BOSSWELD

CUT 30

PLASMA CUTTER

1+1* YEAR LIMITED WARRANTY

INSTRUCTION MANUAL

Thank you for choosing a BOSSWELD Inverter Plasma.

In this manual you will find instructions on how to set up your welder along with general welding information safety information and helpful tips. We encourage you to go online to our website for more tips and troubleshooting as well as many welding resources.

We truly hope you enjoy using your welder!

Please ensure you read and understand the instructions before installation and operation of this machinery.

CONTENTS

SPECIFICATIONS

Primary Input Power	**1 Phase 240V 50-60 HZ +/-10%**
Duty Cycle @ 40°C 10min	**20%@340A 60%@17A 100%@13.4A**
Welding Current Range (A)	15 – 30
I Max (A)	18.6A
I eff (A)	8.3A
Rated Input Power (kVA)	6.5
Cutting Range	1 – 12 mm
Protection	IP21
Insulation Class	H
Thermal Overload	Yes
Dimensions / Weight	470L x 198W x 330H mm
Weight	6.7 kg
Part Number	**611150**

CUTTING RANGE	
MATERIAL	**RANGE**
Copper	1 – 4 mm
Stainless Steel	1 – 8 mm
Aluminium	1 – 8 mm
Iron	1 – 10 mm
Steel	1 – 12 mm

BOX CONTENTS

1. Cut 30 Inverter Plasma 240V
2. Plasma Torch
3. Earth Clamp
4. Plasma Spare
5. Manual

PLASMA TORCH

1. Plasma Torch
2. Ceramic Cap
3. Nozzle
4. Electrode

MACHINE PANEL

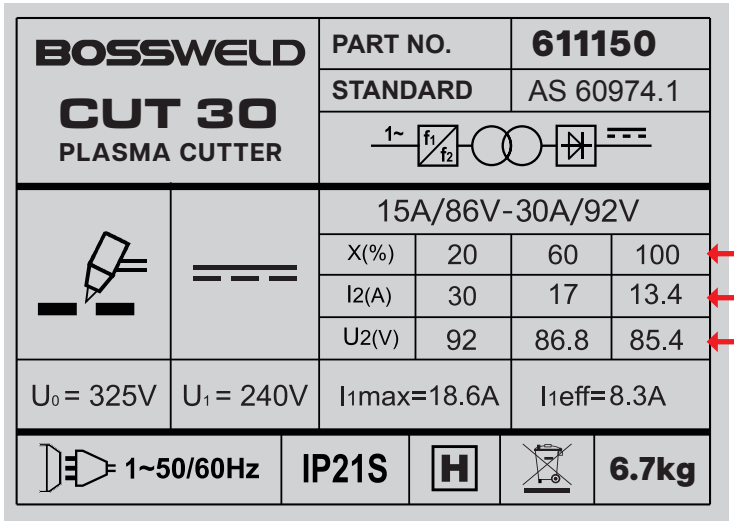
1. Digital LED Screen
2. Power Indicator Light
3. Overload Error Indicator
4. Current Adjustment Knob
5. Plasma Torch Central Connector
6. Earth Lead Connection Socket
7. Mains Power Switch
8. 240V AC Mains Power Cord
9. Air Regulator Pressure Adjustment
10. Air Pressure Gauge
11. Compressed Air Inlet
12. Air Filter/Water Separator Drain
13. Cooling Fan

DUTY CYCLE

SPECIAL NOTE:
If this welders duty cycle is exceeded the welder will enter "thermal overload" which will automatically stop the welding output in order to protect, both the user and the welder. You will know the welder has gone into thermal overload when the overload error indicator light is illuminated. The welder will then cool itself down, and once the overload error indicator light is no longer illuminated, welding can then re-commence.

Please note. Exceeding the machine's duty cycle, cannot be considered grounds for warranty or return.

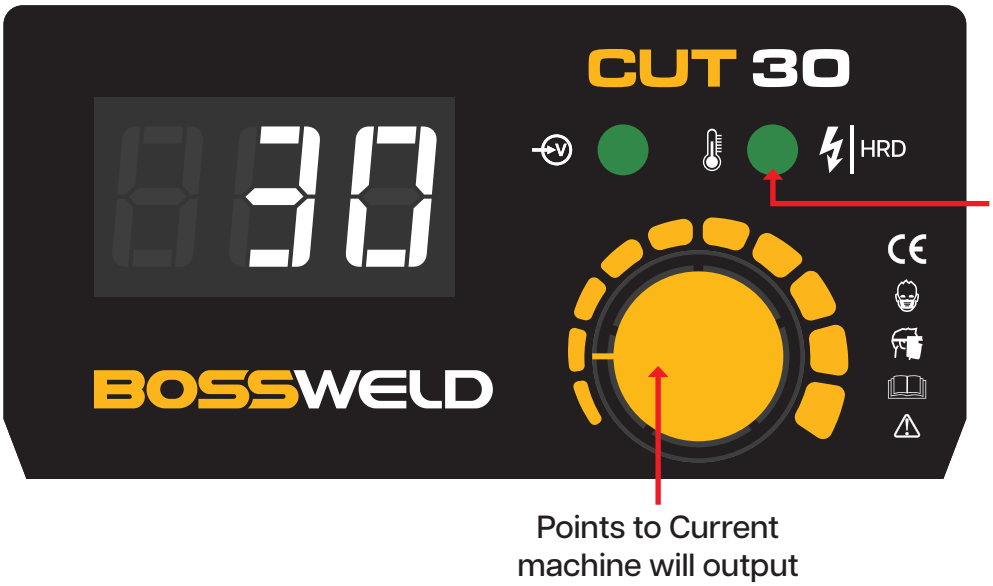
The term duty cycle indicates the percentage welding time available at the output current for each 10 min period over 4 hours, the specification plate on the machine list two given ratings at a given current and voltage.



NOTE: Amps refer to the Current setting

20%	60%	100%
30 Amps	17 Amps	13.4 Amps
92 Volts	86.8 Volts	85.4 Volts

For example this means when the machine is set at a current of 30 Amps it can only cut for Two Minutes in a Ten minute period. The power source is protected by a built in temperature protection device, this will activate if the machine is operated in excess of its amperage and duty cycle rating.



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.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

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
After welding 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, or people just passing by. Use screens if necessary, or non-reflecting welding curtain. Do not let children or animals have 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, move the ON/OFF switch to the OFF position 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 welding 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.

MACHINE CARE / SAFETY

Keep the welding cables, earth 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.

SAFETY INSTRUCTIONS

WARNING
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.

WORK AREA

- 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 earth 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 is 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.

OPERATIONAL ENVIRONMENT
- Height above sea level ≤1000m
- Operation temperature range -10~+40°C
- Air relative humidity is below 90%(20°C)
- Preferably site the machine above floor level, ensure the maximum angle does not exceed 15 degrees.
- Protect the machine against heavy rain and against direct sunshine.
- The content of dust, acid, corrosive gas in the surrounding air or substance must not exceed normal standard.
- Take care that there is sufficient ventilation during welding. There must be at least 30cm free distance between the machine and wall.

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 and if damaged is suspected, it must be immediately replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard

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 unconditionally be secured against falling or rolling over during transport.

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.

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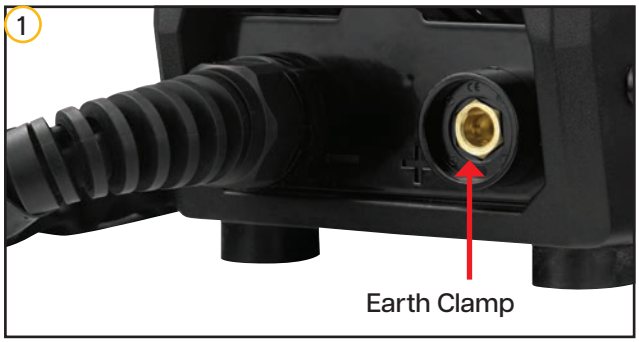
CUT30 PLASMA CUTTER SET UP



Connect Earth Clamp to the earth lead connection socket.

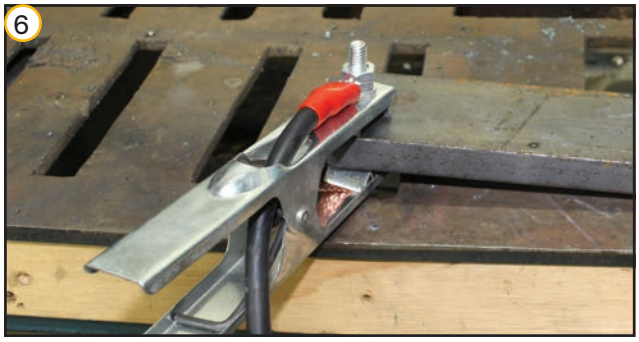
Install the air compressor air hose to the rear panel of the machine - Compressed Air Inlet. Use hose clamp to secure the hose.

Plug the machine 10Amp input power lead into the wall socket, ensuring that the power switch on the machine is in the **ON** position. The front displays will light up and the cooling fan will start.

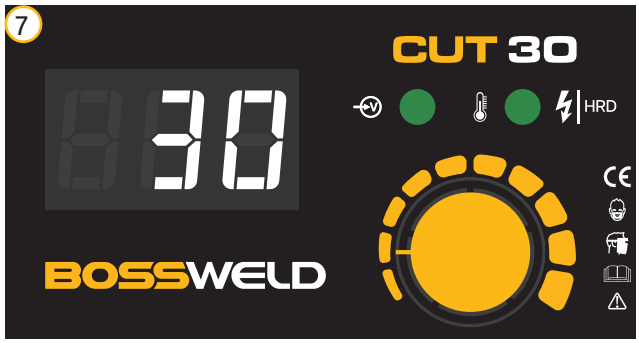
Turn on the air compressor and capable of 7-8 CFM (cubic feet per minute) free air delivery, or 200 LPM (litres per minute)

Set Air pressure to 60-80 PSI, 410-550 KPA or 0.41-0.55 MPA

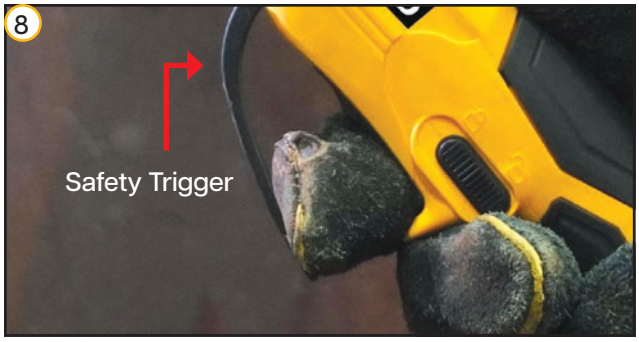
Pull up the air regulator pressure adjustment to unlock then rotate the knob to **set air pressure to 44-58 PSI, 300-400 KPA or 0.3-0.4 MPA.** Then push down to lock the air pressure setting.



Connect earth clamp firmly to work-piece ensuring that the clamp makes good contact with bare metal.



Select your required current turning the Current Adjustment Knob. If the plasma is struggling to penetrate, increase amperage by turning the Current Adjustment Knob.



The plasma torch trigger switch has a safety trigger to prevent accidental triggering. Slide the safety switch back and depress switch.

Depress switch and the arc fires from the nozzle and care must be taken when depressing trigger switch.

This arc is designed to burn through contamination, paint or rust to allow the main cutting arc to connect with bare metal.

Continued depressing of the switch away from cutting surface will reduce the effectiveness of the consumables and greatly reduce their life span.

After the cutting arc starts, slowly start moving the torch across the work piece.

Note: Always start the Arc on a material edge or drill a small hole in the work piece to start Arc.

Adjust the cutting speed so that the sparks go through the work piece and out the bottom of the cut.

If the sparks a blown out toward the torch or at a great angle below the work piece, reduce the cutting speed.

Regularly inspect your consumables for wear. Replace when excessive wear is apparent.

Note: Pictures may vary from your machine model.

TIPS FOR PLASMA CUTTING

COMPRESSED AIR REQUIREMENTS

1. A reliable and consistent supply of clean dry compressed air is essential for proper operation.
2. The compressed air supply must have filtration in the line feeding the power source, both a standard water trap (sintered bronze filter) and also a coalescing filter (for oil in air).
3. The unit requires a minimum (FAD) Free Air Delivery of 200LPM and 60 – 80 PSI pressure. This normally means the compressor must be a belt drive model or if a direct drive it must have a motor power of 2.5HP or greater.
4. The air must be dry and free of oil and moisture (normally a symptom of older, worn out compressors). The air hose must also be of sufficient size (3/8”/10mm minimum) to supply the machine.

Note: Alloys generally take 50% more amperage for the thickness than steel

PIERCING THE WORK

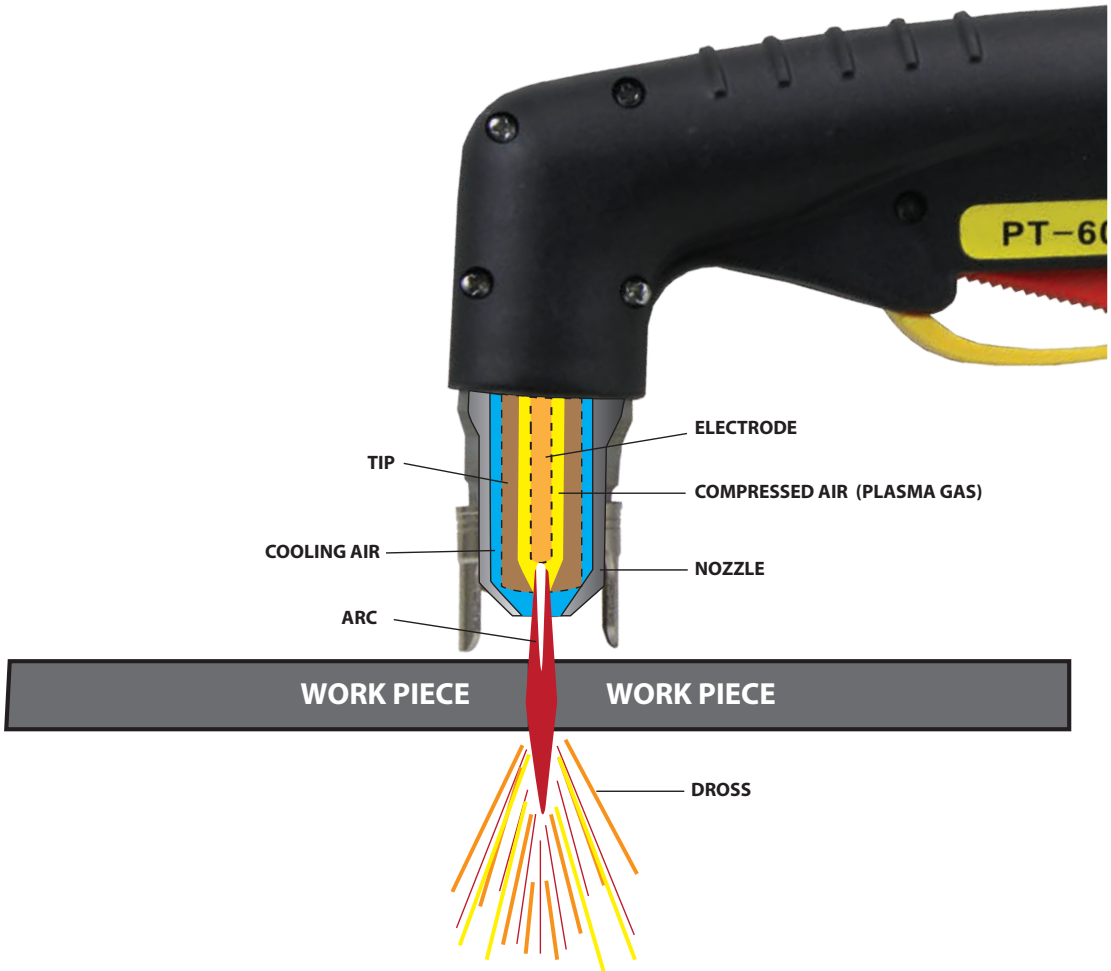
Many inexperienced users try to pierce the metal by coming straight down perpendicular (90°) to the work. This results in molten metal being blown back into the torch. A better method is to approach the metal at a slight angle (60°) towards the direction of the cut. This way, the molten metal is blown away from the torch.

Handheld Operation – how it works

In a typical handheld plasma system, such as our Bossweld Cut 30 Air Plasma, the electrode and nozzle consumable parts are in contact with one another inside the torch when in the OFF state.

When the trigger is squeezed, the power supply produces a DC current that flows through this connection, and also initiates the plasma gas flow. Once the plasma gas (compressed air) builds up enough pressure, the electrode and nozzle are forced apart, which causes an electrical spark that converts the air into a plasma jet.

The DC current flow then switches from electrode to nozzle, to a path between the electrode and work piece. This current and airflow continues until the trigger is released.



MACHINE CONSUMABLE OPTIONS

Bossweld Shade 5 Gas Welding Flip Up Goggles

P/N: 700056

- Flip up lens
- Complete with shade 5 lens
- Elastic head strap

Lightweight goggles used for oxygen/acetylene and oxygen/LPG cutting and brazing. Can also be used during plasma cutting process.

Bossweld Crew Variable Shade Welding Helmet

P/N: 710200

- Dual shade range 4-8 / 9-13
- 96 x 44mm (42cm²) viewing area with 2 sensors

Featuring an auto-darkening lens, it quickly adjusts to protect your eyes while maintaining clear visibility of your work. Certified to AS/NZS 1337.1 & 1338.1

Bossweld 16" Black And Gold Welding Gloves

P/N: 700010

- Full 40cm in length for extra wrist protection

High quality A/B grade split leather with a reinforced palm to first finger for added durability. Ideal for use when MIG & Stick welding and plasma cutting.

Bossweld 16" Blue Welding Gloves

P/N: 700995

- Full 40cm in length for extra wrist protection

The set of gloves feature premium A/B grade split leather with reinforced palm to first finger for added durability. Ideal for use when MIG and Stick welding and plasma cutting.

Bossweld Large Leather Welders Jacket

P/N: 700001

- Size: Large - XXXLarge

Heavy duty chrome leather garment that protects welders from sparks, spatter, and radiant heat.

Reinforced stitching and secure metal snaps.

Bossweld 60 x 90cm WFR Full Apron

P/N: 700820

- Nylon neck and waist adjustable strap

Full welders apron made with a durable flame retardant material. Ideal alternative to a welders jacket when doing light welding.

Bossweld Chalk Pencil and Holder

P/N: 800023

- High quality soapstone

Ideal for semi marking of steel before welding or cutting. Pack contains holder and chalk refills.

10mm x 5mm in size and up to 125mm in length.

Bossweld CUT30 Torch Spare Kit

P/N: 94.CT30FEK

Contain 14 nozzles, 8 electrodes and 2 ceramic caps

REPAIR AND MAINTENANCE

DAILY CHECK

In order to give maximum performance of the machine and ensure the daily security operations, routine maintenance is critically required.

During routine maintenance, attention must be paid if the various parts of the cutting device wear, focusing on deformation, pore is blocked, check the above parts in sequence. If necessary, clean and replace some parts. In order to maintain original performance, be sure to use genuine parts for our cutting machine during replacement.

REGULAR CHECKING

To maintain the performance of the machine can be use for a long time, routine maintenance alone is not enough. Regular checking the inside of the cutting machine carefully, including the maintenance and purification of the power supply.

Under normal circumstances, there will be a lot of accumulation of particles such as dust and oil will spatter within six months time. If the working environmental is very poor, the splash and dust inside the power supply will be more, then it is preferably to maintenance every three months .

And implementation of standards, see next page. Hope customers can add some maintenance projects according to their own needs.

INTERNAL DUST REMOVAL

Remove the housing of the cutting power source, use compressed air to remove moisture (dry air) to clean and blow away the internal accumulation of splash and dust.

CUTTING POWER SOURCE CHECKING

Attention shall be paid to check if any signs of strange smell, color change, heating, and the internal connection is reliable.Focus on the areas not involved in daily maintenance.

CABLE

The check on output cable, input cable and the earth cable in daily maintenance should be as detailed as possible.

CONSUMPTION COMPONENTS REPAIR, MAINTENANCE

The relay used on the printed circuit board of the input circuit, is are respectively via the “contact” and to realize the breaking or connecting of the circuit, and it has a certain service life on electrical and mechanical device. Because the customer usage is different, the above elements actual service life is difficult to generalize. So when applying the maintenance, the machine should be regarded as a kind of consumption components to repair and maintenance.

- Regularly check nozzle, electrode, and replace them in time if worn out, in case of avoid torch getting sticked on work-piece, or affecting arc starting and cutting results.
- During cutting, the cutting torch cable, especially cable between torch grip and cable transitions, should not overly bend, and the bending radius must not be less than 200mm.
- Do not put cutting torch on newly welded work-piece to avoid burning.
- If do not use cutting torch for long period(especially in wet weather or raining season), please well pack it and keep in dry place.
- Prevent rain and wind if works in open area.
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- Prevent rain and wind if works in open area.

TROUBLE SHOOTING

EXCEPTIONAL PRELIMINARY DETERMINE

Even it happens with inability to cut, arc of instability, poor cutting results and other anomalies, do not make judgment that the machine is broken.

There will many reasons that causing these anomalies or failure but the cutting machine still is good. For example: fuse melting, loose fasteners, switch is not turned on, error settings, gas hose broken, cable breaking, chapping. So, before sent to repair, please try to check, and a considerable portion of all accidents could be solved immediately.

COMMON PROBLEM REASON AND SOLUTIONS

This cutting power has self diagnosis function,i.e. If abnormal happen, warning light on. Analysis reason and make proper treatment.

MACHINE TEMPERATURE IS RISING ABNORMALLY

Reason: In usage,if machine works with over duty cycle and rated output power, indication light will be on.

Solution: Release the cutting torch switch. Keep power switch on with cooling fan rotates and wait. When cutting power internal temperature drop to or lower than normal value , the machine will start automatically, and restart operation.

When the indication light is off, do not cut immediately, wait 20 minutes or more, keep cooling fan rotates, make sure the cutting power internal is fully cooled.

When you start a cutting process, please be sure to start with lower working condition (like reduce cutting time or reduce output current). If users continues to operate in the same condition, it will cause the same fault again, causing the cutter to stop work, and interrupting the cutting. If you repeatedly use in overload cycle and overrated output state,it will result in reduced insulation of internal components, shorten the machine's service life, resulting in machine faults or burning out.

	TROUBLES	REASONS	SOLUTIONS
1	Abnormal indicator light on	Poor ventilation condition, leading to overheat protection	Improve the ventilation conditions
		Environment temperature is too high	Recovery automatically after temperature is lower
		Work in over-rated duty cycle	Automatic recovery after temperature lowering
2	Current knob adjusting noneffective	Potentiometer damage (current adjustment)	Replace the Potentiometer
3	Fan does not turn or turn very slow	Power switch is broken	Replace the power switch
		Fan is broken	Replace or repair the fan
		Lead is broken or fall off	Check line and repair it
4	No no-load voltage	Over heat inside machine	See chart 1
		Power switch is broken	Replace the power switch
5	Torch and cable is overheat + - sockets are overheat	plug is loosen	Replace better quality cutting torch
		plug is loosen	Replace proper cable as request
		plug is loosen	Descaling, and re-tightening
		The contact resistance between torch and cable is too big	
6	Power is tripped	Power capacity is not enough	Increase power capacity
		Short circuit happened duding the welding process	Contact manufacturer/supplier
7	NO compressed air come out of cutting torch	Check if there is air leakage on torch	Replace or repair cutting torch
		Check gas reduce valve if it has inlet compressed air	If yes,check if there is air output, if no air output, change gas reduce valve
		Compressor is damaged	Contact manufacturer/supplier
8	Others		Contact manufacturer/supplier

Please avoid abnormal operation!
To avoid electric shock! Please pay attention to check the above procedures.

WARRANTY

This warranty is in addition to the statutory warranty provided under Australian Consumer Law, but does not include damage resulting from transport, misuse, neglect or if the product has been tampered with.
The product must be maintained as per this manual, and installed and used according to these instructions on an appropriate power supply. The product must be used in accordance with industry standards and acceptable practice.
This warranty covers the materials used to manufacture the machine and the workmanship used to produce the item. This Warranty does not cover damage caused by:

1. Normal wear and tear due to usage
2. Misuse /abuse or Neglect of the item
3. Transport / handling breakages
4. Lack of maintenance, care and cleaning
5. Environmental factors, such as usage in temperatures exceeding 40 degrees, above 1000mt sea level, rain, water, excessive damp, cold or humid conditions.
6. Improper setup or installation
7. Use on Incorrect voltage or non authorised electrical connections and plugs
8. Use of non standard parts
9. Repair, case opening, tampering with, modifications to any part of the item by non authorised BOSSWELD repairers.

This warranty covers the machine only and does not include Torches, Leads, Earth Clamps, Electrode holders, Plasma Torches, Tig Torches and any of the parts on those items unless there is a manufacturing fault.

1. REGISTRATION
Purchasers are encouraged to register for warranty on our website. www.bossweld.com.au/warranty

2. TIME PERIOD - 1 Years
A warranty claim must be made within 1 years from the date of purchase of this product. Any claim must include proof of purchase.

3. HOW TO MAKE A CLAIM - NEED SOME HELP?

- Visit our website www.bossweld.com.au/troubleshooting for many helpful tips and guides to assist with the setup and usage of your new machine. Still stuck....?
- Call the BOSSWELD Helpdesk on 1300 899 710 for over the phone assistance.
- If the machine is not operational then return the item to the place of purchase.

Note:
If this welders duty cycle is exceeded the welder will enter "thermal overload" which will automatically stop the welding output in order to protect, both the user and the welder. You will know the welder has gone into thermal overload when the overload error indicator light is illuminated. The welder will then cool itself down, and once the overload error indicator light is no longer illuminated, welding can then re-commence. Please note. Exceeding the machine's duty cycle, cannot be considered grounds for warranty or return.

BOSSWELD MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHERS, INCLUDING, BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

Scan to Learn More

This warranty is given by Dynaweld Industrial Supplies Pty Ltd
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Australia (Head Office)
2/10 Jessica Place, Prestons, NSW, Australia, 2170

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