V1.1 11.10.24

USER MANUAL

SYNERGIC
INVERTER WELDING MACHINE
DIGIMIG 202 M-POWER

Sherman® digitec

CE

ATTENTION!
Before installing and starting the device, please read this manual

1. GENERAL REMARKS

The device may only be started and operated after carefully reading this Operating Instructions.

Due to the continuous technical development of the device, some of its functions may be modified and their operation may differ in detail from the descriptions in the manual. This is not a device error, but the result of progress and continuous modification work on the device.

Damage to the device caused by improper operation will void your warranty.
Any modifications to the rectifier are prohibited and will void the warranty.

2. SECURITY

Employees operating the device should have the necessary qualifications entitling them to perform welding work:

- should have qualifications of an electric welder in the field of gas shielded welding,
- know the health and safety rules when operating electrical power equipment such as welding equipment and auxiliary equipment powered by electricity,
- know the health and safety regulations when handling cylinders and installations with compressed gas (argon),
- be familiar with the contents of this manual and use the device in accordance with its intended purpose.

WARNING

Welding can pose a safety risk to the operator and other people in the vicinity.
Therefore, special precautions must be taken when welding. Before starting to weld, familiarize yourself with the health and safety regulations applicable at the workplace.
The following hazards exist during MIG/MAG electric welding:

- **ELECTRIC SHOCK**
- **NEGATIVE IMPACT OF ARC ON HUMAN EYES AND SKIN**
- **VAPORS AND GAS POISONING**
- **BURNS**
- **EXPLOSION AND FIRE HAZARDS**
- **NOISE**

Preventing electric shock:

- connect the device to a technically efficient electrical installation with proper protection and effective zeroing (additional protection against electric shock); other devices at the welder's workstation should also be checked and correctly connected to the network,
- install power cables when the device is switched off,
- do not touch the non-insulated parts of the electrode holder, the electrode and the object at the same time welded, including the device housing,
- do not use handles and power cables with damaged insulation,
- in conditions of particular risk of electric shock (work in environments with high humidity and closed tanks) work with an assistant supporting the welder's work and ensuring safety, use clothing and gloves with good insulating properties,
- if you notice any irregularities, please contact the competent persons to have them corrected. removal,
- It is prohibited to operate the device with removed covers.

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

- Wear protective clothing (gloves, apron, leather shoes),
- Use protective shields or visors with a properly selected filter,

• Use protective curtains made of non-flammable materials and choose the right wall colors absorbing harmful radiation.

Prevention of poisoning by vapors and gases emitted during welding from electrode coating and metal evaporation:

• Use ventilation devices and exhaust systems installed in places with limited air exchange. air,
• Blow with fresh air when working in a confined space (tanks),
• Use masks and respirators.

Burn prevention:

• Wear appropriate protective clothing and footwear to protect against radiation burns. arc and splinters,
• Avoid contaminating clothing with grease and oils that may cause ignition.

Explosion and fire prevention:

• It is prohibited to operate the device and weld in rooms with a risk of explosion or fire,
• The welding station should be equipped with fire extinguishing equipment,
• The welding station should be located at a safe distance from flammable materials.

Preventing the negative impact of noise:

• Use earplugs or other noise protection measures,
• Warn people nearby about dangers.

WARNING!

Do not use an electrical source to thaw frozen pipes.

Before starting the device, you must:

• Check the condition of electrical and mechanical connections. It is forbidden to use handles and power cables with damaged insulation. Improper insulation of handles and power cables may cause electric shock,

• Ensure proper working conditions, i.e. ensure proper temperature, humidity and ventilation in the workplace. work. Outside closed rooms, protect against atmospheric precipitation,
• Place the charger in a place where it can be easily operated.

People operating a welding machine should:

• have the qualifications for electric welding using the MIG/MAG method,
• know and comply with the occupational health and safety regulations applicable to welding work,
• use appropriate, specialist protective equipment: gloves, apron, rubber boots, shield or a welding helmet with a properly selected filter,
• be familiar with the contents of this instruction manual and use the welding machine in accordance with its intended purpose.

Any repairs to the device may only be performed after disconnecting the plug from the power socket.

When the device is connected to the mains, it is not permitted to touch any elements forming the welding current circuit with bare hands or through wet clothing.
It is prohibited to remove external covers when the device is connected to the mains.
Any modifications to the rectifier on your own are prohibited and may constitute a deterioration of safety conditions.

All maintenance and repair work may only be carried out by authorised persons in compliance with the work safety conditions applicable to electrical devices.
It is prohibited to operate the welding machine in rooms at risk of explosion or fire!
The welding station should be equipped with fire extinguishing equipment.
After finishing work, the device's power cord must be disconnected from the mains.

The above-mentioned hazards and general health and safety rules do not exhaust the issue of welder's work safety, because they do not take into account the specifics of the workplace. An important supplement to them are workplace health and safety instructions and training and instruction provided by supervisory employees.

3. GENERAL DESCRIPTION

The DIGIMIG 202 M-POWER synergic welding machine is used for manual welding of steel and non-ferrous metals.
It allows welding using the MMA (covered electrode), TIG Lift, and MIG/MAG methods. The MIG/MAG method can be used in manual and synergistic mode. Thanks to the change of polarity, the device allows welding using the MIG/MAG method using both standard wires in a protective gas shield and self-shielding flux-cored wires.

The welder allows for the connection of a Spool Gun (SG) with a mini wire feeder and a D100 spool of steel or colored wire.

The device allows you to remember 10 sets of welding parameters and is equipped with a Fan Stop function that turns off the fan at low welding load, which reduces noise and improves user comfort.

The welding machine is intended for use in closed or roofed rooms, not directly exposed to atmospheric influences.

4. TECHNICAL PARAMETERS

4.1 Welding machine

Supply voltage:	AC 230V 50Hz
Maximum power consumption:	MIGÿ8.2kVA MMAÿ8.4kVA TIGÿ6.2kVA
Rated welding current:/ duty cycle	MIG: 200A / 60%; MMA: 180A / 60%; TIG: 200A / 60%
No-load rated voltage Wire spool diameters:	59 V
	100mm, 200mm
Maximum current consumption:	MIG: 35.7 A; MMA: 36.4 A; TIG: 26.8 A 25 A
Network security	
Weight (without accessories):	10.1 kg
Dimensions [mm]:	450x220x350
Degree of protection:	IP21

4.1.1 Parameter adjustment ranges

Welding current:	MIG: 30 – 200 A; MMA: 20 – 180 A; TIG:10 – 200 A
Welding voltage:	MIG: 15.5 - 24V
Wire feed speed:	2 – 14 m/min
Inductance:	-10 - +10
Spot welding time	0.1 - 20 sec
ARC FORCE (MMA):	0-100
HOT START (MMA)	0-50
VRD	on – off

4.2 MIG torch

Handle type:	TW-15
Maximum current capacity:	200A (CO2)
Cooling type:	gas
Cooling gas flow:	10-18 l/min
Length:	3m

Work cycle
The duty cycle is based on a 10-minute period. A duty cycle of 60% means that after 6 minutes of operation, a 4-minute break is required. A duty cycle of 100% means that the device can operate continuously without interruption.

Note! Heating tests were conducted at ambient air temperature. Duty cycle at 40ºC was determined by simulation.

Degree of protection
IP specifies the degree to which the device is resistant to the ingress of solid and water contaminants. IP21 means that the device is suitable for operation in closed rooms.

Overheating protection
The IGBT module is protected against overheating by a protective installation that turns off the power to the welding machine. After a few minutes, the device cools down to a temperature that allows it to automatically switch on again. Do not disconnect the power supply during this time, because the continuously operating fan cools the internal radiators of the device in order to reduce the temperature faster. After restarting, remember to limit the welding parameters in order to continue the continuous operation of the device.

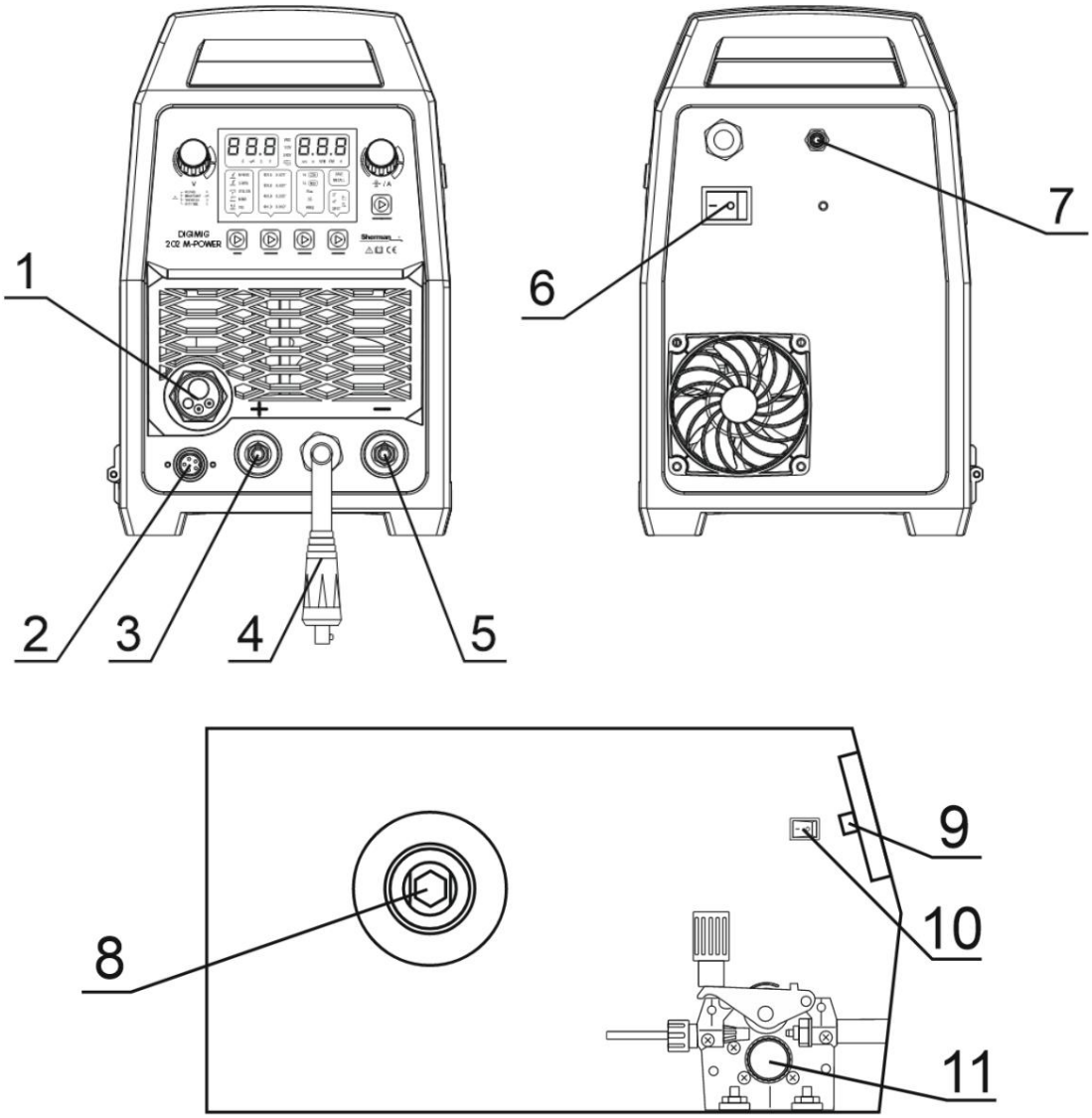
VRD function
The VRD function reduces the voltage in the no-load condition. The correct voltage value is restored only just before the arc is struck. This minimizes the risk of electric shock, but in some cases it may make it difficult to strike the arc.

ARC FORCE function
The ARC FORCE function allows you to adjust the dynamics of the welding arc. Shortening the arc length is accompanied by an increase in the welding current, which stabilizes the arc. Reducing the value gives a soft arc and a smaller penetration depth, while increasing the value causes deeper penetration and the possibility of short arc welding. When the ARC FORCE function is set to a high value, you can weld while maintaining a minimum arc length and a high electrode melting speed

HOT START function
The HOT START function is popularly called hot start. It works when the arc is ignited, causing a momentary increase in the welding current above the value set by the welder. HOT START is intended to prevent the electrode from sticking to the material and is a great convenience during
arc ignition. When welding small elements, it is recommended to turn this function off, as it may cause burning of the welded material.

5. PREPARING THE DEVICE FOR WORK

If the device is to be stored or transported in frosty conditions, the temperature must be above freezing before starting work.



1. MIG gun socket
2. Remote Control/Spool Gun Holder Socket 3. "+" Socket

4. Polarity change plug
5. Socket "-"
6. Power switch
7. Shielding gas connection stub 8. Wire spool pin
9. Feeder chamber lighting
10. Light switch
11. Wire feeder

5.1 Remote control pedal (option)

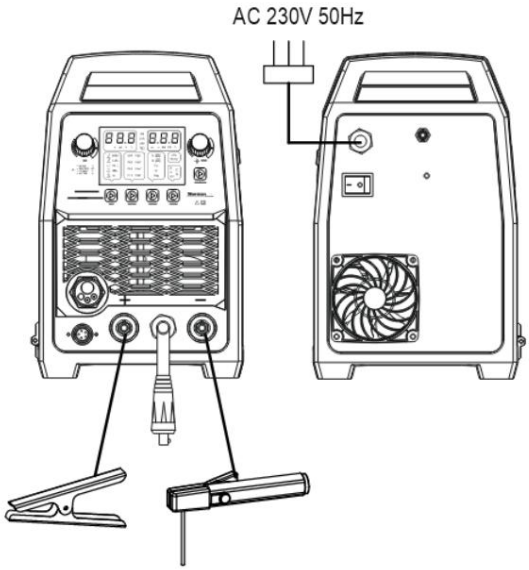
The device allows you to connect a remote control pedal. The pedal is active only during TIG welding. It allows you to adjust the welding current after the arc is struck. The device switches to remote control mode automatically after connecting the control plug to the socket (2). Switching to this mode

the mode is signaled by the diode lighting up  .

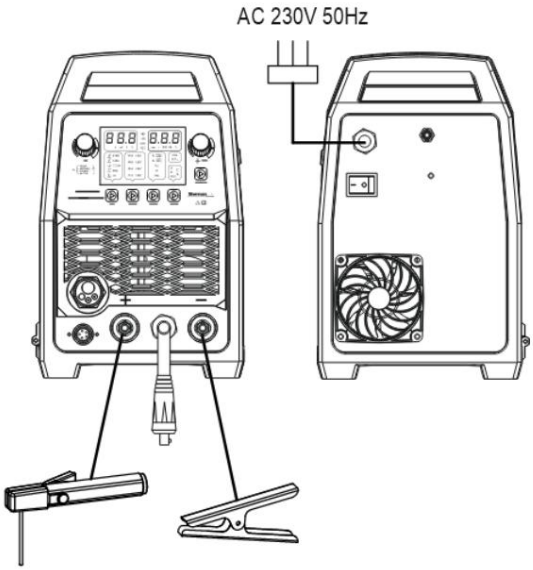
5.1 Connecting the cables

5.1.1 MMA method

The ends of the welding cables should be connected to the sockets (3) and (5) located on the front panel so that the correct pole for the given electrode is on the electrode holder. The polarity of the welding cable connection depends on the type of electrode used and is given on the electrode packaging (negative polarity DCEN or positive polarity DCEP). The return cable clamp should be carefully secured to the welded material. Connect the device plug to a 230V 50Hz mains socket.



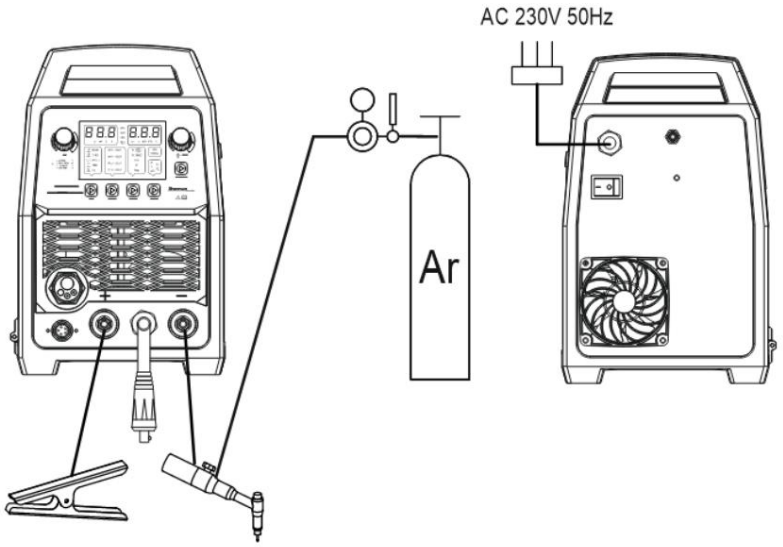
DCEN



DCEP

5.1.2 TIG method

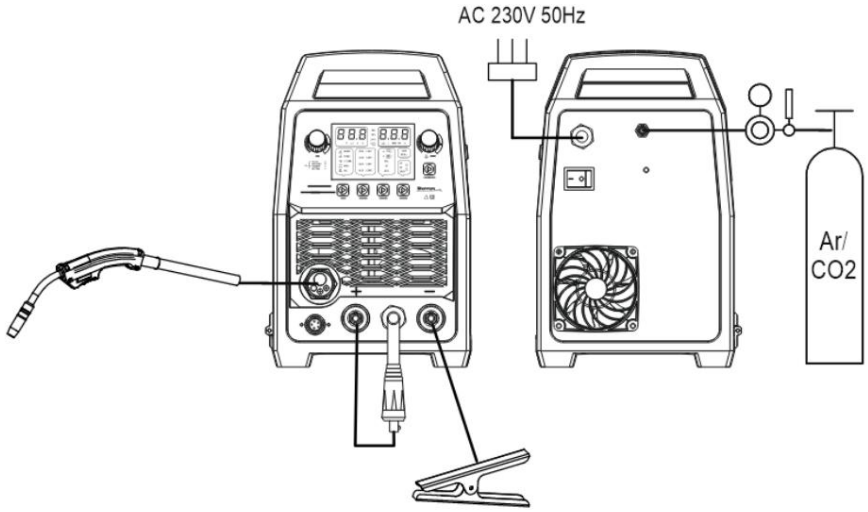
For welding with this method, it is necessary to use an additional TIG torch. A gas-cooled torch with a current load of 200A, equipped with a shielding gas control valve, is required.
The current terminal of the handle should be connected to the negative polarity socket (5), and the gas hose to the reducer on the gas cylinder. The positive pole of the source (3) should be connected to the welded material using a cable with a clamp. Connect the device plug to a 230V 50Hz mains socket.



5.1.3 MIG and braze welding

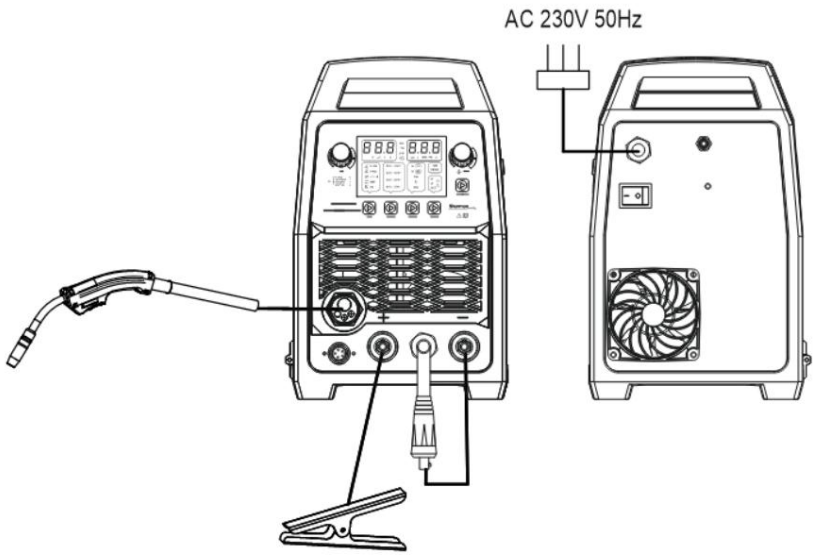
5.1.3.1 Welding and brazing in protective gases

The current clamp of the torch should be connected to the MIG torch socket (1). The gas hose from the reducer should be led and attached to the gas connector (7) located on the rear wall of the device. The polarity change plug (4) should be inserted into the socket (3). The negative pole of the source (5) should be connected to the welded material using a cable with a clamp. Connect the device plug to a 230V 50Hz mains socket.



5.1.3.2 Welding with self-shielded steel wire

The current clamp of the torch should be connected to the MIG torch socket (1). The polarity change plug (4) should be inserted into the socket (5). The positive pole of the source (3) should be connected to the welded material using a cable with a clamp. Connect the device plug to a 230V 50Hz mains socket.



5.1.3.3 Welding with a Spool Gun (option)

The Spool Gun should be connected in the same way as a standard MIG gun, and the control plug should also be inserted into the remote control socket (2).
Use the MODE welding method button (G) to select the Spool Gun mode.

5.2 Shielding gas connection

1. Secure the cylinder and secure it against tipping over.
2. Open the cylinder valve momentarily to remove any contamination.
3. Install the reducer on the cylinder.
4. Connect the reducer with the gas nozzle (7) on the rear wall of the welder using a hose.
5. Unscrew the cylinder and reducer valve.

5.3 Connection to the mains

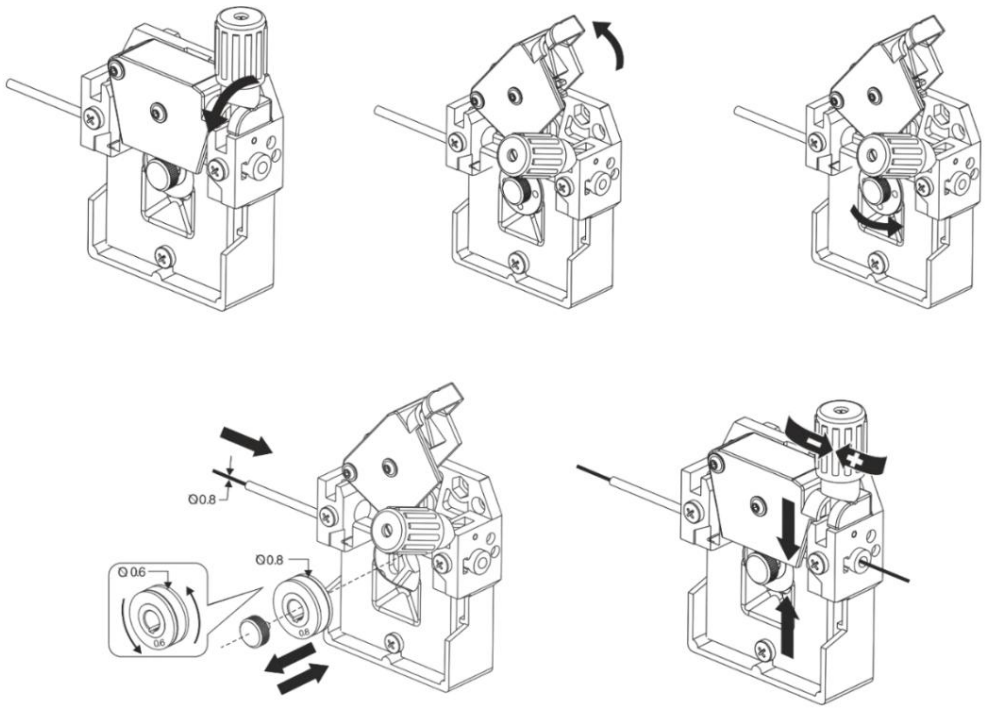
1. The device should only be used in a single-phase power supply system, three-wire, with grounded neutral point.
2. The DIGIMIG 202 M-POWER inverter rectifier is designed to work with a 230V50 Hz network protected by 25 A delayed fuses. The power supply should be stable, without voltage drops.

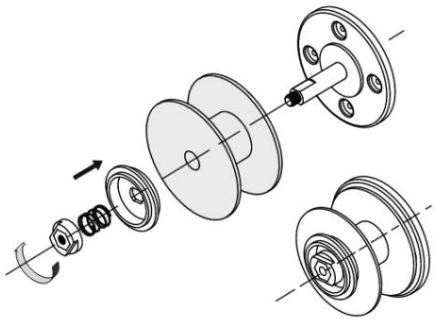
3. Before connecting the power supply, make sure that the power switch (6) is in the OFF position. (off).

5.4 Installing the electrode wire spool

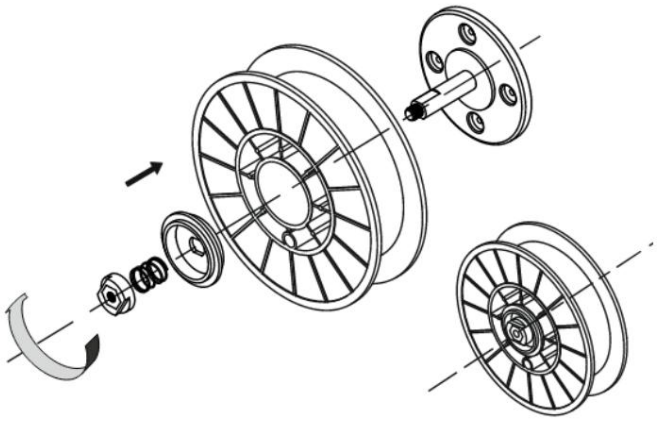
1. Open the side cover of the housing.
2. Check that the drive rollers are suitable for the type and diameter of wire. If necessary, fit the correct roller. For steel wires, use rollers with V-grooves and for aluminium wires, use rollers with U-grooves.

3. Place the spool of electrode wire on the mandrel.
4. Secure the spool against falling.
5. Release the pressure on the feed rollers.
6. Blunt the tip of the electrode wire.
7. Insert the wire through the feeder drive roller into the holder.
8. Press the wire into the grooves of the drive roller.
9. Unscrew the current tip from the holder, turn on the welding machine power supply and pull the wire into the holder welding machine by pressing the button on the handle.
10. Once the wire appears in the handle outlet, release the button and screw on the contact tip.
11. Adjust the feed roller pressure by turning the pressure knob. Too low a pressure will result in slipping of the drive roller, too high a pressure will increase the feeding resistance, which may lead to wire deformation and damage to the feeder.





Spool D100



Spool D200

5.5 Preparing the MIG gun for work

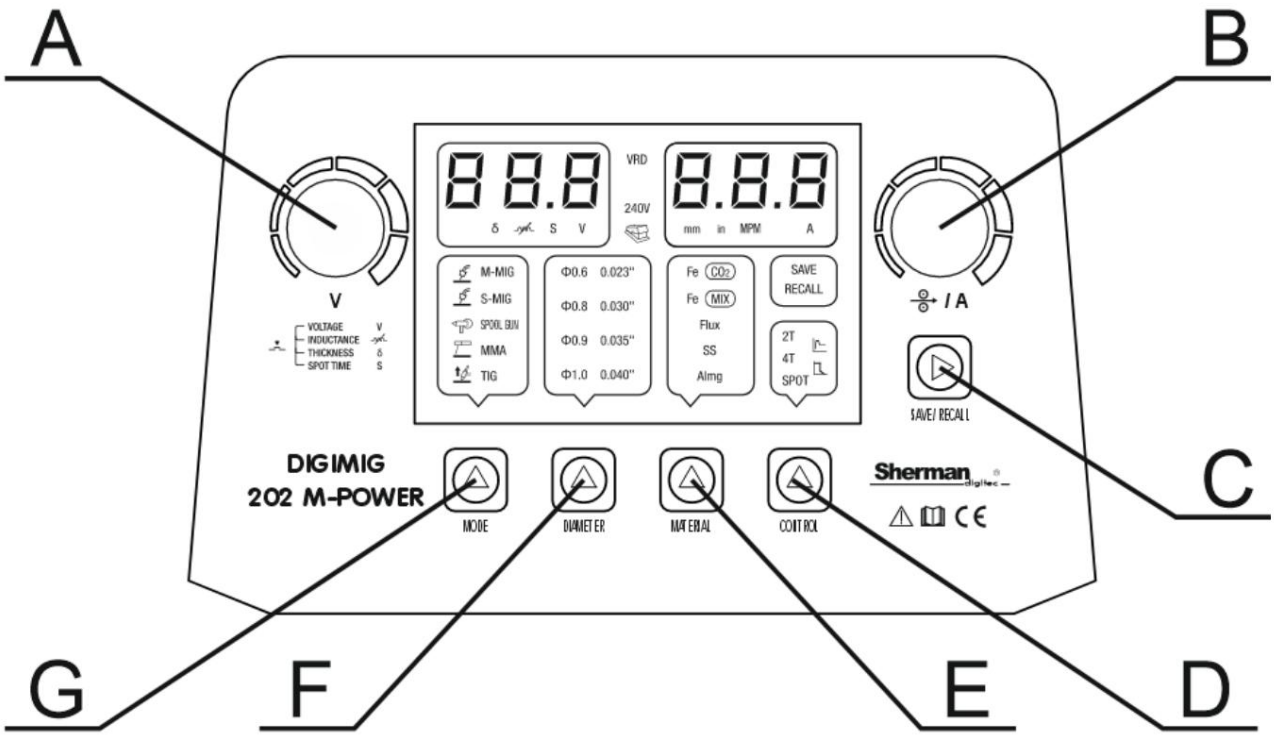
Depending on the type of material being welded and the diameter of the electrode wire, fit the appropriate current tip and wire guide insert to the MIG torch.
For welding steel, use steel welding tips and a steel insert. For welding aluminum, use aluminum welding tips and a Teflon insert.

5.5.1 Quick wire feed

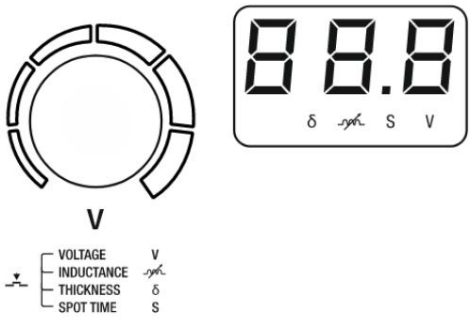
The device has a fast wire feed function. Pressing and holding the button in the handle grip without striking the arc causes the wire to feed out quickly, allowing it to be easily inserted into the handle.

6. SERVICE

6.1 Front panel



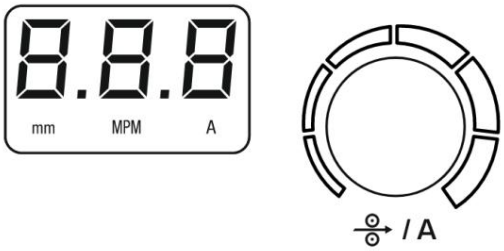
A - Welding voltage knob



The knob is only active during MIG welding.
In manual mode (M-MIG) the welding voltage is adjusted by turning the knob. Pressing the knob saves the currently set value and moves on to adjusting the remaining parameters –
inductance, material thickness and spot welding time.
In synergic mode (S-MIG) the knob is used to correct the welding voltage in relation to the synergic program settings. It is possible to correct within +/- 15% of the factory settings

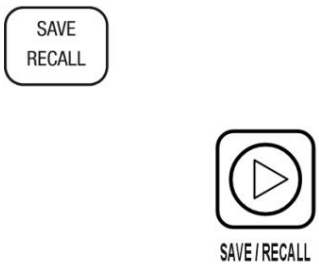
	Inductance – its adjustment enables the optimization of arc characteristics depending on the thickness of the welded element and the welding method and conditions. Only for MIG/MAG method. Adjustment range: 0.1 – 20 s.
δ	Material thickness – depending on the set material thickness, the welder selects the initial welding parameters. The parameter is active only in synergic mode (S-MIG) and SPOOL GUN. Adjustment range: depending on the selected welded material and set parameters.
S	Spot welding time – this parameter can only be adjusted after selecting the SPOT function using the CONTROL (D) button. Adjustment range: -50 – 50%.

B – Wire feed/welding current adjustment knob



During MMA and TIG welding, the knob is used to adjust the welding current.
When welding with the MIG method in manual mode (M-MIG), the knob is used to adjust the wire feed speed. In synergic mode (S-MIG), the knob is used to adjust the wire feed speed and the corresponding welding voltage. If necessary, the welding voltage can be corrected using the knob (A).

C – Save/Load Settings Button

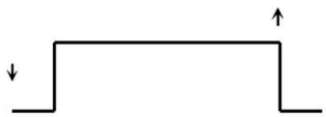
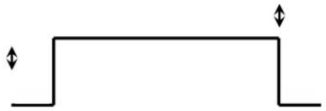


The button is active only during MIG.MAG welding.
To save the current settings, press and hold the button for 3 seconds, then use the knob (B) to select the channel number under which they will be saved and confirm the save by pressing the button again.

To load previously saved settings, briefly press the button, then use the knob (B) to select the number under which they were saved and confirm by pressing the button.

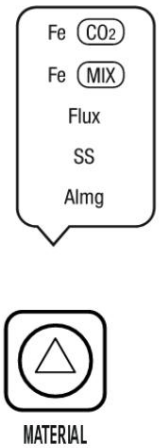
D – Source control button

The button is used to select the welding machine control (MIG/MAG method). During MMA welding, it is used to select the HOT TART, ARC FORCE and VRD functions. After selecting the function, its adjustment is done by turning the knob (B). To go to the VRD function adjustment, press and hold the button for 4 seconds.

2T	Two-stroke mode  Pressing the welding torch button will ignite the arc and start welding. When you release the button, the arc will turn off.
4T	Four-stroke mode  Pressing and releasing the welding torch button will ignite the arc and start welding. Pressing and releasing the button again will extinguish the arc.
SPOT	Spot welding.  Pressing the welding gun button will ignite the arc. After the set time has elapsed, the arc will be extinguished. Releasing the gun button earlier will immediately extinguish the arc.

	HOT START function (only for the MMA method) – this function is popularly called hot start. It works when the arc is ignited, causing a temporary increase in the welding current above the value set by the welder. HOT START is intended to prevent the electrode from sticking to the material and is a great convenience during arc ignition. When welding small elements, it is recommended to turn this function off, as it may cause burning of the welded material.
	ARC FORCE function (only for MMA method) – this function allows you to adjust the dynamics of the welding arc. Shortening the arc length is accompanied by an increase in the welding current, which stabilizes the arc. Reducing the value gives a soft arc and a smaller depth of penetration, while increasing the value causes deeper penetration and the possibility of short arc welding. With a high ARC FORCE function value set, you can weld while maintaining an arc of minimum length and a high electrode melting speed
VRD	VRD function (only for MMA method) – this function reduces the voltage in no-load condition. The correct voltage value is restored only just before the arc is struck. This minimizes the risk of electric shock, but in some cases may make it difficult to strike the arc.

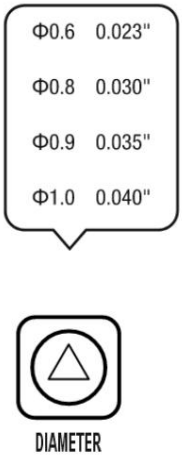
E – Welded material selection button.



The button is active only during MIG/MAG welding in M-MIG, S-MIG and SPOOL GUN modes.
Used to select the material to be welded.

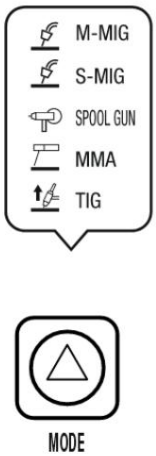
Fe CO_2	Welding of carbon steels in CO2 shielding
Fe MIX	Argon shielded welding of carbon steels
Flux	Welding with self-shielded wire
SS	Welding of stainless steels in an Ar/ CO2 mixture shield.
Almg	Welding of magnesium aluminum alloys in argon shield

F – Electrode wire diameter selection button



Button active only during MIG/MAG welding in S-MIG and SPOOL GUN modes. Used to select the electrode wire diameter.

G – Welding method selection button



The button is used to select the welding method. Selection of the appropriate mode is confirmed by lighting up the control diode.

M-MIG	MIG welding with manual selection of settings.
S-MIG	MIG/MAG welding using synergistic settings. The device selects welding parameters depending on the selected type and thickness of material. These parameters can be changed by the user.
SPOOL GUN	MIG/MAG welding using the SPOOL GUN holder (optional).
MMA	Welding with coated electrode
TIG	TIG Lift welding (non-consumable electrode)

7. PARAMETER SETTINGS

7.1 MMA method

After selecting the MMA method, it is possible to adjust the welding current, the HOT START and ARC FORCE functions and to enable/disable the /VRD function.

HOT START function
The HOT START function is popularly called hot start. It works when the arc is ignited, causing a momentary increase in the welding current above the value set by the welder. HOT START is intended to prevent the electrode from sticking to the material and is a great convenience during
arc ignition. When welding small elements, it is recommended to turn this function off, as it may cause burning of the welded material.

ARC FORCE function
The ARC FORCE function allows you to adjust the dynamics of the welding arc. Shortening the arc length is accompanied by an increase in the welding current, which stabilizes the arc. Reducing the value gives a soft arc and a smaller penetration depth, while increasing the value causes deeper penetration and the possibility of short arc welding. With a high ARC FORCE function value set, you can weld while maintaining a minimum arc length and a high electrode melting speed.

VRD function
The VRD function reduces the voltage in the no-load condition. The correct voltage value is restored only just before the arc is struck. This minimizes the risk of electric shock, but in some cases it may make it difficult to strike the arc.

7.2 TIG method

After selecting the TIG method, it is possible to adjust the welding current.

7.3 MIG method

During MIG welding, the device can operate in synergic mode (S-MIG) and manual mode (M-MIG). The synergic mode allows less experienced users to select welding parameters. In this mode, the device automatically selects the welding current and wire feed speed depending on the type of welded material, electrode wire diameter and material thickness. It is possible to correct the welding voltage.

Manual mode allows the user to select welding voltage and wire feed speed as needed.

Welding voltage correction in synergistic modes
After setting the wire feed speed using the knob (B) in synergic mode, the program will automatically select the welding voltage corresponding to it. If necessary, it is possible to correct the welding voltage using the knob (A).

Inductance control
Inductance control allows for optimisation of arc characteristics depending on the thickness of the welded element and the welding method and conditions. This function is useful when welding thin elements using the MIG/MAG method, preventing them from burning through, and when brazing galvanised elements.
Changing the inductance value also reduces the amount of welding spatter when welding in a CO2 shield. The higher the inductance value (+), the smaller the amount of spatter, while the negative value (-) increases the amount of spatter. The optimal setting of the inductance value depends on several factors and may differ from standard recommendations, so it should be selected experimentally during welding tests.

Adjusting this parameter also enables brazing of thin (up to 3 mm) galvanized elements with wires made of CuSi3 copper alloy in a shield of pure argon or, in some cases, an Ar/CO2 mixture in the ratio (82/18).

7.4 Restore factory settings.

To restore factory settings:
- switch to MMA mode and set the welding current to 108A
- switch to M-MIG mode and set the wire feed speed to 10.0 m/min
- press and hold the MATERIAL (E) button for 3 seconds.

8. BRAZING

The manual M-MIG function, i.e. manual selection of parameters, is particularly useful for brazing.
Using three welding parameters, the optimal set should be set to obtain the correct weld. When selecting parameters, low voltage values and high wire feed speeds should be selected. It is recommended to use argon as a shielding gas, but a mixture of argon and CO2 (82/18) also gives good results. Due to the required shape of the weld, the inductance should be selected experimentally depending on the thickness and type of the welded material.
Copper-based filler metals are most often used as additional materials. These are wires marked as CuSi3 or SG –CuAl.

It is recommended to use a handle no longer than 3 m equipped with a Teflon insert.

9. WELDING ALUMINUM ALLOYS

In the synergic mode, you can choose one of two programs for welding aluminum. The programs have been selected for welding with ALSi5 wires type ER 4043, mainly intended for cast aluminum, and with AlMg5 wire type ER 5356, which is suitable for welding all types of structures and shapes.
Welding aluminum is not an easy task, it requires the welder to have experience, knowledge and maintain certain practices that will make it easier to weld aluminum elements. The device selects output parameters for the appropriate type of materials and types of wires in the synergistic program.
Depending on your needs, make appropriate voltage and inductance adjustments to achieve the desired effect.

First of all, you should remember a few important things that significantly affect the appearance of the weld and influence the correct course of the welding process.
Before starting welding work on aluminum components, the following steps must be performed:

Device:

- Make sure the feed rolls are designed for aluminum: the groove is U-shaped and designed for the correct diameter of welding wire. Using the wrong rolls will deform the wire and cause problems in the welding process.
- Make sure the feed rollers are not set too tight. Excessive wire tension can cause a feeding problem.
- Make sure the holder is equipped with a Teflon guide insert intended for aluminum. Using steel components used to feed steel wire will cause feeding problems.

- Make sure the contact tip is the correct size and designed for aluminum wire.
- It is worth replacing part of the wire guide insert in the feeder with a Teflon version, which improves wire feeding, just like in the case of a welding torch.

Work position:

- Attention should be paid to the proper preparation of the welding work site: the hall should be clean, have good ventilation and low air humidity should be maintained. The presence of iron oxide dust or dust from arc gouging of steel is unacceptable.

- Aluminum welding stations should be vacuumed with industrial vacuum cleaners once a day, after completion of work.
- Welders' clothes should be clean, gloves must not be greasy.

Preparation of material:

- The welding site should be cleaned and degreased immediately before welding,
- Degrease aluminum elements by wiping them with a clean cloth soaked in a degreasing agent, e.g. acetone (Alcohol is not a good degreasing agent and we do not recommend using it when cleaning aluminum).

- Remove heavy oxide residues before welding. This is normally done manually or mechanically using a steel wire brush. If the material is heavily contaminated, it may be necessary to use a grinder.

- After proper surface preparation, the welding process should be performed as quickly as possible.
- If the part must remain unwelded for a longer period, protect it with brown paper packing material and cover with adhesive tape.

Proper storage of welding wire

- Aluminum welding wire should be stored in a clean, dry environment, preferably in original packaging.
- The wire does not need to be stored in air-conditioned rooms, it is best to store it in low humidity conditions. The wire must not be soaked in water.
- If a wire that is relatively cold is brought into a room on a hot, humid day and immediately opened, it is possible that the humid air will contaminate the wire. Therefore, if the wire is stored in an air-conditioned room, remember not to unpack the wire until it has warmed up and acclimatized to the ambient temperature.
- After finishing work, the wire should be removed from the feeder and secured in a plastic bag for storage. next use.

For welding aluminum alloys, pure argon of high quality class, recommended not less than 4.8, should be used as a shielding gas. The gas flow should be selected according to the thickness and welding speed. Good welding results are achieved when the process direction is to the left.

10. WELDING OF STAINLESS STEEL

The synergistic program in the device has been developed for welding the most popular stainless steel alloys, such as 308LSi and 316LSi, and the shielding gas mixture argon + CO2 in a ratio of 98/2. The welding parameters of other high-alloy steels and other shielding gas mixtures may require correction of the welding parameters.

11. ARC INITIATION

11.1 MMA method

1. Touch the electrode to the workpiece, rub briefly and remove.
2. In the case of arc initiation with electrodes whose coating forms a non-conductive slag after solidification, pre-clean the electrode tip by striking it several times against a hard surface until metallic contact with the welded material is achieved.

11.2 TIG method

1. Open the valve on the TIG torch to allow the shielding gas to flow.
2. Lightly touch the workpiece with the electrode, remove the electrode from the workpiece by tilting the handle so that the gas nozzle touches the material.
3. Once the arc is struck, straighten the torch and start welding.

11.3 MIG/MAG method

1. Bring the torch closer to the welded elements so that the distance between the nozzle and the welded elements was approximately 10 mm.
2. Press the button on the welding torch and start welding.

12. BEFORE YOU CALL FOR SERVICE

If the device does not function properly, before sending the welding machine to the service center, check the list of basic faults and try to fix them yourself.
Any repairs to the device may only be performed after disconnecting the plug from the power socket.
Note! The device is not sealed and the user can remove the welding machine housing to eliminate minor faults.

NOTE! The welder is equipped with a Fan Stop function that turns off the fan a few minutes after welding is finished and the device has cooled down. The fan starts again under load.

Symptoms	Cause	Procedure
No power, failure signal or device malfunction	No connection or loose plug inside the device	Check and correct the connections of all electrical plugs inside the device
No electrode wire feeding (feeder motor is running)	Roller pressure too weak	Set the correct pressure
	Incorrect guide roller groove diameter	Install the correct guide roller
	Dirty wire guide in the holder	Clean the electrode wire guide
	Electrode wire blocked in the current tip	Replace the contact tip
No electrode wire feeding (feeder motor not working)	Device switched to Spool Gun mode	Switch the device to M-MIG or S-mode MIG
Irregular electrode wire feed	Damaged current terminal	Replace the contact tip
	The feed roller groove is dirty or damaged.	Clean the roller groove or replace the roller
	The wire spool rubs against the walls of the welding machine cover	Secure the wire spool correctly
The arc does not ignite	No proper contact of the ground wire terminal	Improve the contact of the ground terminal
	Damaged switch in MIG torch	Replace the switch
	Improper connection of the MIG gun to the device	Check the condition of the electrical connections of the holder, check if the pins in the socket are not broken or jammed
The arc is too long and irregular	Welding voltage too high	Reduce welding voltage
	Wire feed speed too slow	Increase wire feed speed
Bow too short	Welding voltage too low	Increase welding voltage
	Wire feed speed too high	Reduce wire feed speed
After switching on the power, the displays and diodes do not light up	No power supply voltage	Check the fuses at the mains connection
The fan is not working	The fan was blocked by a bent cover	Straighten the fan cover
Unsatisfactory weld quality when welding with the MIG method	Inappropriate or poor quality materials or consumables used,	Replace consumable parts. Change welding wire or gas cylinder to suitable or higher quality materials
	Shielding gas flows at an inappropriate rate.	Check the gas supply hose, improve the connection of the hose with the connectors and the condition of the quick connectors. Check the cylinder reducer
Unsatisfactory weld quality when welding using the MMA method, the electrode sticks to the welded material	Incorrect polarity of welding cable connection	Connect the welding cables correctly
	Wet electrode.	Replace the electrode
	The welder is powered by a generator or by a long extension cord with a cable cross-section that is too small.	Connect the device directly to the mains
Unsatisfactory weld quality when welding with the TIG method	Check the quality of the materials and consumables used, especially the tungsten electrode and shielding gas.	Replace consumables, replace the shielding gas with a higher quality one
	Shielding gas does not flow or flows with insufficient intensity	Check the cylinder reducer, gas supply hose, improve the hose connection with the connectors and the condition of the quick connectors.

List of errors indicated on the display

Error code	Description
Err-01	Output current too high. Turn the device off and on again.
Err-02	Thermal protection activated. Wait a few minutes for the welder to cool down. Do not turn off the device so that the fan can cool the welder elements faster. After cooling, the device will automatically return to normal operation.
Err-03	Wire feed error
Err-04	Damaged temperature sensor.

13. OPERATING INSTRUCTIONS

The DIGIMIG 202 M-POWER welding machine should be operated in an atmosphere free from corrosive components and high dust levels. The device should not be placed in dusty places, near working grinders, etc. Dust and contamination with metal filings of control boards, cables and connections inside the device may lead to an electrical short circuit and, consequently, to damage to the welding machine.

Avoid operation in high humidity environments, especially where dew occurs on metal parts.

If dew appears on metal parts, e.g. after bringing a cold device into a warm room, wait until it dries completely and the device warms up to the ambient temperature. Starting a cold welder in these conditions can damage it. It is recommended that the welder be placed under a roof to protect it from adverse weather conditions if used outdoors.

The DIGIMIG 202 M-POWER device should be operated under the following conditions: - changes in the effective value of the supply voltage not greater than 10%
- ambient temperature from -10°C to +40°C
- atmospheric pressure 860 to 1060 hPa
- relative humidity of atmospheric air not exceeding 80%
- altitude above sea level up to 1000m

List of consumable parts:

No.	For steel wires	For aluminum wires
1	Feeder roller 30x10x10mm	Feeder roller Al 30x10x10mm
2	Contact tip TW-15 M6x25	Contact tip Al TW-15 M6x25
3	TW-15 current switch	
4	Gas nozzle TW-15	
5	Steel insert 3m	Teflon insert 3m

A full list of consumables and spare parts is available on the website www.tecweld.pl and at TECWELD. It is possible to purchase these parts directly.

14. MAINTENANCE INSTRUCTIONS

As part of daily maintenance, you should keep the welding machine clean, check the condition of external connections and the condition of electrical wires and cables.
Replace consumable parts regularly.
Periodically (depending on operating conditions) remove the cover and clean the device inside by blowing it with compressed air to remove dust and metal filings from the control boards and electrical wires and connections.

At least once every six months, the general condition of the device and electrical connections should be inspected, in particular:
- condition of electric shock protection - condition of insulation
- status of the security system
- correct operation of the cooling system

Damage resulting from operating the welding machine in improper conditions or failure to follow maintenance recommendations is not covered by warranty repairs.

15. STORAGE AND TRANSPORT INSTRUCTIONS

The device should be stored at a temperature of -10°C to +40°C and relative humidity up to 80%, free from corrosive fumes and dust. The transport of packed devices should be carried out in covered means of transport. During transport, the packed device should be secured against moving and ensured in the correct position.

16. COMPLETE SPECIFICATION

1. Welding machine	1 pc.
2. Welding holder TW-15	1 pc.
3. Ground cable with clamp	1 pc.
4. Electrode cable	1 pc.
4. Operating instructions	1 pc.
5. Packaging	1 pc.

17. WARRANTY

The warranty is granted for a period of 12 months for business entities, but excluding warranty claims, or 24 months for consumers from the date of sale.

The warranty will be honored upon presentation by the claimant of proof of purchase (invoice or receipt) and a warranty card with the product name, serial number, date of sale and the stamp of the point of sale.
To order a warranty repair, please fill out the form available at www.tecweld.pl in the SERVICE tab. Based on the notification, the device will be transported to the service by a courier company. Devices sent in any other way at the expense of TECWELD will not be accepted!
The welding machine must be delivered with a welding torch. Complaints about the machine without a welding torch will not be considered.
The device sent for complaint must be packed in the original carton secured with original polystyrene shapes. TECWELD is not responsible for any damage to the welder caused during transport.

If you intend to dispose of this product, do not dispose of it with 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, in accordance with the provisions of the Act of 11 September 2015 on waste electrical and electronic equipment, it is prohibited to place used equipment marked with the crossed-out wheeled bin symbol together with other waste.

The user who intends to dispose of this product is obliged to return used electrical and electronic equipment to a collection point for used equipment. Collection points are run by, among others, wholesalers and retailers of this equipment and by municipal organizational units conducting activities in the field of waste collection.

The above statutory obligations were introduced to limit the amount of waste generated from used electrical and electronic equipment and to ensure an appropriate level of collection, recovery and recycling of used equipment. Proper implementation of these obligations is especially important when the used equipment contains hazardous components that have a particularly negative impact on the environment and human health.

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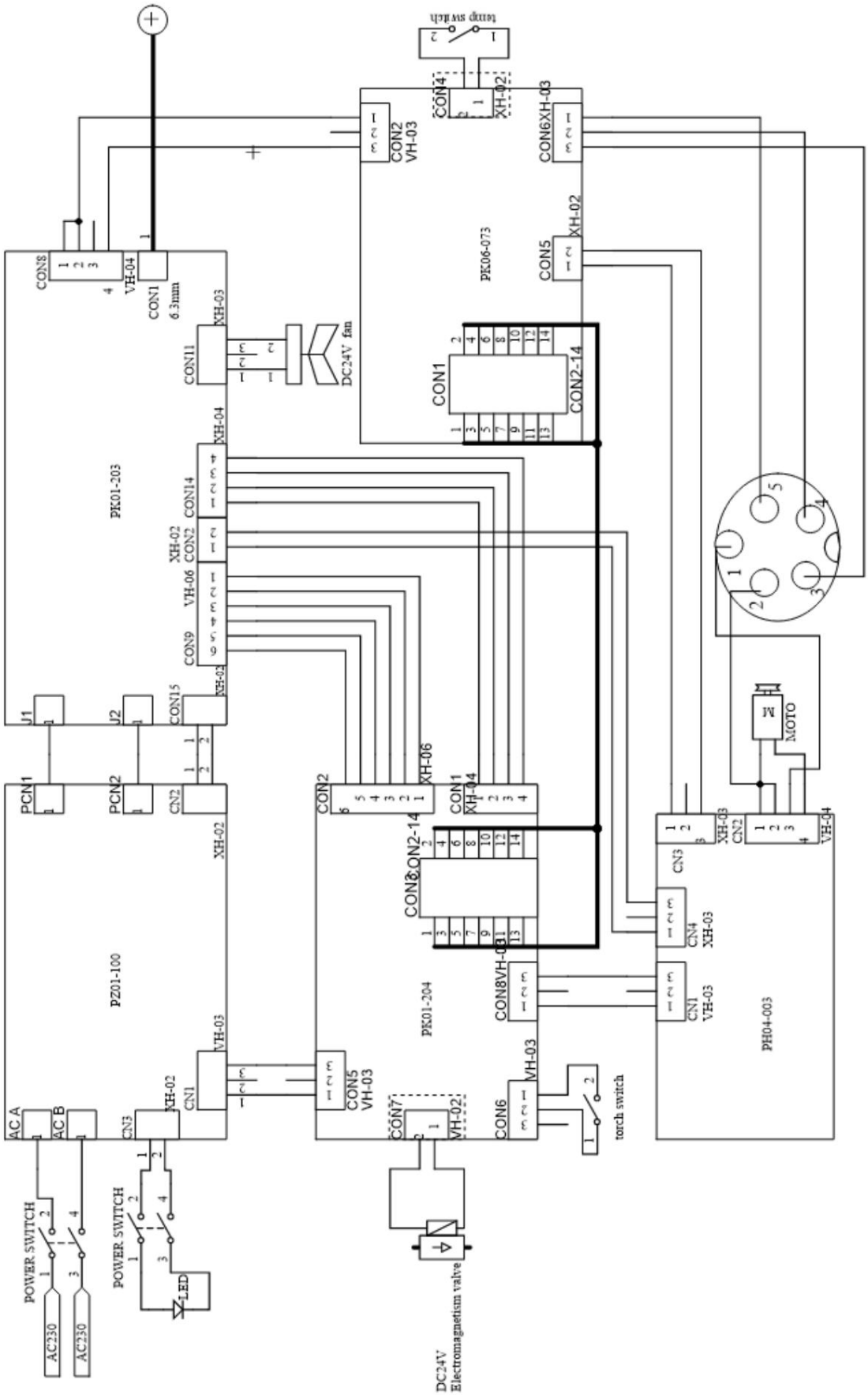
18. ELECTRICAL DIAGRAM



DECLARATION OF CONFORMITY
01/DIGIMIG202MPOWER/2024

Authorized manufacturer representative:
TECWELD Piotr Polak
41-943 Piekary ŷlŷskie
ul. Emerald 21/3/6

branch:
41-909 Bytom
1G Krzyŷowa Street
POLAND

We declare that the product listed below:

Inverter welder

Type: **DIGIMIG 202 M-POWER**

Manufacturer's trademark: Sherman digitec®

to which this declaration relates complies with the requirements of the following European Union directives and the national regulations implementing these directives:

Low Voltage Directive LVD 2014/35/EU

EMC Electromagnetic Compatibility Directive 2014/30/EU

RoHS II Directives 2011/65/EU

and complies with the following standards:

PN-EN IEC 60974-1:2023-05+A11:2023-09 Arc welding equipment - Part 1: Welding energy sources,

PN-EN IEC 60974-10:2022-07 Arc welding equipment - Part 10: Electromagnetic compatibility (EMC) requirements,

PN-EN IEC 63000:2019-01 Technical documentation for the assessment of electrical and electronic products with regard to the restriction of hazardous substances.

Year of CE marking on the device: 2018

Bytom, 07.06.2024

Peter the Pole
(signature of authorized person)