JASIC®

EVO2.0

Operator Manual

ET- 200PACDC TFT-LCD Screen Option

To be used in conjunction with the ET-200PACDC Operating Manual

CE UKCA RoHS Intertek

Your new product

Jasic.co.uk

Thank you for selecting this Jasic EVO 2.0 product.

This product manual has been designed to ensure that you get the most from your new product. Please ensure that you are fully conversant with the information provided paying particular attention to the safety precautions. The information will help protect yourself and others against the potential hazards that you may come across.

Please ensure that you carry out daily and periodic maintenance checks to ensure years of reliable and trouble free operation.

Please call your Jasic distributor in the unlikely event of a problem occurring.
Please record below the details from your product as these will be required for warranty purposes and to ensure you get the correct information should you require assistance or spare parts.

Date purchased _____

From where _____

Serial number _____

(The serial number is normally located on the top or underside of the machine and will begin with AA)

For further information on your Jasic product warranty registration please visit:
www.jasic-warranty.co.uk

Disclaimer
Whilst every effort has been made to ensure that the information contained within this manual is complete and accurate, no liability can be accepted for any errors or omissions.

Please Note:
Products are subject to continual development and may be subject to change without notice. Regularly check our product pages at www.jasic.co.uk for revision updated operating manuals.

CONTENTS

SAFETY INSTRUCTIONS

These general safety norms cover both arc welding machines and plasma cutting machines unless otherwise noted. The user is responsible for installing and operating the equipment in accordance with the enclosed instructions.
It is important that users of this equipment protect themselves and others from harm, or even death. The equipment must only be used for the purpose it was designed for. Using it in any other way could result in damage or injury and in breach of the safety rules.
Only suitably trained and competent persons should operate the equipment.
Pacemaker wearers should consult their doctor prior to using this equipment.
PPE and workplace safety equipment must be compatible for the application of the work involved.

Always carry out a risk assessment before carrying out any welding or cutting activity.

General electrical safety

The equipment should be installed by a qualified person and in accordance with current standards in operation.
It is the users responsibility to ensure that the equipment is connected to a suitable power supply. Consult your utility supplier if required.
Do not use the equipment with the covers removed. Do not touch live electrical parts or parts which are electrically charged. Turn off all equipment when not in use.
In the case of abnormal behaviour of the equipment, the equipment should be checked by a suitably qualified service engineer.
If earth bonding of the work piece is required, bond it directly with a separate cable with a current carrying capacity capable of carrying the maximum capacity of the machine current.
Cables (both primary supply and welding) should be regularly checked for damage and overheating.
Never use worn, damaged, under sized or poorly jointed cables.
Insulate yourself from work and earth using dry insulating mats or covers big enough to prevent any physical contact.
Never touch the electrode if you are in contact with the work piece return.
Do not wrap cables over your body.
Ensure that you take additional safety precautions when you are welding in electrically hazardous conditions such as damp environments, wearing wet clothing and metal structures.
Try to avoid welding in cramped or restricted positions.
Ensure that the equipment is well maintained. Repair or replace damaged or defective parts immediately.
Carry out any regular maintenance in accordance with the manufacturers instructions.
The EMC classification of this product is class A in accordance with electromagnetic compatibility standards CISPR 11 and IEC 60974-10 and therefore the product is designed to be used in industrial environments only.
WARNING: This class A equipment is not intended for use in residential locations where the electrical power is provided by a public low-voltage supply system. In those locations it may be difficult to ensure the electromagnetic compatibility due to conducted and radiated disturbances.

General operating safety

Never carry the equipment or suspend it by the carrying strap or handles during welding.
Never pull or lift the machine by the welding torch or other cables.
Always use the correct lift points or handles. Always use the transport under gear as recommended by the manufacturer.
Never lift a machine with the gas cylinder mounted on it.
If the operating environment is classified as dangerous, only use S-marked welding equipment with a safe idle voltage level. Such environments may be for example: humid, hot or restricted accessibility spaces.

SAFETY INSTRUCTION

Use of Personal Protective Equipment (PPE)

Welding arc rays from all welding and cutting processes can produce intense, visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin.

- Wear an approved welding helmet fitted with an appropriate shade of filter lens to protect your face and eyes when welding, cutting or watching.
- Wear approved safety glasses with side shields under your helmet.
- Never use any equipment that is damaged, broken or faulty.
- Always ensure there are adequate protective screens or barriers to protect others from flash, glare and sparks from the welding and cutting area.
- Ensure that there are adequate warnings that welding or cutting is taking place.
- Wear suitable protective flame resistant clothing, gloves and footwear.
- Ensure adequate extraction and ventilation is in place prior to welding and cutting to protect users and all workers nearby.
- Check and be sure the area is safe and clear of flammable material before carrying out any welding or cutting.

Some welding and cutting operations may produce noise. Wear safety ear protection to protect your hearing if the ambient noise level exceeds the local allowable limit (e.g: 85 dB).

Welding and Cutting Lens Shade Selector Guide

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SAFETY INSTRUCTION

Safety against fumes and welding gases

The HSE have identified welders as being an 'at risk' group for occupational diseases arising from exposure to dusts, gases, vapours and welding fumes. The main identified health effects are pneumonia, asthma, chronic obstructive pulmonary disease (COPD), lung and kidney cancer, metal fume fever (MFF) and lung function changes.
During welding and hot cutting 'hot work' operations, fumes are produced which are collectively known as welding fume. Depending upon the type of welding process being performed, the resultant fume generated is a complex and highly variable mixture of gases and particulates.
Regardless of the length of welding being carried out, all welding fume, including mild steel welding requires suitable engineering controls to be in place which is usually Local Exhaust Ventilation (LEV) extraction to reduce the exposure to welding fume indoors and where LEV does not adequately control exposure it should also be enhanced by using suitable respiratory protective equipment (RPE) to assist with protecting against residual fume.
When welding outdoors appropriate RPE should be used.


An example of personal fume protection

Prior to undertaking any welding tasks an appropriate risk assessment should be carried out to ensure expected control measures are in place.

Locate the equipment in a well-ventilated position and keep your head out of the welding fume.
Do not breathe in the welding fume.
Ensure the welding zone is well-ventilated and provision should be made for suitable local fume extraction system to be in place.
If ventilation is poor, wear an approved airfed welding helmet or respirator.
Read and understand the Material Safety Data Sheets (MSDS's) and the manufacturer's instructions for metals, consumable, coatings, cleaners and de-greasers.
Do not weld in locations near any de-greasing, cleaning or spraying operations.
Be aware that heat and rays of the arc can react with vapours to form highly toxic and irritating gases.

<u>For further information please refer to the HSE website www.hse.gov.uk for related documentation.</u>

Precautions against fire and explosion

Avoid causing fires due to sparks and hot waste or molten metal.
Ensure that appropriate fire safety devices are available near the welding and cutting area.
Remove all flammable and combustible materials from the welding, cutting and surrounding areas.
Do not weld or cut fuel and lubricant containers, even if empty. These must be carefully cleaned before they can be welded or cut.
Always allow the welded or cut material to cool before touching it or placing it in contact with combustible or flammable material.
Do not work in atmospheres with high concentrations of combustible fumes, flammable gases and dust.
Always check the work area half an hour after cutting to make sure that no fires have begun.
Take care to avoid accidental contact of the torch electrode to metal objects, as this could cause arcs, explosion, overheating or fire.

<u>Know and understand your fire extinguishers</u>

SAFETY INSTRUCTION

The working environment

Ensure the machine is mounted in a safe and stable position allowing for cooling air circulation.
Do not operate equipment in an environment outside the laid down operating parameters.
The welding power source is not suitable for use in rain or snow.
Always store the machine in a clean, dry space.
Ensure the equipment is kept clean from dust build up.
Always use the machine in an upright position.

Protection from moving parts

When the machine is in operation keep away from moving parts such as motors and fans.
Moving parts, such as the fan, may cut fingers and hands and snag garments.
Protections and coverings may be removed for maintenance and managed only by qualified personnel after first disconnecting the power supply cable.
Replace the coverings and protections and close all doors when the intervention is finished and before starting the equipment.
Take care to avoid getting fingers trapped when loading and feeding wire during set up and operation.
When feeding wire be careful to avoid pointing it at other people or towards your body.
Always ensure machine covers and protective devices are in operation.

Risks due to magnetic fields

The magnetic fields created by high currents may affect the operation of pacemakers or electronically controlled medical equipment.
Wearers of vital electronic equipment should consult their physician before beginning any arc welding, cutting, gouging or spot welding operations.
Do not go near welding equipment with any sensitive electronic equipment as the magnetic fields may cause damage.
Keep the torch cable and work return cable as close to each other as possible throughout their length.
This can help minimise your exposure to harmful magnetic fields.
Do not wrap the cables around the body.

Handling of compressed gas cylinders and regulators

Mishandling gas cylinders can lead to rupture and the release of high pressure gas.
Always check the gas cylinder is the correct type for the welding to be carried out.
Always store and use cylinders in an upright and secure position.
All cylinders and pressure regulators used in welding operations should be handled with care.
Never allow the electrode, electrode holder or any other electrically “hot” parts to touch a cylinder.
Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.
Always secure the cylinder safely and never move with regulator and hoses connected.
Use a suitable trolley for moving cylinders.
Regularly check all connections and joints for leaks.
Full and empty cylinders should be stored separately.

Never deface or alter any cylinder

SAFETY INSTRUCTIONS

Fire awareness

The cutting and welding process can cause serious risks of fire or explosion.
Cutting or welding sealed containers, tanks, drums or pipes can cause explosions.
Sparks from the welding or cutting process can cause fires and burns.
Check and risk assess the area is safe before doing any cutting or welding.
Ventilate all flammable or explosive vapour from the workplace.
Remove any and all flammable materials away from the working area. If necessary, cover flammable materials or containers with approved covers (following manufacturers instructions) if unable to remove from the immediate area.
Do not cut or weld where the atmosphere may contain flammable dust, gas or liquid vapour.
Always have the appropriate fire extinguisher nearby and know how to use it.

Hot parts

Always be aware that material being cut or welded will get very hot and hold that heat for a considerably long time which will cause severe burns if the appropriate PPE is not worn.
Do not touch hot material or parts with bare hands.
Always allow for a cooling down period before working on material recently cut or welded.
Use the appropriate insulated welding gloves and clothing to handle hot parts to prevent burns.

Noise awareness

The cutting and welding process can generate noise that can cause permanent damage to your hearing. Noise from cutting and welding equipment can damage hearing.
Always protect your ears from noise and wear approved and appropriate ear protection if noise levels are high.
Consult with your local specialist if you are unsure how to test for noise levels.

RF Declaration

Equipment that complies with directive 2014/30/EU concerning electromagnetic compatibility (EMC) and the technical requirements of EN60974-10 is designed for use in industrial buildings and not for domestic use where electricity is provided via the low voltage public distribution system.
Difficulties may arise in assuring class A electromagnetic compatibility for systems installed in domestic locations due to conducted and radiated emissions.
In the case of electromagnetic problems, it is the responsibility of the user to resolve the situation.
It may be necessary to shield the equipment and fit suitable filters on the mains supply.

LF Declaration

Consult the data plate on the equipment for the power supply requirements.
Due to the elevated absorbance of the primary current from the power supply network, high power systems affect the quality of power provided by the network. Consequently, connection restrictions or maximum impedance requirements permitted by the network at the public network connection point must be applied to these systems.
In this case, the installer or the user is responsible for ensuring the equipment can be connected, consulting the electricity provider if necessary.

SAFETY INSTRUCTION

Materials and their disposal

Welding equipment is manufactured with BSI published standards meeting CE requirements for materials which do not contain any toxic or poisonous materials dangerous to the operator.
Do not dispose of the equipment with normal waste.

The European Directive 2012/19/EU on Waste Electrical and Electronic Equipment states that electrical equipment that has reached its end of life must be collected separately and returned to an environmentally compatible recycling facility for disposal.

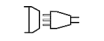
For more detailed information please refer to the HSE website www.hse.gov.uk

DESCRIPTION OF SYMBOLS


Read this operation manual carefully before use.


Warning in operation.


Single-phase static frequency converter-transformer rectifier.



Symbol of single-phase AC power supply and rated frequency.


Can be used in the environment which has high risk of electric shock.

IP Degree of protection, such as IP23S.

U_1 Rated AC input voltage (with tolerance ±15%).

I_{1max} Rated maximum input current.

I_{1eff} Maximum effective input current.

X Duty cycle, The ratio of given duration time/the full-cycle time.

U_0 No-load voltage, Open circuit voltage of secondary winding.

U_2 Load voltage.

H Insulation class.


Do not dispose of electric waste with other ordinary waste.


Electric shock risk warning.


Current unit "A"


Overheat protection indicator.


Overcurrent protection indicator.


VRD function indicator.


MMA mode.


LIFT TIG mode.

Selection of welding electrode diameter for MMA.


MMA current.


Hot start current of MMA.


Arc force of MMA.


Welding mode switching.


Other function switching.


Wireless indication.


Remote control.


Pairing of wireless remote controller.

Pre-flow

Initial current

Up-slope time

Peak current

Base current

Down-slope time

Finish current

Post-flow time

Spot welding time

Pulse frequency

Pulse duty cycle


DC TIG mode


DC pulse TIG mode

Pulse frequency unit "Hz"


HF arc starting mode


Lift arc starting mode

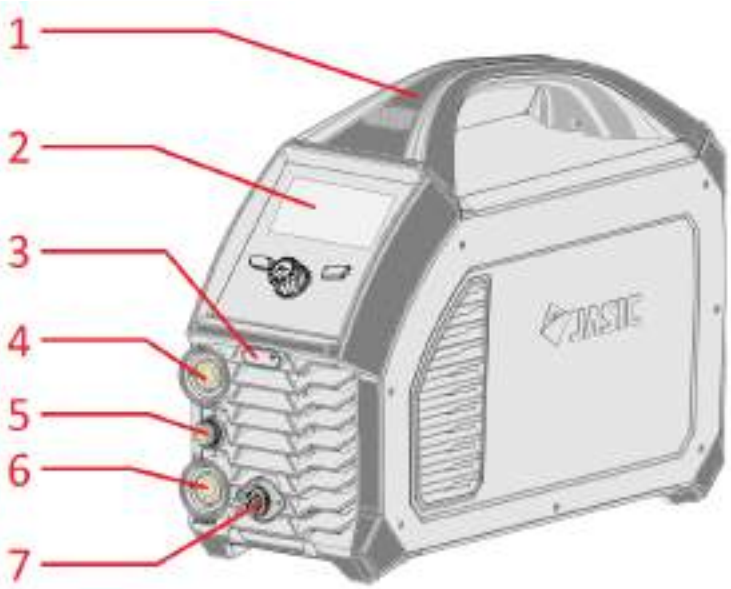

Smart gas

DESCRIPTION OF CONTROLS - JASIC TIG ET-200P ACDC

Front view Jasic TIG ET-200P ACDC

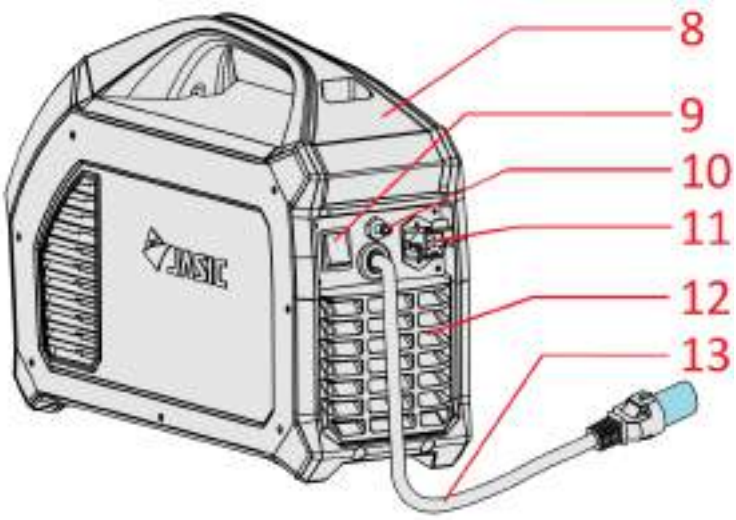
1. Machine carry handle
2. Digital user control panel (see lower down for further information)
3. Wireless remote control (optional)
4. "+" Output terminal*, The connection for the work clamp in TIG mode
5. Shielding gas outlet connector
6. "-" Output terminal*: The connection for the TIG torch in TIG mode
7. Wired remote control 9 pin socket

* Panel socket size is 35/50mm



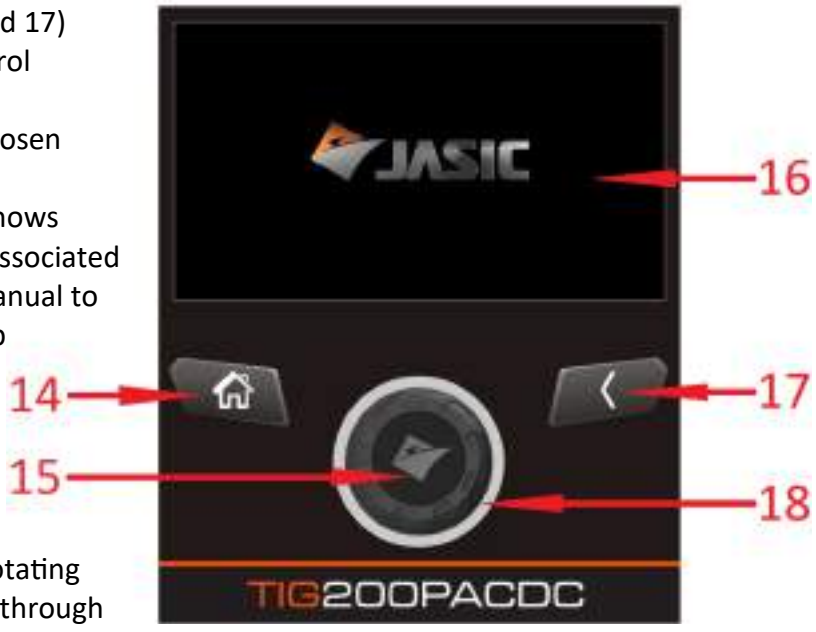
Rear view Jasic TIG ET-200P ACDC

8. Machine carry handle
9. ON/OFF power switch
10. Shielding gas inlet connector
11. Cooler control socket outlet
12. Rear panel with integrated cooling vents
13. Input power cable



Front control panel view Jasic TIG ET-200P ACDC

14. Home Button: Pressing the home button will take you directly back to the home screen (as shown in the display area image on pages 12 and 17)
15. The parameter control dial is also a control button which when pressed 'confirms' entry to another screen option or the chosen parameter being set.
16. LCD screen: The 5" colour display area shows the various welding mode options, the associated welding parameter, error codes, user manual to to the operator. During machine boot up the screen will show the Jasic logo (as shown right)
17. Return button: Pressing the return button takes the user back to the previous screen or option.
18. Parameter adjustment control dial: By rotating this control dial allows the user to scroll through or to make parameter changes that are shown via the display screen



DESCRIPTION OF 'LCD' CONTROL PANEL

Display screen

The display screen offers the operator a wealth of information including operation modes, a vast array of TIG DC/TIG AC and MMA parameters. The home screen is shown right and using the adjustment dial allows you to navigate through the machines options and the following pages will explain in greater details these features.

Parameter adjustment knob

Rotating the control dial clockwise or anti-clockwise allows the operator to scroll though the functions of the machine, increases or decreases parameter values including welding current and when these parameters are adjusted the values are shown in the display screen.

Home Button

Pressing the home button at any time will take directly back to the home screen which is shown in the display screen image below.

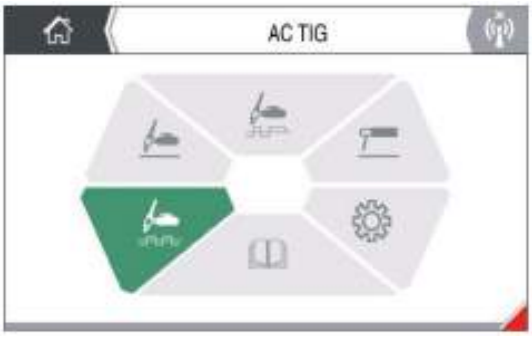
Return Button

The return button will take you back to the previous screen and the 'upper' level of the function you were within.

Display screen options

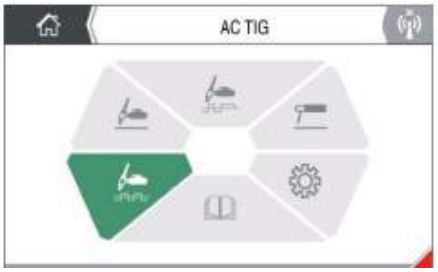
Home Screen

Upon pressing the Home button you will be taken to the home screen (as shown right), default setting for selection is AC TIG, from here you can rotate the control dial to highlight the option you require and to select, simply press the control dial to access: welding mode, settings or operating information.



Selecting TIG Welding Modes

Before commencing any welding, press the Home button to return to the home page then rotate the control dial to select either TIG AC, TIG DC, TIG AC MIX welding mode, then press the control dial to select the required welding mode (see page 17 for further details).

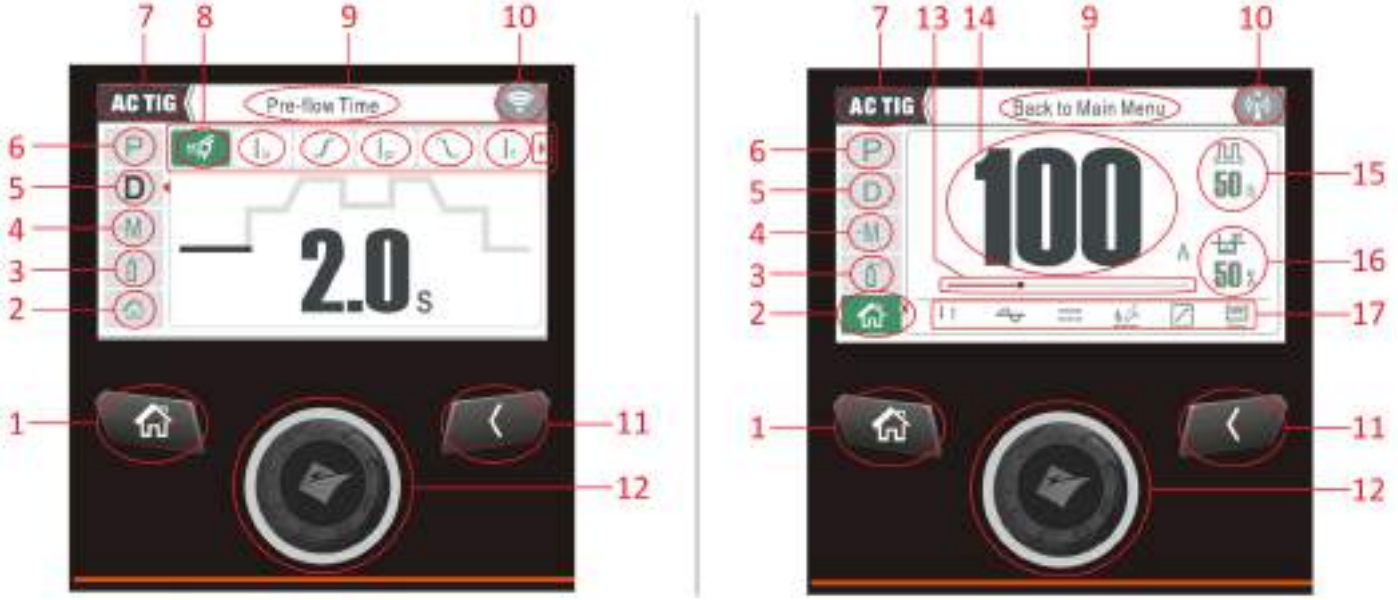


TIG AC Welding Mode

TIG DC Welding Mode

TIG AC Mix Welding Mode

LCD SCREEN ICON FUNCTION DESCRIPTIONS



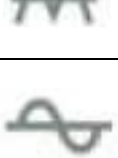
The above control panel images are examples of screen modes you will come across during normal use of the Jasic ET-200P ACDC LCD machine and the below and following pages offer a brief explanation for the icons used.

Item No	Icon		Icon image description
1		Home button	Pressing the 'Home' button will return you to the main menu "Home" screen (as shown on page 17) and following pressing the button the AC TIG option will be highlighted by default.
2		Home icon	When rotating the control dial (item 12) for parameter or mode selection you will note as passing that the selected icon will highlight green, if you then press the control dial button (item 12) in this case the home icon, you will be taken to the home screen. The highlighted icon detail will also be stated in the text area (item 9) top center of the screen.
3		Gas check function	When in a TIG welding mode, rotate the control dial (item 12) until the gas check symbol lights up green, then press the control dial button to enter and activate gas purge, after 20s, the system will automatically exit the gas check function and return to the previous menu. During gas check, if you press any key, you will exit the gas check function.
4		Memory function	When in either TIG or MMA mode the machine can store 4 memory channels for each welding mode (machine total being 16). Rotate the control dial until the -M symbol lights up and press the control button. You will note that the header shows 4 channel slots with the header stating the channel number with the relevant parameters displayed. From here you can save, load and delete welding setups.

LCD SCREEN ICON FUNCTION DESCRIPTIONS

Item No	Icon	Icon Description	Brief Meaning of Setting
5		Parameter Settings	When in either of the TIG modes, D (Parameter settings) is a secondary menu where the TIG welding parameter additional functions can be adjusted and set. For example: pre/post gas, up/down slope, AC frequency, pulse and more.
		Pre Gas Time	Pre-flow time icon, indicates the gas pre-flow time which can be adjusted between 0 ~ 3 seconds.
		Initial (Start) Current	Initial current icon that indicates the start current mode. The start current adjustment range is 20 ~ 200 amps.
		Current Upslope Time	Upslope time icon, indicates the time set for the initial current to reach the peak current when welding, the adjustment range is 0 ~ 10 seconds.
		Peak Welding Current	Peak welding current icon which indicates the preset welding current during operation the range being 5 ~ 200 amps.
		Base Welding Current	Base (low pulse) welding current icon, an option only shown in pulse mode that indicates the base current setting, the low pulse current range is 20 ~ 200 amps.
		Current Downslope Time	Downslope time icon, indicates the time set for the initial current to reach the peak current, the adjustment range is 0 ~ 10 seconds.
		Final (Crater) Current	Initial current icon that indicates the final (crater) current mode. The final current adjustment range is 20 ~ 200 amps.
		Post Gas Time	Post-flow time icon, indicates the gas post-flow time which can be adjusted between 0 ~ 15 seconds.
		AC Frequency	AC frequency icon, indicates the AC frequency when in AC TIG Mode which has an adjustable range of 20 ~ 250Hz.
		AC Balance	AC balance icon, indicates the AC wave balance of tungsten anode time to AC cycle, which has an adjustable range of 20 ~ 60% with the mid point being 40%.
		Pulse Duty Ratio	Duty-ratio icon that indicates the ratio of the peak current time to the pulse period, the adjustment range of 10 ~ 90%.
		Pulse Frequency	Pulse frequency icon that indicates the pulse frequency can be adjusted and set between the range of 0.5 ~ 200Hz.
		Spot Time	Spot welding time icon which allows the user to adjust the spot welding time of between time of 0.1 ~ 10 seconds.
		Mix Frequency	Mixed frequency icon, indicates the mixed AC frequency when in MIX TIG mode, the adjustment range being 1 ~ 25Hz.
		Mix Duty Ratio	Mixed duty-cycle icon, indicates the ratio of DC time to the mixed period, adjustment range being 5 ~ 95%.

LCD SCREEN ICON FUNCTION DESCRIPTIONS

Item No	Icon	Icon Description	Icon image description
6		Function settings	When in either of the TIG modes, P (function settings) is a secondary menu where additional functions can be adjusted and set. For example: Trigger mode, HF or Lift TIG, Waveform, air/water cooled setting.
		2T	This icon represents 2T torch trigger mode, when this trigger option is selected it indicates the machine is in 2T mode.
		4T	This icon represents 4T torch trigger mode, when this trigger option is selected it indicates the machine is in 2T (latch) mode.
		Cycle Mode	This icon represents cycle (repeat) torch trigger mode, selecting this trigger option indicates the machine is in cycle mode.
		Spot Mode	This icon represents spot time trigger mode, selecting this trigger option allows the user to spot weld.
		HF TIG	HF TIG starting mode icon, allows the user to select and use HF arc start ignition when in DC or AC TIG welding mode.
		LIFT TIG	LIFT TIG starting mode icon, allows the user to select and use contact arc start ignition when in DC or AC TIG welding mode.
		Pulse Mode OFF	Pulse OFF icon indicator. When the icon is selected when TIG welding AC or DC pulse mode is turned OFF.
		Pulse Mode ON	Pulse ON icon indicator. When this icon is selected when TIG welding AC or DC pulse mode is turned ON.
		AC TIG Square wave	AC square wave provides fast transitions which provide a responsive and dynamic arc allowing for faster travel speeds
		AC TIG Sawtooth Wave	The triangular wave provides the required peak amperage but the waveform shape has the effect of reducing heat input. This reduction in heat input makes it well suited for thin materials.
		AC TIG Sinusoidal Wave	The sine wave gives the operator a softer feel arc similar to that of older conventional power source. The arc tends to be much wider than the square wave arc.
		Air Cooled Mode	This icon represents that Air Cooled mode has been selected, meaning no water cooler is connected and an air cooled TIG torch is fitted.
		Water Cooled Mode	This icon represents that Water Cooled mode has been selected, meaning a water cooler is connected and a water cooled TIG torch is fitted.
7		Screen Mode Section	English by default. This area displays which home mode option is currently selected, i.e. DC TIG, AC TIG, MIX TIG, MMA, Settings and User Guide.

LCD SCREEN ICON FUNCTION DESCRIPTIONS

Item No	Icon	Icon Description	Icon image description
8	——	Top Icon Bar	This multiple icon bar will show various secondary icon/options when you select and enter either Function Setting (P), Parameter Settings (D) or Memory (–M) options.
9	——	Function Description	English by default. This area displays and explains the current selected operation which is normally highlighted in green.
10		No Wireless Connection	This wireless icon is displayed when no wireless remote control device is connected to the machine.
		Wireless Connection Icon	The "Pairing successful" icon will be displayed when a wireless remote control device has been connected to the machine.
11		Back Button	Pressing the back button will take you to the previous screen or previous menu.
12		Control Dial	Rotating the control dial clockwise or anti-clockwise allows the user to navigate around the options, adjust welding current or the various welding parameters that are available.
		Control Button	The control button function is activated by pressing the front face of the control dial which ‘enters/acknowledges the selected function on the screen.
13	— —	Progress Bar	When welding current is displayed and rotating the control knob to adjust the welding current as you increase or decrease the current value you will note that the progress bar adjusts proportionally with the current preset value.
14	— —	Parameter Setting	When numbers or values are highlighted, rotating the control dial clockwise or anti-clockwise allows the user to increase or decrease the value of the parameter or in the case of the image examples on page 18, the welding current shown is 100amps or the pre-gas time of 2 seconds.
15		AC Frequency Icon & Setting	In AC mode, the display represents AC frequency that allows the user to make quick adjustments during operation.
16		AC Balance Icon and Setting	In AC mode, this display represents AC balance which allows for quick balance adjustment that can be made by the user during operation.
17	— —	Bottom Icon Bar	This multiple icon bar shows the operator a quick view of the ‘background’ set parameters, as per example shown on page 18 for AC TIG (from left to right) parameters are set as follows: 2T trigger mode, AC sine waveform, pulse mode ON, HF start, remote control ON and water cooled enabled. The icons shown can change depending on which TIG welding mode is selected.

NAVIGATING THE ‘LCD’ CONTROL PANEL

On powering up the machine and prior to commencing to weld, press the "Home" button to return to the home page (as shown below) by rotating the control dial you can then select either:

- AC TIG
- DC TIG
- MIX TIG
- MMA

then pressing the control dial will select and take you to the required welding mode parameters.

In addition to the four welding modes, there are two other options in the Home page:

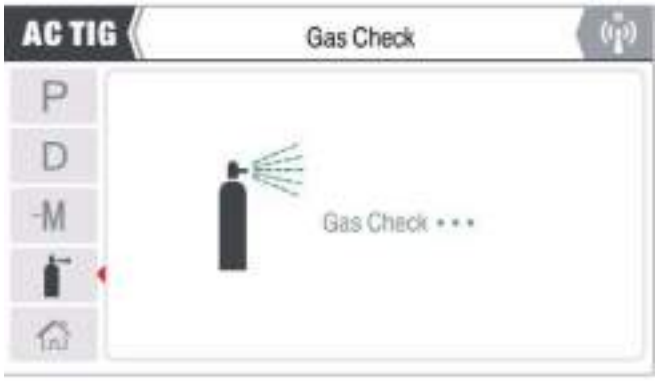
- System Settings
- User Manual

Select the required option, rotate and press the control dial to enter the corresponding page option.

NAVIGATING THE ‘LCD’ CONTROL PANEL

Gas check (purge) function

When in either AC TIG, DC TIG or MIX TIG welding modes and prior to welding you can activate the gas flow function, this allows the user to check and set the gas flow.
With the machine connected to the shielding gas supply, navigate to the gas purge option by rotating the control dial until the gas purge icon is highlighted green (as shown below).



Pressing the control dial button once will activate the gas valve , the screen will change to show and state ‘gas check’ mode has activated and gas flow through the machine and TIG torch will commence, then pressing the control dial button again will turn off the gas flow.

Please Note: If you just press and release this button the gas will purge for 30 seconds and then turn off automatically.

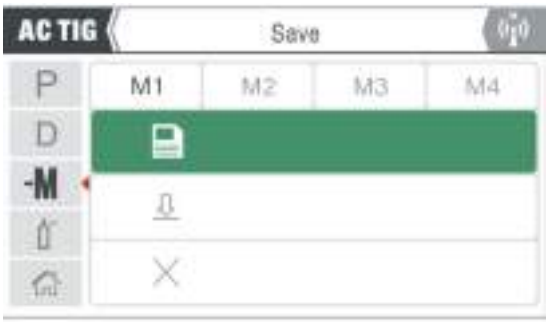
Channel Storage, Recall or Delete

When in either AC TIG, DC TIG, MIX TIG or MMA welding mode and prior to welding you can select a saved welding job or save a welding job to and from the memory function page.

Once in the memory page, you will note there are 4 memory slots to Select "M1", "M2", "M3" and "M4" and if a welding job was saved to any of the 4 welding slots the saved welding parameters will be displayed when you select a memory slot.

Rotating and pressing the control dial on the desired memory slot will then take you to the specific memory slot option page where you have three options of: “Save", “Load” or “Delete”. Selecting your desired option is carried out by rotating the control dial and (for example) pressing the “Load” option recall the saved welding parameters and load said program.

Pressing the back button will take you to the recalled welding screen where you can then commence your welding procedure.



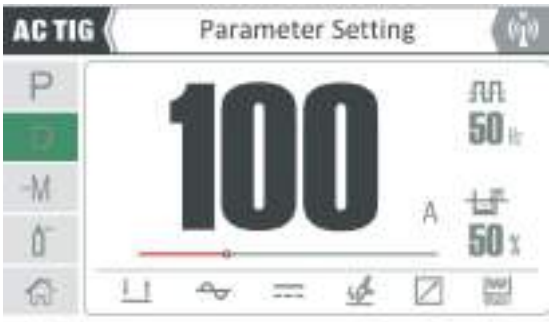
NAVIGATING THE ‘LCD’ CONTROL PANEL

Welding Parameter Setting - Selection and Adjustment

Upon selecting your required welding mode, which could be either AC TIG, AC TIG, MIX TIG or MMA from the "Home" page and for example we will continue to use AC TIG (as shown right). When AC TIG has been selected and then immediately rotating the control dial clockwise or anticlockwise will automatically increase or decrease welding current, this is because pre-set welding current is highlighted green.

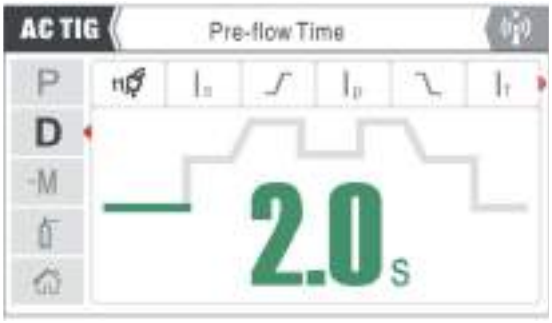
To access and adjust AC TIG welding parameters, press the control dial button which now highlights the pre-set welding current area in a raised rectangle (as shown right).

The welding Parameter Setting access icon is identified by the ‘D’ symbol and rotating the control dial clockwise or anticlockwise will scroll you though all accessible options which are noted by being highlighted green, once the ‘D’ icon is highlighted, then press the control dial button to enter the welding parameter settings page.



On entering the Parameter Settings screen, you will note a row of welding parameter icons and the pre-flow icon is automatically highlighted green.
Rotating the control dial clockwise will scroll you through the available AC TIG welding parameters, rotating the dial anti-clockwise will then take you back through the parameters until ‘D’ is highlighted again.
Rotate the dial until pre-gas is highlighted green and press the control dial button to enter pre-gas time adjustment.

Once you have entered pre-gas time adjustment, you will see that the pre-gas time (as shown right) is now highlighted green. Now rotating the control dial clockwise or anticlockwise will automatically increase or decrease the pre-flow gas time and this is noted in second.
Once set, pressing the control dial button will save your chosen setting and return you to the previous setting of highlighting the pre-flow icon green where you can then rotate the control dial to select the next parameter setting you wish to adjust.



For further information on welding parameter choice, settings and description, go to from page 14.

NAVIGATING THE 'LCD' CONTROL PANEL

Welding Function Setting - Selection and Adjusting

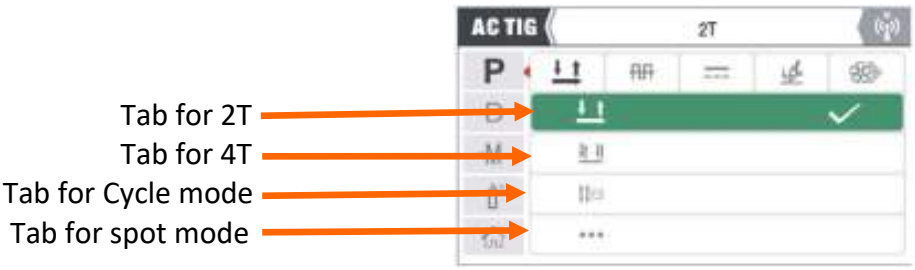
As per previous page, to access and adjust AC TIG Function Settings, press the control dial button which now highlights the pre-set welding current area in a raised rectangle (as shown right).

The welding Function Setting access icon is identified by the 'P' symbol and rotating the control dial clockwise or anti-clockwise will scroll you though all accessible options which are noted by being highlighted green, once the 'P' icon is highlighted, press the control dial button to enter the welding function settings page.

On entering the Functions Settings screen, you will note a row of function setting icons and the 'trigger' control icon will be automatically highlighted green.
Rotating the control dial clockwise will scroll you through the other available AC TIG function settings, rotating the dial anti-clockwise will then take you back through the settings until 'P' is highlighted in green again.
Rotate the dial until the trigger option is highlighted green and press the control dial button to enter trigger mode selection screen.

Once you have entered Trigger selection mode screen, you will see that the trigger (as shown right) is highlighted green on the 2T trigger mode, rotating the control dial clockwise or anticlockwise will scroll you through the trigger mode options. Once set on your required choice, pressing the control dial button will save your chosen setting and return you to the previous setting of highlighting the trigger icon green where

TIG torch trigger operation steps



NAVIGATING THE ‘LCD’ CONTROL PANEL

System Setting - Selection and Adjusting

As per previous pages, to access and adjust System Settings from the home screen, just navigate to the System Settings icon which will be highlighted green (as shown right).
Then press the control dial button to enter this option screen.

Settings Screen

Once entering the system settings screen, you will note a row of setting options as follows:

- User background Settings
- Language
- System Information
- Home

Rotating the control dial clockwise or anticlockwise will allow you to scroll through system icon options.

System Information

To enter the system information screen, rotate the control dial to select the ‘Ver’ icon (as shown right) and press control dial button to access the system information page which reveals the machine information, which is displayed in order from: Rated Current, Software Version No, LCD Version No and Machine Serial No.
Press the return button to go back to the previous screen.

Language Selection

To enter the system information screen, rotate the control dial to select the language icon (as shown right) and press control dial button to access the language choice screen.
Rotating the control dial clockwise or anticlockwise will scroll you through the language choice options.
Once set on your required language choice, pressing the control dial button will save your chosen setting.
Press the return button to go back to the previous screen.

NAVIGATING THE 'LCD' CONTROL PANEL

System Setting - Selection and Adjusting

User Background Settings

As per previous page, to access and adjust user background settings from the home screen, navigate to the background settings icon which will be highlighted green (as shown right). Then press the control dial button to enter this option screen

Settings Screen Options

Once entering the user background settings screen, you will note a row of setting options as follows:

- Overvoltage / Undervoltage Protection Switch (as shown below)
- Sleep Time Adjustment
- Remote Control Mode (Local/Remote)
- Wireless Remote Control Pairing
- Parameter Reset
- Factory Reset

Rotating the control dial clockwise or anticlockwise will allow you to scroll through system icon options.

Overvoltage & Undervoltage Protection Switch

To enter the input voltage protection switch control function screen, rotate the control dial to select the said icon (as shown directly above) and press control dial button to access the control.
Here you can select either OFF or ON for input voltage protection by rotating the control dial and then pressing the control dial button to confirm your choice.
This option is factory set to ON, please speak with Jasic technical before interfering with this setting.

Pressing the control dial button will confirm and save your choice and return you to the previous screen otherwise press the return button to go back to the previous screen.

NAVIGATING THE 'LCD' CONTROL PANEL

System Setting - Selection and Adjusting

Sleep Time Adjustment Option

Standby time is a function that when there is no operator activity with the Jasic TIG machine, then after a pre-determined time (Factory time: 5 minutes) the machine will go into standby (sleep) mode.
To enter the standby sleep timer mode function screen, rotate the control dial to select the said icon (as shown directly below) and press control dial button to access the control.
Here you can select the standby sleep time by rotating the control dial which will scroll through the standby sleep time options of 0, 5, 10 and 15 minutes.
(The Factory default setting is 5 minutes and 0 means the standby time function is switched off).

Pressing the control dial button will confirm and save your choice and return you to the previous screen.

The standby sleep time function is only available in TIG mode (if activated).

If the machine is not used within the preset period of time (5 minutes for example), the machine will then enter a standby state where the unit powers down and the screen will show just the Jasic logo only.
The machine will wake up immediately and the screen show the previous data when either the torch trigger, remote device or if one of the control panel buttons are pressed.

NAVIGATING THE ‘LCD’ CONTROL PANEL

System Setting - Selection and Adjusting

Parameter and Factory reset function

Accessing the parameter and factory reset function, is straight forward, press the ‘home’ button and from the home screen menu, navigate and enter into ‘system settings’ and then enter ‘user background’ settings and then scroll down to either the parameter reset or the factory reset function which the later is shown and highlighted green to the right.

The operational function process is the same for parameter reset as it is for factory reset.

Factory reset function

1. Select the Factory Reset option by pressing the control dial button
2. Rotate the control dial to select and confirm your required option of either "Sure” or “Cancel" as shown below.

3. Once you have pressed the control dial on the highlighted green “sure” tab a new pop up green box will be displayed indicating "Waiting for factory reset", after approximately 10 seconds the system will complete the machine has been reset to factory settings and the screen will return to the home page.

Parameter reset function

1. Select the Parameter Reset option by pressing the control dial button
2. Rotate the control dial to select the required option of either "Sure” or “Cancel".
3. Once you have pressed the control dial on the highlighted green “sure” tab a new pop up green box will be displayed indicating "Waiting for parameter reset", after approximately 10 seconds the system will complete the process and any saved parameter settings have been reset and the screen will go back to the previous menu rather than returning to the home page.

CONTROL PANEL - FUNCTIONS

System Setting - Selection and Adjusting

Restored Parameter Settings

Welding Parameter	Unit	MMA	DC TIG	DC Pulse TIG	AC TIG	AC Pulse TIG	Mixed TIG
Pre-flow time	Seconds	-	0.5	0.5	0.5	0.5	0.5
Initial current	Amps	-	20	20	20	20	20
Up-slope time	Seconds	-	0.5	0.5	0.5	0.5	0.5
Peak current	Amps	-	100	100	100	100	100
Base current	Amps	-	-	50	-	50	-
Down-slope time	Amps	-	0.5	0.5	0.5	0.5	0.5
Final current	Amps	-	20	20	20	20	20
Post-flow time	Seconds	-	2	2	2	2	2
Spot welding time	Seconds	-	1	-	1	-	-
Pulse frequency	Hz	-	-	50	-	50	-
Pulse duty cycle	%	-	-	50	-	50	-
Welding current	Amps	100	-	-	-	-	-
Hot start current	Amps	30	-	-	-	-	-
Arc-force current	Amps	30	-	-	-	-	-
AC Frequency	Hz	-	-	-	20	20	20
Ac Balance	%	-	-	-	20	20	20
Mixed Frequency	Hz	-	-	-	-	-	2
Mixed Duty Cycle	%	-	-	-	-	-	20

The factory parameter settings for the ET-200PACDC machine are as shown in the table below.

VRD Function

Voltage Reduction Device (VRD) is a hazard reducing circuitry inbuilt into welding power sources which is used in the MMA/Stick welding process which reduces the open circuit voltage (OCV) when the voltage output of the machine is ON but not welding to a safe voltage (normally under 20V). VRD has no effect on arc starting.

The factory setting for VRD is ON and The VRD symbol will be on show when the machine is in MMA mode and the output voltage is limited to 11.5V when the machine is idle (as shown right).

Please Note:

- **The VRD icon will go off when the welding arc is established.**
- **VRD can be disabled although this requires a technician to carry out this task, please contact your supplier for further details.**

CONTROL PANEL - FUNCTIONS

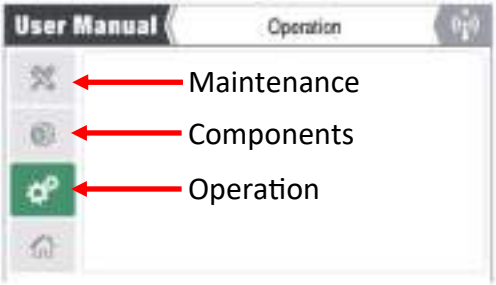
System Setting - Selection and Adjusting

User Manual

Accessing the User Manual is straight forward, press the 'home' button and from this home screen menu, navigate to the notebook icon and press the control dial button to enter the user guide (as shown right).

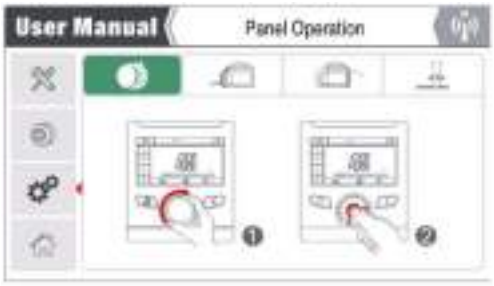
From here you can navigate through various sections and pages of the operating manual.

Please Note: For the latest and more in-depth version of the Jasic ET-200PACDC operating manual, please visit www.jasic.co.uk, navigate to the product page up and then click on the documents tab.



When In the User Manual screen, you can rotate the control dial to select the section tabs on the left of the screen which are:

- Operation
- Components (Spare Parts)
- Maintenance



When you select for example select and enter the operation tab, you will then open up the operation page which also offers a secondary top row of page tabs with further user operational data.
Rotating the control dial will scroll you thorough these pages which will be highlighted green.

- The Operation tab also includes further information on Panel Operation, Front Panel Connection, Rear Panel Operation and Welding Guide.
- The Components (Spare Parts) tab also includes further information on Welding Torch, Consumables, Earth Cable and other parts.
- The Maintenance tab also includes further information on Alarms and Solutions, Repair Parts and Troubleshooting.

When you access or open pages of the operating manual the page maybe larger that the screen, if you then press the control dial button you will enlarge the page, image or chart and will be able to scroll through the page data by rotating the control dial, pressing the control dial button will return you to the previous page.

CONTROL PANEL - FUNCTIONS

System Setting - Selection and Adjusting

Alarm function

The Evo range of machines have inbuilt protection devices and in the unfortunate case of a malfunction, an error code is indicated along with the corresponding error description appears on the LCD display as the example right shows.
As long as an error code is shown, welding operation is generally not possible.

There are seven alarm conditions that the machine can experience as follows:

Overcurrent Protection (E10), Undervoltage Protection (E31), Overvoltage Protection (E32),
Data error alarm (E55), Overheat Protection (E60), Overheat protection (E61), Water Cooler Alarm (E71).

See the 200PACDC operating manual for further information on error codes and troubleshooting them.

Screen (Saver) Protection Mode

When the machine is switched on but has not been operated or used for a set period of time (standby time, see page 23 for further details), the unit will enter into standby (idle) mode and the machine will enter sleep mode although the screen display will only show the protection image which is the Jasic logo (as shown right).

The machine will wake up immediately and the screen will show the previous data if either the torch trigger, remote device or one of the control panel buttons are pressed.

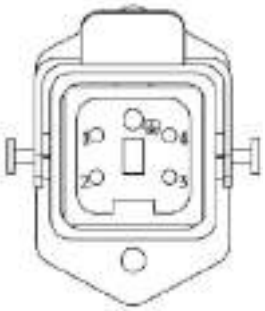
Water cooler control

Depending on whether you are using an air or water cooled TIG torch will depend on if the water cooled control mode is set to enabled or disabled.
When in any TIG welding mode, either an icon indicator will show either an air cooled icon or the water cooled icon option, the icon that shows indicates that is the mode selected.

- If the  indicator is showing, this indicates that the machine is setup as air-cooled.
- If the 

indicator is showing, this indicates that the machine is setup as water-cooled.

With a water cooler fitted and the control enabled when the output is activated and welding starts the water cooler will start and then circulate the coolant around the system, when welding stops and there is no current output, the water cooler will continue to circulate coolant for 5 minutes before stopping.



<u>Always enable water-cooled mode when using a water-cooled TIG welding torch.</u>

The 5 pin cooler control socket is mounted on the rear panel of the machine.

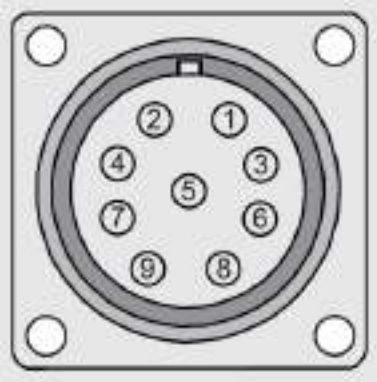
- Pins 1 and 2 is the power output connections for the water cooler.
- Pins 3 and 4 is the fault signal input connections (no coolant flow signal).

See pages 33 of this manual or further information is available within the ET-200PACDC operating manual on how to enable and deactivate the water cooler mode.

Please Note:
The EVO ET-200PACDC can only use the originally designed LC30 Jasic water cooler. Do not use water coolers purchased from other manufacturers.

REMOTE CONTROL SOCKET

The Jasic TIG ET-200PACDC is fitted with 9 pin remote control socket located on the front panel which is used to connect various remote control devices, for example: a TIG torch with trigger switch, a TIG torch with mounted switch and current adjustment dial, a foot pedal or other similar devices including MMA remote control devices.



When fitting the 9 pin remote plug, ensure you align the keyway when inserting the plug, then rotate the threaded collar fully clockwise until finger tight.

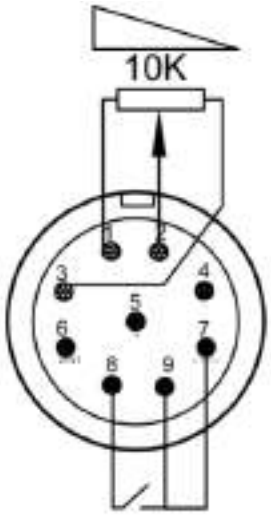
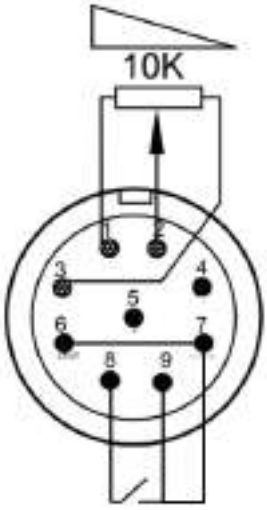
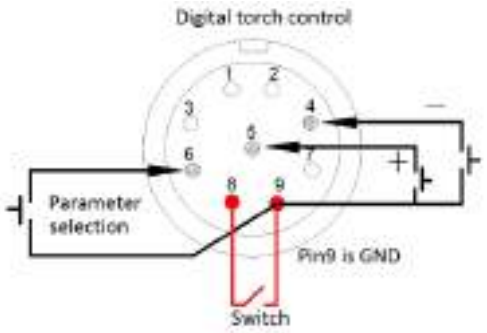
The 9 pin plug and clamp part number is: JSG-PLUG-9PIN

9 Pin Remote socket configuration			
Pin	**Description**	**Signal**	**Description MMA**
1	Potentiometer (min)	VCC	Power supply
2	Potentiometer wiper	ASI	Analog signal
3	Potentiometer (max)	A_GND	Analog signal GND
4	- (negative)	DIG_SI -	Digital signal -
5	+ (positive)	DIG_SI +	Digital signal +
6	Parameter selection	TYPE1	Foot pedal controller recognition /Digital signal Selection
7	TYPE	TYPE	Analog signal recognition （Connected to GND）
8	Torch switch	TORSWI	Torch switch signal
9	Torch switch/ground	GND	GND

Remote device activation

To activate the remote control when using a wired type remote control. Press the home button and select the settings option, then select the user background option, then scroll down to the ‘control mode’ option which gives the operator the choice to select either local or remote control mode, once selected press the control dial button to enter your choice and you will be returned to the previous screen.
For further information please see page 29.

Remote Control Device Wiring

Analog torch	Pedal remote controller	Digital Torch
		

WIRED REMOTE CONTROL FUNCTION

Remote Control Option

The EVO machine range of machines allow the user to use either wired or wireless technology for remote control purposes that offers the user to use wired or wireless hand or foot controls when using the machine in MMA or TIG AC/DC welding modes.

The remote selection control allows the user to select current control from either the front panel or to be controlled remotely either via the 9 pin control socket or via the optional wireless control for MMA and TIG remote control devices.

To enter the remote control mode function screen, rotate the control dial to select the control mode icon (as shown right) and press control dial button to access this function.

Here you can select the remote control ON or OFF by rotating the control dial which will scroll through either ON/OFF options.

Pressing the control dial button will confirm and save your choice and return you to the previous screen.

WIRELESS REMOTE CONTROL FUNCTION

Wireless Remote Control Option

As stated above the EVO range can also allow the user to use wireless technology for remote control purposes that offers the user to use wireless hand or foot controls when using the machine in MMA or TIG AC/DC welding modes.

Wireless Remote Control Pairing Procedure

To use a remote control wireless device, first you need to ensure that you have a fitted the wireless receiver to your machine, see page 16 of this operating manual for further detail.

WIRELESS REMOTE CONTROL FUNCTION

Wireless Remote Control Pairing Procedure:

As per previous pages, to access wireless pairing from the home screen, navigate and enter into System Settings and then enter User Background settings and then scroll down to Turn on Wireless Pairing which will be highlighted green (as shown right).

Then press the control dial button to enter the wireless pairing option screen.

- At this point, ensure your remote wireless device is charged and turned ON
- On accessing the pairing screen, the machine will automatically start to scan for a wireless device
- This is confirmed by the screen showing “Pairing, please wait”
- Ensure that your remote device is in pairing mode (see remote control instructions supplied with your device)

Once wireless pairing is successful the screen will display connection confirmation by stating "Pairing successful !" and the wireless connection indicator icon display the wireless icon without a ‘x’ above it.
You will also note that the highlighted green bar has changed from Turn ‘on’ to Turn ‘off’ wireless.

Once this task is completed either press the ‘back’ button or press the ‘home’ button to continue to use the machine.

Disconnecting the wireless connection:

After a wireless remote control device was successfully paired, disconnecting is similar to above.
There is 2 ways to disconnect the wireless device:

1. Press and hold the remote control device pairing key or
2. Access the machines wireless remote control pairing option screen and press the control dial button on the highlighted green “turn off wireless remote control pairing” tab.

Once the wireless device is disconnected the screen will show the wireless ‘disconnected’ icon and the highlighted green tab will change to turn ‘on’ (as shown right).

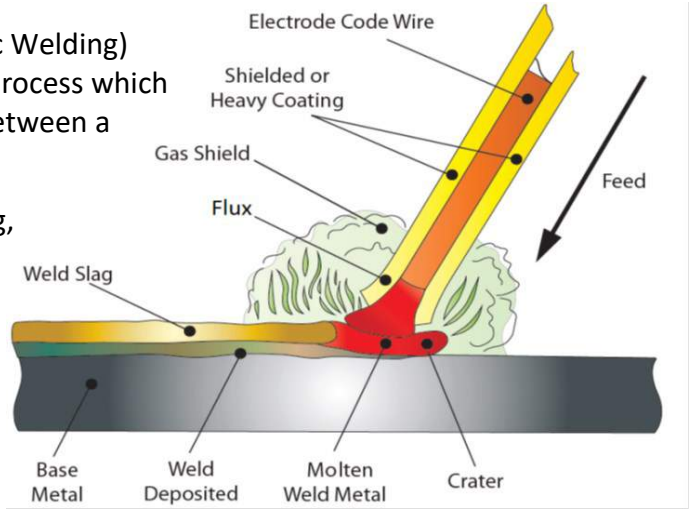
Once this task is completed either press the ‘back’ button or press the ‘home’ button to continue to use the machine.

OPERATION - MMA

Before starting any welding activity ensure that you have suitable eye protection and protective clothing. Also take the necessary steps to protect any persons within the welding area.

MMA welding

MMA (Manual Metal Arc), SMAW (Shielded Metal Arc Welding) or just Stick Welding. Stick welding is an arc welding process which melts and joins metals by heating them with an arc between a covered metal electrode and the work.



Shielding is obtained from the electrode outer coating, often called flux. Filler metal is primarily obtained from the electrode core.

The electrodes outer coating called flux assists in creating the arc and provides a shielding gas and on cooling forms a slag covering to protect the weld from contamination.

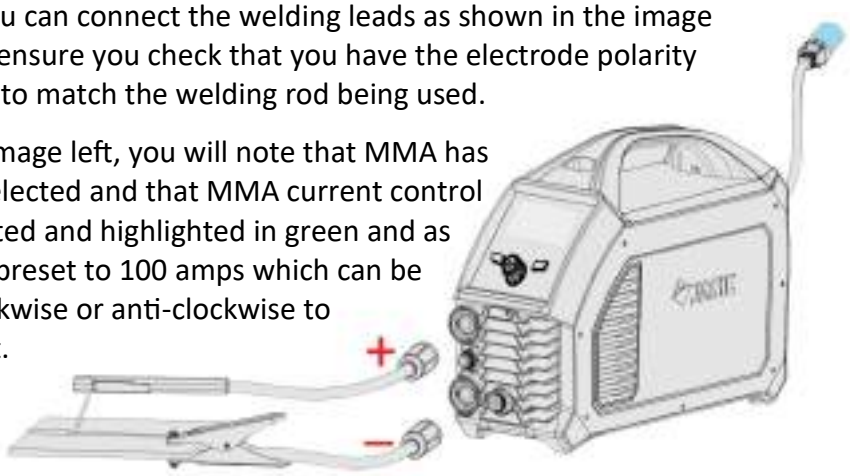
When the electrode is moved along the work piece at the correct speed the metal core deposits a uniformed layer called the weld bead.

After connecting the welding leads as detailed above, plug your machine into the mains supply and turn ‘ON’ the machine, the power switch is located at the rear panel of the machine, place it to the "ON" position, the panel indicator will then light up, the fan may start to rotate as the welding machine powers up and the control panel will also light up to indicate that the machine is ready to use as shown below.

Caution, there is voltage output at both output terminals.

PLEASE NOTE:
Some welding models are equipped with the smart fan function. When the power supply is turned on after a period before welding starts, the fan will automatically stop running.
The fan will then run automatically when welding begins.

Now you can connect the welding leads as shown in the image below, ensure you check that you have the electrode polarity correct to match the welding rod being used.



In the image left, you will note that MMA has been selected and that MMA current control is selected and highlighted in green and as shown preset to 100 amps which can be adjusted by rotating the control dial clockwise or anti-clockwise to increase or decrease the welding current.
In MMA mode you can see if a wireless device has been connected but you cannot not see if the remote control option is turned on or off.

OPERATION - MMA

Before starting any welding activity ensure that you have suitable eye protection and protective clothing as, welding rays, spatter, smoke and high temperatures produced in the process may cause injury to personnel.
Also take the necessary steps to protect any persons within the welding area that may cause injury to.

MMA welding

From the home screen, rotate the control dial and select MMA welding mode by pressing the control dial button until the MMA symbol is illuminated green as shown in the image right.

When entering MMA mode you can easily access and adjust welding current straight away, hot start current and arc force parameters are also accessible and easily as described below.

MMA current adjustment can now be carried out via the panel control dial and this can be achieved by rotating the control dial clockwise or anti-clockwise to increase or decrease the welding current, you will note that the progress bar adjusts proportionally with the current preset value.

Please Note: Welding current adjustment can be carried out during welding.

To access the further MMA welding parameters, press the control dial button which now highlights the preset welding current area in a raised rectangle (as detailed on Page 19) you can now rotate the control dial which as you scroll through will highlight (in a raised box or in green) further parameters and options.

To select MMA ignition current (start current), press the control dial button on the icon shown left and the ignition (start) current icon illuminates green, you can now rotate the control dial clockwise or anti-clockwise until the desired start current is displayed. The start current range is 0 ~ 80 amps.

To select MMA arc force, press the control dial button on the icon shown left and the arc force current icon illuminates green, you can now rotate the control dial clockwise or anti-clockwise Until the desired arc force is displayed. The arc force current range is 0 ~ 40 amps.

If the secondary welding cables (welding cable and earth cable) need to be very long, considering welding cable with larger cross-section to reduce the voltage drop.

VRD indicator

In MMA mode, the VRD LED will be lit to indicate that VRD is active and the machine output voltage is 11.5V.

The table right offers a guide to set up for various welding electrode diameters sizes versus recommended current ranges.
The operator can set their own parameters based on the type and diameter of welding electrode and their own process requirements.

Electrode Size (mm)	Recommended Welding Current (A)
1.0	20 ~ 60
1.6	44 ~ 84
2.0	60 ~ 100
2.5	80 ~ 120
3.2	108 ~ 148
4.0	140 ~ 180
5.0	160 ~ 250

PLEASE NOTE:
The operator should set the parameters that meet the welding requirements. If the selections are incorrect this may lead to problems such as an unstable arc, spatter or sticking of the welding electrode to the work piece.

OPERATION - TIG

Before starting any welding activity ensure that you have suitable eye protection and protective clothing. Also take the necessary steps to protect any persons within the welding area.

TIG DC operation steps

From the home screen, rotate the control dial to highlight DC TIG mode and then pressing the control dial button will take you to the DC TIG control mode screen (as shown below).

To select TIG features like, trigger mode, pulse, arc starting and TIG torch cooling type you need to access the welding Function Setting which is noted by the icon 'P' (see pages 15 and page 20 for further instruction).

On entering the Functions Settings screen,* you will note the relevant row of function setting icons as shown below.

Rotating the control dial clockwise will scroll you through the options and pressing the control dial button will enter you to your selected choice screen and as above from left to right is: trigger mode, pulse mode, arc starting mode and water cooled control.
For example, I have shown below the torch trigger and arc striking modes.

Once you have entered the chosen mode screen, you will see your options and the currently selected choice which has a tick alongside.
Pressing the control dial button, then rotating the dial will scroll through the choices on offer. Once set on your required choice, pressing the control dial button will save your chosen setting (confirmed by a tick) and return you to the previous setting of highlighting the trigger icon green where you can then rotate the control dial to select the next function setting you wish to adjust.

*** Please Note:**
The available options within the Functions Settings screen can change depending on which TIG welding mode is selected i.e. DC, AC or MIX TIG.

OPERATION - TIG

Before starting any welding activity ensure that you have suitable eye protection and protective clothing. Also take the necessary steps to protect any persons within the welding area.

TIG DC operation steps

To select TIG welding parameter features like, pre-gas, slope up pulse current background setting and more you need to access the welding Function Setting which is noted by the icon 'D' (see pages 14 and 19 for further instruction).

On entering the Parameter Settings screen, you will note the DC TIG relevant row of function setting icons.

Image 1

Image 2

You will note in image 1 the small red arrow which denotes that there are more parameters available to adjust the red arrow to the right of the image above will be visible and rotating the control dial will scroll you through the full selection choice (see image 2).

To select pre-flow gas time setting, rotate the control dial until the pre-gas icon is highlighted (as above), then press the control dial button and the green highlight will now change to the parameter setting where by rotating the control dial you will adjust the pre flow time shown in the image right. Pre-flow adjustment range is 0 ~ 3 seconds.

Follow the above 'pre-flow gas' adjustment and setting procedure to select and set the following TIG procedures:

Initial start current setting and the start current adjustment range is 5 ~ 200 amps (230v mode).

Upslope time setting and the upslope time adjustment range is 0 ~ 10 seconds.

Welding current setting and the welding current adjustment range is 10 ~ 200 amps (230v mode).

Downslope time setting and the downslope time adjustment range is 0 ~ 10 seconds.

Final amps (crater current) setting and the he final current adjustment range is 5 ~ 200 amps (230v mode).

Post-flow gas time setting and the post flow adjustment range is 0 ~ 15 seconds.

If Spot weld mode is selected then the option spot time will show and the spot time adjustment range is 0.1 ~ 10 seconds.

- After the parameters are set appropriately, open the gas valve of the cylinder and adjust the gas regulator to the desired gas flow.
- Keep the torch 2-4mm away from the work piece and then press the torch trigger.
- Gas will start to flow followed by the HF and the arc is ignited.
- Once the arc is ignited the HF will cease and the current rises up to the pre-set value and welding can be carried out.
- After releasing the torch trigger, the current begins to decrease automatically to the crater (final) current value.
- The welding arc stops with gas still flowing for the pre-set post flow time and welding ends.

OPERATION - TIG

Before starting any welding activity ensure that you have suitable eye protection and protective clothing. Also take the necessary steps to protect any persons within the welding area.

TIG DC pulse operation steps

To turn pulse control on or off when in DC TIG mode, first you need to access this option from the welding function setting section which is identified by the 'P' symbol, see image 1 below.
On entering this function and rotating the control dial clockwise you will scroll you though all options available that are highlighted in turn green. When selecting pulse option, press the control dial button and you will enter the pulse control screen as shown in image 2.
Here you have the option of turning pulse on or off, rotate the control dial until the bottom tab is highlighted green and press the control dial button, this will move the confirmation tick to the bottom tab as shown in image 2.

Image 1

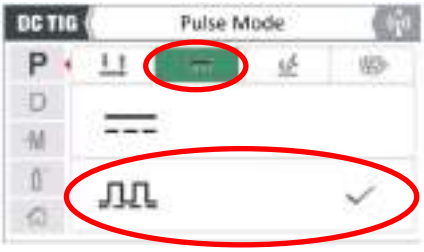


Image 2

Image 3

Pressing the back button will now take you back to the main DC TIG control screen as shown in image 3 and you will now note that the pulse symbol illuminated which informs the operator that TIG pulse is now active.

Proceed with the setting up of pre gas, upslope, welding current, downslope time, final (crater) current and post flow gas time as per standard TIG DC (See page 33).

NOTE: In pulse mode, the welding current setting now becomes the peak welding current of the pulse.

Now pulse mode is active, you now need to select the TIG pulse additional welding parameter and to facilitate this, you need to again access the welding Function Setting which is noted by the icon 'D' (see pages 14 and 19 for further instruction).

On entering the Parameter Settings screen, you will note the additional pulse features function setting icons.


Image 1


Image 2

You will note in image 1 above the small red arrow which denotes that there are more parameters available to adjust the red arrow to the right of the image above will be visible and rotating the control dial will scroll you through the full selection choice (see image 2).

To select these parameters, rotate the control dial until the pre-gas icon is highlighted green (as above), you can now scroll through all the parameter options by rotating the control dial, when you wish to adjust your selected parameter, press the control dial button and then rotate the dial to adjust selected setting. See the following page for more detail a DC pulse settings.

OPERATION - TIG

Before starting any welding activity ensure that you have suitable eye protection and protective clothing. Also take the necessary steps to protect any persons within the welding area.

TIG DC pulse operation steps

When in DC TIG mode with pulse turned ON, you will note the addition pulse parameters circled in red below.

Image 1

Image 2

And these are listed in a little more detail below:

The welding current setting now becomes the peak welding current which has an adjustment range of 5 ~ 200 amps (230v mode).

The next step is to select and adjust the additional pulse parameters and these are only seen when the pulse mode is selected.

To select the background current (base or low pulse), rotate the dial until the base current icon is highlighted green, then press the dial and the base current is now highlighted green, then rotating the control dial will adjust the background current and the adjustment range of 5 ~ 200 amps. (230v mode).

To select and set pulse frequency, rotate the dial until the pulse icon is highlighted green, then press the dial and the pulse Hz is now highlighted green and then rotating the control dial will adjust the pulse frequency rate between 0.5Hz to 200Hz.

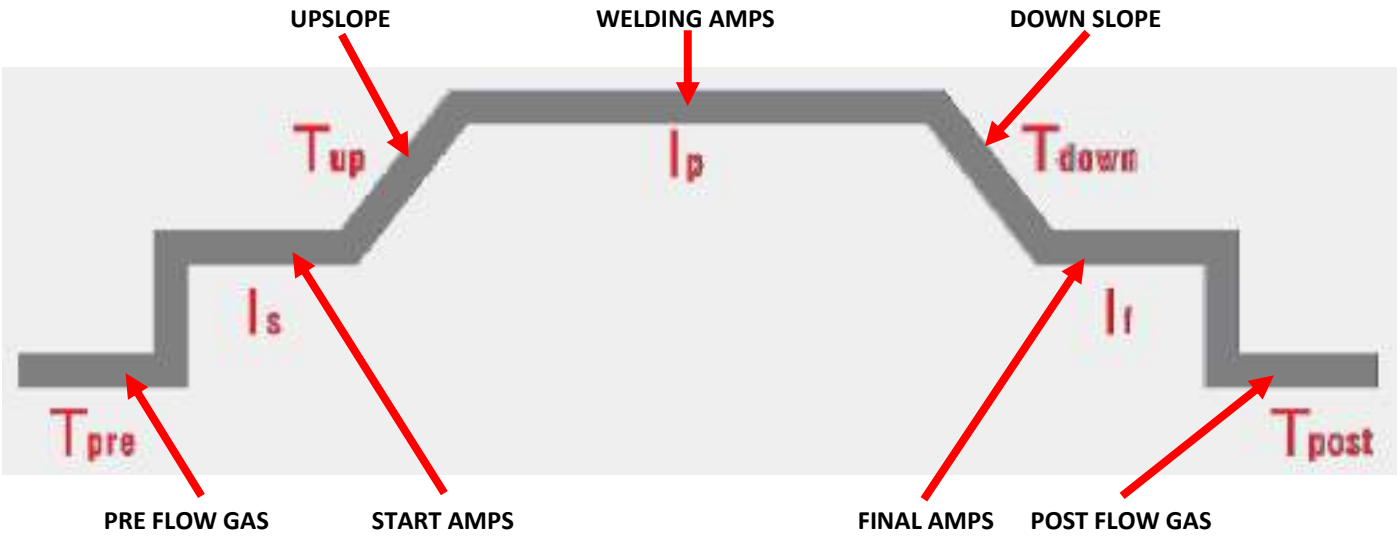
To select and set the pulse ratio (width), rotate the dial until the pulse width is highlighted green, then press the dial and the width % is now highlighted green and then by rotating the control dial will adjust the pulse ratio rate between 10% ~ 90% .

- After the parameters are set appropriately, open the gas valve of the cylinder and adjust the gas regulator to the desired gas flow.
- Keep the torch 2-4mm away from the work piece and then press the torch trigger.
- Gas will start to flow followed by the HF and the arc is ignited.
- Once the arc is ignited the HF will cease and the current rises up to the pre-set value and welding can be carried out.
- After releasing the torch trigger, the current begins to decrease automatically to the crater (final) current value.
- The welding arc stops with gas still flowing for the pre-set post flow time and welding ends.

Please Note:
When a parameter setting has been selected and adjusted, the screen will default back to the welding current setting when no other control have been touched after approximately 2 seconds.

JASIC TIG200PACDC LCD - DC TIG - Quick Set-Up Guide

For DC TIG welding, set up as below, ensure you place the machine in DC TIG, 2T trigger mode, Pulse turned OFF, HF ON and current control set to Local/panel control and depending on TIG torch type fitted either water or air cooled set (for this example water cooled is set).



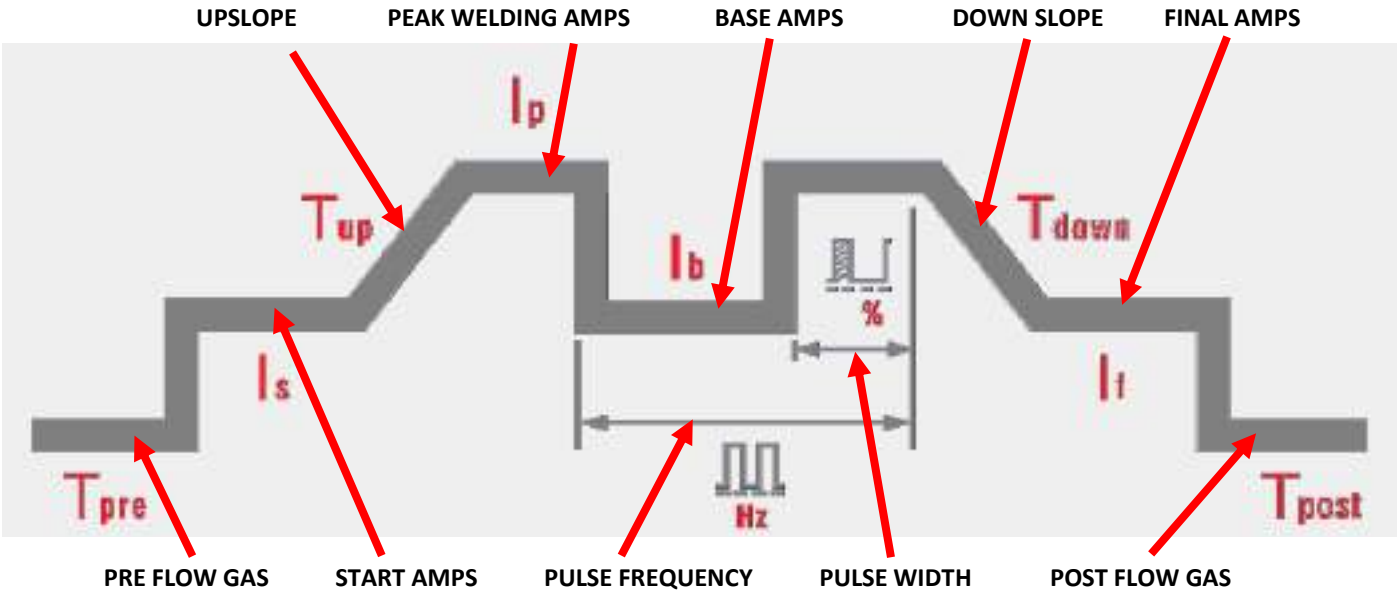
Set parameters as follows using control panel image above as reference

Parameter	Units	Adjustable Range	Guide Setting	User Setting
Job/Material	---	---	---	
PRE-GAS TIME	Seconds	0 ~ 3	0.5	
START-CURRENT	Amps	5 ~ 200	15	
UP-SLOPE TIME	Seconds	0 ~ 10	0	
PEAK WELDING AMPS *	Amps	5 ~ 200	User defined *	
DOWN-SLOPE TIME	Seconds	0 ~ 10	1	
FINAL CURRENT	Amps	5 ~ 200	10	
POST-GAS TIME	Seconds	0 ~ 10	2	

* Depends on material thickness (30A per mm) eg. 3mm = 90A

JASIC TIG200PACDC LCD - DC TIG PULSE - Quick Set-Up Guide

For DC TIG welding, set up as below, ensure you place the machine in DC TIG, 2T trigger mode, Pulse turned ON, HF ON and current control set to Local/panel control and depending on TIG torch type fitted either water or air cooled set (for this example air cooled is set).



Set parameters as follows using control panel image above as reference

Parameter	Units	Adjustable Range	Guide Setting	User Setting
Job/Material	---	---	---	
PRE-GAS TIME	Seconds	0 ~ 3	0.5	
START-CURRENT	Amps	5 ~ 200	15	
UP-SLOPE TIME	Seconds	0 ~ 10	0	
PEAK WELDING AMPS *	Amps	5 ~ 200	User defined *	
BASE CURRENT **	Amps	5 ~ 200	50% **	
PULSE FREQUENCY	Hz	0.5 ~ 200	1	
PULSE WIDTH	%	10 ~ 90	50	
DOWN-SLOPE TIME	Seconds	0 ~ 10	1	
FINAL CURRENT	Amps	5 ~ 200	10	
POST-GAS TIME	Seconds	0 ~ 10	2	

* Depends on material thickness (30A per mm) eg. 3mm = 90A

** Set base current to 50% of your peak welding current

OPERATION - TIG

Before starting any welding activity ensure that you have suitable eye protection and protective clothing. Also take the necessary steps to protect any persons within the welding area.

TIG AC operation steps

From the home screen, rotate the control dial to highlight AC TIG mode and then pressing the control dial button will take you to the AC TIG control mode screen (as shown below).

As with DC TIG, to select features like, trigger mode, pulse, arc starting and TIG torch cooling type you need to access the welding Function Setting which is noted by the icon 'P' (see pages 15 and 25 for further instruction) and for the above example as shown in the bottom bar of icons, we have selected 2T torch trigger, sinusoidal waveform, pulse off, remote current control and water cooling on.

On entering the Functions Settings screen (P),* you will note the relevant row of function setting icons as shown below and that in AC mode you have the additional parameter of AC waveform selection which is circled in red below.

Rotating the control dial clockwise will scroll you through the options and pressing the control dial button will enter you to your selected choice screen and as above from left to right shows is;

- Trigger mode,
- AC waveform,
- Pulse mode,
- Arc starting mode
- Water cooled control.

The example shown right, shows the AC waveform options which when selected lists the waveform choices underneath, you can see that AC square wave is the currently selected choice which has a tick alongside, from here you can also select sawtooth or sinusoidal waveforms and for further information on AC waveforms, please see page 15.
Pressing the control dial button, then rotating the dial will scroll through the other choices on offer. Once set on your required choice, pressing the control dial button will save your chosen setting (confirmed by a tick) and return you to the previous setting of highlighting the trigger icon green where you can then rotate the control dial to select the next function setting you wish to adjust.

*** Please Note:**
The available options within the Functions Settings screen can change depending on which TIG welding mode is selected i.e. DC, AC or MIX TIG.

OPERATION - TIG

Before starting any welding activity ensure that you have suitable eye protection and protective clothing. Also take the necessary steps to protect any persons within the welding area.

TIG AC operation steps

To select TIG welding parameter features like, pre-gas, slope up pulse current background setting and more you need to access the welding Function Setting which is noted by the icon 'D' (see pages 14 and 20 for further instruction)

On entering the Parameter Settings screen, you will note the AC TIG relevant row of function setting icons.

Image 1

Image 2

You will note in image 1 the small red arrow which denotes that there are more parameters available to adjust the red arrow to the right of the image above will be visible and rotating the control dial will scroll you through the full selection choice (see image 2).

To select pre-flow gas time setting, rotate the control dial until the pre-gas icon is highlighted (as above), then press the control dial button and the green highlight will now change to the parameter setting where by rotating the control dial you will adjust the pre flow time shown in the image right. Pre-flow adjustment range is 0 ~ 3 seconds.

Follow the above 'pre-flow gas' adjustment and setting procedure to select and set the following TIG procedures:

Initial start current setting and the start current adjustment range is 5 ~ 200 amps (230v mode).

Upslope time setting and the upslope time adjustment range is 0 ~ 10 seconds.

Welding current setting and the welding current adjustment range is 10 ~ 200 amps (230v mode).

Downslope time setting and the downslope time adjustment range is 0 ~ 10 seconds.

Final amps (crater current) setting and the he final current adjustment range is 5 ~ 200 amps (230v mode).

Post-flow gas time setting and the post flow adjustment range is 0 ~ 15 seconds.

This icon represents AC TIG frequency, the AC frequency adjustment range is 20 ~ 250Hz.

This icon signifies AC wave balance and the AC balance adjustment range is 20 ~ 60% with the balanced zero point being 40.

Please Note:
When a parameter setting has been selected and adjusted, the screen will default back to the welding current setting when no other control have been touched after approximately 2 seconds.

OPERATION - TIG

Before starting any welding activity ensure that you have suitable eye protection and protective clothing. Also take the necessary steps to protect any persons within the welding area.

TIG AC operation steps continued

- After the parameters are set appropriately, open the gas valve of the cylinder and adjust the gas regulator to the desired gas flow.
- Keep the torch 2-4mm away from the work piece and then press the torch trigger.
- Gas will start to flow followed by the HF and the arc is ignited.
- Once the arc is ignited the HF will cease and the current rises up to the pre-set value and welding can be carried out.
- After releasing the torch trigger, the current begins to decrease automatically to the crater (final) current value.
- The welding arc stops with gas still flowing for the pre-set post flow time and welding ends.

AC wave forms

Pressing the AC wave button will allow you to scroll through 3 wave types used in AC welding, the waveform selections are:

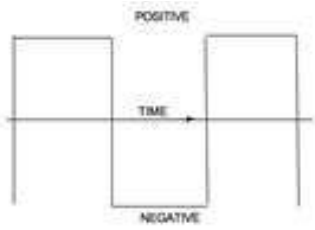
1. Square wave
2. Triangle wave
3. Sine wave

Depending on your selection the corresponding LED indicator will illuminate.

Waveforms summary:

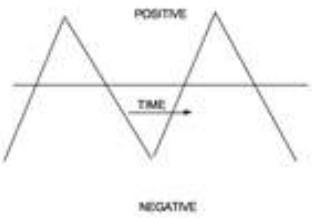
The waveform selection should be made to meet a specific requirement or operator preference and the waveforms available with the ET-200PACDC are as follows:

AC square wave:



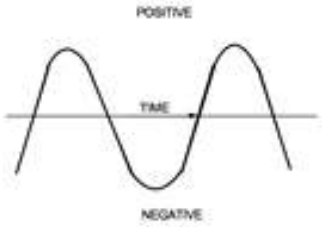
This provides fast transitions which provide a responsive and dynamic arc. The fast transitions eliminate the need for continuous HF. The focused arc provides good directional control.
Square wave offers improved cleaning of the oxide film on aluminium, more power and penetration, giving fast puddle freezing along with deep penetration and fast travel speeds.

Triangular wave:



The triangular wave provides the required peak amperage but the waveform shape has the effect of reducing the heat input. This reduction in heat input makes it particularly suited to thin material welding.
Triangle wave is ideally suited to thinner materials as it reduces the heat input especially in vertical or overhead joints and require to have the puddle freeze quickly! It also allows for faster travel speeds.

AC sine wave:



The sine wave gives the operator a softer feel arc similar to that of the older conventional power source. The arc tends to be much wider than the square wave arc.
The sine wave AC waveform is like the older transformer type TIG welding machines which mimic's the AC TIG welding performance of 'transformer' type machines for that similar traditional arc performance.

OPERATION - TIG

Before starting any welding activity ensure that you have suitable eye protection and protective clothing. Also take the necessary steps to protect any persons within the welding area.

TIG AC operation steps

Mix (Hybrid) mode:

The 'hybrid' mix AC TIG mode allows for the selected AC waveform to be mixed with a positive element which increases the cleaning action of aluminium oxides along with increasing welding speeds. When the mixed indicator is ON, this indicates that the machine is in Mix AC DC mode and the additional Mix controls will be active. Mixed AC-DC output is suitable for welding thicker aluminium, magnesium and their alloys.

The MIX TIG welding option offers a combination of either:
1. Square wave and DC
2. Triangle wave and DC
3. Sine wave and DC

Please Note:
When mix mode is active, pulse control is deactivated and will not show as an option.

AC Waveform selection:

When in AC MIX TIG mode, you can still scroll through the 3 wave types used in AC welding, Square wave , Triangle wave and Sine wave.
These 3 waveforms are easily changed by pressing the wave waveform button (shown left) and depending on your selection the corresponding LED indicator will illuminate.

On entering the Parameter Settings screen, you will note for AC MIX TIG the relevant row of function setting icons.

In image 1 (below) the small red arrow denotes that there are more parameters settings available and are accessed by rotating the control dial which will scroll you through the full selection choice (see image 2).
Apart from the 2 circled parameters below, the rest of the parameters are as AC TIG.


Image 1


Image 2

Mixed frequency parameter and adjustment.

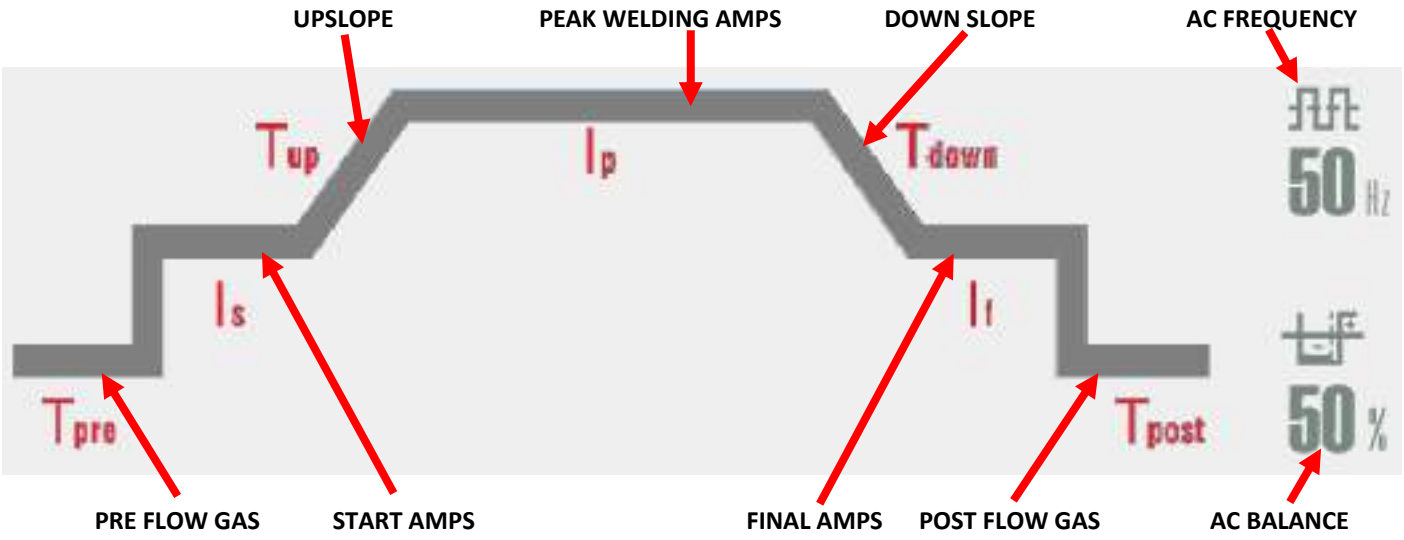
To select and set the mix frequency, rotate the control dial until the mix frequency icon is highlighted and then press the control dial button, then by rotating the control dial you will be able to adjust the mix frequency rate between the range of 10% ~ 90% .

Mixed duty-cycle parameter and adjustment.

To select and set the ratio of DC time, rotate the dial until the mix duty icon is highlighted, then press the control dial button, then by rotating the control dial you will be able to adjust the mix duty cycle % between the range of 10% ~ 90% .

JASIC TIG200PACDC LCD - AC TIG - Quick Set-Up Guide

For DC TIG welding, set up as below, ensure you place the machine in AC TIG, 2T trigger mode, AC sine wave, Pulse turned OFF, HF ON and current control set to Local/panel control and depending on TIG torch type fitted either water or air cooled set (for this example water cooled is set).



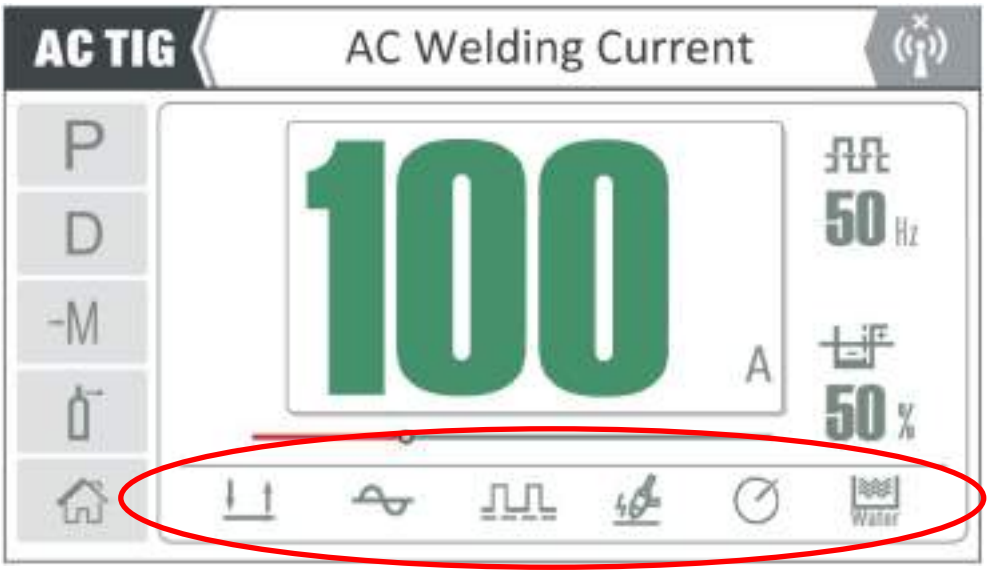
Set parameters as follows using control panel image above as reference

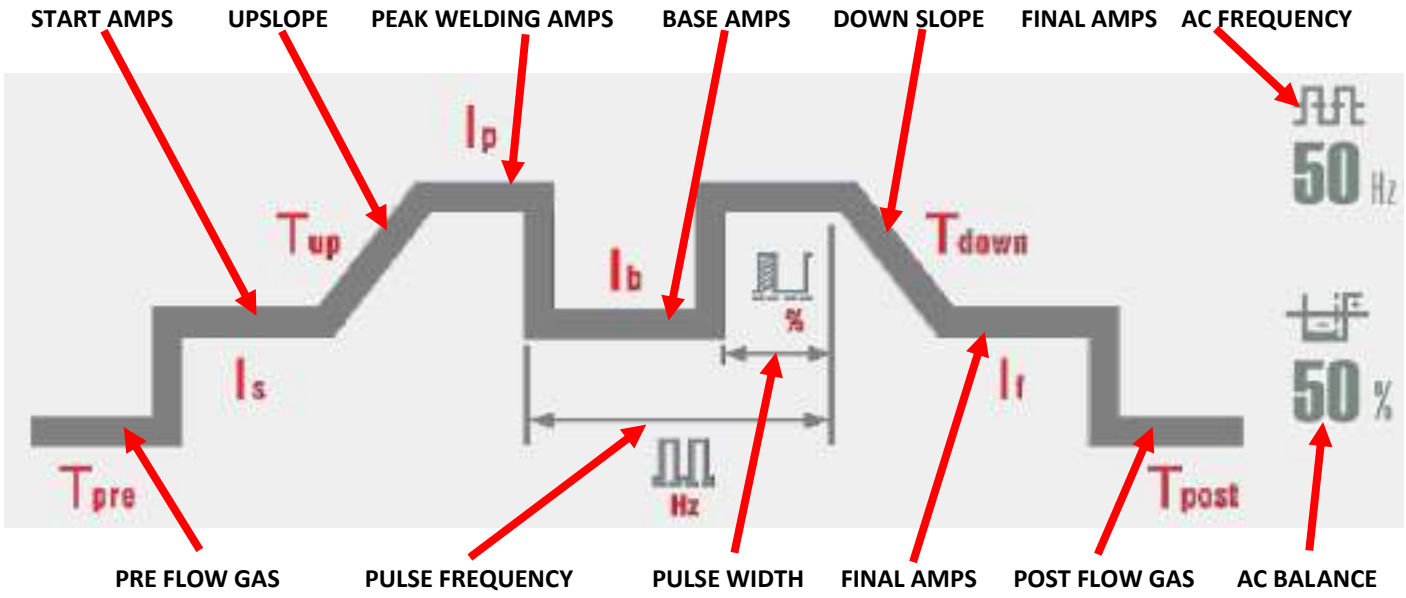
Parameter	Units	Adjustable Range	Guide Setting	User Setting
Job/Material	---	---	---	
PRE-GAS TIME	Seconds	0 ~ 3	0.5	
START-CURRENT	Amps	5 ~ 200	20	
UP-SLOPE TIME	Seconds	0 ~ 10	0	
PEAK WELDING AMPS *	Amps	5 ~ 200	User defined *	
AC FREQUENCY	Hz	20 ~ 200	70	
AC BALANCE	%	20 ~ 60	40	
DOWN-SLOPE TIME	Seconds	0 ~ 10	1	
FINAL CURRENT	Amps	5 ~ 200	10	
POST-GAS TIME	Seconds	0 ~ 15	3	

* Depends on material thickness (30A per mm) eg. 3mm = 90A

JASIC TIG200PACDC LCD - AC TIG PULSE - Quick Set-Up Guide

For DC TIG welding, set up as below, ensure you place the machine in AC TIG, 2T trigger mode, AC sine wave, Pulse turned ON, HF ON and current control set to Local/panel control and depending on TIG torch type fitted either water or air cooled set (for this example water cooled is set).





Set parameters as follows using control panel image above as reference

Parameter	Units	Adjustable Range	Guide Setting	User Setting
Job/Material	---	---	---	
PRE-GAS TIME	Seconds	0 ~ 3	0.5	
START-CURRENT	Amps	5 ~ 200	20	
UP-SLOPE TIME	Seconds	0 ~ 10	0	
PEAK WELDING AMPS*	Amps	5 ~ 200	User defined *	
BASE AMPS**	Amos	5 ~ 200	50% **	
AC FREQUENCY	Hz	20 ~ 200	70	
AC BALANCE	%	20 ~ 60	40	
PULSE FREQUENCY	Hz	0.2 ~ 200	1	
PULSE WIDTH	%	10 ~ 90	50	
DOWN-SLOPE TIME	Seconds	0 ~ 10	1	
FINAL CURRENT	Amps	5 ~ 200	10	
POST-GAS TIME	Seconds	0 ~ 15	3	

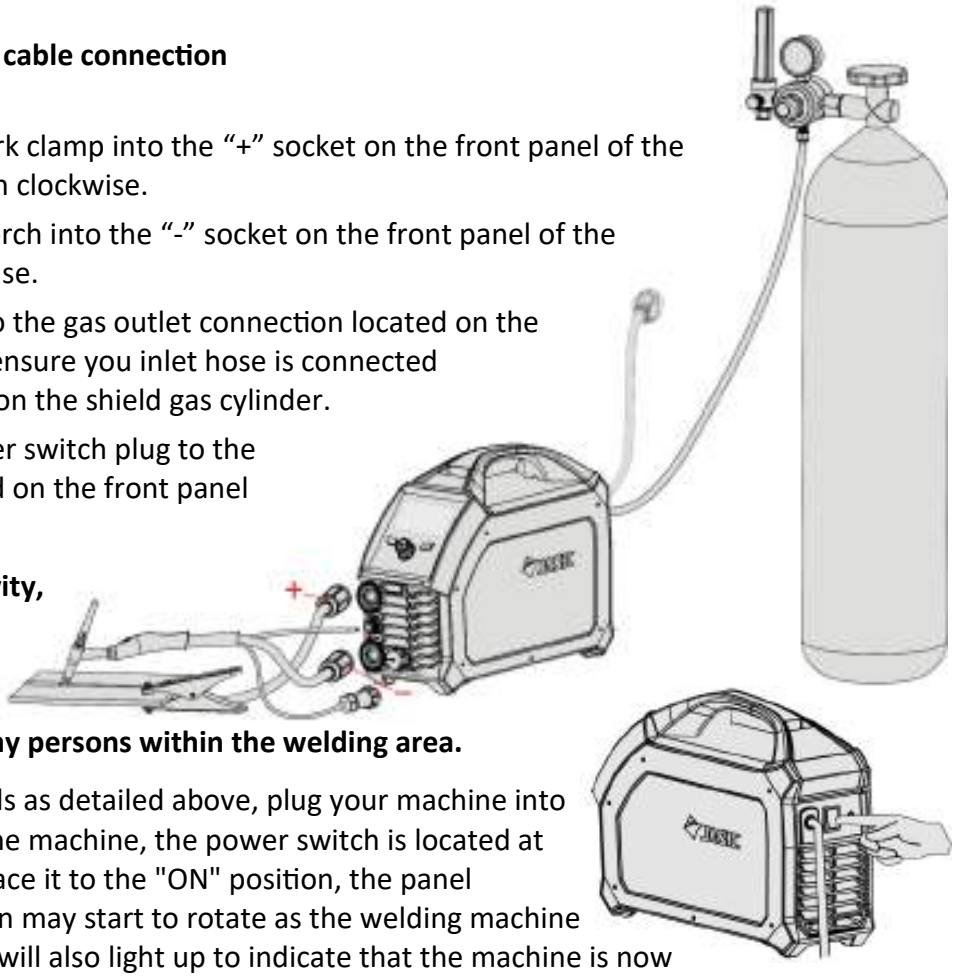
* Depends on material thickness (30A per mm) eg. 3mm = 90A

** Set base current to 50% of your peak welding current

TIG SETUP LIFT TIG

Before starting any welding activity ensure that you have suitable eye protection and protective clothing as, welding rays, spatter, smoke and high temperatures produced in the process may cause injury to personnel.
Also take the necessary steps to protect any persons within the welding area that may cause injury.

LIFT TIG welding torch and earth cable connection



Insert the cable plug with the work clamp into the “+” socket on the front panel of the Jasic welding machine and tighten clockwise.

Insert the cable plug of the TIG torch into the “-” socket on the front panel of the Jasic machine and tighten clockwise.

Connect the TIG torch gas hose to the gas outlet connection located on the front panel of the machine, also ensure you inlet hose is connected to the regulator which is located on the shield gas cylinder.

Connect the 9 pin TIG torch trigger switch plug to the matching control socket mounted on the front panel of the machine

Before starting any welding activity, please ensure that you have suitable eye protection and protective clothing. Also take the necessary steps to protect any persons within the welding area.

After connecting the welding leads as detailed above, plug your machine into the mains supply and turn ‘ON’ the machine, the power switch is located at the rear panel of the machine, place it to the "ON" position, the panel indicator will then light up, the fan may start to rotate as the welding machine powers up and the control panel will also light up to indicate that the machine is now ready to use as shown below.

Select DC TIG from the home screen, then navigate to the function settings icon ‘P’ by rotating the control dial (image 1) and pressing the control dial button to access the additional functions, navigate to the arc striking mode where you can select either HF TIG start or LIFT TIG mode.

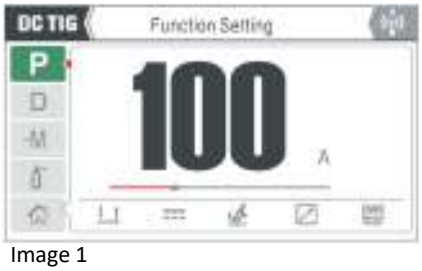


Image 1

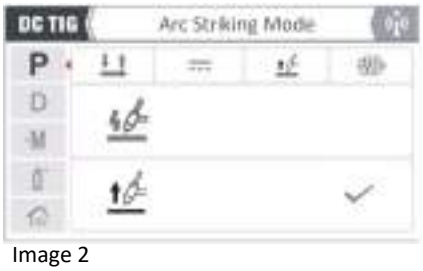


Image 2

(image 2) shows Lift TIG selected.

On pressing your selection you will be taken back to the previous screen and you will not note that the striking icon on the bottom bar will show the Lift TIG symbol .

Set the welding parameters
TIG welding parameters can now be adjusted and set according to your welding requirements, see pages from 39 for further information.

LIFT TIG process
Press the TIG torch switch, then touch the tungsten electrode to the work piece for less than 2 seconds and then lift away to 2-4mm from the work piece and the welding arc is then established.

Once welding is complete release the torch trigger to disengage the welding arc, ensure to leave the torch in place to shield the weld with gas until the shield gas has automatically turned off.

NOTES

NOTES

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