

IM307
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Weldanpower 150 MWM Diesel
8259; 8611; 8731

OPERATING MANUAL

MWM MURPHY DIESEL ENGINE DRIVEN WELDANPOWER® 150

Combination 150 Amp AC Welder and
4500 Watt, 50 Hertz AC Power Generator

This manual covers equipment which is obsolete and no longer in production by The Lincoln Electric Co. Specifications and availability of optional features may have changed.

DAMAGE CLAIMS

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.

SAFETY DEPENDS ON YOU

Lincoln welders are designed and built with safety in mind. However, your overall safety can be increased by proper installation . . . and thoughtful operation on your part. Read and observe all instructions and specific safety precautions included in this manual as well as the common machine operating and welding safety precautions outlined on the back of this manual. And, most importantly, think before you act and be careful.

WARNING: Operate internal combustion engines in open, well ventilated areas or vent the engine exhaust fumes outdoors.

The 1978 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 may 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 a #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.

PRODUCT DESCRIPTION

This Weldanpower 150 is a diesel engine driven combination welder/generator power source. It was designed to provide a maximum output of 150 amperes at 25 volts of alternating welding current or 4.5 KW, 115/230 volt, 50 Hertz auxiliary power. It is for use with all common AC stick welding electrodes and all AC, 50 Hertz tools within the rating of the unit.

ARC WELDING SAFETY PRECAUTIONS

PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. READ AND UNDERSTAND BOTH THE SPECIFIC INFORMATION GIVEN IN THE OPERATING MANUAL FOR THE WELDER AND/OR OTHER EQUIPMENT TO BE USED AS WELL AS THE FOLLOWING GENERAL INFORMATION.

1. Have all installation, maintenance and repair work performed only by qualified people.

2. ELECTRIC SHOCK can kill.

Protect yourself from possible dangerous electrical shock:

- The electrode and work (or ground) circuits are electrically "hot" when the welder is on. Never permit contact between "hot" parts of the circuits and bare skin or wet clothing. Wear dry, hole-free gloves to insulate hands.
- Always insulate yourself from the work and ground using dry insulation when welding in damp locations, on metal floors, gratings or scaffolds, and particularly when in positions (such as sitting or lying) where large areas of your body can be in contact with a conductive surface.
- Maintain the electrode holder, work clamp, welding cable and welding machine in good, safe operating condition.
- Never dip the electrode holder in water for cooling.
- 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.
- If using the welder as a power source for mechanized welding, the above precautions also apply for the automatic electrode, electrode reel, welding head, nozzle or semiautomatic welding gun.
- When working above floor level, protect yourself from a fall should you get a shock. Never wrap the electrode cable around any part of your body.
- Also see Item 7.

3. FUMES AND GASES can be dangerous to your health.

- 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 on galvanized, lead or cadmium plated steel and other metals which produce toxic fumes, even greater care must be taken.
- 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.
- Also see Item 8b.

4. ARC RAYS can injure eyes and burn skin.

Arcburn may be more severe than sunburn. Therefore:

- 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. Filter lens should conform to ANSI Z87.1 standards.
- Use suitable clothing to protect your skin and that of your helpers from the arc rays.
- 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.

5. FIRE OR EXPLOSION can cause death or property damage.

- Remove fire hazards well away from the 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.
- 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.

- 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 "Safe Practices for Welding and Cutting Containers That Have Held Combustibles", A6.0-65 from the American Welding Society, Miami, Florida 33125.
- Vent hollow castings or containers before heating, cutting or welding. They may explode.
- Also see Items 6c and 8c.

Additional Safety Precautions

6. For Welding in General.

- Droplets of molten slag and metal are thrown or fall from the welding arc. Protect yourself with 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 when in a welding area. Use glasses with side shields when near slag chipping operations.
- Keep all equipment safety guards, covers and devices in position and 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.
- Be sure the work cable is connected to the work as close to the welding area as practical. Work cables connected to the building framework or other locations some distance 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.

7. For Electrically Powered Equipment.

The high voltage and rotating parts associated with such units requires observance of these additional precautions:

- Disconnect and lock out all power sources before doing any work on the equipment.
- Make the electrical installation in accordance with the National Electrical Code and all local codes.
- Properly ground the equipment in accordance with the National Electrical Code and the manufacturer's recommendations. The work or metal to be welded must also be connected to a good electrical ground.

8. For Engine Powered Equipment.

The required fuel and rotating parts associated with such units requires observance of these additional precautions:

- Whenever possible, turn the engine off before troubleshooting and maintenance work.
- Operate internal combustion engines in open, well-ventilated areas or vent the engine exhaust fumes outdoors.
- Do not add the fuel near an open flame or when the engine is running. Stop the engine and, if possible, allow it to cool to prevent spilled fuel from igniting on contact with hot engine parts or electrical sparks. Do not spill fuel when filling tank.
- 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.
- To avoid scalding, do not remove the radiator pressure cap when the engine is hot.

For more detailed information it is strongly recommended that you purchase a copy of "Safety in Welding & Cutting — ANSI Standard Z49.1" from the American Welding Society, Miami, Florida 33125.

OPERATION

Read the engine manufacturer's manual supplied with the welder for detailed engine starting, operating and maintenance instructions, parts lists and safety precautions. All specifications for fuel, fuel filter, lube oil, oil filter and air filter are listed in the engine manufacturer's manual.

EXHAUST SPARK ARRESTER

Some federal, state or local laws may require that diesel 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. NOTICE: An incorrect arrester may lead to damage of the engine or its performance. Contact the engine manufacturer for specific recommendations.

STARTING THE ENGINE

WARNING: Operate internal combustion engines in open, well ventilated areas or vent the engine exhaust fumes outdoors.

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

AVAILABLE STARTERS

The engine is equipped with hand crank capability.

To start the unit with the crank starter, set the speed adjustment lever to full speed, push the overload button and set the decompression lever. Crank the engine vigorously and quickly with the crank handle. At the moment you recognize the distinctive squeak when injecting fuel, release the decompression lever, keeping the cranking handle revolving in order to overcome at least twice the compression strength. Repeat if necessary. When the engine is running, turn on the key switch, activating the various engine warning light circuits.

STOPPING THE ENGINE

Remove the load and let the engine run at low idle speed for a few minutes before stopping. Stop the engine by placing the speed adjustment lever in the stop position.

Battery Charging (Applicable Only To Discontinued Electric Start Units)

The battery is maintained at its proper state of charge by the battery charging generator and regulator which automatically regulates the charging current from 10 amps when the battery is low 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 terminal and the negative battery cable has an "N" stenciled on the terminal.

OPERATION AS A WELDER

With the engine off connect the "work" cable to the welder output stud marked "work". Connect the "electrode" cable to the welder output stud marked "electrode". 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. Each tap is rated at 100% duty cycle. Never change the selector switch setting while under load. This will cause severe damage to the switch.

The following electrode guide will show the recommended electrodes and settings for this machine.

TABLE 1 — ELECTRODE GUIDE

Electrode Type & Size	5/64	3/32	1/8	5/32
Fleetweld® 180	—	60	90	135
Fleetweld® 37 & 57	75	90	135	—
Stainweld® 308-16	—	60	90	135
Steel Thickness	18 to 12 ga.		1/8 & Over	

OPERATION AS AN AC, 50 HERTZ POWER SOURCE

CAUTION: This 115 or 230 volt, 50 Hertz auxiliary power should not be used for equipment such as fluorescent lights, radios or other electronic device and motors, appliances or tools designed only for 60 Hertz input. For specific information about the operation of 60 Hertz equipment on 50 Hertz power, contact the equipment manufacturer.

Start the engine and set the throttle control for full speed. Voltage is now present at the auxiliary power receptacles. 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 auxiliary power, each half of the duplex receptacle can supply 20 amps load for a total maximum load of 40 amps. Drawing the full 20 amps requires a male plug specifically rated at 20 amps. (The standard plug furnished with most power tools is rated at 15 amps.)

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.

When using the 230 volt auxiliary power, each single 230 volt receptacle has a maximum rating of 15 amps. The total current that can be drawn from both receptacles at one time is 20 amps.

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 230 volt supply, not both at the same time. If the 115 volt and 230 volt auxiliary power receptacles are used simultaneously, the total load must not exceed the values shown in the Watts column of Table 2.

TABLE 2

Welding Output	Permissible Auxiliary Power Loads		
	Watts	Amps @ 115V	Amps @ 230V
120-150 amps	None	0	0
105 amps	180	1.5	.75
90 amps	1350	12	6
75 amps	1900	17	8.5
60 amps	2500	22	11
None	4500	40	20

Inherent short circuit protection of the auxiliary power circuit is provided. If the power winding is short circuited the output current and voltage falls to zero. When the short is removed the power voltage returns to normal.

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

STANDBY POWER

Suitable for temporary, standby or emergency power using engine manufacturer's recommended maintenance schedule.

MAINTENANCE AND TROUBLE SHOOTING

Have a qualified technician do the maintenance and trouble shooting work. Turn the engine off before removing any covers or working inside the welder.

1. Blow out the welder with low pressure air periodically. In particularly dirty locations this may be required once each week.
2. Refer to the engine manufacturer's manual for engine maintenance and trouble shooting instructions.

PARTS LIST (Temporary) FOR MWM WP-150 (Code No. 8611)

Stator Coil Spec.: WP-216-18, -19, -20 and -21
 Rotor Coil Spec.: WP-216-23
 Reactor Coil Spec.: WP-216-22

Engine Spec. Sheet: M-14300
 Engine Assembly: M-14308

Connection Diagram: S-16171

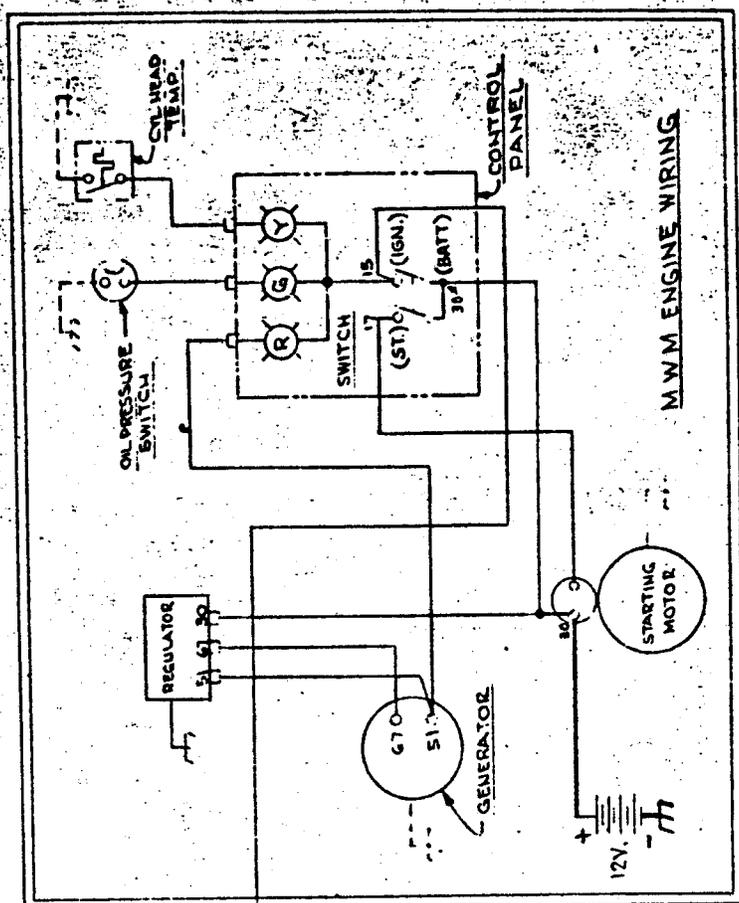
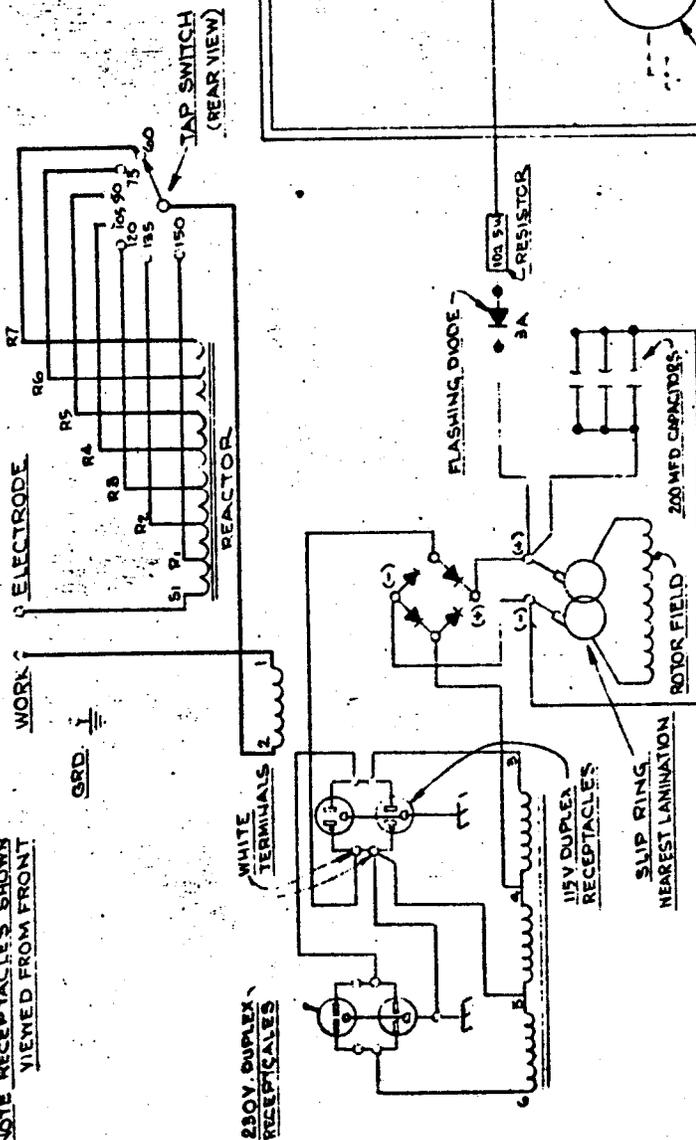
Wiring Diagram: S-17032

PART	PART NUMBER	REQUIRED	NO. OF SPARE PARTS RECOMMENDED FOR GROUP OF 10 MACHINES *
Case Front Panel Assembly	L-6629-2	1	0
Rotor Assembly	L-5461	1	2
Bearing	M-9300-8	1	2
Blower	M-11881-10	1	2
Blower Key	M-9776-31	1	2
Thru Bolt	3/8-24 x 11.375	1	0
Frame Assembly	L-5483	1	2
Case Back & Bottom	G-1392-2	1	0
Brush	T-14213	2	10
Lift Bale	S-16822	1	0
Lift Bale Mtg. Bolts	T-8833-10	2	0
Case Wraparound	L-5477-1	1	0
Reactor Assembly	M-13022-1	1	1
Flashing Diode Assembly	T-13894-2	1	2
Capacitor	T-11577-53	3	6
Full Wave Bridge	T-13637	1	2
Rubber Mtgs.	T-11991-1	3	6
Base Assembly	S-17033	1	0
Fuse	T-10728-16	1	5
Case Front Assembly, Includes:			
Case Front Welded Assy.	L-6628	1	1
Nameplate	L-6627-1	1	1
Selector Switch	M-12449-4	1	1
Duplex Receptacle (115V)	S-15767	1	2
Duplex Receptacle (230V)	S-17174	1	2
Receptacle (115V)	S-17175	1	2

* Judgment is required for machine orders of larger quantities. These suggested spare parts are not to be considered as a multiple for each series of ten.

M-13924

NOTE RECEPTACLES SHOWN VIEWED FROM FRONT



MWM ENGINE WIRING

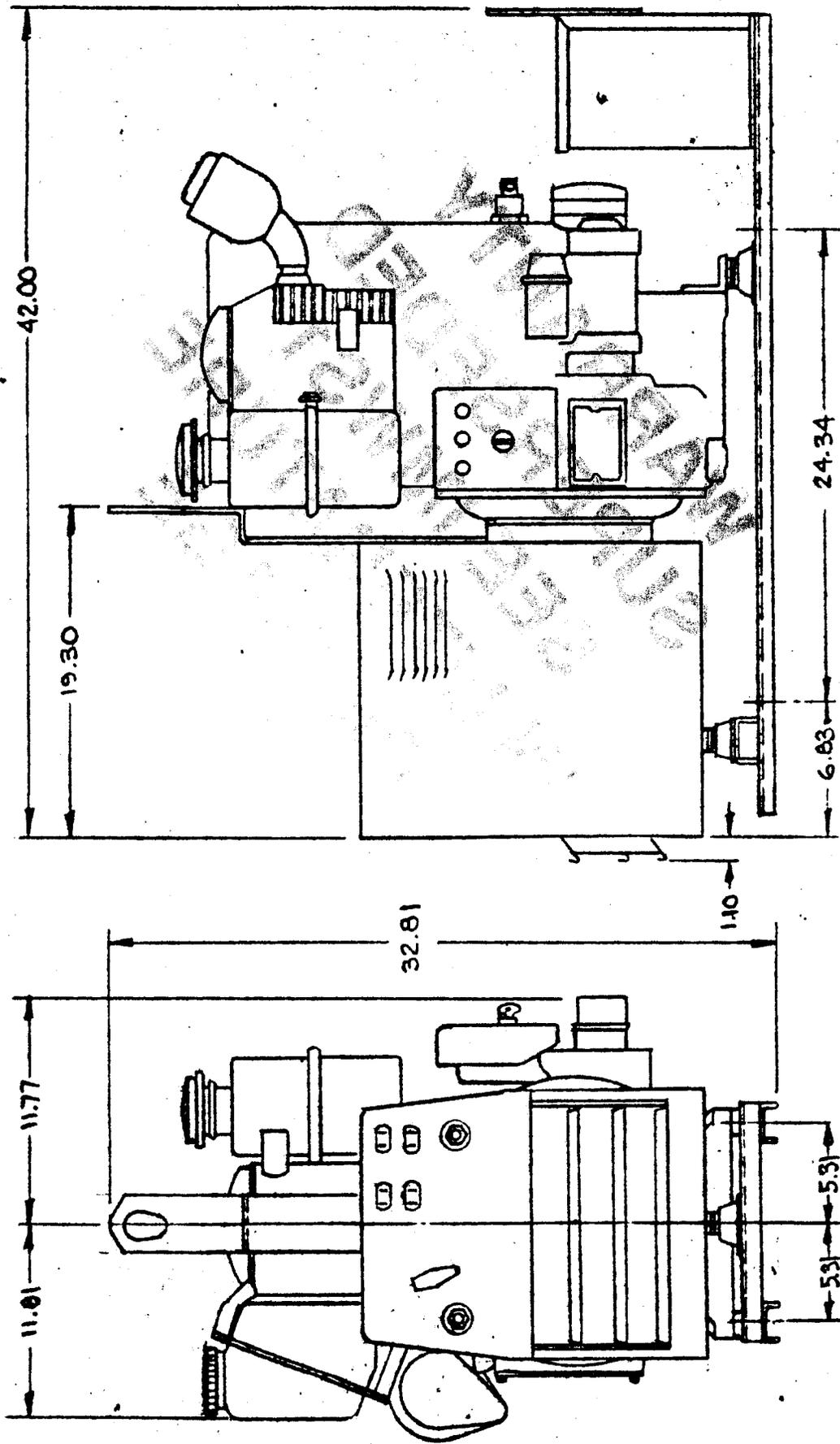
A.N.S.I. ELECTRICAL SYMBOLS PER E. 15.31

UNLESS OTHERWISE SPECIFIED TOLERANCE
 ON HOLE SIZES PER E. 15.31
 ON 3 PLACE DECIMALS IS ± .002
 ON ALL ANGLES IS ± 3 OF A DEGREE
 MATERIAL TOLERANCE (T) TO AGREE
 WITH PUBLISHED STANDARDS

C.P. No.
 225 87
 523 25W

THE LINCOLN ELECTRIC CO. EQUIP. WELDANPOWER 150 (50HZ)(MWM ENGINE)
 CLEVELAND, OHIO U. S. A. WIRING DIAGRAM
 SCALE
 1:1 (P) MAT. 6-28-73 ON DEC. SUPPLY NO. M-13924

88991-S



Chg. Sht. No.

2-22-80

THE LINCOLN ELECTRIC CO. EQUIP. WELDANPOWER 150 (50HZ) MWM ENGINE
CLEVELAND, OHIO U. S. A.

TYPE _____ SUBJECT DIMENSION PRINT

SCALE

DR LJP DATE 7-5-79 CHK DEC

SUP'S'D/G

NO. S-16688

HOW TO ORDER REPLACEMENT PARTS

Order parts only from Lincoln offices or from the Authorized Field Service Shops listed in the "Service Directory". Give the following information:

- (a) From the nameplate — machine model, code and serial numbers.
- (b) From this manual — part name, item number, quantity

required and the number of the list used to get this information.

Any items indented in the "Parts Name" column are included in the assembly under which they are listed. The indented items may be ordered separately. If the entire assembly is needed, do *not* order the indented parts.

GUARANTEE

The Lincoln Electric Company, the Seller, warrants all new equipment except engines and accessories thereof against defects in workmanship and materials for a period of one year from date of shipment, provided the equipment has been properly cared for, and operated under normal conditions. Engines and engine accessories are warranted free from defects for a period of ninety days from the date of shipment.

If the Buyer gives the Seller written notice of any defects in equipment or electrodes or flux within any period of warranty and the Seller's inspection confirms the existence of such defects, then the Seller shall correct the defect or defects at its option, either by repair or replacement F.O.B. its own factory or other place as designated by the Seller. The remedy provided Buyer herein for breach of Seller's warranty shall be exclusive.

No expense, liability or responsibility will be assumed by the Seller for repairs made outside of the Seller's factory without

written authority from the Seller.

The Seller shall not be liable for any consequential damages in case of any failure to meet the conditions of any warranty. The liability of the Seller arising out of the supplying of said equipment or electrode or its use by the Buyer, whether on warranty or otherwise, shall not in any case exceed the cost of correcting defects in the equipment or replacing defective electrode in accordance with the above guarantee. Upon the expiration of any period of warranty, all such liability shall terminate.

The foregoing guarantees and remedies are exclusive and except as above set forth. There are no guarantees or warranties with respect to engines, accessories, equipment, electrodes, or flux, either express or arising by operation of law or trade usage or otherwise implied, including without limitation the warranty of merchantability, all such warranties being waived by the Buyer.

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ELECTRIC

THE LINCOLN ELECTRIC COMPANY

World's Largest Manufacturer of Arc Welding Products • Manufacturer of Industrial Motors

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Ram