

**INSTRUCTION FOR CONNECTION, SAFE USE
AND MAINTENANCE**

**HTP MIG 1600
HTP MIG 2000
HTP MIG 2500**



INTRODUCTION

We congratulate you on the purchase of your new HTP MIG welding unit and would like to thank you for the confidence you have reposed in us.
Before starting up your machine, please read these Instructions through carefully, especially observe our instructions for safe operation of the unit (chapter 5).

1. TECHNICAL DATA

Type:	HTP MIG 1600	HTP MIG 2000	HTP MIG 2500
Mains voltage	1 x 220V	1 x 220V	1 x 220V
Prim. current	19A	29A	38A
Mains power	4,4 kVA	7,8 kVA	7,8 kVA
Fuses	T 16A slow	T 20A slow	T 25A slow
No Load Volt.	17 - 32V	18 - 24V	18 - 31V
Current range	40 - 170A	30 - 200A	30 - 250A
Duty cycle	100% 60% 25%	100% 60% 35%	100% 60% 35%
Current	60A 90A 140A	100A 140A 200A	130A 160A 250A
Steps	6	6	12
Wire speed	1 - 12 m/min	1 - 18 m/min	1 - 18 m/min
Wire diameter	0,6 - 0,8	0,6 - 1,0	0,6 - 1,2
Spot welding	0,3 - 5 sec	0,3 - 5 sec	0,3 - 5 sec
Insulation	H	H	H
Mechan. prot.	IP 23	IP 23	IP 23
Cooling	air, forced	air, forced	air, forced
Dimensions	780x442x735mm	780x442x735mm	780x442x735mm
Weight	56 kg	58kg	64kg

2. PURPOSE AND DESCRIPTION OF THE UNIT

2.1. Application

The welding machine HTP MIG 1600 (2000, 2500) is designed for semi – automatic welding by the MIG/MAG process. As a shielding gas C.O.2, argon or gas mixtures are applied. The choice of welding wire and shielding gas depends on the type and thickness of metal to be welded.

2.2. Description

This compact and light unit consists of the following main components:

- wire feeder side with D.C. wire feed motor, reel brake and central connection of the MIG torch.
- rectifier side with copper main transformer, choking coil, control electronics, rectifier, electromagnetic valve, switches.

Scheme – front side (fig. 1 HTP MIG 1600)
(fig. 2 HTP MIG 2000)
(fig. 3 HTP MIG 2500)

1. Central connection for MIG Gun.
2. Main switch 0 – 1
3. Welding current switch
4. Potentiometer for wire speed regulation
5. Potentiometer for setting spot welding time
6. Earth connection +
7. Overload illumination lamp
8. Signal lamp switching ON.
9. Burning off potentiometer
10. 2 T, 4 T, spot or interval welding selector and gas flow
11. Earth connection -

3. CONNECTION AND PREPARATION

3.1. Power supply

Connection should be made to the suitably fused single phase AC power supply power plug or directly.

3.2. Installation of wire reel

Open the side cover and turn reel brake cover so that marks on the cover are right - angled to the marks on the brake. Mount the reel in such a way that one end of wire hangs downwards. Turn brake cover back into position where marks on the cover are parallel to the marks on the brake.

Cutt off the bent end of the wire. Lead the end of the wire trough inlet guide and unclip pressure handle of feed rollers in order to make the work eaiser. Ensure both inlet guide for the wire and the groove of the feeding rollers are aligned. Choose the feeding roller with the corresponding groove to wire diameter. Push the welding wire to the inlet on the euro-connector. Replace the pressure handle to resume pressure on the wire. The pressure may be too strong, in this case the wire could be squeezed. If the pressure is too low, the wire would slide in the feeding groove, use tension knob to adjust.

3.3. Torch connection

Torch is to be put into the central connection and screwed by the fastening nut. Contact tip must correspond to the diameter of the wire. Switch on the machine. Push the wire to the outlet on the torch by activating the switch on the torch handle.

3.4. Earth connection

Earth lead for connection to metal with clamp is in the accessory kit. Connect the Dinse plug to the machine and clamp to workpiece.

3.5. Shielding gas connection

The gas hose is in the accessory pack, fasten your regulator to the gas bottle. Then connect to the machine using the supplied gas hose.

4. WELDING WITH MIG – MAG DEVICE

4.1. Setting into operation

Set the main switch into the ON position and welding selector on 2 T (type HTP MIG 2000, 2500).

Then turn the potentiometer for wire speed regulation counter-clock-wise, press the knob on the torch and adjust the gas flow on the regulator. Regulate gas flow during operation. Lower values would affect the welding quality and cause a porous weld, while the higher values result in high consumption of gas.

4.2. Welding

Welding process starts by pressing the switch on the torch. The torch must be placed at a certain distance from the welding spot. When placed too far from the welding spot, the gas protection is too small which causes a porous weld. When placed too close, the material can burn out. Before starting the welding it is recommended to make some tests on scarp material.

4.3 Spot welding

Set the welding selector on spot welding and adjust the time of spot welding depending on the thickness of material. The spot welding starts by pressing the torch switch. The torch must remain switched on until the timer has been switched out. To start a new cycle, press the torch switch again.

4.4. Burning off potentiometer (type HTP MIG 2000, 2500)

Set the burning off potentiometer to the corresponding time between 0 – 0,4 sec. Define the correct value with test.

4.5. Overload control

Thermal protection is inbuilt within the main transformer of the welding machine. If the machine is overheated, thermal fuse will prevent further welding and control lamp on the front side will lit up. In this case the welder must wait until the temperature falls to normal. Note the machine must be left running to enable the fan to cool the transformer .

5. PROTECTION OF WORKING AREA

Fumes and gases are dangerous for your health. Ventilation on working place must be adequate to remove all unhealth fumes and gases but not so strong to remove shielding gas. Welding rays are dangerous for your eyes. The welder must use helmet with protective glass no. 10-11 for MIG/MAG and all personal protectives (working clothes, leather apron, gloves, etc.)

6. MAINTENANCE

Maintenance comprises only the basic cleaning and inspection. Switch off the device before removing panels. Remove all dust from the inside. Check primary and secondary side of transformer from time to time. Make sure that no excessive heating occurs. Control the gas supply to prevent escape of gas. Spray the gas nozzle and contact tip regularly with spray containing no silicon in order to remove sprayed blobs without difficulty. Pay attention for the gap of contact hose, which must be free permanently. Check that the borings for gas on the torch outlet are not tamped. If the lead insert causes a bad wire feeding, it must be cleaned or replaced.

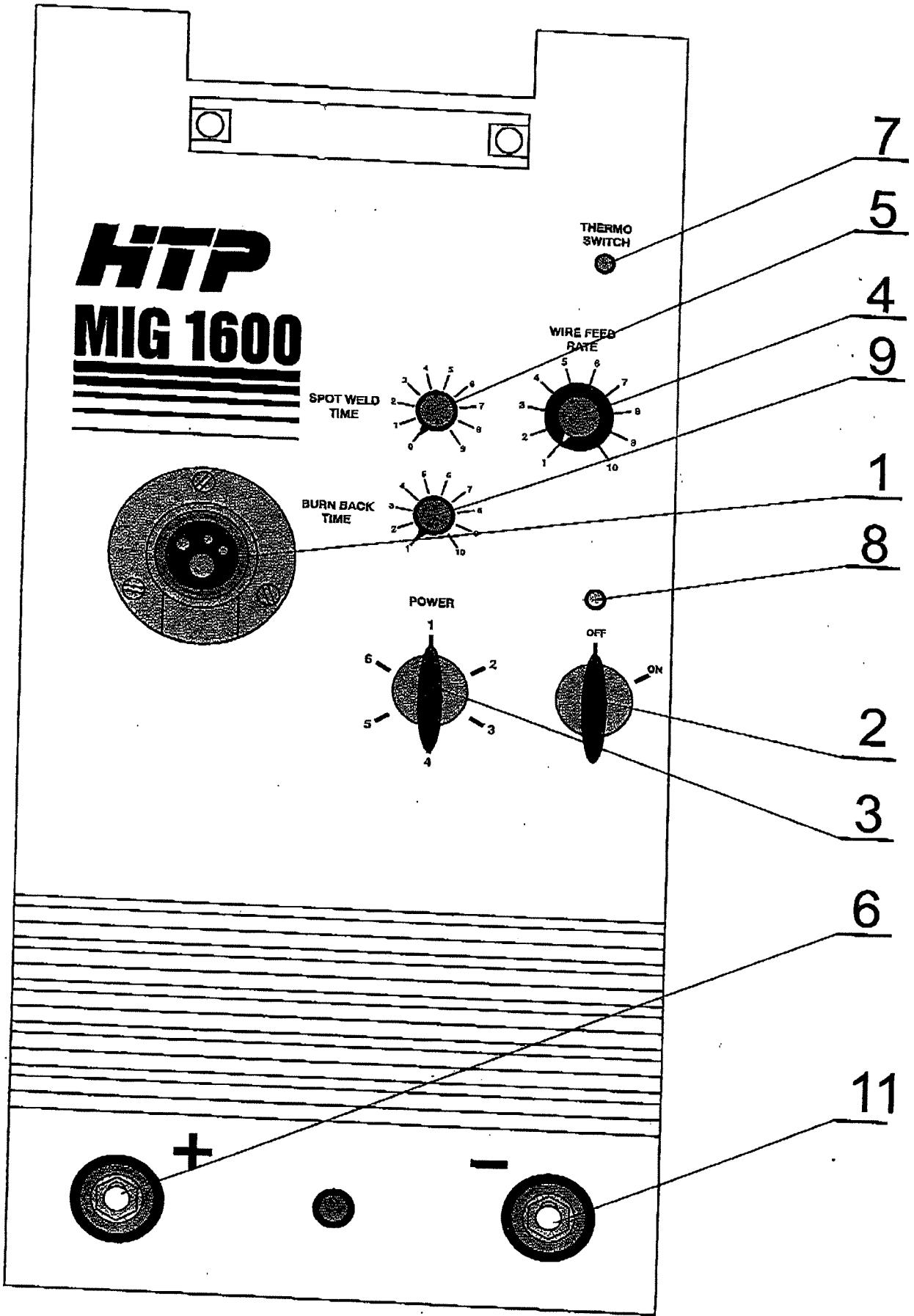
7. LIST OF SPARE PARTS

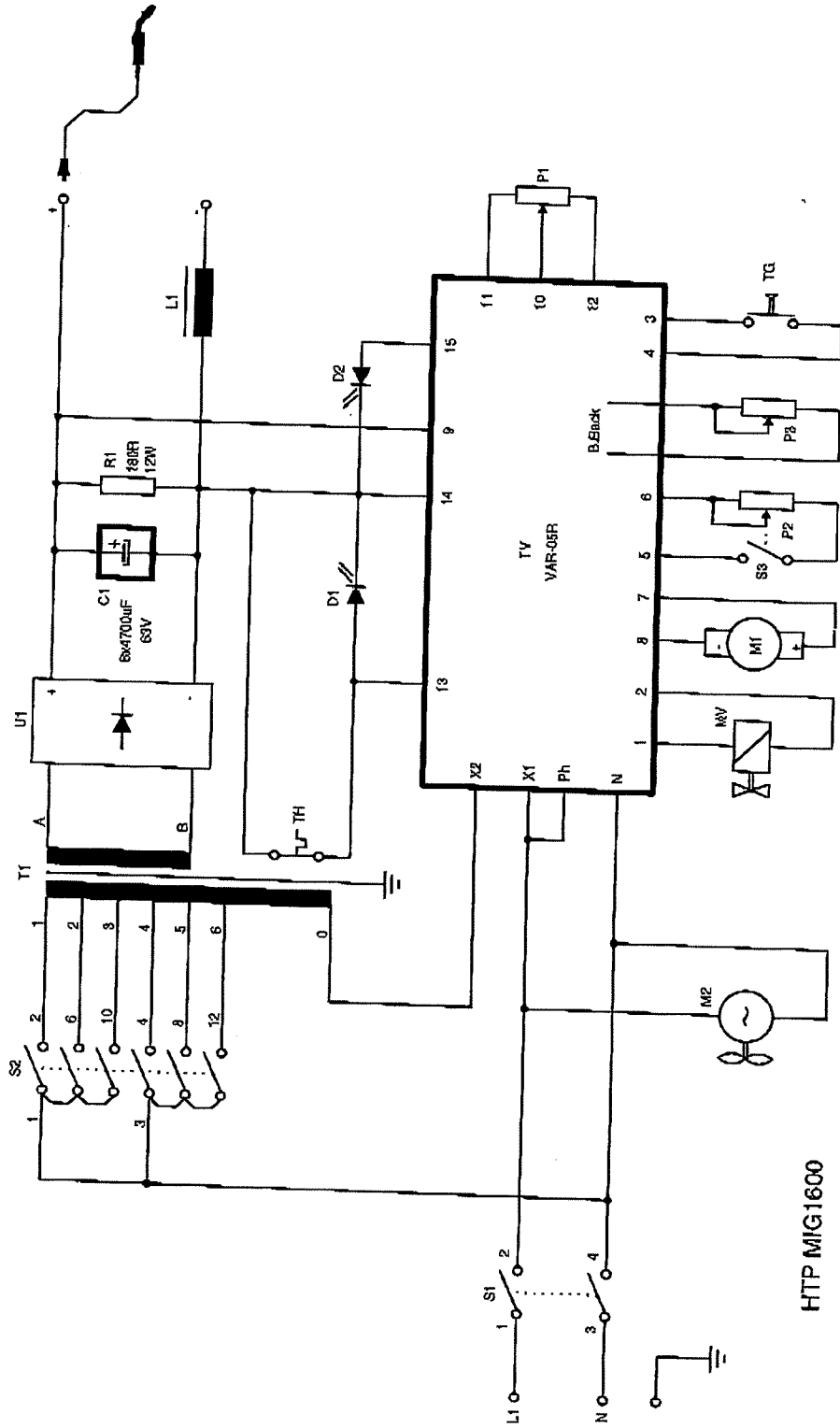
Description	HTP MIG 1600
Switch 0 - 1	951.234
Welding current switch	951.232
Spot potentiometer	935.723
Wire speed potentiometer	935.706
Burn back potentiometer	935.121
Main transformer	048.185
Choke	044.017
Rectifier	962.276
Wire feed motor	765.054
Feed rolls 0,6 - 0,8	-
Feed rolls 1,0 - 1,2	-
Fan	974.236
PCB control	976.896
Solenoid valve	955.121

8. OPERATING FAULTS

FAULT	CAUSE	MEASURE
Switching on, the device doesn't work.	Interrupted mains supply.	Check the fuses, electric cable and plug connection.
When torch switch is pressed :		
- no wire feeding	Interrupted line from torch switch to PCB. Fault on PCB.	Call distributor. Check central connector connections.
- no arc established	Fault on PCB. Thermal overloaded device. No ground connection.	Call distributor.
Unsteady arc, a lot of spattering	Inproper contact tip. Damaged rectifier. Wrong welding parameters.	Replace the contact tip. Set correct parameters.
	Bad contact of connection to frame	Enable good contact of workpiece with welding clamp. Call distributor.
Bad quality of the weld (porous oxide)	Solenoid valve no gas flow Insufficient quantity of gas. Draught at welder's working place.	Check contacts, replace with new valve. Increase the gas flow. Protect the welder with partition wall.
	Oxidized or uncleaned workpiece	Clean the workpiece.
	Blobs inside the gas nozzle.	Clean it and spray with silicon spray
Irregular wire feed shift.	Incorrect pressure on the feed-roller	Adjust.

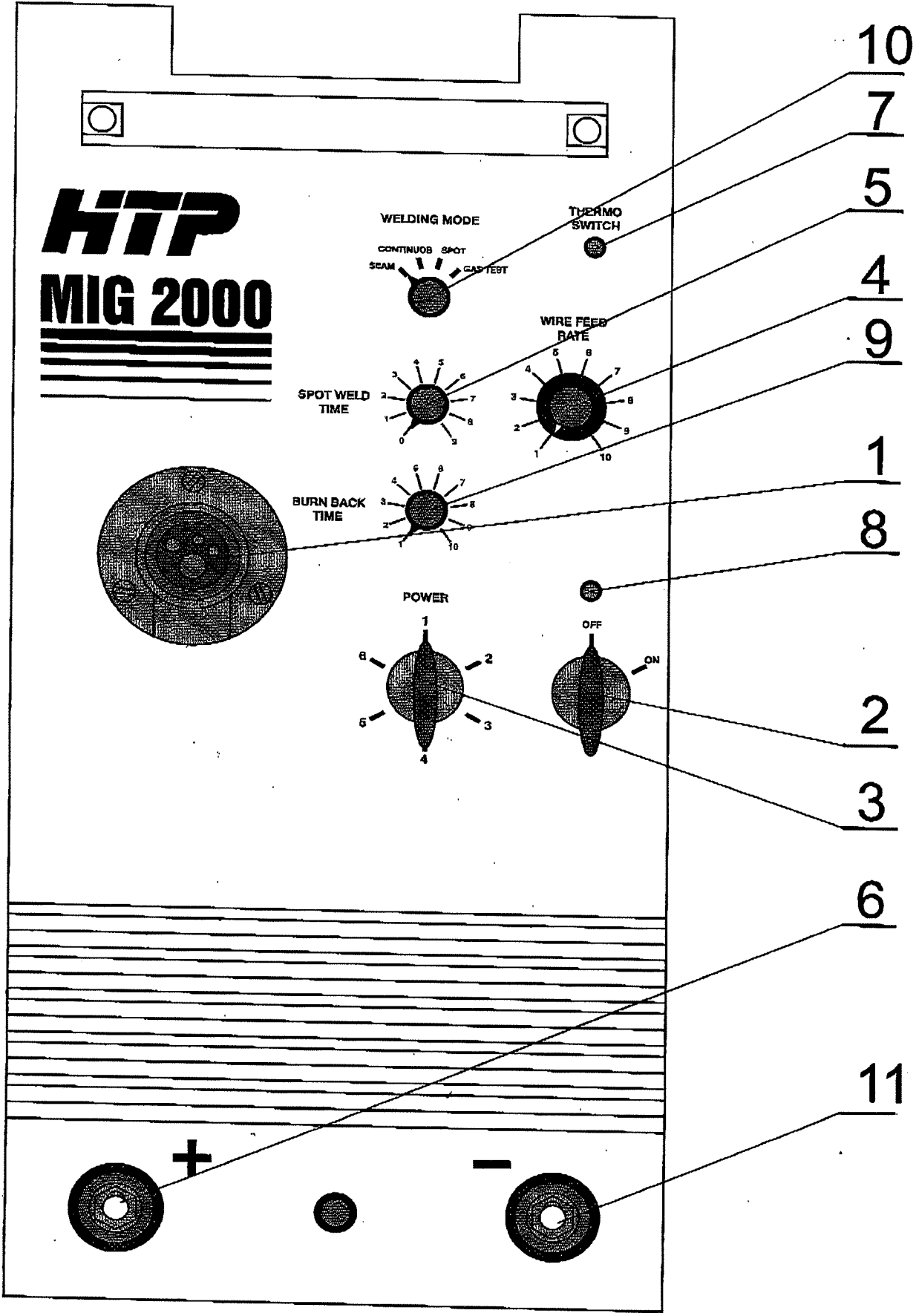
HTP MIG 1600



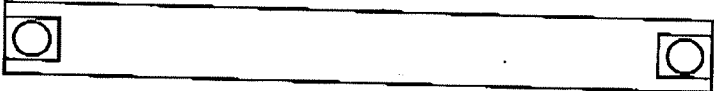


HTP MIG1600

HTP MIG 2000



HTP MIG 2500



WELDING MODE

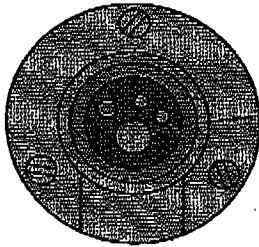
CONTINUOUS SEAM SPOT GAB TEST

THERMO SWITCH

SPOT WELD TIME

WIRE FEED RATE

BURN BACK TIME



POWER

OFF ON



+

-

10

7

5

4

9

1

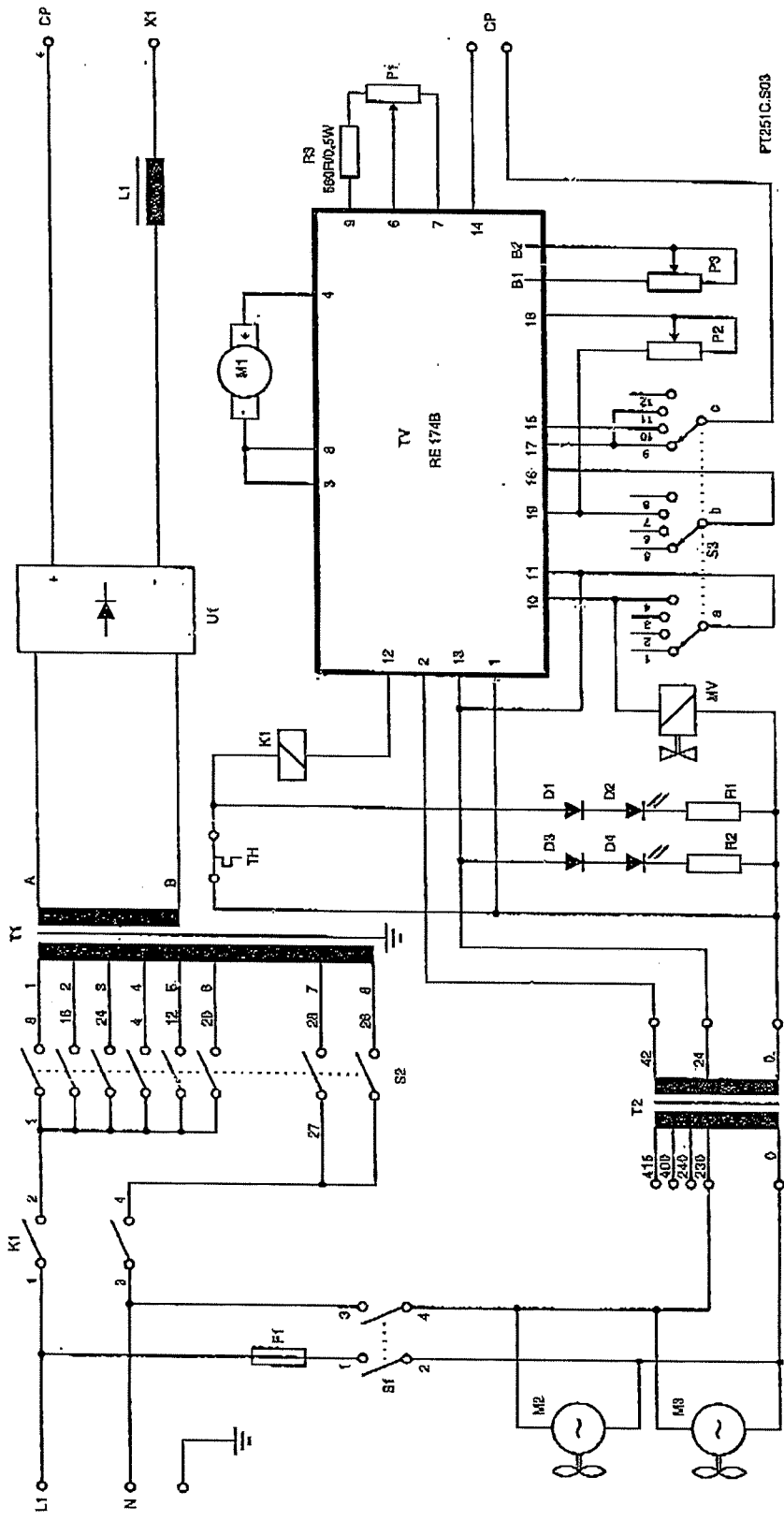
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2

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6

11



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HTP MIG 2500