INVERTER ARC/TIG WELDER

130 Amp

INSTRUCTION MANUAL

SPECIFICATIONS

Input Voltage: 240V ~ 50Hz
Welding Current: 10 - 130A
Arc Electrode Size: 1.6 - 3.2mm
Duty Cycle: Arc 15%@130A (25.2V) DC, TIG 20%@130A (15.2V) DC
Cord & Plug: 2.0m/10A
Weight: 4.85kg

The input supply is protected by HRC 30A fuse.

ozito.com.au

WHAT'S IN THE BOX

Inverter Welder
TIG Torch
Arc Electrode Holder
Earth Clamp
Accessories

3 YEAR REPLACEMENT WARRANTY
KNOW YOUR PRODUCT

INVERTER WELDER

1. CONTROLS

Welding Current Control
The welding current can be increased or decreased by turning the Welding Current control knob. The welding current should be set according to the specific application and material.

Process Selection Switch
Select either ARC or TIG welding process.

Power ON LED
The Power ON Indicator illuminates when the power cord is connected to a live mains outlet and the ON/OFF switch is in the ON position.

Thermal Overload LED
When illuminated, wait for the LED to extinguish before resuming welding.

On/Off Switch
Is located on the rear of the Inverter welder.
1. To turn the welder on, select the ON (I) position
2. To turn the welder off, select the OFF (O) position

Output Terminals
Negative (-) terminal is used with the TIG Torch lead when TIG welding.
Positive (+) terminal is used with the ARC electrode lead when ARC welding.

NOTE: Fully insulated lock-type connectors should be used with the Inverter Welders Output Terminals

1. Power On LED
2. Process Selection Switch
3. Thermal Overload LED
4. Positive Output Terminal
5. Negative Output Terminal
6. Welding Current Control
7. On/Off Switch (rear)

8. Earth Clamp
9. Arc Electrode Holder
10. TIG Torch WP-17V
11. Gas Flow Dial
12. Hammer Brush
13. Back Caps, Short & Long
14. Tungsten Electrode, ø1.6mm & ø2.4mm
15. TIG Nozzles, 5 & 6
16. Collets ø1.6mm & ø2.4mm
17. Welding Mask
18. Collet Body, ø1.6 & ø2.4mm

ONLINE MANUAL
Scan this QR Code with your mobile device to take you to the online manual.

3 YEAR REPLACEMENT WARRANTY
2. ARC WELDING ASSEMBLY

**WARNING!** ENSURE THE TOOL IS DISCONNECTED FROM THE POWER SUPPLY BEFORE PERFORMING ANY OF THE FOLLOWING OPERATIONS.

Before starting you will require a suitable Electrode according to the specific material type and thickness.

1. Set Process Selection Switch to ARC WELDING process.

2. Attach Arc Electrode Holder lead to the POSITIVE (+) output terminal. Insert & rotate until connection is firm.

3. Attach Earth Clamp lead to the NEGATIVE (-) output terminal. Insert & rotate until connection is firm.

4. Install thin (uncoated) end of Electrode into the arc electrode holder.

**WARNING!**: Do not touch the electrode while the welder is turned on

5. Attach the Earth Clamp to the work piece ensuring area is free from paint or dirt so that there is a good electrical connection.

6. Connect the Inverter welder power cord into a power outlet.

**WARNING!**

60-80º

**Keep Consistant Height**

2.0mm

Welding Direction

3. ARC WELDING

**Preparation**

Before welding ensure that:
- You have read and understand the safety section of this manual.
- There is sufficient ventilation, particularly at the front and rear of the unit.
- You have an adequate fire-fighting devices on hand.

**WARNING!** ENSURE ALL OIL, PETROL AND FLAMMABLE CONTAINERS HAVE BEEN REMOVED FROM WELDING AREA.

**Electrodes & Welding Current**

The welding current must be regulated in accordance with the diameter of the electrode and the thickness of the steel being used. This will vary with the type of electrodes and material you are using. Below is a guide suggesting suitable currents & thickness for welding steel.

<table>
<thead>
<tr>
<th>Electrode Diameter</th>
<th>Welding Current (Amps)</th>
<th>Thickness of Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>2mm</td>
<td>40 - 60</td>
<td>1.5 - 2mm</td>
</tr>
<tr>
<td>2.5mm</td>
<td>50 - 80</td>
<td>3 - 5mm</td>
</tr>
<tr>
<td>3.2mm</td>
<td>90 - 130</td>
<td>4 - 6mm</td>
</tr>
</tbody>
</table>

**Striking the Arc**

**CAUTION!** Ensure approved protective clothing and welding helmet/mask is worn at all times to protect your face and eyes from arc UV radiation and sparks.

Lower the electrode slowly and proceed to strike the electrode tip against the desired join area on the work piece as if you are striking a match. As soon as you have the arc, try to maintain a distance from the work piece equal to the diameter of the electrode being used, eg 2.0mm electrode, 2.0mm gap.

**Slag**

Slag is refuse left around the weld after welding, this should only be removed after the weld has cooled down and is no longer glowing. Face shield must be worn during removal of slag.
4. TIG WELDING ASSEMBLY

**TIG Torch Parts (included)**

Tungsten Electrode

2% Cerium Tungsten (grey tipped). This tungsten requires less amperage to start so it is recommended for thinner metals, it can be used to weld every type of metal.

Size:
- Ø1.6mm x 175mm
- Ø2.4mm x 175mm

**TIG Nozzles**

Come in a wide variety of shapes and sizes depending on your torch and your welding application.

Size:
- #5, Ø8mm
- #6, Ø10mm

**Collet Body**

Collet bodies screw into the TIG torch and accommodate various size tungsten and their respective collet.

Size:
- 1.6mm I/D
- 2.4mm I/D

**Collets**

Directly hold the tungsten in place when you tighten the back cap and create the electrical contact necessary for good current transfer.

Size:
- 1.6mm I/D
- 2.4mm I/D

**Back Caps**

Apply pressure to the back end of the collet to force it against the collet body. This pressure holds the tungsten in place and seals the torch head from the atmosphere. Back caps simply twist into the back of the torch to prevent the tungsten from slipping.

**Basic TIG Torch**

The components parts of a WP-17V TIG torch, collet bodies and collets are sized to match the electrode and should be fitted in matched sets.

**Preparation**

Before welding ensure that:
- If you have not TIG welded before we recommend consulting external information and practicing first.
- You have read and understand the safety section of this manual.
- There is sufficient ventilation, particularly at the front and rear of the unit.
- You have an adequate fire-fighting devices on hand.

**WARNING:** ENSURE ALL OIL, PETROL AND FLAMMABLE CONTAINERS HAVE BEEN REMOVED FROM WELDING AREA.

**Gas**

When using the TIG function with the Inverter welder, you will require a gas regulator (flowmeter & tank gauge) connected to a bottle of inert gas. We recommend that you check for gas leakage prior to operation of your machine and you close the cylinder valve when the machine is not in use.

These additional accessories are available at your local gas supplier.

**Tungsten Electrode Preparation**

Sharpening tungsten is very important for a nice fine arc strike. Grind lengthwise, not radial.

- **Grind Lengthwise**
- **Not Radial**

- Grind lengthwise, not radial
- 60 grit or finer aluminium oxide
- Flat spot 1/4 - 1/2 x Electrode Diameter
- 2 1/2 Times Electrode Diameter

**TIG Torch Assembly**

1. Nozzle
2. Tungsten Electrode
3. Back Cap
4. Collet Body
5. TIG WELDING

**WARNING!! ENSURE THE TOOL IS DISCONNECTED FROM THE POWER SUPPLY BEFORE PERFORMING ANY OF THE FOLLOWING OPERATIONS.**

Before starting you will require a suitable Regulator and bottle of Inert Gas.

1. **Set Process Selection Switch to TIG WELDING process.**
   - [Image of switch setting]

2. **Attach TIG Torch lead to the NEGATIVE (-) output terminal. Insert & rotate until connection is firm.**
   - [Image of connecting torch]

3. **Attach Earth Clamp lead to the POSITIVE (+) output terminal. Insert & rotate until connection is firm.**
   - [Image of connecting earth clamp]

4. **Set up the gas hose and pressure regulator.**
   - [Image of gas setup]

5. **Attach the Earth Clamp to the work piece ensuring area is free from paint or dirt so that there is a good electrical connection.**
   - [Image of connecting earth clamp to work piece]

6. **Connect the Inverter welder power cord into a power outlet.**
   - [Image of power cord connection]

**Note:** Avoid use of long extension leads.

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**Starting Arc**

**CAUTION!** Ensure approved welding helmet/mask is worn at all times to protect your face and eyes from arc rays and sparks.

1. Hold electrode above work piece at weld start point and enable output of inert gas.
2. Touch electrode to work piece for 1-2 seconds.
3. Slowly lift electrode, arc is formed when electrode is lifted
4. Tilt torch and travel at a consistent speed

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**Different Types of Electrodes**

Tungsten electrodes are colour coded at the end for easy identification.

A couple of the most commonly used tungsten electrodes available in Australia and New Zealand are listed below.

**Tungsten Type:**

- **2% Cerium Tungsten (Grey tipped).** This tungsten requires less amperage to start so it is recommended for thinner metals, it can be used to weld every type of metal.

- **2% Thoriated Tungsten (Red tipped).** They are most commonly used electrodes and are preferred for their longevity and ease of use. Best stability is achieved at medium currents, good arc starts. Commonly used for steel and stainless steel applications.
**Electrode Angle**

The angle that the electrode makes with the work is important to ensure a smooth, even transfer of metal. When welding in down hand, fillet, horizontal or overhead the angle of the electrode is generally between 5 and 15 degrees towards the direction of travel. When vertical up welding the angle of the electrode should be between 70 and 80 degrees to the work piece. A very long arc produces the arc is established. A simple rule for the proper arc length; it should be the shortest arc that gives a good surface to the weld. A very long arc produces a cracking or spluttering noise and the weld metal comes across in large, irregular blobs and gives a rough surface finish to the weld. A short arc is essential if a high quality weld is to be obtained but a excessively short arc will cause sticking of the electrode and result in poor quality welds. For down hand welding is to have an arc length no greater than the diameter of the electrode. If the internal components of the welder should become hot the welder could overheat. If the welder overheats the Thermal Overload Protection feature will automatically shut down the welder.

**Electricity**

Electricity always finds the fastest path to the earth. When the earth cable clamp is connected to the metal work piece a direct earth connection is created back to the welder. When the electrode makes contact with the earthed work piece an arc is created. The electricity flows through the electrode, the metal work piece and then through the earth cable straight back to the welder.

**Arc Length**

To strike the arc, the electrode should be gently scraped on the work until the arc is established. A simple rule for the proper arc length; it should be the shortest arc that gives a good surface to the weld. A very long arc produces a cracking or spluttering noise and the weld metal comes across in large, irregular blobs and gives a rough surface finish to the weld. A short arc is essential if a high quality weld is to be obtained but a excessively short arc will cause sticking of the electrode and result in poor quality welds. For down hand welding is to have an arc length no greater than the diameter of the electrode.

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CARING FOR THE ENVIRONMENT

Power tools that are no longer usable should not be disposed of with household waste but in an environmentally friendly way. Please recycle where facilities exist. Check with your local council authority for recycling advice.

Recycling packaging reduces the need for landfill and raw materials. Reuse of recycled material decreases pollution in the environment.

Please recycle packaging where facilities exist. Check with your local council authority for recycling advice.

DESCRIPTION OF SYMBOLS

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volt (V)</td>
<td>Volts</td>
</tr>
<tr>
<td>A (Ampere)</td>
<td>Current (Ampere)</td>
</tr>
<tr>
<td>Hz (Hertz)</td>
<td>Frequency (Hertz)</td>
</tr>
<tr>
<td>W (Watt)</td>
<td>Power (Watt)</td>
</tr>
<tr>
<td>IP</td>
<td>Protection class</td>
</tr>
<tr>
<td>Single-phase transformer</td>
<td>Rectifier</td>
</tr>
<tr>
<td>Do not operate in the rain</td>
<td>Warning</td>
</tr>
<tr>
<td>Read operator’s manual</td>
<td>Regulator compliance mark</td>
</tr>
</tbody>
</table>

SPARE PARTS

Earth Clamp: SPIWT130-12
Electrode Holder: SPIWT130-13
TIG Torch: SPIWT130-34

Accessories (not included): 2.5mm Welding Rods - ACWRT-2525, 3.2mm Welding Rods - OZACWRT-3220, Magnetic Welding Clamp - ACCWC-0033

Spare parts can be ordered from the Special Orders Desk at your local Bunnings Warehouse.

For further information, or any parts not listed here, visit www.ozito.com.au or contact Ozito Customer Service:

Australia 1800 069 486
New Zealand 0508 069 486
E-mail: enquires@ozito.com.au

TROUBLESHOOTING

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Power</td>
<td>Switch on rear is off</td>
<td>Turn on by moving switch to up position</td>
</tr>
<tr>
<td>Power supply</td>
<td>Test supply with another product, avoid using extension leads.</td>
<td></td>
</tr>
<tr>
<td>Circuit breaker tripped</td>
<td>Check the rating of the circuit breaker on the supply and other appliances connected to the circuit. The welder is a high power device and it is recommended that it be the only appliance on the circuit to ensure it has enough power to operate.</td>
<td></td>
</tr>
<tr>
<td>Difficulty starting arc</td>
<td>Incorrect settings, cable connection</td>
<td>Check AVR/TIG switch is in correct position. Check earth and electrode cables are in correct terminals. Check cable connections to welder are secure, rotate clockwise until tight.</td>
</tr>
<tr>
<td>Earth clamp connection not adequate</td>
<td>Check earth clamp has good connection to material being welded. Surface for clamp connection needs to be bare metal, remove rust or paint.</td>
<td></td>
</tr>
<tr>
<td>Welding technique</td>
<td>Use electrode at correct angle, practice on scrap material.</td>
<td></td>
</tr>
<tr>
<td>Welder cuts out</td>
<td>Thermal overload active</td>
<td>The thermal overload light on the front panel will be on and the welder will not operate until cooled down and the light goes out. This is normal in heavy welding, allow the welder to cool down.</td>
</tr>
<tr>
<td>Poor welding</td>
<td>Incorrect or wet welding electrodes</td>
<td>Select electrode type to suit material, electrodes need to be dry.</td>
</tr>
<tr>
<td>Welding welding electrode</td>
<td>Settings</td>
<td>Increase current to recommended.</td>
</tr>
<tr>
<td>Material</td>
<td>Clean area being welded to bare metal.</td>
<td></td>
</tr>
<tr>
<td>Electrode type and size</td>
<td>Check the electrode type and size is appropriate for the material being used.</td>
<td></td>
</tr>
<tr>
<td>Electrode damage</td>
<td>Replace with new welding rod.</td>
<td></td>
</tr>
<tr>
<td>Excessive welding electrode consumption</td>
<td>Welding current setting too high</td>
<td>Reduce welding current.</td>
</tr>
<tr>
<td>Electrode size too small for material</td>
<td>Change to larger electrode.</td>
<td></td>
</tr>
</tbody>
</table>

ARC WELDING

Poor welding | Incorrect or wet welding electrodes | Select electrode type to suit material, electrodes need to be dry. |
| Settings | Increase current to recommended. |
| Material | Clean area being welded to bare metal. |
| Electrode type and size | Check the electrode type and size is appropriate for the material being used. |
| Electrode damage | Replace with new welding rod. |
| Excessive welding electrode consumption | Welding current setting too high | Reduce welding current. |
| Electrode size too small for material | Change to larger electrode. |

TIG WELDING

Poor welding | Welding tip damaged | Grind tip to point. Replace with new TIG electrode. |
| Gas supply | Check the correct shield gas is being used. Check gas supply connections and flow settings. |
| Welding electrode | Settings | Check welder TIG settings. |

Troubleshooting symbols:

- 1~: Single-phase AC power and rated frequency
- IP: Protection class
- Direct Current (DC)
- S: Suitable for welding in an environment which has high risk of electric shock
- MAG welding: Gas Tungsten Arc Welding (GTAW)

Symbol of single-phase AC power and rated frequency:

Single-phase transformer: Rectifier

Do not operate in the rain: Warning

Read operator’s manual: Regulator compliance mark
The following is a list of spare parts carried by Ozito. Please contact Customer Service for any parts not listed.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Earth Clamp</td>
<td>SPIWT130-12</td>
</tr>
<tr>
<td>13</td>
<td>Arc Electrode Holder</td>
<td>SPIWT130-13</td>
</tr>
<tr>
<td>34</td>
<td>Tig Torch</td>
<td>SPIWT130-34</td>
</tr>
<tr>
<td>35</td>
<td>Accessories</td>
<td>SPIWT130-35</td>
</tr>
</tbody>
</table>

How To Order

Available spare parts can be ordered through the Special Orders Desk at any Bunnings Warehouse. If you have any further questions, please contact Ozito Customer Service on:
Australia: 1800 069 486
New Zealand: 0508 069 486
enquiries@ozito.com.au
**ELECTRICAL SAFETY**

**WARNING!** When using mains-powered tools, basic safety precautions, including the following, should always be followed to reduce risk of fire, electric shock, personal injury and material damage.

Read the whole manual carefully and make sure you know how to switch the tool off in an emergency, before operating the tool.

Save these instructions and other documents supplied with this tool for future reference.

The electric motor has been designed for 230V and 240V only. Always check that the power supply corresponds to the voltage on the rating plate.

*Note: The supply of 230V and 240V on Otso tools are interchangeable for Australia and New Zealand.*

If the supply cord is damaged, it must be replaced by an electrician or a power tool repairer in order to avoid a hazard.

**GENERAL POWER TOOL SAFETY WARNINGS**

**WARNING!** Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference. The term “power tool” in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

1. **Keep work areas clean.** Cluttered work areas and benches can cause accidents.
2. **Consider work area environment.** Do not expose your equipment to high humidity or rain. Do not use your equipment in damp or wet conditions. Keep the work area well lit. Do not use your tool where there is a risk of causing fire or explosion, e.g. in the presence of flammable liquids and gases.
3. **Keep children away.** Do not allow children, visitors or animals to come near the work area or to touch the equipment or accessories.
4. **Dress appropriately.** Wear the appropriate protective clothing. Wear a protective hair covering to keep long hair out of the way.
5. **Guard against electric shock.** Prevent body contact with earthed or grounded surfaces. Electrical safety can be further improved by using a high sensitivity (30 mA / 30 mS) residual current device (RCD).
6. **Do not overreach.** Keep proper footing and balance at all times.
7. **Stay alert.** Watch what you are doing. Use common sense. Do not operate the equipment when tired.
8. **Secure work piece.** If required, use clamps or a vice to hold the work piece.
9. **Extension leads.** Before use inspect the extension leads and replace if damaged. When using the equipment outdoors, only use extension leads intended for outdoor use and marked accordingly.
10. **Use appropriate equipment.** Only use the equipment as outlined within this instruction manual. Do not force the equipment to the job of heavier duty equipment. The equipment will do the job better and safer at the rate for which it was intended. Do not force the equipment.

**WARNING!** The use of any accessory or attachment, or performance of any operation with this equipment other than those recommended in this instruction manual may present a risk of personal injury.

**INVERTER WELDER SAFETY WARNINGS**

- Under no circumstances should the housing of the welder be opened.
- Always protect your eyes and face with a welding mask.
- Wear appropriate protective clothing such as a welding apron and sleeved gloves etc.
- Avoid exposing skin as UV rays are produced by the arc.
- Screen off the work place to protect others working nearby from UV rays.
- Welding materials with contaminated surfaces may generate toxic fumes. Ensure the surface is clean before welding. Avoid operating on materials cleaned with chlorinated solvents or near such solvents.
- Do not weld metal equipment that holds/contains flammable materials, gases or liquid combustibles.
- Zirc-plated or galvanized material should not be welded as the fumes created are highly toxic.
- Do not use the welder in damp or wet conditions.
- Do not use cables with worn insulation or loose connections.
- Disconnect from the power supply before replacing electrodes.
- Avoid direct contact with the welding circuit.
- Do not use the welder to defrost piping.
- Ensure the welder is placed on a level surface to prevent overturning.
- Provide adequate ventilation or a means for removal of the welding fumes produced (forced circulation using a blower or fan).

**Fumes**

Toxic gases are given off during the ARC welding process, which may collect in the welding area if the ventilation is poor. Be alert at all times to the possibility of fume build-up. In small or confined areas use a fume extractor.

**Glare**

The electric arc generated by the ARC process gives direct heat and ultraviolet radiation. It is essential that the eyes of the operator and bystanders are protected from the glare during welding.

**ALWAYS USE A FACESHIELD OR WELDING HELMET FITTED WITH THE CORRECT GLASS FILTER.**

**Heat**

It is desirable that welding gloves are worn whilst welding. They will protect the hands from ultra-violet radiation and direct heat of the arc.

**OVERALLS should also be worn.** They should be of type designed to be buttoned at the wrists and the neck.

**Dress**

In addition to face shield, welding gloves and overalls, other types of protective clothing should be worn when welding. Additional protective clothing such as a leather apron, sock protectors and a hat will all assist in reducing any injuries due to heat, sparks and slag produced during welding.
IN ORDER TO MAKE A CLAIM UNDER THIS WARRANTY YOU MUST RETURN THE PRODUCT TO YOUR NEAREST BUNNINGS WAREHOUSE WITH YOUR BUNNINGS REGISTER RECEIPT. PRIOR TO RETURNING YOUR PRODUCT FOR WARRANTY PLEASE TELEPHONE OUR CUSTOMER SERVICE HELPLINE:

Australia 1800 069 486
New Zealand 0508 069 486

TO ENSURE A SPEEDY RESPONSE PLEASE HAVE THE MODEL NUMBER AND DATE OF PURCHASE AVAILABLE. A CUSTOMER SERVICE REPRESENTATIVE WILL TAKE YOUR CALL AND ANSWER ANY QUESTIONS YOU MAY HAVE RELATING TO THE WARRANTY POLICY OR PROCEDURE.

The benefits provided under this warranty are in addition to other rights and remedies which are available to you at law. Our goods come with guarantees that cannot be excluded at law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Generally you will be responsible for all costs associated with a claim under this warranty, however, where you have suffered any additional direct loss as a result of a defective product you may be able to claim such expenses by contacting our customer service helpline above.

3 YEAR REPLACEMENT WARRANTY

Your product is guaranteed for a period of 36 months from the original date of purchase and is intended for DIY (Do It Yourself) use only. If a product is defective it will be replaced in accordance with the terms of this warranty. Warranty excludes consumable parts, for example: welding masks and combination wire brush and chipping hammers.

WARNING

The following actions will result in the warranty being void.

• If the tool has been operated on a supply voltage other than that specified on the tool.
• If the tool shows signs of damage or defects caused by or resulting from abuse, accidents or alterations.
• Failure to perform maintenance as set out within the instruction manual.
• If the tool is disassembled or tampered with in any way.
• Professional, industrial or high frequency use.