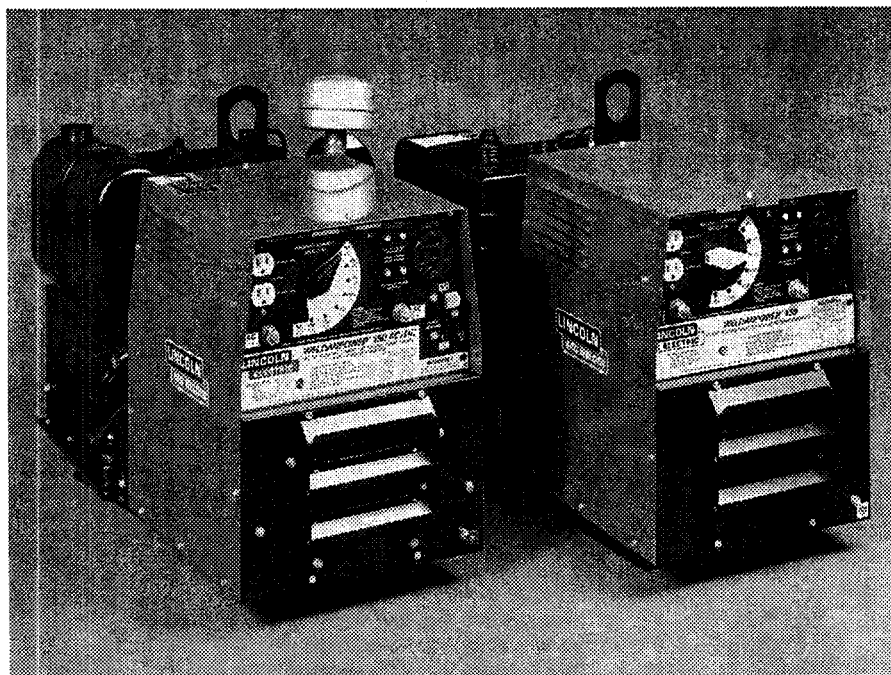


WELDANPOWER® 150 AND AC/DC 150

July 1995

For use with machines having Code Numbers: **10143 and above****COMBINATION
ARC WELDING POWER SOURCES
AND 4500 WATT AC POWER GENERATORS****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.



This manual covers equipment which is obsolete and no longer in production by The Lincoln Electric Co. Specifications and availability of optional features may have changed.

IM413
July, 1995
WeldanPower 150 and 150 AC/dc
10143; 10144; 10145; 10146

OPERATOR'S MANUAL

World's Leader in Welding and Cutting Products



Premier Manufacturer of Industrial Motors

Sales and Service through Subsidiaries and Distributors Worldwide
22801 St. Clair Ave. Cleveland, Ohio 44117-1199 U.S.A. Tel. (216) 481-8100

⚠ WARNING

⚠ CALIFORNIA PROPOSITION 65 WARNINGS ⚠

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

The Above For Diesel Engines

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

The Above For Gasoline Engines

ARC WELDING CAN BE HAZARDOUS. PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACEMAKER WEARERS SHOULD CONSULT WITH THEIR DOCTOR BEFORE OPERATING.

Read and understand the following safety highlights. For additional safety information, it is strongly recommended that you purchase a copy of "Safety in Welding & Cutting - ANSI Standard Z49.1" from the American Welding Society, P.O. Box 351040, Miami, Florida 33135 or CSA Standard W117.2-1974. A Free copy of "Arc Welding Safety" booklet E205 is available from the Lincoln Electric Company, 22801 St. Clair Avenue, Cleveland, Ohio 44117-1199.

BE SURE THAT ALL INSTALLATION, OPERATION, MAINTENANCE AND REPAIR PROCEDURES ARE PERFORMED ONLY BY QUALIFIED INDIVIDUALS.



FOR ENGINE powered equipment.

1.a. Turn the engine off before troubleshooting and maintenance work unless the maintenance work requires it to be running.



1.b. Operate engines in open, well-ventilated areas or vent the engine exhaust fumes outdoors.



1.c. Do not add the fuel near an open flame welding arc or when the engine is running. Stop the engine and allow it to cool before refueling to prevent spilled fuel from vaporizing on contact with hot engine parts and igniting. Do not spill fuel when filling tank. If fuel is spilled, wipe it up and do not start engine until fumes have been eliminated.



1.d. Keep all equipment safety guards, covers and devices in position and in good repair. Keep hands, hair, clothing and tools away from V-belts, gears, fans and all other moving parts when starting, operating or repairing equipment.

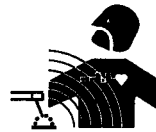
1.e. In some cases it may be necessary to remove safety guards to perform required maintenance. Remove guards only when necessary and replace them when the maintenance requiring their removal is complete. Always use the greatest care when working near moving parts.

1.f. Do not put your hands near the engine fan. Do not attempt to override the governor or idler by pushing on the throttle control rods while the engine is running.

1.g. To prevent accidentally starting gasoline engines while turning the engine or welding generator during maintenance work, disconnect the spark plug wires, distributor cap or magneto wire as appropriate.



1.h. To avoid scalding, do not remove the radiator pressure cap when the engine is hot.



ELECTRIC AND MAGNETIC FIELDS may be dangerous

2.a. Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding current creates EMF fields around welding cables and welding machines

2.b. EMF fields may interfere with some pacemakers, and welders having a pacemaker should consult their physician before welding.

2.c. Exposure to EMF fields in welding may have other health effects which are now not known.

2.d. All welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:

2.d.1. Route the electrode and work cables together - Secure them with tape when possible.

2.d.2. Never coil the electrode lead around your body.

2.d.3. Do not place your body between the electrode and work cables. If the electrode cable is on your right side, the work cable should also be on your right side.

2.d.4. Connect the work cable to the workpiece as close as possible to the area being welded.

2.d.5. Do not work next to welding power source.

Mar '95

WELDPower 150 & AC/DC 150





ELECTRIC SHOCK can kill.

- 3.a. The electrode and work (or ground) circuits are electrically "hot" when the welder is on. Do not touch these "hot" parts with your bare skin or wet clothing. Wear dry, hole-free gloves to insulate hands.
- 3.b. Insulate yourself from work and ground using dry insulation. Make certain the insulation is large enough to cover your full area of physical contact with work and ground.
- In addition to the normal safety precautions, if welding must be performed under electrically hazardous conditions (in damp locations or while wearing wet clothing; on metal structures such as floors, gratings or scaffolds; when in cramped positions such as sitting, kneeling or lying, if there is a high risk of unavoidable or accidental contact with the workplace or ground) use the following equipment:**
- Semiautomatic DC Constant Voltage (Wire) Welder.
 - DC Manual (Stick) Welder.
 - AC Welder with Reduced Voltage Control.
- 3.c. In semiautomatic or automatic wire welding, the electrode, electrode reel, welding head, nozzle or semiautomatic welding gun are also electrically "hot".
- 3.d. Always be sure the work cable makes a good electrical connection with the metal being welded. The connection should be as close as possible to the area being welded.
- 3.e. Ground the work or metal to be welded to a good electrical (earth) ground.
- 3.f. Maintain the electrode holder, work clamp, welding cable and welding machine in good, safe operating condition. Replace damaged insulation.
- 3.g. Never dip the electrode in water for cooling.
- 3.h. Never simultaneously touch electrically "hot" parts of electrode holders connected to two welders because voltage between the two can be the total of the open circuit voltage of both welders.
- 3.i. When working above floor level, use a safety belt to protect yourself from a fall should you get a shock.
- 3.j. Also see Items 6.c. and 8.



ARC RAYS can burn.

- 4.a. Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing open arc welding. Headshield and filter lens should conform to ANSI Z87.1 standards.
- 4.b. Use suitable clothing made from durable flame-resistant material to protect your skin and that of your helpers from the arc rays.
- 4.c. Protect other nearby personnel with suitable, non-flammable screening and/or warn them not to watch the arc nor expose themselves to the arc rays or to hot spatter or metal.



FUMES AND GASES can be dangerous.

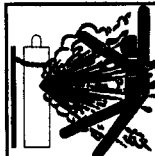
- 5.a. Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. When welding, keep your head out of the fume. Use enough ventilation and/or exhaust at the arc to keep fumes and gases away from the breathing zone. **When welding with electrodes which require special ventilation such as stainless or hard facing (see instructions on container or MSDS) or on lead or cadmium plated steel and other metals or coatings which produce highly toxic fumes, keep exposure as low as possible and below Threshold Limit Values (TLV) using local exhaust or mechanical ventilation. In confined spaces or in some circumstances, outdoors, a respirator may be required. Additional precautions are also required when welding on galvanized steel.**
- 5.b. Do not weld in locations near chlorinated hydrocarbon vapors coming from degreasing, cleaning or spraying operations. The heat and rays of the arc can react with solvent vapors to form phosgene, a highly toxic gas, and other irritating products.
- 5.c. Shielding gases used for arc welding can displace air and cause injury or death. Always use enough ventilation, especially in confined areas, to insure breathing air is safe.
- 5.d. Read and understand the manufacturer's instructions for this equipment and the consumables to be used, including the material safety data sheet (MSDS) and follow your employer's safety practices. MSDS forms are available from your welding distributor or from the manufacturer.
- 5.e. Also see item 1.b.

Mar '95



WELDING SPARKS can cause fire or explosion.

- 6.a. Remove fire hazards from the welding area. If this is not possible, cover them to prevent the welding sparks from starting a fire. Remember that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Avoid welding near hydraulic lines. Have a fire extinguisher readily available.
- 6.b. Where compressed gases are to be used at the job site, special precautions should be used to prevent hazardous situations. Refer to "Safety in Welding and Cutting" (ANSI Standard Z49.1) and the operating information for the equipment being used.
- 6.c. When not welding, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.
- 6.d. Do not heat, cut or weld tanks, drums or containers until the proper steps have been taken to insure that such procedures will not cause flammable or toxic vapors from substances inside. They can cause an explosion even though they have been "cleaned". For information, purchase "Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping That Have Held Hazardous Substances", AWS F4.1 from the American Welding Society (see address above).
- 6.e. Vent hollow castings or containers before heating, cutting or welding. They may explode.
- 6.f. Sparks and spatter are thrown from the welding arc. Wear oil free protective garments such as leather gloves, heavy shirt, cuffless trousers, high shoes and a cap over your hair. Wear ear plugs when welding out of position or in confined places. Always wear safety glasses with side shields when in a welding area.
- 6.g. Connect the work cable to the work as close to the welding area as practical. Work cables connected to the building framework or other locations away from the welding area increase the possibility of the welding current passing through lifting chains, crane cables or other alternate circuits. This can create fire hazards or overheat lifting chains or cables until they fail.
- 6.h. Also see item 1.c.



CYLINDER may explode if damaged.

- 7.a. Use only compressed gas cylinders containing the correct shielding gas for the process used and properly operating regulators designed for the gas and pressure used. All hoses, fittings, etc. should be suitable for the application and maintained in good condition.
- 7.b. Always keep cylinders in an upright position securely chained to an undercarriage or fixed support.
- 7.c. Cylinders should be located:
 - Away from areas where they may be struck or subjected to physical damage.
 - A safe distance from arc welding or cutting operations and any other source of heat, sparks, or flame.
- 7.d. Never allow the electrode, electrode holder or any other electrically "hot" parts to touch a cylinder.
- 7.e. Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.
- 7.f. Valve protection caps should always be in place and hand tight except when the cylinder is in use or connected for use.
- 7.g. Read and follow the instructions on compressed gas cylinders, associated equipment, and CGA publication P-1, "Precautions for Safe Handling of Compressed Gases in Cylinders," available from the Compressed Gas Association 1235 Jefferson Davis Highway, Arlington, VA 22202.



FOR ELECTRICALLY powered equipment.

- 8.a. Turn off input power using the disconnect switch at the fuse box before working on the equipment.
- 8.b. Install equipment in accordance with the U.S. National Electrical Code, all local codes and the manufacturer's recommendations.
- 8.c. Ground the equipment in accordance with the U.S. National Electrical Code and the manufacturer's recommendations.

Mar '95

PRÉCAUTIONS DE SÛRETÉ

Pour votre propre protection lire et observer toutes les instructions et les précautions de sûreté spécifiques qui paraissent dans ce manuel aussi bien que les précautions de sûreté générales suivantes:

Sûreté Pour Soudage A L'Arc

1. Protégez-vous contre la secousse électrique:
 - a. Les circuits à l'électrode et à la pièce sont sous tension quand la machine à souder est en marche. Eviter toujours tout contact entre les parties sous tension et la peau nue ou les vêtements mouillés. Porter des gants secs et sans trous pour isoler les mains.
 - b. Faire très attention de bien s'isoler de la masse quand on soude dans des endroits humides, ou sur un plancher métallique ou des grilles métalliques, principalement dans les positions assis ou couché pour lesquelles une grande partie du corps peut être en contact avec la masse.
 - c. Maintenir le porte-électrode, la pince de masse, le câble de soudage et la machine à souder en bon et sûr état de fonctionnement.
 - d. Ne jamais plonger le porte-électrode dans l'eau pour le refroidir.
 - e. Ne jamais toucher simultanément les parties sous tension des porte-électrodes connectés à deux machines à souder parce que la tension entre les deux pinces peut être le total de la tension à vide des deux machines.
 - f. Si on utilise la machine à souder comme une source de courant pour soudage semi-automatique, ces précautions pour le porte-électrode s'appliquent aussi au pistolet de soudage.
2. Dans le cas de travail au dessus du niveau du sol, se protéger contre les chutes dans le cas où on recoit un choc. Ne jamais enrouler le câble-électrode autour de n'importe quelle partie du corps.
3. Un coup d'arc peut être plus sévère qu'un coup de soleil, donc:
 - a. Utiliser un bon masque avec un verre filtrant approprié ainsi qu'un verre blanc afin de se protéger les yeux du rayonnement de l'arc et des projections quand on soude ou quand on regarde l'arc.
 - b. Porter des vêtements convenables afin de protéger la peau de soudeur et des aides contre le rayonnement de l'arc.
 - c. Protéger l'autre personnel travaillant à proximité au soudage à l'aide d'écrans appropriés et non-inflammables.
4. Des gouttes de laitier en fusion sont émises de l'arc de soudage. Se protéger avec des vêtements de protection libres de l'huile, tels que les gants en cuir, chemise épaisse, pantalons sans revers, et chaussures montantes.
5. Toujours porter des lunettes de sécurité dans la zone de soudage. Utiliser des lunettes avec écrans latéraux dans les zones où l'on pique le laitier.

6. Eloigner les matériaux inflammables ou les recouvrir afin de prévenir tout risque d'incendie dû aux étincelles.
7. Quand on ne soude pas, poser la pince à un endroit isolé de la masse. Un court-circuit accidentel peut provoquer un échauffement et un risque d'incendie.
8. S'assurer que la masse est connectée le plus près possible de la zone de travail qu'il est pratique de le faire. Si on place la masse sur la charpente de la construction ou d'autres endroits éloignés de la zone de travail, on augmente le risque de voir passer le courant de soudage par les chaînes de levage, câbles de grue, ou autres circuits. Cela peut provoquer des risques d'incendie ou d'échauffement des chaînes et des câbles jusqu'à ce qu'ils se rompent.
9. Assurer une ventilation suffisante dans la zone de soudage. Ceci est particulièrement important pour le soudage de tôles galvanisées plombées, ou cadmiées ou tout autre métal qui produit des fumées toxiques.
10. Ne pas souder en présence de vapeurs de chlore provenant d'opérations de dégraissage, nettoyage ou pistolage. La chaleur ou les rayons de l'arc peuvent réagir avec les vapeurs du solvant pour produire du phosgène (gas fortement toxique) ou autres produits irritants.
11. Pour obtenir de plus amples renseignements sur la sûreté, voir le code "Code for safety in welding and cutting" CSA Standard W 117.2-1974.

PRÉCAUTIONS DE SÛRETÉ POUR LES MACHINES À SOUDER À TRANSFORMATEUR ET À REDRESSEUR

1. Relier à la terre le châssis du poste conformément au code de l'électricité et aux recommandations du fabricant. Le dispositif de montage ou la pièce à souder doit être branché à une bonne mise à la terre.
2. Autant que possible, l'installation et l'entretien du poste seront effectués par un électricien qualifié.
3. Avant de faire des travaux à l'intérieur de poste, le débrancher à l'interrupteur à la boîte de fusibles.
4. Garder tous les couvercles et dispositifs de sûreté à leur place.

Mar. '93

WELDPower 150 & AC/DC 150

LINCOLN
ELECTRIC

Thank You

for selecting a **QUALITY** product by Lincoln Electric. We want you to take pride in operating this Lincoln Electric Company product *** as much pride as we have in bringing this product to you!

Please Examine Carton and Equipment For Damage Immediately

When this equipment is shipped, title passes to the purchaser upon receipt by the carrier. Consequently, Claims for material damaged in shipment must be made by the purchaser against the transportation company at the time the shipment is received.

Please record your equipment identification information below for future reference. This information can be found on your machine nameplate.

Model Name & Number _____

Code & Serial Number _____

Date of Purchase _____

Whenever you request replacement parts for or information on this equipment always supply the information you have recorded above.

Read this Operators Manual completely before attempting to use this equipment. Save this manual and keep it handy for quick reference. Pay particular attention to the safety instructions we have provided for your protection. The level of seriousness to be applied to each is explained below:

⚠ WARNING

This statement appears where the information **must** be followed **exactly** to avoid **serious personal injury or loss of life**.

⚠ CAUTION

This statement appears where the information **must** be followed to avoid **minor personal injury or damage to this equipment**.

WELDANPOWER 150 & AC/DC 150



	Page
Installation	Section A
Machine Grounding	A-1
Installation (For Permanent Standby Power)	A-1
Exhaust Spark Arrester	A-1
<hr/>	
Operation	Section B
Product Description	B-1
Starting the Engine	B-1
Stopping the Engine	B-1
Battery Charging	B-2
Operation as a Welder	B-2
Operation as an AC Power Source	B-3
<hr/>	
Accessories	Section C
Optional Features	C-1
Undercarriages	C-1
<hr/>	
Maintenance	Section D
Slip Rings and Brushes	D-1
Rotor	D-1
<hr/>	
Troubleshooting	Section E
<hr/>	
Wiring Diagrams	Section F
<hr/>	
Parts Lists	Appendix
<hr/>	

MACHINE GROUNDING

The United States National Electrical Code does not require this machine to be grounded under normal operating circumstances.

Some state, local or other codes or unusual operating circumstances may require the machine frame to be grounded. It is recommended that you determine the extent to which such requirements apply to your particular situation and follow them explicitly. A machine grounding stud marked with the symbol \equiv is provided below the welder *control panel*.

In general, if the machine is to be grounded it should be connected with #10 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.

INSTALLATION (For Permanent Standby Power)

⚠ 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.

STANDBY POWER CONNECTIONS

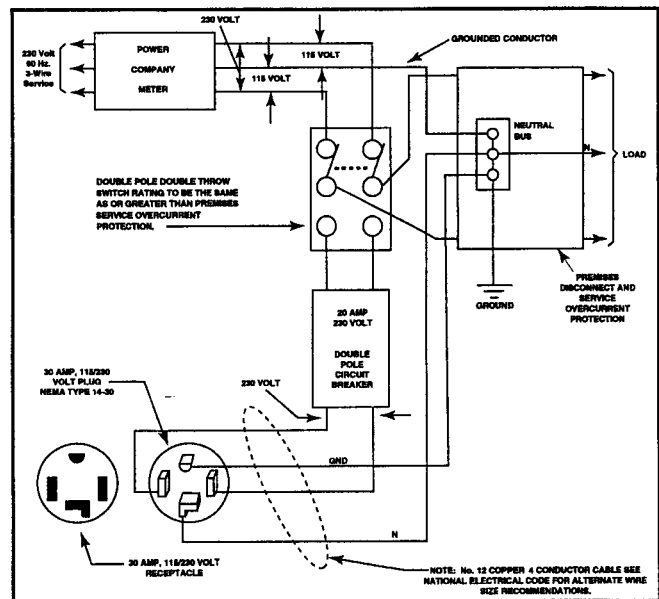
The Weldanpower 150 can be permanently installed as a standby power unit for a 115/230 volt-3 wire, 20 ampere service. Connections must be made by a licensed electrician who can determine how the 115/230 volt Weldanpower 150 can be adapted to the particular installation and comply with all applicable electrical codes. The following information can be used as a guide by the electrician for most applications (refer also to the connection diagrams below).

1. Install a double pole, double throw switch between the power company meter and the premises disconnect. Switch rating must be the same as or greater than the customer's premises disconnect and service overcurrent protection.
2. Take necessary steps to assure load is limited to the capacity of the Weldanpower by installing a 20 amp, 230 volt double pole circuit breaker. Maximum

rated load for the 230 volt auxiliary is 20 amperes. Loading above 20 amperes will reduce output voltage below the allowable – 10% of rated voltage which may damage appliances or other motor-driven equipment.

3. Install a 30 amp, 115/230 volt plug (NEMA Type 14-30) to the double pole circuit breaker using No. 12, 4-conductor cable of the desired length. (The 30 amp, 115/230 volt plug is available in the K802-P plug kit.)
4. Plug this cable into the 30 amp, 115/230 volt receptacle on the Weldanpower 150 case front.

CONNECTION OF W/P-150 TO PREMISES SYSTEM



EXHAUST 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 mufflers included with these welders do not qualify as spark arresters. When required by local regulations, suitable spark arresters must be installed and properly maintained.

⚠ CAUTION

An incorrect arrester may lead to damage of the engine or its performance. Contact the engine manufacturer for special recommendations.

⚠ WARNING**ELECTRIC SHOCK can kill.**

- Do not touch electrically live parts such as output terminals or internal wiring.
- Insulate yourself from the work and ground.
- Always wear dry insulating gloves.

**FUMES AND GASES can be dangerous.**

- Keep your head out of fumes.
- Use ventilation or exhaust to remove fumes from breathing zone.

**WELDING SPARKS can cause fire or explosion.**

- Keep flammable material away.

**ARC RAYS can burn.**

- Wear eye, ear and body protection.

PRODUCT DESCRIPTION

The Woldanpower 150 is a gasoline engine driven combination welder/generator power source. The unit was designed to provide a maximum output of 150 amperes at 25 volts of alternating welding current or 4.5KW, 115/230 volts, 60 Hertz auxiliary power suitable for temporary, standby, or emergency power using engine manufacturer's recommended maintenance schedule. The unit is designed to be used with all common AC stick welding electrodes and all AC power tools within the rating of the unit.

The Woldanpower 150 AC/DC has the same capabilities as the Woldanpower 150 AC plus 125 amperes DC welding current for use with all common DC stick welding electrodes.

STARTING THE ENGINE**⚠ WARNING**

Operate internal combustion engines in open, well ventilated areas or vent the engine exhaust fumes outdoors. Do not move welder unless fuel line is shut off.

Your engine may be equipped with either the standard manual rope pull starter or the optional factory installed electric starter.

The manual start unit is equipped with an engine throttle rod and ignition switch located on the control panel.

The electric start unit is equipped with a wetcharged battery, an ignition switch starter pushbutton, engine throttle rod and ammeter (for battery charging circuit) located on the control panel.

⚠ WARNING

Use care as battery fluid is a strong acid. Avoid contact with eyes and skin.

Remove all loads connected to the AC power receptacles before starting.

To start either the manual or electric start units with a Kohler engine, turn fuel line on, rotate the choke lever on the side of the carburetor down (closing the choke). Place the ignition switch in the run position. With rope start, crank the engine with a firm steady pull on the rope. With electric start, depress the starter button. Immediately after the engine has started, slowly rotate the choke lever to the up position (choke open).

NOTE: The starting procedures are the same as above for the Briggs and Stratton manual start unit except the choke lever on the side of the carburetor is rotated clockwise to start (closing choke) and counter clockwise (open choke) immediately after starting.

Allow the engine to warm up gradually by letting it run at low idle for a few minutes. For longest life and lowest fuel consumption run at low idle whenever power is not being drawn.

STOPPING THE ENGINE

Remove the load and let the engine run at low idle speed for a few minutes before stopping. Stop the engine with the ignition switch. The Kohler engine can also be stopped by pressing the button on the side of the breaker point box and holding until the engine comes to a complete stop. Turn fuel line off before moving welder.

BATTERY CHARGING

The battery is maintained at its proper state of charge by the battery charger P.C. board which automatically regulates the charging current from 2.5 amps when the battery is low (after starting the engine) to less than 0.5 amps when the battery is fully charged.

If the welder is operated with the battery disconnected, the battery cable terminals should be taped separately with insulating tape to avoid damage to the charging circuit.

When replacing, jumping, or otherwise connecting the battery to the battery cables, the proper polarity *must* be observed. Failure to observe the proper polarity could result in damage to the charging circuit. The positive battery cable is designated with a "P" stenciled on the cable lug and the negative battery cable has an "N" stenciled on the cable lug.

The ammeter is the best indicator of the condition of the battery and charging circuit. If the ammeter shows a charging current with the engine stopped, then the battery cables are reversed and should be connected correctly. If the ammeter shows a discharging (-) current with the engine stopped, the control SCR is shorted and the P.C. board must be replaced.

If the condition of the battery is in question, the following chart should prove helpful:

The importance of keeping the battery fully charged

State of Charge	Specific Gravity (measured with a Hydrometer)
Fully Charged	1.265
75% Charged	1.225
50% Charged	1.190
25% Charged	1.155
Discharged	1.120

during cold weather operation may be shown with the following chart:

A 75% charged battery is, therefore, in no danger of freezing in most climates, whereas a 25% charged

Specific Gravity	Freezing Temperature
1.265 (fully charged)	-71°F
1.250	-62°F
1.200	-16°F
1.150	+ 5°F
1.100 (discharged)	+19°F

battery will freeze at +5°F.

GASES FROM BATTERY can explode.

- Keep sparks, flame and cigarettes

⚠ WARNING

away from battery.



To prevent **EXPLOSION** when:

- **INSTALLING A NEW BATTERY** — disconnect negative cable from old battery first and connect to new battery last.
- **CONNECTING A BATTERY CHARGER** — remove battery from welder by disconnecting negative cable first, then positive cable and battery clamp. When reinstalling, connect negative cable last. Keep well ventilated.
- **USING A BOOSTER** — connect positive lead to battery first then connect negative lead to copper strap on engine foot.

OPERATION AS A WELDER

Weldanpower 150 AC

With the engine off, connect the "work" cable to the welder output stud marked "to work." Connect the "electrode" cable to the welder output stud marked "electrode."

Weldanpower 150 AC/DC

DC Welding: For DC(+) welding, connect the electrode cable to the "+" output stud and the work cable to the "-" output stud. [For DC(-) welding, reverse these connections.] Put the Output Selector in the DC position (down).

AC Welding: With the engine off, connect the work cable to one output stud and the electrode cable to the other output stud (makes no difference which cable goes to which output stud for AC welding). Put the Output Selector in the AC position (up).

Start the engine and set the throttle control for full speed. Set the selector switch for the desired welding current and the machine is ready for welding.

The selector switch is a seven position switch with welding positions at 60, 75, 90, 105, 120, 135 and 150 amps for AC welding. Each tap is rated at 100% duty cycle for AC welding. The WP-150 AC/DC also provides DC welding settings of 45, 55, 65, 75, 90, 105 and 125 amps; DC settings of 75 amps and less are rated at 100% duty cycle, 90-105 amps at 50% and

125 amps at 40%. Duty cycle is based on a 10 minute period; thus, the welder can be loaded at rated output for 10 minutes of every 10 minute period on AC and 10, 5 or 4 minutes of every 10 minute period on DC depending on the current setting specified above.

AC/DC Output Selector Switch (on WP-150 AC/DC only)

A toggle-handle two-position selector switches the output terminals from the AC welding supply to the output of the DC welding rectifier.

Never change the Welding Current Selector or Output Selector Switch settings while under load. This will cause severe damage to the switches.

⚠ CAUTION

The electrode guide in Table 1 shows the recommended electrodes and settings for these machines. DC electrodes should only be used on DC with the WP-150 AC/DC.

OPERATION AS AN AC POWER SOURCE

Suitable for temporary, standby or emergency

TABLE 1

Electrode Type	Electrode Polarity	Electrode Size			
		5/64	3/32	1/8	5/32
Fleetweld 5P	DC(+)	—	55	75-105	125
Jetweld LH-78	DC(+)	—	75	105-125	—
Stainweld 308-16	DC(+)	45	55	75-105	—
	AC	—	75	90	—
Fleetweld 180	AC	—	60	90	135
Fleetweld 35	AC	—	60	75	120
Fleetweld 37 & 57	AC	75	90	135	—
Jetweld LH-73	AC	—	90	105-135	—
Jetweld 1	AC	—	—	135	—
Steel Thickness		18 GA to 12 GA		1/8 and Over	

power using engine manufacturer's recommended maintenance schedule. Not recommended for long term primary power.

Start the engine and slip the throttle control into the notch so that the engine runs at full speed. Voltage is now at the receptacle for the auxiliary power. Do *not* apply a load to the machine until the engine is up to full speed. Failure to do this may keep the Weldanpower from building up its voltage. Bringing the engine up

to full speed without the load will again provide output voltage if this should happen.

When using the 115 volt duplex receptacle, each receptacle can supply 15 amps load for a total maximum load of 30 amps. (The standard plug furnished with most power tools is rated at 15 amps.) These receptacles are each protected with a 15 amp circuit breaker.

When using the 230 volt auxiliary power receptacle, up to 20 amps can be drawn from the 115/230 volt receptacle. This receptacle is protected with 20 amp circuit breakers.

Most 1.5 hp motors can be started if there is no load on the motor or other load connected to the Weldanpower since the full load current rating of a 115 volt, 1.5 hp motor is approximately 20 amperes (10 amps for 230 volt motors).

The auxiliary power ratings are with no welding load. Simultaneous welding and power loads are permitted by following Table 2. The permissible currents shown assume that current is being drawn from either the 115 volt or 115/230 volt supply, not both at the same time.

Inherent short circuit protection of the auxiliary power circuit is provided. If the power winding is short circuited, the output current and voltage fall to zero. When

TABLE 2

Welding Output	Permissible Auxiliary Power Loads	
	Amps – 115V Receptacles	Amps – 230V Receptacles
120-150 amps	0	0
105 amps	1.5	.75
90 amps	12	6
75 amps	17	8.5
60 amps	22	11
None	40	20

the short is removed, the power voltage returns to normal.

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

OPTIONAL FEATURES

TIG WELDING

The Woldanpower 150 AC or AC/DC may be converted to a portable TIG welding outfit with the K930-1 field installed TIG Module.

TIG Module (K930-1) – The TIG Module is an accessory that provides high frequency and shielding gas control for AC and DC GTAW (TIG) welding applications. It provides contactor control of constant current welding power sources having an internal contactor.

The K930-1 TIG Module is supplied without accessories. Arc Start switches, Amptrols, cables, torches and mounting brackets must be purchased separately.

K938-1 Contactor Kit – This field installed kit must be installed in the TIG Module whenever it is used with a power source which does not have a built-in contactor for constant current (stick/TIG) welding. See the list of compatible power sources to see which applications require the Contactor Kit.

K936-4 9-Socket to a grounded 115V plug (Contains circuits 31, 32 and ground)

UNDERCARRIAGES

The K759 undercarriage (hand moving) is available for field installation on gasoline engine powered 150 amp Woldanpowers. Also, it can be used with the K829 frame.

The K829 frame is available for field installation on 150 amp Woldanpowers. Also, it can be used with the K759 undercarriage.

⚠ WARNING

MOVING PARTS can injure.

- If possible, turn the engine off before working inside the machine.
- Do not put your hands near the engine fan.
- Do not attempt to override the governor or idler by pushing on the throttle control rods while the engine is running.
- If a problem cannot be corrected by following the instructions, take the machine to the nearest Lincoln Field Service Shop.

Inspect the machine at least once a year to be sure all guards and covers are firmly in place and that all labels are clearly readable. If needed, repair or replace with Lincoln parts from your local Field Service Shop.

1. Blow out the welder and controls with low pressure air periodically. In particularly dirty locations this may be required once each week.
2. Governor and carburetor joints and the throttle shaft must be kept clean and lubricated.
3. Refer to the engine manufacturer's manual for engine maintenance and troubleshooting instructions.

SLIP RINGS AND BRUSHES

The rotor slip rings and brushes require practically no attention. They should be inspected when a general overhaul is necessary. To fit replacement brushes, stop the engine and install the new brushes. Then slide one end of a 24" long piece of sandpaper between slip ring and brushes, with coarse side against brush. Putting slight finger pressure on top of the brush, pull the sandpaper around the circumference of the slip rings in the direction of rotation only until brushes are seated. Touch up slip rings by stoning with a 220-230 grit commutator stone until 100% seated. Form brush pigtails so they will not hang up on brushholder.

⚠ WARNING

Uncovered rotating equipment can be dangerous. Use care so hands, hair, clothing or tools do not catch in the rotating parts. Protect yourself from particles that may be thrown out by the rotating rotor when stoning the slip rings.

ROTOR

In the event of a major engine overhaul, it will be necessary to remove the rotor. This is accomplished by loosening the rotor thru bolt and backing it out a few turns. Then give the thru bolt a blow with a hammer. The rotor assembly should break loose from the engine shaft.

HOW TO USE TROUBLESHOOTING GUIDE

WARNING

Service and Repair should only be performed by Lincoln Electric Factory Trained Personnel. Unauthorized repairs performed on this equipment may result in danger to the technician and machine operator and will invalidate your factory warranty. For your safety and to avoid Electrical Shock, please observe all safety notes and precautions detailed throughout this manual.

This Troubleshooting Guide is provided to help you locate and repair possible machine malfunctions. Simply follow the three-step procedure listed below.

Step 1. LOCATE PROBLEM (SYMPTOM).

Look under the column labeled "PROBLEM (SYMPTOMS)". This column describes possible symptoms that the machine may exhibit. Find the listing that best describes the symptom that the machine is exhibiting.

Step 2. POSSIBLE CAUSE.

The second column labeled "POSSIBLE CAUSE" lists the obvious external possibilities that may contribute to the machine symptom.

Step 3. RECOMMENDED COURSE OF ACTION

This column provides a course of action for the Possible Cause.

If you do not understand or are unable to perform the Recommended Course of Action safely, contact your local Lincoln Authorized Field Service Facility.

WARNING



MOVING PARTS can injure.

- Have qualified personnel do maintenance and troubleshooting work.
- If possible, turn the engine off and disconnect the battery before working inside the machine.
- Remove guards only when necessary to perform maintenance, and replace them when the maintenance requiring their removal is complete.
- If fan guards are missing from a machine, obtain replacements from a Lincoln Distributor. (See Operating Manual Parts List.)

CAUTION

If for any reason you do not understand the test procedures or are unable to perform the tests/repairs safely, contact your **Local Lincoln Authorized Field Service Facility** for technical troubleshooting assistance before you proceed.

WELDANPOWER 150 & AC/DC 150



Observe all Safety Guidelines detailed throughout this manual

PROBLEMS (SYMPTOMS)	POSSIBLE CAUSE	RECOMMENDED COURSE OF ACTION
FUNCTION PROBLEMS		
<p>A. No output of welding power or auxiliary power.</p>	<ol style="list-style-type: none"> 1. Flashing circuit inoperative. 2. Brushes not making good contact or slip rings dirty. 3. Open connections or broken leads. 4. Open field winding on rotor or stator. 5. Shorted capacitors. 6. Defective bridge rectifier. 	<ol style="list-style-type: none"> 1. Check flashing circuit voltage at slip ring brushes. Disconnect (+) lead on feedback rectifier (located on fire wall) before taking flashing reading. Take reading at high idle: Kohler Engine 1-1/2-4 volts DC. Briggs and Stratton 12-14 volts DC. 2. Seat brushes and clean rings with commutator stone. 3. Inspect and repair. 4. Check continuity — motor resistance approximately 4.6 ohms. 5. Check capacitors, replace if defective. 6. Check diodes, replace if defective.
<p>B. Low voltage from auxiliary power supply or too low an output from welder.</p>	<ol style="list-style-type: none"> 1. Defective capacitor. 2. Engine RPM too low. 3. Engine needs a tune up. 	<ol style="list-style-type: none"> 1. Check capacitors, replace if defective. 2. Check engine manual or contact your authorized Lincoln Field Service Shop. 3. Check the RPM under load, if low check manual and contact your authorized Lincoln Field Service Shop. (RPM under load 3400-3520 for Briggs or Kohler.)

 **CAUTION**

If for any reason you do not understand the test procedures or are unable to perform the tests/repairs safely, contact your **Local Lincoln Authorized Field Service Facility** for technical troubleshooting assistance before you proceed.

WELDPower 150 & AC/DC 150



Observe all Safety Guidelines detailed throughout this manual

PROBLEMS (SYMPTOMS)	POSSIBLE CAUSE	RECOMMENDED COURSE OF ACTION
FUNCTION PROBLEMS		
C. Engine will not turn when start button pushed.	<ol style="list-style-type: none"> 1. Start button defective. 2. Loose cables, corroded connections. 3. Batteries dead. 4. Defective starting motor or solenoid. 	<ol style="list-style-type: none"> 1. Inspect, replace if defective. 2. Tighten and clean. 3. Check, recharge or replace. 4. Check and replace.
D. Ammeter reads discharge when engine is stopped.	<ol style="list-style-type: none"> 1. Battery cables reversed. 2. Defective P.C. board. 	<ol style="list-style-type: none"> 1. Disconnect and reconnect correctly. 2. Inspect and replace.
E. Ammeter reads zero when engine is running.	<ol style="list-style-type: none"> 1. Defective P.C. board. 2. Defective ammeter or open leads in charging circuit. 3. No output from welder. 	<ol style="list-style-type: none"> 1. Inspect and replace. 2. Inspect, test, repair or replace. 3. Check flashing circuit voltage (see Item A Note 1).

⚠ CAUTION

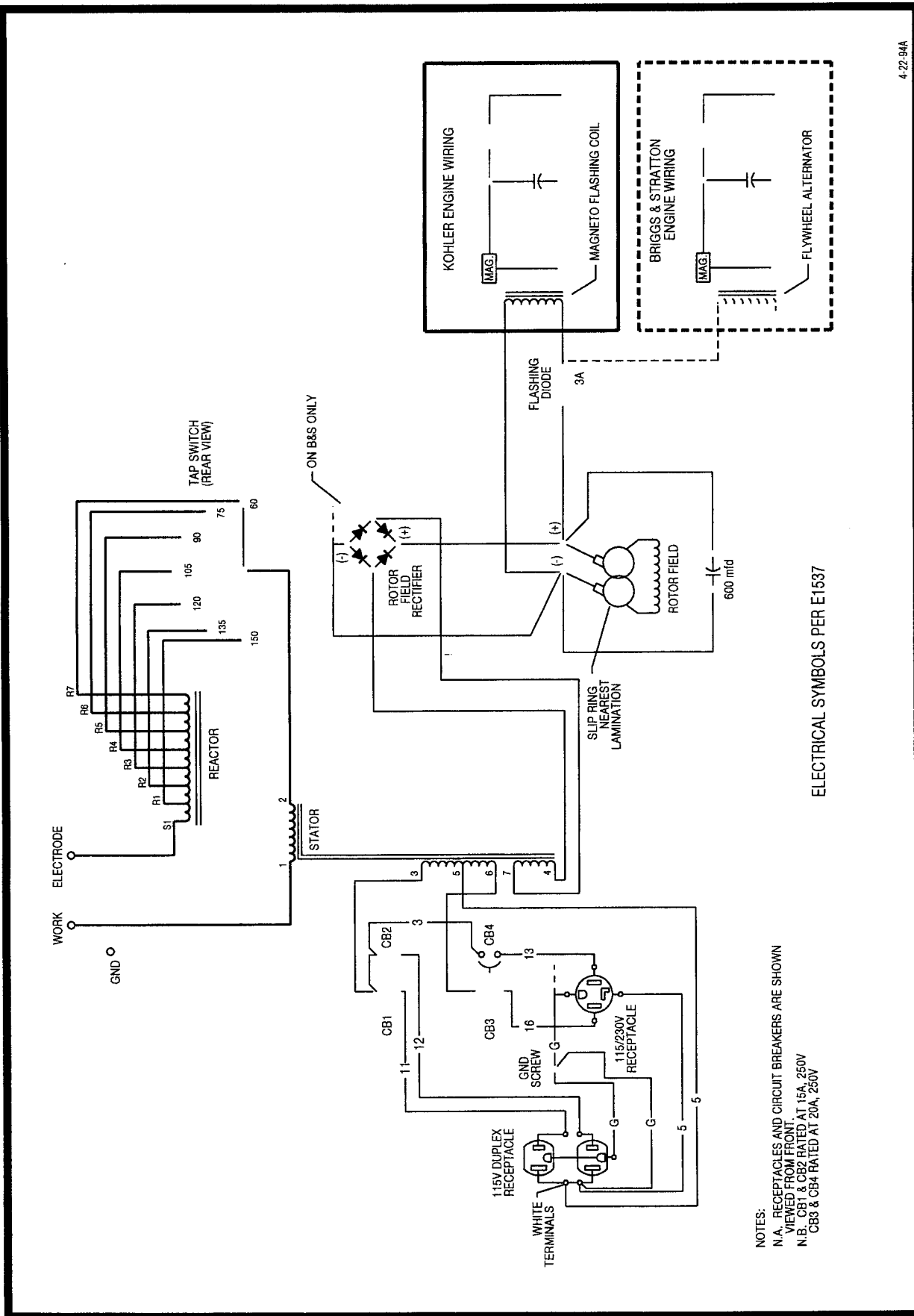
If for any reason you do not understand the test procedures or are unable to perform the tests/repairs safely, contact your **Local Lincoln Authorized Field Service Facility** for technical troubleshooting assistance before you proceed.

WELDPower 150 & AC/DC 150



WELDANPOWER 150 W/O ELECTRIC START (Codes 10145, 10143)
WIRING DIAGRAM (Briggs & Stratton or Kohler)

WELDANPOWER 150 WIRING DIAGRAM



ELECTRICAL SYMBOLS PER E1537

NOTES:
 N.A. RECEPTACLES AND CIRCUIT BREAKERS ARE SHOWN
 VIEWED FROM FRONT
 N.B. CB1 & CB2 RATED AT 15A, 250V
 CB3 & CB4 RATED AT 20A, 250V

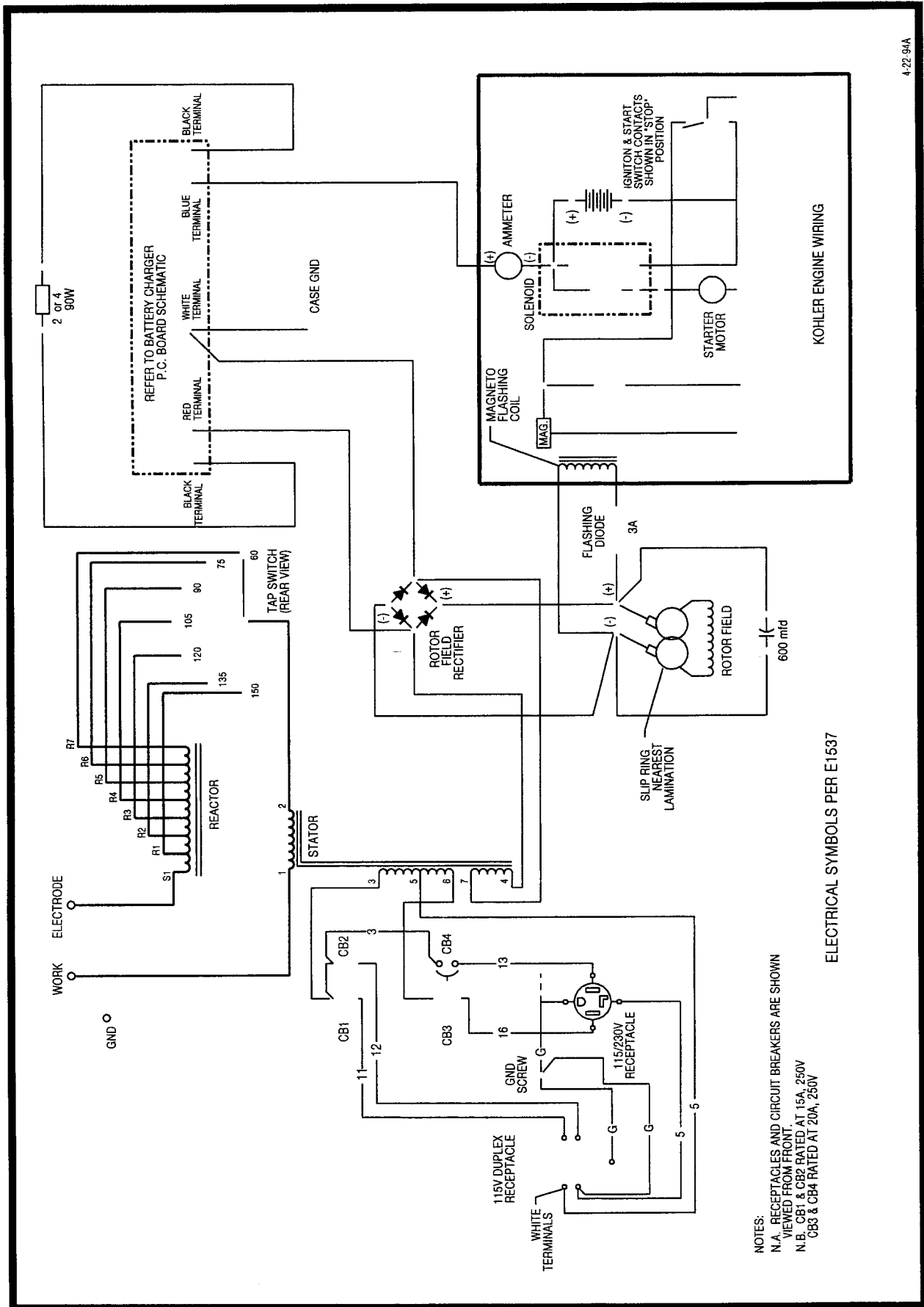
4-22-94A
M17545

CLEVELAND, OHIO U.S.A.



WELDANPOWER 150 AC KOHLER WITH ELECTRIC START (Code 10144)

WELDANPOWER 150 WIRING DIAGRAM (ELECTRIC START)



4-22-94A
MIT547

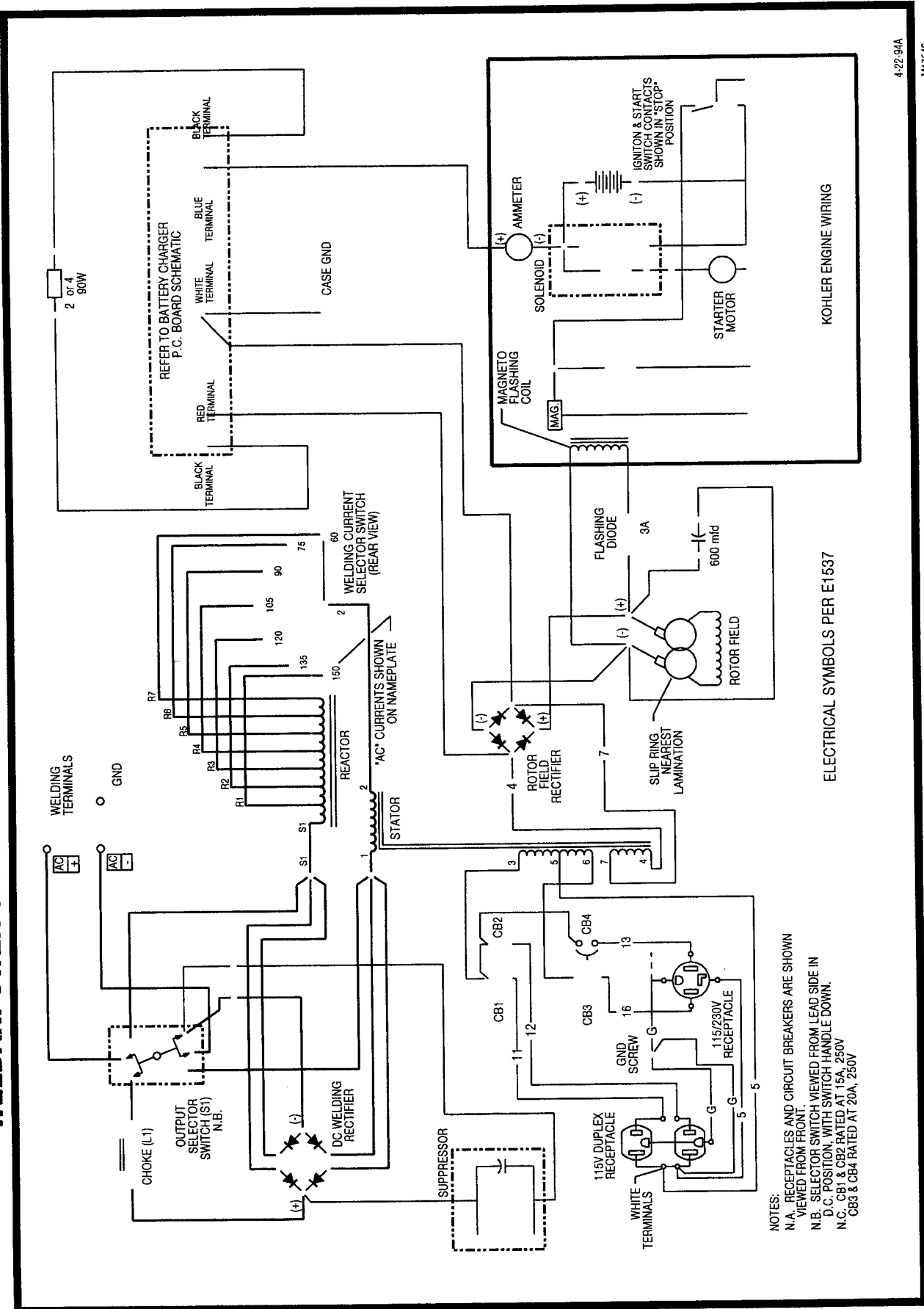
CLEVELAND, OHIO U.S.A.

WELDANPOWER 150 & AC/DC 150



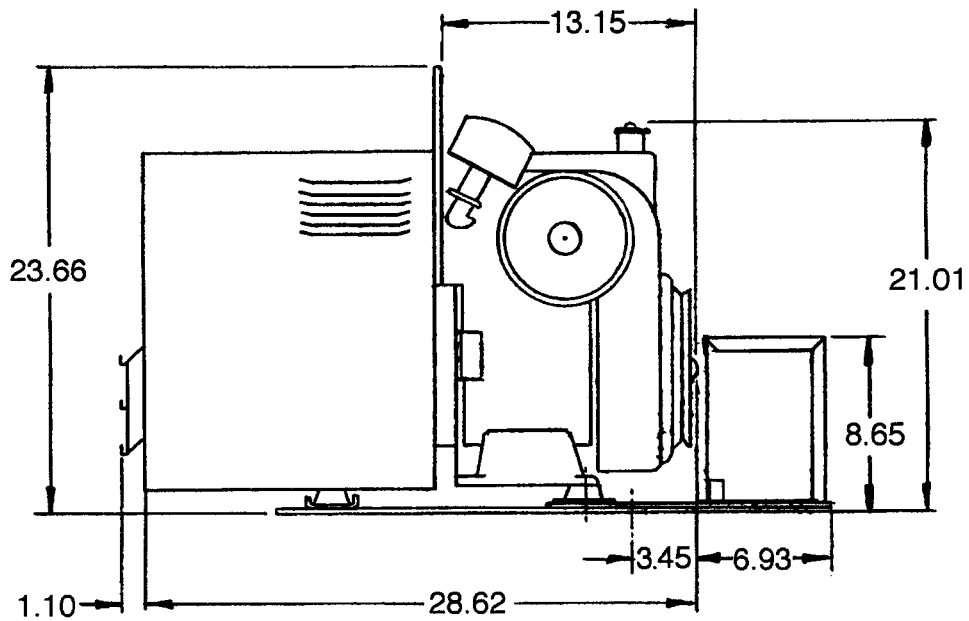
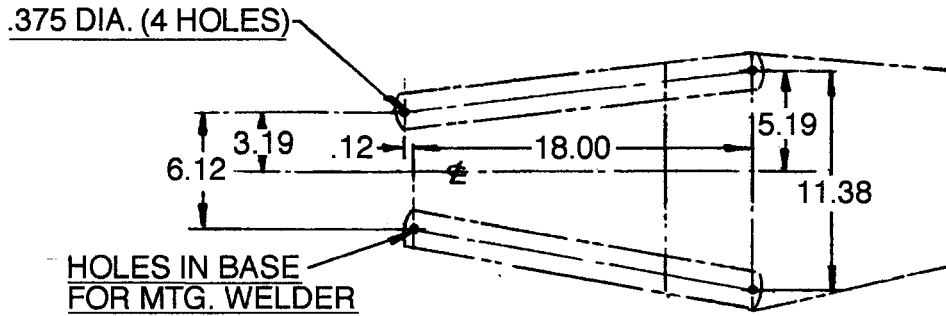
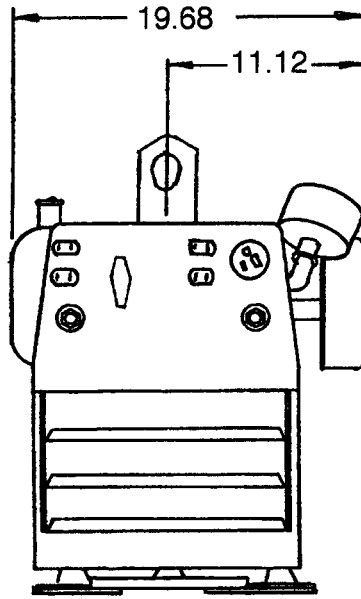
WELDANPOWER 150 AC/DC WITH ELECTRIC START (Code 10146)

WELDANPOWER 150 AC/DC WIRING DIAGRAM



WELDANPOWER 150 & AC/DC 150





S16184
2-20-87G

WELDANPOWER 150 & AC/DC 150



			
WARNING	<ul style="list-style-type: none"> ● Do not touch electrically live parts or electrode with skin or wet clothing. ● Insulate yourself from work and ground. 	<ul style="list-style-type: none"> ● Keep flammable materials away. 	<ul style="list-style-type: none"> ● Wear eye, ear and body protection.
Spanish AVISO DE PRECAUCION	<ul style="list-style-type: none"> ● No toque las partes o los electrodos bajo carga con la piel o ropa mojada. ● Aislese del trabajo y de la tierra. 	<ul style="list-style-type: none"> ● Mantenga el material combustible fuera del área de trabajo. 	<ul style="list-style-type: none"> ● Protéjase los ojos, los oídos y el cuerpo.
French ATTENTION	<ul style="list-style-type: none"> ● Ne laissez ni la peau ni des vêtements mouillés entrer en contact avec des pièces sous tension. ● Isolez-vous du travail et de la terre. 	<ul style="list-style-type: none"> ● Gardez à l'écart de tout matériel inflammable. 	<ul style="list-style-type: none"> ● Protégez vos yeux, vos oreilles et votre corps.
German WARNUNG	<ul style="list-style-type: none"> ● Berühren Sie keine stromführenden Teile oder Elektroden mit Ihrem Körper oder feuchter Kleidung! ● Isolieren Sie sich von den Elektroden und dem Erdboden! 	<ul style="list-style-type: none"> ● Entfernen Sie brennbares Material! 	<ul style="list-style-type: none"> ● Tragen Sie Augen-, Ohren- und Körperschutz!
Portuguese ATENÇÃO	<ul style="list-style-type: none"> ● Não toque partes elétricas e electrodos com a pele ou roupa molhada. ● Isole-se da peça e terra. 	<ul style="list-style-type: none"> ● Mantenha inflamáveis bem guardados. 	<ul style="list-style-type: none"> ● Use proteção para a vista, ouvido e corpo.
Japanese 注意事項	<ul style="list-style-type: none"> ● 通電中の電気部品、又は溶材にヒフやぬれた布で触れないこと。 ● 施工物やアースから身体が絶縁されている様にして下さい。 	<ul style="list-style-type: none"> ● 燃えやすいものの側での溶接作業は絶対にはなりません。 	<ul style="list-style-type: none"> ● 目、耳及び身体に保護具をして下さい。
Chinese 警告	<ul style="list-style-type: none"> ● 皮肤或湿衣物切勿接觸帶電部件及綽條。 ● 使你自已與地面和工件絕緣。 	<ul style="list-style-type: none"> ● 把一切易燃物品移離工作場所。 	<ul style="list-style-type: none"> ● 佩戴眼、耳及身體勞動保護用具。
Korean 위험	<ul style="list-style-type: none"> ● 전도체나 용접봉을 젖은 헝겊 또는 피부로 절대 접촉치 마십시오. ● 모재와 접자를 접촉치 마십시오. 	<ul style="list-style-type: none"> ● 인화성 물질을 접근 시키지 마시오. 	<ul style="list-style-type: none"> ● 눈, 귀와 몸에 보호장구를 착용하십시오.
Arabic تحذير	<ul style="list-style-type: none"> ● لا تلمس الاجزاء التي يسري فيها التيار الكهربائي أو الإلكترود بجلد الجسم أو بالملابس المبللة بالماء. ● ضع عازلا على جسمك خلال العمل. 	<ul style="list-style-type: none"> ● ضع المواد القابلة للاشتعال في مكان بعيد. 	<ul style="list-style-type: none"> ● ضع أدوات وملابس واقية على عينيك وأذنيك وجسمك.

READ AND UNDERSTAND THE MANUFACTURER'S INSTRUCTION FOR THIS EQUIPMENT AND THE CONSUMABLES TO BE USED AND FOLLOW YOUR EMPLOYER'S SAFETY PRACTICES.

SE RECOMIENDA LEER Y ENTENDER LAS INSTRUCCIONES DEL FABRICANTE PARA EL USO DE ESTE EQUIPO Y LOS CONSUMIBLES QUE VA A UTILIZAR, SIGA LAS MEDIDAS DE SEGURIDAD DE SU SUPERVISOR.

LISEZ ET COMPRENEZ LES INSTRUCTIONS DU FABRICANT EN CE QUI REGARDE CET EQUIPMENT ET LES PRODUITS A ETRE EMPLOYES ET SUIVEZ LES PROCEDURES DE SECURITE DE VOTRE EMPLOYEUR.

LESEN SIE UND BEFOLGEN SIE DIE BETRIEBSANLEITUNG DER ANLAGE UND DEN ELEKTRODENEINSATZ DES HERSTELLERS. DIE UNFALLVERHÜTUNGSVORSCHRIFTEN DES ARBEITGEBERS SIND EBENFALLS ZU BEACHTEN.

WELDPANPOWER 150 & AC/DC 150



			
<ul style="list-style-type: none"> ● Keep your head out of fumes. ● Use ventilation or exhaust to remove fumes from breathing zone. 	<ul style="list-style-type: none"> ● Turn power off before servicing. 	<ul style="list-style-type: none"> ● Do not operate with panel open or guards off. 	WARNING
<ul style="list-style-type: none"> ● Los humos fuera de la zona de respiración. ● Mantenga la cabeza fuera de los humos. Utilice ventilación o aspiración para gases. 	<ul style="list-style-type: none"> ● Desconectar el cable de alimentación de poder de la máquina antes de iniciar cualquier servicio. 	<ul style="list-style-type: none"> ● No operar con panel abierto o guardas quitadas. 	Spanish AVISO DE PRECAUCION
<ul style="list-style-type: none"> ● Gardez la tête à l'écart des fumées. ● Utilisez un ventilateur ou un aspirateur pour ôter les fumées des zones de travail. 	<ul style="list-style-type: none"> ● Débranchez le courant avant l'entretien. 	<ul style="list-style-type: none"> ● N'opérez pas avec les panneaux ouverts ou avec les dispositifs de protection enlevés. 	French ATTENTION
<ul style="list-style-type: none"> ● Vermeiden Sie das Einatmen von Schweißrauch! ● Sorgen Sie für gute Be- und Entlüftung des Arbeitsplatzes! 	<ul style="list-style-type: none"> ● Strom vor Wartungsarbeiten abschalten! (Netzstrom völlig öffnen; Maschine anhalten!) 	<ul style="list-style-type: none"> ● Anlage nie ohne Schutzgehäuse oder Innenschutzverkleidung in Betrieb setzen! 	German WARNUNG
<ul style="list-style-type: none"> ● Mantenha seu rosto da fumaça. ● Use ventilação e exaustão para remover fumo da zona respiratória. 	<ul style="list-style-type: none"> ● Não opere com as tampas removidas. ● Desligue a corrente antes de fazer serviço. ● Não toque as partes elétricas nuas. 	<ul style="list-style-type: none"> ● Mantenha-se afastado das partes moventes. ● Não opere com os painéis abertos ou guardas removidas. 	Portuguese ATENÇÃO
<ul style="list-style-type: none"> ● ヒュームから頭を離すようにして下さい。 ● 換気や排煙に十分留意して下さい。 	<ul style="list-style-type: none"> ● メンテナンス・サービスに取りかかる際には、まず電源スイッチを必ず切って下さい。 	<ul style="list-style-type: none"> ● パネルやカバーを取り外したまま機械操作をしないで下さい。 	Japanese 注意事項
<ul style="list-style-type: none"> ● 頭部遠離煙霧。 ● 在呼吸區使用通風或排風器除煙。 	<ul style="list-style-type: none"> ● 維修前切斷電源。 	<ul style="list-style-type: none"> ● 蓋板打開或沒有安全罩時不準作業。 	Chinese 警告
<ul style="list-style-type: none"> ● 얼굴로부터 용접가스를 멀리하십시오. ● 호흡지역으로부터 용접가스를 제거하기 위해 가스제거기나 통풍기를 사용하십시오. 	<ul style="list-style-type: none"> ● 보수전에 전원을 차단하십시오. 	<ul style="list-style-type: none"> ● 판넬이 열린 상태로 작동치 마십시오. 	Korean 위험
<ul style="list-style-type: none"> ● ابعد رأسك بعيداً عن الدخان. ● استعمل التهوية أو جهاز ضغط الدخان للخارج لكي تبعد الدخان عن المنطقة التي تتنفس فيها. 	<ul style="list-style-type: none"> ● قطع التيار الكهربائي قبل القيام بأية صيانة. 	<ul style="list-style-type: none"> ● لا تشغيل هذا الجهاز إذا كانت الاغطية الحديدية الواقية ليست عليه. 	Arabic تحذير

LEIA E COMPREENDA AS INSTRUÇÕES DO FABRICANTE PARA ESTE EQUIPAMENTO E AS PARTES DE USO, E SIGA AS PRÁTICAS DE SEGURANÇA DO EMPREGADOR.

使う機械や溶材のメーカーの指示書をよく読み、まず理解して下さい。そして貴社の安全規定に従って下さい。

請詳細閱讀並理解製造廠提供的說明以及應該使用的銀擇材料，並請遵守貴方的有關勞動保護規定。

이 제품에 등봉된 작업지침서를 숙지하시고 귀사의 작업자 안전수칙을 준수하시기 바랍니다.

اقرأ بتمعن وافهم تعليمات المصنع المنتج لهذه المعدات والمواد قبل استعمالها واتبع تعليمات الوقاية لصاحب العمل.

WELDPANPOWER 150 & AC/DC 150



LIMITED WARRANTY

STATEMENT OF WARRANTY:

The Lincoln Electric Company (Lincoln) warrants to the original purchaser (end-user) of new equipment that it will be free of defects in workmanship and material.

This warranty is void if Lincoln finds that the equipment has been subjected to improper care or abnormal operation.

WARRANTY PERIOD:

All warranty periods date from the date of shipment to the original purchaser and are as follows:

Three Years:

Transformer Welders
Motor-generator Welders
Inverter Welders
Automatic Wire Feeders
Semiautomatic Wire Feeders
Plasma-cutting Power Source
Engine Driven Welders (except engine and engine accessories) with operating speed under 2,000 RPM

Two Years:

Engine Driven Welders (except engine, engine accessories and Power Arc Generator/Welders) with operating speed over 2,000 RPM

All engine and engine accessories are warranted by the engine or engine accessory manufacturer and are not covered by this warranty.

One Year:

Equipment not listed above such as gun and cable assemblies, water coolers, FAS TRAK or MIG-TRAK equipment, Power-Arc generator/welder, Wire Feed Module (Factory Installed) and field-installed optional equipment.

TO OBTAIN WARRANTY COVERAGE:

You are required to notify Lincoln Electric, your Lincoln Distributor, Lincoln Service Center, or Field Service Shop of any defect within the warranty period. Written notification is recommended.

WARRANTY REPAIR:

If Lincoln's inspection of the equipment confirms the existence of a defect covered by this warranty, the defect will be corrected by repair or replacement at Lincoln's option.

WARRANTY COSTS:

You must bear the cost of shipping the equipment to a Lincoln Service Center or Field Service Shop as well as return shipment to you from that location.

IMPORTANT WARRANTY LIMITATIONS:

- Lincoln will not accept responsibility for repairs made without its authorization.
- Lincoln shall not be liable for consequential damages (such as loss of business, etc.) caused by the defect or reasonable delay in correcting the defect.
- Lincoln's liability under this warranty shall not exceed the cost of correcting the defect.
- This written warranty is the only express warranty provided by Lincoln with respect to its products. Warranties implied by law such as the Warranty of Merchantability are limited to the duration of this limited warranty for the equipment involved.

August, '94