INSTALLATION

TECHNICAL SPECIFICATIONS - EAGLE™ 10,000 Plus (K2343-3)

INPUT - GASOLINE ENGINE									
Make/Model	Descriptio	n Horsepower	Operating Speed (RPM)	Displacement cu. in. (cu.cm.)	Starting System	Capacities			
Kohler CH23S, CH680 CH730	2 cylinder 4 Cycle Air-Cooled Gasoline Engine. Aluminum Al with Cast Ird Liners, Electronic Ignition	23 HP @ loy 3600 RPM on	High Idle 3700 Full Load 3500 Low Idle 2200	41.1(674)	12VDC Battery Electric Start Group 58 Battery (435 cold Cranking Amps)	Fuel: 12 Gal (45.4 L) Lubricating Oil: 2.0 Qts. (1.9 L)			
		RATED OUTPU	JT @ 104°F (40°C)- WELD	ER				
			Welding Output						
	DC Constant Current 225A / 25V / 40% DC Constant Current 210A / 25V / 100%								
	R	ATED OUTPU	Г @ 104°F (40)°C)- GENER	ATOR				
			Auxiliary Pow	er '					
	9,000 Watts Continuous, 60 Hz AC 10,500 Watts Surge, 60 Hz AC 120/240 Volts								
		RECEPTACLE	S AND CIRC	UIT BREAKE	RS				
(2) 120VAC D (1) 120/240VAC Full KVA	Duplex (5-20R) C Dual Voltage (14-50R)	AUXILIARY PC Two 20AMP fo (1) 40AMP fo	DWER CIRCUIT or Two Duplex R or Dual Voltage	BREAKER BATT eceptacle (2-pole)	cle 20AMP for Engine Battery Charging Circuit				
		PHYS	SICAL DIMEN	SIONS					
HEIGHT		WIDTH	C	DEPTH	MODEL / V	MODEL / WEIGHT			
30.00** in.	30.00** in.		42	.25 in.	Codes 11798 and below 514 lbs. (233kg.)				
762.0 mm		546.0 mm	10	73.0 mm	Code 12094				
** Top of enclosure, add 6.00"(152mm) for exhaust. 523 lbs. (237kg.)									
ENGINE COMPONENTS									
LUBRICATION VALVE LIFTERS		FUEL SYSTEM		GOVERNOR Mechanical Coverner					
with Full Flow I 5% Regulation	with Full Flow Filter 5% Regulation								
AIR CLEANERENGINE IDLERDual ElementAutomatic Idler		MUI Low noise M can be rotate long life, alur	MUFFLER Low noise Muffler: Top outlet can be rotated. Made from ong life, aluminized steel.		ENGINE PROTECTION Shutdown on low oil pressure.				

¹ Output rating in watts is equivalent to volt - amperes at unity factor.Output voltage is within +/-10% at all loads up to rated capacity. When welding available auxiliary power will be reduced.



SAFETY PRECAUTIONS

\Lambda WARNING

Do not attempt to use this equipment until you have thoroughly read the engine manufacturer's manual supplied with your welder. It includes important safety precautions, detailed engine starting, operating and maintenance instructions, and parts lists.



ELECTRIC SHOCK can kill.

- · Do not touch electrically live parts or
- electrode with skin or wet clothing.
- Always wear dry insulating gloves.



Use in open, well ventilated areas or vent exhaust outside.

MOVING PARTS can injure. Do not operate with doors open or guards off. Stop engine before servicing.

Keep away from moving parts.

See additional warning information at front of this operator's manual.

MACHINE GROUNDING

Because this portable engine driven welder or generator creates it's own power, it is not necessary to connect it's frame to an earth ground, unless the machine is connected to premises wiring (your home, shop, etc.).

To prevent dangerous electric shock, other equipment to which this engine driven welder supplies power must:

· be grounded to the frame of the welder using a grounded type plug, or be double insulated.

Do not ground the machine to a pipe that carries explosive or combustible material.

When this welder is mounted on a truck or trailer, it's frame must be electrically bonded to the metal frame of the vehicle. Use a #8 or larger copper wire connected between the machine grounding stud and the frame of the vehicle.

Where this engine driven welder is connected to premises wiring such as that in your home or shop, it's frame must be connected to the system earth ground. See further connection instructions in the section entitled "Standby Power Connections", as well as the article on grounding in the latest National Electrical Code and the local code.

In general, if the machine is to be grounded, it should be connected with a #8 or larger copper wire to a solid earth ground such as a metal water pipe going into the ground for at least ten feet and having no insulated joints, or to the metal framework of a building which has been effectively grounded. The National Electrical Code lists a number of alternate means of grounding electrical equipment. A machine grounding stud marked with the symbol (__) is provided on the front of the welder.

SPARK ARRESTER

Some federal, state, or local laws may require that gasoline engines be equipped with exhaust spark arresters when they are operated in certain locations where unarrested sparks may present a fire hazard. The standard muffler included with this welder does not qualify as a spark arrester. When required by local regulations, the K1898-1 spark arrester must be installed and properly maintained.

An incorrect arrester may lead to damage to the engine or adversely affect performance.

TOWING

The recommended trailer for use with this equipment for road, in-plant and yard towing by a vehicle⁽¹⁾ is Lincoln's K2635-1. If the user adapts a non-Lincoln trailer, he must assume responsibility that the method of attachment and usage does not result in a safety hazard nor damage the welding equipment. Some of the factors to be considered are as follows:

- 1. Design capacity of trailer vs. weight of Lincoln equipment and likely additional attachments.
- 2. Proper support of, and attachment to, the base of the welding equipment so there will be no undue stress to the framework.





- 3. Proper placement of the equipment on the trailer to insure stability side to side and front to back when being moved and when standing by itself while being operated or serviced.
- Typical conditions of use, i.e., travel speed; roughness of surface on which the trailer will be operated; environmental conditions.
- 5. Conformance with federal, state and local laws⁽¹⁾
- Consult applicable federal, state and local laws regarding specific requirements for use on public highways.

VEHICLE MOUNTING

A WARNING

Improperly mounted concentrated loads may cause unstable vehicle handling and tires or other components to fail.

- Only transport this Equipment on serviceable vehicles which are rated and designed for such loads.
- Distribute, balance and secure loads so vehicle is stable under conditions of use.
- Do not exceed maximum rated loads for components such as suspension, axles and tires.
- Mount equipment base to metal bed or frame of vehicle.
- Follow vehicle manufacturer's instructions.

PRE-OPERATION SERVICE

READ the engine operating and maintenance instructions supplied with this machine.

- Stop engine while fueling.
- Do not smoke when fueling.
- Keep sparks and flame away from tank.
 - Do not leave unattended while fueling.

GASOLINE can cause fire or explosion.

 Wipe up spilled fuel and allow fumes to clear before starting
engine.

on. • Do not overfill tank, fuel expansion may cause overflow. GASOLINE FUEL ONLY FUEL 📄

Fill the fuel tank with clean, fresh, lead-free gasoline. Observe fuel gauge while filling to prevent overfilling.

Stop fueling once the fuel gauge reads full. Do not top off tank. Be sure to leave filler neck empty to allow room for expansion.



\Lambda WARNING



Damage to the fuel tank may cause fire or explosion. Do <u>not</u> drill holes in the EAGLE[™] 10,000 PLUS base or weld to the EAGLE[™] 10,000 PLUS base.

LUBRICATION SYSTEM CAPACITY (INCLUDING FILTER) Kohler CH23S, CH680, CH730 - 2.0 Quarts (1.9 Liters)

The EAGLE[™] 10,000 Plus is shipped with the engine crankcase filled with SAE 10W-30 oil. Check the oil level before starting the engine. If it is not up to the full mark on the dip stick, add oil as required. Make certain that the oil filler cap is tightened securely. Refer to the engine Owner's Manual for specific oil recommendations.

BATTERY CONNECTIONS

Let *i* Use caution as the electrolyte is a strong acid that can burn skin and damage eyes.

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This welder is shipped with the negative battery cable disconnected. Make sure that the Engine Switch is in the "STOP" position and attach the disconnected cable securely to the negative battery terminal before attempting to operate the machine. If the battery is discharged and does not have enough power to start the engine, see the battery charging instructions in the Battery section.

NOTE: This machine is furnished with a wet charged battery; if unused for several months, the battery may require a booster charge. Be careful to charge the battery with the correct polarity.

ELECTRIC

WELDING OUTPUT CABLES

With the engine off, connect the electrode and work cables to the studs provided. These connections should be checked periodically and tightened if necessary. Loose connections will result in overheating of the output studs.

When welding at a considerable distance from the welder, be sure you use ample size welding cables. Listed below are copper cable sizes recommended for the rated current and duty cycle. Lengths stipulated are the distance from the welder to work and back to the welder again. Cable sizes are increased for greater lengths primarily for the purpose of minimizing cable voltage drop.

TOTAL COMBINED LENGTH OF ELECTRODE AND WORK CABLES					
	225 Amps <u>100% Duty Cycle</u>				
0-100 Ft. (0-31m)	1 AWG				
100-150 Ft. (31-46m)	1 AWG				
150-200 Ft. (46-61m)	1/0 AWG				

ANGLE OF OPERATION

Internal combustion engines are designed to run in a level condition which is where the optimum performance is achieved. The maximum angle of operation for the engine is 15 degrees from horizontal in any direction. If the engine is to be operated at an angle, provisions must be made for checking and maintaining the oil at the normal (FULL) oil capacity in the crankcase in a level condition.

When operating at an angle, the effective fuel capacity will be slightly less than the specified 12 Gal. (45 L).

LIFTING

The EAGLE[™] 10,000 Plus weighs approximately 595lbs. (269.9kg) with a full tank of gasoline. A lift bail is mounted to the machine and should always be used when lifting the machine.

ADDITIONAL SAFETY PRECAUTION

🏠 WARNING

• Lift only with equipment of adequate lifting capacity.



- Be sure machine is stable when lifting.
- Do not lift this machine using lift bail if it is equipped with a heavy accessory such as trailer or gas cylinder.

FALLING EQUIPMENT can

- Do not lift machine if lift bail is damaged.
- cause injury. •
- Do not operate machine while suspended from lift bail.

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HIGH ALTITUDE OPERATION

At higher altitudes, Welder output de-rating may be necessary. For maximum rating, de-rate the welder output 3.5% for every 1000 ft. (305m) above 3000 ft. (914m). If operation will consistently be at altitudes above 5,000 ft. (1525m), a carburetor jet designed for high altitudes should be installed. This will result in better fuel economy, cleaner exhaust and longer spark plug life. It will not give increased power. Contact your local authorized engine service shop for high altitude jet kits that are available from the engine manufacturer.

A CAUTION

Do not operate with a high altitude jet installed at altitudes below 5000 ft. (1525m). This will result in the engine running too lean and result in higher engine operating temperatures which can shorten engine life.

MUFFLER OUTLET PIPE

Using the clamp provided secure the outlet pipe to the outlet tube with the pipe positioned such that it will direct the exhaust in the desired direction. Tighten using a 9/16" socket or wrench.



LOCATION / VENTILATION

The welder should be located to provide an unrestricted flow of clean, cool air to the cooling air inlets and to avoid heated air coming out of the welder recirculating back to the cooling air inlet. Also, locate the welder so that engine exhaust fumes are properly vented to an outside area.

STACKING

EAGLE[™] 10,000 Plus machines cannot be stacked.

CONNECTION OF K930-2 TIG MODULE TO THE EAGLE™ 10,000 PLUS.

The TIG Module is an accessory that provides high frequency and shielding gas control for DC GTAW (TIG) welding. See IM528 supplied with the TIG Module for installation instructions.

NOTE: The TIG Module does not require the use of a high frequency bypass capacitor. However, if the EAGLETM 10,000 Plus is used with any other high frequency equipment, the bypass capacitor must be installed, order kit T12246.

INSTRUCTIONS ADDITIONAL SAFETY PRECAUTIONS

Always operate the welder with the roof and case sides in place as this provides maximum protection from moving parts and assures proper cooling air flow.

Read and understand all Safety Precautions before operating this machine. Always follow these and any other safety procedures included in this manual and in the Engine Owner's Manual.



WELDER OPERATION WELDER OUTPUT

- Maximum Open Circuit Voltage at 3700 RPM is 80 Volts RMS.
- Duty Cycle is the percentage of time the load is being applied in a 10 minute period. For example, a 60% duty cycle represents 6 minutes of load and 4 minutes of no load in a 10 minute period. Duty Cycle for the EAGLE[™] 10,000 Plus is 100%.

EAGLE™ 10,000 Plus					
Constant Current	210 Amps DC @ 25 Volts				

AUXILIARY POWER

The EAGLE[™] 10,000 Plus can provide up to 9,000 watts of 120/240 volts AC, single phase 60Hz power for continuous use, and up to 10,500 watts of 120/240 volts AC, single phase 60Hz power surge use. The front of the machine includes three receptacles for connecting the AC power plugs; one 50 amp 120/240 volt NEMA 14-50R receptacle and two 20 amp 120 volt NEMA 5-20R receptacles. Output voltage is within +/-10% at all loads up to rated capacity.

All auxiliary power is protected by circuit breakers. The 120V has 20 Amp circuit breakers for each duplex receptacle. The 120/240V Single Phase has a 40 Amp 2-pole Circuit Breaker that disconnects both hot leads simultaneously.

Do not connect any plugs that connect to the power receptacles in parallel.

Start the engine and set the "IDLER" control switch to the desired operating mode. Set the "CONTROL" to 10. Voltage is now correct at the receptacles for auxiliary power.

120/240 VOLT DUAL VOLTAGE RECEPTACLE

The 120/240 volt receptacle can supply up to 38 amps of 240 volt power to a two wire circuit, up to 38 amps of 120 volts power from each side of a three wire circuit (up to 76 amps total). Do not connect the 120 volt circuits in parallel. Current sensing for the automatic idle feature is only in one leg of the three wire circuit as shown in the following column.



*Current Sensing for Automatic Idle. (Receptacle viewed from front of Machine)

120 V DUPLEX RECEPTACLES

The 120V auxiliary power receptacles should only be used with three wire grounded type plugs or approved double insulated tools with two wire plugs.

The current rating of any plug used with the system must be at least equal to the current load through the associated receptacle.

MOTOR STARTING

Most 1.5 hp AC single phase motors can be started if there is no load on the motor or other load connected to the machine, since the full load current rating of a 1.5 hp motor is approximately 20 amperes (10 amperes for 240 volt motors). The motor may be run at full load when plugged into only one side of the duplex receptacle. Larger motors through 2 hp can be run provided the receptacle rating as previously stated is not exceeded. This may necessitate 240V operation only.

Current	Voltage	Load		Maximum Allowable Cord Length in ft. (m) for Conductor Size										
(Amps)	Volts	(Watts)	14 /	AWG	12 /	AWG	10 A	AWG	8 A	WG	6 A	WG	4 A	WG
15	120	1800	30	(9)	40	(19)	75	(23)	125	(38)	175	(53)	300	(91)
20	120	2400			30	(9)	50	(15)	88	(27)	138	(42)	225	(69)
15	240	3600	60	(18)	75	(23)	150	(46)	225	(69)	350	(107)	600	(183)
20	240	4800			60	(18)	100	(30)	175	(53)	275	(84)	450	(137)
38	240	9000					50	(15)	90	(27)	150	(46)	225	(69)
Conductor size is based on maximum 2.0% voltage drop.														

EAGLE™ 10,000 Plus Extension Cord Length Recommendations (Use the shortest length extension cord possible sized per the following table.)

INSTALLATION

TABLE Ilyn ELECTRICAL DEVICE USE WITH THE EAGLE™ 10,000 Plus.						
Туре	Common Electrical Devices	Possible Concerns				
Resistive	Heaters, toasters, incandescent light bulbs, electric range, hot pan, skillet, coffee maker.	NONE				
Capacitive	TV sets, radios, microwaves, Appliances with electrical control.	Voltage spikes or high voltage regulation can cause the capaci- tative elements to fail. Surge protection, transient protection, and additional loading is recom- mended for 100% fail-safe oper- ation. DO NOT RUN THESE DEVICES WITHOUT ADDI- TIONAL RESISTIVE TYPE LOADS.				
Inductive	Single-phase induction motors, Drills, well pumps, grinders, small Refrigerators, weed and hedge Trimmers	These devices require large Current inrush for starting. Some synchronous motors may be frequency sensitive to attain maximum output torque, but they SHOULD BE SAFE from any frequency induced failures.				
Capacitive/Inductive	Computers, high resolution TV sets, Complicated electrical equipment.	An inductive type line condition- er along with transient and surge protection is required, and liabilities still exist. DO NOT USE THESE DEVICES WITH A EAGLE [™] 10,000 Plus				
The Lincoln Electric Company is not responsible for any damage to electrical components improperly connected to the EAGLE™ 10,000 Plus.						

AUXILIARY POWER WHILE WELDING

Simultaneous welding and power loads are permitted by following Table I. The permissible currents shown assume that current is being drawn from either the 120V or 240V supply (not both at the same time). Also, the "Output Control" is set at "10" for maximum auxiliary power.

TABLE I SIMULTANEOUS WELDING AND POWER							
Output Selector Setting	Permissible Power Watts (Unity Power Factor)	Permissible Auxiliary Current in Amperes @ 120V *-or- @ 240V					
Max. Stick Setting	None	0	0				
145 Stick Setting	3450	32**	16				
90 Stick Setting	6000	50**	25				
No Welding	9000	76**	38				

* Each duplex receptacle is limited to 20 amps.

**Not to exceed 40A per 120VAC branch circuit when Splitting the 240 VAC output.

STANDBY POWER CONNECTIONS

The EAGLE[™] 10,000 Plus is suitable for temporary, standby, or emergency power using the engine manufacturer's recommended maintenance schedule.

The EAGLE[™] 10,000 Plus can be permanently installed as a standby power unit for 240V-3 wire, single phase 38 ampere service.

(Connections must be made by a licensed electrician who can determine how the 120/240V power can be adapted to the particular installation and comply with all applicable electrical codes.) The following information can be used as a guide by the electrician for most applications (refer also to the connection diagram shown in Figure 1.) Install a double pole, double throw switch between the power company meter and the premises disconnect.

Switch rating must be the same or greater than the customer's premises disconnect and service overcurrent protection.

- Take necessary steps to assure load is limited to the capacity of the EAGLE[™]10,000 Plus by installing a 40 amp 240V double pole circuit breaker. Maximum rated load for the 240V auxiliary is 38 amperes. Loading above 38 amperes will reduce output voltage below the allowable -10% of rated voltage which may damage appliances or other motor-driven equipment.
- 3. Install a 50 amp 120/240V plug (NEMA type 14-50) to the Double Pole Circuit Breaker using No. 8, 4 conductor cable of the desired length. (The 50 amp 120/240V plug is available in the optional plug kit.)
- 4. Plug this cable into the 50 amp 120/240V receptacle on the EAGLE[™] 10,000 Plus case front.

INSTALLATION Figure 1

CONNECTION OF EAGLE™ 10,000 Plus TO PREMISES WIRING



A WARNING

Connection of EAGLE™ 10,000 Plus to premises wiring must be done by a licensed electrician and must comply with the National Electrical Code and all other applicable electrical codes.