder is rubber mounted on a rugged steel base.

The output terminals are placed at the side of the machine so that they are protected by the door. The output terminals are labeled (+) and (-).

Remote Control

K924-1 (for K1283-4, -5) (Field Installed). Provides a receptacle switch and remote control box with 100 ft cord for fine current and OCV adjustment at the welding site.

Cranking System

A 12 volt electric starter is standard.

Air Cleaner

Heavy duty two stage dry type.

Muffler

A muffler to reduce engine noise is standard on the diesel engine units.

Engine Hour Meter

A meter to record the hours of operation.

Diesel Engine Protection

The system shuts the engine down in the event of sudden low oil pressure or high coolant temperature.

OPTIONAL FEATURES

Accessory Set (K703)

Includes electrode and work cables, headshield, work clamp, and electrode holder.

Ether Start Kit (K793-1) for Perkins Engine

When frequent starting is expected below 10°F (-12°C), remove the "thermostart" system and install the optional ether start kit to provide maximum cold weather starting assistance. **Note:** The required ether tank **is not** provided with the kit and must be purchased locally. Ether starting should only be used as required since indiscriminate application will contribute to shortened engine life. (Available for field installation only).

Hi-Freq™ (K799)

Provides high frequency plus gas valve for DC TIG welding. (Request Publication E385).

Optional field installed water valve kit available. **Order K844.**

Linc-Thaw™ (L2964-5) Control Unit

Includes meter and fuses to protect welder when thawing frozen water pipes.

⚠ WARNING

Pipe Thawing IS NOT a CSA approved procedure. If not done properly, it can result in fire, explosion, damage to wiring which may make it unsafe, damage to pipes, burning up the welder, or other hazards.

Do not use a welder to thaw pipe before reviewing Lincoln Bulletin E695.1 (dated October 1987 or later.)

Mufflers

Mufflers are standard on the SA-250 Perkins.

Power Plug Kit (K802C)

- A power plug kit for the auxiliary power receptacles is available. (Provides a plug for each receptacle).

Trailer (K913)

Two wheeled highway trailer with steel, torsion-bar axle, 54 (137cm) wheel track. Low sway, low center-of-gravity. Sturdy tread plate platform. Choice of 3 hitches. Add on fender & light package. For highway use, consult applicable local laws regarding possible additional requirements.

Order: K913-1 Base Trailer
K913-2 Ball Hitch
K913-3 Lunette Eye Hitch
K913-4 Clevis Pin Hitch
K913-5 Fender & Light Kit

Wire Feed Module (K623-1)

The Wire Feed Module is field-installed on the K1283-4, and factory-installed on the K1283-5 to provide CV (constant voltage) output for semiautomatic welding. Output rated at 250 Amps at 35 Volts with a 60% Duty Cycle and 310 Amps at 32 Volts with a 35% Duty Cycle.