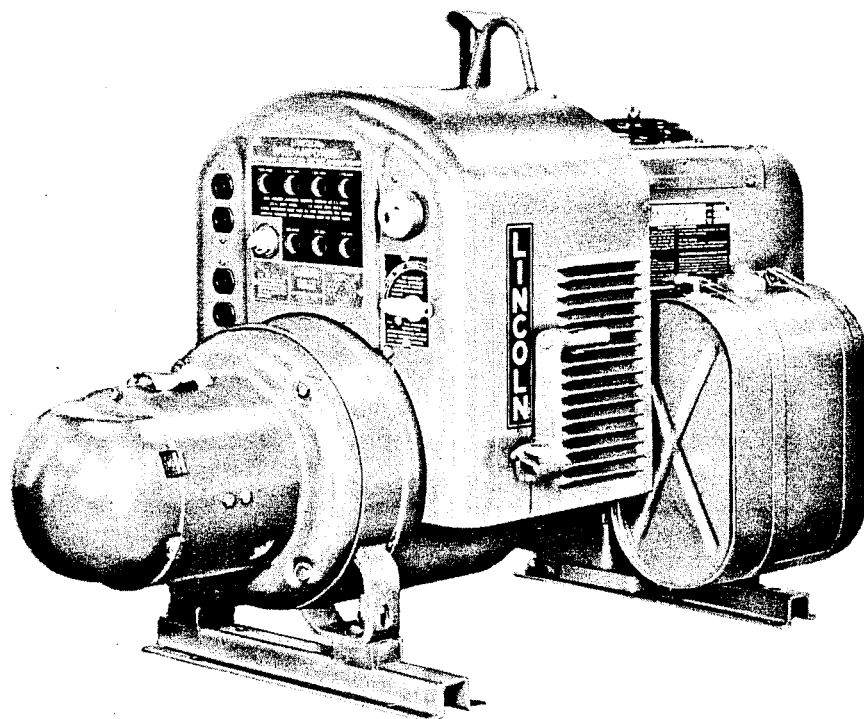


OPERATING MANUAL

IM183
Weldanpower AC-200/5-AT,
AC-200/5-BT
February, 1962
2612; 2683; 2730; 2951; 3117;
3200; 3201; 3723; 3790; 3951;
3952; 4058; 4059; 4208; 4713

"Weldanpower"
AC - 200/5 - AT
AC - 200/5 - BT
Combination 200 Ampere AC Welder
and Auxiliary 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This manual covers equipment which is obsolete and no longer in production by The Lincoln Electric Co. Specifications and availability of optional features may have changed.



Operating Instructions and Parts Lists within this manual apply to all "Weldanpower" engine driven and belt driven models with plug-in type welding current selection taps.

THE LINCOLN ELECTRIC COMPANY

The World's Largest Manufacturer of Arc Welding Equipment and Electrodes

CLEVELAND, OHIO 44117

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.

STARTING THE ENGINE

See the Wisconsin engine operating manual supplied with your welder for detailed engine starting, operating and maintenance instructions.

NOTE: The engine is stopped by pushing the ignition switch in, or by holding the button on the side of the magneto down until the engine stops.

INSTALLING BELT DRIVEN MODELS

See Instruction Manual IM-146 supplied with your welder for detailed instructions on how to mount and connect belt driven machines.

OUTPUT CABLE SIZES

When supplying AC power for runs over 25 feet in length, use #10 wire. For shorter runs, use #12 wire.

Electrode and ground cables are supplied with the welder. If longer cable lengths must be used, use #2 cable or larger.

OPERATION AS AN AC POWER SOURCE

Output Rating

The Weldanpower is designed as a single phase 60 cycle power source with a maximum output of 5 KVA*.

One 230 volt and two pair of 115 volt receptacles are located on the control panel. When operating continuously, a maximum of 21.8 amperes* can be drawn from the 230 volt receptacle.

When using the Weldanpower to produce 115 volt power, be sure to balance the load between the two pair of 115 volt receptacles. For example, if only two loads are to be connected to the machine, plug one load into one of the two upper receptacles and plug the other load into one of the two lower receptacles. Maximum current drawn continuously from either pair of the 115 volt receptacles must not exceed 21.8 amperes* per pair. The two pair of receptacles cannot be paralleled to produce more than 21.8 amperes for any one load. In other words, a load which requires more than 21.8 amperes of 115 volt current cannot be operated from a Weldanpower.

The Weldanpower can be connected to a 115 volt

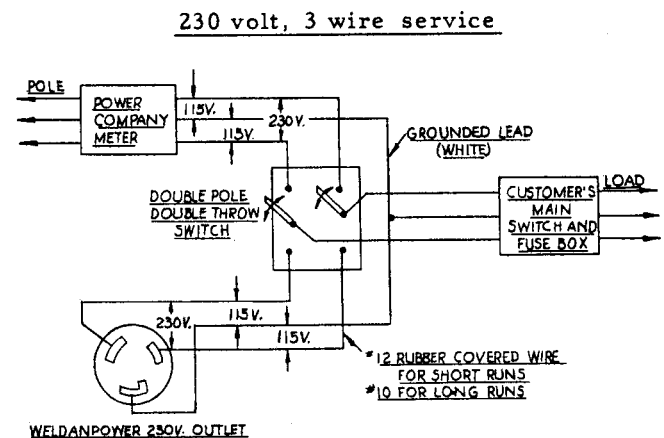
load and to a 230 volt load at the same time, provided the total load drawn does not exceed 5 KVA*.

*Weldanpowers with code number 3952 and below, have a 4 KVA maximum output. For these models, the current drawn from either pair of 115 volt receptacles or from the 230 volt receptacle should not exceed 18.2 amperes.

Connecting to Loads

Connect all loads to the Weldanpower through the receptacles on the control panel. The 230 volt receptacle takes the standard three prong plug supplied with the machine. The voltage between the two upper prongs is 230 volts, and the voltage between either upper prong and the lower prong is 115 volts. The lower middle prong is not an earth ground, but it is to be connected to the ground lead of a 230 volt 3 lead system. Any standard two pronged plug fits the 115 volt receptacles. To lock the plugs in the 230 volt and 115 volt receptacles, insert them all the way and twist to the right.

To permanently install a Weldanpower as a stand-by power unit for any circuit supplied by the power company, install a double pole, double throw switch as shown below. The switch rating should be the same or greater than the main circuit fuses. Install the switch between the power company meter and the main switch and fuse box. This switch is necessary to protect the Weldanpower when normal electric service is resumed.



Voltage Regulation

Special electrical circuits keep the output voltage constant when the Weldanpower is used as a power source. This is done by rectifying a portion of the load current. This rectified current is passed through the windings of the exciter field. Therefore, as the load current increases, the exciter field strength increases raising the exciter output voltage. This results in a higher rotor current in the alternator, which in turn, maintains the rated alternator output voltage. Rectifiers are placed in both 115 volt circuits to keep the output voltage constant whether the load is an unbalanced 115 volt load or one 230 volt load.

Operation of Engine Driven Models

To operate the Weldanpower as a power source, pull the throttle control lever out until the position washer on the throttle shaft is even with the "Power" mark on the throttle plate. The no load speed with the throttle in this position is 1925 RPM. Set the Welding Heat Control pointer on Power and connect the load.

Operation of Belt Driven Models

To operate a belted Weldanpower as a power supply, regulate the tractor engine or whatever power is used to drive the Weldanpower to provide a maximum no load shaft speed of 1925 RPM. Full load shaft speed must be 1800 RPM. Set the Welding Heat control pointer on Power and connect the load.

OPERATION AS A WELDER

Rating

The welding output is rated 200 amperes at 25 arc volts, 70 cycle AC current on a 50% duty cycle basis. Duty cycle is based on a 10 minute period. Thus, the welder can be loaded at rated output for 5 minutes out of every 10 minute period.

Welding Current Selection

Connect the ground cable to the stud on the control panel marked "Work". There are twelve "plug-in" taps for the electrode cable. Each tap is marked with the output amperes for that terminal. Insert the electrode cable into the tap marked with the current required for your application.

The Welding Heat Control is used for the fine adjustment of welding current after the tap has been chosen. The best arc characteristics are usually obtained with the Welding Heat Control set near maximum. An overlapping range of welding current is obtained by using the taps in conjunction with the Welding Heat Control. For this reason, the best arc characteristics are sometimes obtained using the next lower tap and a high setting of the Welding Heat Control.

Operation of Engine Driven Models

Pull the throttle control lever out until the position washer on the throttle shaft is even with the "Weld" mark on the throttle plate. The no load speed with the throttle in this position should be 2100 RPM.

Operation of Belt Driven Models

Regulate the tractor engine, or whatever source of power you are using to drive the Weldanpower, to provide a maximum no load shaft speed of 2150 RPM. Full load shaft speed must be 2050 RPM.

OPERATION FOR SIMULTANEOUS WELDING AND POWER SOURCE

You can use your Weldanpower to operate lights and small power tools at the same time you weld

if the following loads are not exceeded:

Simultaneous Welding and Power Operation

<u>Welding Tap</u>	<u>Permissible Power Load</u>
170-200	400 watts
150-180	750 "
125-160	1100 "
100-130	1600 "
80-100	2100 "
55-80	2700 "
25-65	3200 "

When the machine is idling with the throttle set for welding, the voltage at the power receptacle is approximately 15% higher than normal. This causes motors to run faster and bulbs to burn brighter. When welding, the power voltage drops near normal providing normal operation of power tools and light.

PIPE THAWING

Your machine can be used to thaw frozen water pipes. Securely connect the electrode cable to one end of the frozen pipe. Connect the ground cable to the other end of the pipe. Turn the Welding Heat Control clockwise until it hits the stop at minimum position. Insert the electrode cable into the 125-160 ampere tap. Start the engine and set the throttle at power position. If you have a belt driven model, set the power source for 1925 RPM shaft speed. When water starts flowing, turn the machine off. Time for thawing depends on temperature, pipe material and size of pipe. CAUTION: When the machine is being used to thaw pipes it cannot be used either as a welder or auxiliary power source.

IDLING

Push the throttle rod in to reduce the Weldanpower engine to idle speed.

COMMUTATOR, BRUSHES AND SLIP RINGS

The exciter commutator and brushes are inspected by removing the exciter end cover. Do not remove or replace the end cover while the welder is running.

The brushes are properly adjusted when the welder arrives. No particular attention is required to keep the brushes in good condition. As the brushes wear within 1/4 inch of the pigtail, they must be replaced with new ones. One complete set of brushes should always be kept on hand. Lincoln brushes have a bearing face specially curved to fit the commutator surface. These brushes are fitted by lightly stoning the commutator while the armature rotates at full speed. This operation is complete when the brushes make

positive contact over the entire contact face. Visually inspect the brushes to make sure they are fully seated. After stoning blow out the carbon dust with low pressure air. DO NOT SHIFT THE BRUSHES.

The commutator requires practically no attention. It should be cleaned periodically with a clean rag, or while running with a piece of fine sandpaper. Never use emery cloth or paper for this purpose.

The rotor slip ring and brushes require almost no attention. If the brushes require replacement, they are fitted by placing a piece of sandpaper between the brush and slip ring and working the sandpaper back and forth.

BEARINGS

Your Weldanpower generator is equipped with double-shield ball bearings having sufficient grease to last indefinitely under normal conditions. Where the welder is used constantly or in excessively dirty locations, it may be necessary to add one ounce of grease per year.

When greasing the bearings, keep all dirt out of the area. Wipe the fittings clean and use clean grease and equipment. More failures are caused by dirt introduced while greasing than from insufficient grease.

MAINTENANCE INSTRUCTIONS

1. Blow out the welder and controls with low pressure air periodically. In particularly dirty locations this may be required once each week.
2. Replace the engine crankcase oil every 50 hours of operation.
3. Clean the oil bath air filter every 50 hours of normal operation.
4. Governor and carburetor joints and the throttle shaft must be kept clean and lubricated.
5. Refer to the Wisconsin engine manual for engine maintenance and trouble shooting instructions.

SEE THE BACK COVER FOR INSTRUCTIONS ON HOW TO ORDER SPARE PARTS. ALWAYS GIVE THE WELDER CODE NUMBER WHEN ORDERING PARTS.

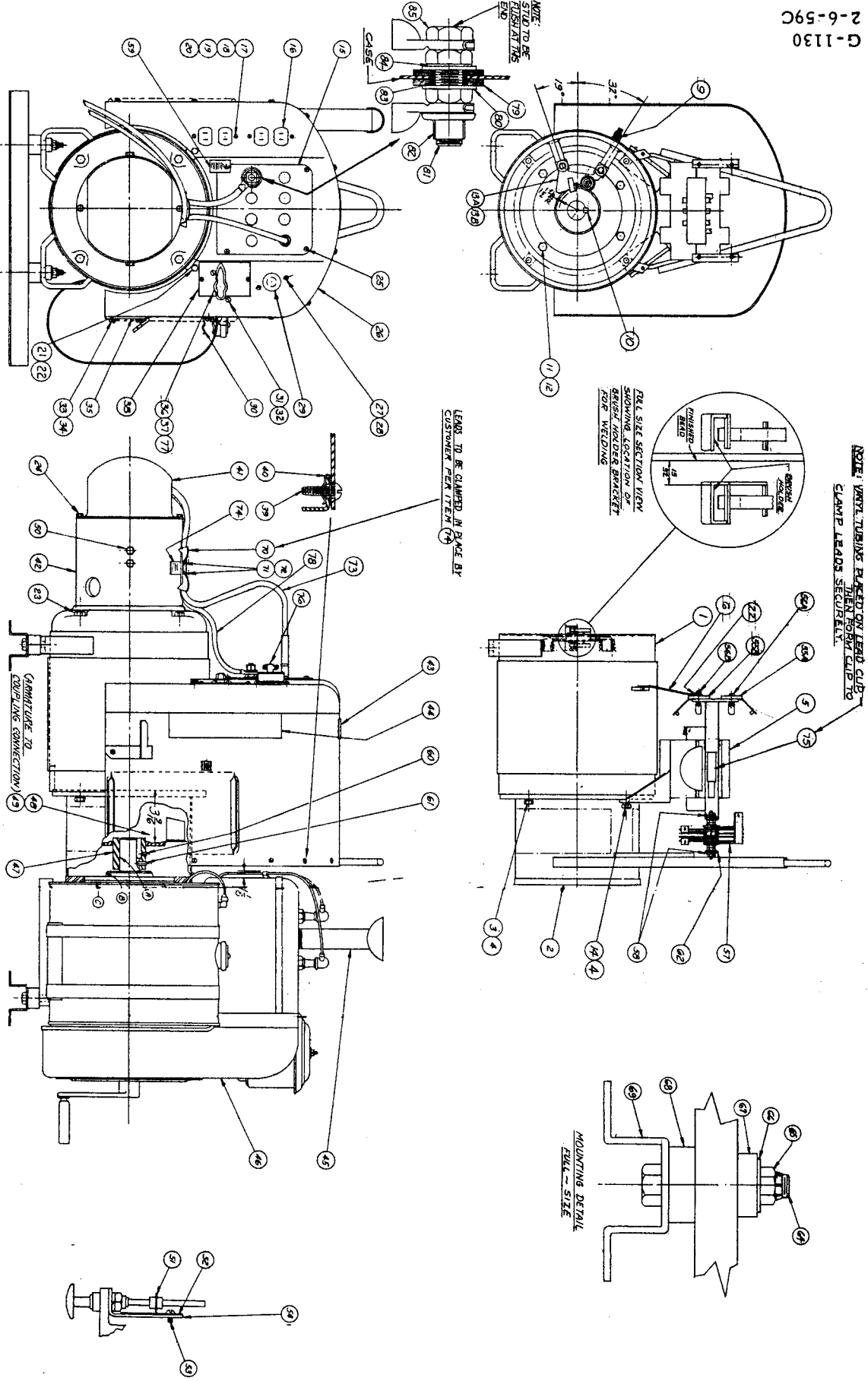
GENERAL ASSEMBLY

Parts List P-21-C

ITEM	PART NAME AND DESCRIPTION	NO. REQ'D.
1	Frame Assembly	1
2*	Connecting Ring Assembly	1
3	Hex Head Cap Screw	2
4	Lockwasher	4
5	Reactor Assembly	1
6	Clip Panel Support	2
7	Left Panel Support	1
8	Right Panel Support	1
9	Loom	1
10*	Key	1
11*	Hex Head Cap Screw	4
12*	Lockwasher	4
13	Generator Brushholder, New Style	1
	Brushholder Parts	See P-21-F
	Brush, New Style	2
13	Generator Brushholder, Old Style, Includes:	1
	Brushholder Parts	See P-21-G
	Brush, Old Style	2
14	Hex Head Cap Screw	2
15	Panel Nameplate	1
16	Duplex Receptacle	2
17	Round Head Screw	4
18	Flat Washer	4
19	Lockwasher	4
20	Hex Nut	4
21	Hex Head Cap Screw	2
22	Lockwasher	4
23	Hex Head Cap Screw	4
24	Shakeproof Screw	2
25	Self Tapping Screw	6
26	Case	1
27	Round Head Screw	2
28	Lockwasher	2
29	Receptacle	1
30*	Crank Clip	1
31	Round Head Screw	2
32	Lockwasher	2
33*	Round Head Screw	3
34*	Lockwasher	3
35*	Crank Bracket	1
36	Rheostat	1
37	Rheostat Handle	1
38	Rheostat Dial Plate	1
39	Self Tapping Screw	10

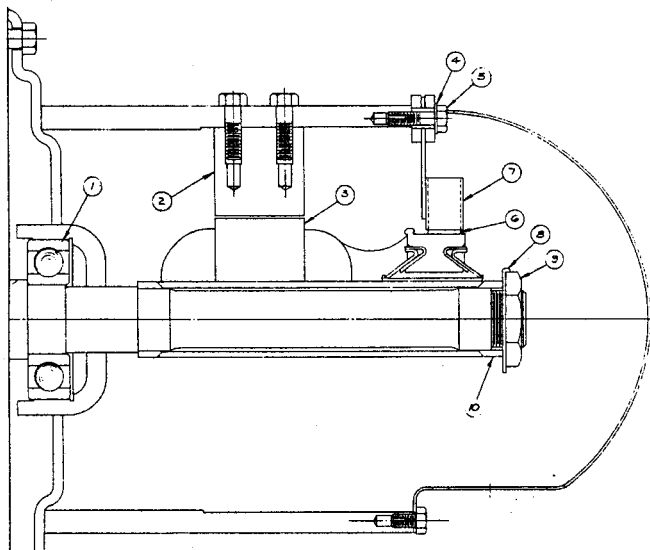
ITEM	PART NAME AND DESCRIPTION	NO. REQ'D.
40	Tinnerman Nut	10
41	End Shell	1
42*	End Bracket Assembly	1
43	Caution Decal	1
44	Lincoln Transfer	2
45*	Exhaust Pipe Assembly	1
46*	Engine	1
47*	Coupling & Blower Assembly	1
48*	Hex Head Cap Screw	6
49*	Screw Clip	3
50	Hex Head Cap Screw	6
51	Throttle Positioning Washer	1
52	Throttle Plate	1
53	Self Tapping Screw	2
54	Throttle Bracket	1
55A	Clip Panel Assembly (Top)	1
55B	Clip Panel Assembly (Bottom)	1
56A	Round Head Screw	4
57	Rectifier	2
58	Lockwasher	4
59	Instruction Tag	1
60*	Set Screw	1
61*	Set Screw	1
62	Rectifier Support	1
64	Hex Head Cap Screw	4
65	Huglock Nut	4
66	Flat Washer	4
67	Rear Support Washer	4
68	Front Rubber Pad	4
69	Base End	2
70	Clamp	1
71	Hex Head Screw	2
72	Shakeproof Washer	2
73	Electrode Lead	1
74	Instruction Tag	1
75	Vinyl Tubing	2
76	Armored Plug	1
77	Set Screw (Cup Point - Hex Socket)	1
78	Ground Lead	1
79	Insulating Washer	1
80	Flat Washer	1
81	Output Stud	1
82	Flanged Nut	1
83	Insulating Bushing	1
84	Shakeproof Lockwasher	1
85	Jam Nut	1

* Used on Engine Driven Models Only.



GENERATOR AND EXCITER

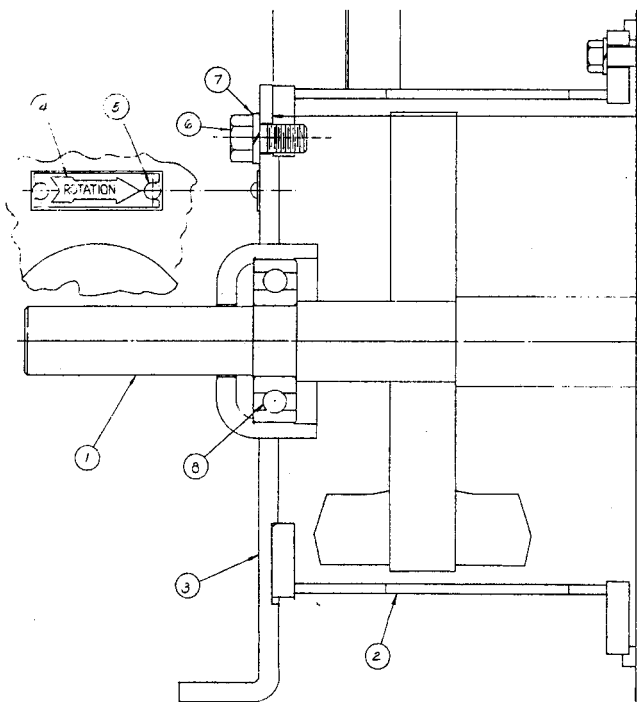
Parts List P-21-D



ITEM	PART NAME AND DESCRIPTION	NO. REQ'D.
1	Bearing	1
2	Main Pole	2
	Field Coil	2
3	Exciter Armature	1
	Exciter Armature Coil Spec	1
4	Plain Washer	4
5	Thread Cutting Screw	4
6	Brush	2
7	Exciter Brushholder	2
	Exciter Brushholder Parts	See P-25-M
8	Exciter Washer	1
9	Exciter Nut	1
10	Exciter Sleeve Collar	2
	Rotor Assembly, Engine Driven	1
	Rotor Assembly, Belt Driven	1

COUPLING PARTS FOR BELT DRIVEN

Parts List P-21-E

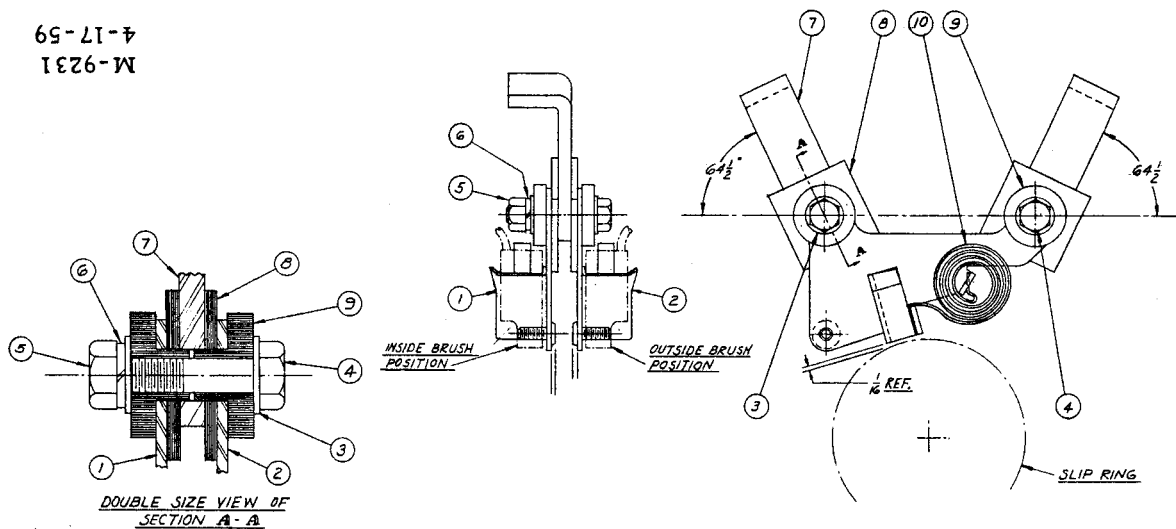


ITEM	PART NAME AND DESCRIPTION	NO. REQ'D.
3	End Plate	1
4	Rotation Nameplate	1
5	Self Tapping Screw	2
6	Hex Head Screw	4
7	Lockwasher	4
8	Bearing	

SLIP RING BRUSH HOLDER - NEW STYLE

Code 4050 up, Parts List P-21-F

69-21-7
1E26-M

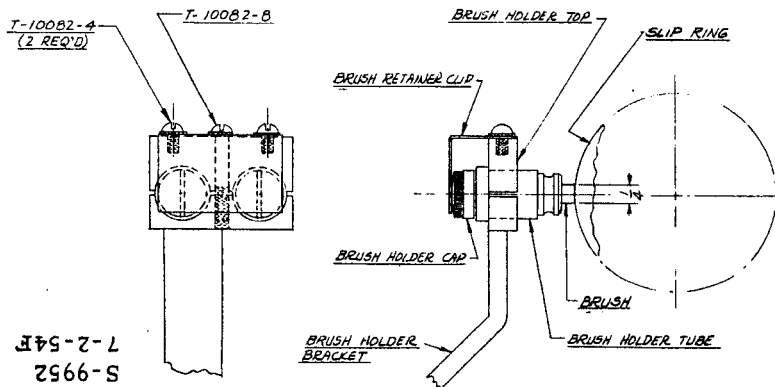


ITEM	PART NAME AND DESCRIPTION	NO. REQ'D.
	Brushholder Assembly, Includes All Below	1
1	Brushholder	1
2	Brushholder	1
3	Plain Washer	4
4	Hex Head Cap Screw	2

ITEM	PART NAME AND DESCRIPTION	NO. REQ'D.
5	Hex Nut	2
6	Lockwasher	2
7	Mounting Bracket	2
8	Insulator	4
9	Insulator Bushing	4
10	Brushholder Spring	2

SLIP RING BRUSH HOLDER - OLD STYLE

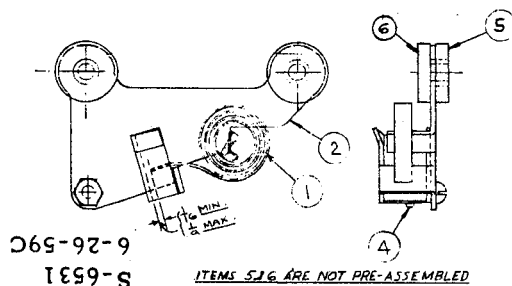
Below Code 4050 Parts List P-21-G



ITEM	PART NAME AND DESCRIPTION	NO. REQ'D.
	Brushholder Assembly, Includes All Below	2
	Brushholder Top	1
	Brush Retainer Clip	1
	Brushholder Cap	2
	Brushholder Tube	2
	Brush	2
	Screw	2
	Screw	1

EXCITER BRUSH HOLDER

Parts List P-25-M



ITEM	PART NAME AND DESCRIPTION	NO. REQ'D.
	Exciter Brushholder Assembly Includes:	2
1	Spring	1
2	Brushholder	1
4	Hex Nut	1
5	Insulating Washer	2
6	Bushing	2

HOW TO ORDER REPLACEMENT PARTS

All parts should be ordered from Authorized Field Service Shops or branch offices. The "Field Service Directory" listing all Authorized Field Service Shops geographically is supplied with each machine or is available upon request. These shops stock GENUINE replacement parts and have factory trained men to service your machine.

In ordering replacement parts give the following information:

- (a) From the machine nameplate - Machine model, code number and serial number.
- (b) From the Instruction Manual - Part name, item number, quantity required, and the number of the parts list used to get this information. To obtain this information refer to the pictures of the machine shown in this manual and find the required part and its item number. Get the part name and quantity required from the accompanying parts list.

All items in the parts lists which are indented in the parts name column are integral parts of the assembly which they are listed immediately under. If the entire assembly is required, do not order the indented items as they will be supplied as part of the assembly. The indented parts may be ordered separately if only parts of the assembly are required.

SAFETY PRECAUTIONS

When using a welder, as with all machinery, certain safety precautions should be observed:

- (1) Protect the arms and hands from rayburns and hot slag by wearing good leather gloves whenever welding.
- (2) Wear a good shield fitted with the proper safety lenses to protect your eyes from sparks and arc flash.
- (3) Use extreme care whenever chipping slag that chips do not fly and hit your eyes or those of your helper.
- (4) Although, with rated input, this welder will have a maximum output voltage well within prescribed safety limits, carelessness can result in a serious accident. Be Careful.
 - (a) Ground the welder frame.
 - (b) Use a well constructed, properly insulated electrode holder connected to the welder by insulated welding cable.
 - (c) Make certain the work is well connected to the ground cable, as close to the point of welding as possible. This is particularly important when standing on wet ground or a metal framework. Under such conditions be sure you are well insulated from the ground by dry gloves and rubber soled shoes.
 - (d) The electrode holder should be used for welding and not for lighting cigarettes.
- (5) Provide adequate ventilation for welder.

The Lincoln Electric Company, Cleveland, Ohio, the Seller, warrants all new equipment except engines and accessories thereof, against defects in workmanship and material 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 electrode within any period of warranty and the Seller's inspection confirms the existence of such defects, the Seller shall correct the defect or defects at its option, either by repair or replacement at its own factory or other place as designated by the Seller.

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 warranties 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 there are no other guarantees or warranties either expressed or implied.

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CLEVELAND, OHIO 44117



Branch Offices, Field Service Shops, and Distributing Agencies in All Principal Cities

LINCOLN ELECTRIC CO., (Australia) Pty., Ltd., Padstow, N. S. W.

LINCOLN ELECTRIC CO., of Canada, Ltd., Leaside, Toronto 17, Canada

LA SOUDURE ELECTRIQUE LINCOLN, Grand Quevilly, Seine-Maritime, France

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