

ARC 145



INSTRUCTION MANUAL

BOSSWELD

MACHINE OVERVIEW

1. Control Panel
2. Positive Output Connection Socket
3. Negative Output Connection Socket
4. Power Switch
5. Input Power Cable



CONTROL PANEL OVERVIEW



1. MODE Button: to select welding mode - MMA Stick / Lift TIG
2. Welding Current Adjustment Knob
3. Caution Light

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SPECIFICATIONS

Primary Input Power	1 Phase 240V 50-60 HZ +/-10%	
Duty Cycle @ 40°C 10min	15% @ 140A 60% @ 70A 100% @ 54A	
Function	MMA	TIG
Welding Current Range (A)	10 – 140	10 – 140
I Max (A)	29	18
I eff (A)	10	7
Thermal Overload	Yes	
Tungsten Diameter Range	1.0 – 2.0mm	
Electrode Diameter Range	1.6 – 3.2mm	
Protection	IP21S	
Insulation Class	H	
Dimensions / Weight	L225 x W95 x H134 mm	
Weight	2.1 kg	
Part Number	633145	

TROUBLE SHOOTING

PROBLEM	SUGGESTED REMEDY
Power indicator is not lit, fan does not work and no output current	<ol style="list-style-type: none">1. Check that the welder is plugged into the 240V mains outlet and is switched on.2. Check that the mains fuse or breaker has not operated.3. Check that the main switch on the rear of the unit is in the on position.
Power indicator is lit, fan works, no output current	<ol style="list-style-type: none">1. Check the welding cables are connected correctly.2. Check the output connectors are not disconnected or damaged.3. Check that the work clamp is connected securely to the work piece and that the contact point is clean of paint or rust.
Over temperature indicator is on, no output current	<ol style="list-style-type: none">1. Duty cycle of the unit has been exceeded. Allow the unit to cool.
Output current is not stable.	<ol style="list-style-type: none">1. Check mains voltage is constant.2. Check the welding cable connectors are tight in the sockets.3. Check the work clamp connection to the work piece.4. Check the welding leads are not reversed.
Excessive Spatter	<ol style="list-style-type: none">1. Check that the output polarity is correct for the type of electrode being used

SAFETY INFORMATION



WARNING! The device and packaging material are not toys! Children must not be allowed to play with the machine and its accessories. Plastic parts and packaging are choking risks for children.

- Open the packaging and remove the welder carefully.
- Check that the delivery is complete.
- If possible, store the packaging until the warranty period has expired.

The user of this welder is responsible for their own safety and the safety of others. It is important to read, understand and respect the contents of this user guide. When using this welder, basic safety precautions, including those in the following sections must be followed to reduce the risk of fire, electric shock and personal injury. Ensure that you have read and understood all of these instructions before using this welder.

Persons who are not familiar with this user guide should not use this welder. Keep this booklet in a safe place for future reference.

TRAINING

The operator should be properly trained to use the welding machine safely and should be informed about the risks relating to arc welding procedures. This user guide does not attempt to cover welding technique. Training should be sought from qualified / experienced personnel on this aspect, especially for any welds requiring a high level of integrity for safety.

SERIOUS FIRE RISK

The welding process produces sparks, droplets of fused metal, metal projectiles and fumes. This constitutes a serious fire risk. Ensure that the area in which welding will be undertaken is clear of all inflammable materials. It is also advisable to have a fire extinguisher, and a welding blanket on hand to protect work surfaces.

MACHINE SAFETY

Keep the welding cables, work clamp and electrode holder in good condition. Failure to do this can result in poor welding quality, which could be dangerous in structural situations.

Prior to use, check for breakage of parts and any other conditions that may affect operation of the welder. Any part of the welder that is damaged should be carefully checked to determine whether it will perform its intended function whilst being safe for the operator. Any part that is damaged should be properly repaired, or replaced by an authorised service centre.

IMPROPER USE

It is hazardous to use the welding machine for any work other than that for which it was designed e.g. do not use welder for thawing pipes.

HANDLING

Ensure the handle is correctly fitted. As welding machines can be heavy, always use safe lifting practices when lifting.

POSITION AND HANDLING

To reduce risk of the machine being unstable / danger of overturning, position the welding machine on a horizontal surface that is able to support the machine weight. Operators MUST NOT BE ALLOWED to weld in raised positions unless safety platforms are used.

WORK AREA SAFETY

- Ensure a clear, well lit work area with unrestricted movement for the operator.
- The work area should be well ventilated, as welding emits fumes which can be dangerous.
- Always maintain easy access to the ON/OFF switch of the welder, and the electrical mains supply
- Do not expose the welder to rain and do not operate in damp or wet locations

Where welding must be undertaken in environments with increased risk of electric shock, confined spaces or in the presence of flammable or explosive materials, it is important that the environment be evaluated in advance by an "expert supervisor". It is also recommended that welding in these circumstances be carried out in the presence of persons trained to intervene in emergencies.

AVOID ELECTRICAL CONTACT

Use adequate electrical insulation with regard to the electrode, the work piece and any accessible earthed metal parts in the vicinity. Avoid direct contact with the welding circuit. The no load voltage between the work clamp and the electrode can be dangerous under certain circumstances.

Note: For additional protection from electric shock. It is recommended that this welder be used in conjunction with a residual current device (RCD) with rated residual current of 30MA or less.

In general the use of extension leads should be avoided. If used however, ensure that the extension lead used with the welder is of a suitable current rating and heavy duty in nature that MUST have an earth connection. If using the welder outdoors, ensure that the extension lead is suitable for outdoor use. Always keep extension leads away from the welding zone, moisture and any hot materials.

WELDING SURFACES

- Do not weld containers or pipes that hold, or have held, flammable liquids or combustible gases or pressure.
- Do not weld on coated, painted or varnished surfaces as the coatings may ignite, or can give off dangerous fumes.

WORK PIECE

When welding, the work piece will remain at high temperature for a relatively long period. The operator must not touch the weld or the work piece unless wearing welding gloves. Always use pliers or tongs. Never touch the welded material with bare hands until it has completely cooled

VOLTAGE BETWEEN ELECTRODE HOLDERS OR TORCHES

Working with more than one welding machine on a single work piece, or on work pieces that are connected, may generate a dangerous accumulation of no-load voltage between two different electrode holders or torches, the value of which may reach double the allowed limit.

PERSONAL PROTECTION EQUIPMENT (PPE)

PERSONAL PROTECTIVE EQUIPMENT MUST BE USED WHEN MACHINE IS IN USE!

GLOVES AND PROTECTIVE CLOTHING

Use protective gloves and fire resistant protective clothing when welding. Avoid exposing skin to ultraviolet rays produced by the arc.

WELDING HELMET

Under no circumstances should the welder be operated unless the operator is wearing a welding helmet to protect the eyes and face. There is serious risk of eye damage if a helmet is not used. The sparks and metal projectiles can cause serious damage to the eyes and face. The light radiation produced by the arc can cause damage to eyesight, and burns to skin. **Never remove the welding helmet whilst welding.**

SAFETY GLASSES

Always use appropriate safety glasses when brushing, chipping or grinding the slag from the weld.

OTHER PERSONS

Ensure that other persons are screened from the welding arc and are at least 15 metres away from the work piece. Always ensure that the welding arc is screened from onlookers. Use screens if necessary or non-reflecting welding curtain. Do not allow children or animals access to the welding equipment or to the work area.

SWITCHING OFF

When the operator has finished welding they must switch the welder off. DO NOT put the electrode holder down with the welder switched ON. When leaving the welder unattended, switch OFF and disconnect the welder from the electrical mains supply. Do not leave hot material unattended after welding.

FUMES & GASES ARE DANGEROUS

Smoke and gas generated whilst welding or cutting can be harmful to people's health. Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

- Do not breathe the smoke and gas generated whilst welding or cutting, keep your head out of the fumes
- Keep the working area well ventilated, use fume extraction or ventilation to remove fumes and gases
- In confined or heavy fume environments always wear an approved air-supplied respirator. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Be sure the breathing air is safe.
- Do not weld in locations near de-greasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapours to form highly toxic and irritating gases.
- Materials such as galvanized, lead, or cadmium plated steel, containing elements that can give off toxic fumes when welded. Do not weld these materials unless the area is very well ventilated, and or wearing an air supplied respirator.

MAINTENANCE

WARNING! Before starting any cleaning, or maintenance procedures on the welding machine, make sure that it is switched OFF and disconnected from the mains supply.

There are no user serviceable parts inside the welder. Refer to a qualified service personnel if any internal maintenance is required. After use, wipe the welder down with a clean soft dry cloth.

Regular inspection of the supply cord is required. If damaged is suspected, must be immediately replaced by the manufacturer, its service agent or similarly qualified persons.

STORAGE / TRANSPORT

Store the welder and accessories out of children's reach in a dry place. If possible store the welder in the original packaging. The appliance must be secured against falling or rolling over during transport.

MMA (STICK) WELDING MACHINE SET UP

WARNING! Ensure the machine is turned off and disconnected from the power supply before performing any of the following operations.

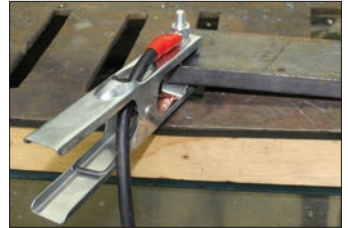
Fitting the Arc and Work Leads

1. Plug the **Electrode Holder** connector into the positive terminal. Twist to ensure a good connection.
2. For the most common applications, plug the **Earth Clamp** connector into the Negative terminal. Twist to ensure a good connection.



Grounding and Fitting the Electrode

3. Connect the work clamp firmly to the work-piece ensuring that the clamp makes good contact with bare metal.
4. Take the electrode holder and press the handle to open the tong. Insert the bare metal rod end of the electrode and release the handle to clamp the electrode.



Welding Setup

5. Plug the machine 10Amp input power lead into the wall socket. Turn the power outlet **ON** and turn on the machine using the power switch on the rear of the machine. **WARNING:** Ensure the electrode/electrode holder is not near the work-piece when switching on the machine.
6. Press Mode button to select MMA Stick Welding.
7. Select your required welding current by turning the Welding Current Adjustment Knob on the machine control panel.



MMA (STICK) WELDING OPERATION

WARNING! Ensure appropriate PPE is worn, and work area is clear of hazards prior to operation.

Starting The Arc

1. Hold the Electrode above the work piece. In a smooth, quick motion, scratch the electrode across the work piece to create the arc.

Welding Work Piece

2. Hold the Electrode slightly above the work piece to maintain the arc, moving the electrode at an even speed to create an even weld distribution.

Finishing the Weld

3. Pull the electrode away from work piece quickly to break the arc.
4. Once the weld has cooled, clean the weld by chipping away at slag to reveal the weld metal.

ELECTRODE SELECTION GUIDE

Electrode size selection will be determined by the thickness of the section being welded. Use the table below as a guide:

AVERAGE METAL THICKNESS	ELECTRODE SIZE
1.0 - 2.0mm	2.0mm
2.0 - 5.0mm	2.6mm
5.0 - 8.0mm	3.2mm
8.0+	4.0mm

WELDING CURRENT GUIDE

Welding current level is determined by the size of electrode. Use the table below as a guide:

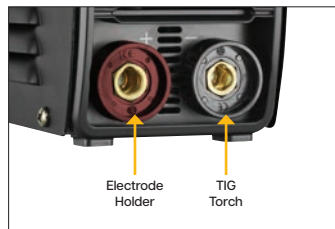
ELECTRODE SIZE/GAUGE	WELDING CURRENT
1.6mm	40 - 50 Amps
2.0mm	50 - 75 Amps
2.5mm	75 - 105 Amps
3.2mm	105 - 140 Amps
4.0mm	140 - 160 Amps

TIG WELDING MACHINE SET UP

WARNING! Ensure the machine is turned off and disconnected from the power supply before performing any of the following operations.

Fitting the TIG Torch, Earth Clamp & Gas Leads

1. Plug **Earth Clamp** connector into the **Positive** terminal.
Twist to ensure a good connection.
2. Plug **TIG Torch** into the **Negative** terminal. Twist to ensure a good connection.
3. Connect gas line to regulator on gas bottle.
Note: CHECK FOR LEAKS prior to welding



Welding Setup

4. Connect the work clamp firmly to the work-piece ensuring that the clamp makes good contact with bare metal.
5. Plug the machine 10Amp input power lead into the wall socket. Turn the power outlet **ON** and turn on the machine using the power switch on the rear of the machine.
6. Carefully open the valve of the gas cylinder. Adjust to required gas flow rate as indicated on the regulator.
7. Press Mode button to select TIG Welding.
8. Rotate the Adjustment Knob to set the welding current as required.



WELDING GAS SELECTION GUIDE

Use the table below as a guide:

METAL TYPE	RECOMMENDED GAS
Mild Steel	Ar
Stainless Steel	Ar
Low Alloy Steel	Ar
Galvanised Steel	Ar



OPTIONAL ACCESSORIES



Bossweld Argon
Flowmeter Regulator
400209



9 Series TIG Torch
with Valve 4m
95.9FV.4.1.DA25



TIG WELDING OPERATION (LIFT START)

WARNING! Ensure appropriate PPE is worn, and work area is clear of hazards prior to operation.

Starting The Arc

1. Lay the outside edge of the Gas Cup on the work piece. Maintain a 1-3mm gap between the Tungsten Electrode and the work piece.
2. Rock the torch sideways so the Tungsten Electrode touches the work piece and hold momentarily.
3. Rock the torch back, the arc will ignite as the Tungsten Electrode lifts off the work piece.
4. Lift the torch and hold approximately 2mm above the work piece to maintain the arc.



Welding Work Piece

5. Hold the Torch in place, moving in a small circular motion, until a weld pool is generated.
6. Tilt the torch at a 75° angle, introducing the filler wire (TIG rod) into the leading edge of the weld pool at a 15° angle.
7. Move Torch and filler wire smoothly and at an even speed to create an even weld distribution. The arc will melt the filler wire into the pool as the torch moves forward.



Note: It is important to keep the molten end of the filler wire inside the gas shield to protect from oxidation and contamination.

Finishing the Weld

8. Pull electrode away from work piece quickly to break the arc.



BOX CONTENTS

1. BUDDY ARC 145 Inverter Welder

2. Earth Clamp
3. Electrode Holder
4. Carry Strap



NOTE: The manufacturer's liability shall be deemed void if the machine is modified in any way and

DISPOSAL

DISPOSING OF THE PACKAGING

Recycling packaging reduces the need for landfill and raw materials. Reuse of the recycled material decreases pollution in the environment. Please recycle packaging where facilities exist. Check with your local council authority for recycling advice.

DISPOSING OF THE WELDER

Welders 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.

WARRANTY

PRIOR TO RETURNING YOUR PRODUCT FOR WARRANTY PLEASE CHECK THE TROUBLESHOOTING GUIDE IN THE PRODUCT INSTRUCTION MANUAL

FOR SERVICE SUPPORT PLEASE CALL (02) 8761 6500

IN ORDER TO MAKE A CLAIM UNDER WARRANTY YOU MUST RETURN THE PRODUCT TO THE ORIGINAL PLACE OF PURCHASE ALONG WITH YOUR PURCHASE RECEIPT.

FAULTY GOODS SHOULD BE RETURNED IN THEIR ORIGINAL PACKAGING ALONG WITH ANY SUPPLIED ACCESSORIES.

1 YEAR WARRANTY

Your product is guaranteed against manufacturing workmanship or defect for a period of 12 months from the original date of purchase. This warranty covers manufacturing defects in materials, workmanship and finish under normal use. If a product is found to be defective we reserve the right to repair or replace at our sole discretion.

No responsibility will be taken for products lost, damaged or mislaid whilst in transit.

To the extent permitted by law this warranty does not cover any indirect or consequential losses and our total liability, if any, shall be limited to the amount paid for the product by you to the retailer.

The benefits provided under this warranty are in addition to other rights and remedies which are available to you under Australian law.

WARRANTY EXCLUSIONS

The following actions will result in the warranty being void:

- Any damage caused by connection to a power supply or voltage other than specified for the machine
- Damage, faults or defects arising from misuse, abuse accidents or alterations
- Failure to perform maintenance or maintain good working condition of the machine or accessories as set out in the instruction manual
- If the machine is disassembled or tampered with in any way
- Fair wear and tear especially to cables, leads etc
- Consumable items such as electrode holders or clamps

This warranty is given by Dynaweld Industrial Supplies Pty Ltd

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