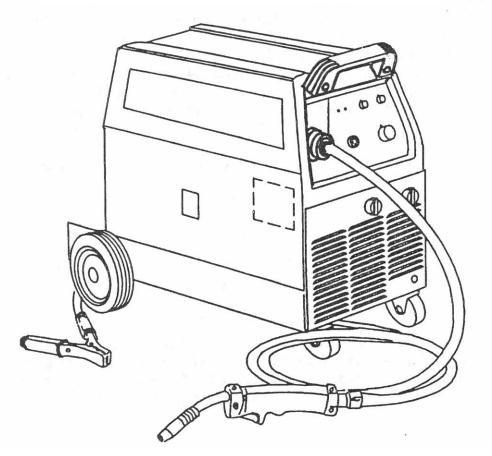
M12208, 83-390 Service Manual



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.

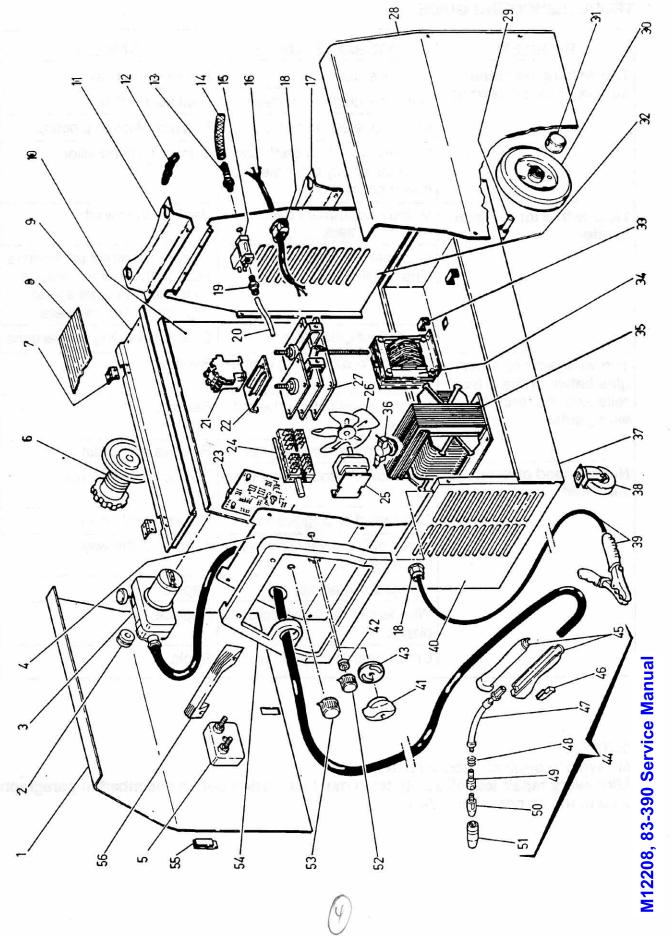
TROUBLESHOOTING GUIDE

PROBLEM	PROBABLE CAUSE	REMEDY
The welding machine	Line fuse blown.	Replace line fuse.
supplies limited current	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 entan- gles between the drive	Contact tip with wrong diameter.	Replace.
rolls and the torch infeed wire guide.	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.
and the second	Clogged contact tip.	Replace.
	Wire feeder motor with pro- blems.	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

ltem	Lincoln Stock #	Customer#	Description	Item	Linco
1		251075	Hinged side panel	33	
2	310-210-666	251299	Drive roller	34	
3		251066	Wire feed motor	35	
4		251018,251019	Control panel	36	S2
5	S26399-10	251067	Terminal block	37	
6		B7125370 (3060278)	Coil support	38	
7		246217	Hinge	39	S2
8		251063	Rubber mat	40	
9		251082	Cover	41	S2
10		251080	Center divider	42	
11		251056	Gas cylinder support	43	
12		B7108370	Chain	44	334
13		B7107370 (3160016)	Hose barb joint		334
14		246169	Gas hose		334
15	246-516-666	B7007380	Gas solenoid	45	
16		251069	Power cord	46	
17		251083	Gas cylinder support	47	334
18		B7114370	Strain relief	48	334
19		246997	Fitting	49	334
20		251017	Gas hose, 0.7 M long	50	KP11-
21	246-518-666	B7026380	Contactor		KP11-
22		B7099370	Contactor support		KP11-
23		251072 (5600925)	Circuit board w/wire speed potentiometer	51	334
24	S26399-4	246994	Switch		334
25		246222 (3165067)	Fan motor	52	
26		246193 (3065101)	Fan blade	53	
27		251070	Rectifier	54	
28		251074	Right side panel	55	S2
29	413-121-666	250881	Axle	56	
30		B7112370	Wheel	57	
31		250224	Cover	58	
32		251079	Back panel	-	

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 43 251061 Spacer 44 334-634-000 246199 Steel Liner 45 87121370 (3055607) Handle assy. 46 246258 (3190057) Trigger 47 334-628-000 B7123370 Gooseneck 48 334-172-000 B7124370 Spring 49 334-632-000 246311 Gooseneck KP11-30, KH711 43090, 334-160-300, KP2039-BH, M15522 0.035 Contact Tips	Item	Lincoln Stock #	Customer #	Description	
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56 246949 Handle assy. 57 247506,247508				Frame	
57 247506,247508	55	S26400-1	246948	Latch	
				Handle assy.	
58 247509 Warning label	57		247506,247508		
	58		247509	Warning label	

 Model
 Primary Input
 Input Plug
 Duty Cycle at Rated Output

 M12208
 230V, 30 amp
 50A
 20%

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

	DIAGRAM COLOUR CODE	
Α	BLACK	-
В	RED	_
C	GREY	
D	WHITE	
Ε	GREEN	-
F	PURPLE	
G	YELLOW	
Н	BLUE	-
K	BROWN	M12208,
J	ORANGE	22
1	PINK	08
L	PINK-BLACK	, 00
М	GREY-PURPLE	<u> </u>
N	WHITE-PURPLE	83-390
0	WHITE-BLACK	
Р	GREY-BLUE	Service
Q	WHITE-RED	5
R	GREY-RED	
S	WHITE-BLUE	Manua
T	BLACK-BLUE	n L
U	YELLOW-GREEN	<u>a</u>

WIRING

