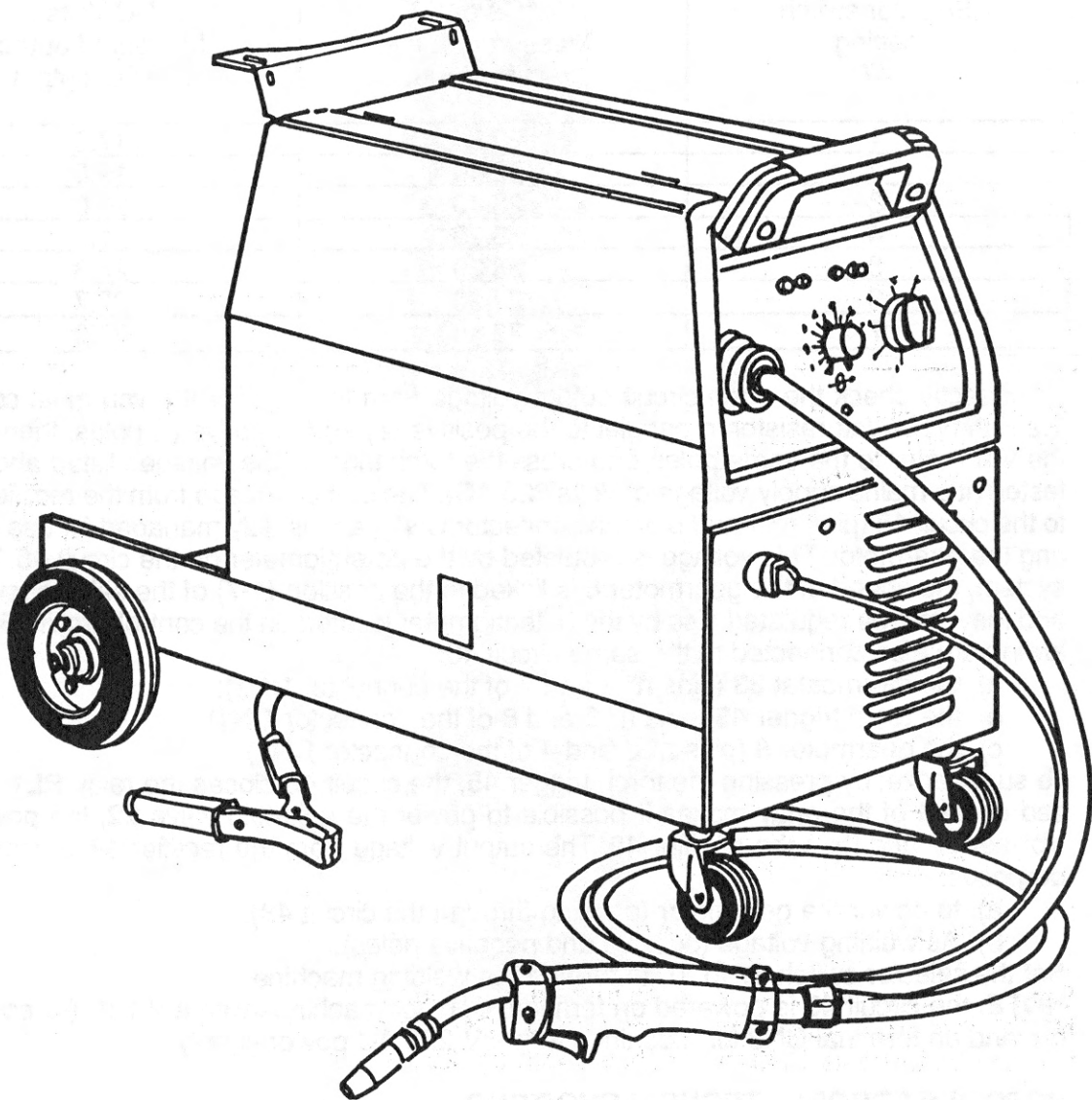




When working inside the machine, be especially careful of all wires, non-insulated clamps and moving parts (motor-driven fan).

DESCRIPTION OF OPERATING LOGIC.

The machine can be started by setting the switch/selector **47** to one of the 7 settings. Power reaches the following components directly:

- 1) motor-driven fan **29**.
- 2) control circuit **48**.

Now, pressing the torch trigger will close the relay **RL1** (located on the circuit **48**), thereby powering the solenoid valve **22** and power transformer **32**. The power transformer **32** directly powers the rectifier **49**; the positive (+) and negative (-) poles are connected to a terminal board located in the coil compartment so that the polarity can easily be reversed if flux-cored wire is used for welding (no gas). The voltage leaving the rectifier **49** varies in relation to the setting of the selector switch **47**, as listed in the table below:

Open circuit reference voltages for the welding machine:

Selector switch setting 47	AC Volts Measured at the rectifier input	DC Volts Measured at the rectifier output
1	20.35	17.5
2	22.40	19.0
3	23.40	20.0
4	25.20	21.5
5	28.30	24.3
6	29.90	25.7
7	32.46	27.9

To correctly check the open circuit output voltage from the rectifier **49**, you must connect a 1.2-Kohm/10-Watt resistor in parallel to the positive (+) and negative (-) poles, then connect the Volt meter to the same poles and press the torch trigger (the voltages listed above were tested at a mains supply voltage of Volts 220 AC). The output voltage from the rectifier is sent to the circuit **48** (pins n° 1 and 5 of the connector **CN1**), and is duly managed for use in powering the gearmotor. This voltage is regulated by the potentiometer on the circuit **48**. With this system, the speed of the gearmotor **8** is linked to the position (1-7) of the selector switch **47**, and may later be regulated also by the potentiometer located on the control circuit **48**. The following are also connected to the same circuit **48**:

- a) the thermostat **33** (pins n° 2 and 7 of the connector **CN1**);
- b) the torch trigger **45** (pins n° 6 and 8 of the connector **CN1**);
- c) the gearmotor **8** (pins n° 3 and 4 of the connector **CN1**).

To summarize: by pressing the torch trigger **45**, the circuit **48** closes the relay **RL1**. The closed contact of the relay makes it possible to power the solenoid valve **22**, the power transformer **32** and thus the rectifier **49**. The output voltage from the rectifier **49** is used for two purposes:

- a) to power the gearmotor (passing through the circuit **48**).
- b) As welding voltage (positive and negative poles).

Set the selector switch **47** to "0" to turn off the welding machine.

NOTE: the circuit **48** is powered on terminal **CN2** for machines with a V 240 AC power supply, and on terminal **CN3** for machines with a V 220 AC power supply.

POSSIBLE ERRORS - TROUBLESHOOTING

Limited current distributed.

Probable causes:

- 1) defective diode or diodes on the rectifier **49**.
- 2) incorrect connections on the torch **45** or grounding cable **37**.
- 3) defective welding voltage regulator selector switch **47**.
- 4) broken connections on the outputs from the power transformer **32**.

Remedies:

- a) replace the rectifier.
- a) check the connections on the torch and grounding cable.
- a) replace the selector switch.
- a) restore the connection.

Excessive metal sprays during welding.

Probable causes:

- 1) welding parameters incorrectly set
- 2) welding wire moves forward irregularly
- 3) grounding cable incorrectly connected

Remedies:

- a) find the appropriate parameters by adjusting the selector switch **47** and wire advancement speed potentiometer.
- a) See paragraph 6.3 of the instruction manual 3.300.614.
- a) make sure the connections are correct.

The contact 89 does not close when the torch trigger is pressed.

Probable causes:

- 1) defective torch trigger.
- 2) defective circuit **43**
- 3) coil of the contact **89** is broken or not powered.
- 4) connection cable **54** is broken.
- 5) no voltage on the service transformer **71**.

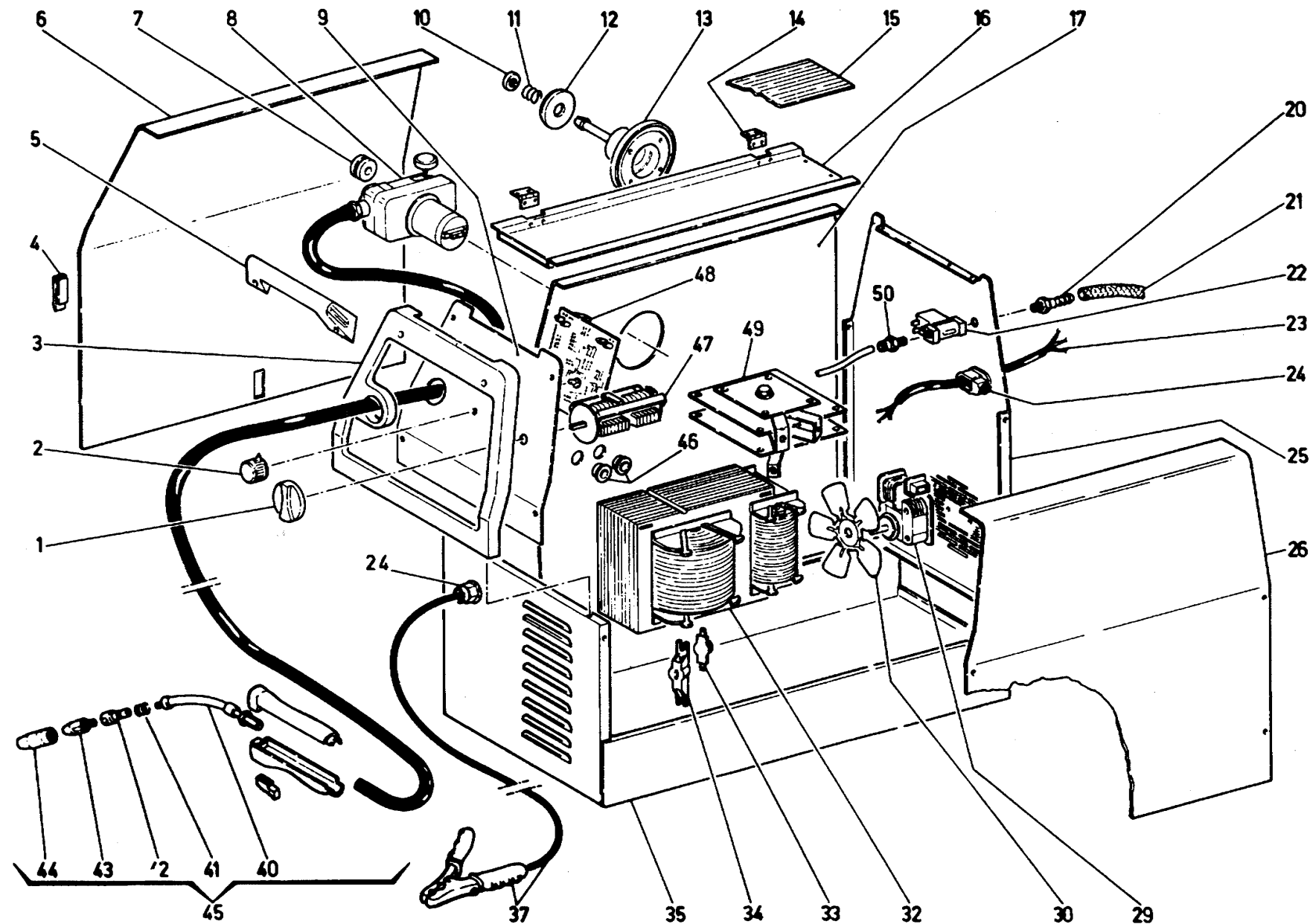
Remedies:

- a) make sure the trigger and its connections are in good working order
- a) replace it.
- a) check the coil wire
b) check the power connections for the coil on contact **89**.
- a) make sure the connections on the connection cable **54** are intact.
- a) make sure the service transformer **71** is correctly powered.
b) check the secondary voltage on the service transformer **71**: 27 V AC, and corresponding fuse.

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.



M12190, 83-327

Item	Lincoln Stock #	Customer #	Description
1	S26399-1	246945 (3055132)	Knob
2		246946 (3055121)	Knob
3		246947	Frame
4	S26400-1	246948 (3060880)	Side Panel Latch
5		246949 (3055176)	Handle
6		246950	Left Side Panel
7	310-210-666	246951 (3080392)	Drive Roller
8	216-116-000	246952	Drive Motor, 28 Vdc
9		246954	Front Panel
10	S26399-8	251030	Washer
11	S26399-9	251031 (3115048)	Spring
12	S26399-7	251027	Reel Outer Support
13	S26399-6	251022 (3060746)	Coil Support
14	S26399-2	246958 (3120057)	Hinge
15		246959	Rubber Mat
16		246961	Cover
17		246962	Center Divider
20		B7107370 (3160016)	Fitting
21		246169 (241169)	Gas Hose
22	246-516-666	B7007380	Gas Solenoid, 230Vac
23		246968	Power Cord
24		B7114370 (3180002)	Strain Relief
25		246971	Back Panel
26		246972	Right Side Panel

Item	Lincoln Stock #	Customer #	Description
29		246975 (3165069)	Fan Motor, 230 Vac
30		246193 (3065101)	Fan Blade
32		246978 (5600698)	Main Transformer
33	S26399-21	B7096370 (3190357)	Thermostat
34		B7098370	Thermostat Mounting Bracket
35		251116/251121	Undercarriage
37	S26399-3	246983 (5585001)	Ground Cable
40	334-628-000	B7123370	Swan Neck
41	334-172-000	B7124370	Spring
42	334-632-000	246311	Diffuser
43	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
44	334-164-400	M15520 (246307)	Gas Nozzle
45	334-634-000	247008	Mig Gun Assy.
	334-637-000	246199	Steel Liner
	334-645-000	M15220	Teflon Liner
46		246993 (3180039)	Bushing
47	S26399-4	246994 (3190100)	Heat Selector Switch
48	880-594-000	246995	Main Circuit Board
49	S26399-5	246996 (3200306)	Rectifier
50		246997 (3160050)	Fitting

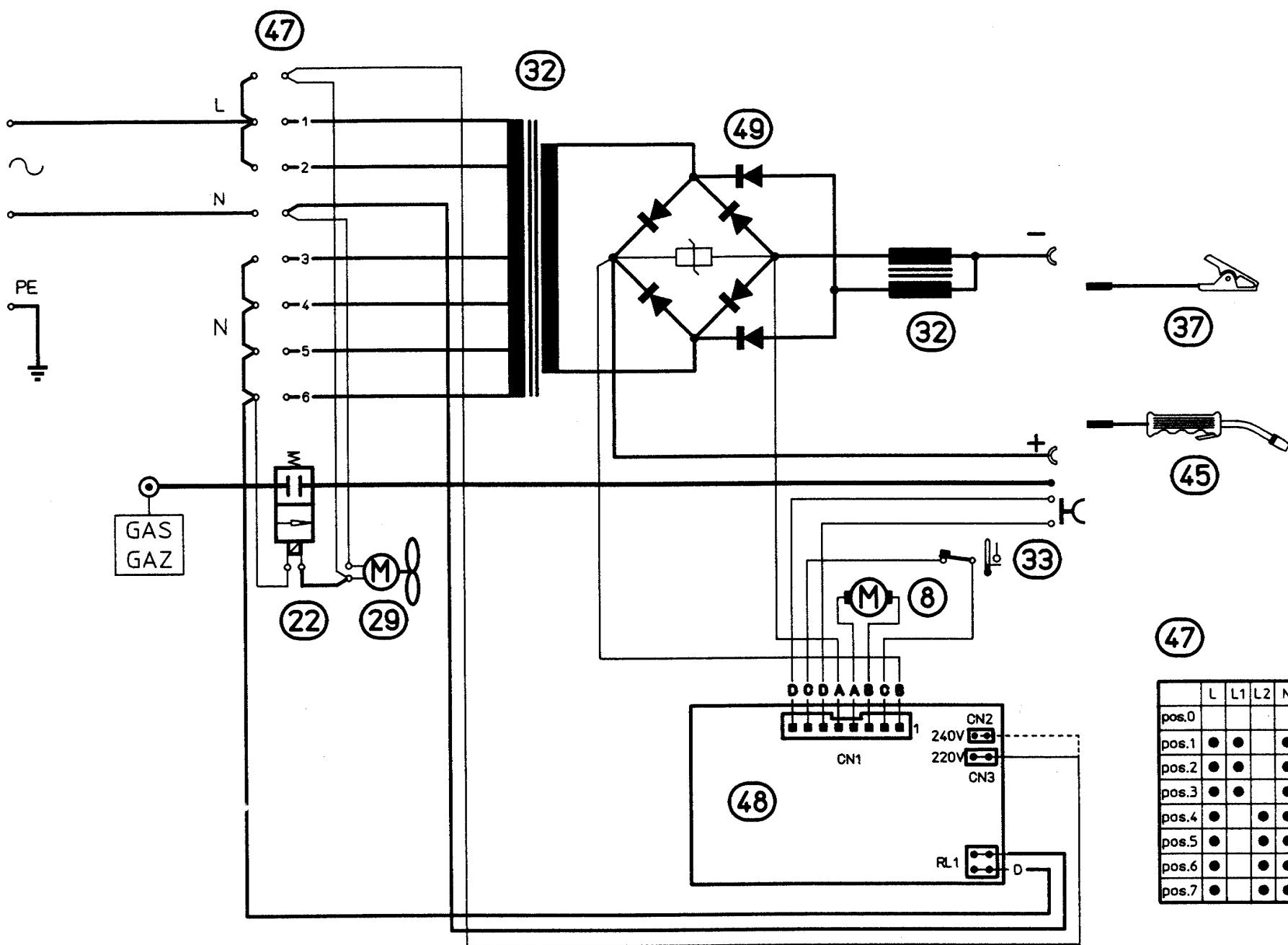
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51		M15525, M12233, 246866	Gas Regulator
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2/9/2006

Model	Primary Input	Input Plug	Duty Cycle at Rated Output
M12190, 83-327	230V, 24 amp	50A	15%

Rated Output	Voltage Settings	Agency Listing	Max Output
155 Amps	7	CSA	155 amps



47

	L	L1	L2	N	N3	N4	N5	N6
pos.0								
pos.1	•	•		•				•
pos.2	•	•		•			•	
pos.3	•	•		•		•		
pos.4	•		•	•				•
pos.5	•		•	•			•	
pos.6	•		•	•		•		
pos.7	•		•	•				