

USER MANUAL

WELDING INVERTER Sherman DIGITIG 206P AC/DC



WARNING!

Before installing and commissioning the device, you must read this instruction

1. GENERAL NOTES

Launch and operation of the device can be made only after a thorough reading of this manual.

Due to continuous technical development unit, some of its features may be subject to modifications and performance may differ in detail from the descriptions in this manual. This is not a device error, but the result of progress and continuous work of modification of the device.

Damage to the appliance caused by improper handling causes the loss of warranty. Any alteration of the charger are forbidden and result in loss of warranty.

2. SECURITY

Equipment operators should possess the necessary qualifications entitling them to perform welding work:

- should be an electric welder welding electrodes coated and coated gas,
- know the rules of SAFETY operation of power equipment such as welding machines and auxiliary powered electricity,
- know the rules of SAFETY when handling cylinders and installation of compressed gas (argon), • be familiar with the content of this manual and operate in accordance with its intended purpose.



WARNING



Welding can endanger the operator and other people in the vicinity. Therefore, during welding should keep special precautions. Prior to welding, you should be familiar with the **OCCUPATIONAL HEALTH and SAFETY** regulations in force at the place of work. At the time of the electric arc welding methods **MMA WELDING** and **TIG WELDING**, there are the following:

- **ELECTRIC SHOCK**
- **NEGATIVE EFFECTS OF THE ARC TO THE EYES AND SKIN MAN**
- **POISONING IN PAIRS AND GASES**
- **BURNS**
- **RISK OF EXPLOSION AND FIRE**
- **NOISE**

To prevent electric shock:

- connect the device to the technically efficient electrical installation at the right protection and the effectiveness of the reset (additional fire protection); check and correctly connected to other network devices at the place of work the welder,
- current wires mounted on the unit is switched off,
- do not touch at the same time, non-insulated part of the electrode holder, electrode and work piece, in this case,
- do not use the handles and current lines of the damaged insulation,
- in terms of specific risk electric shock (work in environments with high humidity and containers closed) work with an Assistant supporting the work of the welder and for security, used clothing and gloves with good insulation properties,
- if you notice any irregularities, please contact your competent people to remove them,
- Operation is prohibited with sacks, the guards.

Preventing the negative impact of the electric arc to the eyes and skin:

- Use protective clothing (gloves, apron, leather shoes),
- Use shields or protective helmets with properly selected filter
- Use protective curtains made from non-combustible materials and properly match the color scheme of the walls absorbing the harmful radiation.

Preventing food poisoning in pairs and gases that react during welding with coating electrodes and evaporation of metals:

- Use ventilation and extraction systems installed in positions with limited air exchange,
- Use compressed air to clean the air in a confined space (tanks), • Use masks and respirators.

Prevention of Burns:

- Use suitable protective clothing and footwear to protect from burns from radiation and spatter,
- Avoid dirt clothing grease and oils that may lead to inflammation. **Explosion prevention and fire:**
- It is prohibited to operate the unit and welding in explosive or fire,
- Welding position should be equipped with fire-fighting equipment,
- Welding position should be located at a safe distance from flammable materials.

Prevention of the negative effects of noise:

- Use earplugs or other protection against noise, • Warn about the danger of people nearby.



WARNING!

Do not use power source for defrosting frozen pipes.

Before starting the machine:

- Check the condition of the electrical and mechanical connections. It is prohibited to use handles and wire current at the damaged insulation. Faulty insulation and cable handles current risk electric shock,
- Ensure appropriate working conditions. Provide the right temperature, humidity and ventilation in the workplace. In addition to enclosed spaces protected from rain,

- Put the charger in place for its ease of use.

People that support drop should:

- have the power to electric arc welding with coated electrodes and TIG
- know and comply with the occupational safety and health applicable when carrying out welding work,
- use proper protective equipment, specialized: gloves, apron, rubber boots, shield or helmet welding stationary filter
- be familiar with the content of this manual and operate the place in accordance with its intended purpose. Any repair of the device may be made only after disconnecting the plug from the electrical outlet.

When the device is connected to the network it is not allowed to touch the bare hand or by damp clothing no elements making up the welding current circuit.

It is forbidden to remove the guards outside at the device on the network.

Any alteration of the charger on its own is prohibited and may constitute a deterioration of security conditions.

Any maintenance and repair may only be performed by qualified persons in compliance with the conditions for safety of electrical equipment.

It is prohibited to the operation of welding in explosive or fire!

Welding position should be equipped with fire-fighting equipment.

After you complete the power cord, disconnect the device from the network.

These risks and the General principles of HEALTH and SAFETY at WORK do not cover all the issues of safety at work the welder, because it does not take into account the specificities of the work place. Important are complemented by on-the-job HEALTH and SAFETY instructions, training and briefings provided by the supervisors.

3. GENERAL DESCRIPTION

DIGITIG 206 p AC/DC is used for manual welding with coated electrodes structural steels AC and (MMA) and steel and non-ferrous metals established electrode in inert gas (TIG). In the design and construction of the device uses the latest advances in technology, PWM (pulse width modulation) and IGBT modules (with bipolar transistors insulated-gate), which resulted in that the welder is characterized by small size and low weight.

DIGITIG 206 p AC/DC has a static arc. Has the functions of ARC FORCE, build-up and downslope, pre flow and post flow gas and adjustable pulse parameters. The device is also equipped with intelligent security overload, overvoltage and thermal. If you have previously described event alarm LED indicator lights on the front panel and the disabled will be output. This leads to the self security of the device and to extend its service life.

Function ARC FORCE

ARC FORCE function allows you to adjust the dynamic range of the welding arc. The shortening of the length of the arc is accompanied by an increase in welding current, resulting in stabilizing the arc. Decreasing the value will give you soft arc and less depth of penetration, while increasing the value causes a deeper penetration and the possibility of submerged arc welding. With large values of the ARC FORCE can be welded together by keeping the bow with a minimum length and high speed melting electrode

MMA-welding coated electrode (Manual Metal Arc welding);

PWM-pulse width modulation (Pulse-Width Modulation);

IGBT — bipolar with insulated-gate (Insulation Gate Bipolar Transistor)

TIG-welding of tungsten electrode in argon (Tungsten Insert Gas welding)

4. TECHNICAL SPECIFICATIONS

4.1 Welder

| | |
|-------------------------------|------------------------------|
| Supply voltage | AC 230V 50 Hz |
| The maximum power consumption | MMA: 6.6 kVA, TIG: 4.2 kVA |
| Rated output/duty cycle | MMA: 160 A/40% TIG 200 A/40% |
| Nominal voltage without load | 60 V |
| Maximum current consumption | MMA: 30 A, TIG, 30 A |
| Network security | 16 A |
| The weight of the | 14 kg |
| The dimensions of the | 420 x 170 x 350 mm |
| Degree of protection | IP21S |
| Class application | |

4.1.1 Ranges parameter adjustment

| | |
|----------------------|------------------------------|
| Pre flow gas | 0.1-10 s |
| Post flow gas | 0.5-15 s |
| The current build-up | 0-10 s |
| Downslope | 0 to 15 s |
| The starting current | 5-160 A |
| Welding current | MMA: 10-160 and TIG: 5-200 A |
| Electricity basics | 5-200 A |
| Crater current | 5-200 A |
| Pulse frequency | 0.2-200 Hz |
| Pulse duration | 10-90% |
| AC Frequency | 20 – 250 Hz |
| AC Balance | 15-85% |
| ARC FORCE | 0-40 and |
| Spot time | 0.5-10 s |

4.2 Torch

| | |
|------------------------------|-----------------------|
| The type of handle | T-26 |
| The maximum current capacity | 200 and |
| Airflow | 10-20 l/min |
| ARC | Non-Contact Type (HF) |
| The length of the | 4 m |

Duty cycle

Duty cycle is based on a period of 10 minutes. 40% duty cycle means that after 4 minutes of operation the device is required 4-minute break. The duty cycle of 100% means that the device can work continuously, without interruption.

Please note! Heating test has been carried out at a temperature of ambient air. Duty cycle at 40 ° C has been determined by simulation.

Degree of protection

IP specifies the extent to which the device is resistant to ingress inside the solids and water. IP21S indicates that the device is suitable for working in confined spaces and is not suitable for use in the rain.

Class application

Class application means that the device is suitable for use in areas with an increased danger of electric shock.



5. DESIGN AND FUNCTION

The basis for the construction of processing system of electricity welding machines are electronic circuits made in IGBT technology to work in the frequency range above 200 kHz.

The principle of operation is based on rectification voltage single phase mains to DC voltage, converted the received voltage on the rectangular frequency, voltage transformation in the scope required by the welding process and then restart after voltage on received voltage.

6. THE CONNECTION TO THE MAINS

1. The device should be used only in the single phase power, three wired, with a grounded (earthed) neutral.
2. Inverter rectifiers DIGITIG 206 p AC/DC are designed to work with the network 230V 50 Hz 16A fuse protected. The power supply should be stable, no voltage drops
3. The device is equipped with a power cord. Before connecting the power supply, make sure that the power switch (6) is in the OFF position (off).

7. PREPARE YOUR MACHINE FOR

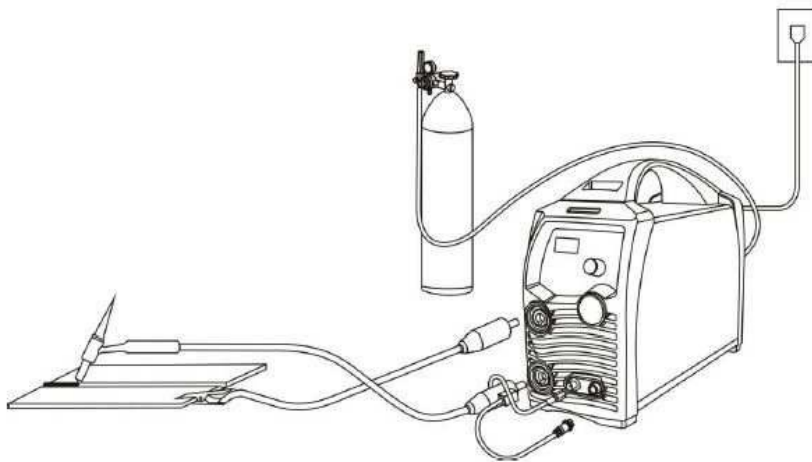
If you store or transport the device at low temperatures before starting to work to bring the device to the right temperature!

7.1 method of MMA

Tips for welding cables must be connected to sockets (1) and (2) located on the front panel so that the electrode holder was appropriate for a given electrode pole. The polarity of the connecting cables depends on the type of the used electrodes and is given on the packaging of electrodes. Clamp return line should be carefully stored on the puddle. Connect the mains plug to a wall socket 230V 50 Hz.

7.2 TIG

Current clamp holder should be connected to the socket for negative polarity (2), screw the handle control plug into the socket (4), and the gas connection to the socket coupler (3). Gas hose with regulator and must be attached to the gas nozzle (5) located on the back of the housing. The positive pole (1) connect with the material welded using wire with tick-borne encephalitis. Connect the mains plug to a wall socket 230V 50 Hz.



8. A DESCRIPTION OF THE FUNCTION PRZELACZNIKÓW AND KNOBS

8.1 Front and rear Panel

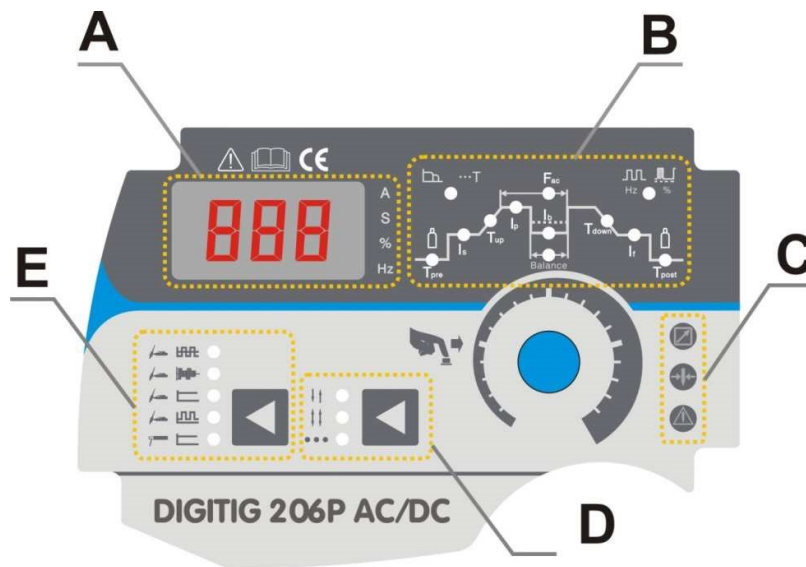


2. The socket the polarity negative
3. Protective gas port
4. Control socket handle

TIG WELDING

5. Protective gas connection
6. Main switch

8.2 Control Panel

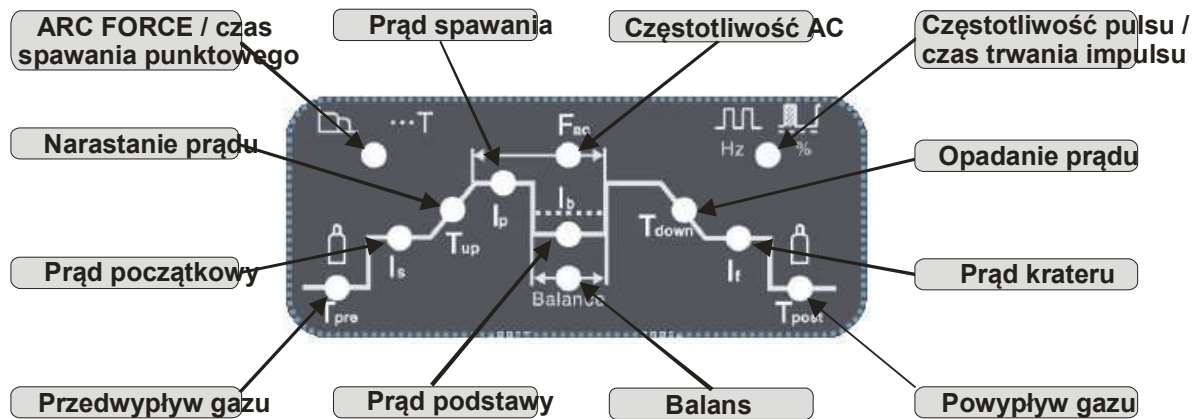


(A) -display of welding parameters

The display indicates the parameters during their set and during welding. When lit up, the corresponding LEDs on the side of the display indicates the unit parameter.

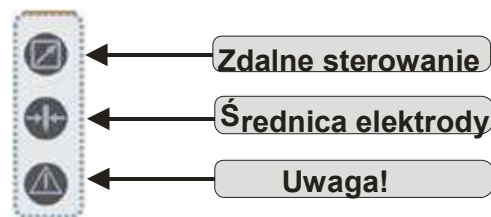


(B) -Setting of welding parameters



Adjustment of welding parameters is made by using the multifunctional knob located on the front panel. Pressing the knob moves between the adjustable parameters. Currently adjustable parameter is lighted the corresponding led, and appears on the display the current value of the parameter. Turn the knob to the left to decrease and turn right to increase the value of the parameter. Pressing the knob or leaving the knob stationary. 5 seconds to remember the changed parameter values.

(C) -Other features



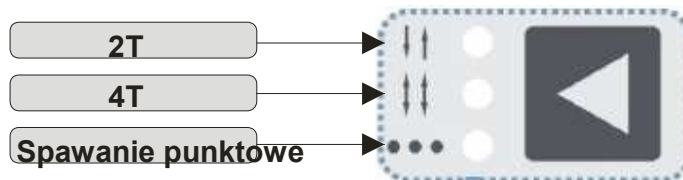
Remote led becomes active when you connect the handle with the possibility of remote control (option)

Electrode diameter check function is available in all welding methods. When you select the diameter of the electrode the device will have spoken to sub-optimal setting of welding parameters by inflammation of LEDs Note!.

(D) -Operating mode selection button (2T/4T/spot welding)

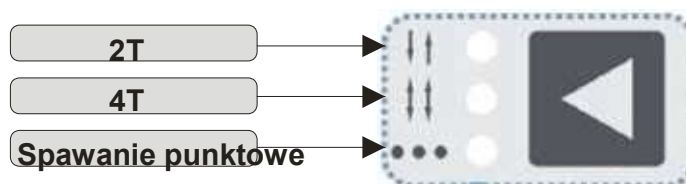
The button active only while welding TIG. Mode selection is indicated a corresponding led.

In 2T mode, pressing the switch in the handle of the handle will turn on the lonizer and the ignition of the arc. Welding is carried out with the switch. Release the switch to stop welding. In 4T mode, pressing the switch in the handle of the handle will turn on the lonizer and the ignition of the arc then release the switch and lead welding with slow motion switch. Pressing the switch to stop welding. In spot mode, after pressing the button you will start the welding and automatically stops after the set time.



E-selection of welding methods

Button used to select welding method. The choice of method is indicated a corresponding led.



8.3 protection against overheating

The power source is equipped with a thermal overload switch in the compression. When the temperature of the welding will be too high, disconnect the welding current, the code appears on the display E1 will start beeping to signal overheating. After falling back temperature will automatic reset circuit breaker.

9. PARAMETER SETTINGS

9.1 MMA Method

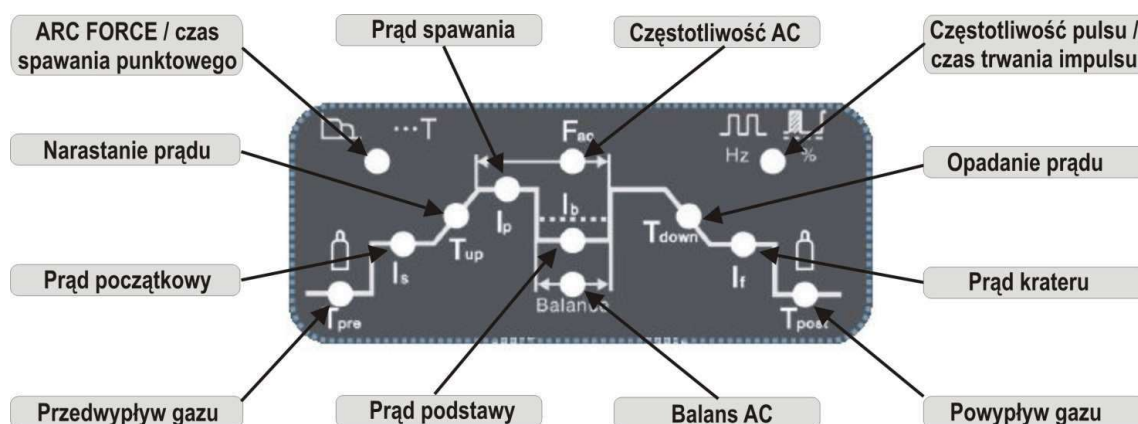
After selecting the MMA welding current adjustment is possible and the ARC FORCE.

9.2 TIG

The check button welding select TIG DC, TIG DC with pulse, TIG AC or TIG with pulse. Source control mode button select the 2T, 4T or spot welding.

Adjustment of the welding current is possible immediately after the power is turned on. Turning the control dial to change the welding current. After you set the appropriate values, you must press the knob to confirm the settings. Leave the knob without movement by the 5s will automatically confirm a setting.

To set the other parameters you must press the control dial until the led lights up the appropriate parameter by turning the control dial to set the desired value. Confirm the setting by pressing the control dial or waiting for 5s (auto-confirm a setting).



- ARC FORCE (MMA)/spot time

Adjustment range 0 – 40A/0.5-10s

Tpre is a time post flow gas

Control range: 0.1-10 s

The is-the starting current

Range 5-160A

Tup-rise time currents

Adjustment range 0 – 10 s

IP-welding current

Range 5-160A (MMA)/05-200A (TIG)

IB-current base (only in welding with pulse)

Range 5-200A

Tdown-downslope time

Adjustment range 0-15s

If direct current crater

Range 5-200A

Tpost-post flow gas

Control range: 0.5-15s

Balance-Balance AC-the ratio of the duration of the halves of the positive to the negative halves of welding current

Adjustable 15-85%



-Pulse frequency/pulse duration (the time of welding current Ip to time of the current base of Ib) (only in welding with pulse)

Adjustment range 0.2-200 Hz/10-90%

10. WELDING**10.1 Welding coated electrode (MMA)****10.1.1 Initiation of the arc**

Initiation of the arc when welding coated electrode is touched the electrode to the work piece, short non-safety and isolation. In the case of the initiation of the arc electrodes whose lagging after set creates a non-conductive slag should be initially cleaned top of the electrodes by repeatedly hitting a hard surface until the contact with metal welded material.

10.1.2 Carrying out welding process

The check button to select welding method MMA. In this mode, the welding current adjustment is possible and the ARC FORCE.

Adjustment of the welding current is possible immediately after the power is turned on. Turning the control dial to change the welding current. After you set the appropriate values, you must press the knob to confirm the settings. Leave the knob without movement by the 5s will automatically confirm a setting.

10.2 Gas shielded Welding (TIG).**10.2.1 The initiation and conduct of welding in TIG welding**

Device DIGITIG 206 p AC/DC is fitted with Ionizer for non-contact arc.

To initiate the arc in dwutaktu mode, you must approach the electrode to the work piece at a distance of 2 millimeters and press the button in the handle of the burner to turn on the Ionizer. After the correct initialization of the arc welding lead control-button. Release the button at the handle starts the downslope phase and the completion of the welding process.

To initiate the arc in czterotaktu mode, you must approach the electrode to the work piece at a distance of 2 millimeters and press the button on the handle of the burner to turn on the lonizer. After a valid ARC, you can release the button and the welding lead with a slow motion button. To complete the welding press and release the button on the handle.

10.2.2 TIG welding in 2T mode :

| | |
|-------|---|
| 0: | Press and hold the handle. Starts the flow of shielding gas; |
| 0~t1 | Pre flow of gas; |
| T1~t2 | Ignition of the arc welding current builds up from the minimum value to the set value welding current. If the pulsator is enabled, the current is modulated. |
| T2~t3 | During welding the handle should stay down; Note: If the pulsator is enabled, the output current pulses if the pulsator is turned off, welding current is fixed to |
| T3: | Release the handle button, the welding current begins to fall. If the pulsator is enabled, decreasing electricity is modulated; |
| T3~t4 | Welding current drops to the minimum value, the arc is suppressed; |
| T4~t5 | Post flow gas. |
| T5: | Solenoid valve closes the gas flow, completion of welding. |

10.2.3 TIG welding in 4T mode:

| | |
|-------|---|
| 0: | Press and hold the handle. Starts the flow of shielding gas; |
| 0~t1 | Time pre flow. Adjustment range: 0 ~ 1.0 sec; |
| T1: | Ignition of the arc, is start current; |
| T2: | Release the button of the handle starts the current buildup to the set current value welding. If enabled, current pulser is modulating; |
| T2~t3 | Rise time currents; |

- T3~t4 The welding process;
Note: If the pulsator is enabled, the output current pulses if the pulsator is disabled, the output current is a constant value;
- T4: Press the handle. Welding current starts to fall to the current crater. If the pulsator is enabled, falling power is modulated;
- T4~t5 Downslope;
- T5~t6 Crater current;
- T6: Release the handle. The arc is dimmed, spewing shielding gas;
- T7: Solenoid valve closes the gas flow, completion of welding.

10.2.4 Spot welding

In spot mode, source control is done as in 2T mode, after the set time welding end of welding will occur automatically.

11. BEFORE YOU CALL SERVICE

In the case of a malfunction of the device, before sending the welder to the site you should check out the list of basic failure and try to remove them.

Any repair of the device may be made only after disconnecting the plug from the electrical outlet.

Please note! The device is not sealed and you can remove the cover of the welder to remove glitches.

| Symptoms of | Ways to remove |
|---|---|
| Control Panel does not light up, the fan is not working, no output voltage | <ol style="list-style-type: none"> 1. Make sure that the switch is in the ON position 2. Check the security and network voltage 3. Remove the cover and check the connection of all the electrical plug-ins inside the machine |
| Control Panel lights up, fan not working, no output voltage. | <ol style="list-style-type: none"> 1. Verify that the device is not connected to a network with a higher voltage. If so, connect the 230V and turn on again 2. The supply voltage is unstable and the fuse is enabled. Turn off the machine for 2-3 min and turn on again 3. Short lived on and off switch resulted in the inclusion of fuse. Turn off the machine for 2-3 min and turn on again 4. there has been other damage requiring repair by an authorized service |
| Control Panel lights up, fan runs, the problems of the ignition arc | <ol style="list-style-type: none"> 1. check the torch, replace wear parts if they are worn |
| Control Panel lights up, fan runs, the machine ignites the arc | <ol style="list-style-type: none"> 1. Check the terminals and correct electrical conductivity electrode cable and mass 2. Check the connection of the TIG torch to the unit, pay attention if any plug pins on the socket are not broken or do not seize. 3. To spin the TIG torch handle and check that the switch in the handle is working |
| Control Panel lights up, fan runs, the display shows E1 | <ol style="list-style-type: none"> 1. The device is overheated. Wait a few minutes. When the light goes out, the message E1 and continue welding. |
| Unsatisfactory quality of welds in welding MMA, the electrode stick to the work piece | <ol style="list-style-type: none"> 1. Check the polarity of the connecting cables 2. Check that the electrode is not moist. Replace the electrode. 3. Welder is powered by generator or by a long extension cord is too small. Connect the unit directly to the mains |

| | |
|--|--|
| Unsatisfactory quality of welds in welding TIG | <ol style="list-style-type: none"> 1. Replace wear parts. Change the tungsten electrode or gas cylinder on the higher-quality materials 2. Check that the shielding gas flows with the appropriate intensity 3. Check the gas supply hose, hose couplings, steel connection status and improved quick couplers 4. Check the cylinder regulator/reductor. |
|--|--|

12. OPERATING MANUAL

Operating the system DIGITIG 206 p AC/DC should take place in an atmosphere free from abrasive and dusty. Do not set the device in dusty, near working grinding machines etc. Dust and pollution control boards metallic filings, wires and connections inside the equipment can lead to short circuits, and consequently damage the welder.

Avoid operation in environments with high humidity, and in particular the presence of dew on the elements of metal.

In the event of the occurrence of dew on the elements of metal for example. After the introduction of a cool device to a warm room, wait until it disappears. It is recommended that if operation of the welding machine in the open air, placing her under a roof to protect against adverse weather conditions.

Device DIGITIG 206 p AC/DC should be operated under the following conditions:

- changes the effective value of the supply voltage not greater than 10%
- ambient temperature from -10 ° c to + 40 ° c
- atmospheric pressure of 860 to 1060 hPa
- relative humidity of ambient air not more than 80% of the
- height above sea level up to 1000 m parts list the TIG torch

consumables T-26:

| LP | The name of the |
|----|----------------------------|
| 1 | Tungsten electrode |
| 2 | Collet T-26 |
| 3 | The current connector T-26 |
| 4 | Gas nozzle T-26 |

For the full list of consumables and spare parts is available on the website www.tecweld.pl and at TECWELD. There is a possibility of direct purchase of these parts.

13. MAINTENANCE MANUAL

As part of the daily service keep the place clean, check the status of the external connections and the condition of the wires and electric cables.

Regularly wear parts.

Periodically clean the device inside through the scavenge with compressed air to remove dust and metallic filings of controls and wires and electrical connections.

Not less than once every half a year to be made a general review of the condition of the electrical connections, in particular:

- State fire protection
- insulation
- the State security system
- correct operation of the cooling system

14. INSTRUCTIONS FOR STORAGE AND TRANSPORT

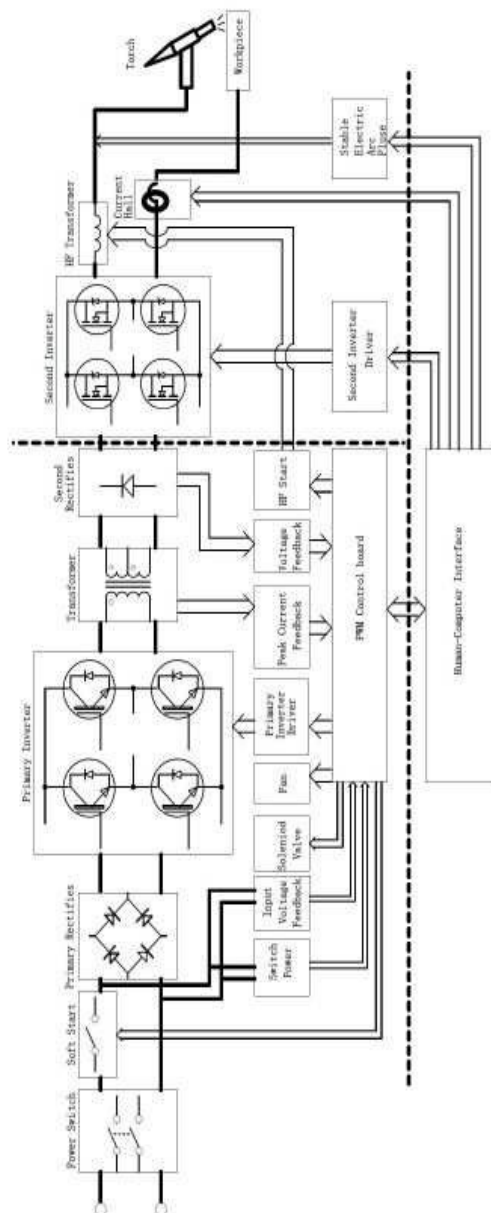
The device should be stored at a temperature of -10 ° c to + 40 ° c and a relative humidity of up to 80% of free from corrosive fumes and dust. Transportation of packaged devices should be carried out

in covered means of transport. To transport the packed unit must be protected against displacement and provide them with the right position.

15. THE SPECIFICATION OF A SET OF

1. Retrieved DIGITIG 206 p AC/DC 1 PCs.
2. TIG welding holder 1 PCs.
3. Ground cable with clamp tick-borne encephalitis 1 PCs.
4. instruction manual 1 PC.
5. Pack 1 PCs.

16. WIRING DIAGRAM



17. WARRANTY

Warranty is granted for a period of 12 months for entities carrying on economic activities or 24 months from the date of sale to the consumer.

Warranty will be respected after the presentation by the advertiser of proof of purchase (invoice or receipt) and the warranty card with the typed name of the product, the serial number, the date of sale and bearing the stamp of the point of sale.

In the case of warranty repair faulty device should be sent to the company TECWELD shipping company GLS.

Consignments sent at the expense of the company TECWELD through other shipping companies will not be accepted!

Place must be delivered together with cables. Complaints without the gun will not be considered.

The device sent to the complaint must be packed in the original carton and protected the original fittings styrofoam boards. The company TECWELD is not responsible for damage to the welding machines arising during transport.

If you are going to get rid of this product, do not dispose of it together with ordinary household waste. According to the WEEE directive (Directive 2002/96/EC) applicable in the European Union for used electrical and electronic equipment should be used separate ways of disposal.

In Poland in accordance with the provisions of the Act of 1 July 2005. about the waste electrical and electronic equipment is prohibited including waste waste tagged crossed trash.

A user who intends to get rid of this product, is obliged to return the waste electrical and electronic equipment to the point of collecting used hardware. Collection points are m.in. by wholesale and retail vendors of equipment and by municipal agencies active in the field of receiving waste. These statutory duties have been introduced in order to limit the amount of waste generated from the waste electrical and electronic equipment, and ensure an appropriate level of the collection, recovery and recycling of waste. The correct implementation of these duties is important especially when used equipment contains hazardous ingredients, which have a particularly negative impact on the environment and human health.