

DIY TRADE

P40



PLASMA

# INVERTER PLASMA CUTTER MANUAL



# BOSSWELD

WELD LIKE A BOSS

## Thank you for choosing a BOSSWELD P40 Inverter DC Plasma Cutter

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.

The BOSSWELD P40 is the latest in IGBT Inverter cutting technology, this lightweight plasma cutter enables the user to complete high quality cutting of ferrous and non ferrous metals up to 12mm with ease. You will be impressed with what this power house can cut.

We truly hope you enjoy using your plasma cutter



## P

## PLASMA CUTTING

- Wide range of uses to cut conductive metals
- Uses an accelerated jet of hot plasma
- High speed/low cost cutting method
- Used extensively replacing gas cutting methods
- Air compressor is required

### METAL TYPES

Mild steel, stainless steel & aluminium

<b>CONTENTS</b>	<b>PAGE</b>
<b>WARRANTY</b>	<b>4</b>
<b>BOX CONTENTS</b>	<b>5</b>
<b>WARNINGS</b>	<b>6</b>
<b>MACHINE CARE / SAFETY INSTRUCTIONS</b>	<b>7</b>
<b>WORK AREA SAFETY</b>	<b>8</b>
<b>MAINTENANCE &amp; DISPOSAL / DUTY CYCLE</b>	<b>9</b>
<b>FRONT &amp; REAR PANEL LAYOUT</b>	<b>10</b>
<b>PLASMA SETUP</b>	<b>11-13</b>
<b>PLASMA CUTTING FUNDAMENTALS</b>	<b>14</b>
<b>TIPS FOR PLASMA CUTTING</b>	<b>15</b>
<b>PLASMA TORCH SPARES</b>	<b>16</b>
<b>TROUBLE SHOOTING</b>	<b>17</b>
<b>COMMON WEAR PARTS</b>	<b>18-19</b>



## 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.

### 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 thermal overload light is illuminated. The welder will then cool itself down, and once the thermal overload 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.**

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](http://www.bossweld.com.au/warranty)

### 2. TIME PERIOD - 1 Year

A warranty claim must be made within 1 year 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](http://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.
- Visit [www.bossweld.com.au](http://www.bossweld.com.au),
- If the machine is not operational then return the item to the place of purchase.

**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.**



**DO NOT GRIND YOUR PLUG**  
This will void any warranty on your machine

## BOSSWELD P40 Inverter DC Plasma Cutter Box Contents

1. BOSSWELD P40 Inverter DC Plasma Cutter
2. Plasma Torch
3. Earth Lead
4. Air regulator (built in)
5. Carry Strap
6. Cable / Lead tidy
7. Torch Spares (not shown)
8. Owners Manual (not shown)





## 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 plasma cutting. Avoid exposing skin to ultraviolet rays produced by the arc.



### WELDING HELMET / SAFETY GLASSES

Under no circumstances should the plasma cutter be operated unless the operator is wearing goggles 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.



### OTHER PERSONS

Ensure that other persons are screened from the plasma sparks and are at least 15 metres away from the work piece. Always ensure that cutting area 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 cutting they must switch the Plasma cutter off. When leaving the Plasma cutter unattended, move the ON/OFF switch to the OFF position and disconnect the plasma from the electrical mains supply. Do not leave hot material unattended after cutting.



### 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 plasma torch, earth clamp and cables good condition. Failure to do this can result in poor cutting 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 plasma cutter. Any part of the plasma cutter 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 plasma machine for any work other than that for which it was designed e.g. do not use plasma for thawing pipes.

### HANDLING

Ensure the handle is correctly fitted. As plasma 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 plasma cutter 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 plasma cutting 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 plasma cutting emits fumes which can be dangerous.
-  Always maintain easy access to the ON/OFF switch of the plasma cutter, and the electrical mains supply.
-  Do not expose the Plasma cutter to rain and do not operate in damp or wet locations

Where plasma cutting 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 plasma arc. 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 plasma cutter 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.

### CUTTING SURFACES

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

### WORK PIECE

When cutting, 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.



## MAINTENANCE

### WARNING

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

There are no user serviceable parts inside the plasma cutter. Refer to a qualified service personnel if any internal maintenance is required. After use, wipe the plasma cutter 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 plasma cutter and accessories out of children's reach in a dry place. If possible store the plasma cutter 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 PLASMA CUTTER

Plasma cutters 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.

# 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 thermal overload light is illuminated.

The welder will then cool itself down, and once the thermal overload 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%	100%
40 - Amps	25-Amps
96.0 Volts	92.0 Volts

For example this means when the machine is set at a current of 40 Amps it can only weld 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.

- This light indicates
- Over temperature
- Duty cycle exceeded



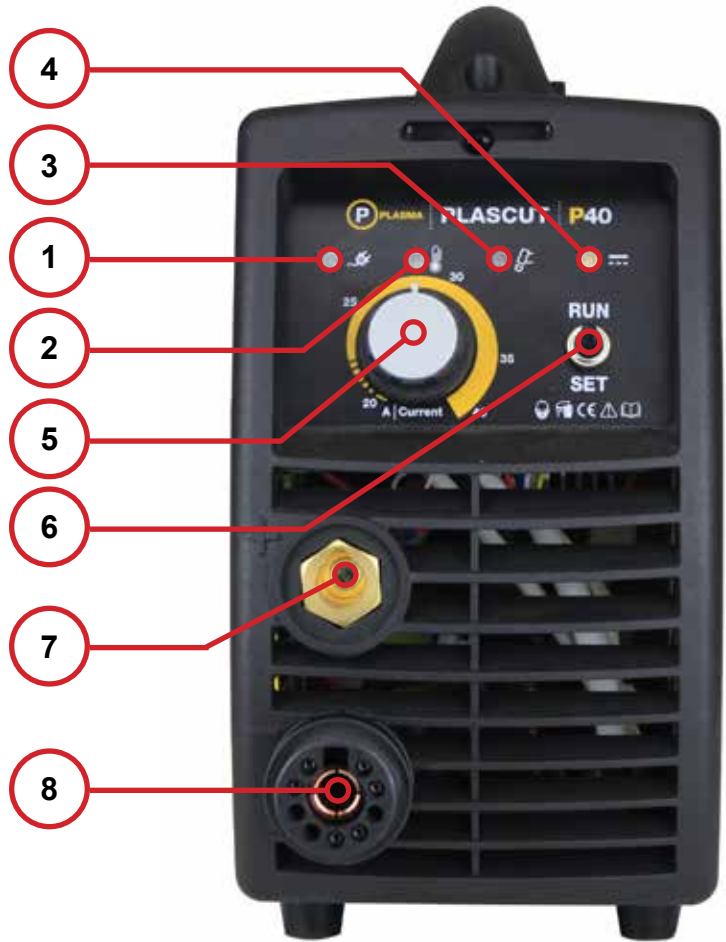
Points to Current machine will output

BOSSWELD		WELD LIKE A BOSS	
INVERTER DC PLASMA CUTTER		PART NO.	610120
BOSSWELD P40		STANDARD	IEC 60974
20A/88V-40A/96V		X	20% 100%
U <sub>1</sub> =32V		I <sub>2</sub>	40A 25A
		U <sub>2</sub>	96V 92V
U <sub>1</sub> =240V		I <sub>max</sub>	32A
I <sub>1</sub>		I <sub>tot</sub>	14.3A
IP21		H	AF
			6.5Kg

- Duty Cycle
- Amperage / Current
- Voltage

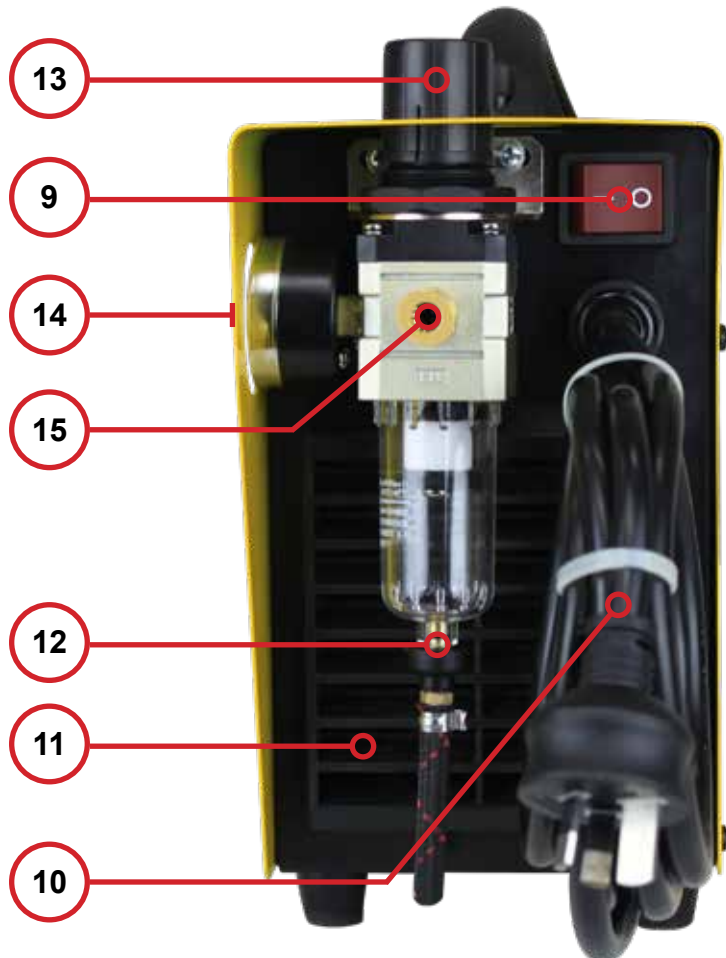
**FRONT PANEL**

1. Power Indicator Light
2. Overload Error Indicator
3. Cutting Circuit Operational Lamp
4. Cutting Indicator Light
5. Current Adjustment Knob
6. Run / Set Switch
7. Earth Lead Connection Socket
8. Plasma Torch Central Connector



**REAR PANEL**

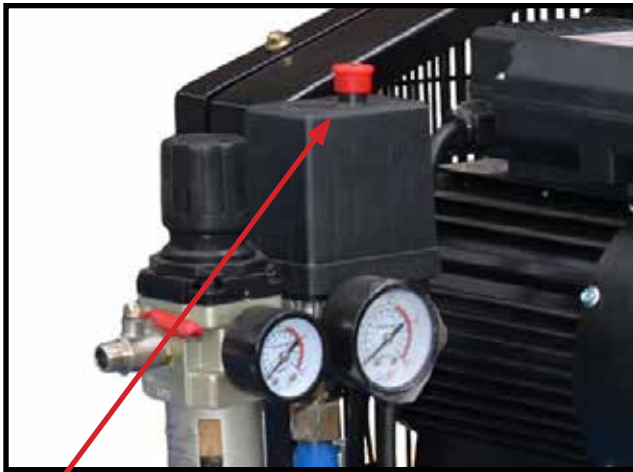
9. Mains Power Switch
10. 240V AC Mains Power Cord
11. Cooling Fan
12. Air Filter/Water Separator Drain
13. Air Regulator Pressure Adjustment
14. Air Pressure Gauge (view on side of machine)
15. Compressed Air Inlet



## SET UP P40 Inverter DC Plasma Cutter



**SET UP P40 Inverter DC Plasma Cutter- continued**



**5** Make sure air compressor is turned on and capable of 7-8 CFM (cubic feet per minute) free air delivery, or 200 LPM (litres per minute)



**8** Select your required current turning the Current Adjustment Knob. If the plasma is struggling to penetrate, increase amperage by turning the Current Adjustment Knob Set the RUN / SET switch to RUN,



**6** Set Air pressure to 60-80 PSI, 410-550 KPA or 041-0.55 MPA



**9** The plasma torch trigger switch has a safety trigger to prevent accidental triggering of the pilot arc. Slide the safety switch back and depress switch.



**7** Switch ON the machine using Mains Power Switch. Set the RUN / SET switch to SET and test the Air Pressure by sliding the safety switch back on the torch and depress torch trigger



**10** Depress switch and the pilot 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.

## SET UP P40 Inverter DC Plasma Cutter- continued



- 11** 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.



- 14** At the end of the cut pause to allow the plasma to sever the last part.



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



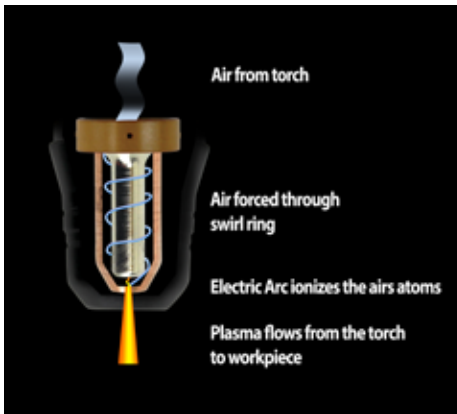
- 15** Regularly inspect your consumables for wear. Replace when excessive wear is apparent.



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

**Note:** Pictures may vary from your machine model

## PLASMA CUTTING FUNDAMENTALS



The Plasma arc process has always been seen as an alternative to the oxy-fuel process. The plasma arc cutting process is illustrated below. The basic principle is that the arc formed between the electrode and the workpiece is constricted by a fine bore, copper nozzle. This increases the temperature and velocity of the plasma emanating from the nozzle. The temperature of the plasma is in excess of 20 000°C and the velocity can approach the speed of sound. When used for cutting, the plasma gas flow is increased so that the deeply penetrating plasma jet cuts through the material and molten material is removed in the efflux plasma. The process differs from the oxy-fuel process in that the plasma process operates by using the arc to melt the metal whereas in the

oxy-fuel process, the oxygen oxidises the metal and the heat from the exothermic reaction melts the metal. Thus, unlike the oxy-fuel process, the plasma process can be applied to cutting metals which form refractory oxides such as stainless steel, aluminium, cast iron and non-ferrous alloys.

### POWER SOURCE

The power source required for the plasma arc process must have a drooping characteristic and a high voltage. Although the operating voltage to sustain the plasma is typically 50 to 60V, the open circuit voltage needed to initiate the arc can be up to 400V DC.

On initiation, the pilot arc is formed within the body of the torch between the electrode and the nozzle.

For cutting, the arc must be transferred to the workpiece in the so-called 'transferred' arc mode.

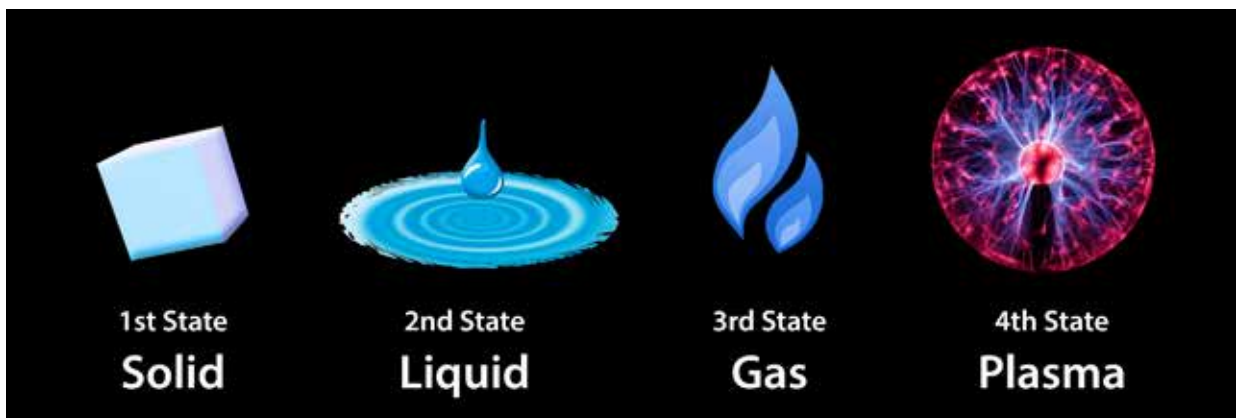
The electrode has a negative polarity and the workpiece a positive polarity so that the majority of the arc energy (approximately two thirds) is used for cutting.

### GAS COMPOSITION

In the conventional system using a tungsten electrode, the plasma is inert, formed using argon, argon-H<sub>2</sub> or nitrogen. However oxidising gases, such as air or oxygen, can be used but the electrode must be copper with hafnium. The plasma gas flow is critical and must be set according to the current level and the nozzle bore diameter. If the gas flow is too low for the current level, or the current level too high for the nozzle bore diameter, the arc will break down forming two arcs in series, electrode to nozzle and nozzle to workpiece. The effect of 'double arcing' is usually catastrophic with the nozzle melting.

### CUT QUALITY

The quality of the plasma cut edge is similar to that achieved with the oxy-fuel process. However, as the plasma process cuts by melting, a characteristic feature is the greater degree of melting towards the top of the metal resulting in top edge rounding, poor edge squareness or a bevel on the cut edge. As these limitations are associated with the degree of constriction of the arc, several torch designs are available to improve arc constriction to produce more uniform heating at the top and bottom of the cut.



Plasma is commonly known as the 4th matter of state the first being solid, then liquid, gas and then plasma. each matter changes from one state to another through the introduction of heat

## 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.

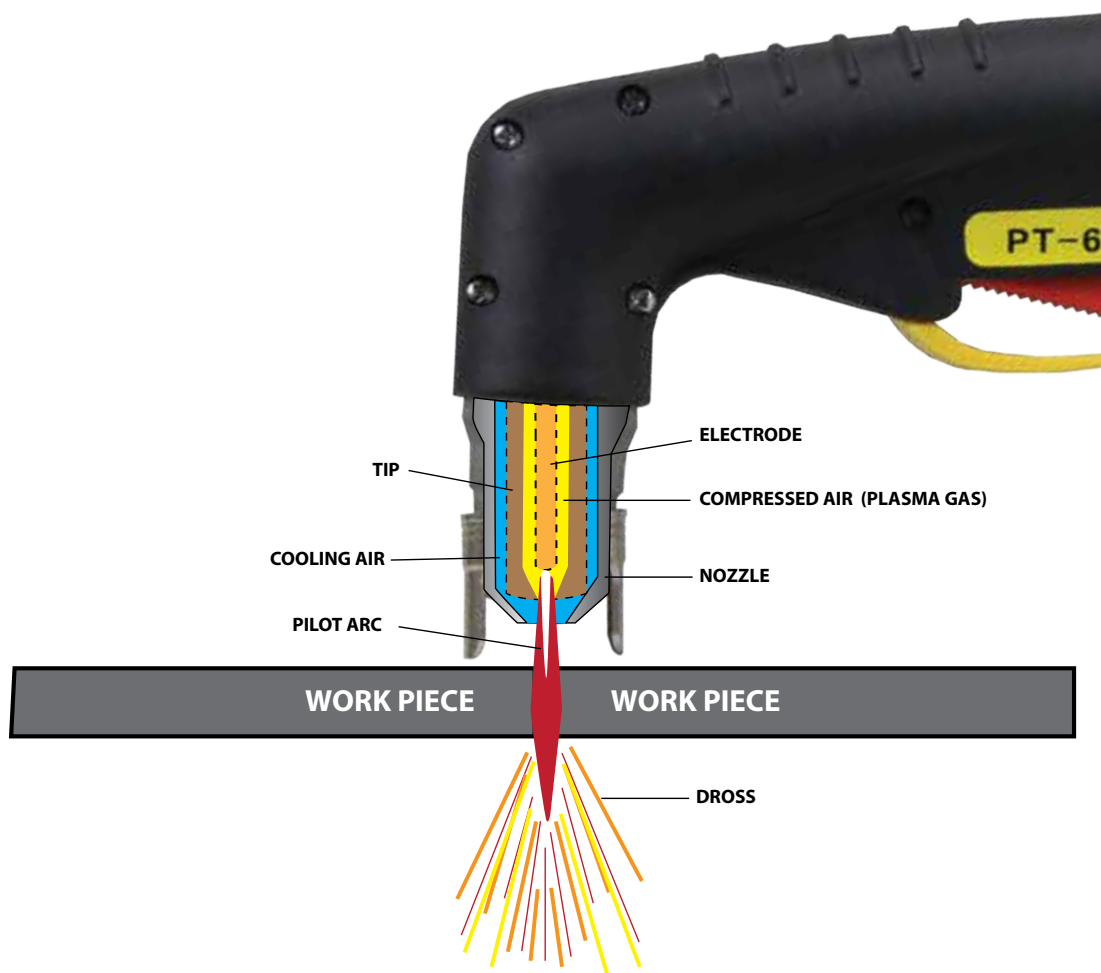
Note: Alloys generally take 50% more amperage for the thickness than steel

### 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 Plascut 40 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.



## PLASMA TORCH PT40

PART NO.	DESCRIPTION
94.PT40.4	Bossweld PT40 Plasma Cutting Torch suits P40



PART NO.	DESCRIPTION
96.60432	Double Pointed Spacer Tecmo PT40/PT60



PART NO.	DESCRIPTION
96.60028	Swirl Ring Tecmo PT25/PT40/PT60 Trafimet S45/S54



PART NO.	DESCRIPTION
96.60389	Retaining Cap 6 holes Tecmo PT40/PT60, Trafimet S45



PART NO.	DESCRIPTION
96.52582	Electrode back striking Tecmo PT25/PT40/PT60



PART NO.	DESCRIPTION
96.51318.08	Tip Contact B/Strike 0.80mm 20-30A Tecmo PT25/PT40/PT60
96.51318.09	Tip Contact B/Strike,0.9mm 30-40A Tecmo PT40/PT60



PART NO.	DESCRIPTION
96.52583	Electrode Extended back striking Tecmo PT25/PT40/PT60



PART NO.	DESCRIPTION
96.51314.09	Tip Ext Contact B/Strike,0.9mm 30-40A Tecmo PT40/PT60



Central Adaptor



## TROUBLE SHOOTING

Problem	What to do
Power indicator is not lit, fan does not work and no output current	<ol style="list-style-type: none"> <li>1. Check that the plasma is plugged into the 240V mains outlet and is switched on.</li> <li>2. Check that the mains fuse or breaker has not operated.</li> <li>3. Check that the main switch on the rear of the unit is in the on position.</li> </ol>
Power indicator is lit, fan works, no output current	<ol style="list-style-type: none"> <li>1. Check the plasma cables are connected correctly.</li> <li>2. Check the output connectors are not disconnected or damaged.</li> <li>3. Check that the earth clamp is connected securely to the workpiece and that the contact point is clean of paint or rust.</li> </ol>
<p>Over temperature indicator is on, no output current</p> <p>Output current is not stable.</p>	<ol style="list-style-type: none"> <li>1. Duty cycle of the unit has been exceeded. Allow the unit to cool for 20 minutes.</li> <li>1. Check mains voltage is constant.</li> <li>2. Check the torch cable connector is tight in the socket.</li> <li>3. Check the earth clamp connection to the workpiece.</li> </ol>
Power lamp and temperature lamp on	<ol style="list-style-type: none"> <li>1. Air flow blocked – check for blocked air flow around the unit and correct condition.</li> <li>2. Fan blocked – check and correct condition.</li> <li>3. Unit is overheated - let it cool down for at least 5 minutes. Make sure the unit has not been operated beyond the duty cycle limit, refer to parameters</li> <li>4. Faulty components in unit – return for repair or have qualified technician repair as per service manual.</li> </ol>
Torch fails to ignite the arc when torch switch activated	<ol style="list-style-type: none"> <li>1. Faulty torch parts – inspect torch parts and replace if necessary.</li> <li>2. Gas pressure too high or too low – adjust to proper pressure.</li> <li>3. Faulty components in unit – adjust for repair or have qualified technician repair per service manual.</li> </ol>

## 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.

**MACHINE CONSUMABLE OPTIONS**



CODE	DESCRIPTION
600311	Bossweld Welder Trolley Universal

**Bossweld Universal Welders Trolley**

Multi purpose welder trolley that suits most Bossweld welding machines.

**Features**

- 45kg capacity
- 3 storage levels
- Sturdy formed steel construction
- Cylinder holder accepts D and E size gas cylinders and comes with 2 safety chains
- Large 7.5cm casters for easy movement
- Welders sits at an angle for easy access to controls
- Handy cable hangers
- Overall dimension - 70.5cm (L) x 41.9cm (W) x 77.5cm (H)



CODE	DESCRIPTION
700010	Bossweld 16" Black & Gold Welding Glove

**Bossweld 16inch Welding Gloves**

BossSafe 16 inch welding gloves available in black and green cow split leather.



CODE	DESCRIPTION
700056	Bossweld Gas Welding Flip-up Goggles Shade 5

**Bossweld Shade 5 Gas Welding Flip Up Goggles**

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

- Flip up lens
- Elastic head strap
- Comfortable fit to face
- Complete with shade 5 lens



CODE	DESCRIPTION
700055	Bossweld Gas Welding Flip-up Goggles Shade 5

**Bossweld Gas Welding Flip-Up Goggles**

Lightweight goggle used for Oxy/Acetylene and Oxy/LPG cutting and brazing

**Features**

- Light weight
- Flip up lenses
- Comfortable fit to face
- Elastic head straps

**Applications**

- Eye protection during Oxy/Acetylene and Oxy/LPG cutting and brazing
- Plasma cutting



CODE	DESCRIPTION
800020	Bossweld Engineers Chalk 75 x 10 x 10mm
800022	Bossweld Engineers Split Chalk 75 x 10 x 5 mm

**Bossweld Engineers Chalk**

High quality soapstone engineers chalk used for marking steel in general engineering & boilermaking.

**Features**

- 75mm long
- 10 x 5mm or 10 x 10mm
- Semi permanent marking of steels

## MACHINE CONSUMABLE OPTIONS



CODE	DESCRIPTION
700001M	Bossweld Leather Welder's Jacket (Medium)
700001L	Bossweld Leather Welder's Jacket (Large)
700001XL	Bossweld Leather Welder's Jacket (X Large)
700001XXL	Bossweld Leather Welder's Jacket (XX Large)
700001XXXL	Bossweld Leather Welder's Jacket (XXX Large)

### Bossweld Leather Welders Jacket

Chrome leather welding jacket with metal snaps. Unlined, the jacket has heavy duty sewing.

#### Features

- Heavy duty chrome leather
- Double studs for extra protection
- Several sizes available
- Heavy duty sewing



CODE	DESCRIPTION
700255M	Bossweld FR-40 Jacket w/ Leather Sleeve - M
700255L	Bossweld FR-40 Jacket w/ Leather Sleeve - L
700255XL	Bossweld FR-40 Jacket w/ Leather Sleeve - XL

### Bossweld FR40 Welders Jacket with leather Sleeve

Manufactured from a lightweight, flame retardant material, provides protection for the upper body & arms, with chrome leather sleeves.

#### Features

- Light weight composite welders jacket
- Flame retardant material
- Several sizes available
- Leather sleeves for excellent protection



CODE	DESCRIPTION
700002	Bossweld Chrome Leather Full Apron 60 x 90cm

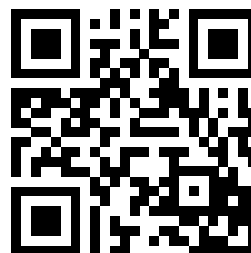
### Bossweld Chrome Leather Apron

Chrome leather full apron. Two piece style with heavy duty sewing. 60cm x 90cm.

#### Features

- Heavy duty chrome leather
- Leather neck and waist adjustable strap
- Heavy duty sewing for reliability
- Excellent protection (60cm x 90cm)

For Further Tips and Information please visit **Bossweld TV**



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