

ozito

INVERTER ARC WELDER

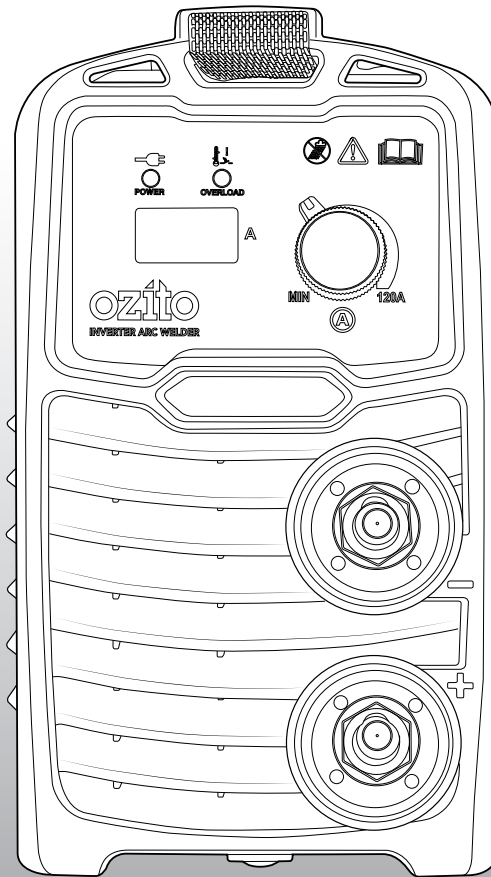
120 Amp

INSTRUCTION MANUAL

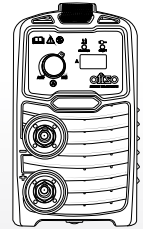
SPECIFICATIONS

Welding Current:	20 - 120A
Arc Electrode Size:	1.6 - 3.2mm
Duty Cycle:	20%@120A (24.8V) DC 60%@69A (22.8V) DC 100%@54A (22.2V) DC
Weight:	3.2kg

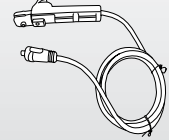
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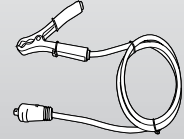
WHAT'S IN THE BOX



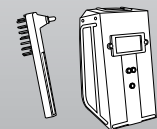
Inverter Welder



Arc Electrode Holder



Earth Clamp



Accessories

3 YEAR REPLACEMENT WARRANTY

IWR-120

WARRANTY

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**. If a product is defective it will be replaced in accordance with the terms of this warranty. Warranty excludes consumable parts, for example: Welding tips, torch nozzles, flexible inner tube, welding wire, wire feed rollers, welding lenses, wire brushes and chipping hammer.

WARNING

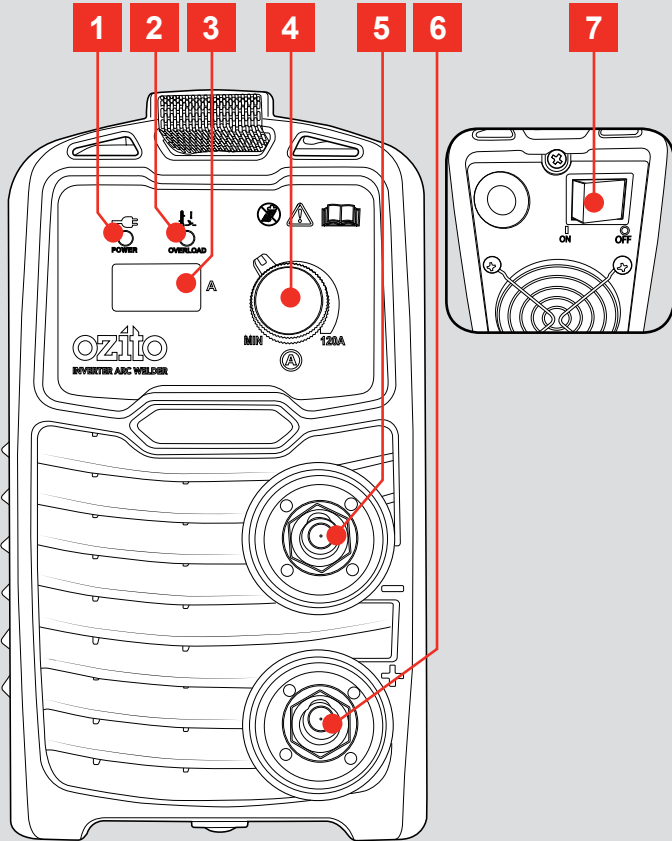
The following actions will result in the warranty being void.

- 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 or high frequency use.

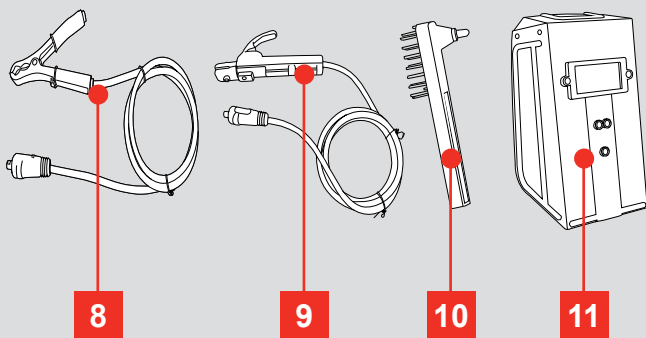
KNOW YOUR PRODUCT

INVERTER ARC WELDER

- | | |
|---------------------------|----------------------------|
| 1 Power On LED | 5 Negative Output Terminal |
| 2 Thermal Overload LED | 6 Positive Output Terminal |
| 3 Digital Display | 7 On/Off Switch (rear) |
| 4 Welding Current Control | |



- | | |
|------------------------|-----------------|
| 8 Earth Clamp | 10 Hammer Brush |
| 9 Arc Electrode Holder | 11 Welding Mask |



ONLINE MANUAL

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



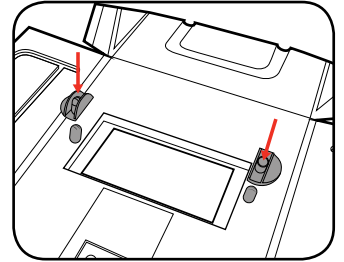
SETUP & PREPARATION

1. WELDING MASK

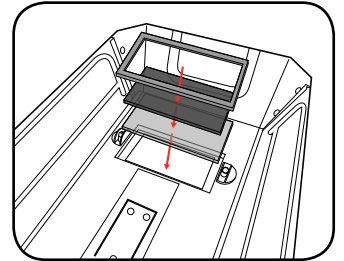
Fitting the Welding Screen

The included welding mask must be fitted with the welding screen and handle before using for welding.

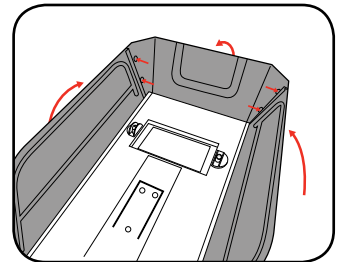
- 1 Insert the glass retaining pins into the holes from the outside of the mask and then fit the retaining clips from the inside. Rotate the clip to allow the glass to be inserted.



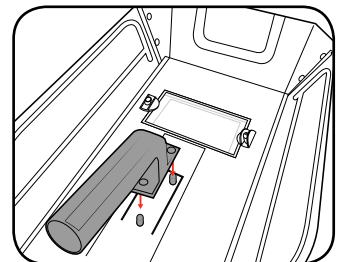
- 2 First insert the clear glass into the recess of the welding mask, followed by the dark safety glass and then the plastic frame. Rotate the retaining clips to lock in position.



- 3 Bend the sides and top of the welding mask inwards and clip together at the corners.



- 4 Insert the 3 screws into the handle mounting holes from the outside. Fit the handle onto the screws from inside the mask and then secure using the 3 nuts.

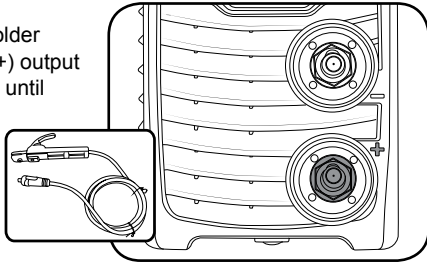


2. ASSEMBLY

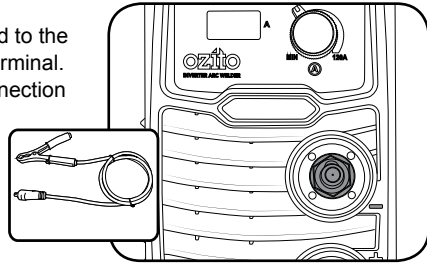
WARNING: ENSURE THE TOOL IS SWITCHED OFF AND DISCONNECTED FROM THE POWER SUPPLY BEFORE PERFORMING ANY OF THE FOLLOWING STEPS.

Terminals

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



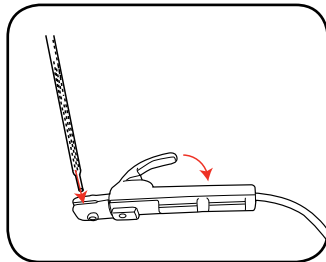
- 2 Attach Earth Clamp lead to the NEGATIVE (-) output terminal. Insert & rotate until connection is firm.



NOTE: FULLY INSULATED LOCK-TYPE CONNECTORS SHOULD BE USED WITH THE INVERTER WELDERS TERMINALS.

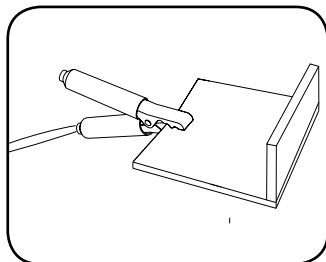
Electrode and Earth Clamp

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



WARNING: DO NOT TOUCH THE ELECTRODE WHILE THE WELDER IS ON.

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



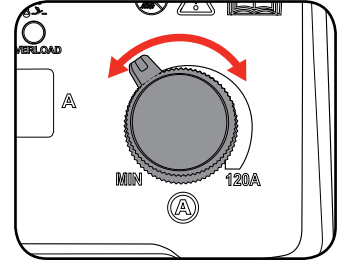
NOTE: AVOID USE OF LONG EXTENSION LEADS.

3. CONTROLS

Welding Current Control

- 1 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.

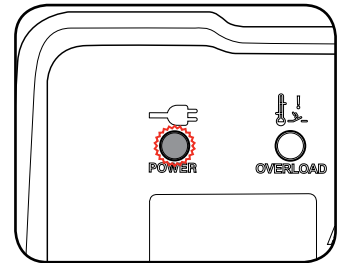


Status LED Lights

Power ON LED

Illuminates when the power cord is connected to a live mains outlet and the ON/OFF switch is in the ON position

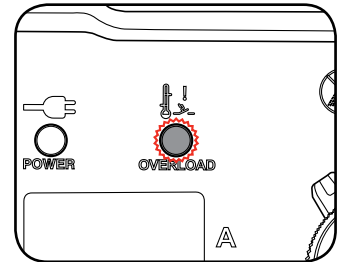
Note: The cooling fan operates when ON.



Thermal Overload LED

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

Note: This can occur in heavy use and does not indicate a fault.

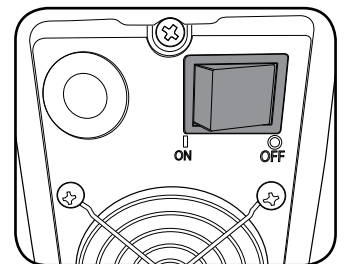


On/Off Switch

The on/off switch is located at the rear of the welder and must be turned on for the unit to operate.

- 1 To turn the welder on, push the on/off switch into the on position 'I'.

- 1 To turn the welder off, push the on/off switch into the off position 'O'.



If the power LED does not turn on when the on/off switch is in the correct position:

- Test supply with another product, avoid using extension leads
- 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 is the only appliance on the circuit to ensure it has enough power to operate.
- If a 15A circuit is available, it is recommended that the welder be connected to this.

OPERATION

4. WELDING SETUP

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 THE 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.

Electrode Diameter	Welding Current (Amps)	Thickness of Steel
2mm	30 - 60	1.5 - 2mm
2.5mm	50 - 80	3 - 5mm
3.2mm	90 - 120	4 - 6mm

5. ARC WELDING



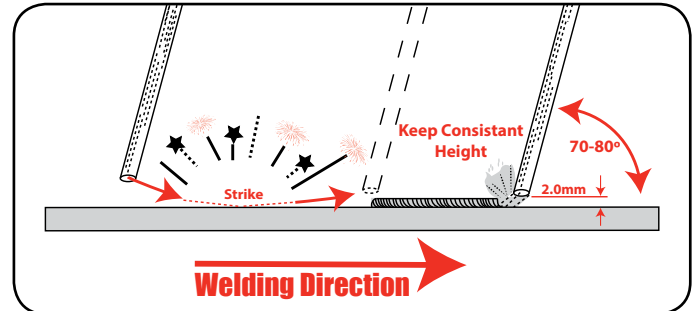
WARNING: THE POWER SUPPLY FOR THIS PRODUCT SHOULD BE PROTECTED BY A RESIDUAL CURRENT DEVICE (RATED AT 30MA OR LESS). A RESIDUAL CURRENT DEVICE REDUCES THE RISK OF ELECTRIC SHOCK.

Striking the Arc



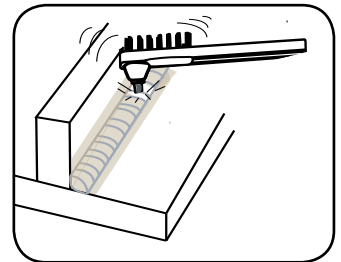
WARNING: ENSURE APPROVED PROTECTIVE CLOTHING AND WELDING HELMET/MASK IS WORN AT ALL TIMES TO PROTECT YOUR FACE AND EYES FROM ARC UV RADIATION AND SPARKS.

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

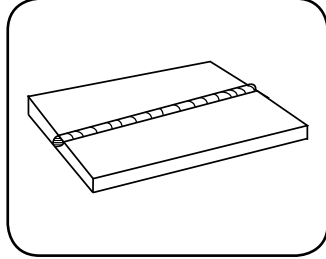
Slag is refuse left around the weld after welding, this should only be removed after the weld has cooled down and is no longer glowing. Face shield must be worn during removal of slag.



6. COMMON WELDS

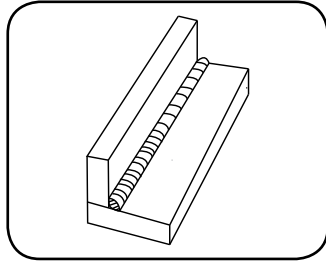
Butt Joint

Is the joining of two pieces of material together along a single edge in a single plane. Two sheets of metal are laid side-by-side and joined together along a single joint



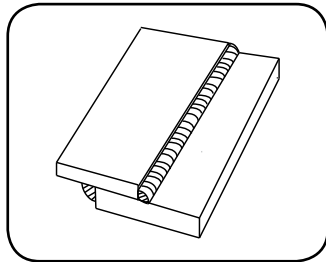
Fillet Joint

Is a type of joint used for welding pieces or plates in which the angle between them varies from 0° to 180°. The edge of one plate is brought against the surface of another not in the same plane. The joint can be welded on one or both sides.



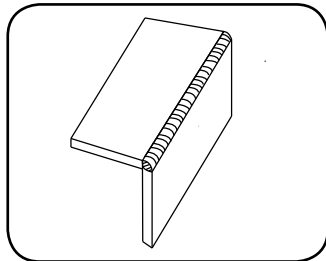
Lap Joint

The edges of a plate are lapped one over the other and the edge of one is welded to the surface of the other.



Corner Joint

A corner joint consists of two pieces of material joined at their edges to form an "L" shape.



7. WELDING TIPS

Electrodes

Always store the electrodes in a dry place protecting them from moisture. Should electrodes become damp or moist, bake them in an oven at 200 - 250°C for 2 hours. Unless the electrodes are vacuum packed, basic coated electrodes will always require such baking prior to use.

Metal arc welding electrodes consist of a core wire surrounded by a flux coating. The flux coating is applied to the core wire by an extrusion process.

The coating on arc welding electrodes has a number of purposes:

- To provide a gaseous shield for the weld metal, and preserve it from contamination by the atmosphere whilst in a molten state.
- To give a steady arc by having 'arc stabilisers' present, which provide a bridge for current to flow across.
- To remove oxygen from the weld metal with 'deoxidised'.
- To provide a cleansing action on the work piece and a protective slag cover over the weld metal to prevent the formation of oxides while the metal is solidifying. The slag also helps to produce a bead of the desired contour.
- To introduce alloys into the weld deposits in special type electrodes.

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 crackling 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 an excessively short arc will cause sticking of the electrode and result in poor quality welds. For down hand welding it is to have an arc length no greater than the diameter of the electrode.

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.

Travel Speed

The electrode should be moved along in the direction of the joint being welded at a speed that will give the size of run required. At the same time, the electrode is fed downwards to keep the correct arc length at all times. Excessive travel speeds lead to poor fusion and lack of penetration. While too slow a rate of travel will frequently lead to arc instability, slag inclusions and poor mechanical properties.

Electricity

The electricity flows through the electrode cable to the attached electrode. The electricity will not leave the electrode unless it touches an earthed object.

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.

Earth Clamp

Prior to connecting the earth clamp it may be necessary to clean the surface of the work piece using the metal brush. Attach the earth clamp firmly to the work piece ensuring there is good metal to metal contact. Clamp it where it will not be in the way. This clamp provides an earth connection back to the welder. Always ensure the welder is disconnected from the power supply before attaching electrodes into the holder.

IMPORTANT INFORMATION

Thermal Overload

IF YOUR WELDER OVERHEATS AND THE THERMAL OVERLOAD PROTECTION ENGAGES DO NOT TURN YOUR WELDER OFF AS THE FAN WILL ASSIST IN REDUCING THE COOLING TIME.

All Welders have a feature called a duty cycle.

Duty cycle on a welder refers to the time in which the welder operates during normal welding.

A welder can only weld for a certain continuous period of time before it requires to cool down.

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.

THIS CAN OCCUR IN HEAVY USE AND DOES NOT INDICATE A FAULT.

The Welder will cease to weld and the Thermal Overload LED light will turn on. This LED indication light is just to inform you that your welder is becoming too hot and requires to cool down to protect the internal components of the welder. Do Not turn your welder Off as the welder has an internal cooling fan and this will assist your welder to cool down quicker. Reducing the cooling time will enable you to get back to your welding job quicker.

Depending on how many Amps or how heavy the welding you are doing the cooling time may take up to 10 Minutes for your welder cool down so you can return to your welding job.

Duty cycle % as referenced on the rating label are based on 10 minute intervals. For instance with a 20% duty cycle, one can weld continuously for 2 minutes, but then must wait 8 minutes for the welder to cool. Lower current levels have longer duty cycles.

TROUBLESHOOTING








PROBLEM	CAUSE	REMEDY
GENERAL OPERATION		
No Power	Switch on rear is off	Turn on by moving switch to on position (I)
	Power supply	Test supply with another product, avoid using extension leads.
	Circuit breaker tripped	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.
Difficulty starting arc	Incorrect settings, cable connection	Check earth and electrode cables are in correct terminals. Check cable connections to welder are secure, rotate clockwise until firm.
	Earth clamp connection not adequate	Check earth clamp has good connection to material being welded. Surface for clamp connection needs to be bare metal, remove rust or paint.
	Welding technique	Hold electrode at correct angle, practice on scrap material
Welder cuts out	Thermal overload active	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.
ARC WELDING		
Poor welding	Incorrect or wet welding electrodes	Select electrode type to suit material, electrodes need to be dry.
Sticking welding electrode	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

EQUIPMENT CLASSIFICATION

This product is classified as Group 2, Class A welding equipment.

- Group 2 - This product generates radio frequency energy in the frequency range 9KHz to 400GHz.
- Class A - This product is intended for use in an industrial environment. If used in other environments there may be difficulty in ensuring adequate protection to radio reception.

DESCRIPTION OF SYMBOLS

V	Volts	Hz	Hertz
~	Alternating current	—	Direct Current (DC)
m/min	Revolutions or reciprocation per minute	A	Amperes
∅	Diameter	U₀	Non-load voltage
U₁	Rated input voltage	U₂	On-load voltage
I_{1max}	Rated maximum input current	I_{1eff}	Maximum effective input current
I₂	Current rating	X	Load duration rate
IP	Protection class	S	Used in the environment which has high risk of electric shock
	Symbol of single-phase AV power and rated frequency		Manual metal arc welding
	Do not operate in the rain		Read instruction manual
	Regulator compliance mark		Warning
	Single-phase transformer- Rectifier		

SPARE PARTS

Replacement electrodes, electrode holder and ground clamps are available for purchase from your local Bunnings Warehouse.

Select 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: enquiries@ozito.com.au

CARING FOR THE ENVIRONMENT

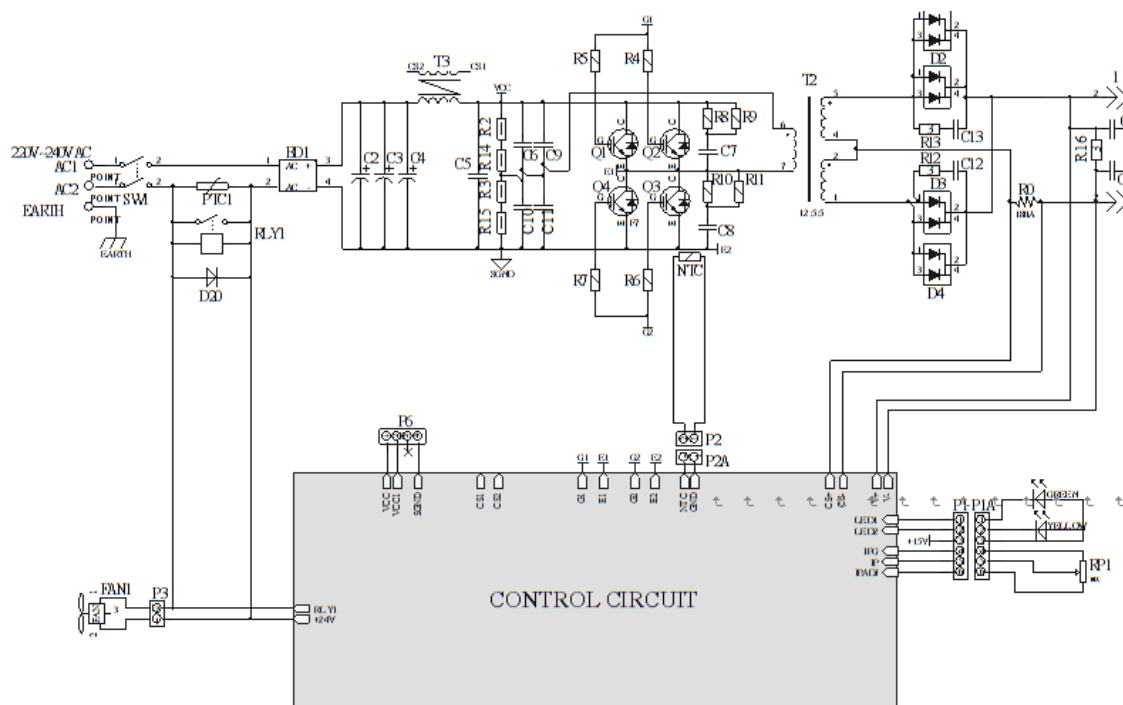


Power tools that are no longer usable should not be disposed of with household waste but in an environmentally friendly way. Please recycle where facilities exist. Check with your local council authority for recycling advice.




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.

CIRCUIT DIAGRAM



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 Ozito 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.

Using an Extension Lead

Always use an approved extension lead suitable for the power input of this tool. Before use, inspect the extension lead for signs of damage, wear and ageing. Replace the extension lead if damaged or defective. When using an extension lead on a reel, always unwind the lead completely. Use of an extension lead not suitable for the power input of the tool or which is damaged or defective may result in a risk of fire and electric shock.

The power supply for this product should be protected by a residual current device (rated at 30mA or less). A residual current device reduces the risk of electric shock.

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. Work area safety

- Keep work area clean and well lit. Cluttered or dark areas invite accidents.
- Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.
- Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

2. Electrical safety


- Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.
- Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.
- Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.
- If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply. Use of an RCD reduces the risk of electric shock.

3. Personal safety

- Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
- Use personal protective equipment. Always wear eye protection. Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool. Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.

- Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
 - Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
 - Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.
 - If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of dust collection can reduce dust-related hazards.
 - Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles. A careless action can cause severe injury within a fraction of a second.
- ## 4. Power tool use and care
- Do not force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.
 - Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
 - Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.
 - Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.
 - Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
 - Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
 - Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.
 - Keep handles and grasping surfaces dry, clean and free from oil and grease. Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.
- ## 5. Service
- Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.

INVERTER WELDER SAFETY WARNINGS

 **WARNING!** This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

- 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.
- Zinc-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 the welder for pipe thawing.
- 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.

Position and Handling

Position the welding machine on a horizontal surface that is able to support the weight: otherwise (e.g. inclined or uneven floors etc.) there is danger of overturning.

The welder MUST NOT be supported by the operator (e.g. using belts). The operator MUST NOT BE ALLOWED to weld in raised positions unless safety platforms are used.

Heat

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

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