WDC0893

WELDCO™

INSTRUCTION MANUAL

MIG/ARC/TIG Inverter PULSE Welder

MIG200 PULSE

IMPORTANT:

This manual contains important information regarding safety, operation, maintenance and storage. Before use, carefully read and understand all cautions, warnings, instructions and product labels. Failure to do so could result in serious personal injury and/or property damage.

TABLE OF CONTENTS

Thank you for your Purchase.

Weldco would like to thank you for purchasing the Inverter Welder.

This manual is designed to guide you through using your new machine.

Your Weldco inverter welder utilizes the latest in welding technology to ensure you receive professional results in a variety of applications.

UNPACKING YOUR WELDER

Contents:

- MIG inverter power source
- MB24 MIG torch, 3M cable, with graphite torch line (fitted)
- 300A Earth clamp, 1.5M cable
- 500A Twist lock electrode holder, 2M cable
- Argon regulator, dual-stage, twin gauge, side entry
- 2M Gas hose *(not shown)*
- Steel torch liner *(not shown)*
- MB24 Spare Contact Tips 1.0mm, 1.2mm*(not shown)*
- Wire Rollers *(not showen)*
  0.8-1.0 V Groove, 0.8-0.9 K Groove,
  1.0-1.2 U Groove (fitted)

ACCECCORIES

Please check that all contents are correct and damage-free before first use. If any issues, please contact your place of purchase.

WELDING HAZARDS AND SAFETY

Welding poses a variety of hazards to health and safety. Please ensure you have the correct safety equipment for yourself and those within the welding area. Your local distributor will be able to assist you with the correct Weldco protective helmet and gloves. Detailed documents can be located on the Worksafe website, www.worksafe.govt.nz, topic welding.

WORK AREA

- Ensure your work area is clean, dry and free of trip hazards.
- That the area is well ventilated, and all flammable materials are removed to a safe distance.
- Never leave your welder powered up, unattended.

FIRE RISK

- Due to the welding process producing molten metal, including sparks and fumes, maximum fire safety must always be obeyed. Ensure you have direct access to the correct fire extinguisher for your environment.
- Never weld tanks or containers that have or have held flammable liquid, gas or where the contents are under pressure. This should only be carried out by trained specialists.
- Ensure that the area is checked for smoldering materials, as the material will remain hot well after welding.

ELECTRICITY CAN KILL

- Never weld or attempt to weld in wet or rainy environments. There is a serious risk of electrocution to the operator or those within the area.
- It is recommended that the welder be connected to an RCD.

FUMES AND GASES

- Welding produces fumes and gases that can be harmful to the operator and those within the surrounding areas. Always ensure that there is plenty of ventilation and fresh air.
- Do not weld material that has been coated or contaminated with paint, varnish or rubber, as they may give off harmful fumes or gas and increase the risk of fire and or explosion.

PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING

The user must comply with occupational health and safety rules and wear appropriate protective equipment.

BURNS

- The welding process causes the workpiece and surrounding items to become hot.
- It is always recommended that flame-resistant clothing be worn.
- Welding gloves **must** be worn to help prevent burns to hands and arms when handling hot objects.
- Avoid skin exposure to the Ultraviolet rays produced by the arc. It is recommended that skin be protected from these harmful rays. Serious burns are possible when this recommendation is not followed.
- Approved welding helmets **must** be worn by the operator and any personnel within 10m of the work area. It is also recommended that welding safety screens be installed to protect.

- It is always recommended that enclosed footwear with rubber soles be worn to protect from sparks and molten metal and to reduce the risk of electrocution.
- As welding produces gases and fumes, many of which can be harmful, it is recommended that the operator and those in the direct area wear respirators with the relevant protection.
- Always wear safety glasses when chipping the slag, scraping or preparing the workpiece.

ELECTROMAGNETIC AND RADIO FREQUENCIES – "PACEMAKERS"

- Avoid contact with the energised workpiece.
- Always ensure you have adequate protection from electrocution and burns.
- Since the welder emits strong electromagnetic and radio frequencies. Persons fitted with **"PACEMAKERS"** or similar devices **MUST** consult their doctor before turning on the welder. This relates to both the operator and those nearby.

PRE-CHECKS

The following items must be checked by the operator each time before powering up the power source.

- Ensure that the welder is damage-free and no exposed wires.
- Check all welding cables, insulation and accessories are free of damage.
- The work area is checked and free of hazards
- All personal protective clothing and equipment are defect-free.
- Access to a Fire extinguisher and welding blanket.
- All flammable material has been removed.

WARNING!

- Disconnect the power source before servicing and ensure the device has powered down.
- Contact your dealer or reseller immediately should your welder require servicing.
- It is not recommended that you remove the covers to carry out your own servicing – doing so will void the warranty.

STORAGE, TRANSPORTATION AND MAINTENANCE

- Your welder contains sensitive electronics and needs to be stored in a dust and moisture-free environment.
- Periodically, your welder should be blown down using dry compressed air to remove any dust and metal filings.
- Once your power source and welder have cooled down. Remove your accessories for storage – wipe both the welder and accessories down with a clean cloth to remove any contaminants.
- Store your welder in a dry, safe environment.
- When transporting, ensure that the power source, accessories and wire are secure.
- Cylinders need to be stored and transported as per NZ regulations and safe operating procedures.

TECHNICAL DESCRIPTION

SPECIFICATIONS

MODEL		**WDC0893**
DESCRIPTION		WELDCO MIG200 PULSE ALLOY WELDER
RATED INPUT (VOLTS)		230
RATED INPUT PLUG		15amp
OUTPUT CURRENT	**MIG**	30-200
	ARC	10-160
	TIG	10-200
SPOOL SIZE		1KG D100 & 5KG D200
WIRE DIAMETER RANGE		0.8, 0.9 & 1.0mm
ELECTRODE DIAMETER RANGE		1.6-5.0mm
PROTECTION CLASS		IP21S
DIMENSSIONS		495X210X330
WEIGHT (KG)	**NW**	12
	GW	18

DUTY CYCLE

The welder's duty cycle is the number of minutes in a 10-minute period that the power source can safely produce the set welding current (actual arc on). If this is exceeded, the machine will enter thermal overload, turning the welding current off and protecting the welder. This is indicated by the **'ALARM'** light on the front panel.

Do not turn the welder off, as the cooling fan will assist. Once the alarm light has turned off, your welder is ready again.

For example:

- At 100 amps, the welder will **MIG** continuously for **6 minutes** and needs to rest for **4 minutes**.
- At 77 amps, the welder will **MIG** continuously or 100% of the time.

The duty cycle is tested at 40 degrees Celsius; if the welder operates at a lower temperature e.g. 20 degrees Celsius, the duty cycle will be higher.

INPUT PLUG

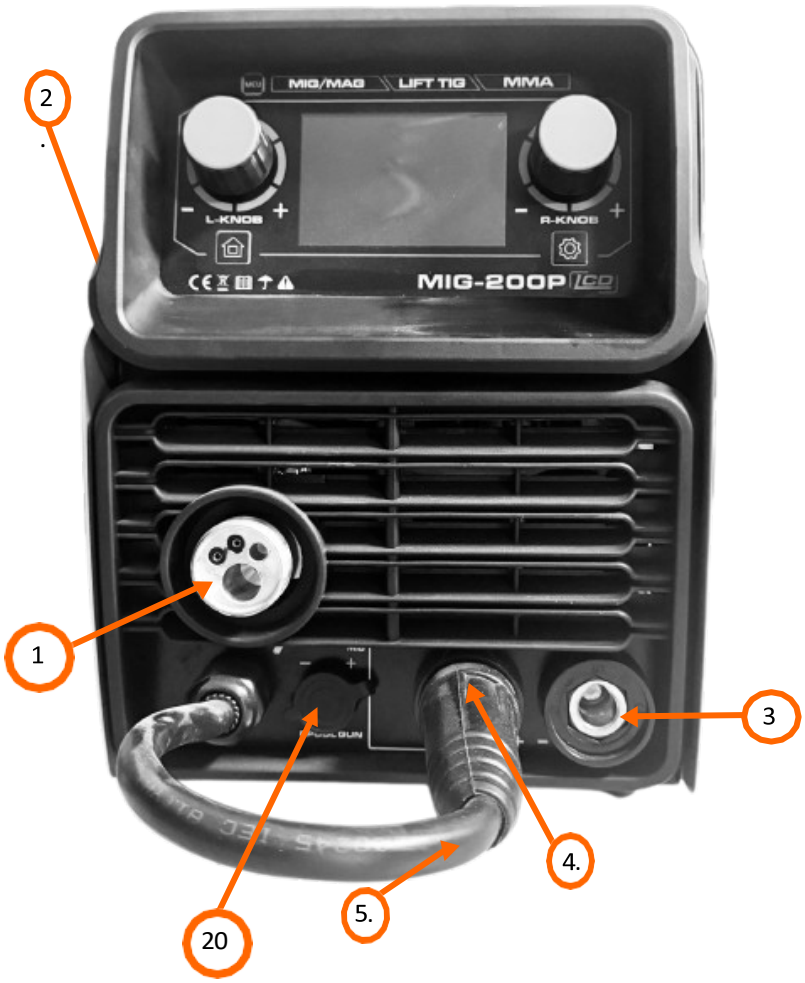
The welder is fitted with a **15-amp plug**. This machine is designed to work with **15-amp** domestic wall sockets. The machine must be plugged directly into the mains plug. If an extension cord must be used, a minimum of 2.5mm wire thickness is required and no more than 10m in length.

Using unsuitable extension cords will reduce the input voltage (known as ***'voltage drop'***), and this will void the warranty of your machine.

OPERATING ENVIRONMENT

- Operating temperature: -10℃~40℃.
- Transportation and storage: -25℃~55℃.
- Relative air humidity: 40℃ ≤ 50%; 20℃ ≤ 90%.
- The dust, acids, corrosive gases and substances in the ambient air must not be higher than the normal level.
- The altitude must be less than 1km.
- Good ventilation around the machine, at a distance of at least 50cm.
- The power source must be kept on a level surface to reduce the risk of the machine falling.

MACHINE LAYOUT



1. Female Euro Connector
2. Wire Feed Compartment.
3. Negative Terminal
4. Positive Terminal
5. Polarity Cable
20. Spool Gun Trigger Wire socket

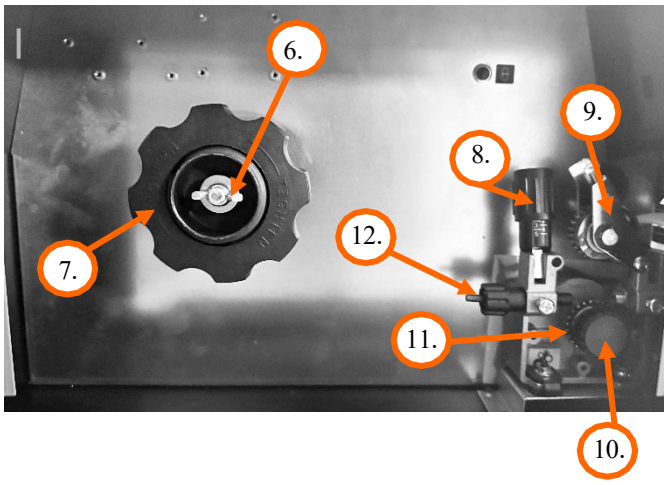
Inside – Wire Feed Compartment

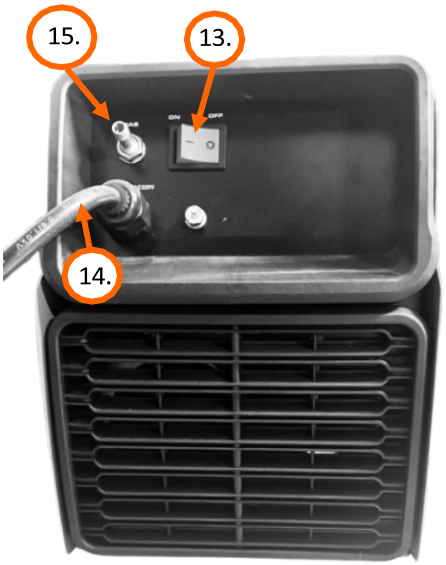
6. Spool Retainer Nut
7. Spool Brake Tensioner
8. Tensioner Adjuster
9. Tensioner Arm
10. Roller Retainer Bolt
11. Drive Roller
12. Inner guide Tube

Rear Panel

13. ON OFF Switch
14. 15-amp 230-volt Power Cable and Plug
15. Gas Inlet

INSIDE WIRE FEED COMPARTMENT





REAR PANEL

CONTROL PANEL LAYOUT

The MIG200 Alloy Pulse welder features a 3.5” colour display, allowing you to easily navigate through a wide range of functions and advanced settings with precision and ease.

16. HOME BUTTON
First Press:
Press the **HOME BUTTON** once to access the **Weld Mode Selector**, where you can choose from the following welding modes: DC MIG, PULSE MIG, DOUBLE PULSE MIG, MMA (ARC) or DC Lift TIG
Second Press:
Press the **HOME BUTTON** a second time to access additional settings, including: **Gas Type, Manual Mode, Flux Core** (Gasless) or **Spool Gun Mode.**

17. LEFT CONTROL KNOB (VOLTS)
Function in Home Menu:
Rotate the knob to scroll through available parameters. Press the knob to select a desired parameter.
Function on Main Screen:
Turn the knob to adjust the **voltage (VOLTS)** setting. Rotating clockwise increases voltage; counterclockwise decreases it.

18. RIGHT CONTROL KNOB (AMPS/WIRE SPEED)
Function on Main Screen:
Turn the knob to adjust either the AMPS/VOLTAGE in synergic mode or in manual mode just the AMPS/Wire speed in manual mode. The material thickness is also adjusted.
Advance setting adjustment:
Rotate the knob to scroll through available parameters. Press the knob to select a desired parameter.

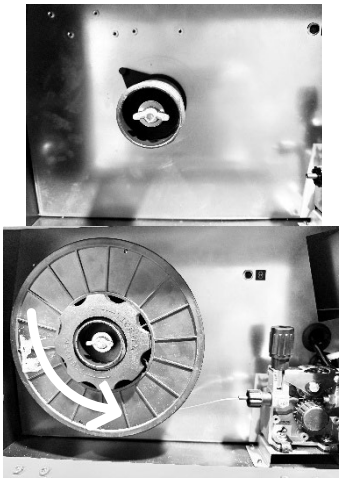
19. PARAMETER ADJUSTMENT (COG Icon)
Press to step through the available parameters on the right hand of the display screen. Each time the button is pressed it will highlight (move) to the next available option. Each parameter can then be adjusted by the right control knob.

SETUP FOR MIG WELDING

Smooth, consistent wire feed is critical to achieving professional results.

FITTING THE WIRE 5KG/200MM DIAMETER WIRE SPOOL

Open the cover door (**2**) for the wire feed compartment. Remove the wire spool retaining nut (**22**) by threading the retainer clockwise.



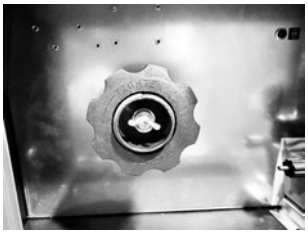
- Fit the 5 kg/200mm diameter wire spool to the spool holder, lining up the locating pin with the locating plug on the spool. Ensure that the end of the wire feeds towards the drive rollers from the bottom of the spool.
- Refit the wire spool retaining nut (**22**) and tighten anticlockwise, hand-tight.
- Set the spool brake tensioner by rotating the adjustment nut (**23**).

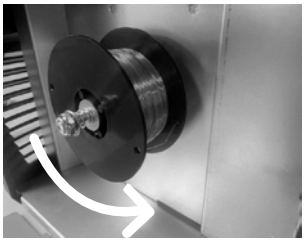
To increase brake tension, turn clockwise. Turn anti-clockwise to decrease brake tension.

- Set the spool brake tension so that the spool can rotate freely, without continuing to rotate once the wire feed stops. Check performance from time to time to ensure that the wire is feeding correctly, especially as the wire spool empties.
- Always reset when replacing with a new spool.

FITTING THE WIRE 1KG/100MM DIAMETER WIRE SPOOL

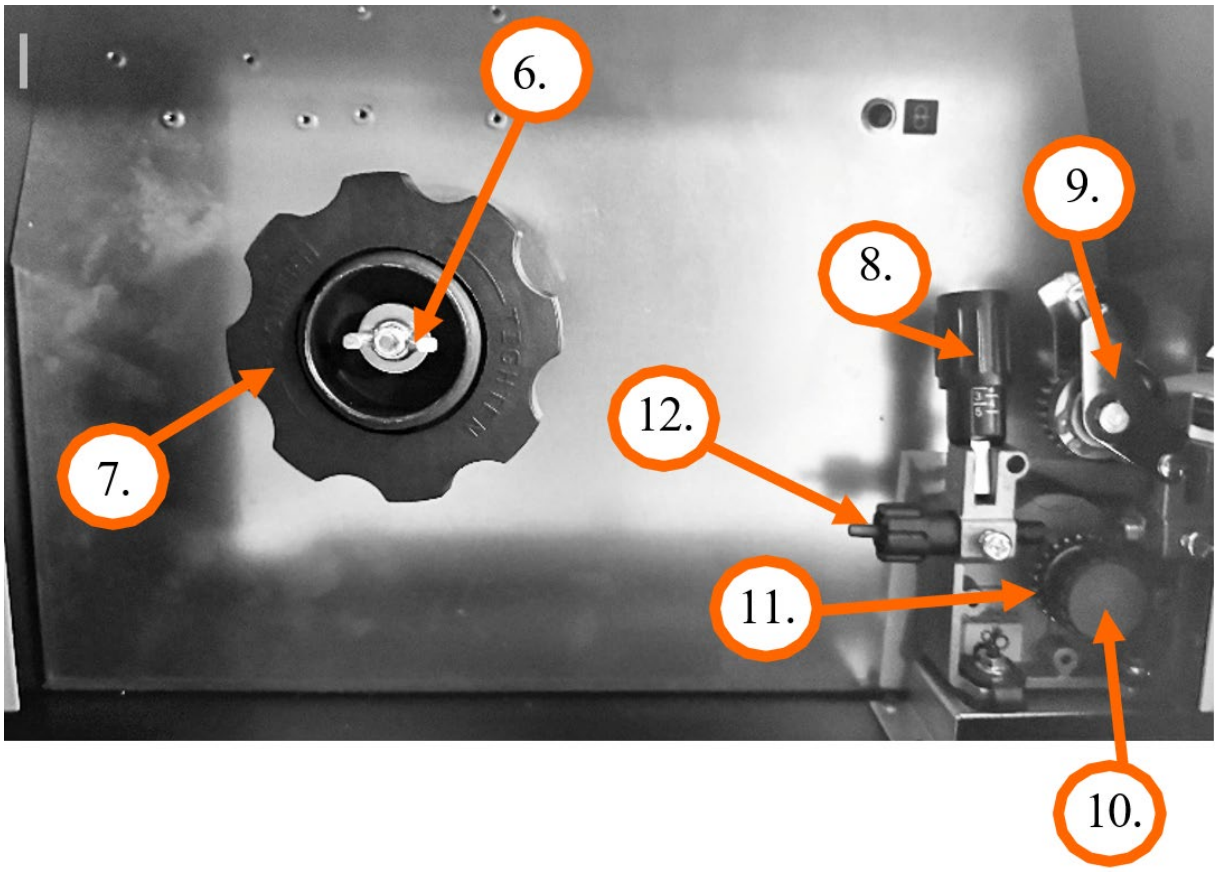
Open the cover door (**2**) for the wire feed compartment. Remove the tensioning nut, washers and spring. Slide off the spool holder – keep in a safe place.





- Fit the 1 kg/100mm diameter wire spool on the shaft. Ensure that the end of the wire feeds towards the drive rollers from the bottom of the spool.
- Refit the washer's spring and tensioning nut. Set the spool brake tensioner by rotating the adjustment nut (**23**). Ensure there is tension on the spool before fitting the wire into the wire feeder (the spool will unravel).
- To increase brake tension, turn clockwise. Turn anticlockwise to decrease brake tension.
- Set the spool brake tension so that the spool can rotate freely, without continuing to rotate once the wire feed stops. Check performance from time to time to ensure that the wire is feeding correctly, especially as the wire spool empties.
- Always reset when replacing with a new spool.

WIRE FEEDER



- Release the wire feeder tensioner arm (**9**) by pulling forward the tension adjustment knob (**8**).

Check that the drive roller matches the wire type and wire diameter (size is stamped on the side of the roller).

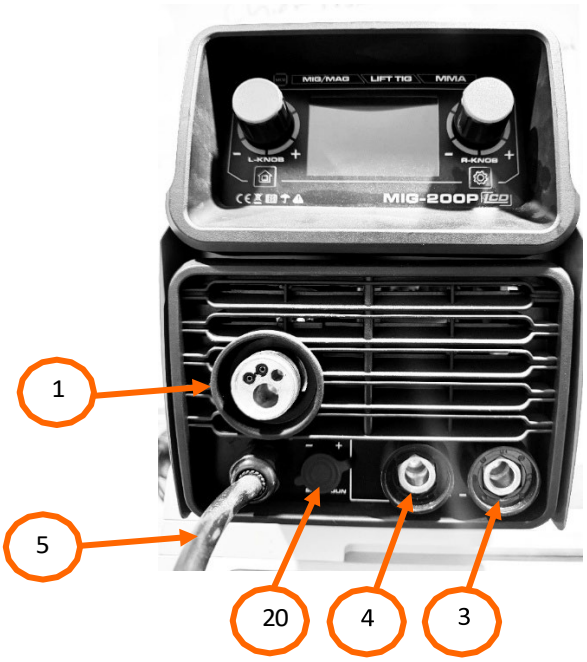
"V" groove roller for solid hard gas shield wires – Mild steel and Stainless Steel.

"Knurled" roller for gasless/flux core.

"U" Groove roller for soft wire – Aluminium and silicon bronze.

- To change the roller, undo the roller retainer bolt (**10**), slide off the roller, and replace it with the correct roller, making sure that the correct size groove is facing towards the machine. Tighten the retaining bolt anticlockwise, hand-tight.
- Whilst holding the wire spool (this will prevent the spool from uncoiling), carefully snip the wire and feed it through the inlet guide tube (**12**), over the roller and into the outer guide tube, feeding the wire approximately 50mm out of the female euro connect (**1**), fitting on the front of the machine.
- Align the wire into the groove of the roller and close the wire tensioner arm (**9**) and adjust the wire feed tensioner (**8**), making sure the wire remains in the groove.
- Adjust the wire feed tension (**6**) by turning clockwise to increase the tension and anti-clockwise to reduce it. Do not over-tighten the tension, the wire will be crushed – especially soft wires and flux- cored wires.

SETTING UP YOUR GAS SHEILDING (MIG/TIG) AND POLARITY



Gas Shield MIG Welding

- Connect the supplied Argon regulator to the gas hose and connect the gas line to GAS INLET (**15**) on the back of the machine. Connect your regulator to the Argon Mix, argon or CO2 (using the optional CO2 adaptor ZWDC0812-CO2) cylinder. Turn on the argon cylinder and set the regulator between 10 and 15 L/min.
- It is good practice to test for leaks. Close the cylinder valve. If there are no leaks, the regulator will maintain the set L/min and cylinder pressure values. Always turn off your cylinder valve when not in use.
- Connect the MIG torch male euro connector to the female euro connector (1) on the front of the power source. Secure hand tight.
- Check that the correct gas shield wire, drive roller (11) and welding tip are fitted.
- Connect the Polarity cable (5) to the positive welding output terminal (4).
- Connect the Earth Lead to the negative output welding terminal (3).
- Connect the Earth Clamp to the workpiece

Gas Shield MIG Welding

- Connect the MIG torch male Euro Connector to the female Euro Connector (1) on the front of the power source. Secure hand tight.
- Check that the correct gasless (Flux-cored) wire, drive roller (28) and welding tip are fitted.
- Connect the Polarity cable (5) to the Negative Terminal (3).
- Connect Earth Lead to the Positive Welding Terminal (4).
- Connect the Earth Clamp to the workpiece.

Gas Shield Spool Gun MIG Welding

- Connect the supplied Argon regulator to the gas hose and connect the gas line to GAS INLET (**15**) on the back of the machine. Connect your regulator to the Argon Mix, argon or CO2 (using the optional CO2 adaptor ZWDC0812-CO2) cylinder. Turn on the argon cylinder and set the regulator between 10 and 15 L/min.
- It is good practice to test for leaks. Close the cylinder valve. If there are no leaks, the regulator will maintain the set L/min and cylinder pressure values. Always turn off your cylinder valve when not in use.
- Connect the Spool gun male euro connector to the female euro connector (1) on the front of the power source. Secure hand tight.
- Connect the Spool gun trigger wires to the Spool gun trigger wire socket (20).
- Check that the correct gas shield wire, drive roller (11) and welding tip are fitted.
- Connect the Polarity cable (5) to the positive welding output terminal (4).
- Connect the Earth Lead to the negative output welding terminal (3).
- Connect the Earth Clamp to the workpiece

TIG Welding

- Connect your regulator to the argon cylinder and connect the gas line from the TIG torch to the regulator. With the valve of the TIG **torch** turn on the argon cylinder and set the regulator to between 6-10 L/min.
- It is good practice to test for leaks. Close the cylinder valve. If there are no leaks, the regulator will maintain the set L/min and cylinder pressure values. Always turn off your cylinder valve when not in use.

MMA (ARC) Welding

This setup is the most common **electrode positive** setting for general-purpose rods. Please check your electrode packaging to confirm.

- Connect the **earth clamp cable** into the **NEGATIVE (3)** terminal on the front of the machine.
- Connect the Earth clamp to the workpiece.
- It is important that the earth clamp makes strong contact with bare metal – remove paint, rust or other contaminants to ensure strong contact. Failure to do so will reduce your welding performance.
- Connect the **electrode holder cable** to the **POSITIVE (4)** terminal on the front of the machine.

Ensure that the plug is secure in the socket to reduce any chance of arcing from a loose connection.

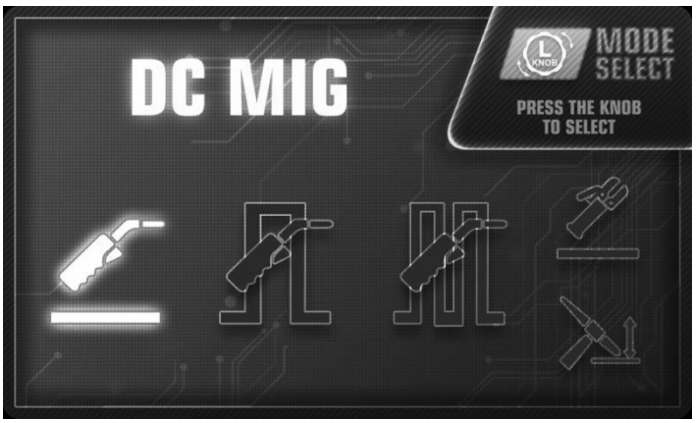
Warning!

Please check that your argon cylinder valve is closed after every use.

Never leave your machine running unattended.

SETUP DC MIG WELDING

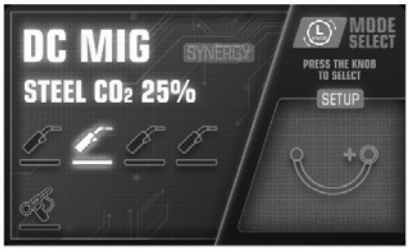
- Switch on the machine using the mains power switch. Wait 5 seconds for the digital control program to load.
- Press the HOME (16) button to enter the mode selection menu. Turn the Left knob to select DC MIG mode.
- Press the Left knob to confirm your selection.



In DC MIG mode, there are 5 easy setup options.
3 Syneric programs and 2 manual modes.

Syneric

- Removes the guesswork by selecting the right combination of VOLTAGE and WIRE SPEED. Once you have selected your shielding gas or FLUX (gasless – using flux-cored self sheild wire), increasing or decreasing the Right Control Knob (18) will adjust both the voltage (heat) and wire speed (m/min).



Manual

- In Manual (CV) or when using the SPOOLGUN mode, you can independently adjust the VOLTAGE (LEFT CONTROL KNOB (17)). And the WIRE SPEED/AMPERAGE (RIGHT CONTROL KNOB (18)).

Welding Voltage and Current

Voltage fine adjustment (Synergic only)

- This setting is used to fine-tune the synergic curve, allowing you to achieve the optimal parameters for your personal welding speed, torch angle and stick out length.
- To adjust the preset (synergic) voltage only from the factory default, rotate the Left Knob to increase or decrease the welding voltage only. Range – 5.0V to +5.0V.
- To set back to factory default, set to 0.0V.
- Depending on material thickness, the maximum positive volts may be restricted.

Inductance adjustment

- Press the Parameter adjustment button (19) to cycle through until the **INDUCTANCE** is highlighted. Use the Right Knob (18) to adjust the inductance from -10 (less inductance) to +10 (more inductance). Press the knob to confirm selection.
- Default is 0

Inductance adjustment Caution

- A quick note regarding inductance – this effectively adjusts the intensity of the welding arc; lower inductance makes the arc 'softer', with less weld spatter. Higher inductance gives a stronger driving arc, which can increase penetration. Optimum inductance settings are affected by many welding variables, including material type, shielding gas, joint type, welding amperage, and wire size. welding amperage, wire size.

Wire Diameter (Synergic only)

- Press the Parameter adjustment button (19) to cycle through until the **WIRE SIZE** is highlighted. Use the Right Knob (18) to select the correct wire size. Press the knob to confirm the selection.
- Wire size options will be determined by gas selection and available amperage.

Trigger Mode: 2T/4T function

- Press the Parameter adjustment button (19) to cycle through until the **TRIGGER MODE** is highlighted. Use the Right Knob (18) to select the correct wire size. Press the knob to confirm the selection.
- **2T** for standard torch operation. Press and hold the trigger to start the weld and continue to hold the trigger whilst welding. Releasing the trigger stop welding.
- **4T** is used for long welding runs or for out-of-position welding where holding the trigger is difficult. Each press of the trigger starts and stops welding. Press once and release to start the weld, press again to stop.

Post-flow time

- Press the Parameter adjustment button (19) to cycle through until the **POST GAS** is highlighted. Use the Right Knob (18) to select the desired post gas setting
- Range 0.1-2.0 seconds
- Press the knob to confirm selection.

Slow Start

- Slow start temporarily lowers the wire feed speed at the beginning of the weld. This improves the consistency and quality of the weld start, which is often difficult because both the wire and the workpiece are cold.
- Press the Parameter adjustment button (19) to cycle through until the **SLOW START** is highlighted. Use the Right Knob (18) to select the desired Soft start setting.
- Range 1.0-4.0mm
- Press the knob to confirm selection.

SETUP SINGLE PULSE MODE

Note: In Single Pulse MIG mode, voltage fine adjustment, Welding voltage and current adjustment, inductance, wire diameter, and Torch Trigger adjustment are the same as DC MIG mode.

- Switch on the machine using the mains power switch. Wait 5 seconds for the digital control program to load.
- Press the **HOME** (16) button to enter the mode selection menu. Turn the Left knob to select **SINGLE PULSE** mode.
- Press the Left knob to confirm your selection.
- Then select the Synergic setup for your material and gas selection.

In **PULSE MIG** mode, there are 6 easy setup options. All options are Synergic.

- Press

Cool Pulse (SINGLE PULSE only)

In Single Pulse mode, the pulse frequency is automatically synchronised and adjusted in proportion to the welding current. When the wire feeding speed drops below 2.5 m/min, the system automatically switches to **COOL PULSE** mode. This mode is optimised for low heat input, making it especially suitable for cold pulse welding applications.

Recommended Use:

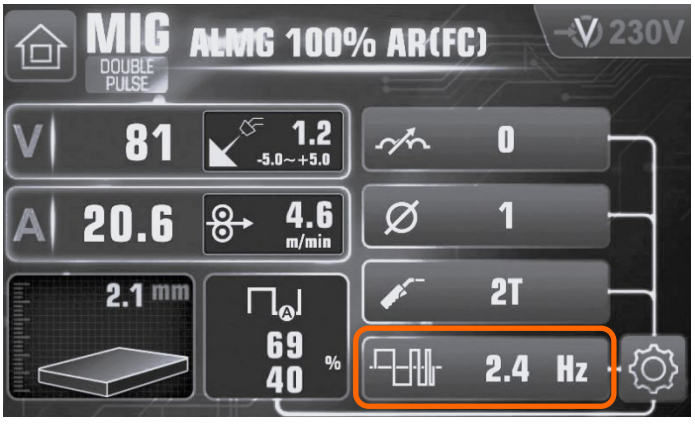
Single Pulse mode is ideal for welding materials that require reduced heat input to minimise distortion, spatter, or burn-through—such as thin metals or heat-sensitive alloys.

SETUP FOR DOUBLE PULSE MODE

Note: In Double Pulse MIG mode, voltage fine adjustment, Welding voltage and current adjustment, inductance, wire diameter, and Torch Trigger adjustment are the same as DC MIG mode.

- Switch on the machine using the mains power switch. Wait 5 seconds for the digital control program to load.
- Press the HOME (16) button to enter the mode selection menu. Turn the Left knob to select DOUBLE PULSE MIG mode.
- Press the Left knob to confirm your selection.
- Then select the Synergic setup for your material and gas selection.

In **DOUBLE PULSE MIG** mode,
there are 6 easy setup options. All options are Synergic.



Pulse Frequency (DOUBLE PULSE ONLY)

Pulse frequency refers to the number of times per second that a pulse (or cycle) occurs during pulsed welding. It is measured in **Hertz (Hz)**. Each pulse cycle alternates between two current levels:

- **Base Current** (the lower part of the pulse)
- **Peak Current** (the upper part of the pulse)

This cycling allows for better control of the weld pool, reduced overall heat input, improved arc stability, and a cleaner weld appearance.

Higher pulse frequencies result in faster transitions between the base and peak current, producing more refined control.
For example, a pulse frequency of **2.4 Hz** means the system generates **2.4 pulses per second**,
or approximately **10 pulses every 5 seconds**.

- Press the Parameter adjustment button (19) to cycle through until the **PULSE FREQUENCY** is highlighted. Use the Right Knob (18) to select the desired setting. Press the knob to confirm selection.

Base Current "A" (DOUBLE PULSE ONLY)
Top number in the highlighted box.

Pulse Base Current refers to the **percentage of current maintained during the low (base) portion of each pulse cycle**. This value is calculated as a percentage of the **Peak Current**, which is typically set through a combination of **Wire Feed Speed** and **Voltage**.
The base current plays a crucial role in maintaining arc stability, controlling the world pool and reducing overall heat input.
By providing a lower current between peak pulses, the weld remains fluid but controlled, minimising distortion and spatter.

Example:
If the **Base Current is set to 40%**, then the current drops to 40% of the peak value during the base phase. This results in a 60% difference between the peak and base currents.

- **Higher base current** (e.g., 60%) increases the **average current**, producing a **hotter weld**.
- **Lower base current** (e.g., 30%) reduces the **average current**, resulting in a **colder weld**.

- Press the Parameter adjustment button (19) to cycle through until the **BASE CURRENT "A"** is highlighted. Use the Right Knob (18) to select the desired setting. Press the knob to confirm selection.
- Range 20-99%.

Pulse width "W" (DOUBLE PULSE ONLY)
Top number in the highlighted box.

Pulse Width, also known as **Pulse Duration** or **Ripple Gap,** refers to the amount of time the welding current stays at the peak level during each pulse cycle before dropping back to the base current. It is expressed as a percentage of the total pulse cycle time.

A **longer pulse width** means the current stays at peak longer, resulting in Higher heat input, Wider weld beads and Deeper penetration.
A shorter pulse width means less time at peak current, resulting in Lower heat input, Narrower weld beads and Better control on thin materials.

- Press the Parameter adjustment button (19) to cycle through until the **PULSE WIDTH "W"** is highlighted. Use the Right Knob (18) to select the desired setting. Press the knob to confirm selection.
- Range: 20-80%

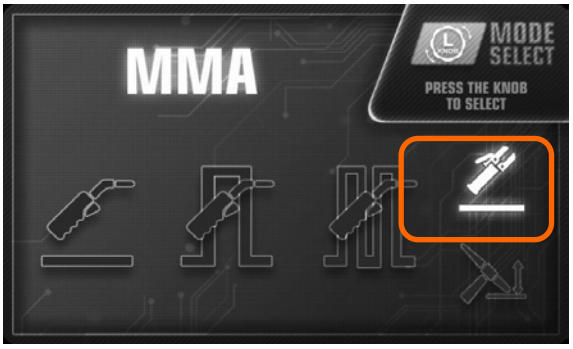
Pre-Set Functionality Disclaimer
The Pre-Set functionality available on this power source is designed to serve as a guideline only. Actual welding output may differ from the preset values due to several influencing factors, including:

- Welding mode in use
- Variations in consumables and shielding gas mixtures
- Operator welding technique
- Arc transfer mode (e.g., dip vs. spray transfer)

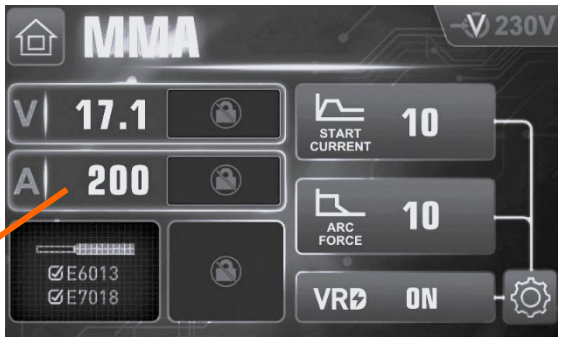
As a result, pre-set values may not always reflect true output. For applications requiring precise settings—such as procedural or certified welds—it is strongly recommended to use independent measurement tools to verify welding parameters.

SETUP MMA (ARC)

- Switch on the machine using the mains power switch. Wait 5 seconds for the digital control program to load.
- Press the HOME (16) button to enter the mode selection menu. Turn the Left knob to select MMA (ARC) mode.
- Press the Left knob to confirm your selection.



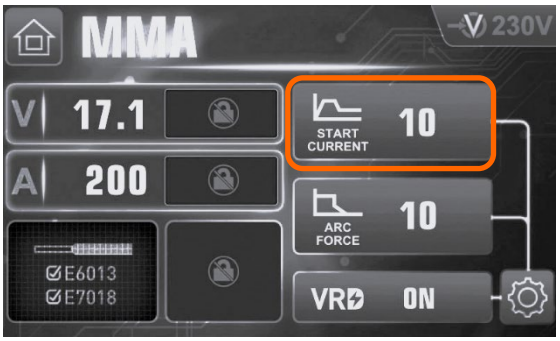
- Adjust Amperage (Current) by turning the RIGHT CONTROL KNOB (18) to the required setting.



Welding current

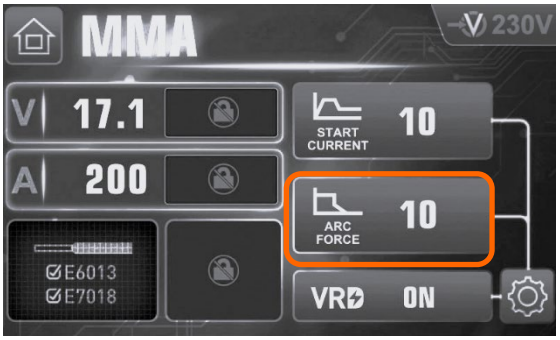
Hot Start

- Hot Start will supply an initial burst of current, improving arc starting and reducing the chance of the electrode sticking.
- Press the Parameter adjustment button (19) to cycle through until the **HOT START** is highlighted. Use the Right Knob (18) to select the desired setting. Press the knob to confirm selection.
- Range 0-10.



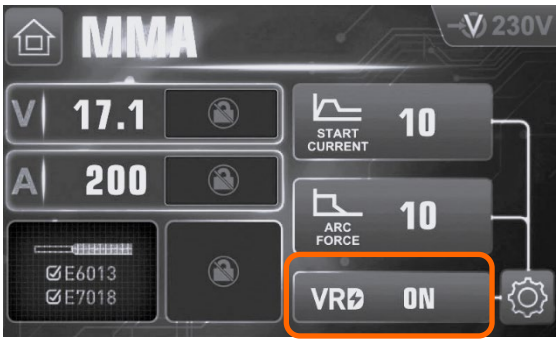
ARC Force

- ARC FORCE is like Hot Start but works during the welding process, not just at Arc ignition. Increasing arc force will supply an increased burst of current, improve arc starting, and reduce the chance of the electrode sticking.
- Press the Parameter adjustment button (19) to cycle through until the **ARC FORCE** is highlighted. Use the Right Knob (18) to select the desired setting. Press the knob to confirm selection.
- Range 0-10.



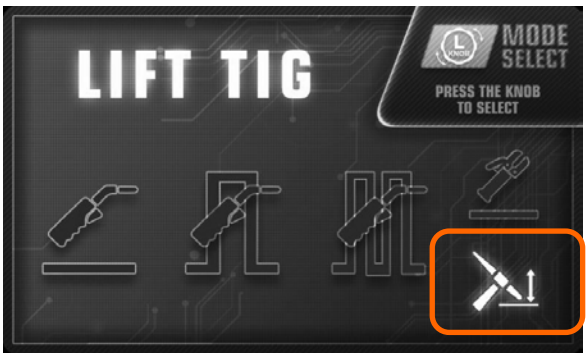
Voltage Reduction Device (VRD)

- The VRD reduces the open circuit voltage to safer levels as the electrode is being struck, reducing the chance of serious electric shock.
- Press the Parameter adjustment button (19) to cycle through until the **VRD** is highlighted. Use the Right Knob (18) to select the desired setting. Press the knob to confirm selection.
- Range: ON / OFF

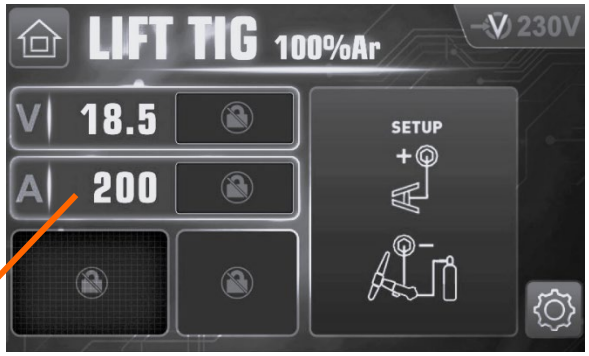


SETUP DC LIFT TIG

- Switch on the machine using the mains power switch. Wait 5 seconds for the digital control program to load.
- Press the HOME (16) button to enter the mode selection menu. Turn the Left knob to select MMA (ARC) mode.
- Press the Left knob to confirm your selection.



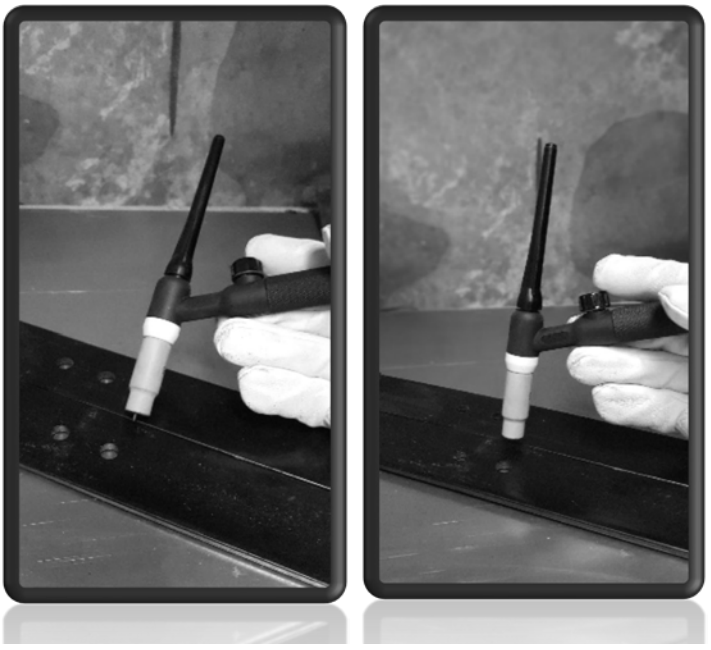
- Adjust Amperage (Current) by turning the RIGHT CONTROL KNOB (18) to the required setting.



Welding current adjustment

Striking the arc

- Rest your ceramic cup on the workpiece, then roll your hand holding the torch so the tungsten contacts the workpiece, and roll your hand back to lift the tungsten off the torch to keep a 2-4mm gap from the workpiece (this is called rocking the cup). The welder will send a pulse to initiate the welding current once the electrical field is detected.
- To stop the weld, quickly lift the TIG torch from the workpiece (stopping the electrical circuit).
- Once you have finished welding or if you need to reposition the workpiece, **CLOSE** the valve on the TIG Torch to save gas. Do not rest the torch on the workpiece or connected metal, or the tungsten will spark.



ERROR CODES

Over Temperature Warning

When the welder operates at maximum current for an extended period, an **Over Temperature** warning may appear. This indicates that the internal temperature of the machine has exceeded the safe operating limit. **Immediately stop welding. Do not turn off the power.** Allow the cooling fan to continue running so the machine can cool down properly.

Welding can be resumed once the internal temperature drops below the standard threshold and the warning indicator turns off.

Over Current

When the IGBT current exceeds the safety value when the welding machine is running, the welding machine will enter the **OVER CURRENT** protection to prevent damaging the IGBT. Please stop welding immediately, turn off the welder for 30 seconds and then restart. If the **OVER CURRENT** warning still appears, please refer to your local Weldco Distributor or a Qualified authorised service centre.

MAINTENANCE

- The major difference between an inverter arc welder and a traditional welder is that the inverter welder has a lot of advanced electronic components. Repair of this product can only be carried out by **Approved Weldco Technicians.**
- As part of general use, the user must carry out all pre-checks and ensure that the welder is maintained. Where the machine is in contact with dust or contaminants, these must be cleaned off regularly. In dusty environments, the power source will need to be blown down from time to time with dry compressed air at a suitable level. The machine must not be plugged in when this happens; all care and responsibility must always be maintained for those in the surrounding area.
- All accessories and leads must be inspected regularly by the user. Any repairs must be done by **Approved Weldco Technicians.**

WARNING!

Due to high voltage in the main circuit of the welder,

DO NOT remove the cover except for Approved Weldco Technicians. Failure to do so could result in electrocution, leading to injury or death.

WARRANTY

Your Weldco power source is covered by Weldco's 24-month warranty covering faulty materials and manufacturing.

During this time, should your Weldco power source fail please contact your local Weldco distributor.

This warranty does not cover freight or goods serviced by unauthorised personnel.

Weldco NZ will inspect your power source for faulty material or workmanship and will only be replaced if repair is not possible.

Note: The warranty is for the power source only.
Leads and accessories are consumables and are only replaced for failures due to materials and manufacturing.

TROUBLESHOOTING

Daily Maintenance Instructions for the Welding Machine
To ensure optimal performance and longevity of the machine, daily inspection is essential.
Please follow the steps below in order:

1. **Torch** – Check for any signs of damage or wear. Clean thoroughly and replace if necessary.
2. **Wire-Feeding Mechanism** – Inspect the wire feeder for proper function and cleanliness.
3. **Gas Nozzle and Ports** – Ensure that the gas holes are clean and free from obstructions.

Remove any dust or foreign particles during the inspection. If any parts appear worn or damaged, replace them immediately.

POWER SUPPLY

Part	Check	Remarks
Control panel	Operation, replacement, and installation of Switch.	If no power, see approved service agent.
	Switch on the power and check if the power indicator is on.	
Fan	Check if the fan is functioning and the sound generated is normal.	If the fan does not work or the sound is abnormal. See approved service agent.
Power supply	Switch on the power supply and check if abnormal vibration, heating of the case of this equipment, variation of colors of case or buzz presents.	
Other parts	Check if gas connection is available, case, and other joints are in good connection.	

WELDING TORCH

Part	Check	Remarks
Nozzle	Check if the nozzle is fixed firmly and no distortion of the tip exists.	Possible gas leakage occurs due to the unfixed nozzle.
	Check if there is spatter sticking on the nozzle.	Spatter possibly leads to the damage of torch. Use anti-spatter to eliminate the spatter.
Contact tip	Check if the contact tip is fixed firmly.	Unfixed contract tip can lead to unstable arc.
	Check contact tip is within working tolerances.	The physically incomplete contact tip can lead to unstable arc and arc automatically terminating.

Torch liner	Check torch liner can take selected diameter wire	Disagreement of the diameters of wire and wire feed tube possibly leads to the unstable arc. Replace it/them if necessary.
	Make sure that there is no bending or elongation of wire feed tube.	Bending and elongation of wire feed tube possibly leads to the unstable wire feed and arc. Replace it if necessary.
	Make sure that there is no dust or spatter accumulated inside the wire feed tube which makes the wire feed tub blocked.	If there is dust or spatter, remove it.
	Check if the wire feed tube is physically complete.	The Physically incomplete wire feed tube possibly leads to the excessive spatter. Replace the wire feed tube or O-shaped seal ring if necessary.
Diffuser	Make sure that the diffuser of required specification is installed and is unblocked.	Defection weld or even the damage of torch occurs due to the non-installation of diffuser or the unqualified diffuser.

WIRE FEEDER

Part	Check	Remarks
Pressure adjusting handle	Check the tensioner adjustment dial is fixed and adjusted to the desired position.	The unfixed pressure-adjusting leads to the unstable welding output and can crush wire.
Wire-feeding hose	Check if there is dust or spatter inside the hose or beside wire-feeding wheel.	Remove the dust.
	Check if there is a diameter agreement of wire and wire-feeding hose.	Non-agreement of the diameter of wire and wire-feeding hose possibly leads to the excessive spatter and unstable arc.
	Check if rod and wire feeding groove are concentric.	Unstable arc possibly occurs.
Wire-feeding drive roller	Check if there is an agreement of wire diameter and wire-feeding wheel.	Non-agreement of wire diameter and wire-feeding wheel possibly leads to the excessive spatter and unstable arc.
	Check if the wire groove is blocked.	Replace it if necessary.
Pressure adjusting wheel	Check if the pressure adjusting wheel can rotate smoothly, and it is physically complete.	Unstable rotation or physically incompleteness of the wheel possibly leads to unstable wire feeding and arc.

CABLES

Part	Check	Remarks
Torch cable	Check if the cable of torch is twisted.	The twisted torch cable leads to unstable wire feeding and arc.
	Check if the coupling plug is in loose connection.	
Output cable	Check if the cable is physically complete.	Relevant measures should be taken to obtain stable weld and prevent the possible electric shock.
	Check if insulation damaged or loose connection exists.	
Input cable	Check if the cable is physically complete.	
	Check if insulation damage or loose connection exists.	
Earth cable	Check if the earth cables are well fixed and not short-circuited.	Relevant measures should be taken to prevent the possible electric shock.
	Check if this welding equipment is well grounded.	

Warning!

Protect the machine from rapid power switching. When the machine senses that the power is turned on and off rapidly, the unit will turn off. The power indicator light will not turn on. Allow the machine to rest for a few minutes and normal operation should continue.
If this does not rectify the issue, please contact your approved Weldco Technician.

WHY PULSE MIG

Pulse MIG welding is a high-performance process known for delivering fast, high-quality welds with minimal spatter and excellent visual consistency. It offers superior thermal control compared to conventional MIG welding, making it ideal for applications where heat input must be carefully managed.

Although widely recognised for its effectiveness in aluminium welding, Pulse MIG is also highly effective for stainless steel and bronze wires. In many scenarios, it can produce welds that approach TIG-like quality, but with greater speed and productivity.

How It Works.
Pulse MIG is a controlled spray-transfer MIG process. Unlike traditional short-circuit MIG, the wire never contacts the weld pool. Instead, the welding current pulses between:

- Peak current – pinches and propels a droplet of filler metal into the weld joint.
- Background current – maintains the arc at a low enough level to prevent short-circuiting.

This cycle happens hundreds of times per second, allowing for precise control over the arc and metal transfer, resulting in cleaner, more consistent welds.

NOTES

WELDCO NEW ZEALAND
www.weldco.co.nz