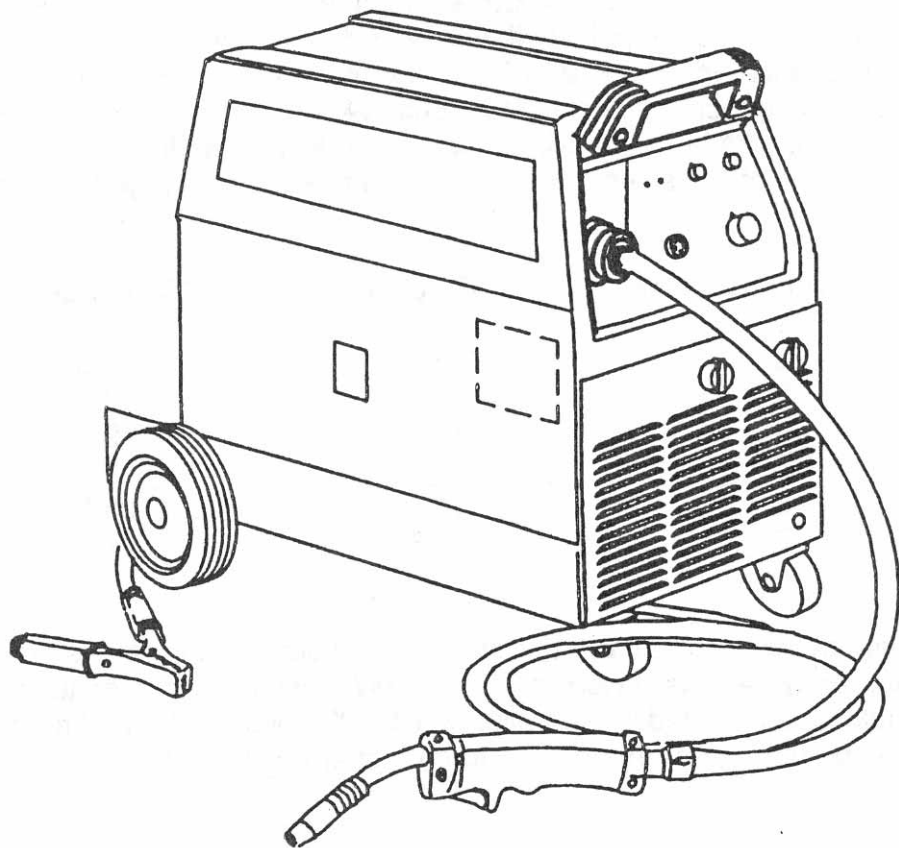


M12208, 83-390 Service Manual



WARNING: all operations listed in this repair manual must be carried out by specialized, trained personnel.

When working inside the machine, be especially careful of all non-insulated wires and terminals and moving parts (motor-driven fan).

Description of operating logic.

The machine is powered by setting the switch **24** to a position from 1 to 7; in this way the mains voltage powers the fan **25** and the electronic circuit **23**. At this point, when the torch trigger **44** is pressed, the following functions are carried out:

- 1) Contact **21** closes, thereby powering the power transformer **35** and the rectifier **27**.
- 2) Solenoid valve **15** opens, and gas flows out of the torch **44**.
- 3) Gearmotor **3** starts, and the torch begins to output welding electrode. Note that the supply voltage for the gearmotor **3** is taken directly from the rectifier **27** and duly managed by the electronic circuit **23**.

The thermostat **36** is also connected to the same electronic circuit, and interrupts all welding functions when the temperature inside the machine rises to levels hazardous to its components.

This machine belongs to the "COMBI" series, and thus the voltage output from the rectifier **27** is connected to the terminal board **5**, located in the coil compartment. This terminal board makes it possible to reverse the polarity if an electrode that does not require the use of gas is used for welding, such as: flux cored wire. In normal user conditions, the positive pole (+) of the rectifier **27** is connected directly to the torch **44**. The negative pole (-) instead passes through the impedance **34** before arriving at the grounding cable **39**.

Based on the position of the selector switch **24**, the reference voltage for welding is as follows:

Selector switch position	AC Voltage	DC Voltage
1	18,5	15,5
2	20,4	16,8
3	22,5	18,8
4	23,3	19,5
5	25,8	22
6	29,3	25,2
7	32,3	27,7

NOTE: If a digital multi-meter is used to measure the voltages on the positive and negative poles of the rectifier **27**, a resistive load of 3.3 KW 1W must be connected to the rectifier. This resistance should be connected in a parallel circuit to the positive "+" and negative "-" poles, as well as the ends of the multi-meter. The torch trigger must remain pressed while measuring.

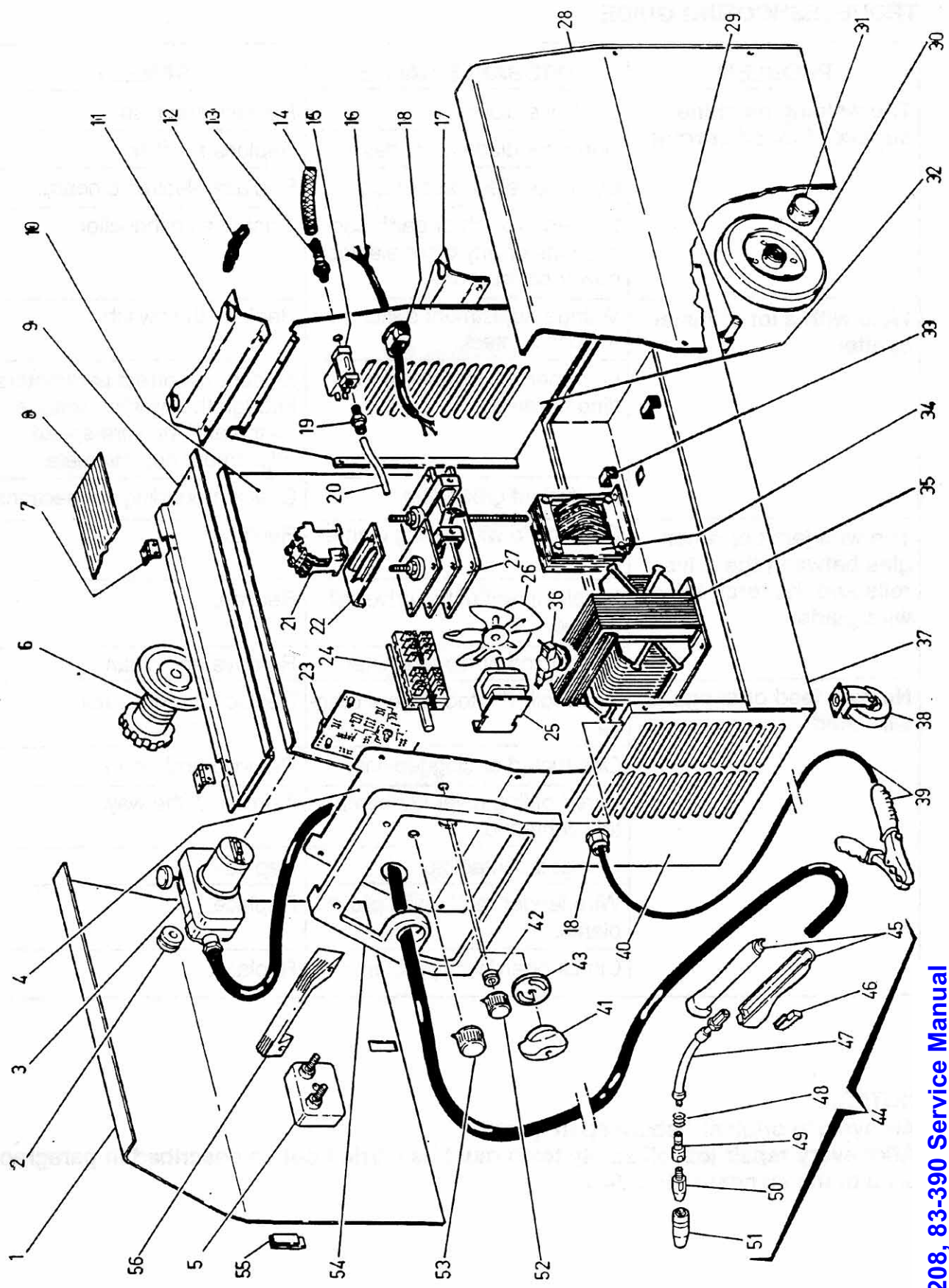
TROUBLESHOOTING GUIDE

PROBLEM	PROBABLE CAUSE	REMEDY
The welding machine supplies limited current	Line fuse blown.	Replace line fuse.
	Burnt out diode or diodes.	Replace rectifier.
	Burnt out electronic board.	Replace electronic board.
	Loosened torch or earth connections or any other electrical power connection.	Tighten all connection.
Weld with a lot of metal spatter	Voltage adjustment switch has a loose contact.	Replace the switch.
	Improper adjustment of welding parameters.	Select the correct parameters through the welding-voltage switch and the wire-speed adjustment potentiometer.
	Insufficient grounding.	Check grounding connections.
The wire jams or entangles between the drive rolls and the torch infeed wire guide.	Contact tip with wrong diameter.	Replace.
	Misalignment of the drive roll groove.	Realign.
	Obstructed or clogged liner.	Remove and clean.
No wire feed or irregular wire feed.	Drive roll with too large a groove.	Replace the drive roll.
	Obstructed or clogged liner.	Remove and clean.
	Wire holding roller not completely tightened.	Tighten all the way.
	Clogged contact tip.	Replace.
	Wire feeder motor with problems.	Replace.
	Circuit board with problems.	Replace.

NOTES:

Always use original Cebora spare parts

After every repair job, all safety tests must be carried out as described in paragraph 6.1.3 of the standard IEC 974.1.



M12208, 83-390

Item	Lincoln Stock #	Customer #	Description
1		251075	Hinged side panel
2	310-210-666	251299	Drive roller
3		251066	Wire feed motor
4		251018,251019	Control panel
5	S26399-10	251067	Terminal block
6		B7125370 (3060278)	Coil support
7		246217	Hinge
8		251063	Rubber mat
9		251082	Cover
10		251080	Center divider
11		251056	Gas cylinder support
12		B7108370	Chain
13		B7107370 (3160016)	Hose barb joint
14		246169	Gas hose
15	246-516-666	B7007380	Gas solenoid
16		251069	Power cord
17		251083	Gas cylinder support
18		B7114370	Strain relief
19		246997	Fitting
20		251017	Gas hose, 0.7 M long
21	246-518-666	B7026380	Contactora
22		B7099370	Contactora support
23		251072 (5600925)	Circuit board w/wire speed potentiometer
24	S26399-4	246994	Switch
25		246222 (3165067)	Fan motor
26		246193 (3065101)	Fan blade
27		251070	Rectifier
28		251074	Right side panel
29	413-121-666	250881	Axle
30		B7112370	Wheel
31		250224	Cover
32		251079	Back panel

Item	Lincoln Stock #	Customer #	Description
33		251081	Support
34		251073	Reactor coil
35		251071	Transformer
36	S26399-21	B7065370	Thermostat
37		251076	Undercarriage
38		B7119370	Caster
39	S26399-3	246983	Ground cable assy.
40		251077,251078	Front panel
41	S26399-1	246945	Knob
42		251060	Spacer
43		251061	Spacer
44	334-634-000	247008	Gun Assembly
	334-637-000	246199	Steel Liner
	334-645-000	M15220	Teflon Liner
45		B7121370 (3055607)	Handle assy.
46		246258 (3190057)	Trigger
47	334-628-000	B7123370	Gooseneck
48	334-172-000	B7124370	Spring
49	334-632-000	246311	Gas diffuser
50	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
51	334-164-400	M15520	Tapered nozzle
	334-162-300	M15521	Spot nozzle
52		246946	Knob
53		246219	Knob
54		251062	Frame
55	S26400-1	246948	Latch
56		246949	Handle assy.
57		247506,247508	
58		247509	Warning label

Model	Primary Input	Input Plug	Duty Cycle at Rated Output
M12208	230V, 30 amp	50A	20%

Rated Output	Voltage Settings	Agency Listing	Max Output
	7	CSA	175 amps, 3/8"

	WIRING DIAGRAM COLOUR CODE
A	BLACK
B	RED
C	GREY
D	WHITE
E	GREEN
F	PURPLE
G	YELLOW
H	BLUE
K	BROWN
J	ORANGE
I	PINK
L	PINK-BLACK
M	GREY-PURPLE
N	WHITE-PURPLE
O	WHITE-BLACK
P	GREY-BLUE
Q	WHITE-RED
R	GREY-RED
S	WHITE-BLUE
T	BLACK-BLUE
U	YELLOW-GREEN

M12208, 83-390 Service Manual

