

Shield-Arc 500AS



Heavy duty diesel engine driven welder

600 amp 4 kVA AC power

LINCOLN[®]
ELECTRIC
THE WELDING EXPERTS

For Heavy Duty DC Mobile Arc Welding



Lincoln's Shield-Arc 500AS is both a rugged four cylinder, diesel engine driven 600 amp DC arc welder and 4kVA AC power generator. This robust diesel powered field welder has been designed and built specifically for rugged working conditions like cross country pipeline laying, mining, construction sites, civil engineering projects and on-site maintenance. Offering reliable pure DC arc welding performance with outstanding arc characteristics for all stick welding applications.

Shield-Arc power sources have an unmatched reputation among pipeliner's and other field welders on demanding jobs. It is a tried and trusted Lincoln design, refined over many years service and providing superb reliability even under the toughest operating conditions. The Perkins diesel engine provides ample reserve power for instant response to changing arc conditions, delivering optimum performance over years of service.

The 500AS is built in a heavy gauge steel case and it's classic A-frame design gives a rigid chassis, unbuilt strength and rugged construction maintains alignment and protects internal parts for long trouble free working life required to withstand the barsh conditions encountered on cross country pipelines. The 500AS can be mounted on trucks, skids and trailers or lifted to site locations by crane using the built-in lifting eye.

Specialised Lincoln design features make the 500AS the logical choice wherever welding requiers exacting tolerances and premium performance.

ADVANTAGE LINCOLN

- 600 amp DC engine driven welder.
- 4kVA 240 V or 2kVA 115 V 50Hz aux power.
- Proven generators with pure DC welding output.
- Designed for pipewelding and applications where arc performance is critical.
- Precise control of both current and open circuit voltage lets the operator select arc characteristics need for each job.
- Dual continuous control allows stepless variation of current from 60 to 600 amps.
- Ideal for on-site power source for carbon arc gouging.
- Heavy duty time tested welders of the industry.
- Lincoln "plus rated" exceeds NEMA
- Auxiliary power and welding available simultaneously.
- All day welding with a 64 litre fuel tank.
- Engine watcher, protects engine from running at excessively high temperatures, low oil level.
- Liquid cooled Perkin's diesel engine.

FEATURES

The 500AS welding generator exceeds the rigid rating requirements of AS1966.2 and NEMA. Special design features include laminated frame and pole pieces,

tightly-wound well-insulated windings, separate excitation, and advanced cooling systems.

To ensure maximum reliability in high and low extremes of ambient temperature and in high humidity, welder windings are double-dipped and baked, while all AC windings are triple-dipped. Field windings are fuse protected against burn out. Additionally, the DC armature is dynamically balanced to ensure smooth operation.

The **Dual Control System** time-saving Lincoln feature, permits independent control of welding current and voltage, allowing stepless variation of generator output to obtain the right arc characteristics and precise arc heat to suit the job in hand. Open circuit voltage and amperage can be varied continuously and independently of each other.

Controls are positive and cannot creep during use, avoiding arc variation during welding. Dual Continuous Control has many unique advantages in all applications, especially out-of-position field welding, and is essential for optimum performance in vertical down stove-pipe welding of pipelines. Up to 5.6mm electrodes may be used without arc popouts.

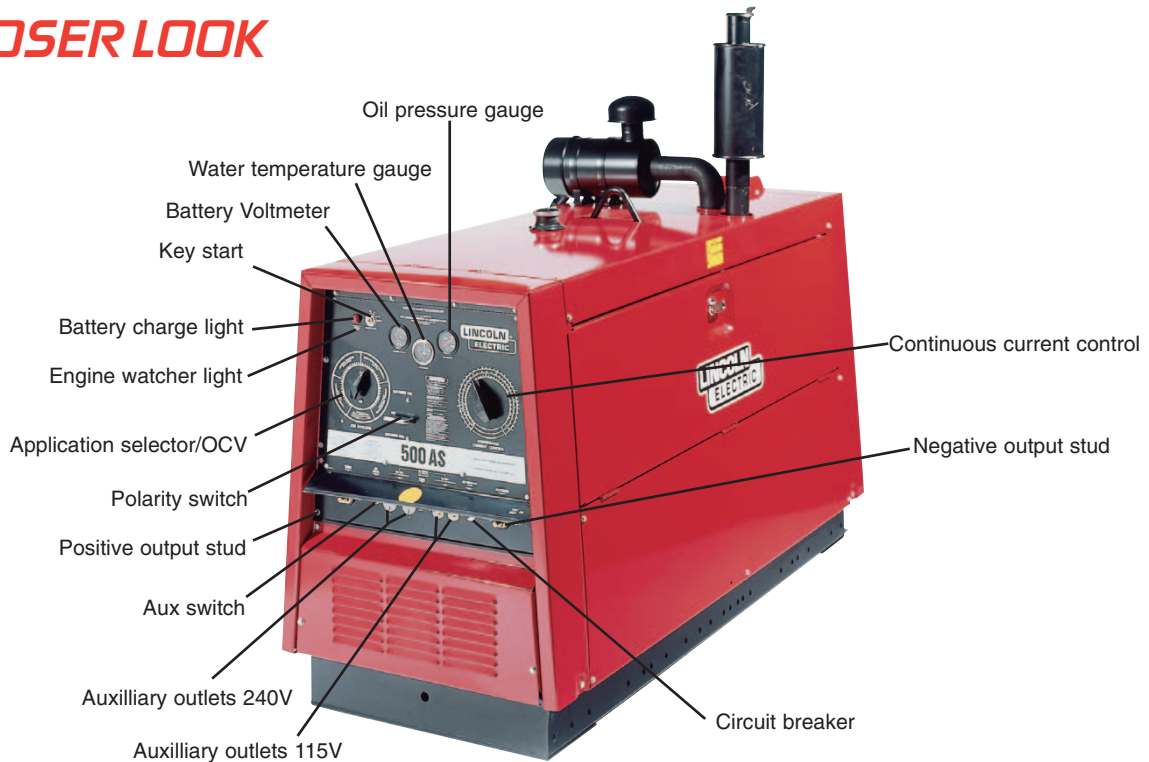
The **Polarity Switch** allows polarity change without swapping leads on terminals. It can also isolate the welding circuit — an important safety feature.

Base Frame - a channel section frame provides a rigid single base for both engine and generator, eliminating any risk of misalignment when the unit is moved or lifted by crane. Optional undercarriages bolt to the chassis frame.

Remote Current Control is separate, optional unit for remote control of welding current by the operator.

Shield-Arc 500AS

A CLOSER LOOK



Auxilliary Power - an AC alternator is standard and shares a common shaft with the DC generator. Stable welding current and auxiliary power supply are assured, even when used simultaneously, because they are isolated against inductive interference.

Protection against weather and excess currents is standard. Switched auxiliary outlets provide power for drills, angle grinders, etc. while welding.

Unique excitation circuits give a 60Hz stabilised AC voltage supply with minimum variation despite varying auxiliary and welding loads. Light globes will not flicker and fade nor will power tools lose speed even when an arc is struck.

Enough 240V auxiliary power is available to light up forty 100W incandescent globes. Specific AC auxiliary power output is 16.5 amps total current from 240 and 115 volt outlets; for example 10 amps at 240 volts and 6.5 amps at 115 volts.

Auxiliary power rating is continuous, providing the engine manufacturer's lubrication and maintenance schedules are adhered to.

Engine

Powered by the universally

acclaimed Perkins diesel, operating well within its rating. The Lincoln 500AS provides sustained high-output welding performance with minimum maintenance. It is dynamically balanced and vibration free.

And it's very economical to run. The engine is protected from running at excessively high temperatures and low oil levels by a cut-out.

Fuel Tank

64-litre fuel tank capacity permits at least one day's constant running. Large inlet assists rapid field refuelling.

Governor

Constant-speed type. Maintains steady engine speed for correct welding output — essential for producing top quality welds in pipeline and alloy steel fabrication, as well as many other critical applications.

Cooling

The pressure cooling system has ample capacity to ensure efficient

running in hot areas of Australia, the Middle East and Asia. Antifreeze is permissible in sub-zero locations.

Battery and Starting

A heavy duty 12V starter motor, alternator and battery ensure reliable key starts and allow easy on-site servicing.

Warranty

Three year worldwide warranty. The engine has the engine manufacturer's warranty.

Fuel - Large sediment bowl cartridge filter protects the engine and injection system.

Oil - Full-flow pressure system with replaceable filter.

Air - Heavy duty air cleaner, dry type.

Instruments

Charging circuit voltmeter, oil pressure gauge, water temperature gauge, Hour meter. Engine watcher protects the engine from running at excessive high temperatures and low oil levels by a cut-out.

Welder output (Amps)	Maximum permissible Auxiliary Power Load (Amps)
400 or less	16.5
400-450	12
450-500	8
500-600	4

TECHNICAL SPECIFICATIONS

Generator

Part Number	Output Range	Rated to AS1966.2 and NEMA	Lincoln 'Plus' rating Duty Cycle	Aux Power* 60Hz AC	Weight (dry) kg	Dimensions H x W x D mm
KA1353	60-600 Amp	400A,36V@60%	475A,40V@60% 380A,36V@100%	4kVA-240V or 2kVA-115V	880	1004 x 623 x 1701

* Any combination, max total current draw of 16.5 amps

Engine

Model	Cylinders	Cooling	Capacity	Power (rated to BS5514.1997)	Max operating inclination	Cooling	Governor
Perkins 1004-4 diesel	4	Liquid cooled	3.9 litre	45kW@1800rpm (61 B.h.p)	14°	Centrifugal pump	Mechanical on injector pump

Sound levels @ 7m

	No Load	Loaded
Standard	80dBA	82.5dBA
Sound reduced	75dBA	76.5dBA

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RECOMMENDED OPTIONS

Undercarriages (Two-wheeled)*

Basic Trailer with springs	Order KA1065
with springs & brakes	Order KA1066
Jockey wheel	Order KA1198
Mud guard kit	Order KA1069

Undercarriages (Four Wheeled)

With towbar, springs and steerable front wheels. Ring type coupling on towbar.

Order KA1037

* Undercarriages supplied with ring type coupling

Tropic Proofing - provides extra protection for service in high humidity environments. **Order T**

Sound Damping Kit - Factory fitted, or customer fitted kit is available for sound reduction. Kit **Order KA1047**
Factory Fitted **Order S**

CV Adaptor - provides constant voltage (CV) output with improved arc stability for Innershield welding. Also excellent for MIG welding. Easy installation. Recommended wire feeders are the LN-25 and LN-23P. **Order KA1208**

LN-25 Wire Feeder - Portable CC/CV unit for flux-cored and MIG welding.

Includes Gas Solenoid & Internal Contactor. Requires CV adapter.

Order K449

Accessory Kit - Contains 1 electrode holder, 1 ground clamp, 1 helmet, 1 wire brush, 1 chipping hammer
Order KIT400

Lead Kit - Contains one 10m electrode lead and one 9m ground lead, complete with lugs.
Order KIT1700

Remote Field Control - For current control up to 15m away from welder.

Order KA1021

High-Freq™ - provides high frequency plus a gas valve for DC TIG welding.
Order K799-1

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 responsibility, 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 requirements.

Subject to Change - This information is accurate to the best of our knowledge at the time of printing.

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