



3-Ti-Pulse



OPERATING MANUAL

MI03307-01 09/2026

INTRODUCTION

Thank you for trusting our brand. We hope the welding equipment you have just purchased fully meets your expectations and provides safe, reliable, and efficient operation.

This instruction manual contains the necessary information for the correct installation, use, maintenance, and conservation of the equipment, as well as the safety warnings that must be observed during its use. Before starting the machine, carefully read this manual and ensure you understand its contents.

Welding equipment must be used exclusively by qualified or duly trained personnel, with knowledge of the risks associated with this type of process, especially those related to electricity, high temperatures, spatter, fumes and gases, and arc radiation.

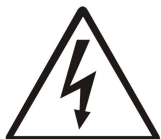
If in doubt about the operation, installation, or any indication included in this manual, please contact our technical service before using the equipment.

Internal manipulation of the machine can entail a serious risk of electric shock. Do not open or tamper with the equipment. Any repair, internal inspection, or technical maintenance operation must be performed only by authorized and qualified personnel.

The manufacturer declines all liability arising from improper, negligent, or unintended use, as well as unauthorized manipulation, modification, or repair.

This manual must always be kept with the equipment and be available to all persons responsible for its use, maintenance, or repair. It is the user's responsibility to ensure that the equipment is used according to the indicated instructions and maintained in adequate conditions to comply with safety requirements and applicable standards.

SAFETY AND PROTECTION



- **ELECTRICITY:** The proper functioning of the machine is ensured by a good installation. Verify that the voltage (V) of the machine corresponds to the mains voltage. The earth connection (T) must ALWAYS be connected.



- **PACEMAKERS:** Persons with implanted electrical devices (PACEMAKERS) must not use this type of equipment.



- **PERSONAL CLOTHING:** The welder's entire body is subject to the possible action of aggressive agents, so it must be fully protected. Use safety boots, gloves, sleeves, gaiters, and leather aprons.



- **BURN PROTECTION:** Never touch parts of the wire or the welded material with bare hands. Prevent detached particles from coming into contact with the skin. Do not point the torch at any part of the body.



- **EYE PROTECTION:** Welders and their assistants must use safety goggles equipped with filters that stop radiations harmful to the human eye. Using special shields makes it possible to observe the welding zone during the process.



- **FIRE PROTECTION:** The welding process causes incandescent metal spatter that can cause fires. Do not use the machine in environments with flammable gases. Clear the work area of all combustible material. Specially protect gas cylinders according to their required specifications.



- **GAS CYLINDER PROTECTION:** Cylinders containing shielding gases store them at high pressures. If they suffer any damage, they can burst. Always treat cylinders with care and weld as far away from them as possible.



- WHEN WELDING OR CUTTING TANKS WITH TRACES OF FLAMMABLE MATERIALS, THERE IS A HIGH RISK OF EXPLOSION. IT IS RECOMMENDED TO HAVE A FIRE EXTINGUISHER READY FOR USE.



- **GAS AND FUME PROTECTION:** Gases and fumes produced during the welding process can be dangerous; several precautions are recommended. Use the equipment in properly ventilated areas and do not expose yourself directly to the gases. Use a suitable breathing filter element if ventilation is inadequate.



- **ELECTROMAGNETIC DISTURBANCES:** Electromagnetic interference from the welding equipment can interfere with the operation of sensitive devices (computers, robots, etc.). Ensure that all equipment in the welding area is resistant to electromagnetic radiation. To reduce radiation as much as possible, work with welding cables as short as possible, and laid parallel on the floor, if possible. Work at a distance of 100 meters or more from sensitive equipment. Ensure the welding equipment is properly grounded.



- **RECYCLING:** In compliance with European Directive 2012/19/EU on waste electrical and electronic equipment. The equipment, at the end of its useful life, must be deposited at your local recycling center.



GENERAL DESCRIPTIONS

The **Stanners 3-Ti-Pulse** equipment is developed to be compatible with shielded metal arc welding (MMA), TIG, and MIG-MAG processes, highlighting its capacity for MIG-MAG welding with multiple combinations of materials and shielding gases. The 3-Ti-Pulse equipment range is equipped with a dual digital signal processor, monitoring the state of the welding arc up to 10,000 times per second. Thanks to this technology, a precise and reliable arc can be guaranteed under any operating condition. It can be applied universally to any type of welding of materials as diverse as stainless steels, alloy steels, aluminum alloys, or other copper or titanium alloys. The equipment achieves agile adjustment thanks to the synergic configuration assistance of the MIG-MAG welding parameters.

For shielded metal arc welding (MMA), the equipment is equipped with adjustable anti-stick, hot-start, and arc-force functions. By using these functions, the equipment allows effective welding with any type of coated electrode.

For TIG welding, the equipment allows Lift Arc ignition, post-gas time control, and final current ramp control. For MIG-MAG welding, the equipment features multiple pre-configured synergic programs. In addition, special functions such as Burn Back, Hot Start, Crater Filling, and spot welding timing are also available.

On the back of the equipment, there is a rating plate that defines the parameters of the welding equipment. The design of this plate corresponds to the EN 60974-1 standard.

MEANING OF RATING PLATE INDICATIONS

EN 60974	International standard for apparatus construction.
S/N....	Serial number.
MMA	Shielded metal arc welding (coated electrodes).
TIG	TIG welding procedure.
MIG/MAG	MIG/MAG welding procedure.
U₀	Secondary no-load voltage.
X	Duty cycle (%).
I₂	Welding current (A).
U₂	Secondary voltage with welding current (I ₂).
U₁	Nominal supply voltage.
50/60 Hz	Mains frequency.
IP21	External protection degree of the machine.
S	Suitable for working in places with increased risk.

Feature	Stanners 3-Ti-Pulse
Input Voltage (U₁)	230V +/- 15%
Max Input Current (I₁ max)	37A
No-load welding voltage (U₀)	68V
Max Absorbed Power	9KVA
Electrical efficiency	81%
Idle consumption	10W
Fuse (configurable)	16A / 25A
MIG-MAG Regulation Range	15-200A
MMA Regulation Range	15-200A
TIG Regulation Range	15-220A
MIG-MAG Duty Cycle	200A 45% (40°C) / 200A 68% (20°C)
MMA Duty Cycle	200A 45% (40°C) / 200A 68% (20°C)
TIG Duty Cycle	220A 45% (40°C) / 220A 72% (20°C)
Usable wires Steel	0.6 - 0.8 - 1.0
Usable wires Ss	0.8 - 1.0

Feature	Stanners 3-Ti-Pulse
Usable wires Al	0.8 - 1.0
Usable wires CuSi3	0.8 - 1.0
Usable wires CuAl8, CuAl9	0.8
Max Wire Speed	16 m/min
Drive Rolls	4-2-2
Motor Power	60W - 30W - 30W
Max Spot Time	10s
Thermal Insulation	(180°C) H
IP Protection Degree	IP23S
Ventilation	FORCED
Weight	54.5 Kg
Dimensions	460x925x916 mm
Standards	UNE EN 60974-1 / UNE EN 60974-10 Class A

PROTECTION

The equipment incorporates all the necessary protections to guarantee correct operation. Temperature sensors ensure that the components remain within the operating range.

Monitoring the supply voltage ensures that the equipment operates within the intended margins and, if they are exceeded, it will disconnect to avoid possible anomalies.

DUTY CYCLE AND OVERHEATING

The duty cycle is the percentage of 10 minutes in which the unit can weld at the required power without overheating. In the event that the equipment overheats, the welding power will stop. An alarm will appear on the screen showing which internal module has overheated. The equipment automatically resets when it recovers a safe temperature. However, it is recommended to wait a minimum of 5 minutes before resuming normal work.

To prevent overheating, reduce the set welding power and/or the length of the beads being made.

ATTENTION:

If the nominal duty cycle of the equipment is exceeded and it is forced to operate for a prolonged period (without giving it time to cool properly), it could cause a major failure not covered by the equipment warranty.

EQUIPMENT INSTALLATION

The equipment must be installed in a dry and ventilated place, away from water sources and the welding station (to prevent metal dust from entering the equipment). If used outdoors, protect from direct rain and inclement weather.

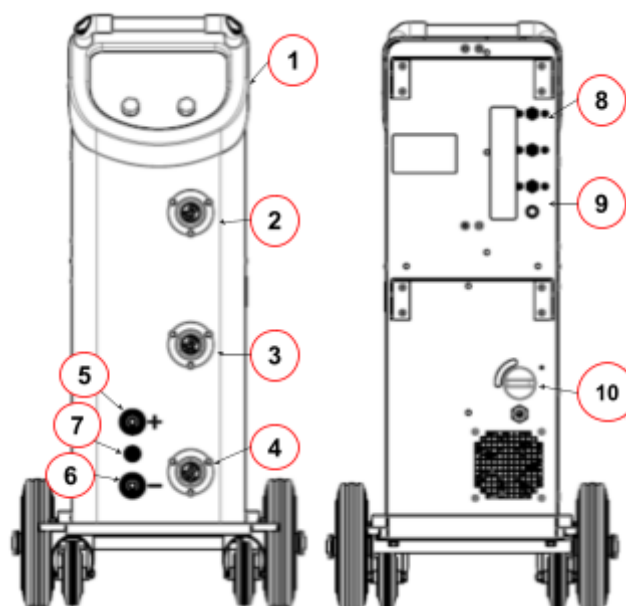
The machine must be connected to an electrical panel, which must consist of a residual current circuit breaker and an automatic circuit breaker.

For handling and transporting the equipment, always use the front and rear handles.

DESCRIPTION OF EQUIPMENT ELEMENTS

Stanners 3-Ti-Pulse

1. Control panel
2. Torch 1 connector
3. Torch 2 connector
4. Torch 3 connector
5. Positive Dinse connector
6. Negative Dinse connector
7. SPOOL-GUN connector
8. Torch gas connection
9. Slow 2A control power fuse
10. Main switch



EARTH CLAMP CONNECTION

The earth clamp must be connected as close as possible to the piece to be welded and the other end of the cable to the equipment (in the desired position according to the polarity). The contact surface with the piece to be welded must be as large as possible. Ensure that this surface is completely clean and free of paint and rust. The following table shows the recommended cable section according to amperage and duty cycle for lengths less than 25m. This data is for guidance only and may not apply to all applications. If the cable overheats, use a larger cable section.

Welding Amperage (A)	100	150	200	250	300	350	400
Section (mm ²) for X<60%	16	25	25	35	50	50	70
Section (mm ²) for X>60%	16	25	35	50	70	70	90

GAS CONNECTION

Connect the gas hose to the rear nozzle of the power unit and the other end of the hose to the gas cylinder flow regulator. Make sure you use the right gas mixture for the material to be welded. Set the gas flow to a typical value between 8 - 15 l/min. An incorrect flow setting can cause defects in the weld bead. Remember to close the gas cylinder valve after finishing welding.

In equipment with 3 torches, there are 3 gas inlets; ensure you connect the correct gas for the material you will use in each torch to the corresponding inlet.

USE OF ELECTRICAL GENERATORS

The equipment is ready to run on an electrical generator. The power supplied by the generator must be at least 10 KVA. If the generator does not have enough power or the output voltage is outside the equipment's working limits, it could affect the stability of the welding arc and, consequently, the quality of the joint to be welded. In the worst case, it can even cause damage to the equipment.

Do not combine several welding machines on the same generator. Sudden changes in load level can affect welding arc stability.

COMMISSIONING

- Connect the welding machine to an earthed socket. It is mandatory that the socket has an earth connection. The mains voltage must be $230\text{ V} \pm 15\%$. Outside these voltages, the machine may malfunction.
- Depending on the type of welding to be used (MMA, TIG, MIG-MAG), you must connect the earth clamp, the electrode holder clamp, the TIG torch, or the MIG-MAG torch

FRONT PANEL LAYOUT

1. Screen
2. Push button, left selector
3. Push button, right selector
4. Menu Button
5. Manual threading button



FRONT PANEL OPERATION

Right and left push buttons (2-3):

Forward or backward function in screen menus. Depending on the icon in the right or left corners. Follow the color guide: yellow left, blue right.

Right and left rotary selectors (2-3):

Select between different options on the screen or modify values, depending on the screen type.

Menu push button (4):

Gives access to the main menu, where we can select welding material, equipment settings, or read and save programs.

Pulsador menú (4):

Da acceso al menú principal, donde podremos seleccionar el material de soldadura, ajustes del equipo o leer y guardar programas.

1. Material selection.
2. Various settings.
3. Read a program.
4. Save a program.
5. Left button function: Exit.
6. Right button function: Accept menu selection.



Threading push button (5):

Manual wire threading.

MIG/MAG WORK SCREENS

Three work screens are available, according to user preferences.

EXPERT MODE:

Display of all parameters and access to expert adjustment mode.

Screen indications:

1. Wire speed in m/min.
2. Welding voltage.
3. Approximate thickness of the piece to be welded (Informative value).
4. Arc height (Wire closer to or further from the puddle).
5. Welding amps (Informative value, real value may differ).
6. Inductance (Arc behavior).



EASY MODE:

Simpler display of main parameters. We can only access to change 2T / 4T and SPOT work modes.

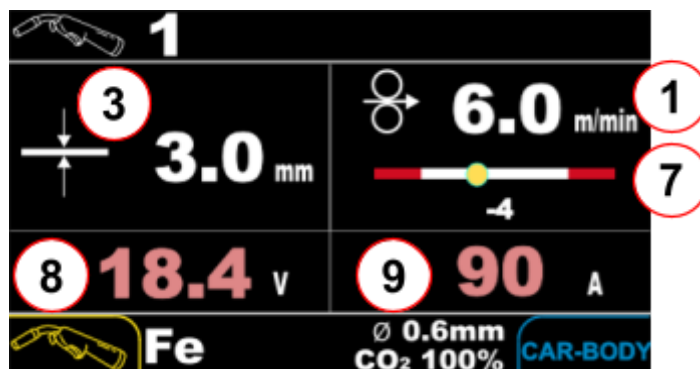


CAR-BODY MODE:

Screen specially designed for panel beaters (Car Body Repair). The equipment's way of working varies, and arc height adjustment is done with wire speed variation. Closer to conventional transformer equipment.

The screen shows volts and amps corresponding to the last weld made. Initially, it is always at zero.

7. Arc height indicator.
8. Average welding voltage of the last bead made.
9. Welding amps of the last bead made.

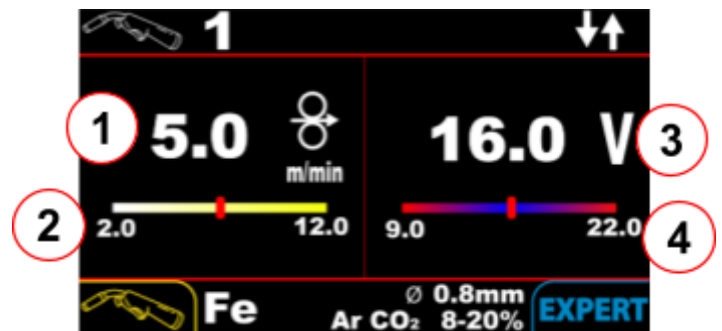


MANUAL MODE:

This work mode can be chosen at any time. This manual mode is not totally free. It is always linked to the welding curve of the selected material, and the minimum and maximum voltage we can select is always limited

to +25% and -25% of the optimal welding voltage.

1. Selected wire speed.
2. Indicator of minimum and maximum speed we can select.
3. Welding voltage.
4. Minimum and maximum voltage we can select.



SELECTING TORCHES AND PROCESSES (3-Ti-Pulse)

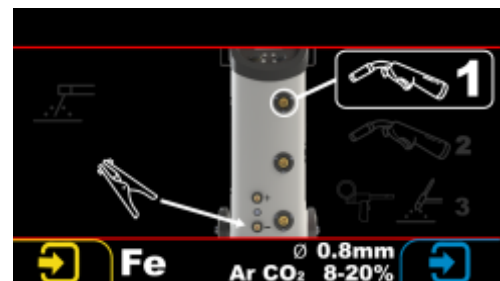
In these models, to change the material type or process settings, it is necessary to select the torch.

On the work screen, press the left selector to select the process or the torch we want to act on.

We can also select the torch with a slight press on the trigger of the torch we want to activate. The torch's work screen will automatically appear.

When modifying parameters, materials, or reading and saving programs, we must ensure it is done on the desired torch.

TIG welding mode will only be possible in torch connection No. 3. It is advisable to use the adapter for gas connection and torch signal.

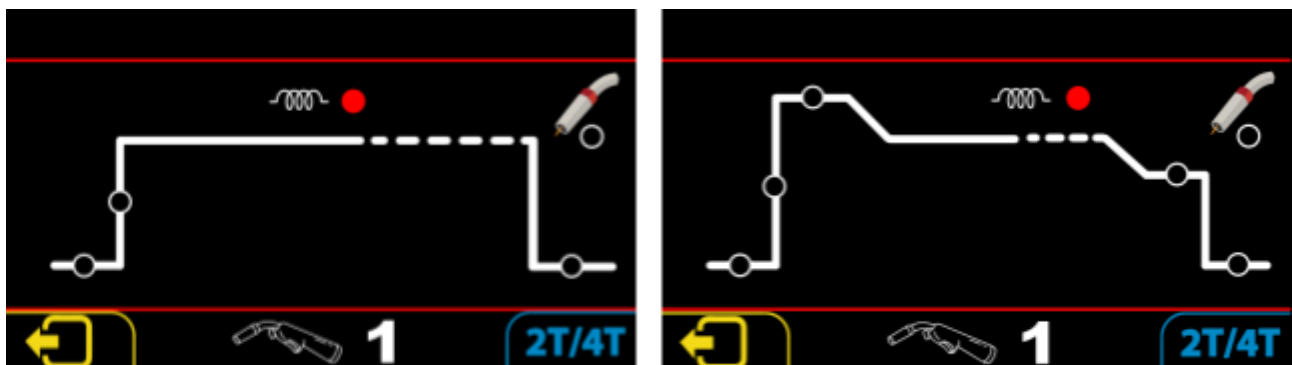


ADDITIONAL PARAMETER ADJUSTMENT

In EXPERT and CAR-BODY modes, as well as for MMA and TIG modes, we can adjust additional welding parameters. They are presented graphically on a screen, indicating which part of the welding sequence they affect. Adjustment of these parameters will not be possible in EASY mode.

El ajuste de estos parámetros no será posible en el modo EASY.

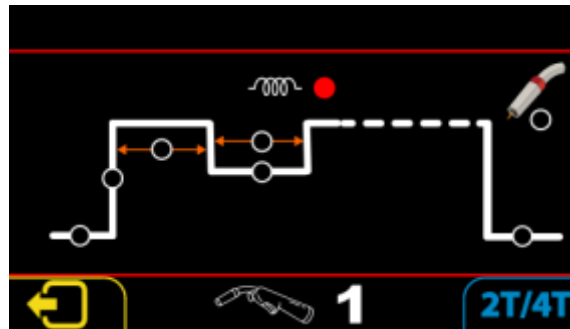
MIG 2T and MIG 4T Mode Screens:



- **Pre-gas:** Shielding gas activation time before starting welding.
- **Soft-Start:** Arc start adjustment. Positive values: faster, potential for more spatter. Negative values: slower and softer.

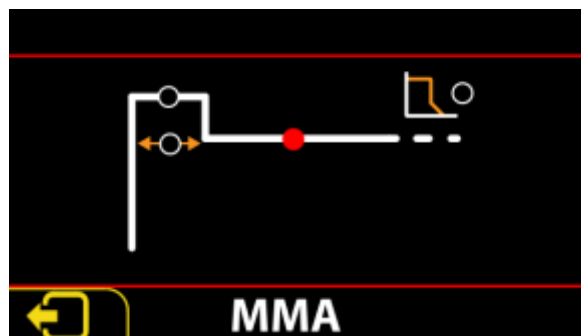
- **Hot-Start:** Arc start parameters, only in 4T mode.
- **Arc Dynamic:** We can adjust arc response (harder or softer).
- **Crater Fill:** Welding parameters for final crater filling, only in 4T mode.
- **Burn-back:** Wire post-burn at the end of welding, allows adjusting wire length. Requires not moving the torch away until the sequence ends.
- **Post-Gas:** Shielding gas time at the end of welding.

Additional parameters in Double Pulsed MIG/MAG Mode:



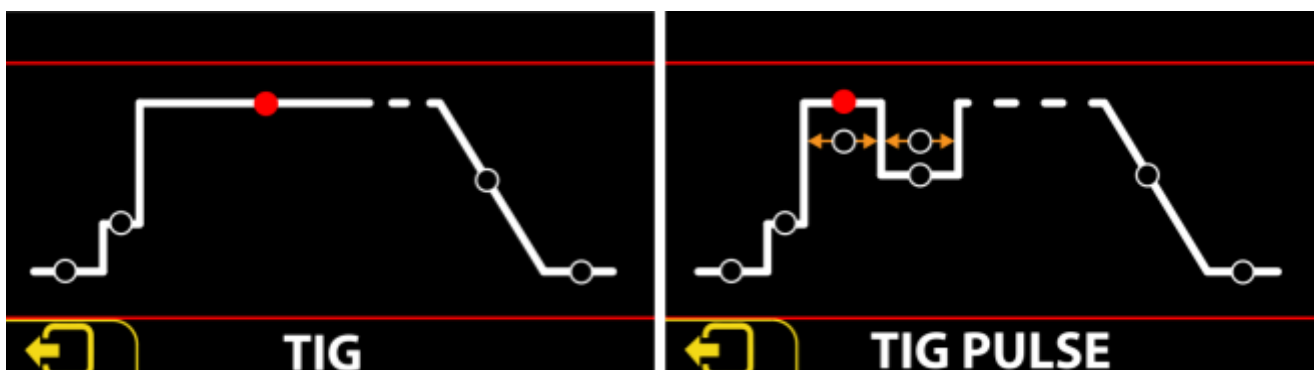
- **Time 1:** Welding time with main current.
- **Current 2:** Wire speed percentage relative to the main one for the second current.
- **Time 2:** Welding time with secondary current.

MMA Mode:



- **Hot-Start:** Initial arc current. Used to improve cold electrode start.
- **Hot-Start Time:** Time during which Hot-Start current will be maintained.
- **Welding Amps:** Nominal welding amps.
- **Arc-Force:** Additional current to improve material transfer. Useful for upward or downward welds.

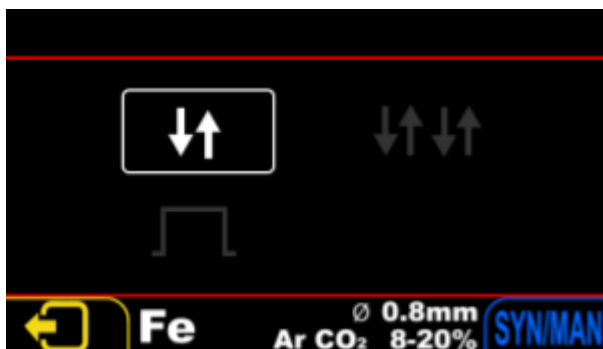
TIG Mode:



- **Pre-Gas:** Initial shielding gas time.
- **Start Current:** Initial welding current. Since it's a Lift-Arc ignition, a low initial current is applied until arc ignition to protect the electrode tip.
- **Welding Current:** Welding current value.
- **Welding Current Time (Pulsed only):** Main current time.
- **Secondary Current (Pulsed only):** % of main current for secondary current.
- **Secondary Current Time (Pulsed only):** Secondary current time.
- **Down Slope:** Fade-out ramp time.
- **Post-gas:** Additional gas time..

WORK MODE: 2T, 4T, SPOT

- **2T Mode:** The equipment is only in the welding process if we keep the torch trigger pressed.
- **4T Mode:** Welding starts on first trigger press. Upon release, main parameters are set. Second press sets crater-fill parameters until trigger is released, at which point the arc turns off and post-gas occurs.
- **SPOT Mode:** Trigger sequence like 2T mode, but automatically turns off at the end of programmed time.



MIG/MAG



TIG

(In TIG mode, we can select 2T, 4T, pulsed 2T, and pulsed 4T).

Synergic / Manual MIG/MAG Mode.

On this screen, you can choose between synergic mode—where parameters are set by the program—and assisted manual mode. In the latter, you can adjust voltage and wire speed within defined maximum and minimum limits, designed to prevent operating the equipment at extremes where welding is not viable.



MIG WELDING OPERATION

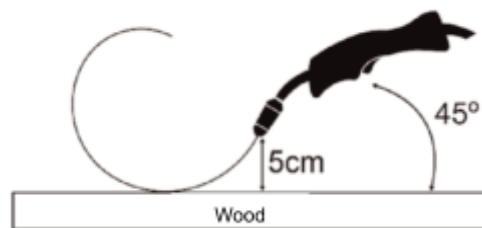
For virtually all material types, the connection involves the negative terminal on the workpiece and the positive terminal on the torch, with the exception of gasless flux-cored wires, where the polarity is reversed.

Wire feed system.

The wire feed system must be set up with options appropriate for the material being used. Install the correct rollers for the material and adjust the roller pressure to the minimum setting; this ensures the wire is fed with sufficient force but allows it to slip if an obstruction occurs in the wire feed guide.

Follow this procedure to correctly adjust the roller pressure:

- 1- Press the wire feed button until the welding wire emerges from the torch.
- 2- Loosen the roller pressure to the minimum setting (indicated by the number 1 on the tensioner).
- 3- Position the torch at a 45° angle with the nozzle approximately 5 cm away from a wooden surface.
- 4- Press the wire feed button to feed the wire onto the wooden surface.
- 5- Increase the roller pressure until the wire stops slipping and begins to advance. At that point, turn the adjustment tensioner another half-turn.
- 6- If the wire continues to slip even with the tensioner at the maximum setting, this indicates a problem with the wire feed system. You should check the wire guide (liner), the brake adjustment, the condition of the contact tip, and the wear on the rollers.



The torch must also be prepared with consumables appropriate for the material being used; this includes using a contact tip and a liner specifically suited to the wire size. For aluminum, a Teflon or graphite liner is required. Torch lengths exceeding three meters are not recommended.

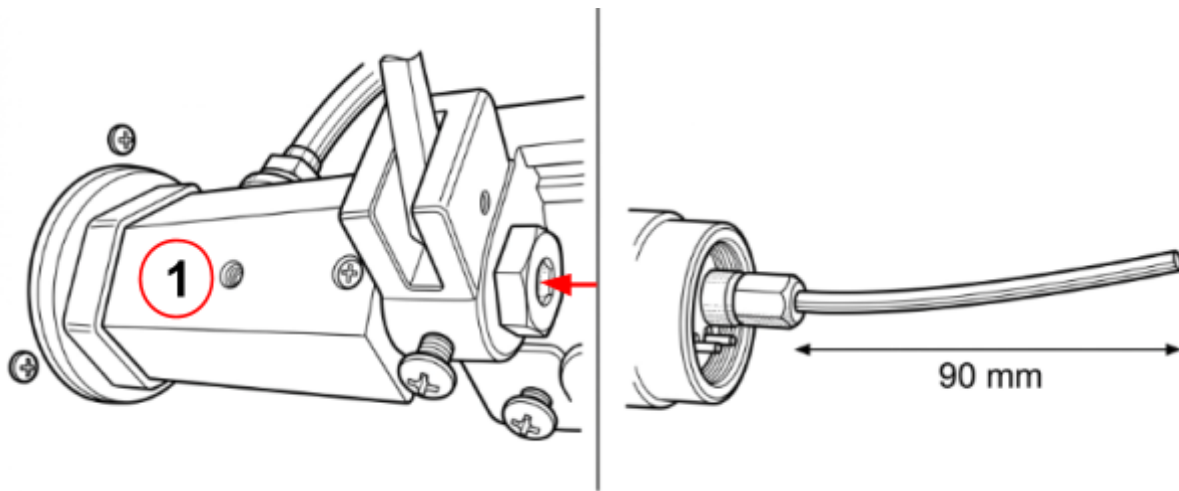
For aluminum welding, the Euro-connector outlet guide must be removed, and the internal Teflon or graphite torch liner must extend all the way to the drive rolls.

Place the wire spool on its designated holder so that it rotates clockwise during operation. Ensure that no wire ends protrude from the spool. Use the 56125 adapter for spools with a 150 mm diameter. File the end of the wire to ensure smooth feeding and prevent it from jamming or damaging the liner. Adjust the brake so the spool stops spinning when the motor stops. Excessive brake pressure can cause the drive motor to slip, resulting in weld defects. The brake is located inside the wire spool holder. Finally, tighten the nut securely to fasten the spool to the holder. Feed the wire through the drive rolls until it extends 10 cm into the torch liner, then close the drive roll mechanism. During welding, the drive motor access door and the spool holder cover must remain closed.

Torch assembly with Teflon liner:

Remove the metal guide tube from the wire feeder by loosening the Allen screw (1). Pull the guide tube out through the front of the connector.

Prepare the torch with the Teflon or nylon liner by cutting it 90 mm from the screw.



ATTENTION

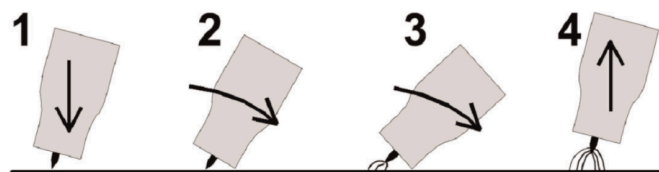
The drive system components are subject to wear. Maintenance of the drive system is essential to ensure optimal welding quality.

Shielding gas

The appropriate shielding gas must be connected for each type of material. An unsuitable gas can result in a defective weld or abnormal equipment operation.

TIG WELDING OPERATION.

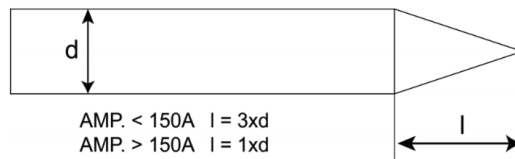
- The equipment is designed for use with a TIG torch featuring a trigger switch.
- For connection, it is recommended to use the TIG adapter specifically designed for this equipment (ref. 56210).
-
- Trigger-start ignition:
- Lightly press the electrode against the workpiece (1).
- Press the torch trigger and wait 1 to 2 seconds (shielding gas will begin to flow, and the tungsten electrode will heat up slightly to allow arc ignition (2)).
- Slowly lift the electrode away from the workpiece, pivoting the torch so that the nozzle remains in contact with the workpiece (3).
- The arc will start, and the amperage will ramp up to the preset level (4).
- Upon releasing the trigger, the current will ramp down and the arc will extinguish.



ATTENTION

Do not attempt to strike the arc by scratching the electrode as if it were a match.

It is recommended to use tungsten electrodes containing thorium (red), cerium (gray), or lanthanum (gold). The electrode tip should be ground to a conical shape. This ensures a more stable arc and allows the energy to be concentrated more effectively at the weld root. The degree of sharpening should be adjusted based on the amperage used.

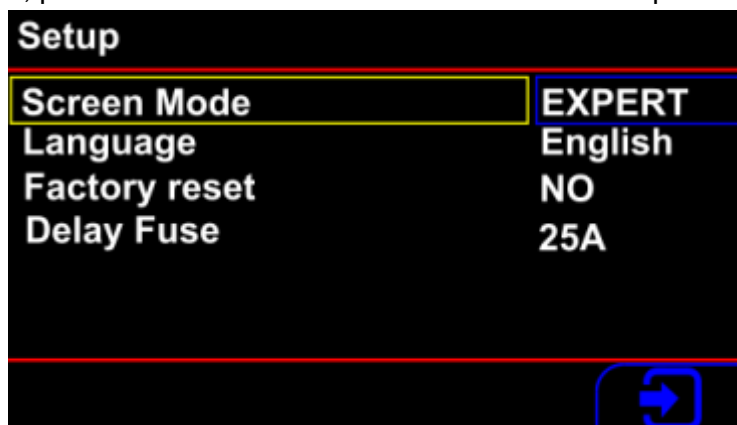


Depending on the welding amperage, specific electrode diameters, nozzles, and gas flow rates are recommended. Use the following reference table as a guide.

Amperage Range (A)	Electrode (mm)	Nozzle (mm)	Gas Flow Rate (l/min)
10 - 60	1,0	6,5 / 8,0	5 - 6
60 - 120	1,6	6,5 / 8,0 / 9,5	6 - 7
120 - 170	2,0	8,0 / 9,5	7 - 8
170 - 220	2,4	9,5 / 11,0	8 - 9
220 - 350	3,2	11,0 / 12,5	9 - 10
300 - 420	4	16	10 - 12

OPTIONS MENU (SETUP)

To access the options menu, press the menu button and select the SETUP option.



- **Screen Mode:** EXPERT, EASY, CAR-BODY.
- **Language:** Screen language selection.
- **Factory reset:** Resets program and options to defaults.
- **Delay Fuse:** Establishes the maximum current the equipment can draw from the electrical grid. Options of **16A** and **25A**.

BREAKDOWNS & POSSIBLE ANOMALIES

ANOMALY	POSSIBLE CAUSE
Equipment does not start	Check voltage at socket. Defective switch. Turn off for 1 min and retry. Defective electronic circuit.
Wire does not feed correctly	Reel brake too tight. Incorrect drive accessories. Bad torch or consumables.
Wire speed incorrect	Check drive system with manual threading.
No shielding gas	Check cylinder gas and flow setting. Blocked torch or defective gas valve.

ANOMALY	POSSIBLE CAUSE
Unstable arc, wire hits piece	Check selected material matches actual. Check consumables and rollers.
Arc unstable, enters nozzle	Check material matching, wire slipping, and wire guide state.
Arc does not start	Earth clamp not contacting. Incorrect polarity. Bad cables.
Poor penetration	Low intensity. Excessive speed. Inverted polarity.
Pores in weld	Defective consumables. Low gas flow or wrong gas.
Spatter	Excess intensity. Wrong dynamic setting or welding position.

ERRORS AND ALARMS

Refer to the information displayed on the screen.

MAINTENANCE INSTRUCTIONS

Disconnect the equipment from the mains before maintenance.

INTERVAL	ACTION
Weekly	Check cables/accessories. Replace worn torch components. Clean/tighten electrical connections. Clean drive unit with compressed air.
Quarterly	Blow ventilation tunnel with dry compressed air from front inlet. Disassemble and clean all drive rollers (lightly grease axis).
Yearly	Complete inspection as specified in EN-60974-4.

WARNING

Handling of the equipment's internal components must be performed only by qualified personnel. There is a risk of electric shock upon contact with live parts. Do not operate the equipment without the covers properly in place. Before accessing the interior of the equipment, disconnect the power supply and wait at least 5 minutes before performing any maintenance operations.



SERVICING & REPAIRS

Our mobile engineers service and repair Stanners equipment and many other makes. We offer planned maintenance, service certificates, fault diagnosis and spare parts support. To request service, repair, or spare parts, please contact us: 01670 514133
<https://www.stanners-equipment.co.uk/serviceandrepair>



DECLARATION OF CONFORMITY

STANNERS EQUIPMENT LIMITED
Coopies Lane Industrial Estate
MORPETH
Northumberland
NE61 6JN
United Kingdom – GB329326355

declare under his responsibility that the product:

Stanners 3-Ti-Pulse

to which this declaration refers is in conformity with the relevant safety standards and directives.

EN 60974-1, EN 60974-5, EN 60974-10, Class A

In accordance with the provisions of the Directive(s)

2014/35/CE (LVD), 2014/30/CE (EMC), 2011/65/CE (ROHS), 2019/1784/CE (EcoD)

Product manager:
Michael Stanners

Morpeth, 30/9/2026



WARRANTY INFORMATION

We offer a limited warranty for this product against any defects in material and workmanship for a period of **24 months** from the date of purchase by the end user / consumer.

The warranty is only valid upon presentation of the purchase invoice linked to the equipment's serial number. The purchase date must also appear.

The warranty does not cover defects caused by misuse, incorrect installation, modification, or product manipulation.

We are not responsible for damages caused by misuse or incorrect use of the equipment.

The warranty is limited to the repair of defective components.

In the event the product is repaired or replaced, the warranty period will remain valid for the remaining period.