



# ADVANCETIG 250/400ACDC TIG / ARC WELDER

## OPERATING INSTRUCTIONS



### 👉 IMPORTANT!

Read these Operating Instructions Completely before attempting to use this machine. Save this manual and keep it handy for quick reference. Pay particular attention to the safety instructions we have provided for your protection. Contact your distributor if you do not fully understand anything in this manual.



# ADVANCETIG 250/400ACDC

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**250A**  
Max Output (TIG/ARC)

Professional  
TIG Welding of:  
Aluminium, Mild Steel,  
Stainless & More

**4.0mm**  
Max Electrode Size

**15A**  
230V

## 250A Synergic AC/DC Pulse TIG/ARC PFC Inverter Welder



\*Water Cooler  
Optional Add-On

- ✓ **Full Colour LCD Control Screen** - Intuitive and clear visibility and setting for control parameters
- ✓ **TIG Smart Set Synergic Mode** - Easy setting of welding parameters according to material, thickness and joint type (switchable to manual mode)
- ✓ **Active PFC Technology** - Increased duty cycle and energy efficiency. Can be safely used with long extension lead
- ✓ **20 Memory Settings** - Ability to quickly save and recall control settings for specific jobs
- ✓ **AC Sine, Square, Triangle & Mixed AC Wave Options** - Ultimate control for every AC tig welding application
- ✓ **AC/DC Mix & Enhanced Fusion Feature** - Faster AC TIG welding speeds
- ✓ **Modular integrated water cooler option** - Ability to use water cooled torch option in an easily portable, compact package, with torch low coolant sensor protection
- ✓ **IGBT Inverter Technology** - Smooth & stable welding output, increased reliability
- ✓ **Digital Microprocessor Control System** - Accurate and reliable setting of control parameters
- ✓ **Dual Lift TIG and HF Start Modes** - Versatility for welding around sensitive electronic equipment
- ✓ **2T, 4T & Bi Level Trigger Control Modes** - Ease of operator use for all job applications
- ✓ **Dual Mode Remote Control Option** - Digital up/ down button or potentiometer thumb wheel torch remote control options through a single connection plug (optional add on)
- ✓ **Electronic HF Tig Arc Ignition System** - Contamination-free and easy arc starting with low EMF interference
- ✓ **Spot Welding Mode** - Special feature for welding very thin material without heat distortion
- ✓ **Industrial IP23 casing with front panel protection** - Resistant to damage, moisture and corrosion
- ✓ **Lightweight & Compact Design** - Ideal for portable site work applications
- ✓ **Adjustable Arc Force, Hot Start & Automatic Anti Stick Control** - Greater control and ease of use
- ✓ **Generator Friendly** - Designed to work with generator power supply and protect from power surges (9 KVA).
- ✓ **Intelligent Machine Protection System** - Temp., voltage & current sensors for increased reliability & safety
- ✓ **Smart cooling fan system** - Reduces noise and intake of environmental contaminants into machine
- ✓ **Production tested with 440V** - Extreme stress testing in production for rugged reliability.
- ✓ **Quick connect inlet gas fitting** - Tool-less easy connection of gas supply to machine

Description	Details
<b>DIMENSIONS (LxWxH)</b>	580 x 189 x 350mm
<b>WEIGHT</b>	15kg
<b>INPUT POWER SUPPLY</b>	230V AC 15A 50/60Hz
<b>INPUT POWER SUPPLY TOLERANCE</b>	90V-275V AC
<b>MAXIMUM INPUT CURRENT</b>	38A
<b>GENERATOR CAPACITY</b>	9kVA
<b>MMA CURRENT OUTPUT</b>	10-250A
<b>MMA O/C VOLTAGE</b>	78V
<b>MMA DUTY CYCLE</b>	250A@30% 210A@60% 160A@100%
<b>AC/DC TIG CURRENT OUTPUT</b>	5-250A
<b>DC TIG DUTY CYCLE</b>	250A@30% 210A@60% 160A@100%

Description	Details
<b>AC TIG DUTY CYCLE</b>	250A@25% 210A@60% 160A@100%
<b>TIG UP/DOWN SLOPE ADJUST</b>	0-10S
<b>TIG GAS POST/PRE FLOW ADJUSTMENT</b>	0-10S
<b>TIG PULSE FREQUENCY</b>	0.5-200Hz
<b>TIG PULSE WIDTH RANGE</b>	5-95%
<b>AC TIG WAVEFORM</b>	Square, Sine, Triangle, Multi Wave
<b>INSULATION CLASS</b>	IP23
<b>AC FREQUENCY ADJUSTMENT</b>	50-250Hz
<b>POWER EFFICIENCY</b>	80%
<b>POWER FACTOR</b>	0.75
<b>STANDARDS</b>	AS/IEC60974-1:2012
<b>WARRANTY</b>	48 Months

### Includes:



ADVANCETIG250ACDC  
User guide, specs, videos

LEARN MORE





**STRATA**  
SUPERIOR WELDING PRODUCTS

TIG ARC **400A**  
**ADVANCETIG400ACDC**

**400A**  
Max Output (TIG/ARC)

Professional  
TIG Welding of:  
Aluminium, Mild Steel,  
Stainless & More

**4.0mm**  
Max Electrode Size

**32A 400V**  
THREE-PHASE



## 400A Three-Phase Synergic AC/DC Pulse TIG/ARC Inverter Welder



\*\*Available as a package with trolley and water cooler

- ✓ **Full Colour LCD Control Screen** - Intuitive and clear visibility and setting of control parameters
- ✓ **TIG Smart Set Synergic Mode** - Easy setting of welding parameters according to material, thickness and joint type
- ✓ **Active PFC Technology** - Increased duty cycle and energy efficiency. Can be safely used with long extension lead
- ✓ **20 Memory Settings** - Ability to quickly save and recall control settings for specific jobs
- ✓ **AC Sine, Square, Triangle & Mixed AC Wave Options** - Ultimate control for every AC tig welding application
- ✓ **AC/DC Mix & Enhanced Fusion Feature** - Faster AC TIG welding speeds
- ✓ **Modular integrated water cooler** - Easy connection of water cooled torch with low coolant torch protection function
- ✓ **Integrated Heavy Duty Industrial Trolley Option** - Easy to move around the workshop environment
- ✓ **Digital Microprocessor Control System** - Accurate and reliable setting of control parameters
- ✓ **Dual Lift TIG and HF Start Modes** - Versatility for welding around sensitive electronic equipment
- ✓ **2T, 4T & Bi Level Trigger Control Modes** - Ease of operator use for all job applications
- ✓ **Dual Mode Remote Control Option** - Digital up/ down button or potentiometer thumb wheel torch remote control options through a single connection plug (optional add on)
- ✓ **Electronic HF Tig Arc Ignition System** - Contamination-free and easy arc starting with low EMF interference
- ✓ **Spot Welding Mode** - Special feature for welding very thin material without heat distortion
- ✓ **Industrial IP23 casing with front panel protection** - Resistant to damage, moisture and corrosion
- ✓ **IGBT Module Inverter Technology** - Smooth & stable output, increased reliability, high duty cycle
- ✓ **Power Source Wind Tunnel Cooling Design** - Protection against environmental contamination
- ✓ **Adjustable Arc Force, Hot Start & Automatic Anti Stick Control** - Greater control and ease of use
- ✓ **Intelligent Machine Protection System** - Temperature, voltage & current sensors for increased reliability & safety
- ✓ **Phase Loss Protection** - Machine automatically shuts down if power supply phase loss occurs, to prevent damage.
- ✓ **Production tested with 550V** - Extreme stress testing in production for rugged reliability.
- ✓ **Generator Friendly** - Designed to work with generator power supply and protect from power surges.
- ✓ **Smart cooling fan system** - Reduces noise and intake of environmental contaminants into machine
- ✓ **Quick connect inlet gas fitting** - Tool-less easy connection of gas supply to machine

Description	Details
MACHINE DIMENSIONS (LxWxH)	640 x 250 x 500mm
WEIGHT	27kg
INPUT POWER SUPPLY	400V AC 3 Phase 32A 50/60Hz
INPUT POWER SUPPLY TOLERANCE	+/-10%
MAXIMUM INPUT CURRENT	36.5A
GENERATOR CAPACITY	25kVA
MMA CURRENT OUTPUT	10-400A
MMA O/C VOLTAGE	67V
MMA DUTY CYCLE	400A@60% 310A@100%
AC/DC TIG CURRENT OUTPUT	10-400A
AC TIG DUTY CYCLE	400A@60% 310A@100%
TIG UP/DOWN SLOPE ADJUSTMENT	0-10S

Description	Details
TIG UP/DOWN SLOPE ADJUSTMENT	0-10S
TIG GAS POST/PRE FLOW ADJUSTMENT	0-2/0-10S
TIG PULSE FREQUENCY	0.5-999Hz
TIG PULSE WIDTH RANGE	5-95%
AC TIG WAVEFORM	Square, Sine, Triangle, Multi Wave
INSULATION CLASS	IP23
AC FREQUENCY ADJUSTMENT	50-250Hz
DC TIG DUTY CYCLE	400A@60% 310A@100%
POWER EFFICIENCY	85%
POWER FACTOR	0.7
STANDARDS	AS/ IEC60974-1:2012
WARRANTY	48 Months

### Includes:



ADVANCETIG400ACDC  
User guide, specs, videos

LEARN MORE



## TIG WELDING ACCESSORIES & CONSUMABLES

○ Standard ● Optional

ACCESSORY:	EZITIG200DCi	EZITIG200ACDCi	ADVANCETIG250ACDC	ADVANCETIG400ACDC
Arc Leads	○ AAL3550	○ AAL3550	○ AAL3550	○ 17479
Earth Leads	○ AEL3550	○ AEL3550	○ AEL3550	○ 17478
Regulator	○ GR102ARFL	○ GR102ARFL	○ GR101AR-2FL	○ GR101AR-2FL
TIG Torch	○ 32235 ● 17371	○ 24219 ● 17371	○ 17371 ● 17372/33921	○ 17372
TIG Consumables Kit	● DCKIT	● ACDCKIT	● ACDCKIT	● ACDCKIT
Foot Pedal (Electric)	● 31088/33728	● 31088/33728	● 31088/33728	● 31088/33728
Water Cooler	-	-	● 39554	● 22109

### Standard Collets

<b>TC10N23</b>	1.6mm Standard Collet
<b>WT-TC10N24</b>	2.4mm Standard Collet
<b>TC10N25</b>	3.2mm Standard Collet

### Standard Collet Bodies

<b>TCB10N31</b>	1.6mm Standard Collet Body
<b>WT-TCB10N32</b>	2.4mm Standard Collet Body
<b>TCB10N28</b>	3.2mm Standard Collet Body

### Standard Ceramic Cups

<b>TCC10N46</b>	1/2" Standard Ceramic Cup
<b>TCC10N47</b>	7/16" Standard Ceramic Cup
<b>TCC10N48</b>	3/8" Standard Ceramic Cup

### Mild Steel TIG Rods

✓ ER70S-6 Grade.

<b>WT-TR16MS-70S-6</b>	1.6mm x 1m Mild Steel TIG Rods
<b>TR24MS-70S-6</b>	2.4mm x 1m Mild Steel TIG Rods
<b>TR32MS-70S-6</b>	3.2mm x 1m Mild Steel TIG Rods

### Aluminium TIG Rods

✓ 5356 Grade

<b>TR16AL-5356</b>	1.6mm x 1m Aluminium TIG Rods
<b>WT-TR24AL-5356</b>	2.4mm x 1m Aluminium TIG Rods
<b>TR32AL-5356</b>	3.2mm x 1m Aluminium TIG Rods

### Stainless Steel TIG Rods

✓ 316 Grade.

<b>WT-TR16SS-316</b>	1.6mm x 1m Stainless Steel TIG Rods
<b>TR24SS-316</b>	2.4mm x 1m Stainless Steel TIG Rods
<b>TR32SS-316</b>	3.2mm x 1m Stainless Steel TIG Rods

### Tungsten Electrodes

- ✓ Zirconiated for use on aluminium
- ✓ Thoriated for use on stainless and mild steel

<b>TT16-150</b>	1.6mm x 150mm Thoriated Tungsten Electrodes
<b>WT-TT24-150</b>	2.4mm x 150mm Thoriated Tungsten Electrodes
<b>TT32-150</b>	3.2mm x 150mm Thoriated Tungsten Electrodes
<b>TZ16-150</b>	1.6mm x 150mm Zirconiated Tungsten Electrodes
<b>WT-TZ24-150</b>	2.4mm x 150mm Zirconiated Tungsten Electrodes
<b>TZ32-150</b>	3.2mm x 150mm Zirconiated Tungsten Electrodes

### ARC Welding Electrodes - 1KG

<b>WEL1KG-16</b>	1.6mm E6013 GP Electrodes
<b>WEL1KG-20</b>	2.0mm E6013 GP Electrodes
<b>WEL1KG-25</b>	2.5mm E6013 GP Electrodes
<b>WEL1KG-32</b>	3.2mm E6013 GP Electrodes
<b>WEL316-25</b>	2.5mm 316L S/S Electrodes
<b>WEL316-32</b>	3.2mm 316L S/S Electrodes
<b>WEL312-25</b>	2.5mm 312 Weld-All Electrodes
<b>WEL312-32</b>	3.2mm 312 Weld-All Electrodes
<b>WELCi-25</b>	2.5mm Cast Iron NiFe Electrodes
<b>WELCi-32</b>	3.2mm Cast Iron NiFe Electrodes
<b>WEL7018-32</b>	3.2mm 7018 Low Hydrogen Electrodes
<b>WELHF-32</b>	3.2mm HF600 Hard Facing Electrodes

### Weld Torch Coolant

✓ for Tig, Mig, Laser & Spot Welder torches and water coolers

<b>WTC5</b>	5L Weld Torch Coolant
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### Leads & Plugs

<b>CP3550</b>	Welding Lead Cable Plug
<b>17847</b>	17847 - 12 Pin Strata TIG Remote Connection Plug



# ADVANCETIG 250/400ACDC

## Know Your Machine



- 1. Main Control Knob – Refer digital screen basic operation
- 2. Right Control Action Button- Refer digital screen basic operation
- 3. TIG Torch Gas Connector
- 4. Positive (+) welding power output connection socket
- 5. Negative (-) welding power output connection socket
- 6. Remote control 12 pin connection socket
- 7. Right Control Action Button- Refer digital screen basic operation
- 8. Software Update USB Connector
- 9. LCD Color Display Screen





# ADVANCETIG 250/400ACDC

## Digital Screen - Basic Operation



### 1. Main Control Knob

- Turn this knob for digital screen navigation and cycling through menu options. If a menu item is active, turning this knob will adjust the item value.
- Press this knob in order to confirm actions between the weld screen and the weld menu parameters. Pressing this knob also cycles through weld cycle parameters.

### 2. Left Action Button

- Press the Left Action Button to initiate the action in 2a.
- Press and hold for 3s to initiate the action in 2b.

### 3. Right Action Button

- Press the Right Action Button to initiate the action in 3a.
- Press and hold for 3s to initiate the action in 3b.



# ADVANCETIG 250/400ACDC

## Quick Start Guide

### Duty Cycle Rating

Welding duty cycle is the percentage of actual welding time that can occur in a ten minute cycle. E.g. 15% at 105 amps - this means the welder can operate at 105 amps for 1.5 minutes and then the unit will need to be rested for 8.5 minutes. All duty cycle ratings are based on an ambient air temperature of 40°C with 50% humidity, which is the international standard for such a rating. In an environment with temperatures exceeding 40°C, the duty cycle will be less than stated. In ambient temperature less than 40°C, duty cycle performance will be higher.

### Welder Installation

#### Electrical Power Supply

##### AdvanceTig250ACDC

The AdvanceTig250ACDC is designed to operate on a 15A 230V AC power supply

The Strata AdvanceArc PFC technology allows the machine to operate from limited capacity power supplies, such as using a long extension cord. However, as the supply voltage decreases, the maximum output current and duty cycle will also decrease. To utilise the full output capacity of the machine using an extension cord, it should be a heavy duty version with a minimum cable core size of 2.5mm<sup>2</sup>. It is recommended to use the Strata industrial duty 15A extension lead, part number; 16895. If powering from a generator, refer to specification table at the start of this manual for required generator capacity.

##### AdvanceTig400ACDC

The AdvanceTig400ACDC is designed to operate on a 32A 400V 3 Phase AC power supply. If operating the machine using an extension cord, it should be a heavy duty version with a minimum cable core size of 2.5mm<sup>2</sup>. If powering from a generator, refer to specification table at the start of this manual for required generator capacity.

### Operating Environment

Adequate ventilation is required to provide proper cooling for the AdvanceTig250/400ACDC. Ensure that the machine is placed on a stable level surface where clean cool air can easily flow through the unit. The AdvanceTig250/400ACDC has electrical components and control circuit boards which may be damaged by excessive dust and dirt, so a clean operating environment is important for long term reliability.

## Basic Operation

### 1. MMA/ Stick Welding Operation

- 1.1 Connect the earth cable quick connector to the negative welding power output socket (5). Connect the earth clamp to the work piece. Contact with the work piece must be firm contact with clean, bare metal, with no corrosion, paint or scale at the contact point.
- 1.2 Insert an electrode into the electrode holder and connect the electrode holder and work lead to the positive welding power output socket (4). Note: This polarity connection configuration is valid for most GP (General Purpose) MMA electrodes. There are variances to this. If in doubt, check the electrode specifications or consult the electrode manufacturer.
- 1.3 Connect the machine to suitable mains power using the mains input power lead. Switch the mains power switch on the rear of the machine to 'on' to power up the machine.
- 1.4 Select MMA welding mode by turning the main control knob (1) until MMA mode is displayed on the LCD screen, then press the main control knob to enter MMA welding mode.
- 1.5 Select the desired settings according to the 'Digital Screen – MMA' detailed instructions below. You are now ready to weld!





# ADVANCETIG 250/400ACDC

## Digital Screen - MMA (STICK)



1. MMA Settings
2. Advanced MMA Settings
3. Button Functions

### 1. MMA Settings

#### i. Current

#### ii. Pulse

Turn Pulse off or on. Pulse MMA (STICK) welding helps reduce spatter, improves heat control and allows for an easier removal of slag. It also improves the speed and efficiency of vertical up welds by eliminating the use of the “Christmas Tree” technique, while still maintaining root fusion.

#### iii. Waveform

Select DC or AC waveform.

### 2. Advanced MMA (STICK) Settings

#### DC/AC

Setting	Values	Description
Hot Start	0-100%	Hot Start provides an initial burst of current, improving the arc ignition and greatly reducing the chance of sticking.
Hot Start Time	0.5-5s	Set how long Hot Start runs for.
Welding Amp	10-200A	Set the peak welding current.
Arc Force	0-100	Arc Force helps to keep the arc stabilised throughout the weld, by detecting any short circuits and increasing the peak current to prevent the arc cutting out or electrode sticking.

#### DC/AC Pulse

Setting	Values	Description
Hot Start	0-100%	Hot Start provides an initial burst of current, improving the arc ignition and greatly reducing the chance of sticking.
Hot Start Time	0.5-5s	Set how long Hot Start runs for.
Peak Amp	10-200A	Set the peak welding current.
Base Amp	10-200A	Set the base current of the pulse cycle.
Frequency	0.5-400Hz	Set the number of pulses per second.
Pulse Width	5-95%	Set the percentage of the pulse cycle spent in peak amp.

### 3. Button Functions

#### 3a. Home

#### 3b. Save Job (Hold for 3s)

#### 3c. Advanced MMA Settings Menu

#### 3d. Load Job (Hold for 3s)



## ADVANCETIG 250/400ACDC

### 2. TIG Operation

- 2.1 Connect the earth cable quick connector to the positive welding power output socket  
(4). Connect the earth clamp to the work piece. Contact with the work piece must be firm contact with clean, bare metal, with no corrosion, paint or scale at the contact point.
- 2.2 Insert TIG torch power connection into the negative welding power output socket  
(5). Connect TIG torch gas line to machine gas connector (3), tighten nut firmly with a spanner to ensure a positive seal. Connect TIG torch 12 pin remote control pin to machine remote socket (6)
- 2.3 Connect the machine to suitable mains power using the mains input power lead. Switch the mains power switch on the rear of the machine to 'on' to power up the machine.
- 2.4 Select Smart TIG, HF TIG or Lift TIG welding mode by turning the main control knob (1) until the mode is displayed on the LCD screen, then press the main control knob to load the welding mode selection.
- 2.5 Connect the argon gas regulator to the argon gas cylinder and tighten firmly with a spanner. Connect the flexible gas line to the hose tail outlet on the regulator and secure using the hose clamp. Connect the female quick connector on the other end of the gas line to the male gas inlet quick connector on the rear of the machine. Ensure all connections are tight, then open gas cylinder valve. Adjust regulator flow setting to between 5-10l/min as required. Re-check regulator flow pressure pr using gas flow test function or torch switch prior to welding as static gas flow setting may drop once gas is flowing.
- 2.6 Select the desired settings according to the 'Digital Screen – TIG' detailed instructions below. You are now ready to weld!



# ADVANCETIG 250/400ACDC

## Digital Screen - TIG



1. TIG Smart-Set Setup
2. Standard TIG Settings
3. Advanced TIG Settings
4. Button Functions

### 1. TIG Smart-Set Setup

#### i. Material Type

Select the desired material.

- Mild Steel
- Stainless
- Aluminium

#### ii. Joint Type

Select the desired joint type.

- Butt Joint
- Fillet Joint
- Lap Joint

#### iii. Diameter

#### iv. Thickness

#### v. Gas

### 2. Standard TIG Settings

#### i. Current

#### ii. Pulse

Turn Pulse off or on.

#### iii. Torch Trigger

Select the desired Torch Trigger.

Torch Cycle	Description
2T	2T (two touch) means you will need to hold the button down on your High Frequency torch while you weld.
4T	4T (four touch) means you will only need to click the button to ignite the arc and the torch will continue to weld until you click it again to turn it off.
RPT	Repeat (RPT) Mode lets you set a base current which you can switch to at any time during a weld by pressing the trigger button. Heat Control Trigger Mode is great for manual heat input control as you go. During the weld cycle push the torch trigger to switch to the HC Base Amp, and push trigger again to return to the Peak Amp. Hold the torch trigger to end the weld cycle.
SPOT	SPOT mode is consecutive and evenly timed arcs that work well if you want perfectly even tacks and small welds.

#### iv. Waveform

- |       |                      |                    |                      |
|-------|----------------------|--------------------|----------------------|
| 1. DC | 2. Square            | 5. Sine            | 8. Triangular        |
|       | 3. Square-Sine       | 6. Sine-Square     | 9. Triangular-Square |
|       | 4. Square-Triangular | 7. Sine-Triangular | 10. Triangular-Sine  |



# ADVANCETIG 250/400ACDC

## 3. Advanced TIG Settings DC

Setting	Values	Description
Pre-Flow	0-20s	Set how long you would like your gas to flow before the arc ignites.
Start Amp	10-250/400A	Set the starting current when the arc ignites.
Up Slope	0-20s	Set how long it takes for the Start Amp to reach the Peak Amp.
Peak Amp	10-250/400A	Set the peak welding current.
Down Slope	0-20s	Set how long it takes for the Peak Amp to reach the End Amp.
End Amp	10-250/400A	Set the End Amp to adjust how hot your weld will finish.
Post-Flow	0-20s	Set how long you would like your gas to flow after the arc ends.
Q-Start	0-60s	Q-Start improves the spot welding mode by applying an adjustable synergic pulsed program. The program speeds up the spot tacking process and is perfect for sheet metal fitups with gaps.
Dynamic Arc	0-50%	Dynamic Arc keeps the volt amps constant by adjusting the welding current proportionally as the arc voltage increases or decreases during a weld. It helps give better puddle control when weaving, reduced heat input and increased side wall fusion.
Multitack	0-6Hz	Multitack allows you to preset a tacking procedure to reduce the time required for tack welding, and also reduces the heat input in the joint between tacks, improving the quality.

## AC

Setting	Values	Description
Pre-Flow	0-20s	Set how long you would like your gas to flow before the arc ignites.
Start Amp	10-250/400A	Set the starting current when the arc ignites.
Up Slope	0-20s	Set how long it takes for the Start Amp to reach the Peak Amp.
Peak Amp	10-250/400A	Set the peak welding current.
Down Slope	0-20s	Set how long it takes for the Peak Amp to reach the End Amp.
End Amp	10-250/400A	Set the End Amp to adjust how hot your weld will finish.
Post-Flow	0-20s	Set how long you would like your gas to flow after the arc ends.
Balance	±5	Adjust the AC Balance up to 5% above or below the calculated value.
AC Frequency	50-250Hz	Adjust the frequency of the AC waveform.
Mix AC/DC %	0-80%	Mixed AC/DC welding is the combination of TIG AC and TIG DC- in one weld. Mixed AC/DC gives you faster welding speeds, better penetration, a faster weld puddle on cold workpieces, and allows you to weld on thicker materials.
Extra Fusion	0-80%	Extra Fusion is an advanced AC TIG feature that provides greater arc focus at high welding speeds, and provides deep penetration even at low AC frequencies.
Diameter	1.0, 1.6, 2.0, 2.4, 3.2, 4.0	Optimises the welding arc ignition in AC TIG based on the chosen tungsten diameter.
Cap Shaping- AdvanceTig400ACDC Only	On/Off	Automatically balls the tungsten end, eliminating manual preparation for improved efficiency

## DC Pulse

Setting	Values	Description
Pre-Flow	0-20s	Set how long you would like your gas to flow before the arc ignites.
Start Amp	10-250/400A	Set the starting current when the arc ignites.
Up Slope	0-20s	Set how long it takes for the Start Amp to reach the Peak Amp.
Peak Amp	10-250/400A	Set the peak welding current.
Base Amp	10-250/400A	Set the base current of the pulse cycle.
Pulse Width	5-95%	Set the percentage of the pulse cycle spent in peak amp.
Frequency	0.5-999Hz	Set the number of pulses per second.
Down Slope	0-20s	Set how long it takes for the Peak Amp to reach the End Amp.
End Amp	10-250/400A	Set the End Amp to adjust how hot your weld will finish.
Post-Flow	0-20s	Set how long you would like your gas to flow after the arc ends.

## AC Pulse

Setting	Values	Description
Pre-Flow	0-20s	Set how long you would like your gas to flow before the arc ignites.
Start Amp	10-250/400A	Set the starting current when the arc ignites.
Up Slope	0-20s	Set how long it takes for the Start Amp to reach the Peak Amp.
Peak Amp	10-250/400A	Set the peak welding current.
Base Amp	10-250/400A	Set the base current of the pulse cycle.
Pulse Width	5-95%	Set the percentage of the pulse cycle spent in peak amp.
Frequency	0.5-999Hz	Set the number of pulses per second.
Down Slope	0-20s	Set how long it takes for the Peak Amp to reach the End Amp.
End Amp	10-250/400A	Set the End Amp to adjust how hot your weld will finish.
Post-Flow	0-20s	Set how long you would like your gas to flow after the arc ends.
Balance	±5	Adjust the AC Balance up to 5% above or below the calculated value.
AC Frequency	50-250Hz	Adjust the frequency of the AC waveform.
Diameter	1.0, 1.6, 2.0, 2.4, 3.2, 4.0	Optimises the welding arc ignition in AC TIG based on the chosen tungsten diameter.





# ADVANCETIG 250/400ACDC

## DC Spot

Setting	Values	Description
Pre-Flow	0-20s	Set how long you would like your gas to flow before the arc ignites.
Peak Amp	10-250/400A	Set the peak welding current.
Down Slope	0-20s	Set how long it takes for the Peak Amp to reach the End Amp.
End Amp	10-250/400A	Set the End Amp to adjust how hot your weld will finish.
Post-Flow	0-20s	Set how long you would like your gas to flow after the arc ends.
Spot Time	0-10s	Set the length of time to run the SPOT function.
Dynamic Arc	0-50%	Dynamic Arc keeps the volt amps constant by adjusting the welding current proportionally as the arc voltage increases or decreases during a weld. It helps give better puddle control when weaving, reduced heat input and increased side wall fusion.

## AC Spot

Setting	Values	Description
Pre-Flow	0-20s	Set how long you would like your gas to flow before the arc ignites.
Peak Amp	10-250/400A	Set the peak welding current.
Down Slope	0-20s	Set how long it takes for the Peak Amp to reach the End Amp.
End Amp	10-250/400A	Set the End Amp to adjust how hot your weld will finish.
Post-Flow	0-20s	Set how long you would like your gas to flow after the arc ends.
Balance	±5	Adjust the AC Balance up to 5% above or below the calculated value.
AC Frequency	50-250Hz	Adjust the frequency of the AC waveform.
Spot Time	0-10s	Set the length of time to run the SPOT function.
Diameter	1.0, 1.6, 2.0, 2.4, 3.2, 4.0	Optimises the welding arc ignition in AC TIG based on the chosen tungsten diameter.

## DC RPT

Setting	Values	Description
Pre-Flow	0-20s	Set how long you would like your gas to flow before the arc ignites.
Start Amp	10-250/400A	Set the starting current when the arc ignites.
Up Slope	0-20s	Set how long it takes for the Start Amp to reach the Peak Amp.
Peak Amp	10-250/400A	Set the peak welding current.
HC Base Amp	10-250/400A	Set the Base Amp for the Heat Control Trigger.
Down Slope	0-20s	Set how long it takes for the Peak Amp to reach the End Amp.
End Amp	10-250/400A	Set the End Amp to adjust how hot your weld will finish.
Post-Flow	0-20s	Set how long you would like your gas to flow after the arc ends.

## AC RPT

Setting	Values	Description
Pre-Flow	0-20s	Set how long you would like your gas to flow before the arc ignites.
Start Amp	10-250/400A	Set the starting current when the arc ignites.
Up Slope	0-20s	Set how long it takes for the Start Amp to reach the Peak Amp.
Peak Amp	10-250/400A	Set the peak welding current.
HC Base Amp	10-250/400A	Set the Base Amp for the Heat Control Trigger.
Down Slope	0-20s	Set how long it takes for the Peak Amp to reach the End Amp.
End Amp	10-250/400A	Set the End Amp to adjust how hot your weld will finish.
Post-Flow	0-20s	Set how long you would like your gas to flow after the arc ends.
Balance	±5	Adjust the AC Balance up to 5% above or below the calculated value.
AC Frequency	50-250Hz	Adjust the frequency of the AC waveform.
Diameter	1.0, 1.6, 2.0, 2.4, 3.2, 4.0	Optimises the welding arc ignition in AC TIG based on the chosen tungsten diameter.

## 4. Button Functions

### 4a. Home

### 4b. Save Job (Hold for 3s)

### 4c. Advanced TIG Settings Menu

### 4d. Load Job (Hold for 3s)



## Safety

### Store and Retain this Manual

Retain this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number into the NOTES section at the rear, and keep this manual and the receipt in a safe and dry place for future reference.

### Important Safety Information

Failure to follow the warnings and instructions may result in electric shock, fire, serious injury and/or death. Save all warnings and instructions for future reference.



This is the safety alert symbol to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



**DANGER!** indicates a hazardous situation which, if not avoided, will result in death or serious injury.



**WARNING!** indicates a hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION**, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**NOTE**, used to address practices not related to personal injury.

### General Safety Warnings

#### 1. Maintain labels and nameplates on the welder.

These carry important information. If unreadable or missing, contact Euroquip for a replacement.

#### 2. Avoid unintentional starting.

Make sure the welder is setup correctly and you are prepared to begin work before turning on the welder.

#### 3. Unplug before performing maintenance.

Always unplug the welder from its electrical outlet before performing any inspection, maintenance, or cleaning procedures.

#### 4. Never leave the welder unattended while

**ener gised.** Turn power off before leaving the welder unattended.

**5. Do not touch live electrical parts.** Wear dry, insulating gloves. Do not touch the electrode or the conductor tong with bare hands. Do not wear wet or damaged gloves.

#### 6. Protect yourself from electric shock.

Do not use the welder outdoors. Insulate yourself from the work piece and the ground. Use non-flammable, dry insulating material if possible, or use dry rubber mats, dry wood or plywood, or other dry insulating material large enough to cover the area of contact with the work or the ground.

#### 7. Avoid inhaling dust.

Some dust created by power sanding, sawing, grinding, drilling, cutting, welding and other construction activities, contain chemicals known to cause cancer, birth defects or other harm. Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.

#### 8. People with pacemakers should consult their physician(s) before using this machine.



#### **WARNING!**

Electromagnetic fields in close proximity to a heart pacemaker could cause interference, or failure of the pacemaker. The use of a Welder is NOT RECOMMENDED for pacemaker wearers. Consult your doctor.



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### 9. Ensure that the unit is placed on a stable location before use.



#### WARNING!

If this unit falls while plugged in, severe injury, electric shock, or fire may result.

**10. Transportation Methods** Lift unit with the handles provided, or use a handcart or similar device of adequate capacity. If using a fork lift vehicle, secure the unit to a skid before transporting.



#### CAUTION!

Disconnect input power conductors from de-energized supply line before moving the welding power source.

**11. Exercise good work practices.** The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be considered by the operator.

### Welding Safety Instructions & Warnings



#### WARNING!

Protect yourself and others from possible serious injury or death. Keep children away. Read the operating/Instruction manual before installing, operating or servicing this equipment. Have all installation, operation, maintenance, and repair work performed by qualified people.

If an operator does not strictly observe all safety rules and take precautionary actions, welding products and welding processes can cause serious injury or death, or damage to other equipment or property. Safe practices have developed from past experience in the use of welding and cutting.

These practices must be learned through study and training before using this equipment. Some of these practices apply to equipment connected to power lines; other practices apply to engine driven equipment. Anyone not having extensive training in welding and cutting practices should not attempt to weld.

Safe practices are outlined in the European Standard EN60974-1 entitled: Safety in welding and allied processes.



#### WARNING!

Only use safety equipment that has been approved by an appropriate standards agency. Unapproved safety equipment may not provide adequate protection. Eye and breathing protection must be AS/NZS compliant for the specific hazards in the work area.



#### DANGER!

Always wear AS/NZS compliant safety glasses and full face shield fitted with appropriate filter shade number (Refer Filter Table in this safety section)



#### CAUTION!

Heavy-duty work gloves, non-skid safety shoes and hearing protection used for appropriate conditions will reduce personal injuries.



#### CAUTION!

Have the equipment serviced by a qualified repair person using identical replacement parts. This will ensure that the safety of the power tool is maintained.

### Personal Safety



#### CAUTION!

Keep the work area well lit. Make sure there is adequate space surrounding the work area. Always keep the work area free of obstructions, grease, oil, trash, and other debris. Do not use equipment in areas near flammable chemicals, dust, and vapours. Do not use this product in a damp or wet location.

1. Stay alert, watch what you are doing and use common sense when operating equipment. Do not use a tool while you are tired or under the influence of drugs, alcohol or medication. A moment of distraction when operating equipment may result in serious personal injury.
2. Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.



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### Arc Rays can Burn Eyes and Skin



#### **DANGER!**

Arc rays from the welding process produce intense heat and strong ultraviolet rays that can burn eyes and skin.

1. Use a Welding Helmet or Welding Face Shield fitted with a proper shade filter (refer AS 60974-1, AS/NZS 1337.1 and AS/NZS 1338.1 Safety Standards) to protect your face and eyes when welding or watching. (See Filter Table later in this section)
2. Wear approved safety glasses. Side shields are recommended.
3. Use protective screens or barriers to protect others from flash and glare; warn others not to watch the arc.
4. Wear protective clothing made from durable, flame-resistant material (wool and leather) and foot safety protection.
5. Never wear contact lenses while welding.
4. If working on a metal wall, ceiling, etc., prevent ignition of combustibles on the other side by moving the combustibles to a safe location. If relocation of combustibles is not possible, designate someone to serve as a fire watch, equipped with a fire extinguisher, during the welding process and well after the welding is completed.
5. Do not weld or cut on materials having a combustible coating or combustible internal structure, as in walls or ceilings, without an approved method for eliminating the hazard.
6. After welding, make a thorough examination for evidence of fire. Be aware that visible smoke or flame may not be present for some time after the fire has started. Do not weld or cut in atmospheres containing dangerously reactive or flammable gases, vapours, liquids, and dust. Provide adequate ventilation in work areas to prevent accumulation of flammable gases, vapours, and dust.
7. Do not apply heat to a container that has held an unknown substance or a combustible material whose contents, when heated, can produce flammable or explosive vapours. Clean and purge containers before applying heat. Vent closed containers, including castings, before preheating, welding, or cutting.

### Noise Can Damage Hearing



#### **CAUTION!**

Noise from some processes can damage hearing. Use AS/NZS compliant ear plugs or ear muffs if the noise level is high.

### Work Environment Safety



#### **DANGER!**

Remove any combustible material from the work area.

1. When possible, move the work to a location well away from combustible materials. If relocation is not possible, protect the combustibles with a cover made of fire resistant material.
2. Remove or make safe all combustible materials for a radius of 10 metres around the work area. Use a fire resistant material to cover or block all doorways, windows, cracks, and other openings.
3. Enclose the work area with portable fire resistant screens. Protect combustible walls, ceilings, floors, etc., from sparks and heat with fire resistant covers.

### Electricity Can Kill



#### **DANGER!**

Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on.

The input power circuit and machine internal circuits are also live when power is on. In semi-automatic or automatic wire welding, the wire, wire reel, drive roll housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.

1. Do not touch live electrical parts.
2. Wear dry, hole-free insulating gloves and body protection.
3. Insulate yourself from the work and the ground using dry insulating mats or covers.





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4. Disconnect input power before installing or servicing this equipment. Lock input power, disconnect switch open, or remove line fuses so power cannot be turned on accidentally.
5. Properly install and ground this equipment according to national, state, and local codes.
6. Turn off all equipment when not in use. Disconnect power to equipment if it will be left unattended or out of service.
7. Use fully insulated electrode holders. Never dip the holder in water to cool it or lay it down on the ground or the work surface. Do not touch holders connected to two welding machines at the same time or touch other people with the holder or electrode.
8. Do not use worn, damaged, undersized, or poorly spliced cables.
9. Do not wrap cables around your body.
10. Connect work piece to a good electrical ground.
11. Do not touch the electrode while in contact with the work (ground) circuit.

Recommended Protective Filters for Electric Welding		
Description of Process	Approximate Range of Welding Current in Amps	Minimum Shade Number of Filter(s)
Manual Metal Arc Welding - Covered Electrodes (MMA)	Less than or equal to 100	8
	100 to 200	10
	200 to 300	11
	300 to 400	12
	Greater than 400	13
Gas Metal Arc Welding (GWAW) (MIG) other than Aluminium And Stainless Steel	Less than or equal to 150	10
	150 to 250	11
	250 to 300	12
	300 to 400	13
	Greater than 400	14
Gas Metal Arc Welding (GWAW) (MIG) Aluminium and Stainless Steel	Less than or equal to 250	12
	250 to 350	13
Gas Tungsten Arc Welding (GTAW) (TIG)	Less than or equal to 100	10
	100 to 200	11
	200 to 250	12
	250 to 350	13
	Greater than 350	14
Flux-Cored Arc Welding (FCAW) - with or without Shielding Gas	Less than or equal to 300	11
	300 to 400	12
	400 to 500	13
	Greater than 500	14
Air - Arc Gouging	Less than or equal to 400	12
Plasma - Arc Cutting	50 to 100	10
	100 to 400	12
	400 to 800	14
Plasma - Arc Spraying	—	15
Plasma - Arc Welding	Less than or equal to 20	8
	20 to 100	10
	100 to 400	12
	400 to 800	14
Submerged - Arc Welding	—	2 (5)
Resistance Welding	—	Safety Spectacles or Eye Shield

Refer to standard AS/NZS 1338.1 for comprehensive information regarding the above table.



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12. Use only well-maintained equipment. Repair or replace damaged parts as soon as practical.
13. In confined spaces or damp locations, do not use a welder with AC output unless equipped with a voltage reducer.

Arc rays from the welding process produce intense heat and strong ultraviolet rays that can burn eyes and skin. Use the following table to select the appropriate shade number for a Welding Helmet or Welding Face Shield.

### Fumes And Gases



#### WARNING!

Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

1. Keep your head out of the fumes. Do not breathe the fumes.
2. If inside, ventilate the area and/or use an exhaust at the arc to remove welding fumes and gases.
3. If ventilation is poor, use an approved air-supplied respirator.
4. Read the Safety Data Sheets (SDS) and the manufacturer's instruction for the metals, consumables, coatings, and cleaners.
5. Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Shielding gases used for welding can displace air causing injury or death. Be sure the breathing air is safe.
6. Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapours to form highly toxic and irritating gases.
7. Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and if necessary, while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.

### Fire & Explosive Risks



#### WARNING!

Sparks and spatter fly off from the welding arc. The flying sparks and hot metal, weld spatter, work piece, and hot equipment can cause fires and burns.

Accidental contact of electrode or welding wire to metal objects can cause sparks, overheating, or fire.

1. Protect yourself and others from flying sparks and hot metal.
2. Do not weld where flying sparks can strike flammable material.
3. Remove all flammables within 10m of the welding site.
4. Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas.
5. Watch for fire, and keep a fire extinguisher nearby.
6. Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
7. Do not weld on closed containers such as tanks or drums.
8. Connect the work lead/clamp to the job as close to the welding area as practical to prevent welding current from travelling long, possibly unknown paths and causing electric shock and fire hazards.
9. Do not use a welder to thaw frozen pipes.
10. Remove the stick electrode from the holder or cut off the welding wire at the contact tip when not in use.

### Sparks & Hot Metal



#### WARNING!

Chipping and grinding causes flying metal, and as welds cool they can throw off slag.

1. Wear an AS/NZS approved face shield or safety goggles. Side shields are recommended.
2. Wear appropriate safety equipment to protect the skin and body.



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### Cylinders



#### **WARNING!**

Gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

1. Protect compressed gas cylinders from excessive heat, mechanical shocks, and arcs.
2. Install and secure cylinders in an upright position by chaining them to a stationary support or equipment cylinder rack to prevent falling or tipping.
3. Keep cylinders away from any welding or other electrical circuits.
4. Never allow a welding electrode to touch any cylinder.
5. Use appropriate shielding gas, regulators, hoses, and fittings designed for the specific application; maintain them and their associated parts in good condition.
6. Turn your face away from the valve outlet when opening the cylinder valve.



## ADVANCETIG 250/400ACDC

### Warranty

As part of an on-going commitment to excellence in product support, Euroquip offers a comprehensive product warranty program.

#### **Warranty period for the ADVANCETIG 250/400ACDC:**

**Commercial Use: 48 Months**

**Domestic Use: 48 Months**

Warranty covers failure caused by manufacturing and material defects in the product, during the warranty period specified. The warranty period begins when the product is purchased by the end user. Warranty is not transferrable and is only claimable by the original purchaser.

Warranty does not cover parts that are subject to wear and tear from usage.

Warranty covers failure of a product caused by defective materials and/or manufacturing for the period given and the usage specified by Euroquip. The warranty period begins when the product is purchased by the end user. Warranty is not transferrable and is only claimable by the original purchaser.

Warranty also does not cover failure caused by the untimely replacement or service of the above wearing parts. Evidence must be provided that the product has been maintained and serviced suitably for a claim to be considered under warranty.

Failure caused by incorrect operation of the product, lack of proper care and maintenance of the product, external damage, external circumstances such as contaminated fuel or poor water supply, modifications to the product, attempted repair/ service by a party other than an Approved Service Agent, is not covered under warranty.

Warranty does not cover pre delivery service and adjustment, or failure that may occur as a result of lack of/ incorrect pre delivery service and adjustment.

Warranty does not cover any incidental, indirect or consequential loss, damage or expense that may result from any defect, failure or malfunction of a product.

Should any issue be found to be a combination of a warranty failure and a non-warranty issue, the repair cost component to rectify and repair the non-warranty failure is the customers' full responsibility.

The decision that an issue with a product qualifies as a warranty claim is made at the sole jurisdiction of Euroquip.

No costs incurred will be considered under warranty if repairs are carried out by a party other than a Euroquip Approved Service Agent, unless with prior consent in writing from Euroquip.

It is the responsibility of the purchaser to deliver a product under warranty to the nearest relevant service agent or product reseller. Warranty does not cover call outs, mileage and freight costs.

If a product is repaired under warranty, parts and labour required for the repair will be supplied at no charge. Warranty assessment and repair will be scheduled and executed according to the normal work flow at the service location and depending on the availability of suitable replacement parts.

This warranty policy is an additional benefit and does not affect the legal rights of any end user, reseller or service agent.





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Congratulations on your new STRATA product. We are proud to have you as our customer and will strive to provide you with the best service and reliability in the industry. This product is backed by our extensive warranty and world-wide service network. To locate your nearest distributor or service agency visit [www.strata.co.nz](http://www.strata.co.nz), or email us at [customerservice@euroquip.co.nz](mailto:customerservice@euroquip.co.nz)

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