

INSTRUCTION MANUAL

RESISTANCE WELDING MACHINE F30

Sherman®

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CE



WARNING!

Before installation and commissioning, please read this manual

1. GENERAL COMMENTS

Commissioning and operation of the unit may only be carried out after thorough reading of these Operating Instructions.

Due to the continuous technical development of the device, certain functions may be modified and their operation may differ in detail from the descriptions in the manual. This is not a fault of the device, but the result of progress and continuous modification work on the device. The standard equipment of the device may change.

Damage to the unit due to improper handling will void the warranty entitlements. Any modification of the charger is prohibited and will void the warranty.

2. SECURITY

The operator should be adequately trained in the safe use of the welding machine, and should also be informed of the hazards of resistance welding processes and of appropriate protective measures and emergency procedures.



WARNING



Welding can endanger the safety of the operator and other people in the vicinity. Therefore, special precautions must be taken when welding. Before welding familiarise yourself with the health and safety regulations applicable to the workplace.

The following risks exist during resistance welding:

- **ELECTRIC SHOCK**
- **FORMATION OF ELECTROMAGNETIC FIELDS**
- **ADVERSE EFFECTS ON HUMAN EYES AND SKIN**
- **BURNS**
- **EXPLOSION AND FIRE RISKS**
- **NOISE**



Prevention of electric shock:

- connect the equipment to a technically efficient electrical installation with adequate protection and effectiveness of neutralisation (additional anti-shock protection); other equipment in the welder's workplace must also be checked and correctly connected to the mains,
- install the conductors with the unit switched off,
- do not touch non-insulated parts of the electrode holder, electrode and workpiece at the same time, including the housing of the machine,
- do not use electrical cables with damaged insulation,
- work with an assistant to assist the operator and ensure safety, wear clothing and gloves with good insulating properties when there is a particular risk of electric shock (working in high humidity environments and enclosed containers),
- if you notice any irregularities, contact the competent persons to rectify them,
- It is forbidden to operate the device with the covers removed.



Prevention of negative effects of electromagnetic fields:

The flowing welding current creates electromagnetic fields in the vicinity of the welding circuit. Electromagnetic fields can adversely affect the operation of medical devices such as pacemakers. To minimise the effects of exposure to electromagnetic fields, the following recommendations should be followed:

- The head and torso should be as far away from the welding perimeter as possible
- Do not leave ferromagnetic objects near the welding circuit.



Preventing negative effects of the electric arc on human eyes and skin:

- Wear protective clothing (gloves, apron, leather boots),
- Use shields or visors with a properly selected filter,
- Use protective curtains made of non-combustible materials and properly choose colours for walls that absorb harmful radiation.

Burn prevention:

- Wear appropriate protective clothing and footwear to protect against burns from arc radiation and splatter,
- Avoid contaminating clothing with grease and oils that can ignite it.



Explosion and fire prevention:

- It is forbidden to operate the device and weld in explosive or fire hazardous areas,
- Do not weld containers, tanks or pipes that contain or have contained liquid or gaseous flammable substances.
- The welding station should be equipped with fire-fighting equipment,
- The welding station should be at a safe distance from flammable materials.



Preventing the negative impact of noise:

- Use earplugs or other means of noise protection,
- Warn people in the vicinity of the danger.

Before starting up the unit:

- Check the condition of the electrical and mechanical connections. It is forbidden to use current cables with damaged insulation. Improper insulation of current cables risks electric shock,
- Ensure proper working conditions, i.e. proper temperature, humidity and ventilation in the work area. Protect from precipitation outside enclosed spaces,
- Place the sealing unit in a place where it can be easily operated.

Any repairs to the appliance must only be carried out after disconnecting the plug from the power socket.

When the appliance is connected to the mains, it is not permitted to touch any parts making up the welding current circuit with the bare hand or through damp clothing.

It is forbidden to remove external covers while appliance is switched on.

Any modification of the welding machine on your own is prohibited and may represent a deterioration of safety conditions.

All maintenance and repair work must only be carried out by authorised persons in compliance with the safety conditions applicable to electrical equipment.

It is forbidden to operate the welding machine in rooms with a risk of explosion or fire! Unplug the unit's power cord after operation.

The hazards and general OSH rules outlined above are not exhaustive of welder safety, as they do not take into account the specifics of the workplace. Important additions to these are the workplace health and safety instructions and the training and instruction given by supervisory personnel.

3. GENERAL DESCRIPTION

The F30 resistance welding machine is designed for double-sided spot welding of sheet metal up to 2 mm. It is recommended for automotive workshops, service workshops and craftsmen. The unit has 2 operating modes: continuous current and pulsed current.

The welding machine is available in 230V mains and two-phase 400V mains versions.



4. TECHNICAL SPECIFICATIONS

	AC 230V	AC 400V
Supply voltage	AC 230V	AC 400V
Maximum power consumption	6 kW	6 kW
Maximum output current	7000 - 9000 A	7000 - 9000 A
Maximum current consumption	30 A	25 A
Thickness of sheets to be welded	0.6 - 2 mm	0.6 - 2 mm
Network security	25 A	25 A
Mass	10 kg	10 kg
Dimensions	500 x 300 x 150 mm	500 x 300 x 150 mm
Degree of protection	IP21	IP21

Degree of protection

IP indicates the extent to which the unit is resistant to the ingress of solid and water contaminants. IP21 means that the unit is suitable for indoor use and is not suitable for use in the rain.

5. CONNECTION TO THE MAINS

The appliance should be operated in a power supply system with the neutral point earthed. The power supply should be stable, without voltage drops and protected by delayed-action fuses. Before connecting the power supply, ensure that the power switch is in the OFF position.

The F30 welding machines are available in 230V and 400V power supply versions. The 230V mains-powered machines are equipped with a mains plug. In the case of 400V mains-powered machines, the connection of the supply cable must be made by the user.

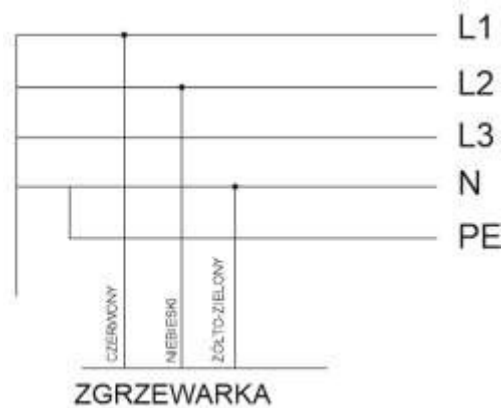
Connection to the mains may only be carried out by qualified personnel!

5.1 Connection of supply lines to the three-phase mains plug

The device should be connected in two phases according to the diagram below.

The yellow-green wire (protective conductor) should be connected to the mains plug in the place marked "PE" or "N".

The red and blue wires are the wires supplying power to the unit (phase) and should be connected to the mains plug at the locations marked with the symbols: red L1, blue L2.



6. PREPARING THE MACHINE FOR OPERATION

If the unit is stored or transported at low temperatures, bring the unit to the correct temperature before operating!!!

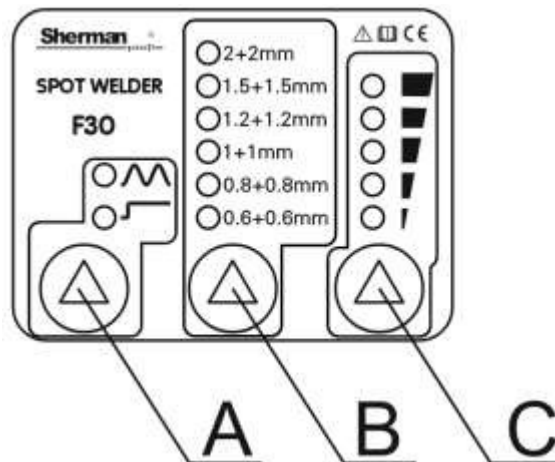
7. CONSTRUCTION OF THE DEVICE



1. Bottom electrode
2. Lower arm
3. Tip (kapa)
4. Lower arm

5. Bottom electrode
6. Control lever
7. Pressure adjustment screw
8. Clamping force indicator

8. CONTROL PANEL



A - Welding current selection button



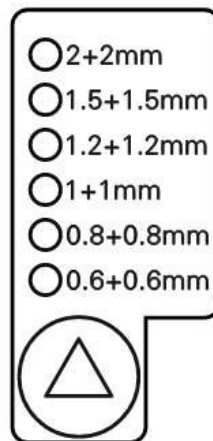
The button is used to select the type of welding current:

 - Pulsed current

 - Continuous current

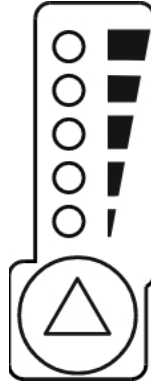
Pulsed current welding is recommended for resilient sheet metal, electroplated, with oxidised coating or traces of paint.

B - Sheet thickness selection button



The button is used to select the thickness of plates to be welded. Pressing the button changes the thickness. The selection of thickness is signalled by lighting of the corresponding LED.

C - Welding time adjustment button



The button is used to select the welding time. Pressing the button changes the time. The selection is indicated by the lighting of the LED corresponding to the time.

9. CONGRATULATION

Place the sheets to be welded in the welding arms (2) and (4). Press down the plates with the lever (6). If necessary, adjust the pressure with the screw (7). Press lever (6) to start welding.

Note: In order to ensure proper point pressure, it is necessary to keep the tips (caps) on the electrodes (3) cleaned and formed on an ongoing basis. If they are worn, it is necessary to replace the caps with new ones.

10. BEFORE YOU CALL FOR SERVICE

In the event of a malfunction, check the list of basic malfunctions and try to rectify them yourself before sending the sealing machine for service.

Any repairs to the appliance must only be carried out after disconnecting the plug from the power socket. Please note that the unit is not sealed and the user may remove the sealer housing to rectify minor faults.

Symptoms	Cause	Proceedings
Power failure, fault signal or malfunction of the unit	No connection or loose plug inside the device	Check and improve the connections of all electrical plugs inside the appliance
	Dirty appliance interior	Remove the housing and clean the unit internally by blowing compressed air to remove dust and metallic filings from control boards and electrical wiring and connections.
Displays do not light up when power is switched on	No supply voltage	Check fuses on mains connection
Control panel lights , unit does not seal	No connection in the welding circuit	Remove impurities and protective coatings from welded material
Welding machine switched off during operation	The device has been overheated.	Wait a few minutes. Do not switch off the power supply.
Poor welding	Welding time too short	Increase welding time
	Poor electrical conductivity between the work surface and the tip (drip)	Remove rust, dirt or protective coating from the workpiece
Too much welding	Welding time too long	Reduce welding time

11. OPERATING INSTRUCTIONS

The F30 welding machine should be operated in an atmosphere free of corrosive components and high dust levels. Do not place the machine in dusty areas, near grinding machines in operation, etc. Dust and metallic filings contaminating the control boards, wires and connections inside the unit may lead to an electrical short and consequently damage the welder.

Operation in high-humidity environments should be avoided, particularly where there is dew on metal components.

In the event of dew on metal parts, e.g. after bringing a cool device into a warm room, wait until the dew has disappeared. It is recommended when operating the welding machine

outdoors placing it under a roof to protect it from adverse weather conditions.

The unit should be operated under the following conditions:

- variations in the rms value of the supply voltage of no more than 10%
- ambient temperature from -10°C to +40°C
- atmospheric pressure 860 to 1060 hPa
- relative humidity of the atmospheric air not greater than 80%
- altitude up to 1000m

12. MAINTENANCE MANUAL

As part of daily maintenance, keep the welding machine clean, check the condition of the external connections and the condition of the electrical wires and cables.

Replace consumable parts regularly.

Periodically (depending on operating conditions), remove the housing and clean the unit internally by blowing with compressed air to remove dust and metallic filings from the control boards and electrical wiring and connections.

No less than once every six months, a general inspection and the condition of the electrical connections should be carried out, in particular:

- the state of protection against electric shock
- state of insulation
- the state of the protection system
- the correct functioning of the cooling system

Damage resulting from operation of the welding machine under unsuitable conditions and failure to comply with maintenance instructions is not covered by warranty repairs.

13. STORAGE AND TRANSPORT INSTRUCTIONS

The equipment should be stored at a temperature of -10°C to +40°C and relative humidity of up to 80% free of corrosive fumes and dust. Packed units should be transported by covered means of transport. During transport, the packaged equipment must be secured to prevent movement and be placed in the correct position.

14. GUARANTEE

The guarantee is given for a period of 12 months for commercial operators, but excluding warranty claims, or 24 months for consumers from the date of sale.

The guarantee will be honoured when the complainant presents the proof of purchase (invoice or receipt) and the guarantee card with the product name, serial number, date of sale and stamped by the point of sale.

To request a warranty repair, please fill in the form at www.tecweld.pl under the SERVICE tab. On the basis of the application, the device will be sent to the service by a courier company. Equipment sent by other means at TECWELD's expense will not be accepted!

The welding machine must be delivered with the work handle. Complaints about the device without the work handle will not be considered.

The device sent for complaint must be packed in the original cardboard box protected by the original polystyrene fittings. TECWELD cannot be held responsible for damage to the welding machine caused during transport.



If you intend to dispose of this product, do not dispose of it with your normal household waste. According to the WEEE Directive (Directive 2012/19/EU) in force in the European Union, separate disposal methods must be used for used electrical and electronic equipment.

In Poland, according to the provisions of the Act of 11 September 2015 on Waste Electrical and Electronic Equipment, it is prohibited to place together with other waste used equipment labelled with the crossed-out wheeled bin symbol.

A user who intends to dispose of this product is obliged to hand over waste electrical and electronic equipment to a waste equipment collection point. Collection points are operated, inter alia, by wholesalers and retailers of such equipment and by communal organisational units operating as waste collection operators.

The above-mentioned statutory obligations were introduced in order to limit the amount of waste produced from waste electrical and electronic equipment and to ensure an appropriate level of collection, recovery and recycling of waste equipment. Proper implementation of these obligations is particularly important in the case waste equipment containing hazardous components, which have a particularly negative impact on the environment and human health.

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