

DIY

M100



INVERTER GASLESS MIG WELDER

MANUAL



BOSSWELD
WELD LIKE A BOSS

Thank you for choosing a BOSSWELD M100 Inverter Gasless MIG Welder

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 M100 is the latest in IGBT Inverter welder technology, this very portable MIG welder is easy to set up, easy to use, enabling the user to complete smooth welds with Gasless MIG wire. Ideal for around the home, DIY workshop, or rural applications.

BOSSWELD products are manufactured to the highest standards so that performance is maximised. We truly hope you enjoy using your welder!

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



ATTENTION !

THIS MACHINE ONLY WORKS WITH GASLESS MIG WIRE

Recommend using Gasless 0.8mm x 0.9kg

0.9kg Spools ONLY

A spool of BOSSWELD Gasless MIG wire is shown.

M MIG

- Simple to learn
- MIG Wire is fed through the gun to create the weld pool
- Gas or flux prevents oxidation in the weld
- Weld with or without gas
- Point and pull the trigger
- Great for maintenance, small projects & automotive repairs

METAL TYPES
Mild steel

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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 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.

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 year from the date of purchase of this product. Any claim must include proof of purchase.

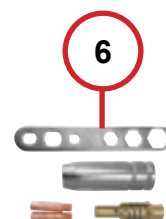
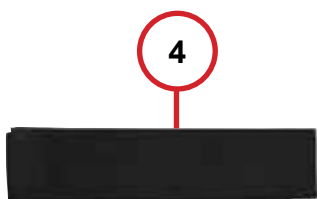
3. HOW TO MAKE A CLAIM - NEED SOME HELP?

- Visit our website www.bossweld.com.au/troubleshooting 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,
- 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.

BOSSWELD M100 Inverter Gasless MIG Welder Box Contents

1. BOSSWELD M100 Inverter Gasless MIG Welder
2. Direct Connect MIG Torch 2.5M
3. Direct Connect welding Earth cable with Earth Clamp
4. Carry Strap
5. Cable / Lead tidy
6. Torch Spares
7. Gasless 0.6-0.8mm Driver Roller (Installed)
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 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.



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.

FRONT PANEL

1. Power Light Indicator
2. Overload Error Indicator Light
3. Welding Voltage Control Knob
4. Wire Speed Control Knob
5. Welding Earth Lead
6. MIG Torch Output



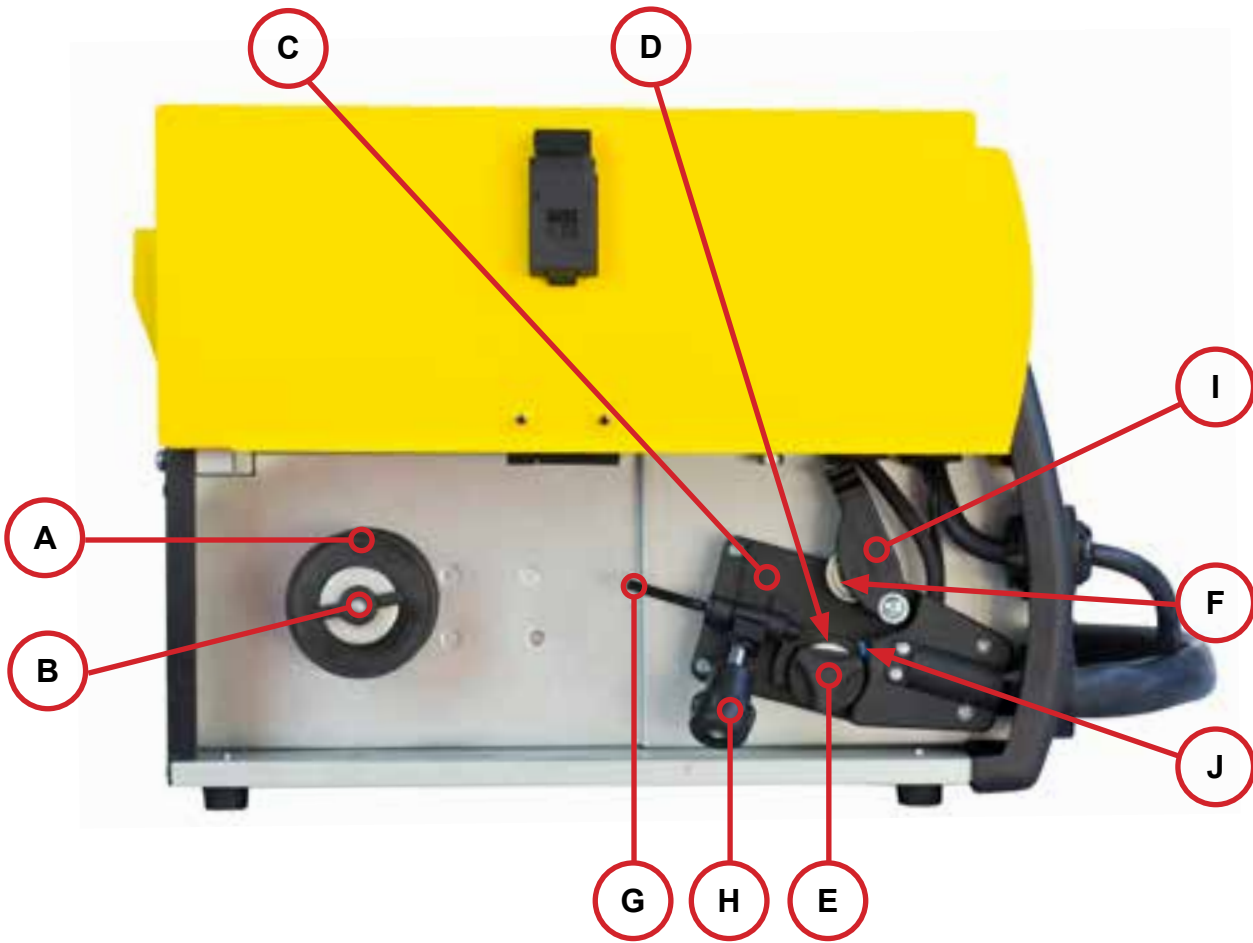
REAR PANEL

7. Cooling Fan
8. Mains Power Switch
9. 240V AC Mains Power Cord
10. 10 Amp Input Plug

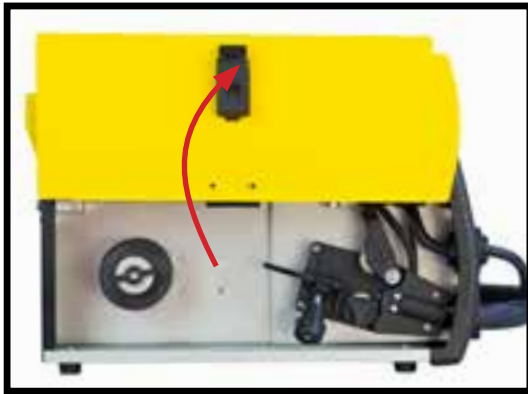


SIDE PANEL (DOOR OPEN)

- A. Spool Hub **NOTE: This unit is suitable for D100 Rolls of Gasless MIG Wire (<1Kg in weight)**
- B. Spool Hub Nut
- C. Wire Drive Assembly
- D. Drive Roller
- E. Drive Roller Cover
- F. Idle Roller
- G. Guide Tube
- H. Wire Feed Tensioning Knob
- I. Wire Tensioning Arm
- J. Inlet Tube



MACHINE SET UP GASLESS MIG WELDING



1 Open the side door of the machine.



2 Remove the Spool Hub Nut and place spool of wire on Spool Hub.



3 Replace Spool Hub Nut and adjust firmly - without too much pressure. **Note:** Wire to roll from over top of spool into wire feeder

ATTENTION
THIS MACHINE ONLY WORKS WITH GASLESS MIG WIRE
Recommend using Gasless 0.8mm x 0.9kg
0.9kg Spool ONLY



4 Release the Wire Feed Tensioning Knob by pulling it down.



5 Remove the Drive Roller Cover. Check the Drive roller is matched to the wire size for the job **Note:** Correct wire size on roller to face out off machine when fitting. **Then replace the Drive Roller Cover. before feeding the wire See Page 14 for drive roller size and type.**



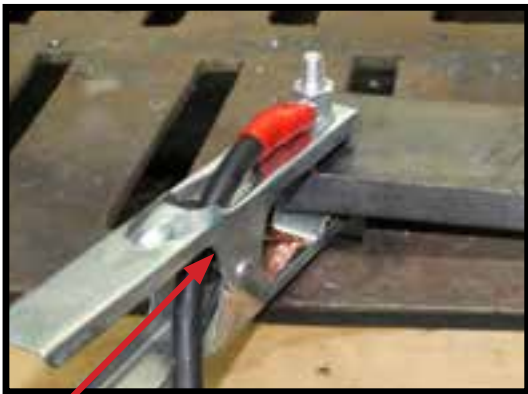
6 Take the end of the wire and feed it into the guide tube over the drive roller groove until it passes into the Inlet Tube, approx 100mm

Ensure you hold the spool and check tension to stop wire spool unraveling

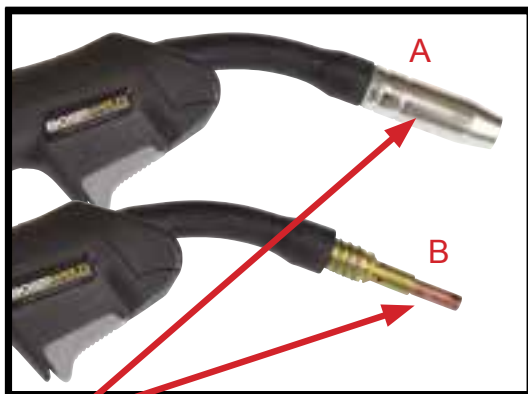


7 Put down Wire Tensioning Arm so it locks into position, and turn the Wire Feed Tensioning Knob to gently tighten.

Note: Pictures may vary from your machine model



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



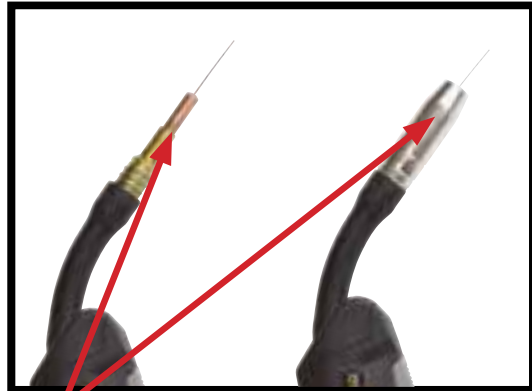
9 Remove nozzle (A) and tip (B) from torch.



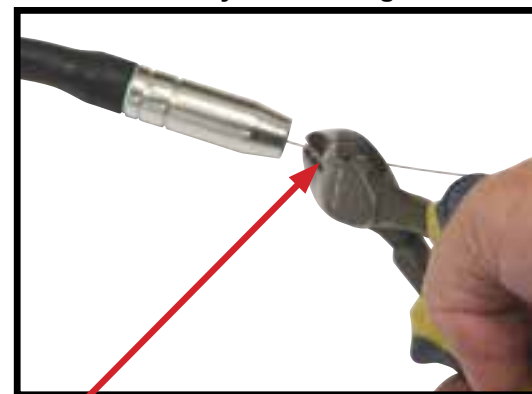
10 Plug machine into 240V and switch to the ON position on the back of machine.



11 Press the trigger. This will feed the wire through the torch. Release button when wire appears at the end of the torch. **NOTE: Make sure your torch is layed out straight**



12 Re install tip over the wire and tighten, Do NOT over tighten, or you may damage the tip holder and re-attach nozzle to torch. **NOTE: Make sure your torch is layed out straight**



13 Trim wire to the end of the nozzle.



14 Refer to settings chart on the front of the machine for suggested machines settings and material thickness.



15 Set The welding Voltage and Wire Speed according to chart

Note: Pictures may vary from your machine model

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 three given ratings at a given current and voltage.

NOTE: Amps refer to the Current setting

20%	60%	100%
100 - Amps	68-Amps	52-Amps
19.0 Volts	17.0 Volts	16.3 Volts

For example this means when the machine is set at a current of 100 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.

Diagram Below shows approx amperage on welding voltage dial

The Overload Error Indicator light indicates

- Over temperature
- Duty cycle exceeded



Approx 50 Amps

Approx 100 Amps

Approx 15 Amps

BOSSWELD			
INVERTER DC MIG WELDER		PART NO.	610050
BOSSWELD M100		STANDARD	IEC 60974
40A/16V-100A/19V			
U ₁ =49V	X	20%	60%
	I ₁	100A	88A
U ₂	19V	17V	16.3V
	I _{max} =19A		I _{max} =8.5A
IP21	H	5.6K _g	AF

Duty Cycle

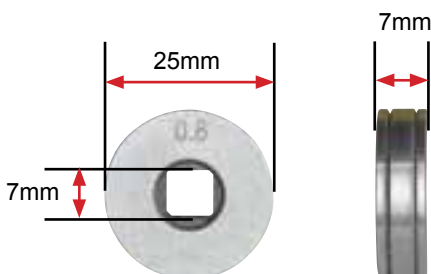
Amperage / Current

Voltage

MACHINE DRIVE ROLLER SIZE (NOTE: MACHINE WILL RUN UP TO 0.8MM WIRE)

Knurled Drive Roller For Gasless Wire

PART NO.	DESCRIPTION
RK250907.06.08	Drive Roller 0.6/0.8mm Knurled 25 x 9 x 7mm



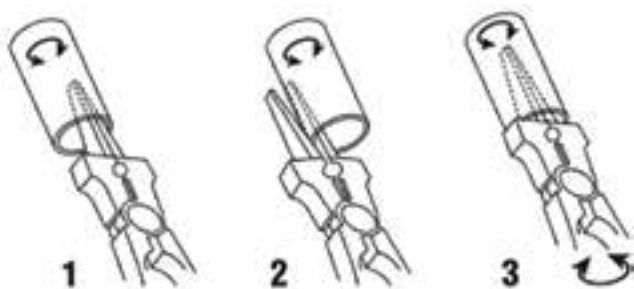
Proper MIG Torch inspection

Prior to welding, ensure all connections are tight and that consumables and equipment are in good condition and free from damage. Start with the front of the gun and work your way back to the feeder. A tight neck connection is essential to carry the electrical current from the welding cable to the front-end consumables. Also, be sure to visually inspect the handle and trigger to check there are no missing screws or damage. The cable should be free of cuts, kinks and damage along the outer cover. Cuts in the cable can expose the internal copper wiring and create a potential safety hazard to the welding operator. In addition, these issues can lead to electrical resistance that causes heat buildup — and ultimately cable failure.

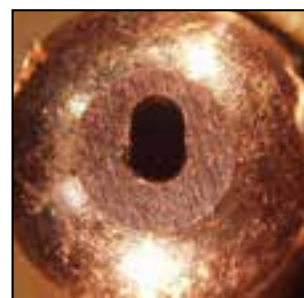
Consumables

MIG gun front-end consumables are exposed to heat and spatter and therefore often require frequent replacement. However, performing some simple maintenance can help extend consumable life and improve gun performance and weld quality. The gas diffuser provides gas flow to the weld pool and also connects to the neck and carries the electrical current to the contact tip. Make sure all connections are tight, and check the diffuser's O-rings for cracks, cuts or damage. The nozzle's main role is to focus the shielding gas around the weld pool. Watch for spatter buildup in the nozzle, which can obstruct gas flow and lead to problems due to inadequate shielding coverage. Use MIG pliers to clean spatter from the nozzle. The contact tip is the last point of contact between the welding equipment and the welding wire. Keyholing of the contact tip is a concern to watch for with this consumable. This occurs when the wire passing through the tip wears an oblong-shaped slot into the diameter of the tip. Keyholing can put the wire out of center and cause problems such as an erratic arc. If you are experiencing wire feeding issues, try changing the contact tip or switching to a larger-size contact tip. Tips that look worn should be replaced.

Spatter removal from inside and outside the nozzle using MIG pliers



Build up of spatter can cause damage to nozzle and tip



Keyholing of the contact tip

Final thoughts

Taking the time for preventative maintenance can pay off in less downtime in the long run. Along with that, always remember to properly store your MIG gun consumables to help you achieve the best results and extend the life of your equipment. When not in use, the MIG gun should be stored in a coiled position, either hanging or lying flat, such as on a shelf. Do not leave MIG gun on the floor of the shop, where there is a chance the cable could be run over, kinked or damaged.

WELDING PRODUCTS TO HELP PROLONG, MAINTAIN AND PRODUCE BETTER WELDS

Bossweld Aerosol Anti Spatter Spray (Part No: 800041)

This silicon free spatter release coating is a colourless film which stops weld spatter from sticking to welding equipment, work pieces & fixtures. Easily removed before painting or finishing.

Bossweld Tip Dip Gel (Part No: 800055)

Non toxic water based dipping gel for the prevention of weld spatter adherence to MIG torch parts. This silicon free compound is used to prolong the life of nozzles & tips.

Bossweld 8 Ways MIG Welding Pliers (Part No: 800074)

Handy 8 function welders pliers. Functions include, nozzle removal, tip removal, cleaning inside of nozzle and wire cutting.



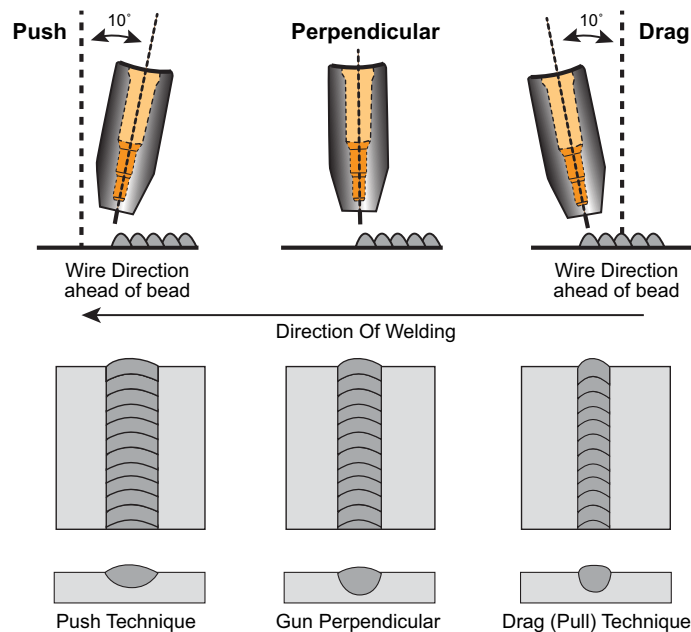
BASIC MIG WELDING GUIDE

The welding power supply has two control settings that have to balance. These are voltage control switches and the wire speed control. The welding amperage is determined by the voltage settings, the wire diameter, gas selection and the wire feed speed. The amperage will increase with higher voltage selection on the machine and higher wire feed speed. This is typically used for welding thick sections of steel. When welding thin sections of steel, a lower voltage selection and lower wire feed speed is required.

- When changing to a different wire diameter different control settings are required. A thinner wire needs more wire speed to achieve the same current level.
- A satisfactory weld cannot be obtained if the wire speed and voltage switch settings are not adjusted to suit the wire diameter and thickness of the material being welded.
- If the wire speed is too high for the welding voltage, “stubby” will occur as the wire dips into the molten pool. If the wire speed is too slow for the welding voltage, large drops will form on the end of the electrode wire, causing spatter. Suppose that wire speed is constant, if the welding voltage is too high, large drops will form on the end of the electrode wire, causing spatter; if the voltage is too low, the wire will not melt.

POSITION OF MIG GUN

The angle of MIG gun to the weld has an effect on the width of the weld run.



Distance from the MIG Gun Nozzle to the Work Piece

The electrode stick out from the MIG gun nozzle should be between 2.0mm to 5.0mm when welding with gas shielded wire. An increased distance of 5mm to 10mm is required when welding with Gasless wire. This distance will vary depending on the type of joint that is being weld. .

Travel Speed

Speed at which a weld travels influences the width of the weld and penetration of the welding run. Welding thin steel will have a faster travel speed than welding thick steel.

Wire Size Selection

The choice of wire size in conjunction with shielding gas used depends on:

- Thickness of the metal to be welded.
- Type of joint configuration
- Capacity of the wire feed unit and power supply.
- The amount of penetration required.
- The deposition rate required.
- The bead profile desired
- The position of welding and cost of the wire.
- Location of welding

GMAW (MIG) WELDING

Metal inert gas (MIG) welding is an attractive alternative to MMA (stick welding), offering high deposition rates and high productivity.

PROCESS CHARACTERISTICS

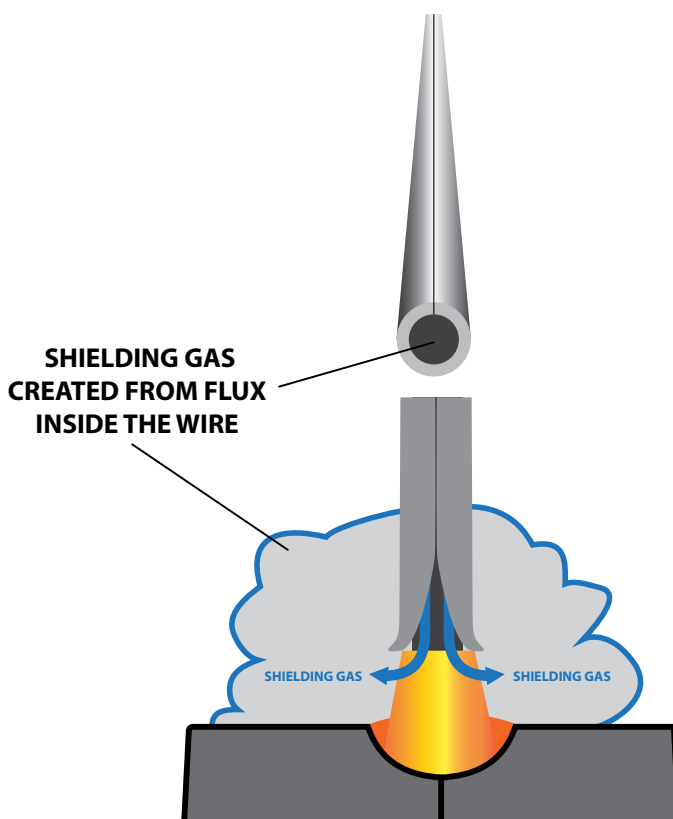
MIG welding is a versatile technique suitable for both thin sheet and thick section components. An arc is struck between the end of a wire electrode and the workpiece, melting both of them to form a weld pool. The wire serves as both heat source (via the arc at the wire tip) and filler metal for the joint. The wire is fed through a copper contact tube (contact tip) which conducts welding current into the wire. The weld pool is protected from the surrounding atmosphere by a shielding gas fed through a nozzle surrounding the wire. Shielding gas selection depends on the material being welded and the application. The wire is fed from a reel by a motor drive, and the welder moves the welding torch along the joint line. Wires may be solid (simple drawn wires), or cored (composites formed from a metal sheath with a powdered flux or metal filling). Consumables are generally competitively priced compared with those for other processes. The process offers high productivity, as the wire is continuously fed.

Manual MIG welding is often referred as a semi-automatic process, as the wire feed rate and arc length are controlled by the power source, but the travel speed and wire position are under manual control. The process can also be mechanised when all the process parameters are not directly controlled by a welder, but might still require manual adjustment during welding. When no manual intervention is needed during welding, the process can be referred to as automatic. The process usually operates with the wire positively charged and connected to a power source delivering a constant voltage. Selection of wire diameter (usually between 0.6 and 1.6mm) and wire feed speed determine the welding current, as the burn-off rate of the wire will form an equilibrium with the feed speed.

SELF SHIELDING GAS

Self-shielding flux-cored wires do not require an external shielding gas. With this type of electrode, the weld pool is protected as gas is generated when the flux from the wire is burned. Because the self-shielding wire produces its own protective shield and doesn't require an external gas tank, it is more easily carried about.

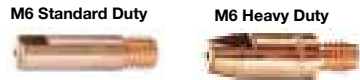
FLUX CORED WIRE (GASLESS)



BZ15 BOSSWELD BINZEL STYLE MIG TORCH SPARES



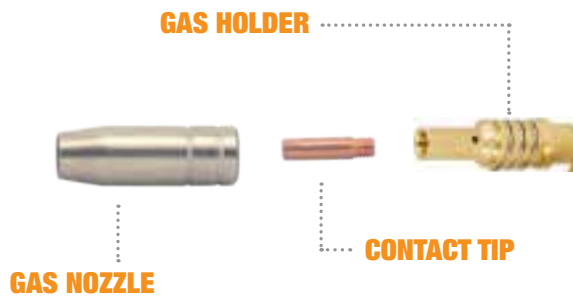
PART NO.	DESCRIPTION
92.02.15.CO	Adjustable conical nozzle ϕ 12mm
92.02.15.CL	Adjustable cylindrical nozzle ϕ 19mm
92.02.15.10	Adjustable tapered nozzle ϕ 10mm



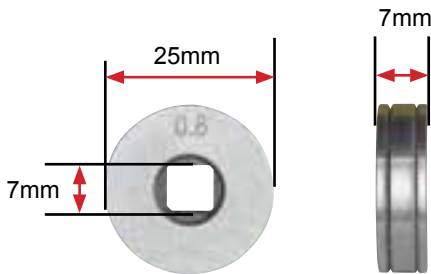
PART NO.	DESCRIPTION
92.01.15.06	Contact tip 0.6mm x M6 x 6mm dia x 25mm long
92.01.15.08	Contact tip 0.8mm x M6 x 6mm dia x 25mm long
92.01.25.06	Contact tip heavy duty 0.6mm x M6 x 8mm dia x 25mm long
92.01.25.08	Contact tip heavy duty 0.8mm x M6 x 8mm dia x 25mm long



PART NO.	DESCRIPTION
92.05.15	Tip holder with spring l/hand



MACHINE DRIVE ROLLER SIZE (NOTE: MACHINE WILL RUN UP TO 0.8MM WIRE)



Knurled Drive Roller For Gasless Wire

PART NO.	DESCRIPTION
RK250907.06.08	Drive Roller 0.6/0.8mm Knurled 25 x 9 x 7mm



BZ15 BOSSWELD BINZEL STYLE DIRECT CONNECT MIG TORCH

Please note:

This replacement torch must be replaced by Bossweld or an authorised service centre
Failure to do so will void your machine warranty.

PART NO.	DESCRIPTION
92.ER.M100DC	Bossweld MIG Torch BZ15 x 2.5mt Direct-Con



MACHINE CONSUMABLE OPTIONS



CODE	DESCRIPTION
200342	Bossweld Gasless GS MIG x 0.8mm x 0.9 Kg

Bossweld Gasless GS MIG Wire

Self-shielding, all-positional flux-cored wire for single pass applications. Excellent for use on thin gauges of galvanised & mild steel. Travel speed is high & weld edges are smooth. It has a smooth arc action, full slag coverage, easy slag removal & low spatter. No shielding gas is required. The use of DC straight polarity welding current minimises the risk of burn through. Deposition efficiency is higher than that of shielded metal arc electrodes.



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
500088	Bossweld Spring Handle Chipping Hammer

Bossweld Spring Handle Chipping Hammer

Used for slag removal, and cleaning up weld beads post weld, Spring handle for increased comfort.

Features

- Robust Spring Handle
- Hardened point and chisel for long life
- Trade quality
- 500 Gram head



CODE	DESCRIPTION
500080	Bossweld 4 Row Engineer Wire Brush Wood Hand

Bossweld Wire Brush

Wooden handled wire brushes used for cleaning & preparation of metals pre & post welding. .



CODE	DESCRIPTION
700010	Bossweld 16" Black & Gold Welding Glove

Bossweld 16inch Welding Gloves

Bossweld 16 inch welding gloves available in black and Gold cow split leather.

VISIT
BOSSWELD.COM.AU
 FOR A FULL RANGE OF WELDING CONSUMABLES

HELPFUL INFORMATION

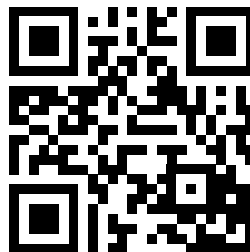
Filler Metal	Notes
Gasless Flux cored Mild Steel Wire (Known as GS)	<ul style="list-style-type: none"> • Use Industry standard flux cored ER71T-GS Steel MIG Wire. This does not require a shielding gas. • Suitable for outside use where gas shield can be blown away or not available. • Suitable for seldom use or when bottle hire is not practical or too costly for small jobs and infrequent use. • Great on galvanised materials • Not suitable for panel steel • Leaves chalky residue. This is normal. • Produces smoke and splatters.
Drive Feed Roller Selection	It is important that correct drive roller is used to get the best results.
Flux cored wire	"V Knurled" roller (assists in gripping as wire is soft)

GENERAL TIPS

- Keep the welding voltage as low as possible for the job at hand to maintain the best duty cycle from your welding machine, prevent the flux from burning and make removal slag easier.
- To stop welding break the circuit withdraw the tip from the work piece. Be careful with the end of the MIG Torch, as it will be HOT. Provided the current setting is correct, the surface of the work piece will also melt by the intensity of the arc. A degree of "penetration" is thereby obtained, and a complete "fusion" of the work piece and the deposited electrode is met.
- This welder is automatically protected from overheating by a thermal overload cut-out protector.
- If the transformer overheats, the overload cut-out protector will activate and cut off. The light will illuminate to show that the cut out has operated.
- After cooling, the protector will reconnect the supply circuit and the welder will be ready for further use.

Note: If the duty cycle of the machine is exceeded, the thermostatic protection will activate and the machine will cut out, to cool down.

For Further Tips and Information please visit Bossweld TV



Scan here to visit Bossweld TV

TROUBLE SHOOTING

Issue	Possible Reason	Suggested Remedy
Power indicator is not lit, fan does not work and no output current	<ul style="list-style-type: none"> • Welder is not plugged into power supply • Circuit breaker may have operated • Main power switch may not be in the ON position 	<ul style="list-style-type: none"> • Check that the welder is plugged into the 240V mains outlet and is switched on. • Check that the mains fuse or breaker has not operated. • 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	<ul style="list-style-type: none"> • Output connectors may be disconnected or damaged • Welding cables or earth clamp not connected properly 	<ul style="list-style-type: none"> • Check output connectors are connected properly and are not damaged • Check connections and that workpiece is free of paint and rust at connection point
Over temperature indicator is on, no output current	<ul style="list-style-type: none"> • Duty cycle of the unit has been exceeded. . 	<ul style="list-style-type: none"> • Allow the unit to cool for 20 minutes
Output current is not stable.	<ul style="list-style-type: none"> • Earth clamp connection loose • Mains Voltage is not constant • Loose welding cables • Leads reversed 	<ul style="list-style-type: none"> • Check earth clamp is connected to work piece properly. • Change the Main Supply to an alternative • Check the welding connectors are tight in the sockets. • Check Leads are not reversed and correct +/-
Hot Welding Clamp	Welding clamp rated current is too small,	Replace with larger size welding clamp.
Excessive Spatter	<ul style="list-style-type: none"> • Wire feed speed set too high • Voltage too high • Wrong polarity set • Stick out too long • Contaminated base metal Contaminated MIG wire • Inadequate gas flow or too much gas flow • Worn contact tip 	<ul style="list-style-type: none"> • Select lower wire feed speed • Select a lower voltage setting • Select the correct polarity for the wire being used • Bring the torch closer to the work • Remove materials like paint, grease, oil, and dirt, including mill scale from base metal • Use clean dry rust free wire. Do not lubricate the wire with oil, grease etc • Check the gas is connected, check hoses, gas valve and torch are not restricted. Set the gas flow between 6-12 l/min flow rate. Check hoses and fittings for holes, leaks. Protect the welding zone from wind and drafts • Change contact tip.
Porosity - small cavities or holes resulting from gas pockets in weld metal	<ul style="list-style-type: none"> • Moisture on the base metal • Contaminated base metal • Contaminated MIG wire • Loose gas connection 	<ul style="list-style-type: none"> • Remove all moisture from base metal before welding • Remove materials like paint, grease, oil, and dirt, including mill scale from base metal • Use clean dry rust free wire. Do not lubricate the wire with oil, grease etc. Check and tighten connection.

TROUBLE SHOOTING - CONTINUED

Issue	Possible Reason	Suggested Remedy
Porosity - small cavities or holes resulting from gas pockets in weld metal	<ul style="list-style-type: none"> • Gas nozzle clogged with spatter, worn or out of shape • MIG torch euro connect O-Ring missing or damaged 	<ul style="list-style-type: none"> • Clean or replace the gas nozzle • Check and replace the O-Ring
Wire stubbing during welding	<ul style="list-style-type: none"> • Holding the torch too far away • Welding voltage set too low • Wire speed set too high 	<ul style="list-style-type: none"> • Bring the torch closer to the work and maintain stick out of 5-10mm • Increase the voltage • Decrease the wire feed speed
Lack of Fusion – failure of weld metal to fuse completely with base metal or a preceding weld bead	<ul style="list-style-type: none"> • Contaminated base metal • Not enough heat input • Improper welding technique 	<ul style="list-style-type: none"> • Remove materials like paint, grease, oil, and dirt, including mill scale from base metal • Select a higher voltage range and /or adjust the wire speed to suit <p>Keep the arc at the leading edge of the weld pool. Gun angle to work should be between 5 & 15° Direct the arc at the weld joint</p> <p>Adjust work angle or widen groove to access bottom during welding, Momentarily hold arc on side walls if using weaving technique</p>
Excessive Penetration – weld metal melting through base metal	<ul style="list-style-type: none"> • Too much heat 	<ul style="list-style-type: none"> • Select a lower voltage range and /or adjust the wire speed to suit Increase travel speed
Lack of Penetration – shallow fusion between weld metal and base metal	<p>Poor in incorrect joint preparation</p> <ul style="list-style-type: none"> • Not enough heat input • Contaminated base metal 	<ul style="list-style-type: none"> • Material too thick. Joint preparation and design needs to allow access to bottom of groove while maintaining proper welding wire extension and arc characteristics Keep the arc at the leading edge of the weld pool and maintain the gun angle at 5 & 15° keeping the stick out between 5-10mm • Select a higher voltage range and /or adjust the wire speed to suit Reduce travel speed • Remove materials like paint, grease, oil, and dirt, including mill scale from base metal

MIG WIRE FEED TROUBLE SHOOTING

The following chart addresses some of the common WIRE FEED problems during MIG welding.

Issue	Possible Reason
Adjusting wrong dial	<ul style="list-style-type: none">• Be sure to adjust the wire feed and voltage dials for MIG welding.
Incorrect wire speed setting	<ul style="list-style-type: none">• Adjust the wire feed speed
Voltage setting incorrect MIG torch lead kinked or too sharp angle being held	<ul style="list-style-type: none">• Adjust the voltage setting• Remove the kink, reduce the angle or bend
Contact tip worn, wrong size, wrong type	<ul style="list-style-type: none">• Replace the tip with correct size and type
Liner worn or clogged (the most common causes of bad feeding)	<ul style="list-style-type: none">• Try to clear the liner by blowing out with compressed air.
Wire misaligned in drive roller groove	<ul style="list-style-type: none">• Locate the wire into the groove of the drive roller
Incorrect drive roller size	<ul style="list-style-type: none">• Fit the correct size drive roller E.g. 0.8mm wire requires 0.8mm drive roller
Wrong type of drive roller selected	<ul style="list-style-type: none">• Fit the correct type roller (e.g. knurled rollers needed for flux cored wires)
Worn drive rollers	<ul style="list-style-type: none">• Replace the drive rollers
Too much tension on wire spool hub	<ul style="list-style-type: none">• Reduce the spool hub brake tension
Wire crossed over on the spool or tangled	<ul style="list-style-type: none">• Remove the spool untangle the wire or replace the wire
Contaminated MIG wire	<ul style="list-style-type: none">• Use clean dry rust free wire. Do not lubricate the wire with oil, grease etc

OPERATIONAL ENVIRONMENT

- Height above sea level $\leq 1000\text{m}$
- Operation temperature range $-10\sim+40^{\circ}\text{C}$
- 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 standards.
- Take care that there is sufficient ventilation during welding. There must be at least 30cm free distance between the machine and wall.

For other tips and troubleshooting refer to our website www.dynaweld.com.au/troubleshooting

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