MARQUETTE®

OPERATING INSTRUCTIONS
AND PARTS LIST

MIG WELDER

M12205, 83-320

IMPORTANT OPERATING INSTRUCTIONS
SAVE THESE INSTRUCTIONS

MARQUETTE®

B7114620

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⚠ WARNING

Read and observe all instructions included in this manual as well as these following specific procedures.

EYE AND BODY PROTECTION

WARNING: Never look at welding arc without a helmet or shield. Arc rays are extremely dangerous to the eyes.

1. Use helmet, filter, and cover plate complying with ANSI Z87.1 to protect your eyes and face from sparks and the rays of the arc when welding or observing open arc welding.
2. Always wear safety goggles with side shields complying with ANSI Z87.1 when in a welding area, or when near slag chipping operation.
3. To avoid spatter and ultraviolet ray burns wear oil free woolen clothing, keep sleeves and collars buttoned, no pockets in front, cuffless trousers overlapping high shoes, and leather gauntlet gloves.
4. Protect other near-by personnel with suitable non-flammable screening, and warn bystanders as to the potential hazards in the weld area.
5. Provide adequate ventilation in the welding area, particularly when welding on galvanized, lead or cadmium plated steel, and other metal which produce toxic fumes.
6. 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.
7. Do not weld in locations close to chlorinated hydro-carbon vapors coming from degreasing, cleaning, or spraying operations. The ultraviolet rays of the arc can react with solvent vapors to form phosgene, a highly toxic gas, and other gases.

PROTECTION FROM ELECTRICAL SHOCK

1. Do not let bare skin or wet clothing come between the following combinations;

   Welding Gun
   AND
   Ground Clamp, or Workpiece,
   or Metal Work Table

   40 Volts exist between these parts when welder is on and gun trigger pressed!
   Wear dry, hole free, clothing and gauntlet type gloves to protect and insulate the body.
2. Take special care to insulate yourself from ground using dry insulation (such as dry wood) of adequate size when welding in damp locations, on metal floors or gratings, and in positions (such as sitting or lying) where parts or large areas of your body can be in contact with possible grounds.
3. Maintain the electrode holder, work clamp , welding cable and welding machine in good, safe operating condition.

FLAMMABLE AND EXPLOSIVE MATERIALS

1. Remove flammable and explosive material at least 35 feet from the welding arc to prevent welding sparks or molten metal from starting a fire. Keep a type ABC fire extinguisher within easy reach.
2. Welding on or near containers which hold combustibles can cause an explosion, even when 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 AWS, 2501 N.W. 7th St., Miami, Florida 33125.
3. Electrodes shall be removed from electrode holders when not in use, and holders shall be so placed that they cannot make electrical contact with persons, conducting objects, flammable liquids, or compressed gas cylinders.
4. Never connect the work cable or clamp to any object but the work piece or metal work table. Connecting to other objects such as building ground can create a fire hazard.
5. Never weld anything on or to the welder cabinet, as a burn through may cause transformer failure.

PREVENTATIVE MAINTENANCE

1. Never apply power to the welder with any part of the "cabinet" removed. Position on-off switch in " Off" position and disconnect power supply at the circuit breaker or fuse box before doing maintenance work inside the machine.
2. Before connecting the welder power cord to the receptacle, check the following:
   a. Inspect the power cord and welding cables for cuts or burns and make sure blades and ground pin on the plug are straight.
   b. Inspect "On-Off" switch lever for cracks or broken parts.
   c. Inspect electrode holder jaw insulators for cracks or broken parts.
   d. For additional safety information, purchase copies of "Practice for Occupational and Educational Eye & Face Protection" (ANSI Z87.1) and "Safety in Welding and Cutting" (ANSI Z49.1) from the American Welding Society or the American National Standards Institute ANSI, 1430 Broadway, New York, New York 10018, and "Code for Safety in Welding and Cutting" (CSA Standard W117.2-1574) from the Canadian Standards Association, 178 Rexdale Blvd., Rexdale, Ontario M9W1R3.

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INSTRUCTION MANUAL FOR PORTABLE MIG WELDER

INTRODUCTION

This manual is meant to describe the correct use of the welder and to inform you about the basics of welding techiques.

Therefore, please read the following directions carfully.

One of the best known systems which has made it possible for users, even for unskilled ones, to produce excellent welds as well as to join with ease materials considered hard to be welded, is the process based on a continued fed wire with gas shielding, commonly known as MIG.

The welder you have bought has been designed and simplified in such a way as to be practical, easy to operate.

It gives excellent performances on mild steel, stainless steel and aluminum.

Furthermore, the welder we supply is equipped with what is necessary to weld mild steel, except for the gas bottle, which is available at a welding distributor.

INSTALLATION

Assemble the parts supplied with the welder as shown in Fig. 1.

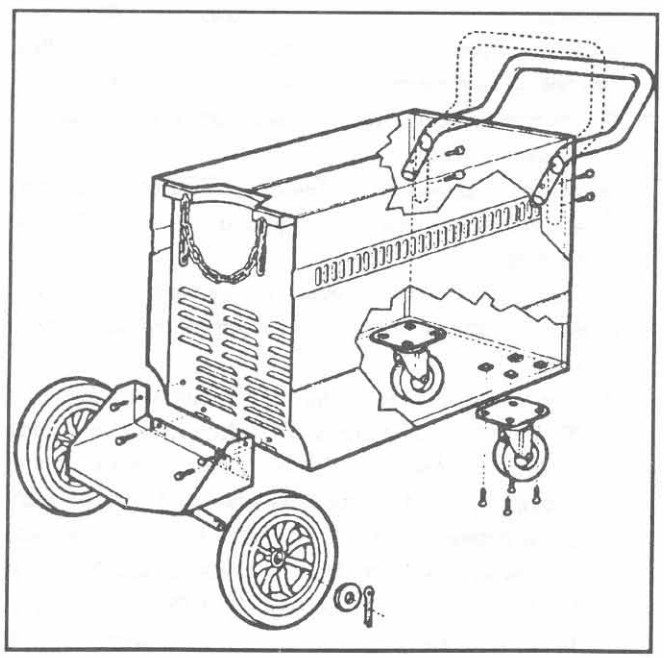


Fig. 1

PREPARING TO WELD

MILD STEEL

Screw the flowmeter to the cylinder following the procedure given at the section: " Instructions for connection to cylinder."

Make sure that the supply voltage corresponds to that indicated in the rating plate of the welder and connect the power cord to AC receptacle (provided with ground wire in perfect working order.) Connect the provided power plug to the machine if it matches the type of receptacle you have in your shop. If it does not match obtain a plug that matches up with your service. This welder should be provided with a minimum of 20 amps, 230 volt supply. Always make sure green-yellow wire in the power cord is connected to the round ground pin of the plug you use.

Remove the side cover (5) and extract the torch (49) and the welding mask. Install the torch by fitting it into the attachment on the front panel (3). Insert the wire in the drive unit (11) as well as in the torch, according to the following steps:

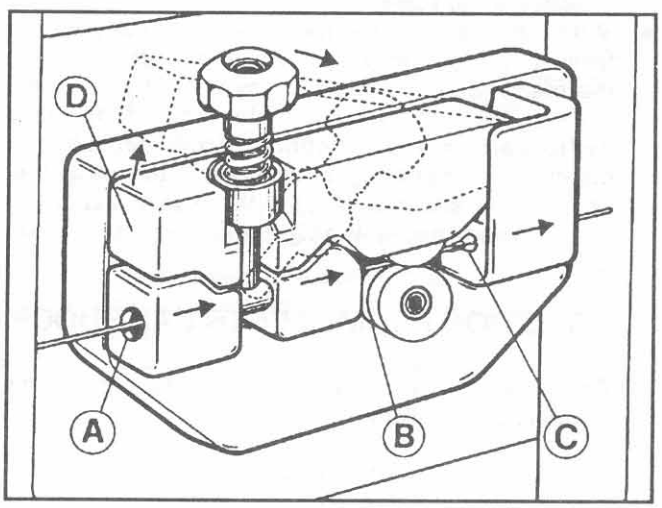


Fig. 2

- Cut the wire end with a well sharpened tool.
- Release the wire pressing unit (D), slip the wire into the hole (A), pass it on the roller (B), and insert it at least 10 inches in the sheath (C). Fasten the unit (D) making sure the wire stays in the grove of the wire slide roller.
- Always ensure that the wire diameter fits the race on the wire slide roller and the hole in the current nozzle.

Connect ground clamp (38) to workpiece, making sure that there is a good contact.

Make sure that the workpieces are thoroughly cleaned and fit closely.

- Set the luminous switch (51) in the ON position.
- Remove the taper gas nozzle (45) by rotating it CLOCKWISE.
- Remove the contact tip (44).
- Press the torch button and release it when the wire comes out approx. 5 inches from the torch (49).

DO NOT BRING TORCH CLOSE TO FACE WHILE THE WIRE IS COMING OUT.

- Screw contact tip (44) ensuring that hole diameter suits the wire used.
- Insert the gas nozzle (45) by rotating it CLOCKWISE.
- Screw open the gas cylinder and set the flowmeter at approx. 20CFH.

THE MACHINE IS READY TO WELD

Select the welding position by means of selector switch (12) according to the thickness of the workpieces, as per below.

Thickness	Setting	Wire Dia.
1/32" to 1/16"	1	.023
1/8'	2	.023
3/16"	3	.023
1/4"	4	.030
3/8"	5	.035
1/2"	6	.035

Place the torch in the welding position, Fig. 4.

Protect your eyes with the mask (prepared as shown in Fig. 3).

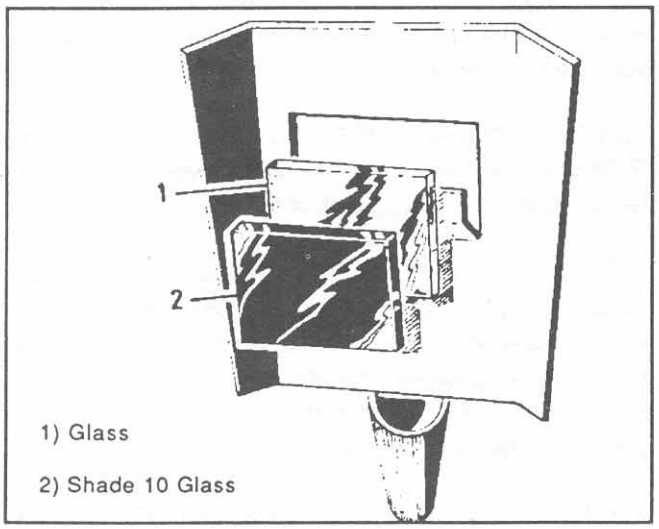


Fig. 3

Press the torch switch all the way to strike the welding arc.

For a greater stability of the arc keep the tip of the torch as near as possible to the workpiece and regulate wire speed by means of the knob (50) so as to get an arc with regular and constant noise. If speed is too high wire tends to push against the workpiece causing the torch to jump back; if speed is too low, wire melts with random drops or arc goes out.

For the welding of mild steel, this welder can be used with a mixture of Argon +CO_2 (75% + 25%) or with 100% CO_2.

SPOT WELDING

For spot welding, replace the gas-weld nozzle with the special spot-weld nozzle. Exert enough pressure with the torch to achieve a good contact between metal sheets.

Now position the knob on SPOT TIME and adjusting the spot-welding time to get an acceptable weld time.
ATTENTION: Metal sheets will have to be perfectly clean.

STAINLESS STEEL WELDING

The welder has to be prepared as described in "mild steel welding" section and following accessories have to be used.

- Cylinder with Argon + CO_2 (75% + 25%) or Argon + O_2 (98% +2%)
- Spool of stainless steel wire

The inclination of the torch and the direction of the motion we recommend are shown in Fig. 4.

ALUMINUM WELDING

The welder has to be prepared as described in "mild steel welding" section and following accessories have to be used:

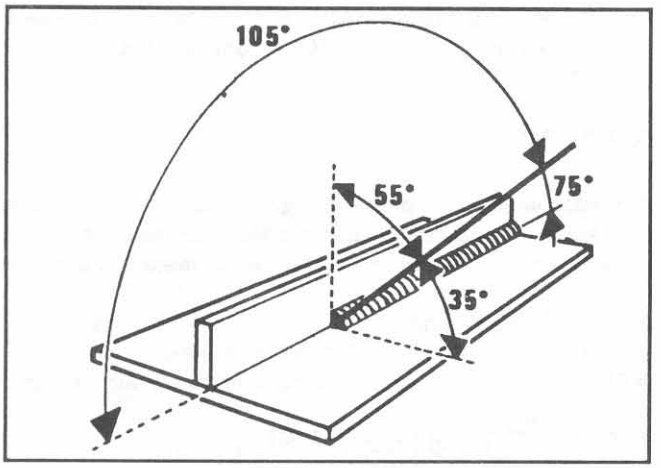
- Cylinder with 100% Argon
- Reel of .035 aluminum wire (type 5356)
- 1 mm. contact tip
- Teflon liner
- Prepared torch for aluminum welding
- If you only have a torch for steel wires, it must be modified in the following way:

a) Make sure that length of torch cable does not exceed 10 feet (it is advisable not to use longer torches.)
b) Remove the brass sheath-holding nut (48), the gas- (45) and the contact tip (44), then slip the sheath (46) off.
c) Insert the teflon sheath for aluminum and ensure it protrudes from both ends.
d) Screw the contact tip so that the sheath is next to it.
e) Insert the sheath holding nipple, the O ring in the free end of the sheath and secure with the nut (48) without tightening too much.

f) Slip the brass tube on the sheath and insert both into the adapter (after removing the iron tube which was fitted inside the adaptor (1)).
g) Cut the sheath diagonally so that it stays as close as possible to the wire slide roller.

The inclination of the torch and the direction of the motion have to be those shown in Fig. 4.

Fig. 4



SETTING UP OF THE WELDER

Use a wire drive roller having a groove larger than the diameter of the wire you are going to use (E.g. for wire dia. 0.035 inches, use a race for dia. 0.040 inches).
- Adjust pressure of the wire holding unit to the minimum but sufficiently to allow sliding. To check this, manually stop the wire coming out from the torch and ensure that the wire slide roller, still running, does not tangle or break the wire but slides on it.
- Connect the earth clamp directly to the workpiece.
- Make sure that workpiece is well cleaned and non-oxidized.
- Touch the workpiece with the wire tip and press the torch push button.

CAUTIONS

- Keep the torch cable as straight as possible.
- Ensure that gas delivery is 20 CHF/minute.
- Do not start welding again with a too large drop at the tip of the wire.
- Should you notice aluminum chips near the unit, check if sharp shavings have formed on the wire guides or on the roller; remove them, if any.
- Use good quality wires.

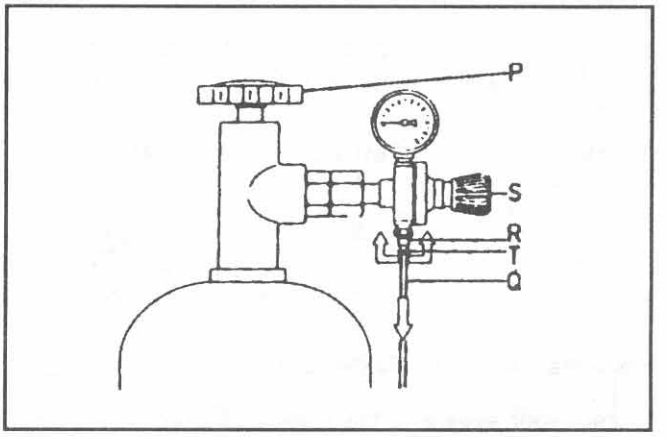
INSTRUCTIONS FOR REPLACEMENT OF WIRE REEL

Turn the welder off: switch (51) in OFF position.
- Remove the mobile cover (5).
- Cut the wire end coming out from the current nozzle with a well sharpened tool.
- Release the wire pressing unit.
- Wind the wire by rotating the reel counterclockwise.
- Hook the wire end in the side hole of the reel.
- Loosen the knob (6), remove the carrier (8) and replace the reel, and install reel retaining adaptor nut.

Note: The reel carrier can be fitted both with the 8 inch (10 lb.) dia. and the 12" dia. (30 lb.) reel.
Position part (8) on the side suitable for the reel to be used.

INSTRUCTIONS FOR CONNECTION TO CYLINDER (FIG. 5)

Fig. 5



Screw the fitting on the flowmeter onto the cylinder and tighten it with a suitable wrench, to avoid any gas leaks. Open the cylinder valve.

Push the gas flexible line (Q) all the way into the connector (R) of the flowmeter. Press the torch lever and regulate the gas flow at 5 cfh by means of the flowmeter knob (S).

Note: It is normal that, when releasing the torch lever, the indicator of the pressure gauge rises. Gas flow must be adjusted when gas flows out of the torch, i.e. when the lever is being pressed. In order to avoid damaging the pressure gauge, it is important to stop gas flow by unscrewing the knob (S) before opening the cylinder valve.

In order to save gas it is possible, particularly at low welding currents, to decrease the gas flow less than 5 cfh, provided that the welding arc is sufficiently shielded and that weld does not show porosity.

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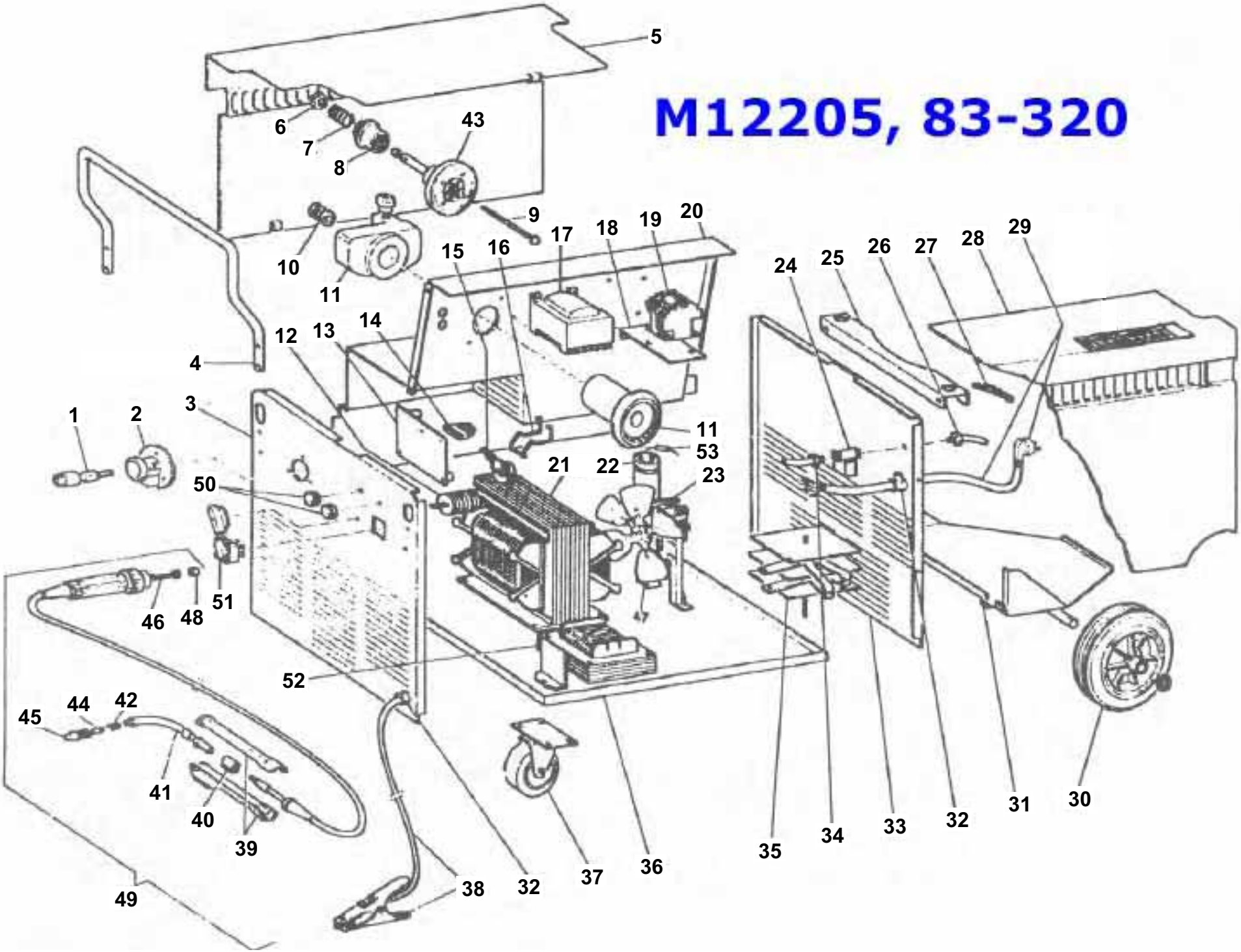

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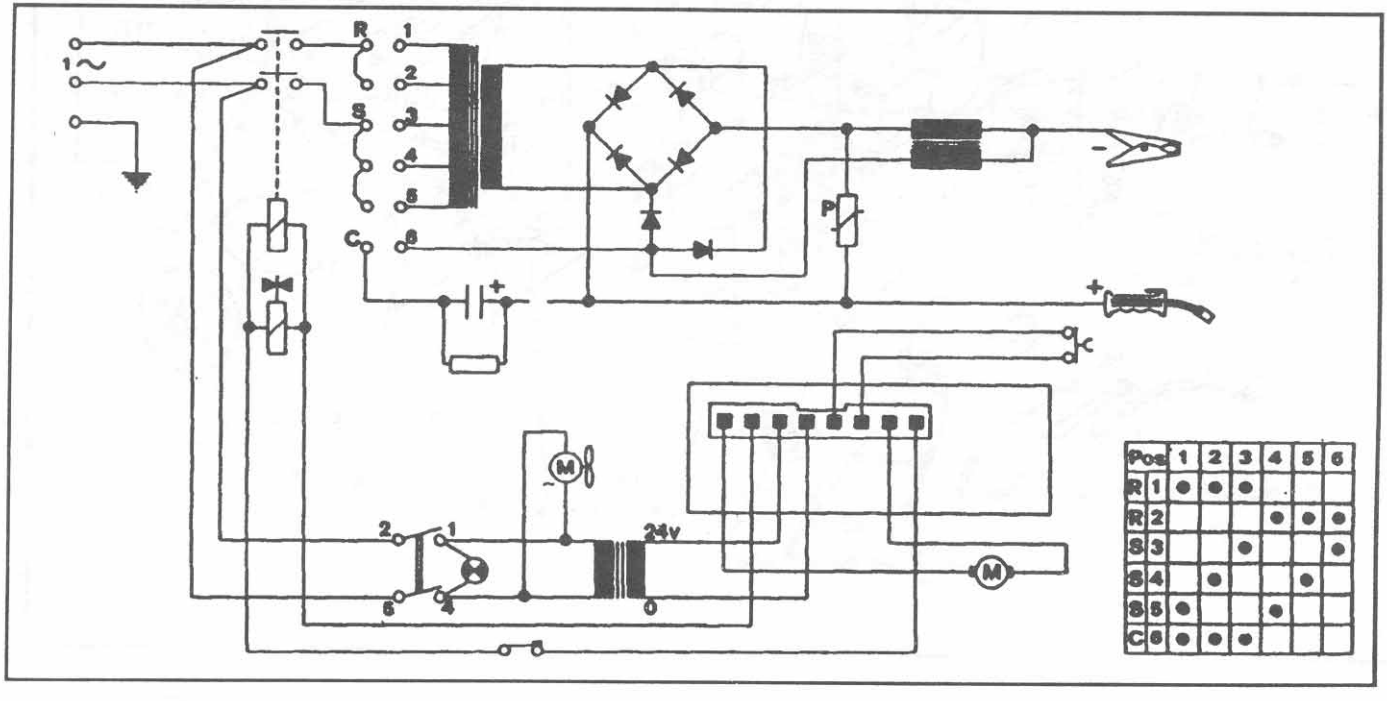
Item	Lincoln Stock #	Customer #	Description
1		B7080370 (**5710065**)	Adapter body
2		B7081370 (**3080234**)	Adapter flange
3		B7082370	Front panel
4		B7084370 (**5800443**)	Handle
5		B7085370	Cover
6		B7087370	Knob
7		B7088370	Spring Support
8		B7089370	Reel outer support
9		B7090370	Screw
10		B7091370 (**3080241**)	Drive Roller
11		B7092370 **(5750602)**	Drive motor & base assy
12		B7093370 (**3190125**)	Switch
13		B7094370 (**5600845**)	Circuit board
14		B7095370 (**5580220**)	Spring Support
15	S26399-21	B7096370 (**3190357**)	Thermostat
16		B7097370 (**311503**)	Thermostat spring
17		B7098370 (**5800517**)	Aux. transformer
18		B7099370	Support
19		B7100370 (**3190268**)	Remote control switch
20		B7101370	Center panel
21		B7125370 (**3060278**)	Spool Holder
22		B7102370 (**5600343**)	Transformer
23		B7104370 (**3165064**)	Fan motor
24		B7105370 (**3160181**)	Gas solenoid, 24Vac
25		B7106370 (**5800828**)	Bottle support
26		B7107370 (**3160016**)	Gas hose fitting
27		B7108370 (**3080353**)	Chain
28		B7109370 (**5800988**)	Fixed side panel
29		B7111370	Power cord
30		B7112370	Wheel, 7 3/4" dia.
31		B7113370 (**5800547**)	Bottle holder
32		B7114370 (**3180002**)	Back Panel
33		B7115370	Back panel
34		B7116370 (**3160014**)	Gas hose fitting
35		B7117370 (**3200076**)	Rectifier
36		B7118370	Base
37		B7119370 (**3130085**)	Caster
38		B7120370 (**5580092**)	Ground cable
39		B7121370 (**3055607**)	Handle assy.
40		B7122370	Adapter
41	334-628-000	B7123370 (**1469.00**)	Gooseneck assy.
42	334-172-000	B7124370	Nozzle spring
43		B7125370 (**3060278**)	Coil support
44	KP11-25, KH710	43090, 334-159-300, KP2039-1B1, M15522	0.025 Contact Tips
	KP11-30, KH711	43100, 334-160-300, KP2039-2B1, M15523	0.030 Contact Tips
	KP11-35, KH712	43110, 334-161-300, KP2039-3B1, M15524	0.035 Contact Tips
45	334-164-400	M15520, 83-391	Steel Welding Nozzle
	334-162-300	M15521, 83-392	Spot Welding Nozzle
46	**411-121-666**	**M15192**	**Steel liner**
	411-123-666	**M15194**	**Teflon liner**
48		B7127370 (**3155512**)	Liner nut
49	**334-644-000**	**M15193**	**Mig gun assy.**
50		B7128370 (**3055125**)	Knob
51		B7129370 (**3190002**)	Switch
52		B7130370 (**5605003**)	Reactor
53		B7131370 (**3205030**)	Resistor
Not Shown			
55	334-303-001		Gas Regulator

2-7-07

Model	Primary Input	Input Plug	Duty Cycle
M12205	230V, 29.5 amp	50A	15% @ 180 amps, 20% @170 amps, 35% @ 130 amps, 60%@ 100 amps

Rated Output	Voltage Settings	Agency Listing	Max Output
180	6	CSA	180 amps, 1/2"



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