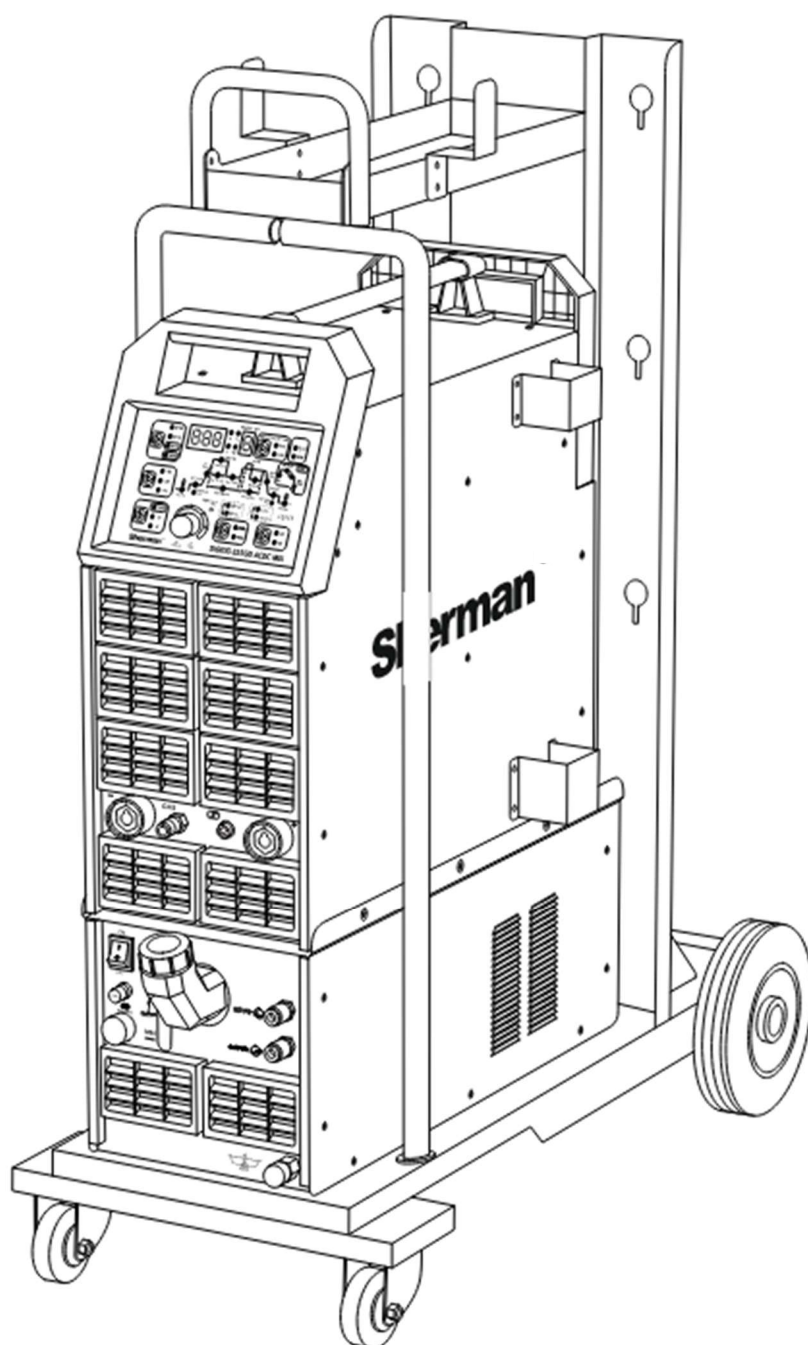


Sherman

ENG V1.2 04.08.26

USER MANUAL

INVERTER WELDING KIT DIGITIG 325GD AC/DC MIX



CE



WARNING!

Before installing and starting the appliance, please refer to this manual

1. GENERAL COMMENTS

The device can only be commissioned and operated after carefully reading these Operating Instructions.

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

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

2. SAFETY

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

- they should have an electric welder license in the field of welding with coated electrodes and in gas shields,
- know the health and safety rules in the operation of electric power equipment, such as welding equipment and auxiliary equipment powered by electricity,
- know the rules of health and safety when operating cylinders and installations with compressed gas (argon),
- Be familiar with the contents of this manual and operate the appliance for its intended purpose.



WARNING



Welding may endanger the safety of the operator and other people in the vicinity. Therefore, special precautions must be taken when welding. Before starting welding, you should familiarize yourself with the health and safety regulations applicable at the workplace.

The following hazards exist during MMA and TIG electric welding:

- **ELECTRIC SHOCK**
- **NEGATIVE EFFECTS OF THE BOW ON HUMAN EYES AND SKIN**
- **VAPOR AND GAS POISONING**
- **BURNS**
- **EXPLOSION AND FIRE HAZARDS**
- **NOISE**

Electric shock prevention:

- connect the device to a technically efficient electrical system with proper protection and zeroing efficiency (additional protection against electric shock); other devices at the welder's workplace 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, electrode and welded object at the same time, including the device housing,
- do not use torch and power cords 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 watching over safety, use clothing and gloves with good insulating properties,
- if you notice any irregularities, you should contact competent people to remove them,
- It is forbidden to operate the device with the covers removed.

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

- 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 properly choose the colors of the walls that absorb harmful radiation.

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

- Use ventilation devices and exhausts installed in positions with limited air exchange,
- Blow fresh air when working in confined spaces (tanks),
- Use masks and ventilators.

Burn prevention:

- Wear appropriate protective clothing and footwear to protect against burns caused by arc radiation and spatter,
- Avoid staining the garment with greases and oils that may lead to its inflammation.

Explosion and fire prevention:

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

Preventing the negative effects of noise:

- Use earplugs or other noise protection equipment,
- Warn of danger to people nearby.



WARNING!

Do not use a power source to defrost frozen pipes.

Before starting the device, you should:

- Check the condition of electrical and mechanical connections. It is forbidden to use torch and power cords with damaged insulation. Improper insulation of torch and power cables may result in electric shock,
- Ensure proper working conditions, i.e. ensure proper temperature, humidity and ventilation in the workplace. Outside closed rooms, protect against precipitation,
- Place the welder in a place that allows it to be easily operated.

Welding machine operators should:

- be licensed to weld electrically with coated electrodes and the TIG method,
- know and comply with health and safety regulations applicable when performing welding work,
- use appropriate, specialized protective equipment: gloves, apron, rubber shoes, welding shield or visor with a properly selected filter,
- Know the contents of this instruction manual and operate the welding machine as intended.

Any repairs to the appliance may only be carried out by unplugging the plug from the power socket.

When the appliance is connected to the mains, it is not allowed to touch any components that make up the welding current circuit with your bare hand or through damp clothing.

It is forbidden to remove the external covers when the device is plugged in.

Any modifications to the welder on your own are prohibited and may impair safety conditions.

All maintenance and renovation work may only be carried out by authorized persons in compliance with the occupational safety conditions applicable to electrical equipment.

It is forbidden to operate the welding machine in rooms with a risk of explosion or fire!

The welding station should be equipped with fire-extinguishing equipment.

When you have finished working, the power cord of the appliance must be unplugged.

The hazards and general health and safety rules presented above do not exhaust the issue of welder's work safety, as they do not take into account the specifics of the workplace. An important complement to them are workplace health and safety instructions as well as training and instructions provided by supervision employees.

3. GENERAL DESCRIPTION

The DIGITIG 325 AC/DC MIX digital welding machine is the latest generation device, designed for professional applications. It is made in IGBT technology and equipped with digital control using a microcontroller (MCU). It is used for manual TIG welding of steel and non-ferrous metals with direct and alternating current. In addition, the welding machine has an innovative possibility of welding with mixed current – combining direct current (DC) and alternating current (AC), which significantly increases its versatility and allows for exceptional weld quality in difficult applications. The device is equipped with the option of MMA welding (coated electrode).

The welding machine allows full digital adjustment and control of welding parameters of arc and pulse characteristics, as well as selection of the AC current waveform. In the TIG method, the device allows the arc to be ignited both by rubbing (TIG Lift) and by means of an ionizer (TIG HF). It has VRD, HOT START and ARC FORCE functions, the ability to control in two-stroke and four-stroke modes, and spot welding. The device has the ability to store 10 sets of pulse and welding current settings. The Fan Stop function turns off the fan when the device is not fully loaded, which significantly improves the comfort of work. The set includes a liquid-cooled TIG welding torch, an electrode cable and a ground cable.

A powerful cooler dedicated to this welding machine is included to cool the welding torch. The use of a heat exchanger built on a copper coil and a stainless steel pump significantly increase the cooling efficiency and extend the life of the device. The whole is built on a stable trolley, with a very practical shelf for accessories and tools, holders for welding cable and hangers for the torch and welding cables.

4. TECHNICAL PARAMETERS

4.1 Welding Machine

Supply Voltage	AC 3x400V $\pm 10\%$ 50Hz
Rated welding current / duty cycle	MMA: 280 A / 60% TIG 315 A / 60%
Rated no-load voltage	20V (VRD) / 59V
Maximum power consumption	MMA: 24 A, TIG 21 A
Fuse protection	20 A
Weight (without attachments)	30.5 kg
Dimensions	557 x 246 x 588 mm
Degree of protection	IP21

4.1.1 Parameter control ranges

Arc Force	0 – 100 A
Hot Start	0 – 50 A
VRD	On / Off
Gas pre-outflow	0.1 – 3 s
Gas post-outflow	1 – 15 s
Current build-up	0 – 15 s
Up slope (time)	0 – 25 s
Starting current	5 – 315 A
Duration of initial current	0 – 10 s
Welding Current	MMA: 20-280 A TIG: 5-315 A
Base Current	5 – 95 % welding current
Crater current	5 – 315 A
Duration of crater current	0 – 10 s
Pulse Rate	0.5 - 200 Hz
Pulse width	10 – 90 %
AC Frequency	20 – 200 Hz
AC Balance	20 – 80 %
Mixed Current Frequency (MIX)	0.1 – 10 Hz
Mixed Current Balance (MIX)	10 – 90 %
Cold welding time	0.1 – 10 s
Break time during spot welding (Cold welding)	0 – 10 s

4.2 TIG Torch

Torch Type	T-18
Maximum current carrying capacity	320 A
Cooling Type	Liquid
Coolant flow	0.9 l/min
Gas Flow	10-20 l/min
Ignition of the arc	Non-contact (HF)
Length	5 m

Duty cycle

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

Attention! Heating tests were carried out at the temperature of the surrounding air. The duty cycle at 40°C was determined by simulation.

Degree of protection

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

5. CONSTRUCTION AND OPERATION

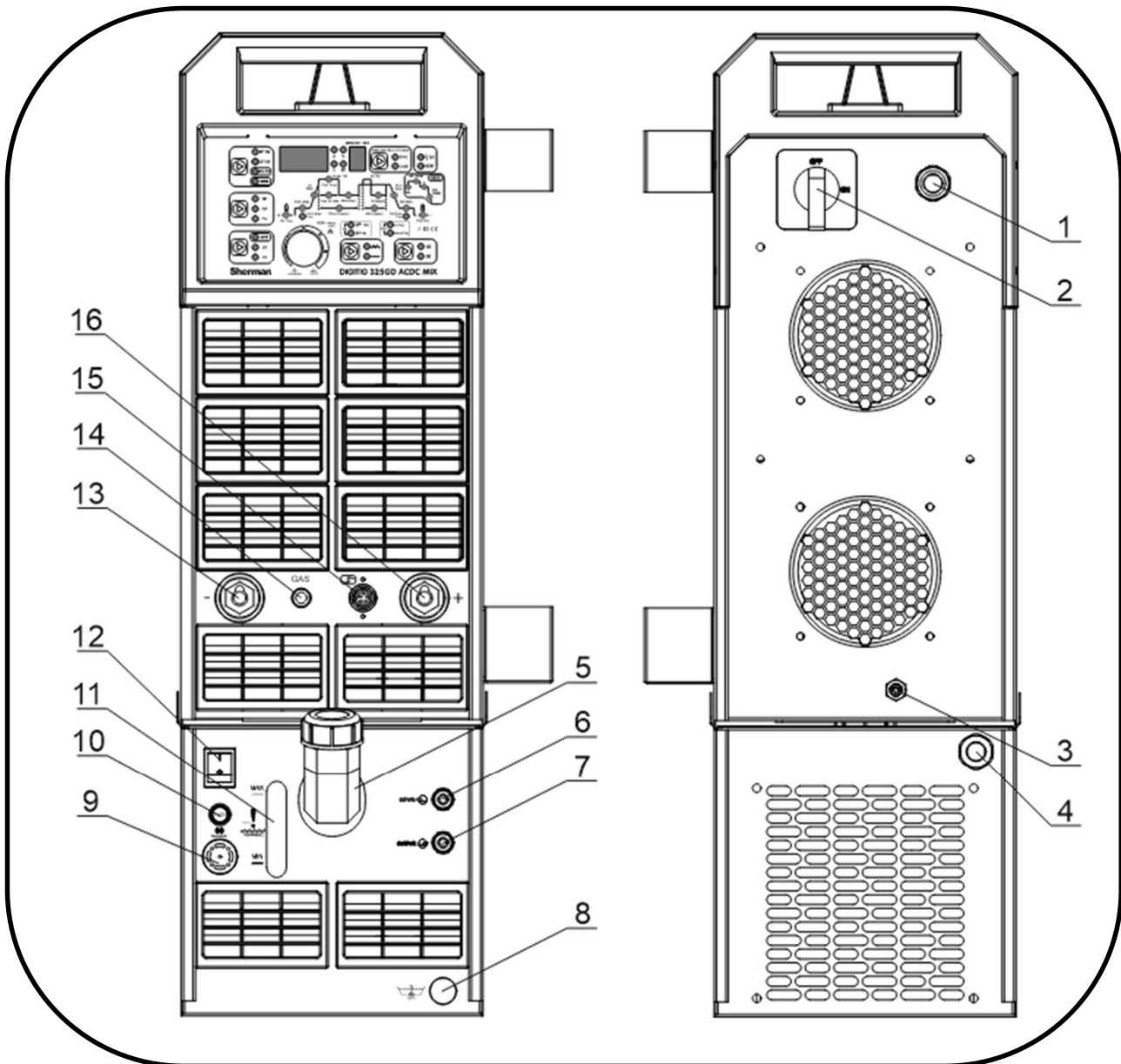
The basis for the construction of the welding machine's electrical energy conversion system are electronic circuits made in IGBT technology, enabling operation in the frequency range above 200 kHz. The principle of operation is to rectify the voltage of a single-phase power supply network to DC voltage, convert the obtained DC voltage into a high-frequency rectangular waveform, transform the voltage into the range required by the welding process, and re-rectify the resulting voltage to DC voltage.

The welding machine is equipped with a supply voltage compensation system, which allows them to be operated with voltage fluctuations in the supply network of up to 10%.

6. CONNECTION TO THE POWER SUPPLY

1. The appliance should only be used in a three-phase, four-cable, grounded zero point power supply system. The cooler should only be used in a single-phase, three-cable, grounded zero point power supply system
2. The DIGITIG 325GD AC/DC MIX is designed to work with a 3x400V 50Hz network protected by 20 A delay-acting fuses, and the cooler is adapted to work with a 230V network protected by 10 A delay-acting fuses. The power supply should be stable, with no voltage drops.
3. Before connecting the power supply, make sure that the power switches of the welding machine (2) and the cooler (12) are in the OFF position.

7. FRONT AND REAR PANEL



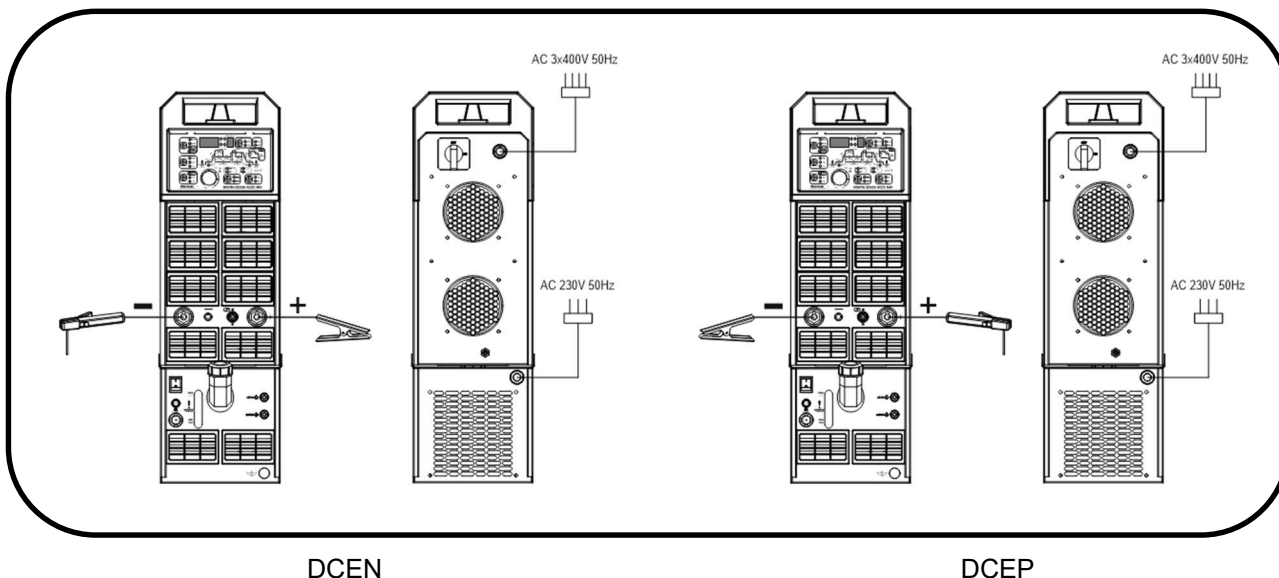
1. Power cord
2. Main switch
3. Shielding gas connection
4. Power cord
5. Coolant filler
6. Coolant inlet connection
7. Coolant outlet connection
8. Coolant drain plug
9. Coolant No Flow Indicator
10. Fuse
11. Coolant level indicator
12. Cooler power switch
13. Negative polarity socket
14. Shielding Gas Quick Coupler Socket
15. TIG torch/control pedal control socket
16. Positive polarity socket

8. PREPARING THE DEVICE FOR OPERATION

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

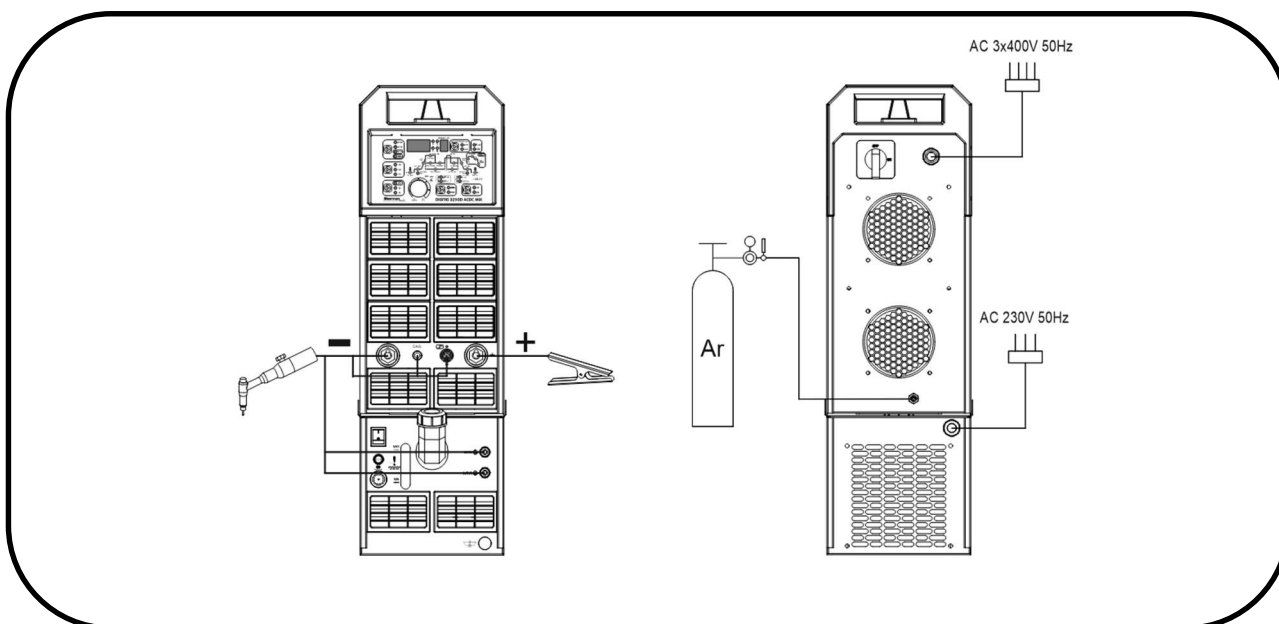
8.1 MMA method

Connect the ends of the welding cables to the sockets (13) and (16) on the faceplate so that the electrode holder has the correct pole for the electrode. The polarity of the connection of the welding cables depends on the type of electrode used and is indicated on the electrode packaging (DCEN negative polarity or DCEP positive polarity). The return cable clamp must be carefully fixed to the welded material.



8.2 TIG method

Connect the torch current terminal to the negative bias socket (13), screw the torch control plug to the socket (15) and the gas connection to the quick connector socket (14). The gas line from the reducer must be routed and attached to the gas connector (3) located on the back wall of the housing. Connect the positive pole of the source (16) to the welded material using a clamp cable. Connect the appliance plug to a 3x400V 50Hz mains socket.



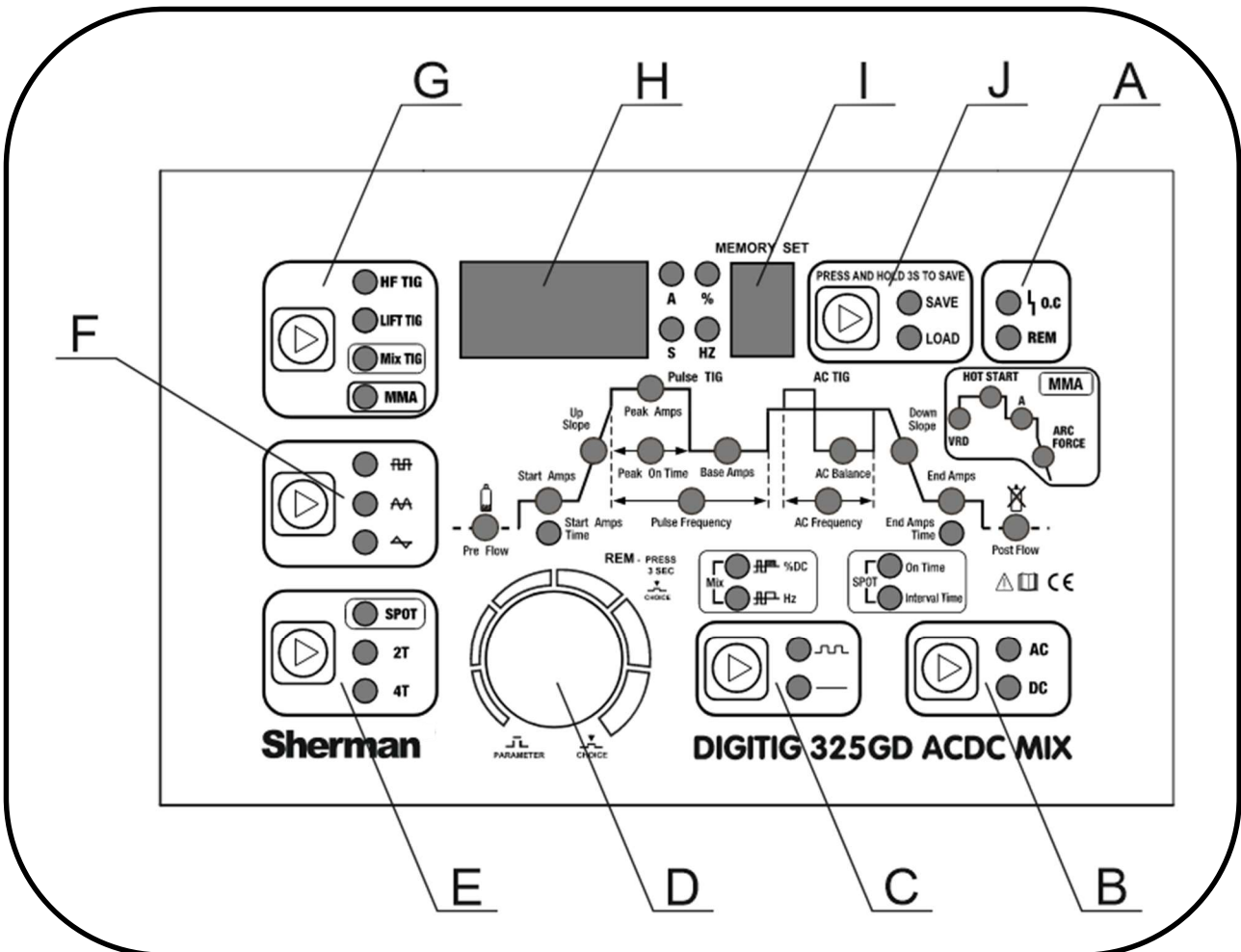
9. PREPARING THE COOLER FOR OPERATION

- Fill the cooler tank with liquid via the filler (5) located at the top of the housing.
- Connect the hot liquid hose from the cooled appliance to the inlet socket (6)
- Connect the cold liquid line to the cooled appliance to the outlet socket (7)
- Connect the appliance to the mains and set the power switch (12) to the ON position.

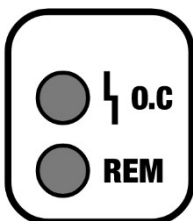
Non-aggressive ethylene glycol-based fluids from recognized welding equipment suppliers should be used as a coolant. The liquid should not be diluted.

Do not use water as a coolant. as this may lead to damage to the fluid pump and failure of the entire cooler.

10. CONTROL PANEL

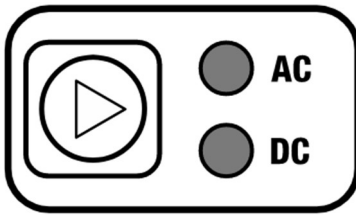


A – Inspection diodes



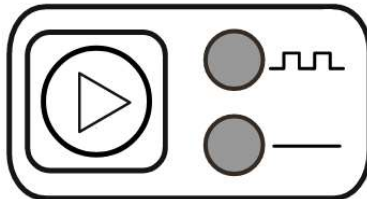
An O.C. LED light indicates that the machine is overheating or that the welding machine is working incorrectly. The REM LED indicates the possibility of remote control. To turn the remote control option on or off, press and hold the adjustment knob (D) for 3 seconds.

B – Welding current type selection button (AC/DC)



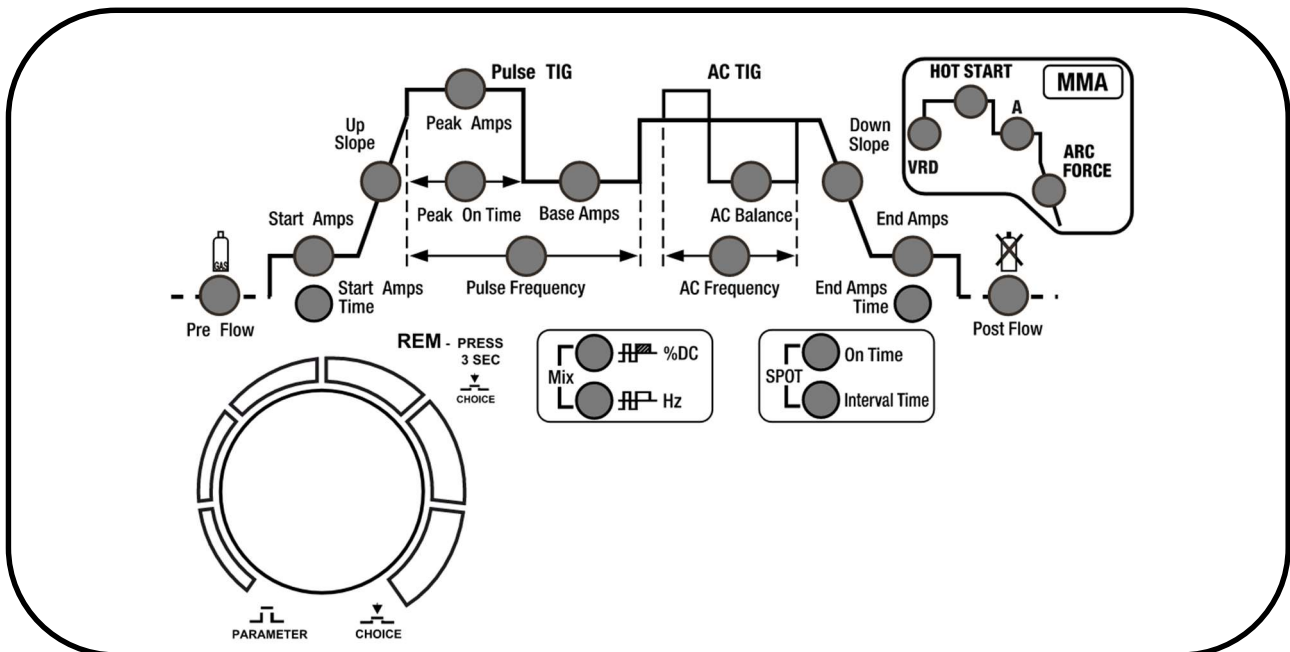
Pressing the button changes the type of welding current. The choice of the type of current is confirmed by the lighting of the appropriate diode. AC – alternating current, DC – direct current

C – Pulsator button



Button active only for TIG welding. The mode selection is indicated by the corresponding LED lighting up. - pulse welding, - pulse welding.

D – Adjustment knob

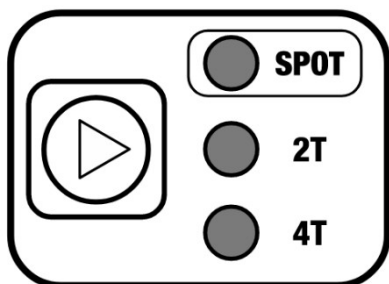


The control knob is used to change the welding parameters and to turn the remote control capabilities on and off.

Pressing the knob for a short time makes a transition between the set parameters. The currently regulated parameter is indicated by the illumination of the corresponding LED, and the current value of the parameter appears on the parameter display (H). Turning the knob to the left decreases and turns to the right increases the value of the parameter. Pressing the knob again will remember the parameter value and move on to the next parameter.

Pressing the knob and holding it for 3 seconds turns the remote control option on or off. Turning on the remote control option is confirmed by the REM diode lighting up.

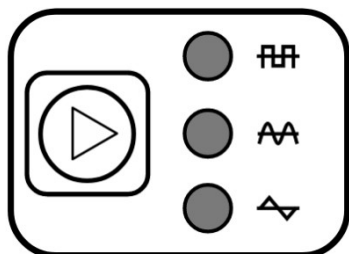
E – Source mode selection button (two-stroke/four-stroke/spot welding)



The button is used to select the control mode of the device:

- SPOT** Spot welding
- 2T** Two-stroke mode. In this mode, pressing the switch in the torch of the torch will turn on the ionizer and ignite the arc. Welding is carried out with the switch pressed. Releasing the switch will end welding.
- 4T** Four-stroke mode. In this mode, pressing the switch in the torch of the chuck will turn on the ionizer and ignite the arc, then release the switch and perform welding with the switch released. Pressing the switch again will end welding.

F – AC waveform selector button



Button active only during TIG welding with alternating current and mixed current (MIX). Used to select the AC waveform:



A square wave. Universal, most commonly used waveform for welding any material. It generates more heat in the welding zone, more fusion than other shapes.

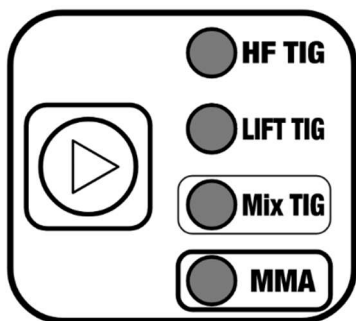


Sinusoidal wave. Classic wave, similar to transformer welders, preferred by older welders.



Triangular wave: Preferred especially when welding thin materials.

G – Welding method selection button



The button is used to select the welding method. The choice of method is signaled by the ignition of the corresponding diode.

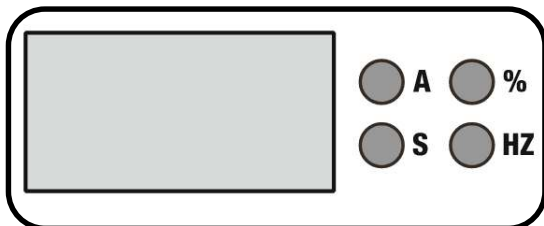
HF TIG – TIG welding (tungsten electrode in inert gas shielding) with ionization ignition (HF). This method of ignition eliminates the risk of contamination of the electrode due to its lack of contact with the welded material and allows for immediate ignition of the arc even at low initial current.

LIFT TIG – TIG welding (tungsten electrode in inert gas shielding) with ignition by rubbing. This ignition method does not generate high-frequency pulses, which is beneficial in interference-sensitive environments (e.g., electronics, CNC controllers) and is used in automotive workshops to weld vehicles.

Mix TIG – TIG welding (tungsten electrode in inert gas shielding) with mixed AC and DC current. This method allows you to obtain a smooth, clean weld, reduce the load on the electrode, as well as obtain a deeper penetration while cleaning the surface, which is especially useful when welding aluminum and its alloys.

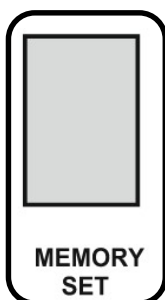
MMA – welding with a coated electrode.

H – welding parameter display



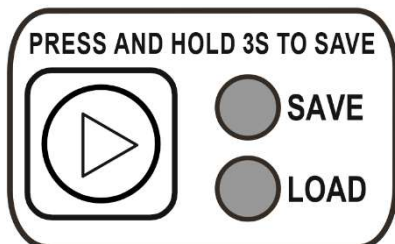
The display indicates the parameters during their setting and during welding. The corresponding LED on the side of the display lights up indicates the parameter unit. The message "Err" indicates that the device is overheating or malfunctioning.

I – Parameter set memory display



The display indicates the number of the parameter set that has been loaded or under which the current set will be stored.

J – Settings Memory



The device has a memory of the last setting, i.e. after turning it off and on again, the last set parameters are restored. It is also possible to remember 10 sets of settings. To remember the current settings, press and hold the button until the "SAVE" LED lights up (about 3 seconds). When the "SAVE" LED lights up, a flashing set number will appear on the memory display (I) under which the settings will be remembered. With the help of a knob, this number can be changed. Pressing the (J) button again will remember the settings under the selected number and turn off the "SAVE" LED.

To recall the stored set of settings, you need to briefly press the button. When the "LOAD" LED lights up, use the knob to select the number of the set of settings to be called. A short press of the button again will load the settings and turn off the "LOAD" LED.

When the set of settings is loaded, the number of the loaded set of parameters will appear on the display (I). If any of the parameters are changed during operation, a dash will appear on the memory display. To save your changes, follow the steps as you would with a standard save of settings.

If the control knob is not moved or the button is pressed again after entering the saving or loading mode and the "LOAD" or "SAVE" LED is lit for approximately 10 seconds, the unit will return to the normal parameter control mode.

If the device is turned off while a set of parameters is loaded in the memory, the last used set will be automatically loaded when it is turned on again, and its number will appear on the display. If no parameter set is loaded into the memory and the device is turned off, the last used parameters will be restored when it is turned on and a dash will appear on the display (I).

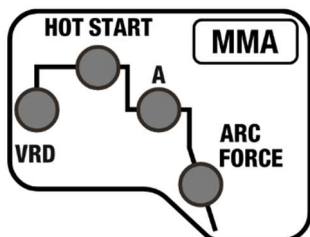
If any of the parameters changes after loading a set of parameters and the device is turned off, then when it is turned on, the last used parameters will be restored, without loading the last set, and a dash will appear on the display (I).

11. OVERHEATING PROTECTION

The power source is equipped with a thermal, self-acting overload switch. When the temperature of the welding machine is too high, the protection will disconnect the welding current, the O.C LED will light up, and the display will show "Err". When the temperature drops, the circuit breaker will automatically reset.

12. PARAMETER SETTINGS

12.1 MMA method



By selecting the MMA method, it is possible to adjust the welding current, select the VRD function, and adjust the Hot Start and Arc Force functions.

VRD function

The VRD function lowers the voltage in the no-load state. The correct voltage value is only restored just before the arc is ignited. This minimizes the risk of electric shock, but in some cases it can make it difficult to ignite the arc.

Hot Start Function

The Hot Start function it operates when the arc ignites, causing the welding current to temporarily increase above the value set by the welder. Hot Start is designed to prevent the electrode from sticking to the material and is a great convenience when igniting the arc. In the case of welding small components, it is recommended to disable this function, as it may cause the weld material to burn out.

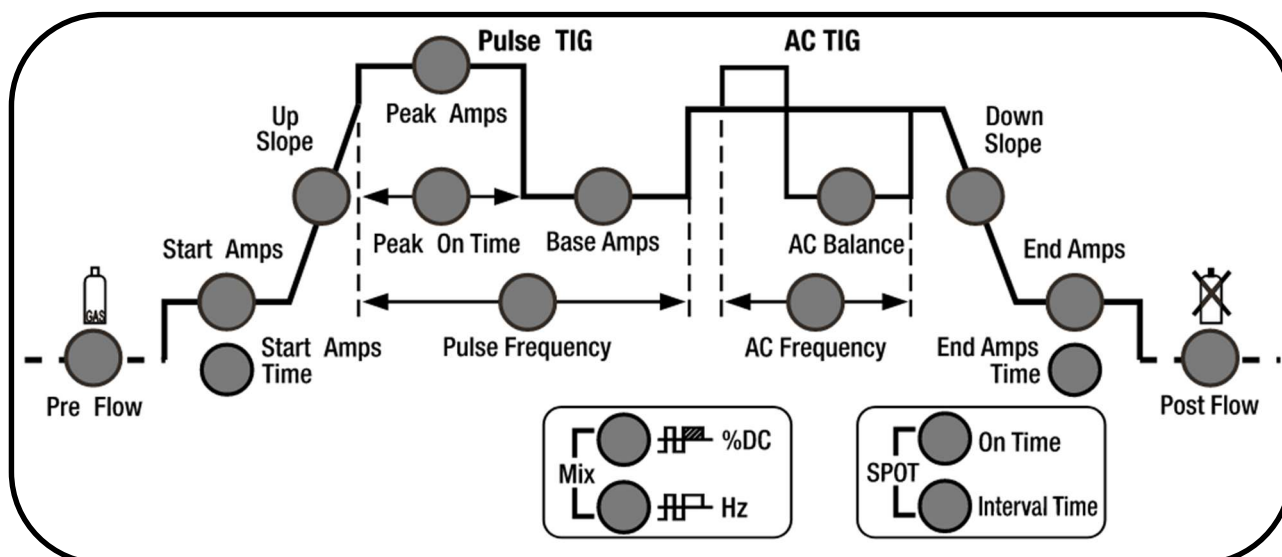
Adjustment range: 1 – 10 A value of 10 corresponds to 50 A

Arc Force Function

The Arc Force function allows you to adjust the arc dynamics. The shortening of the arc length is accompanied by an increase in the welding current, which stabilizes the arc. A decrease in value results in a soft arc and a shallower penetration depth, while an increase in value results in deeper penetration and the possibility of short arc welding. With a high value of the Arc Force function, you can weld while maintaining a minimum arc length and a high electrode melting speed

Adjustment range: 1 – 10 Value 10 corresponds to 100 A

12.2 TIG Method



Pre Flow

Gas pre-flow time - the time from pressing the button in the torch torch to the moment the arc is ignited. It should usually be longer than 0.5 s to deliver shielding gas to the torch nozzle outlet to cover the welding start point and the tungsten electrode. In the case of a longer gas supply line from the cylinder, the pre-flow time should be longer.

Adjustment range: 0.1 – 3s

Start Amps

Initial current - the current that appears in the circuit when a button is pressed in the torch of the torch. The higher the initial current, the easier it is to ignite the arc. However, when welding thin sheets, too high a value of the initial current can lead to burning. In some welding modes, the current does not increase to heat the component to be welded.

Adjustment range: 5 – 315 A

Start Amps Time

Initial current duration – the time for which the initial current welding lasts. In 4T mode, this time is adjusted by holding down the button in the holder. Releasing the button will enter the current build-up phase.

Adjustment range: 0 – 10 s

Up Slope

Current Rise Time - the time of rise of the welding current from the initial current to the set value of the welding current.

Adjustment range: 0 – 15 s

Peak Amps

Welding current – the value of the welding current during pulsator welding or the peak current during pulse welding.

Adjustment range: 5 – 315 A

Peak On Time

Pulse width – the duration of the pulse, allows you to adjust the depth of the penetration. Increasing the width increases the depth of penetration, reducing reduces the amount of heat introduced into the material, reducing the risk of burning through thinner sheets or smaller components.

Lower pulse width values should be used for higher currents. A larger pulse width should be used for small currents, for example, a width above 50% should be used for currents below 100A.

Adjustment range: 10 – 90 %

Base Amps

Base current – the current responsible for maintaining the welding process, the lower value of the current pulse. It makes it easier to control the amount of heat introduced into the material.

Base current adjustment is only possible during pulse welding

Adjustment range: 5 – 95% welding current

Pulse Frequency

Pulse frequency – the frequency with which the pulse value of the current changes between the welding current and the base current.

Adjustment range: 0.5 – 200Hz

AC Frequency

AC current frequency – a function useful for welding aluminum. The higher the frequency, the better the weld quality and the better the arc focus

Adjustment range: 20 – 200 Hz

AC Balance

AC current balance – The ratio of the duration of the positive phase of the current to the negative phase. Reducing the balance causes more heat to be introduced into the material, resulting in a narrower weld and deeper penetration, while reducing the heat load on the tungsten electrode. Increasing the balance introduces less heat into the material, resulting in better cleaning, a wide weld seam and a shallower penetration, but puts a significant strain on the tungsten electrode.

Adjustment range: 20 – 80%

Down Slope

Up slope Time - The time it takes for the welding current to drop from the set value to zero or the crater current value.

Adjustment range: 0 – 25 s

End Amps

Crater current - the current used in some welding modes when the arc is not extinguished immediately after the phase of descent of the welding current. It allows the crater at the end of the weld to be filled.

Adjustment range: 5 – 315 A

End Amps Time

Crater current duration – the time it takes for the crater to be filled. In 4T mode, this time is adjusted by holding down the button in the holder. Releasing the button will extinguish the arc.

Adjustment range: 0 – 10 s

Gas discharge time - the time from the arc extinguishing to the closing of the gas valve in order to shield the solidifying weld pool from air and to cool the tungsten electrode. Too short a run-out time can result in oxidation of the weld. When welding in TIG AC (alternating current) mode, this time should be longer.

Adjustment range: 1 – 15 s

Mix % DC

Mixed current balance – the ratio of the duration of direct current to the duration of alternating current during mixed current welding. Increasing the proportion of DC current results in a more stable, concentrated arc with more penetration, greater penetration, greater thermal efficiency, a narrower weld seam, and better control when welding thin components. An increase in the proportion of AC current results in a wider arc, less infusion and better surface cleaning.

Adjustment range: 10 – 90 %

Mix Hz

Mixed current frequency – the frequency with which DC and AC change during mixed current welding. Higher frequency results in a more stable arc, narrower weld, deeper penetration, and less spatter.

Control range: 0.1 – 10 Hz

SPOT On Time

Spot welding time – the time after which welding will be completed.

Adjustment range: 0.1 – 10 s

SPOT Interval Time

Spot welding break time – the time of the break between spot welding cycles.

Adjustment range: 0 – 10 s

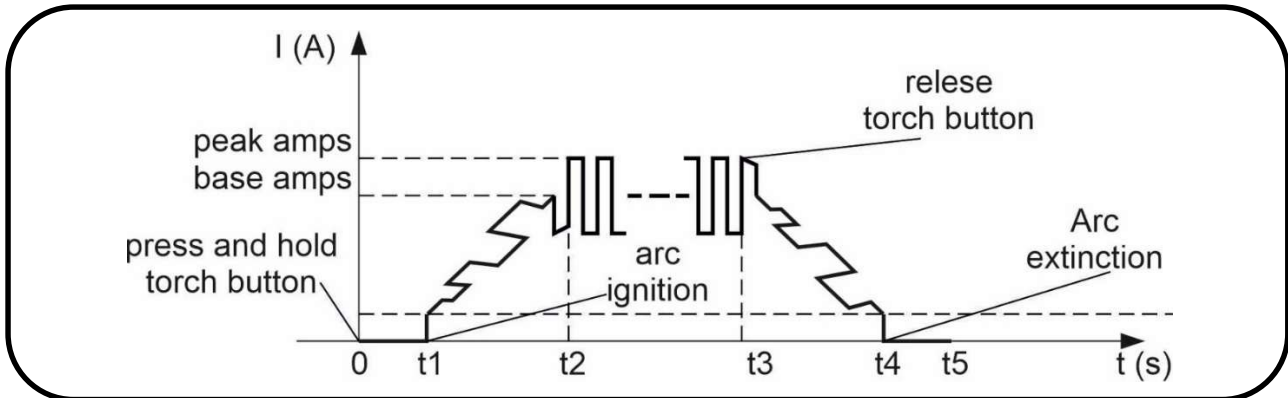
13. WELDING

13.1 Welding with a coated electrode (MMA)

Arc initiation in coated electrode welding involves touching the electrode to the welded material, rubbing it briefly and tearing it off. In the case of arc initiation with electrodes, the coating of which forms non-conductive slag after solidification, the tip of the electrode should be pre-cleaned by hitting the hard surface several times until metallic contact with the welded material is achieved.

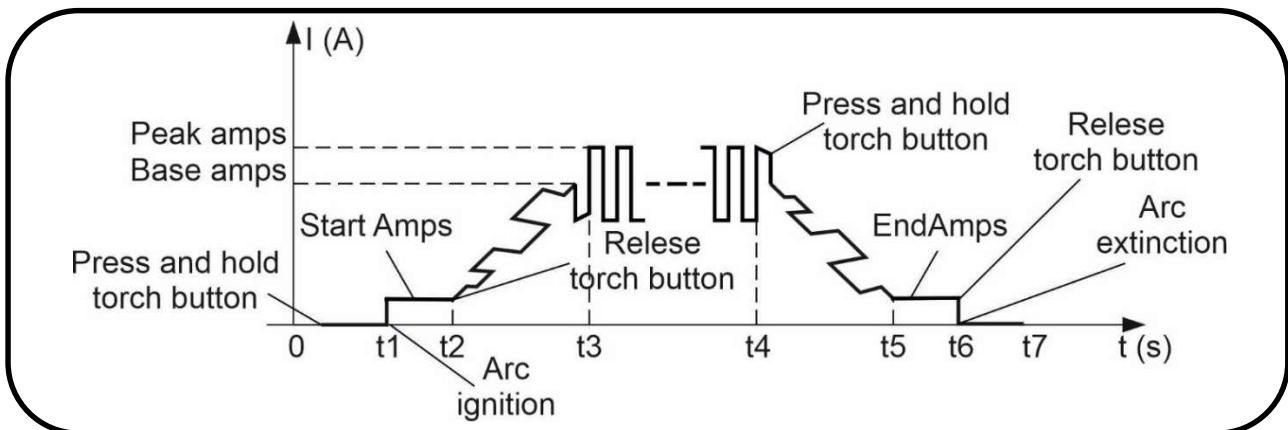
13.2. Shielded Gas Welding (TIG Method).

13.2.1 TIG welding in 2T mode:



- 0 : Press and hold the torch button. The outflow of shielding begins;
- 0~ t_1 : Gas pre-outflow;
- t_1 ~ t_2 : Arc ignition, welding current increases from the minimum value to the set value welding current. If the pulsator is turned on, the current is modulated.
- T_2 ~ T_3 : During welding, the chuck button should remain pressed; Note: If the pulsator is turned on, the welding current pulses if the pulsator is off, welding current has a constant value
- T_3 : Release the chuck button, the welding current starts to drop. If the pulsator is turned on, the falling current is modulated;
- T_3 ~ T_4 : The welding current drops to the minimum value, the arc is extinguished;
- T_4 ~ T_5 : Gas outflow.
- T_5 : The solenoid valve closes the gas outflow, the end of welding.

13.2.2 TIG welding in 4T mode:



- 0 : Press and hold the torch button. The outflow of shielding begins;
- 0~ t_1 : Gas pre-outflow time. Adjustable in the range of :0~1.0s;
- T_1 : ignition of the arc, the starting current is determined;
- T_2 : Release the torch button, the current builds up to the set current value welding.
When the pulsator is switched on, the current is modulated;
- T_2 ~ T_3 : Current rise time;
- T_3 ~ T_4 : Welding process;
Note: If the pulsator is turned on, the welding current pulses, if the pulsator is off, the welding current has a constant value;
- T_4 : Press the torch button. The welding current begins to drop to the value of the crater current. If the pulsator is turned on, the descending current is modulated;
- T_4 ~ T_5 : Current drop time;
- t_5 ~ t_6 : Crater current;
- T_6 : Release the torch button. The arc is extinguished, shielding gas flows out;
- T_7 : The solenoid valve closes the gas outflow, the end of welding.

14. BEFORE YOU CALL FOR SERVICE

In the event of malfunction of the device, before sending the welding machine for service, you should check the list of basic failures and try to fix them yourself.

Any repairs to the appliance may only be carried out by unplugging the plug from the power socket.

Attention! The device is not sealed and the user can remove the welding machine housing to remove minor malfunctions.

ATTENTION! The welding machine 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 restarts under load.

Welding Machine

Symptoms	Cause	Procedure
Lack of power, malfunction signal, or malfunction of the device	No connection or loose plug inside the device	Check and correct the connections of all electrical plugs inside the device
	Dirty interior of the device	Remove the housing and clean the unit inside by blowing with compressed air to remove dust and metal filings from the control boards and wiring and electrical connections.
When the power is turned on, the displays and LEDs do not light up	No supply voltage	Check the fuses on the mains connection
The control panel lights up, the fan is running, the welding machine does not ignite the arc	No connection in the welding circuit	Check the terminals and the correct electrical conductivity of the electrode and ground cable
		Check the connection of the TIG mount to the device, pay attention to whether the pins in the socket are not broken or jammed.
		Unscrew the torch of the TIG torch and check that the switch in the torch is working
The control panel lights up, the fan is running, the LED is on  o.c	The device has overheated.	Wait a few minutes. Do not turn off the power. After the LED goes out, continue welding.
Fan not working	The fan has been blocked by a bent cover	Straighten the fan cover
Unsatisfactory weld quality in MMA welding, the electrode sticks to the welded material	Incorrect polarity of the connection of welding cables	Connect the welding cables correctly
	Damp electrode.	Replace the electrode
	The welding machine is powered by a generator or through a long extension cord with too small a cable cross-section	Connect the device directly to the mains
Unsatisfactory weld quality in TIG welding	Check the quality of the materials and consumables used, especially the tungsten electrode and shielding gas	Replace consumable parts, replace shielding gas with higher quality
	Shielding gas does not flow out or flows out with insufficient intensity	Check the cylinder reducer, gas supply hose, improve the connection of the hose with the fittings and the condition of the quick connectors

Cooler

Symptoms	Cause	Procedure
Fan not working, pump not working	Blown fuse	Replace the fuse on the front of the appliance
When the cooler is turned on, the engine does not run	Seared motor shaft	Move the motor shaft vigorously clockwise, spray the motor stem with penetrating lubricating fluid.
	Blocked or bent fan	Move or bend the locking part or blade
The fan is working, the pump is not working.	Pump blocked.	Switch off the cooler immediately with the switch (7), switch it on again. Repeat the operation several times. If this does not help, turn off the cooler and blow the pump with compressed air through the outlet port (2), then switch on the pump. Make sure the fluid is pumped, connect the welding torch.
Too little liquid flow	Contamination in the water system	Check the coolant level, it must not be below MIN.
	Water system leaks	Replace coolant, it may be contaminated.
	Bent hoses	Check the internal cooler installation and the welding torch supply hoses
Too little thermal efficiency	Pump aeration Clogging of the water system Too little fluid in circulation Damaged pump Damaged fan	Check and proceed as above
Fluid leakage	Water system leakage Damaged tank	Check the installation and tank.

15. OPERATING INSTRUCTIONS

The operation of the DIGITIG 325GD AC/DC MIX should take place in an atmosphere free of corrosive components and high dust. Do not place the appliance in dusty areas, near running grinders, etc. Dust and metallic swarf contamination of control boards, cables and connections inside the device can lead to an electrical short circuit and, as a consequence, damage to the welding machine.

Avoid use in environments with high humidity, especially in situations where dew occurs on metal components. In the event of dew on metal elements, e.g. after introducing a cool device into a warm room, wait until the dew disappears. It is recommended that the welding machine be placed under a roof in order to protect it from adverse weather conditions.

The DIGITIG 325GD AC/DC MIX should be operated under the following conditions:

- changes in the rms value of the supply voltage not greater than 10%
- ambient temperature from -10°C to $+40^{\circ}\text{C}$
- atmospheric pressure 860 to 1060 hPa
- relative humidity of atmospheric air not exceeding 80%
- altitude up to 1000m above sea level

List of consumable parts of the T-18 TIG torch:

Lp.	Name
1	Tungsten electrode
2	T-18 Clamping Sleeve
3	T-18 current connector
4	T-18 gas nozzle

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

Non-aggressive ethylene glycol-based fluids from recognized welding equipment suppliers should be used as a coolant. The liquid should not be diluted.

Water must not be used as a coolant. as this may lead to damage to the fluid pump and failure of the entire cooler.

16. MAINTENANCE INSTRUCTIONS

Daily maintenance

1. Visual Inspection:
 - Inspect the welding cables, TIG torch and connectors for mechanical damage.
 - Check the cooler for fluid leaks.
2. Cleaning:
 - Remove dust and swarf from the housing and air vents with compressed air (low force so as not to damage the electronics).
3. Checking the coolant level:
 - Top up the fluid (finished ethylene glycol-based coolant).

Weekly maintenance

1. Checking the electrical connections:
 - Check that all connectors are securely tightened and there are no signs of overheating.

Monthly maintenance

1. Cooling System Control:
 - Check the hoses and quick couplings for leaks.
 - Assess the condition of the cooler pump (whether it is running quietly and without vibration).
2. Welding Machine Parameter Test:
 - Perform test welding and check the stability of the arc and the operation of the HF function.
3. Cleaning:
 - Remove the housing, remove dust and swarf from the control boards and wiring and electrical connections from inside the device with compressed air. (low force so as not to damage the electronics).

Six-month maintenance

1. Checking the condition of electrical connections:
 - Check the condition of the electric shock protection, insulation, protection system, tightness of hoses and quick couplings.
 - Check the correct operation of the cooling system.

Annual maintenance (or every 1000 hours of operation)

1. To change the coolant:
 - Rinse the cooling system and replace the fluid with a new one.
2. Electronics Overview:
 - Inspect IGBTs, capacitors, and control boards for dirt and corrosion.

Additional recommendations

- Never use water instead of coolant – there is a risk of corrosion and damage to the pump.
- Store the welding machine in a dry, ventilated place, away from dust and moisture.

Damage resulting from operating the welding machine under improper conditions and failure to follow maintenance recommendations are not covered by warranty repairs.

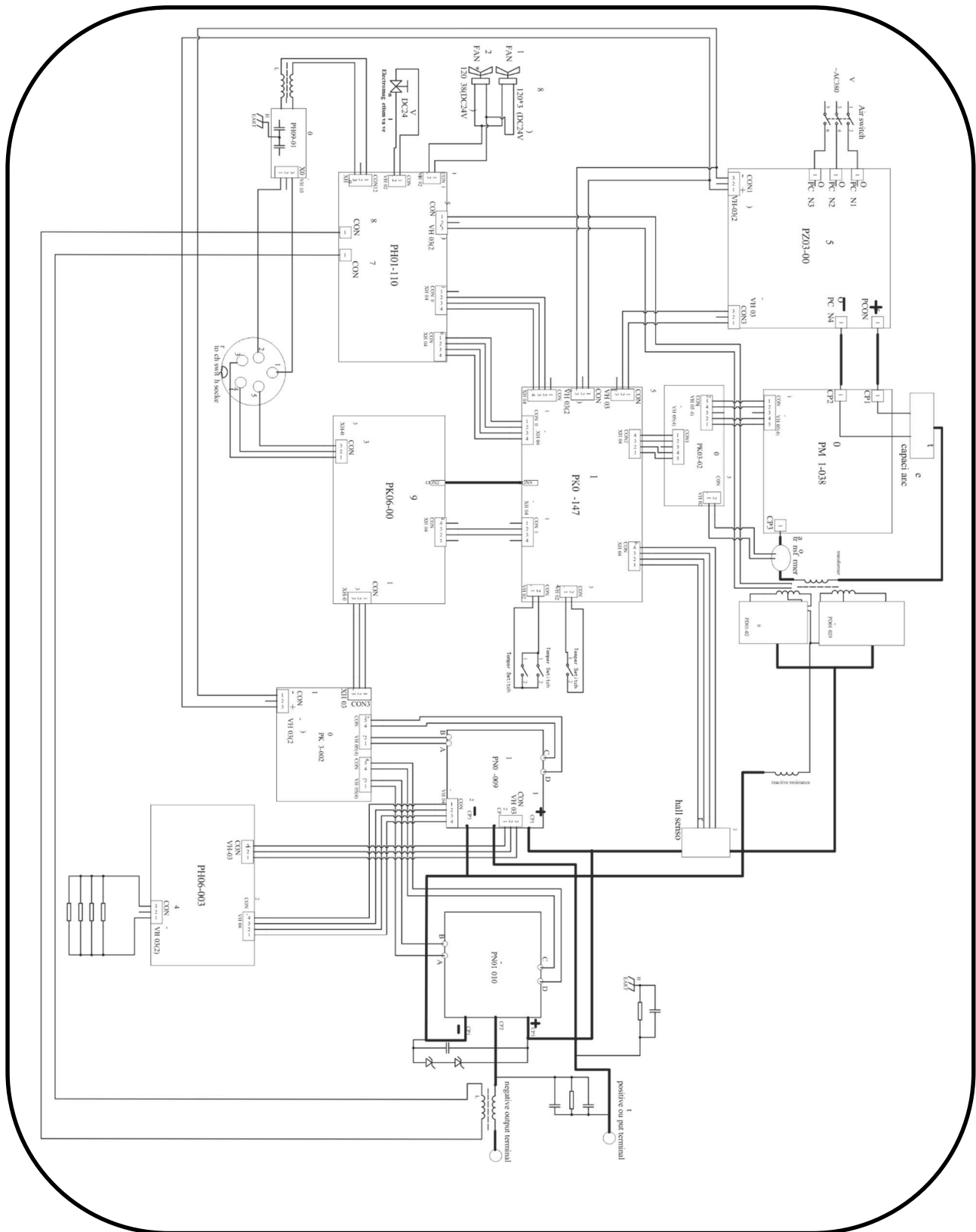
17. STORAGE AND TRANSPORT INSTRUCTIONS

Store the appliance at a temperature of -10°C to $+40^{\circ}\text{C}$ and a relative humidity of up to 80% free of corrosive fumes and dust. Transport of packaged equipment should be carried out by covered means of transport. During transport, the packaged device should be protected against movement and provided with the correct position.

18. SET SPECIFICATION

- | | |
|-----------------------------------|-------|
| 1. DIGITIG 325GD AC/DC MIX source | 1 pc. |
| 2. TIG welding torch | 1 pc. |
| 3. Electrode cable | 1 pc. |
| 4. Clamp Clamp Ground Cable | 1 pc. |
| 5. User Manual | 1 pc. |
| 6. Packaging | 1 pc. |

19. ELECTRICAL DIAGRAM



20. 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 respected upon presentation by the complainant of proof of purchase (invoice or receipt) and a warranty card with the product name, serial number, date of sale and stamped point of sale.

To order a warranty repair, you need to fill in the form on the www.tecweld.pl website in the SERVICE tab. On the basis of the notification, the device will be transported to the service by a courier company. Devices sent in any other way at TECWELD's expense will not be accepted!

The welding machine must be supplied with the welding torch. Complaints about a device without a welding torch will not be considered.

The device sent for complaint must be packed in the original cardboard box, secured with original polystyrene fittings. TECWELD is not responsible for damage to the welding machine resulting from transport.



If you are going to dispose of this product, do not throw it away with ordinary 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 waste equipment marked with the crossed-out bin symbol together with other waste.

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

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

TECWELD Piotr Polak
41-943 Piekary Śląskie, 21/3/6 Szmaragdowa St.

Branch:
41-909 Bytom, 1G Krzyżowa Street
Tel. +48 32 386 94 28
E-mail: info@tecweld.pl, www.tecweld.pl