CIGWELD

AN ESAB BRAND

DESIGNED & TESTED IN AUSTRALIA FOR OVER 100 YEARS

BLUEVENOM XF200P3

MIG WITH SINGLE & DOUBLE PULSE

STICK WITH STICK PULSE

TIG WITH TIG PULSE

MULTI PROCESS WELDING INVERTER

OPERATING MANUAL

XF200P3, P/N: W1400200

200A POWER | SYNERGIC MIG SINGLE / DOUBLE PULSE | QUICKSET PLATE THICKNESS CONTROL | 15A (230/240V) PLUG 'N WELD | 2 YEAR* WARRANTY

CIGWELD
AN ESAB BRAND

WE APPRECIATE YOUR BUSINESS!

Congratulations on your new CIGWELD product. We are proud to have you as our customer and will strive to provide you with the best service and reliability in the industry. This product is backed by our extensive warranty and world-wide service network.

This Operating Manual has been designed to instruct you on the correct use and operation of your CIGWELD product. Your satisfaction with this product and its safe operation is our ultimate concern. Therefore please take the time to read the entire manual, especially the Safety Precautions. They will help you to avoid potential hazards that may exist when working with this product.

We have made every effort to provide you with accurate instructions, drawings, and photographs of the product(s) while writing this manual. However errors do occur and we apologize if there are any contained in this manual.

Due to our constant effort to bring you the best products, we may make an improvement that does not get reflected in the manual. If you are ever in doubt about what you see or read in this manual with the product you received, then check for a newer version of the manual on our website or contact our customer support for assistance.

YOU ARE IN GOOD COMPANY!

The Brand of Choice for Contractors and Fabricators Worldwide.

CIGWELD is a Market Leading Brand of Arc Welding Products for ESAB. We are a mainline supplier to major welding industry sectors in the Asia Pacific and emerging global markets including; Manufacturing, Construction, Mining, Automotive, Engineering, Rural and DIY.

We distinguish ourselves from our competition through market-leading, dependable products that have stood the test of time. We pride ourselves on technical innovation, competitive prices, excellent delivery, superior customer service and technical support, together with excellence in sales and marketing expertise.

Above all, we are committed to develop technologically advanced products to achieve a safer working environment for industry operators.

DESIGNED
& TESTED
IN AUSTRALIA
FOR OVER 100 YEARS

WARNING

Read and understand this entire Manual and your employer's safety practices before installing, operating, or servicing the equipment. While the information contained in this Manual represents the Manufacturer's best judgement, the Manufacturer assumes no liability for its use. Disclaimer: The images and values depicted in this manual are for illustration purposes only and may vary to actual values.

CIGWELD BLUEVENOM XF200P³ WELDING INVERTER OPERATING MANUAL NUMBER 0-5679 FOR:

PART NUMBER W1400200

Published by:

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Publication Date: 15-08-2023

Revision Date:

RECORD THE FOLLOWING INFORMATION FOR WARRANTY PURPOSES:

Where Purchased:

Purchase Date:

Equipment Serial #:

BE SURE THIS INFORMATION REACHES THE OPERATOR. YOU CAN GET EXTRA COPIES FOR FREE BY DOWNLOADING FROM THE CIGWELD WEBSITE.

CAUTION

These INSTRUCTIONS are for experienced operators. If you are not fully familiar with the principles of operation and safe practices for arc welding and cutting equipment, we urge you to read our booklet, "Precautions and Safe Practices for Arc Welding, Cutting, and Gouging," Booklet 0-5407. Do NOT permit untrained persons to install, operate, or maintain this equipment. Do NOT attempt to install or operate this equipment until you have read and fully understand these instructions. If you do not fully understand these instructions, contact your supplier for further information. Be sure to read the Safety Precautions before installing or operating this equipment.

USER RESPONSIBILITY

This equipment will perform in conformity with the description thereof contained in this manual and accompanying labels and/or inserts when installed, operated, maintained and repaired in accordance with the instructions provided. This equipment must be checked periodically. Malfunctioning or poorly maintained equipment should not be used. Parts that are broken, missing, worn, distorted or contaminated should be replaced immediately. Should such repair or replacement become necessary, the manufacturer recommends that a telephone or written request for service advice be made to the Authorized Distributor from whom it was purchased.

This equipment or any of its parts should not be altered without the prior written approval of the manufacturer. The user of this equipment shall have the sole responsibility for any malfunction which results from improper use, faulty maintenance, damage, improper repair or alteration by anyone other than the manufacturer or a service facility designated by the manufacturer.

READ AND UNDERSTAND THE OPERATING MANUAL BEFORE INSTALLING OR OPERATING. PROTECT YOURSELF AND OTHERS!

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DECLARATION OF CONFORMITY

According to AS/NZS 3820:2020, Essential Safety Requirements for Electrical Equipment Radiocommunications Labelling (Electromagnetic Compatibility) Notice 2017

TYPE OF EQUIPMENT

Arc welding power source

TYPE DESIGNATION

BLUEVENOM XF200P³ with serial number from: WC333 XXXX XXXX

BRAND NAME OR TRADEMARK

CIGWELD

MANUFACTURER OR HIS AUTHORIZED REPRESENTATIVE ESTABLISHED WITHIN THE EEA NAME, ADDRESS, AND TELEPHONE NO:

CIGWELD Pty Ltd 71 Gower Street
Preston, Victoria, Australia, 3072
Phone: +61 3 9474 7400;
www.cigweld.com.au

THE FOLLOWING HAS BEEN USED IN THE DESIGN:

AS 1674.2:2007	Safety in welding and allied processes, Part 2: Electrical
AS 60974.1:2020	Arc Welding Equipment, Part 1: Welding Power Sources
AS/NZS 3760-2010	In-service Safety Inspection and Testing of Electrical Equipment EN IEC 60974-1: 2018/A1:2019 Arc Welding Equipment, Part 1: Welding Power Sources
EN 60974-10: 2014/A1:2015	Arc Welding Equipment, Part 10: EMC requirements

ADDITIONAL INFORMATION:

Restrictive use, Class A equipment, intended for use in location other than residential. This equipment is also in compliance with the essential requirements of EU Directives 2014/30/EU and 2014/35/EU.

BY SIGNING THIS DOCUMENT, THE UNDERSIGNED DECLARES AS MANUFACTURER, OR THE MANUFACTURER'S AUTHORIZED REPRESENTATIVE, THAT THE EQUIPMENT IN QUESTION COMPLIES WITH THE SAFETY REQUIREMENTS STATED ABOVE.

PLACE/DATE

Preston
2023-15-08

SIGNATURE

Jarrod Brennan
General Manager

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SECTION 1: ARC WELDING SAFETY INSTRUCTIONS AND WARNINGS

WARNING

PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACEMAKER WEARERS KEEP AWAY UNTIL CONSULTING YOUR DOCTOR. DO NOT LOSE THESE INSTRUCTIONS. READ OPERATING/ INSTRUCTION MANUAL BEFORE INSTALLING, OPERATING OR SERVICING THIS EQUIPMENT.

Welding products and welding processes can cause serious injury or death, or damage to other equipment or property, if the operator does not strictly observe all safety rules and take precautionary actions.

Safe practices have developed from past experience in the use of welding and cutting machinery/equipment. These practices must be learned through study and training before using this equipment. Some of these practices apply to equipment connected to power lines; other practices apply to engine driven equipment. Anyone not having extensive training in welding and cutting practices should not attempt to weld.

Safe practices are outlined in the Australian Standard AS1674.2-2007 entitled: Safety in welding and allied processes Part 2: Electrical. This publication and other guides as to what you should learn before operating this equipment are listed at the end of these safety precautions.

HAVE ALL INSTALLATION, OPERATION, MAINTENANCE, AND REPAIR WORK PERFORMED ONLY BY QUALIFIED PEOPLE.

1.01 ARC WELDING HAZARDS

WARNING

ARC RAYS can burn eyes and skin;
NOISE can damage hearing.

Arc rays from the welding process produce intense heat and strong ultraviolet rays that can burn eyes and skin. Noise from some processes can damage hearing.

ARC RAYS AND NOISE

1. Use a Welding Helmet or Welding Faceshield fitted with a proper shade of filter (see ANSI Z49.1 and AS 1674 listed in Safety Standards) to protect your face and eyes when welding or watching the welding operation.
2. Wear approved safety glasses. Side shields recommended.
3. Use protective screens or barriers to protect others from flash and glare; warn others not to watch the arc.
4. Wear protective clothing made from durable, flame-resistant material (wool and leather) and foot protection.
5. Use approved ear plugs or ear muffs if noise level is high.
6. Never wear contact lenses while welding.

WARNING

ELECTRIC SHOCK can kill.

Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on.

In semiautomatic or automatic wire welding, the wire, wire reel, drive roll housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.

ELECTRIC SHOCK

1. Do not touch live electrical parts.
2. Wear dry, hole-free insulating gloves and body protection.
3. Insulate yourself from work and ground using dry insulating mats or covers.
4. Disconnect input power or stop engine before installing or servicing this equipment. Lock input power disconnect switch open, or remove line fuses so power cannot be turned on accidentally.
5. Properly install and ground this equipment according to its Operating Manual and national, state, and local codes.
6. Turn off all equipment when not in use. Disconnect power to equipment if it will be left unattended or out of service.
7. Use fully insulated electrode holders. Never dip holder in water to cool it or lay it down on the ground or the work surface. Do not touch holders connected to two welding machines at the same time or touch other people with the holder or electrode.
8. Do not use worn, damaged, undersized, or poorly spliced cables.
9. Do not wrap cables around your body.
10. Ground the workpiece to a good electrical (earth) ground.
11. Do not touch electrode while in contact with the work (ground) circuit.
12. Use only well-maintained equipment. Repair or replace damaged parts at once.
13. In confined spaces or damp locations, do not use a welder with AC output unless it is equipped with a voltage reducer. Use equipment with DC output.
14. Wear a safety harness to prevent falling if working above floor level.
15. Keep all panels and covers securely in place.

RECOMMENDED PROTECTIVE FILTERS FOR ELECTRIC WELDING

Description of Process	Approximate Range of Welding Current in Amps	Minimum Shade Number of Filter(s)
Manual Metal Arc Welding - covered electrodes (MMAW)	Less than or equal to 100	8
	100 to 200	10
	200 to 300	11
	300 to 400	12
	Greater than 400	13
Gas Metal Arc Welding (GWAW) (MIG) other than Aluminium and Stainless Steel	Less than or equal to 150	10
	150 to 250	11
	250 to 300	12
	300 to 400	13
	Greater than 400	14
Gas Metal Arc Welding (GMAW) (MIG) Aluminium and Stainless Steel	Less than or equal to 250	12
	250 to 350	13
Gas Tungsten Arc Welding (GTAW) (TIG)	Less than or equal to 100	10
	100 to 200	11
	200 to 250	12
	250 to 350	13
	Greater than 350	14
Flux-cored Arc Welding (FCAW) - with or without shielding gas	Less than or equal to 300	11
	300 to 400	12
	400 to 500	13
	Greater than 500	14
Air - Arc Gouging	Less than or equal to 400	12
Plasma - Arc Cutting	50 to 100	10
	100 to 400	12
	400 to 800	14
Plasma - Arc Spraying	–	15
Plasma - Arc Welding	Less than or equal to 20	8
	20 to 100	10
	100 to 400	12
	400 to 800	14
Submerged - Arc Welding	–	2(5)
Resistance Welding	–	Safety Spectacles or eye shield

Refer to standard AS/NZS 1338.1:2012 for comprehensive information regarding the above table.

FUMES AND GASES

WARNING

FUMES & GASES CAN BE HAZARDOUS TO YOUR HEALTH.

Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

1. Keep your head out of the fumes. Do not breathe the fumes.
2. If inside, ventilate the area and/or use exhaust at the arc to remove welding fumes and gases.
3. If ventilation is poor, use an approved air-supplied respirator.
4. Read the Material Safety Data Sheets (MSDSs) and the manufacturer's instruction for metals, consumables, coatings, and cleaners.
5. Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Shielding gases used for welding can displace air causing injury or death. Be sure the breathing air is safe.
6. Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapours to form highly toxic and irritating gases.
7. Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and if necessary, while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.

WELDING

WARNING

WELDING CAN CAUSE FIRE OR EXPLOSION.

Sparks and spatter fly off from the welding arc. The flying sparks and hot metal, weld spatter, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode or welding wire to metal objects can cause sparks, overheating, or fire.

1. Protect yourself and others from flying sparks and hot metal.
2. Do not weld where flying sparks can strike flammable material.
3. Remove all flammables within 35ft (10.7m) of the welding arc. If this is not possible, tightly cover them with approved covers.
4. Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas.
5. Watch for fire, and keep a fire extinguisher nearby.
6. Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
7. Do not weld on closed containers such as tanks or drums.
8. Connect work cable to the work as close to the welding area as practical to prevent welding current from travelling long, possibly unknown paths and causing electric shock and fire hazards.
9. Do not use welder to thaw frozen pipes.
10. Remove stick electrode from holder or cut off welding wire at contact tip when not in use.

FLYING SPARKS AND HOT METAL

WARNING

FLYING SPARKS & HOT METAL CAN CAUSE INJURY.

Sparks and spatter fly off from the welding arc. The flying sparks and hot metal, weld spatter, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode or welding wire to metal objects can cause sparks, overheating, or fire.

1. Wear approved face shield or safety goggles. Side shields recommended.
2. Wear proper body protection to protect skin.

CYLINDERS

WARNING

CYLINDERS CAN EXPLODE IF DAMAGED.

Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

1. Protect compressed gas cylinders from excessive heat, mechanical shocks, and arcs.
2. Install and secure cylinders in an upright position by chaining them to a stationary support or equipment cylinder rack to prevent falling or tipping.
3. Keep cylinders away from any welding or other electrical circuits.
4. Never allow a welding electrode to touch any cylinder.
5. Use only correct shielding gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
6. Turn face away from valve outlet when opening cylinder valve.
7. Keep protective cap in place over valve except when cylinder is in use or connected for use.
8. Read and follow instructions on compressed gas cylinders, associated equipment, and CGA publication P-1 listed in Safety Standards.

MOVING PARTS

WARNING

MOVING PARTS CAN CAUSE INJURY.

Moving parts, such as fans, rotors, and belts can cut fingers and hands and catch loose clothing.

1. Keep all doors, panels, covers, and guards closed and securely in place.
2. Stop engine before installing or connecting unit.
3. Have only qualified people remove guards or covers for maintenance and troubleshooting as necessary.
4. To prevent accidental starting during servicing, disconnect negative (-) battery cable from battery.
5. Keep hands, hair, loose clothing, and tools away from moving parts.
6. Reinstall panels or guards and close doors when servicing is finished and before starting engine.

WARNING

This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety code Sec. 25249.5 et seq.)

NOTE

Considerations About Welding And The Effects of Low Frequency Electric and Magnetic Fields.

WARNING

The procedures below are among those also normally recommended for pacemaker wearers. Consult your doctor for complete information.

The following is a quotation from the General Conclusions Section of the U.S. Congress, Office of Technology Assessment, Biological Effects of Power Frequency Electric & Magnetic Fields - Background Paper, OTA-BP-E-63 (Washington, DC: U.S. Government Printing Office, May 1989): "...there is now a very large volume of scientific findings based on experiments at the cellular level and from studies with animals and people which clearly establish that low frequency magnetic fields and interact with, and produce changes in, biological systems. While most of this work is of very high quality, the results are complex. Current scientific understanding does not yet allow us to interpret the evidence in a single coherent framework. Even more frustrating, it does not yet allow us to draw definite conclusions about questions of possible risk or to offer clear science- based advice on strategies to minimize or avoid potential risks."

To reduce magnetic fields in the workplace, use the following procedures:

1. Keep all doors, panels, covers, and guards closed and securely in place.
2. Stop engine before installing or connecting unit.
3. Have only qualified people remove guards or covers for maintenance and troubleshooting as necessary.
4. To prevent accidental starting during servicing, disconnect negative (-) battery cable from battery.
5. Keep hands, hair, loose clothing, and tools away from moving parts.
6. Reinstall panels or guards and close doors when servicing is finished and before starting engine.

1.02 PRINCIPAL SAFETY STANDARDS

Safety in welding and allied processes Part 1: Fire Precautions, AS 1674.1-1997 from SAI Global Limited, www.saiglobal.com.

Safety in welding and allied processes Part 2: Electrical, AS 1674.2-2007 from SAI Global Limited, www. saiglobal.com.

Filters for eye protectors - Filters for protection against radiation generated in welding and allied operations AS/NZS 1338.1:2012 from SAI Global Limited, www.saiglobal.com.

Welding Processes, Code of Practice, JULY 2020 - Safe Work Australia. This document provides "Practical guidance on how to manage health and safety risks associated with welding". **The latest version is available free of charge at: https://www.safeworkaustralia.gov.au/doc/model-code-practice-welding-processes.**

Other International Standards and Codes of Practice

Safety in Welding and Cutting, ANSI Standard Z49.1, from American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33126.

Safety and Health Standards, OSHA 29 CFR 1910, from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Recommended Safe Practices for the Preparation for Welding and Cutting of Containers That Have Held Hazardous Substances, American Welding Society Standard AWS F4.1, from American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33126.

National Electrical Code, NFPA Standard 70, from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, from Compressed Gas Association, 1235 Jefferson Davis Highway, Suite 501, Arlington, VA 22202.

Code for Safety in Welding and Cutting, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3.

Safe Practices for Occupation and Educational Eye and Face Protection, ANSI Standard Z87.1, from American National Standards Institute, 1430 Broadway, New York, NY 10018.

Cutting and Welding Processes, NFPA Standard 51B, from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

SECTION 2: INTRODUCTION

2.01 HOW TO USE THIS MANUAL

This Operating Manual only applies to the Part Numbers listed on page 3. To ensure safe operation, read the entire manual, including the chapter on safety instructions and warnings.

Throughout this manual, the words WARNING, CAUTION, and NOTE may appear. Pay particular attention to the information provided under these headings. These special annotations are easily recognized as follows:

NOTE
An operation, procedure, or background information which requires additional emphasis or is helpful in efficient operation of the system.

CAUTION
A procedure which, if not properly followed, may cause damage to the equipment.

WARNING
An operation, procedure, or background information which requires additional emphasis or is helpful in efficient operation of the system.

ELECTRICAL WARNING
Gives information regarding possible electrical shock injury. Warnings will be enclosed in a box such as this.

DANGER
Means immediate hazards which, if not avoided, will result in immediate, serious personal injury or loss of life.

Additional copies of this manual may be purchased by contacting CIGWELD at the address and phone number for your location listed in the inside back cover of this manual. Include the Operating Manual number and equipment identification numbers.

Electronic copies of this manual can also be downloaded at no charge in Acrobat PDF format by going to the CIGWELD web site listed below and clicking on the Literature Library link: **www.cigweld.com.au**

2.02 EQUIPMENT IDENTIFICATION

The units identification number (specification or part number), model, and serial number are located on the Data Plate which is fixed to the bottom of the welding machine. In some cases, the Data Plate may be attached to the rear panel. Equipment which does not have a control panel such as cable assemblies are identified only by the specification or part number printed on the shipping container. Record these numbers on the bottom of page 3 for future reference.

2.03 RECEIPT OF EQUIPMENT

When you receive the equipment, check it against the invoice to confirm it is complete and inspect the equipment for possible damage due to shipping. If there is any damage, notify the carrier immediately to file a claim. Furnish complete information concerning damage claims or shipping errors to the location in your area listed in the inside back cover of this manual. Include all equipment identification numbers as described above along with a full description of the parts in error.

Move the equipment to the installation site before unboxing the unit. Use care to avoid damaging the equipment when using knives, breaker bars, hammers, etc, to unbox the machine and its accessories.

2.04 SYMBOL CHART

Note that only some of these symbols will appear on your model.

	ON
	OFF
	DANGEROUS VOLTAGE
	INCREASE/DECREASE
	CIRCUIT BREAKER
	AC AUXILIARY POWER
	FUSE
A	AMPERAGE
V	VOLTAGE
Hz	HERTZ (CYCLES/SEC)
f	FREQUENCY
—	NEGATIVE
+	POSITIVE
	DIRECT CURRENT (DC)
	PROTECTIVE EARTH (GROUND)
	LINE
	LINE CONNECTION
	AUXILIARY POWER
115V 15A	RECEPTACLE RATING- AUXILIARY POWER
1	SINGLE PHASE
3	THREE PHASE
	THREE PHASE STATIC FREQUENCY CONVERTER-TRANSFORMER-RECTIFIER
	REMOTE
X	DUTY CYCLE
%	PERCENTAGE
	SHIELDED METAL ARC WELDING (SMAW)
	GAS METAL ARC WELDING (GMAW)
	GAS TUNGSTEN ARC WELDING (GTAW)
	AIR CARBON ARC CUTTING (CAC-A)
	CONSTANT CURRENT
	CONSTANT VOLTAGE OR CONSTANT POTENTIAL
	HIGH TEMPERATURE
	FAULT INDICATION
	ARC FORCE
	TOUCH START (GTAW)
	VARIABLE INDUCTANCE
V	VOLTAGE INPUT
	WIRE FEED FUNCTION
	WIRE FEED TOWARDS WORKPIECE WITH OUTPUT VOLTAGE OFF
	WELDING GUN
	PURGING OF GAS
	CONTINUOUS WELD MODE
	SPOT WELD MODE
t	SPOT TIME
t1	PREFLOW TIME
t2	POSTFLOW TIME
PLATE THICKNESS CONTROL	QUICKSET PLATE THICKNESS PRE-SETS
200A DC	OUTPUT CURRENT
2 YEARS*	2-YEAR WARRANTY
t	BURNBACK TIME
	DISTURBANCE IN GROUND SYSTEM
IPM	INCHES PER MINUTE
MPM	METRES PER MINUTE
	SPOOL GUN
QUICK SET MIG	QUICKSET FOR MIG
	SINGLE PULSE
	DOUBLE PULSE
	PULSE FREQ. (PULSE SPEED)
A	PULSE BASE CURRENT
W	PULSE WIDTH

2.05 DESCRIPTION

Get your adrenalin pumping with the new XF200P^3 – a compact, robust mean machine with 3 Pulse modes: Single & Double Pulse MIG, STICK Pulse AND TIG Pulse!

Ready to rock out of the box for welding Aluminium, this predator packs impressive features and welding performance made easy to suit the serious welding enthusiast to the welding pro.

Don't want to weld Aluminium? Is Steel more your thing? Don't stress – the XF200P^3 comes packed with the right liner, inlet guide and feed rollers for hard wires as well.

Release your inner Welditude™ with pre-installed Synergic Quickset MIG (Single & Double Pulse) programs! Simply choose your material and gas combination (unless you're using gasless), wire diameter and dial up the plate thickness you're welding and you're ready to go!

Navigate with ease through the intuitive 3.5" full colour display to custom set values to get the most out of your welds - from Voltage Trim and Adjustable Burnback to Hard and Soft start tweaks (Opti-Start Technology) the XF200P^3 doesn't hold back!

Weighing a mere 13.4kg, this portable beast will have you welding in any pulse mode you like! To make things even better it's equipped with a 2x roll (cogged) **all driven** wire drive system for smooth and effortless wire feedability and is compatible with Spool Gun, TIG foot control and Dial Remote TIG torch!

So the question is... are you ready to Harness the Power!

2.06 USER RESPONSIBILITY

This equipment will perform as per the information contained herein when installed, operated, maintained and repaired in accordance with the instructions provided. This equipment must be checked periodically. Defective equipment (including welding leads) should not be used. Parts that are broken, missing, partly worn, distorted or contaminated, should be replaced immediately. Should such repairs or replacements become necessary, it is recommended that such repairs be carried out by appropriately qualified persons approved by CIGWELD. Advice in this regard can be obtained by contacting an accredited CIGWELD Distributor/service agent.

This equipment or any of its parts should not be altered from standard specification without prior written approval of CIGWELD. The user of this equipment shall have the sole responsibility for any malfunction which results from improper use or unauthorised modification from standard specification, faulty maintenance, damage or improper repair by anyone other than appropriately qualified persons approved by CIGWELD.

2.07 WHAT'S IN THE BOX

BLUEVENOM XF200P^3 (Part No. W1400200)

- BLUEVENOM XF200P^3 Power Source
- MIG Gun 3m - Euro quick connector (Nylon Liner fitted)
- Work Clamp 300A with 3m Lead
- Twist Lock Electrode Holder 200A with 3m Lead
- Feed Rolls: 0.9/1.0 U Groove (fitted), 0.8/0.9mm V Groove, 0.8/0.9mm Gasless Knurled
- Gas Regulator/Flowmeter
- Quick Connect Gas Hose 2m
- Nylon Inlet Guide for Soft Wires (fitted)
- Steel Inlet Guide
- Liner for Steel Wires
- Operating Manual

NOTE
Refer to the complete Warranty Schedule at the back of the manual.

2.08 TRANSPORTING METHODS

This unit is equipped with a handle for carrying purposes.

ELECTRICAL WARNING
ELECTRIC SHOCK can kill.
DO NOT TOUCH live electrical parts.

Disconnect input power conductors from de-energized supply line before moving the welding power source.

WARNING
FALLING EQUIPMENT can cause serious personal injury and equipment damage

2.09 DUTY CYCLE

The rated duty cycle of a Welding Power Source, is a statement of the time it may be operated at its rated welding current output without exceeding the temperature limits of the insulation of the component parts. To explain the 10 minute duty cycle period the following example is used. Suppose a Welding Power Source is designed to operate at a 15% duty cycle, 90 amperes at 23.6 volts. This means that it has been designed and built to provide the rated amperage (90A) for 1.5 minutes, i.e. arc welding time, out of every 10 minute period (15% of 10 minutes is 1.5 minutes). During the other 8.5 minutes of the 10 minute period the Welding Power Source must idle and allowed to cool.

2.10 SPECIFICATIONS

DESCRIPTION	BLUEVENOM XF200P³
Packaged Part Number	W1400200
Power Source Dimensions	(L) 495mm x (W) 220mm x (H) 335mm
Power Source Weight	13.4kg
Cooling	Fan Cooled
Welder Type	Multi Process Inverter Power Source
Standards	AS 60974.1:2020 / IEC 60974-1:2019 EN 60974-10:2014/ A1:2015
Number of Phases	Single Phase
Nominal Supply Voltage	230/240 VAC ± 10%
Nominal Supply Frequency	50/60Hz
Welding Current Range (MIG mode)	30-200A
Welding Current Range (Stick mode)	10-195A
Welding Current Range (Lift TIG DC)	10-200A
Nominal DC Open Circuit Voltage MIG Weld Mode	67V
Open Circuit Voltage (VRD On) Stick Weld Mode	<35V

DESCRIPTION	BLUEVENOM XF200P³
Open Circuit Voltage (VRD Off) Stick Weld Mode	67V
Effective Input Current (I1eff) refer Note 2	14.7 Amps (230VAC) 14.3 Amps (240VAC)
Maximum Input Current (I1max)	43 Amps (230VAC) 41 Amps (240VAC)
Minimum Single Phase Generator Recommendation (refer Note 4)	12kVA@0.8PF
MIG (GMAW) Welding Output, 40°C, 10 min	200A @ 15%, 24.0V 100A @ 60%, 19.0V 77A @ 100%, 17.9V
Stick (MMAW) Welding Output, 40°C, 10 min	195A @ 10%, 27.8V 80A @ 60%, 23.2V 62A @ 100%, 22.5V
Lift TIG DC (GTAW) Welding Output, 40°C, 10 min	200A @ 15%, 18.0V 100A @ 60%, 14.0V 77A @ 100%, 13.1V
Protection Class	IP21S

NOTE 1 Due to variations that can occur in manufactured products, claimed performance, voltages, ratings, all capacities, measurements, dimensions and weights quoted are approximate only. Achievable capacities and ratings in use and operation will depend upon correct installation, use, applications, maintenance and service.

NOTE 2 The Effective Input Current should be used for the determination of cable size & supply requirements.

NOTE 3 Motor start fuses or thermal circuit breakers are recommended for this application. Check local requirements for your situation in this regard.

NOTE 4 Minimum Generator Recommendation at the Maximum Output Duty Cycle. Due to large variations in performance and specifications of different brands and types of generators, CIGWELD cannot guarantee full welding output power or duty cycle on every brand or type of generator. Some small generators incorporate low cost circuit breakers on their outputs. These circuit breakers usually will have a small reset button, and will trip much faster than a switchboard type circuit breaker. This may result in not being able to achieve full output or duty cycle from the power source / generator combination. For this reason we recommend a generator that incorporates switchboard type circuit breakers. CIGWELD recommends that when selecting a generator, that the particular power source / generator combination be adequately trialled to ensure the combination performs to the users expectations.

NOTE 5 CIGWELD reserves the right to change product performance and specifications without notice.

NOTE 6 If an extension lead is required to be used it is recommended to use a minimum size of 1.5mm2 Heavy Duty Extension Lead. Longer extension leads may impact welding performance and operation.

2.11 OPTIONAL ACCESSORIES

We recommend genuine CIGWELD products. The biggest range and best quality with guaranteed performance.

PART NUMBER	DESCRIPTION
BZN2410	Nozzle Tapered, 10mm, Pack of 2
BZN2413	Nozzle Conical, 13mm, Pack of 2
BZN2417	Nozzle Cylindrical, 17mm, Pack of 2
BZT6806	Contact Tip 0.6mm M6 L: 28mm, Pack of 10
BZT6808	Contact Tip 0.8mm M6 L: 28mm, Pack of 10
BZT6809	Contact Tip 0.9mm M6 L: 28mm, Pack of 10
BZT6810	Contact Tip 1.0mm M6 L: 28mm, Pack of 10
BZT6812	Contact Tip 1.2mm M6 L: 28mm, Pack of 10
BZT6814	Contact Tip 1.4mm M6 L: 28mm, Pack of 10
BZH24M6	Tip Holder, M6, Pack of 2
BZD24S	Diffuser Silicone Pack of 2
BZD24	Diffuser Standard Pack of 2
CML50609	MultiLiner Steel 0.6-0.9mm, 5.1m (No collet), Pack of 1
CML50912	MultiLiner Steel 0.9-1.2mm, 5.1m (No collet), Pack of 1
CML50916A	MultiLiner Aluminium 0.9-1.6mm, 5.1m (No collet), Pack of 1
CMLC.BZ	MultiLiner Collet suit Binzel, Pack of 1
CMLC.BZA	MultiLiner Alloy Collet suit Binzel, Pack of 1
W52BR24E3	CIGWELD MIG Gun BZ24 Euro 3m (CMGBZ24)
FR302210V0608	Feed Roll 0.6/0.8mm V Groove (Solid Wires)
FR302210V0809	Feed Roll 0.8/0.9mm V Groove (Solid Wires) included with machine
FR302210V1012	Feed Roll 1.0/1.2mm V Groove (Solid Wires)
FR302210U0809	Feed Roll 0.8/0.9mm U Groove (Soft Wires)
FR302210U1012	Feed Roll 1.0/1.2mm U Groove (Soft Wires)

PART NUMBER	DESCRIPTION
FR302210K0809	Feed Roll 0.8/0.9mm V Knurled (Flux Cored) included with machine
W7007437	Spring Steel Inlet Guide (Steel and Stainless Steel Wires)
W7007384	Nylon Inlet Guide (Soft Wires)
W4013801	TIG Torch 17V with 4m lead and gas valve
W4013800	TIG Torch 17V with 4m lead and gas valve and remote control
CT1726K1	TIG Starter Kit 1 17/18/26 TIG Torches
W4011250	Tweco SGT250 Spool Gun
W4015825	TIG Foot Control with 7m Lead
W4013010	Argon Mini-Regulator and Gas Hose Kit includes BlueJet Regulator/Flowmeter Side Inlet, Gas Hose 2m and Hose Clamp.
210254	BlueJet Argon Regulator/Flowmeter, 55LPM, 2 Gauge
201031	BlueJet Preset Argon Regulator/ Flowmeter Side Inlet
CWPLIER	MIG Pliers 8-Function, Cut Wire, Clean Nozzle, Remove Hot Nozzle, Pick up & hold hot welding jobs/pieces, Remove Contact Tip, Cut/Trim Spring Steel Liner, Long Nose Pliers, Mini Hammers to tap out spatter in the nozzle.
W4011501	WeldSkill Welding Equipment Trolley
WS42550	WeldSkill Welding Leadset 4m, 25mm^2 cable, 50mm^2 DINSE, 250A Twistlock Electrode Holder
WS53550	WeldSkill Welding Leadset 5m, 35mm^2 cable, 50mm^2 DINSE, 400A Twistlock Electrode Holder

2.12 RELATED PRODUCTS

PART NUMBER	DESCRIPTION
646766	WeldSkill Heavy Duty Welding Gloves - Medium
646755	WeldSkill Heavy Duty Welding Gloves - Large
646767	WeldSkill Heavy Duty Welding Gloves – XL
646771	WeldSkill Welding Jacket - Medium
646772	WeldSkill Welding Jacket - Large
646773	WeldSkill Welding Jacket - XL
646774	WeldSkill Welding Jacket - XXL
W4018001	CIGWELD Heavy Duty Backpack
WHAMXC130	Auto Darkening Welding Helmet Variable Shade 9-13 - Payday

PART NUMBER	DESCRIPTION
WHAMXC170	Auto Darkening Welding Helmet Variable Shade 4-8 / 9-14 - Mayhem
646764	WeldSkill Magnetic Welding Clamp/Holder - Medium
646765	WeldSkill Magnetic Welding Clamp/Holder - Large
646770	WeldSkill Welding Curtain – Dark Green, 1.74m x 1.74m
646777	WeldSkill Welding Curtain – Red, 1.74m x 1.74m
646776	Welding Curtain Frame, 1.8m x 1.8m
646778	Welding Blanket, 1.8m x 1.8m

MIG Pliers
P/N: CWPLIER

Magnetic Clamps
P/N: 646764 (Medium)
P/N: 646765 (Large)

WELDSKILL Heavy Duty Leather Welding Gloves
P/N: 646755 (Large)
P/N: 646767 (XL)

Arcmaster XC70 Welding Helmet (Mayhem)
P/N: WHAMXC170

WeldSkill Welding Jacket
P/N: 646772 (Large)

Nozzle Conical 13mm
P/N: BZN2413

Diffuser Standard
P/N: BZD24

Tip Holder M6
P/N: BZH24M6

SECTION 3: INSTALLATION

3.01 ENVIRONMENT

These units are designed for use in environments with increased hazard of electric shock.

A. Examples of environments with increased hazard of electric shock are:

1. In locations in which freedom of movement is restricted, so that the operator is forced to perform the work in a cramped (kneeling, sitting or lying) position with physical contact with conductive parts.
2. In locations which are fully or partially limited by conductive elements, and in which there is a high risk of unavoidable or accidental contact by the operator.

B. Environments with increased hazard of electric shock do not include places where electrically conductive parts in the near vicinity of the operator, which can cause increased hazard, have been insulated.

3.02 LOCATION

Be sure to locate the welder according to the following guidelines:

A. In areas, free from moisture and dust.

B. Ambient temperature between -10°C to 40°C.

C. In areas, free from oil, steam and corrosive gases.

D. In areas, not subjected to abnormal vibration or shock.

E. In areas, not exposed to direct sunlight or rain.

F. Place at a distance of 300mm or more from walls or similar that could restrict natural air flow for cooling.

3.03 VENTILATION

Since the inhalation of welding fumes can be harmful, ensure that the welding area is effectively ventilated.

3.04 MAINS SUPPLY VOLTAGE REQUIREMENTS

The Mains Supply Voltage should be within ± 15% of the rated Mains Supply Voltage. If actual Mains Supply Voltage is outside this range Welding Current may not be available and may cause internal components to fail.

Refer to Specifications on page 17 for Supply Voltage information.

The Welding Power Source must be:

- Correctly installed, if necessary, by a qualified electrician.
- Correctly earthed (electrically) in accordance with local regulations.
- Connected to the correct size power point and fuse as per the Specifications on page 17.

IMPORTANT NOTE!

This product has been fitted with a supply plug as indicated in Section 2.10. Note that the welding output range applicable with the fitted supply plug is detailed in Section 2.10.

WARNING
Any electrical work must be carried out by a qualified Electrical Tradesperson

3.05 GENERATORS

Refer to Note 4 on page 17 for recommendations when using with a Generator.

3.06 EXTENSION LEADS

If an extension lead is required to be used it is recommended to use a minimum size of 1.5mm^2 Heavy Duty Extension Lead. Longer extension leads may impact welding performance and operation.

3.07 ELECTROMAGNETIC COMPATIBILITY

WARNING
Extra precautions for Electromagnetic Compatibility may be required when this Welding Power Source is used in a domestic situation.

A. INSTALLATION AND USE - USERS RESPONSIBILITY

The user is responsible for installing and using the welding equipment according to the manufacturer's instructions. If electromagnetic disturbances are detected then it shall be the responsibility of the user of the welding equipment to resolve the situation with the technical assistance of the manufacturer. In some cases this remedial action may be as simple as earthing the welding circuit. In other cases it could involve constructing an electromagnetic screen enclosing the Welding Power Source and the work, complete with associated input filters. In all cases, electromagnetic disturbances shall be reduced to the point where they are no longer troublesome.

B. ASSESSMENT OF AREA

Before installing welding equipment, the user shall make an assessment of potential electromagnetic problems in the surrounding area. The following shall be taken into account

1. Other supply cables, control cables, signalling and telephone cables; above, below and adjacent to the welding equipment.
2. Radio and television transmitters and receivers.
3. Computer and other control equipment.
4. Safety critical equipment, e.g. guarding of industrial equipment.
5. The health of people around, e.g. the use of pacemakers and hearing aids.
6. Equipment used for calibration and measurement.
7. The time of day that welding or other activities are to be carried out.
8. The immunity of other equipment in the environment: the user shall ensure that other equipment being used in the environment is compatible: this may require additional protection measures.

   The size of the surrounding area to be considered will depend on the structure of the building and other activities that are taking place. The surrounding area may extend beyond the boundaries of the premises.

C. METHODS OF REDUCING ELECTROMAGNETIC EMISSIONS

1. **Mains Supply**
   Welding equipment should be connected to the mains supply according to the manufacturer's recommendations. If interference occurs, it may be necessary to take additional precautions such as filtering of the mains supply. Consideration should be given to shielding the supply cable of permanently installed welding equipment in metallic conduit or equivalent. Shielding should be electrically continuous throughout it's length. The shielding should be connected to the Welding Power Source so that good electrical contact is maintained between the conduit and the Welding Power Source enclosure.

1. **Maintenance of Welding Equipment**
   The welding equipment should be routinely maintained according to the manufacturer's recommendations. All access and service doors and covers should be closed and properly fastened when the welding equipment is in operation. The welding equipment should not be modified in any way except for those changes and adjustments covered in the manufacturer's instructions. In particular, the spark gaps of arc striking and stabilising devices should be adjusted and maintained according to the manufacturer's recommendations.

2. **Welding Cables**
   The welding cables should be kept as short as possible and should be positioned close together, running at or close to the floor level.

3. **Equipotential Bonding**
   Bonding of all metallic components in the welding installation and adjacent to it should be considered. However Metallic components bonded to the work piece will increase the risk that the operator could receive a shock by touching the metallic components and the electrode at the same time. The operator should be insulated from all such bonded metallic components.

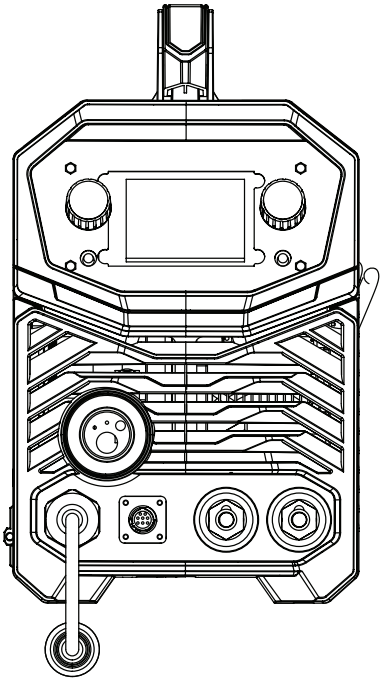
4. **Earthing of the Workpiece**
   Where the workpiece is not bonded to earth for electrical safety, nor connected to earth because of it's size and position, e.g. ship's hull or building steelwork, a connection bonding the workpiece to earth may reduce emissions in some, but not all instances. Care should be taken to prevent the earthing of the workpiece increasing the risk of injury to users, or damage to other electrical equipment. Where necessary, the connection of the workpiece to earth should be made by direct connection to the workpiece, but in some countries where direct connection is not permitted, the bonding should be achieved by suitable capacitance, selected according to national regulations.

5. **Screening and Shielding**
   Selective screening and shielding of other cables and equipment in the surrounding area may alleviate problems of interference. Screening the entire welding installation may be considered for special applications.

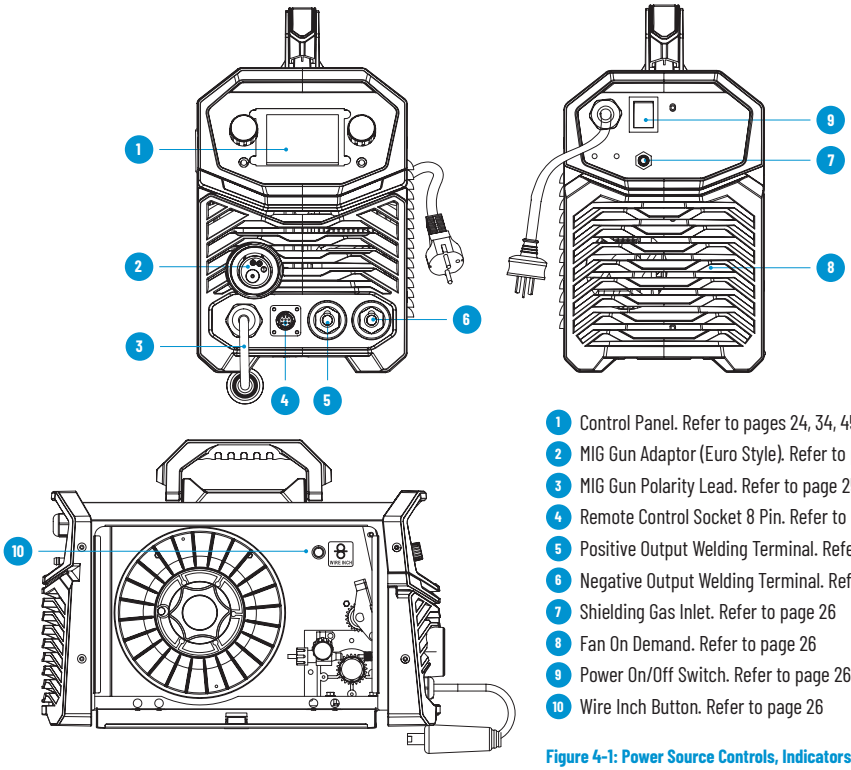
SECTION 4:
OPERATION

Standard operating procedures apply when using these Welding machines, i.e. connect work lead directly to workpiece with the spring loaded clamp. The MIG wire is fed from the spool through the feed roller system and into the MIG Gun (consult CIGWELD or the electrode wire manufacturers information for the correct polarity).

The welding amperage range (plate thickness pre-set) values should be used as a guide only. Current delivered to the arc is dependent on the Wire Feed Speed and welding arc voltage, and as welding arc voltage varies between different classes of MIG wire, welding current at given settings could vary accordingly to the type of MIG wire in use. The operator should use the plate thickness pre-set welding current values as a guide, then finally adjust the current setting to suit the application, by fine tuning the WFS / Amps and Volts / Trim settings.



4.01 POWER SOURCE CONTROLS, INDICATORS AND FEATURES



1. Control Panel. Refer to pages 24, 34, 45, 56 and 67
2. MIG Gun Adaptor (Euro Style). Refer to page 25
3. MIG Gun Polarity Lead. Refer to page 25
4. Remote Control Socket 8 Pin. Refer to page 25
5. Positive Output Welding Terminal. Refer to page 25
6. Negative Output Welding Terminal. Refer to page 25
7. Shielding Gas Inlet. Refer to page 26
8. Fan On Demand. Refer to page 26
9. Power On/Off Switch. Refer to page 26
10. Wire Inch Button. Refer to page 26

Figure 4-1: Power Source Controls, Indicators and Features

1 CONTROL PANEL

The BlueVENOM XF200P3 is equipped with a 3.5" full colour screen enabling you to toggle through the many features and advanced settings with ease! A minimalist control panel with an intuitive user interface.

Figure 4-2: Control Panel

2 MIG GUN ADAPTOR (EURO STYLE)

The MIG Gun adaptor is the connection point for the MIG welding gun. Connect the gun by aligning and pushing the connector into the brass gun adaptor firmly and screwing the plastic nut clockwise to secure in position. To remove the MIG Gun simply reverse these directions. Refer to Section 5.02

3 MIG GUN POLARITY LEAD

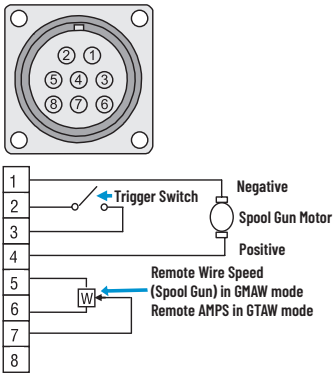
The polarity lead is used to connect the MIG Gun to the appropriate positive or negative output terminal (allowing polarity reversal for different welding applications). The polarity lead should be connected in to the positive welding terminal (+) when using solid steel, stainless steel or aluminium MIG wire. When using gasless wire, the polarity lead is connected to the negative welding terminal (-). If in doubt, consult the manufacturer of the electrode wire for the correct polarity. It is essential, that the male plug is inserted and turned securely to achieve a sound electrical connection.

CAUTION

Loose welding terminal connections can cause overheating and result in the male plug being fused in the twist & lock terminal, known as a DINSE Connector.

4 REMOTE CONTROL SOCKET 8 PIN

The 8 pin Remote Control Socket is used to connect remote control devices (i.e. Spool Gun or TIG Torch) to the welding power source. To make connections, align keyway, insert plug, and rotate threaded collar fully clockwise.



Socket Pin	Part Number / Description
1	Spool gun motor negative
2	Trigger Switch Input
3	Trigger Switch Input
4	Spool gun motor positive
5	5k ohm (maximum) connection to 5k ohm remote control potentiometer.
6	Zero ohm (minimum) connection to 5k ohm remote control potentiometer.
7	Wiper arm connection to 5k ohm remote control Wire Speed MIG (GMAW) mode potentiometer. Wiper arm connection to 5k ohm remote control Amps TIG (GTAW) mode potentiometer.
8	Not connected

Note: If the unit is in TIG mode and a TIG Torch with Remote Current Control is connected to the 8 Pin Control Socket on the front panel the power source will automatically detect the TIG Torch.

Figure 4-3: Remote Control Socket 8 Pin

5 POSITIVE OUTPUT WELDING TERMINAL

The positive welding terminal is used to connect the welding output of the power source to the appropriate welding accessory such as the MIG Gun (via the MIG Gun polarity lead), electrode holder lead or work lead. Positive welding current flows from the power source via this twist & lock terminal, known as a DINSE Connector. It is essential, that the male plug is inserted and turned securely to achieve a sound electrical connection.

6 NEGATIVE OUTPUT WELDING TERMINAL

The negative welding terminal is used to connect the welding output of the power source to the work lead. Most General Purpose electrodes are connected with work lead (with Clamp) to negative. Consult the electrode manufacturer's information for the correct polarity. Welding current flows from the workpiece via this twist & lock terminal, known as a DINSE Connector to the power source. It is essential, that the male DINSE type plug is inserted and turned securely to achieve a sound electrical connection. Do not over Tighten.

CAUTION

Loose welding terminal connections can cause overheating and result in the male plug being fused in the DINSE terminal.

7 SHIELDING GAS INLET (MIG MODES ONLY)

The Shielding Gas Inlet connection is a Quick Connect inlet fitting located on the rear of the machine which is used to supply the appropriate MIG welding gas to the unit. Refer to section 5.01.

WARNING
Only Inert Shielding Gases specifically designed for welding applications should be used.

8 FAN ON DEMAND

The BLUEVENOM XF200P3 is fitted with a fan on demand feature. Fan on demand automatically switches the cooling fan off when it is not required. This has two main advantages; (1) to minimize power consumption, and (2) to minimise the amount of contaminants such as dust that are drawn into the power source. Note that the fan will only operate when required for cooling purposes and will automatically switch off when not required.

9 POWER ON/OFF SWITCH

This switch is used to turn the unit ON/OFF. When this switch is turned ON the Colour Screen on the front panel will illuminate.

NOTE
If the Power Source is repeatedly switched On then Off rapidly or the supply to the power source is turned On and Off rapidly it may not turn On due to inbuilt protective devices acting. If this occurs leave the Power Source On/Off switch turned to the Off position for several minutes to allow for the protective devices to reset.

10 WIRE INCH BUTTON (MIG MODES ONLY)

Wire Inch Button (MIG modes only).
Hold button depressed to Feed the MIG Wire through the MIG Gun.

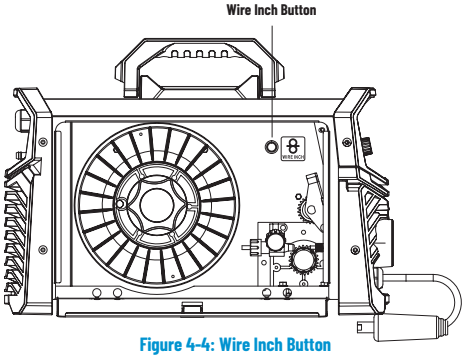


Figure 4-4: Wire Inch Button

SECTION 5:
MIG (GMAW/FCAW) WELDING

5.01 SHIELDING GAS REGULATOR/FLOWMETER OPERATING INSTRUCTIONS

SHIELDING GAS CONNECTION

WARNING
This equipment is designed for use with welding grade (Inert) shielding gases only.

A Preset Argon Regulator/Flowmeter and Gas Hose Kit comes with the machine plant. Connect the gas regulator onto the gas cylinder/bottle by hand, keeping the round sight gauge in the vertical position. Then tighten the nut with a spanner, but do-not over tighten. Connect the gas hose to the threaded outlet on the right-hand side of the regulator (Picture A) and tighten with a spanner. Connect the other end of the gas hose to gas inlet fitting on the rear panel of the welding machine using the supplied Quick Connect fittings. Check for any leaks with soapy water in a squeeze bottle, and look for bubbles (when the gas is on), this will highlight any gas leaks.

The gas flow (in Litres Per Minute) for shielding the molten weld metal from the atmosphere is adjustable and depends on the job and atmospheric conditions you encounter when welding. As a general rule for MIG Welding, always use a minimum of 12 LPM when welding with an amperage range of under 100Amps, a min. of 15 LPM when the amperage is under 180Amps and a minimum of 18 LPM for welding amperages over 200Amps. A lower gas flow will affect the welding quality and cause a porous weld while high gas flow results in bigger consumption of gas.

The flow rate is measured at the middle of the float ball.

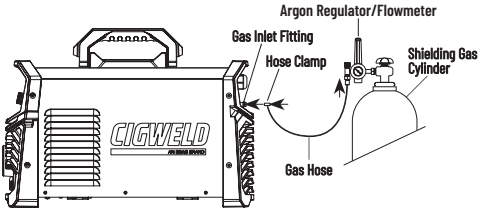


Figure 5-1: Shielding Gas Connection

SHIELDING GAS REGULATOR/ FLOWMETER SAFETY

An Argon Regulator/Flowmeter and Gas Hose comes with the machine plant.

This Regulator/Flowmeter is designed to reduce and control high pressure gas from a cylinder to the working pressure required for the equipment using it.

If the equipment is improperly used, hazardous conditions are created that may cause accidents. It is the users responsibility to prevent such conditions. Before handing or using the equipment, understand and comply at all times with the safe practices prescribed in this instruction.

SPECIFIC PROCEDURES for the use of regulators/flowmeters are listed below.

1. **NEVER** subject the Regulator/Flowmeter to an inlet pressure greater than its rated inlet pressure.
2. **NEVER** pressurize a Regulator/Flowmeter that has loose or damaged parts or is in a questionable condition. NEVER

loosen a connection or attempt to remove any part of a Regulator/Flowmeter until the gas pressure has been relieved. Under pressure, gas can dangerously propel a loose part.

3. **DO NOT** remove the Regulator/Flowmeter from a cylinder without first closing the cylinder valve and releasing gas in the Regulator/Flowmeter high and low pressure chambers.
4. **TURN OFF** When equipment is not in use for extended periods of time, shut off the gas at the cylinder valve and release the gas from the equipment.
5. **OPEN** the cylinder valve SLOWLY. Close after use.

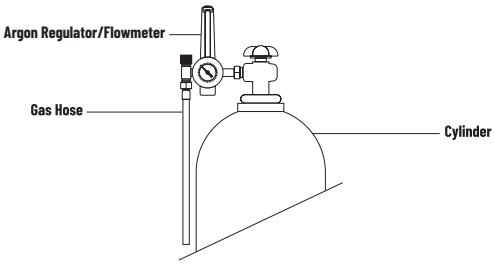


Figure 5-2: Fit Regulator/flowmeter to Cylinder

USER RESPONSIBILITIES

This equipment will perform safely and reliably only when installed, operated and maintained, and repaired in accordance with the instructions provided. Equipment must be checked periodically and repaired, replaced, or reset as necessary for continued safe and reliable performance. Defective equipment should not be used. Parts that are broken, missing, obviously worn, distorted, or contaminated should be replaced immediately.

The user of this equipment will generally have the sole responsibility for any malfunction, which results from improper use, faulty maintenance, or by repair by anyone other than an accredited repairer.

INSTALLATION

1. Remove cylinder valve plastic dust seal. Clean the cylinder valve outlet of impurities that may clog orifices and damage seats before connecting the Regulator/Flowmeter. Crack the valve (open then close) momentarily, pointing the outlet away from people and sources of ignition. Wipe with a clean lint free cloth.
2. Match Regulator/Flowmeter to cylinder. Before connecting, check that the Regulator/Flowmeter label and cylinder marking agree and that the Regulator/Flowmeter inlet and cylinder outlet match. NEVER CONNECT a Regulator/Flowmeter designed for a particular gas or gases to a cylinder containing any other gas.
3. Connect the Regulator/Flowmeter inlet connection to cylinder or pipeline and tighten it firmly but not excessively, with a suitable spanner.
4. Connect and tighten the outlet hose firmly and attach the hose to the welding machine with the Quick Connect fitting. Ensure no gas leakage. The flowmeter must be in the vertical position to read accurately.

OPERATION

With the Regulator/Flowmeter connected to cylinder or pipeline:

1. Stand to one side of Regulator/Flowmeter and slowly open the cylinder valve. If opened quickly, a sudden pressure surge may damage internal Regulator/Flowmeter parts.
2. Since the regulator is a preset type, no adjustments to the regulator are necessary. Before opening the cylinder valve, be sure that the flow adjusting valve is in a finger-tight "OFF" position (clockwise).
3. Slowly and carefully, open the cylinder valve until the maximum pressure registers on the high pressure gauge.

CAUTION

Match Regulator/Flowmeter to cylinder. NEVER CONNECT a Regulator/Flowmeter designed for a particular gas or gases to a cylinder containing any other gas.

CAUTION

DO NOT purge oxidising or flammable gases in the presence of flame, lit cigarettes, or other sources of ignition or in a confined space.

Close equipment valve(s) after purging, and test all connections for leaks with a suitable leak detection solution or soapy water. Never use a flame when testing for leaks.

ADJUSTING FLOW RATE

With the Regulator/Flowmeter ready for operation, adjust working flow rate as follows:

1. Slowly turn adjusting valve in anti-clockwise direction to open and increase until the bobbin in the flow tube indicates the required flow rate.

NOTE

It may be necessary to re-check the shielding Gas Regulator/Flowmeter flow rate following the first weld sequence due to back pressure present within shielding gas hose assembly.

2. To reduce flow rate, allow the welding grade shielding gas to discharge from Regulator/Flowmeter by pressing the Gas Purge button on the front of the machine, or by pressing the trigger on the MIG Gun. Bleed welding grade shielding gas into a well ventilated area. Turn adjusting screw clockwise, until the required flow rate is indicated on the gauge.
3. The correct flow rate will depend on the place and conditions you are working in. For indoors work shielding gas flow rate can be from 12L/min for welding thin metals (0.6-1.0mm) when using 0.6mm MIG wire, up to 15L/min when using thicker metals and using 0.8mm MIG wire. When welding near draughty doorways then the gas flow rate can go up to 18-20L/min. The tell tale sign is to ensure your finished welds do-not have porosity holes in the surface.

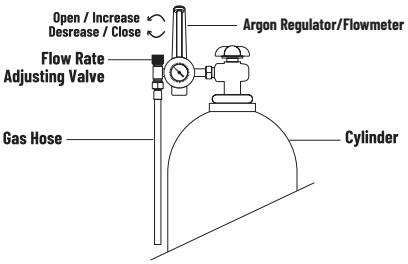


Figure 5-3: Adjust Flow Rate

SHUTDOWN

Close cylinder valve whenever the Regulator/Flowmeter is not in use. To shut down for extended periods (more than 30 minutes).

1. Close cylinder valve tightly.
2. Remove the gas from the machine and hose by pressing the Gas Purge button on the front of the machine, or by pressing the trigger on the MIG Gun. Bleed gas into a well ventilated area.
3. After gas is drained completely turn off the machine.
4. Before transporting cylinders that are not secured on a cart designed for such purposes, remove regulators/flowmeters.

WARNING

Moving Parts can cause injury!

5.02 ATTACHING THE MIG GUN (EURO)

Fit the MIG Gun to the power source by pushing the MIG Gun connector into the MIG Gun adaptor and screwing the plastic nut clockwise to secure the MIG Gun to the MIG Gun adaptor.

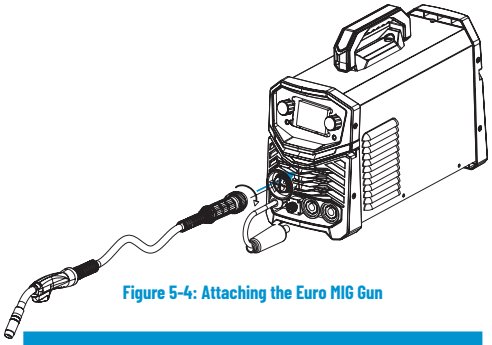


Figure 5-4: Attaching the Euro MIG Gun

5.03 INSTALLING MINI SPOOL (100mm DIAMETER)

As delivered from the factory, the unit is fitted with a Wire Spool Hub which accepts a Handi Spool of 200mm diameter.

In order to fit a Mini Spool of 100mm diameter, remove the Wire Spool Retaining Nut and Spool Hub and assemble parts in the sequence shown below in Figure 5-5.

The Spool Hub Retaining Nut and spring tighten the brake. The brake is correctly adjusted when the spool stops within 10 to 20mm (measured at the outer edge of the spool) after MIG Gun trigger is released. Wire should be slack without becoming dislodged from the spool.

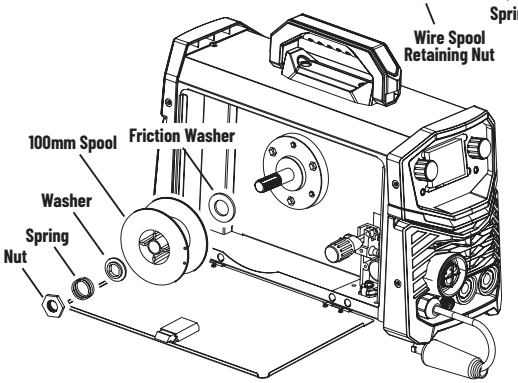


Figure 5-5: 100mm Spool Installation

5.04 INSTALLING HANDI SPOOL (200mm DIAMETER)

As delivered from the factory, the unit is fitted with a Wire Spool Hub which accepts a Handi Spool of 200mm diameter.

In order to fit a 200mm spool assemble parts in the sequence shown below in Figure 5-6.

Adjustment of the Spool Hub Retaining Nut will control the MIG Wire Spool Brake. Clockwise rotation of this nut tightens the brake. The Brake is correctly adjusted when the spool stops within 10 to 20mm (measured at the outer edge of the spool) after MIG Gun trigger is released. Wire should be slack without becoming dislodged from the spool.

NOTE

This spool hub nut can be removed by unscrewing in an anticlockwise direction and locating in the appropriate position.

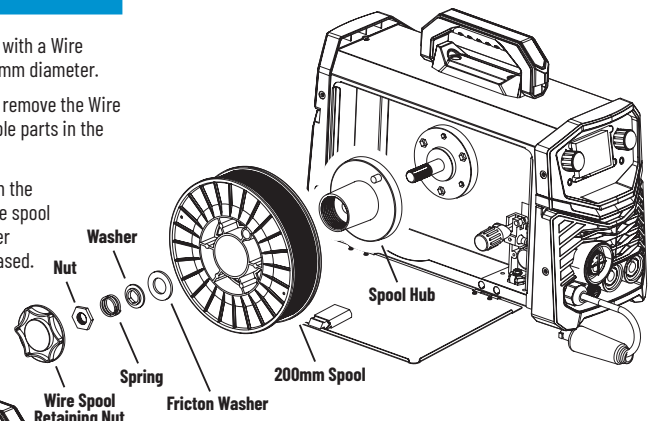


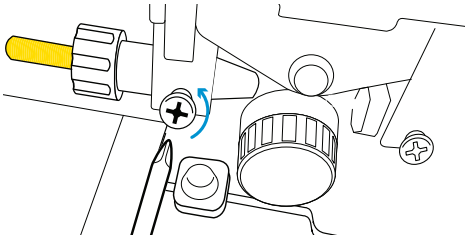
Figure 5-6: 200mm Handi Spool Installation

5.05 CHANGING INLET GUIDE FOR STEEL AND STAINLESS STEEL WIRES

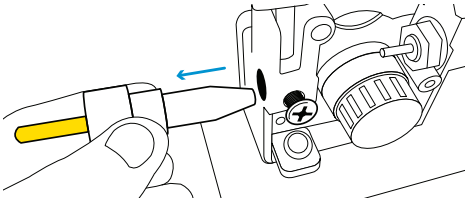
A spare Spring Steel Inlet Guide is supplied with the machine. It is recommended to use this with Steel and Stainless Steel Wires.

Before changing the Inlet Guide ensure wire is removed from the MIG Gun and Wire Drive system and Wire Spool is removed from the Spool Hub.

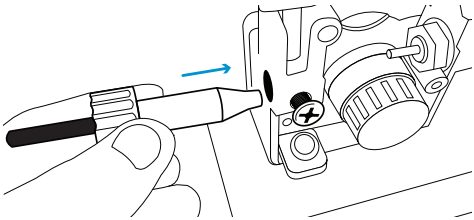
A. Loosen Inlet Guide retaining screw as shown.



B. Remove the Nylon (yellow) Inlet Guide as fitted to the machine from factory from the Wire Drive Assembly.



C. Fit the Steel and Stainless Steel Wires Inlet Guide into the Wire Drive Assembly as shown and tighten the retaining screw.



D. Fit the appropriate feed roll to suit the Steel or Stainless Steel wire being used. Refer to sections 5.09 Changing Feed Roll and section 2.11 Optional Accessories.

E. Install the wire spool and carefully feed the Steel or Stainless Steel wire into the feed mechanism. Refer to sections 5.03, 5.04, 5.05 and 5.07 for further information.

A replacement Spring Steel Inlet Guide is available. Refer to section 2.11 Optional Accessories.

5.06 SPOOL HUB BRAKE

When fitting the Wire Spool, the adjustment of the nut will control the MIG Wire Spool Brake. Rotating the nut clockwise increases the brake and rotating the nut counterclockwise reduces the brake. To access the nut remove the Spool Hub Wire Spool retaining Cap. Brake is correctly adjusted when the spool stops within 10 to 20mm (measured at the outer edge of the spool) after MIG Gun trigger is released. Wire should be slack without becoming dislodged from the spool.

WARNING

Moving Parts can cause injury!

WARNING

Overtension of brake will cause rapid wear of mechanical WIREFEED parts, overheating of electrical componentry and possibly an increased incidence of electrode wire Burnback into contact tip.

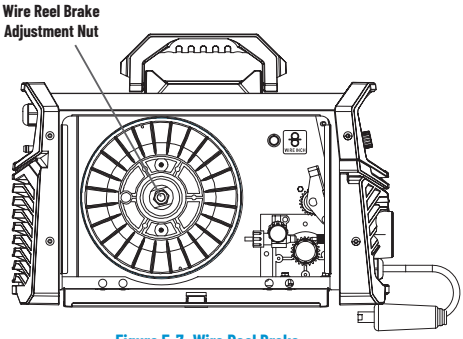


Figure 5-7: Wire Reel Brake

5.07 INSERTING WIRE INTO THE WIRE FEED MECHANISM

Release the tension from the pressure roller by turning the adjustable wire drive tension screw in an anticlockwise direction. Then to release the pressure roller arm, pull the wire drive tension screw outward to release the pressure roller arm (Figure 5-8). With the MIG welding wire feeding from the bottom of the spool (Figure 5-9) pass the wire through the inlet guide, between the rollers, through the outlet guide and into the MIG Gun. Do not release the MIG wire until the Pressure Arm is secured back into place. Adjust the wire drive tension screw accordingly. (Refer to Section 5.08) Remove the contact tip from the MIG Gun. With the MIG Gun lead reasonably straight, feed the wire through the Gun by pressing the Wire Inch button inside the machine, or by depressing the trigger switch. Fit the appropriate contact tip.

WARNING

Keep hands clear of the contact tip holder while feeding wire through to the gun. The wire can easily pierce you skin resulting in injury.

Keep MIG Gun away from eyes and face.

NOTE

A spare Spring Steel Inlet Guide is supplied with the machine. Use this with Steel and Stainless Steel Wires.

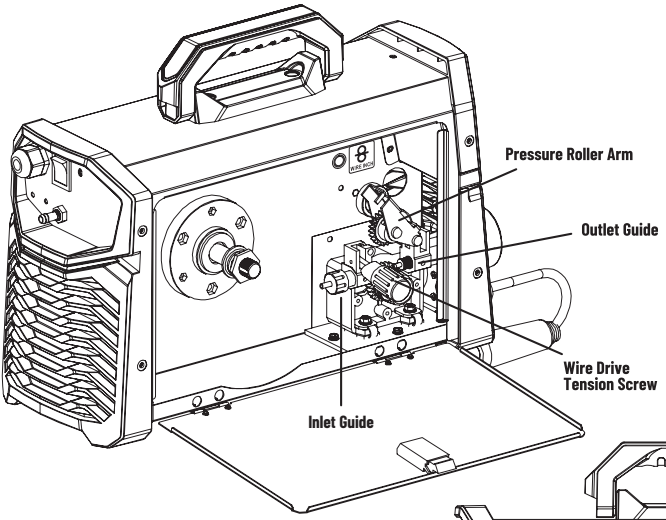


Figure 5-8: Wire Drive Assembly Components

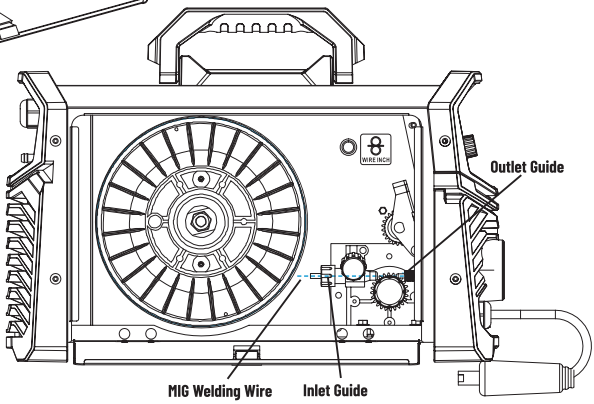


Figure 5-9 Feed Roll Pressure Adjustment

5.08 FEED ROLL PRESSURE ADJUSTMENT

The pressure (top) roller applies pressure to the grooved feed roll via an adjustable pressure screw. These devices should be adjusted to a minimum pressure that will provide satisfactory WIREFEED without slippage. If slipping occurs, and inspection of the wire contact tip reveals no wear, distortion or burn back jam, the conduit liner should be checked for kinks and clogging by metal flakes and swarf. If it is not the cause of slipping, the feed roll pressure can be increased by rotating the pressure screw clockwise.

A simple check for the correct drive tension is to bend the end over of the wire (once out the end of the MIG Gun) and hold it about 50mm from a piece of wood (an insulated object) and let it run into the wood. The wire should coil up without stopping and slipping at the drive rollers, tighten the pressure/tension adjustment screw if it slips.

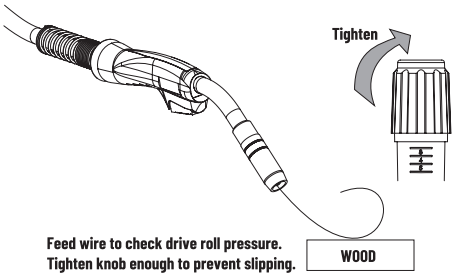


Figure 5-10 Feed Roll Pressure Adjustment

WARNING

Keep hands clear of the contact tip holder while feeding wire through to the gun. The wire can easily pierce you skin resulting in injury.

Keep MIG Gun away from eyes and face.

WARNING

Before changing the feed roll ensure that the mains supply to the power source is switched off.

CAUTION

The use of excessive pressure may cause rapid wear of the feed rolls, shafts and bearing.

5.09 CHANGING THE FEED ROLL

To change the feed roll, release the Wire Drive Tension Screw and lift the Pressure Roller Arm (top roller) up and out of the way. Loosen off and remove the feed roll retaining screw by turning in an anticlockwise direction.

Once the feed roll is removed then to replace feed roll, ensuring you have the correct groove size matching the wire size you are using in the the welder. Ensure the wire size required is the number facing outward on the feed roll when feed roll is installed. Re-install by following these instructions in reverse.

A dual U groove feed roll is fitted as standard. It can accommodate 0.9/1.0mm (Gas Shielded Soft Wires). Markings are indicated on the side edge of the feed roll, for example 0.9U, 1.0U.

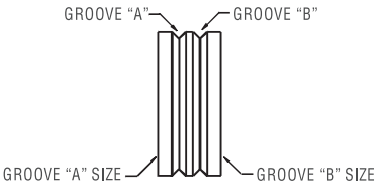


Figure 5-11: Dual Groove Feed Roll

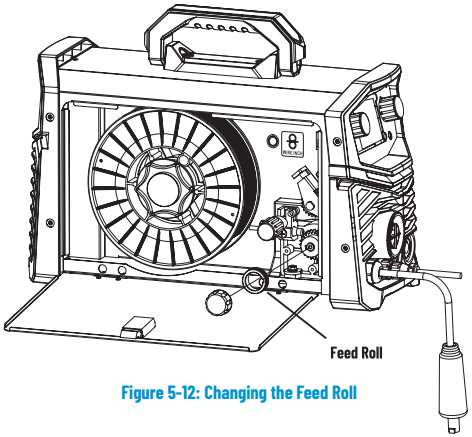


Figure 5-12: Changing the Feed Roll

WARNING

Moving Parts can cause injury!

5.10 MIG MODE AND SETUP

Figure 5-13: MIG Modes

A. Home Button

Press the Home button to show the Process Selection screen (Home).

In the Home Screen rotate the Left Control Knob (Note: Screen will highlight which control knob to use for selection as per Fig. 5-14) and press to Select the desired Welding Process. DC MIG, PULSE MIG, DOUBLE PULSE MIG, MMA (Stick) or TIG.

Once Welding Process is selected rotate Left Control Knob to select the Material and Gas Type (or Manual MIG or Spool Gun modes) and press the left Control Knob to select.

Figure 5-14: Home Screen

B. Left Control Knob (Volts)

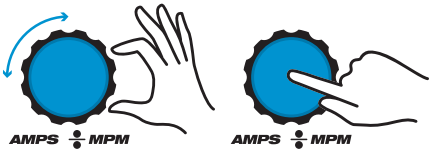
Turn to make selection or change values and press to confirm.

To select an option from the displayed menu:

- Options will be highlighted in sequence at every turn;
- Turn clockwise or anti-clockwise to change selection;
- Press Control Knob to confirm the selection or to enter the next option on menu.

C. Right Control Knob (Amps / MPM)

Turn to make selection or change values and press to confirm.



To select an option from the displayed menu:

- Options will be highlighted in sequence at every turn;
- Turn clockwise or anti-clockwise to change selection;
- Press Control Knob to confirm the selection or to enter the next option on menu.

In the Setting Screen this Right Control Knob adjusts the Wirefeed Speed (MPM) in MIG Manual Mode.

It adjusts Plate Thickness which in turn will change the Voltage Current (A) and m/min values.

- Turn clockwise to increase the value;
- Turn anti-clockwise to decrease the value;
- Turn slowly in order to adjust value in small increments.
- Turn quickly in order to adjust value in larger increments.

D. Advanced Settings (Cog Button)

Press the COG Icon Button to access Advanced Settings. Each press will move to the next Advanced Setting available depending on the Mode selected.

NOTE
If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

DC MIG Selections

From the Home Screen using the Left Control Knob select DC MIG then use the Left Control Knob to make selection. Refer to the Settings Screen Overview Page

DC MIG Gun Polarity Setup
Connect MIG Gun Polarity Lead to Positive (+) Output Terminal. Connect Work Lead into Negative (–) Output Terminal

Mild Steel Gasless Setup
Connect MIG Gun Polarity Lead to Negative (–) Output Terminal. Connect Work Lead into Positive (+) Output Terminal

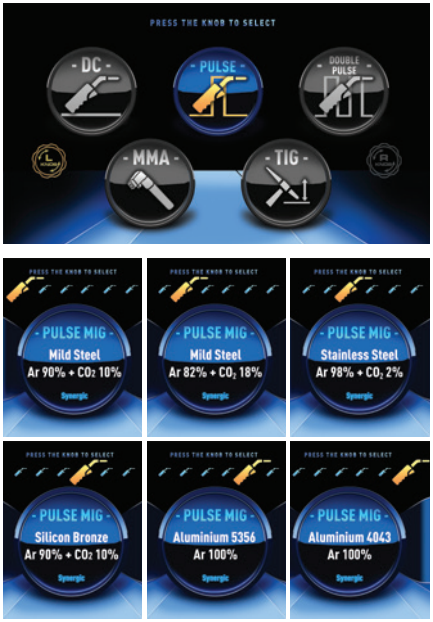
Manual MIG Gas Shielded Polarity Setup
Connect MIG Gun Polarity Lead to Positive (+) Output Terminal. Connect Work Lead into Negative (–) Output Terminal

Manual MIG Gasless Polarity Setup
Connect MIG Gun Polarity Lead to Negative (–) Output Terminal. Connect Work Lead into Positive (+) Output Terminal

Figure 5-15: DC MIG Selections

PULSE MIG Selections

From the Home Screen using the Left Control Knob select PULSE MIG then use the Left Control Knob to make selection. Refer to the Settings Screen Overview Page.



SETUP

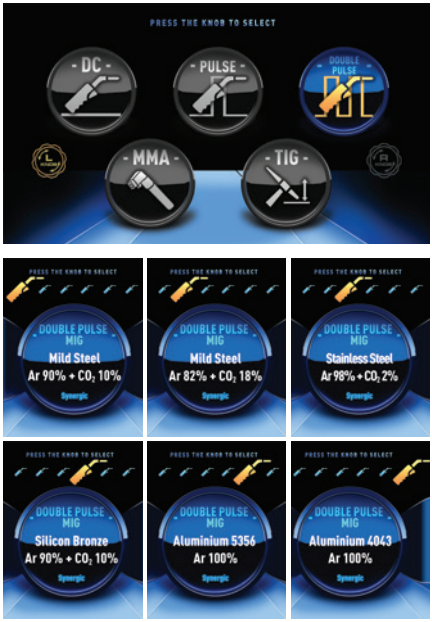
PULSE MIG Setup

Connect MIG Gun Polarity Lead to Positive (+) Output Terminal. Connect Work Lead into Negative (–) Output Terminal.

Figure 5-16: PULSE MIG Selections

DOUBLE PULSE MIG Selections

From the Home Screen using the Left Control Knob select DOUBLE PULSE MIG then use the Left Control Knob to make selection. Refer to the Settings Screen Overview Page.



SETUP

DOUBLE PULSE MIG Setup

Connect MIG Gun Polarity Lead to Positive (+) Output Terminal. Connect Work Lead into Negative (–) Output Terminal.

Figure 5-17: DOUBLE PULSE MIG Selections

MIG Modes Settings Overview

Figure 5-18: DOUBLE PULSE MIG SYNERGIC

NOTE

Post Gas Time setting not available in Mild Steel Gasless Synergic Mode.
Pulse settings are not available in DC MIG. In Single Pulse Mode, Pulse settings are factory set.

Volts Trim

In MIG QuickSet mode if in mm or MPM Modes a quick press of the Left Control Knob will select Volts Trim. Note Volts Trim is not available in DC MIG Manual and Spool Gun Mode. Volts Trim has a range of -5.0 to +5.0 Volts. If the value has been changed, to return to the factory parameters simply return the Volts Trim setting to display 0 which is the Factory Synergic Voltage Value.

For example, if the Pre-set Voltage is 20V and in volts trim mode the setting is changed to -5.0 then the Pre-set voltage will now be 15V. If the Volts Trim is changed to +5.0 then the Pre-set Voltage will be 25V.

Note: depending on the material thickness this may limit the + Volts trim values available.

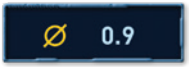
Voltage Display

Displays the Setting Voltage and the Actual Voltage during Welding.

At the completion of welding this digital meter holds the last recorded welding voltage for 10 seconds.

It will hold the value until; (1) any of the front panel controls are adjusted in which case the unit will revert to viewing mode, (2) welding is recommenced, in which case actual welding amperage will be displayed, or (3) a period of 10 seconds elapses following the completion of welding in which case the unit will return to viewing mode.

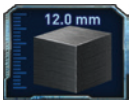
MIG Wire Diameter Setting



Press the Advanced Settings (COG Button) to cycle through the settings until reaching MIG Wire Diameter (It will highlight). Use the Right Control Knob to adjust to the desired level.

QuickSet wire diameters available depend on wire/gas type selected.

QuickSet Plate Thickness



Select Plate Thickness and Quickset will set factory Synergic values for Voltage and Current (Amps) and Wire speed.

With QuickSet Settings installed the guess work is now taken out of the setup, to allow excellent welding results. All you need to set is the MIG Mode, MIG Wire and Shielding Gas Type and Plate Thickness are selected.

QuickSet Plate thickness setting allows you to set up in a flash. There is no guessing the welding parameters. Use the QuickSet feature to set the machine to the correct plate thickness you are welding. You can check the plate thickness with a measuring device, such as a ruler or vernier caliper. If two different plate thickness are to be joined then, add the two together and divide by 2 and use the average plate thickness as your setting guide

Burnback

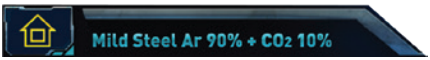
Press the Advanced Settings (COG Button) to cycle through the settings until reaching Burnback (It will highlight). Use the Right Control Knob to adjust to the desired level.

The Burnback Control is used to adjust the amount of MIG wire that protrudes from the MIG Gun after the completion of MIG welding (commonly referred to as stick out). Once selected use the right control knob to set the desired value.

This parameter has an adjustment range of 0 - 0.4 seconds. Factory setting for Burnback is 0.2 seconds.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

MIG Wire and Gas Type Selected



Displays the MIG Wire Type and Gas Selected

Setting Screen Page

Shows the Setting Screen page number. As the Advanced Settings Button (COG Button) is pressed it scrolls through the available Advanced Settings which may move to additional pages.

Post Gas

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Post Gas (It will highlight). Use the Right Control Knob to adjust to the desired level.

Displays the Post Gas time setting. Once selected use the right control knob to set the desired value.

This parameter has an adjustment range of 0.1 - 2.0 seconds. Factory setting for Post Gas is 0.6 seconds.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

Trigger Mode

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Trigger Mode (It will highlight). Use the Right Control Knob to adjust to the desired mode.

The Trigger Mode control is used to switch the functionality of the MIG Gun trigger between 2T (normal) and 4T (latch mode).

2T Normal Mode

In this mode, the MIG Gun trigger must remain depressed for the welding output to be active. Press and hold the MIG

Gun trigger to activate the power source (weld). Release the MIG Gun trigger switch to cease welding.

4T Latch Mode

This mode of welding is mainly used for long welding runs to reduce operator fatigue. In this mode the operator can press and release the MIG Gun trigger once welding has commenced and the output will remain active. To deactivate the power source, the MIG Gun trigger switch must again be depressed and released, thus eliminating the need for the operator to hold the MIG Gun trigger.

Wire Feed Speed (m/min)

Displays MIG wire feed speed in metres per minute (m/min).

MIG Synergic Modes

Wire Speed is not able to be set independently in Synergic Modes.

With QuickSet Settings installed the guess work is now taken out of the setup, to allow excellent welding results. All you need to set is the MIG Mode, MIG Wire and Shielding Gas Type and Plate Thickness.

Use the right Control Knob to set to desired Plate Thickness.

Current (Amps)

Welding Current (AMPS) is not able to be set independently in Synergic Modes. The setting value shown represents an average for the set welding conditions, as preview for the operator.

Displays actual Welding Current (AMPS) whilst welding.

At the completion of welding this holds the last recorded welding voltage for 10 seconds. It will hold the value until; (1) any of the front panel controls are adjusted in which case the unit will revert to setting mode, (2) welding is recommenced, in which case actual welding amperage will be displayed, or (3) a period of 10 seconds elapses following the completion of welding in which case the unit will return to setting mode.

Inductance

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Inductance (It will highlight). Use the Right Control Knob to adjust to the desired level.

The Inductance (arc) control operates in MIG (GMAW) modes only and is used to adjust the intensity of the welding arc. Lower arc control settings make the arc softer with less weld spatter. Higher arc control settings give a stronger driving arc which can increase weld penetration. This parameter has an adjustment range of +10 to -10.

Factory setting for Inductance is 0.

Opti-Start

Allows the user to customise their starting arc characteristics through Soft and Hard Start controls.

Hard Start

The hard start is used to improve the start characteristics for the MIG mode by increasing the start wire feed speed. Hard-Start increases the Wire Feed Speed above the pre-set WFS for a short period of time, which punches more wire into the arc and provides better penetration and higher amperage at the start. This parameter has an adjustment range of -5 to 5. Factory setting for Hard Start is 0.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

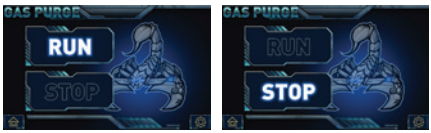
Soft Start

The soft start is used to improve the start characteristics for the MIG mode by increasing the start voltage. Soft-Start adds additional Voltage to the pre-set voltage for a short period of time, which softens the arc and makes the weld bead flatter with less build up at the start. This parameter has an adjustment range of -5 to 5.

Factory setting for Soft Start is 0.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

Gas Purge (MIG modes only except for Gasless MIG)



This purges Shielding Gas (MIG) through the MIG Gun.

From the Setting Screen hold the Right Control Knob depressed for 3 seconds and it will display the Gas Purge Screen. Rotate the Right Control Knob to select Run and it will purge the shielding gas for 10 seconds. If during that time the Gas Purge is required to be stopped rotate the Right Control Knob to select Stop.

Note: If no adjustment is made after 5 seconds it will return to the Setting Screen.

Pulse in welding

Pulse has a growing relevance in the welding industry, as it allows operators to achieve great results with less effort. To better comprehend the concept we will examine the 4 main components of the Pulse concept, applied to a welding scenario.

Why is it such a big deal?

When the pulse function is enabled, the welding current alternates between the base and peak levels according to the set frequency and pulse duration. This pulsing of the current offers several benefits:

1. Heat control: By alternating between higher and lower currents, the pulse function allows for better control over the heat input. The peak current generates more heat, allowing for good fusion and penetration into the base metal, while the base current helps reduce heat buildup, minimizing the risk of distortion or burn-through.
2. Arc stability: Pulsing the current helps to maintain a stable welding arc, especially when welding thin materials or in challenging positions. The rapid cycling between the two current levels can aid in arc control and reduce spatter.
3. Improved control over weld pool: The pulsing action provides better control over the molten weld pool, allowing the welder to manipulate its shape and size. This control is particularly useful for achieving desired bead appearance, controlling the width of the weld, and filling gaps more effectively.
4. Reduced heat-affected zone (HAZ): The pulse function helps limit the size of the heat-affected zone, which is the area surrounding the weld that undergoes thermal changes. This can lead to less distortion, reduced warping, and minimise metallurgical changes in the base metal.

By utilizing the pulse function in DC MIG welding, welders can achieve improved weld quality, better control over the process, and enhanced productivity, especially when working with challenging materials or in demanding welding applications.

Pulse Frequency (Pulse Freq or Pulse Speed)

Only available in Double Pulse MIG Modes.

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Pulse Freq (Pulse Speed) (It will highlight). Use the Right Control Knob to adjust to the desired level. Pulse Frequency Range is 0.3 – 5Hz. Factory setting is 1.5Hz in this mode.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

It is the amount of times per second that a pulse (also known as cycle) will take place. The unit of measurement is Hertz (Hz). A Pulse cycles between a Pulse Base current (bottom of the pulse) and the Peak Current (top of the pulse). This allows you to control the overall heat input, maintain arc stability and have a better looking weld by improving control over the weld pool. Higher frequencies result in more rapid cycling between the two current levels. As an example, if the Pulse Frequency is set for 2.4 Hz, you will observe 2.4 pulses per second (almost 10 pulses every 5 seconds).

Pulse Base Current (A)

Only available in Double Pulse MIG Modes.

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Pulse Base Current (It will highlight). Use the Right Control Knob to adjust to the desired level. Pulse Base Current Range is 20 – 99% in this mode. Factory setting changes according to the Plate Thickness.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

It's the percentage of current that your Pulse will have at the Bottom (base). This percentage is calculated from your peak current, which you set as a combination of the Wire Feed Speed and Voltage. It is the low-current pulse that follows the peak current. It helps maintain the arc stability and keeps the weld pool in a controlled state while minimizing heat input. The background current is usually set at a lower value compared to the peak current. For example, if a Pulse Base Current of 40% is set, the variation will be 60% between Peak and Base. If you increase the Base Current percentage to 60% this will make the weld hotter (provide more average current), conversely if you have a low base percentage the average weld current will be colder.

Pulse Width (Ripple Gap)

Only available in Double Pulse MIG Modes.

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Pulse Width (It will highlight). Use the Right Control Knob to adjust to the desired level. Pulse Width Range is 20 – 80%. Factory setting may changes according to the Plate Thickness

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

The Pulse Width, also known as Pulse Duration or Ripple Gap, refers to the length of time the current remains at the peak level before returning to the base level. It is usually expressed as a percentage of the total cycle time. A shorter pulse width results in less heat input and narrower weld beads, while a longer pulse width provides more heat and wider weld beads. Put it simply, it refers to the duration of the "on" and "off" periods of the welding current during each pulse.

NOTE

The Pre-set functionality provided on this power source is intended to act as a guide only. Some differences may be observed between pre-set values and actual welding values due to factors including the mode of welding, differences in consumables/gas mixtures, individual welding techniques and the transfer mode of the welding arc (ie dip versus spray transfer). Where exact settings are required (in the case of procedural work), it is recommended that alternate measurement methods be utilised to ensure output values are accurate.

5.11 QUICKSET MIG AND MANUAL MIG MODES

QuickSet MIG Mode in 3 Steps

With QuickSet Pre-Sets installed the guess work is now taken out of the setup, to allow excellent welding results. All you need to set is the MIG Wire Diameter, Shielding Gas Type (ARG, MIX or Gasless) and Plate Thickness.

Plate thickness setting allows you to set up in a flash. There is no guessing the welding parameters. Use the QuickSet feature to set the machine to the correct plate thickness you are welding. You can check the plate thickness with a measuring device, such as a ruler or vernier caliper. If two different plate thickness are to be joined then, add the two together and divide by 2 and use the average plate thickness as your setting guide

Manual MIG Mode

In Manual MIG Mode, Voltage and MPM (Wire Speed) must be manually set. Refer to the Weld Guide located on the Wire Feed Compartment Door for recommended setting values.

5.12 CONNECTIONS FOR SOLID MIG WIRES WITH SHIELDING GAS AND GASLESS FLUX CORED WIRES

Changing MIG Gun Polarity in MIG Mode.

The MIG Gun Polarity Lead is located at the bottom on the machine front. It can be connected to either of the Positive (+) or Negative (-) Dinse Sockets on the machine front panel. These terminals determine the polarity of the MIG Gun and the Work Lead connection.

MIG Gun Polarity Lead Connection for Solid MIG Wire with Shielding Gas.

1. The MIG Gun Polarity Lead must be connected to the Positive (+) Terminal on the front of the Power Source as shown. This makes the MIG Gun electrode positive, which supplies 2/3 heat to the welding wire and weld deposit. Polarity electrode/wire Positive (+)

2. The Work Return cable and clamp must be connected to the negative (-) terminal by inserting the twist connector into the front panel socket and then tighten it clockwise. Connect the clamp to the work piece.

MIG Gun Polarity Lead Connection for Gasless Flux Cored MIG Wire.

1. The MIG Gun Polarity Lead must be connected to the Negative (-) Terminal on the front of the Power Source as shown. This makes the MIG Gun electrode negative, which supplies 1/3 heat to the welding wire and weld deposit. Polarity electrode/wire Negative (-)

2. The Work Return cable and clamp must be connected to the positive (+) terminal by inserting the twist connector into the front panel socket and then tighten it clockwise. Connect the clamp to the work piece.

5.13 SETUP FOR MIG (GMAW) WELDING WITH GAS SHIELDED MIG WIRE

A. Ensure that the Power Source On/Off switch located on the rear of the Power Source is in the Off position.

B. Fit the MIG Gun to the Power Source. (Refer to section 5.02 Attaching the MIG Gun).

C. Connect the MIG Gun Polarity Lead (8) to the positive welding terminal (+). If in doubt, consult the wire manufacturer. Welding current flows from the Power Source via DINSE terminals. It is essential, that the male DINSE plug is inserted and turned securely to achieve a sound electrical connection.

D. Fit the correct Feed Roll for the Gas Shielded MIG wire being used. Refer to section 2.11 Options and Accessories for Feed Roll types and Part Numbers.

E. Place the MIG wire spool onto the spool holder. Refer to sections 5.03 for 100mm diameter spools or 5.04 for 200mm diameter spools.

F. Switch the Power Source On/Off switch located on the rear of the Power Source to the On position and ensure the Power indicator on the Front Display is illuminated.

G. Select the Gas Shielded MIG Mode for the application. Refer to Section 5.10 for details.

H. Feed wire through the wire drive mechanism. Refer to section 5.07.

I. Connect the work lead to the negative welding terminal (-). If in doubt, consult the wire manufacturer. Welding current flows from the Power Source via DINSE terminals. It is essential, that the male plug is inserted and turned securely to achieve a sound electrical connection.

J. Fit the welding grade shielding Gas Regulator/Flowmeter to the shielding gas cylinder. Ensure that the shielding gas hose connection is sufficiently tight at the regulator connection. Refer to section 5.01 for the connection and instruction of shielding Gas Regulator/Flowmeter.

NOTE

Power Source settings are adjusted using the front panel controls. Refer to section 5.10.

WARNING

Before connecting the work clamp to the work piece make sure the mains power supply is switched off.

CAUTION

Loose welding terminal connections can cause overheating and result in the male plug being fused in the terminal. Remove any packaging material prior to use. Do not block the air vents at the front or rear of the Welding Power Source.

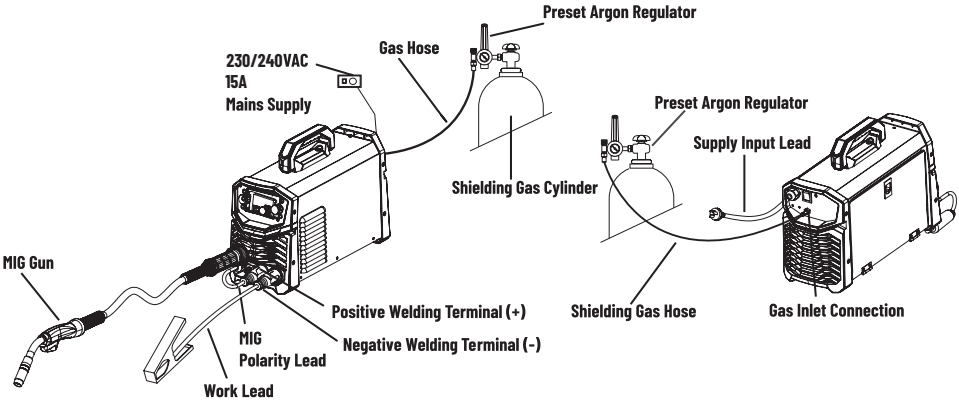


Figure 5-19: Setup for MIG Welding with Gas Shielded MIG Wire

5.14 SETUP FOR MIG (FCAW) WELDING WITH GASLESS MIG WIRE

A. Ensure that the Power Source On/Off switch located on the rear of the Power Source is in the Off position.

B. Fit the MIG Gun to the Power Source. (Refer to section 5.02 Attaching the MIG Gun).

C. Connect the MIG Gun Polarity Lead (8) to the negative welding terminal (-). If in doubt, consult the wire manufacturer. Welding current flows from the Power Source via DINSE terminals. It is essential, that the male DINSE plug is inserted and turned securely to achieve a sound electrical connection.

D. Fit the correct Feed Roll for the Gasless MIG wire being used. Refer to section 2.11 Options and Accessories for Feed Roll types and Part Numbers.

E. Place the MIG wire spool onto the spool holder. Refer to sections 5.03 for 100mm diameter spools or 5.04 for 200mm diameter spools.

F. Switch the Power Source On/Off switch located on the rear of the Power Source to the On position and ensure the Front Panel Display is illuminated.

G. Select DC MIG Mild Steel Gasless Mode. Refer to Section 5.10 for details.

H. Feed wire through the wire drive mechanism. Refer to section 5.07.

I. Connect the work lead to the positive welding terminal (+). If in doubt, consult the wire manufacturer. Welding current flows from the Power Source via DINSE terminals. It is essential, that the male plug is inserted and turned securely to achieve a sound electrical connection.

WARNING
Moving Parts can cause injury!

WARNING
Before connecting the work clamp to the work piece make sure the mains power supply is switched off.

CAUTION
Loose welding terminal connections can cause overheating and result in the male plug being fused in the terminal.

Remove any packaging material prior to use. Do not block the air vents at the front or rear of the Welding Power Source.

NOTE
QuickSet wire sizes for MIG GASLESS (Flux Cored Wire) are 0.8mm and 0.9mm diameter.

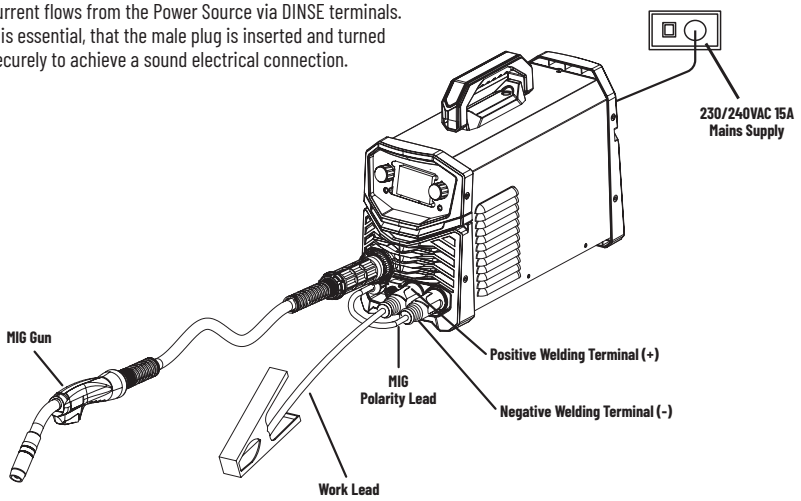


Figure 5-20: Setup for MIG Welding with Gasless MIG Wire

5.15 MIG (GMAW) MANUAL MODE AND SETUP WITH SPOOL GUN FOR GAS SHIELDED MIG WIRE

Note: MIG Manual and Spool Gun Mode Settings layout are the same.

Figure 5-21: MIG (Gmaw) Manual Mode And Setup With Spool Gun For Gas Shielded MIG Wire

From the Home Screen using the Left Control Knob select DC MIG then use the Left Control Knob to select DC MIG Manual Spool Gun Mode.

Figure 5-22: MIG Manual and Spool Gun Mode

Mode Selected

Displays the Welding Mode selected.

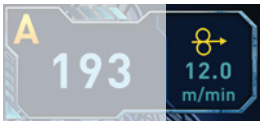
Voltage Display

Displays the Setting Voltage and the Actual Voltage during Welding.

At the completion of welding this digital meter holds the last recorded welding voltage for 10 seconds.

It will hold the value until; (1) any of the front panel controls are adjusted in which case the unit will revert to viewing mode, (2) welding is recommenced, in which case actual welding amperage will be displayed, or (3) a period of 10 seconds elapses following the completion of welding in which case the unit will return to setting mode..

Wire Feed Speed (m/min)



Displays MIG wire feed speed in metres per minute (m/min).

DC MIG Spool Gun Manual Mode

Use the right Control Knob to set to desired value.

In MIG (GMAW/FCAW) modes, the setting wire feed speed adjusts the speed of the wire feed motor (which in turn adjusts the output current by varying the amount of MIG wire delivered to the welding arc). The optimum wire speed required will dependent on the type of welding application.

Note: MIG Manual and Spool Gun Mode share many of the same functions.

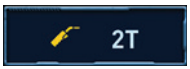
DC MIG Manual Mig Mode and DC MIG Spool Gun Manual

Current (AMPS) is not able to be set in these modes.

At the completion of welding this digital meter holds the last recorded welding current (AMPS) for 10 seconds.

It will hold the value until; (1) any of the front panel controls are adjusted in which case the unit will revert to viewing mode, (2) welding is recommenced, in which case actual welding amperage will be displayed, or (3) a period of 10 seconds elapses following the completion of welding in which case the unit will return to setting mode.

Trigger Mode



Press the Advanced Settings (COG Button) to cycle through the settings until reaching Trigger Mode (It will highlight). Use the Right Control Knob to adjust to the desired mode.

The Trigger Mode control is used to switch the functionality of the MIG Gun trigger between 2T (normal) and 4T (latch mode).

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

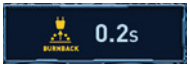
2T Normal Mode

In this mode, the MIG Gun trigger must remain depressed for the welding output to be active. Press and hold the MIG Gun trigger to activate the power source (weld). Release the MIG Gun trigger switch to cease welding.

4T Latch Mode

This mode of welding is mainly used for long welding runs to reduce operator fatigue. In this mode the operator can press and release the MIG Gun trigger once welding has commenced and the output will remain active. To deactivate the power source, the MIG Gun trigger switch must again be depressed and released, thus eliminating the need for the operator to hold the MIG Gun trigger.

Burnback



Press the Advanced Settings (COG Button) to cycle through the settings until reaching Burnback (It will highlight). Use the Right Control Knob to adjust to the desired level.

The Burnback Control is used to adjust the amount of MIG wire that protrudes from the MIG Gun after the completion of MIG welding (commonly referred to as stick out). Once selected use the right control knob to set the desired value.

This parameter has an adjustment range of 0 - 0.4 seconds. Factory setting for Burnback is 0.2 seconds.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

Inductance

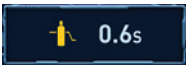
Press the Advanced Settings (COG Button) to cycle through the settings until reaching Inductance (It will highlight). Use the Right Control Knob to adjust to the desired level.

The Inductance (arc) control operates in MIG (GMAW) modes only and is used to adjust the intensity of the welding arc. Lower arc control settings make the arc softer with lessweld spatter. Higher arc control settings give a stronger driving arc which can increase weld penetration. This parameter has an adjustment range of +10 to -10.

Factory setting for Inductance is 0.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

Post Gas



Press the Advanced Settings (COG Button) to cycle through the settings until reaching Post Gas (It will highlight). Use the Right Control Knob to adjust to the desired level.

Displays the Post Gas time setting. Once selected use the right control knob to set the desired value.

This parameter has an adjustment range of 0 1- 2.0 seconds. Factory setting for Post Gas is 0.6 seconds.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

Opti-Start

Allows the user to customise their starting arc characteristics through Soft and Hard Start controls.

Hard Start

The hard start is used to improve the start characteristics for the MIG mode by increasing the start wire feed speed. Hard-Start increases the Wire Feed Speed above the pre-set WFS for a short period of time, which punches more wire into the arc and provides better penetration and higher amperage at the start. This parameter has an adjustment range of -5 to 5. Factory setting for Hard Start is 0.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

Soft Start

The soft start is used to improve the start characteristics for the MIG mode by increasing the start voltage. Soft-Start adds additional Voltage to the pre-set voltage for a short period of time, which softens the arc and makes the weld bead flatter with less build up at the start. This parameter has an adjustment range of -5 to 5.

Factory setting for Soft Start is 0.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

5.16 SETUP WITH SPOOL GUN FOR GAS SHIELDED MIG WIRE

A. Ensure that the Power Source On/Off switch located on the rear of the Power Source is in the Off position.

B. Fit the Euro Spool Gun to the Power Source using the front panel EURO torch adaptor (refer also to section 5.02 Attaching the MIG Gun). Connect the 8 pin Remote Control Plug to the 8 pin Remote Control Socket on the power source. Ensure 8 pin plug is correctly fitted to the 8 pin socket on front panel and collar on plug is tightened firmly.

C. Connect the MIG Gun Polarity Lead (8) to the positive welding terminal (+). If in doubt, consult the wire manufacturer. Welding current flows from the Power Source via DINSE terminals. It is essential, that the male DINSE plug is inserted and turned securely to achieve a sound electrical connection.

D. Fit the correct Feed Roll in Spool Gun for the Gas Shielded MIG wire being used.

E. Switch the Power Source On/Off switch located on the rear of the Power Source to the On position and ensure the Digital Display on the Front Panel is illuminated.

F. Select DC MIG Spool Gun Manual Mode. Refer to Section 5.15 for further information.

G. Feed wire through the wire drive mechanism in the Spool Gun.

H. Connect the work lead to the negative welding terminal (-). If in doubt, consult the wire manufacturer. Welding current flows from the Power Source via DINSE terminals. It is essential, that the male plug is inserted and turned securely to achieve a sound electrical connection.

I. Fit the welding grade shielding Gas Regulator/Flowmeter to the shielding gas cylinder. Ensure that the shielding gas hose connection is sufficiently tight at the regulator connection. Refer to section 5.01 for the connection and instruction of shielding Gas Regulator/Flowmeter.

WARNING

Before connecting the work clamp to the workpiece make sure the mains power supply is switched off.

CAUTION

Loose welding terminal connections can cause overheating and result in the male plug being fused in the terminal. Remove any packaging material prior to use. Do not block the air vents at the front or rear of the Welding Power Source. 5.16

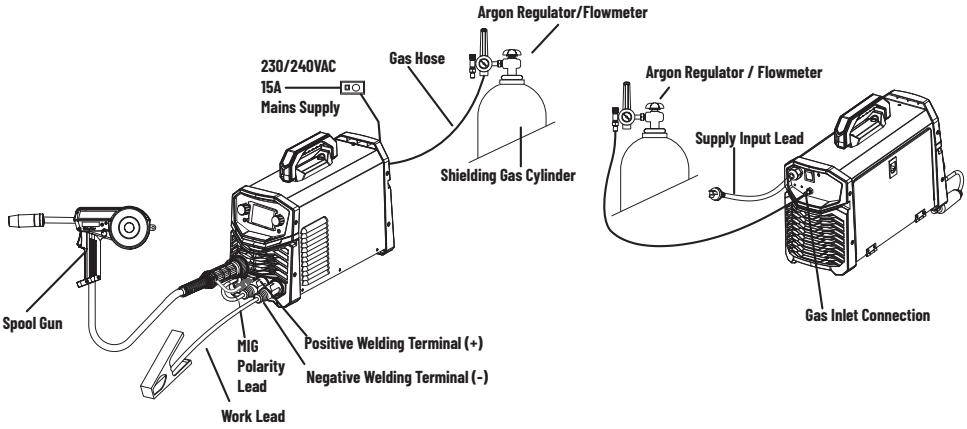


Figure 5-23: Setup with Spool Gun for Gas Shielded MIG Wire

SETTING OF THE POWER SOURCE

Power source setting requires some practice by the operator, (however with the QuickSet feature of the BLUEVENOM XF200P³, setting up the correct parameters is a very simple procedure - refer to section 5.10 and 5.11), as the welding plant has two control settings that have to balance. These are the Wire Feed Speed control and the welding Voltage Control. The welding current is determined by the Wire Feed Speed control, the current will increase with increased Wire Feed Speed, resulting in a shorter arc. Less Wire Feed Speed will reduce the current and lengthen the arc. Increasing the welding voltage hardly alters the current level, but lengthens the arc. By decreasing the voltage, a shorter arc is obtained with a little change in current level

When changing to a different MIG wire diameter, different control settings are required. A thinner electrode wire needs more Wire Feed Speed to achieve the same current level.

A satisfactory weld cannot be obtained if the Wire Feed Speed and Voltage settings are not adjusted to suit the MIG wire diameter and the thickness of the work piece.

If the Wire Feed Speed is too high for the welding voltage, "stubbing" will occur as the wire dips into the molten pool and does not melt. Welding in these conditions normally produces a poor weld due to lack of fusion. If, however, the welding voltage is too high, large drops will form on the end of the wire, causing spatter. The correct setting of voltage and Wire Feed Speed can be seen in the shape of the weld deposit and heard by a smooth regular arc sound. Refer to the Weld Guide located on the inside of the wirefeed compartment door for setup information.

MIG WIRE SIZE SELECTION

The choice of MIG wire size and shielding gas used depends on thew following:

- Thickness of the metal to be welded
- Type of joint
- Capacity of the wire feed unit and Power Source
- The amount of penetration required
- The deposition rate required
- The bead profile desired
- The position of welding
- Cost of the wire

5.17 CIGWELD MIG WIRE SELECTION CHART

BLUEVENOM XF200P³ MIG WELDING WIRE SELECTION CHART

DESCRIPTION	CLASS. AUS/ NZ STD (NEW)	CLASS. AWS STD	DIA.	PACK	PART NO	APPLICATION
Weldskill Solid Welding Wire	B G 49A 3U C1/M21/ M24 S6	ER70S-6	0.6mm	Mini Spool 0.9kg	WS0906	General purpose solid welding wire suitable for the all positional Gas Metal Arc Welding (GWAW) of mild and low alloy steels, used in general fabrication and for welding of light to medium gauge sheet and tubular steel sections. Please Note: A suitable shielding gas is required.
			0.6mm	Handi Spool 5kg	WS5006	
			0.8mm	Mini Spool 0.9kg	WS0908	
			0.8mm	Handi Spool 5kg	WS5008	
			0.9mm	Mini Spool 0.9kg	WS0909	
			0.9mm	Handi Spool 5kg	WS5009	
Weldskill Gasless Welding Wire	B T 49 Z T11 1 NA	E71T-11	0.8mm	Mini Spool 0.9kg	WG0908	WeldSkill Gasless wire is an all positional self-shielded tubular flux cored wire recommended for single and multi-pass welding applications. It is excellent for lap, fillet and butt welding of thin gauged galvanised and mild steels. The resultant welds have a full coverage easy to scrape-off thin slag covering.
			0.8mm	Handi Spool 4.5kg	WG4508	
			0.9mm	Mini Spool 0.9kg	WG0909	
			0.9mm	Handi Spool 4.5kg	WG4509	
Autocraft 316LSi Solid Stainless Steel MIG Wire	B SS316LSi	ER316LSi	0.8mm	Mini Spool 1kg	721285	General purpose all positional solid stainless steel wire providing excellent results when used with correct shielding gas. Suitable for the general welding of a wide range of stainless steels (300 & 400 series). Please Note: A suitable shielding gas is required.
			0.8mm	Handi Spool 5kg	720288	
			0.9mm	Handi Spool 5kg	720283	
Autocraft AL5356 Solid Aluminium MIG Wire	S Al 5356	ER5356	0.9mm	Mini Spool 0.5kg	721223	Excellent general purpose solid Aluminium MIG wire suitable for the welding of a wide range of wrought and cast Aluminium alloys containing Magnesium. Please Note: A suitable shielding gas is required
			1.0mm	Mini Spool 0.5kg	721224	
			1.0mm	Handi Spool 2.0kg	723224	
Ok Autrod 5356 Solid Aluminium Mig Wire	S Al 5356	ER5356	1.2mm	Handispool 2kg	1815124620	
Autocraft Silicon Bronze MIG Wire	—	ERCuSi-A	0.8mm	Handi Spool 5kg	720159	A solid Silicon Bronze wire designed for MIG brazing of most metals. Used for lower strength welding of steels in automotive applications. It can also be used for welding copper-silicon alloys in hot water systems, heat exchangers and marine components. Please Note: A suitable shielding gas is required

Note: Mini Spool = 100mm diameter, Handi Spool = 200mm diameter

5.18 MIG (GMAW/FCAW) WELDING TROUBLESHOOTING

SOLVING PROBLEMS BEYOND THE WELDING TERMINALS

The general approach to fix Gas Metal Arc Welding (GMAW) problems is to start at the wire spool then work through to the MIG Gun. There are two main areas where problems occur with GMAW, Porosity and Inconsistent wire feed.

SOLVING PROBLEMS BEYOND THE WELDING TERMINALS - POROSITY

When there is a gas problem the result is usually porosity within the weld metal. Porosity always stems from some contaminant within the molten weld pool which is in the process of escaping during solidification of the molten metal. Contaminants range from no gas around the welding arc to dirt on the work piece surface. Porosity can be reduced by checking the following points.

FAULT	CAUSE
1 Shielding gas cylinder contents and flow meter.	Ensure that the shielding gas cylinder is not empty and the flow meter is correctly adjusted to 15 litres per minute.
2 Gas leaks.	Check for gas leaks between the regulator/cylinder connection and in the gas hose to the Power Source.
3 Internal gas hose in the Power Source.	Ensure the hose from the solenoid valve to the gun adaptor has not fractured and that it is connected to the gun adaptor.
4 Welding in a windy environment.	Shield the weld area from the wind or increase the gas flow.
5 Welding dirty, oily, painted, oxidised or greasy plate.	Clean contaminates off the work piece.
6 Distance between the MIG Gun nozzle and the work piece.	Keep the distance between the MIG Gun nozzle and the work piece to a minimum. Refer to cigweld.com.au for further MIG (GMAW/FCAW) Welding information
7 Maintain the MIG Gun in good working order.	**A** Ensure that the gas holes are not blocked and gas is exiting out of the gas diffuser. **B** Do not restrict gas flow by allowing spatter to build up inside the gun nozzle. **C** Check that the MIG Gun O-rings are not damaged.

WARNING

Disengage the feed roll when testing for gas flow by ear.

Refer to **cigweld.com.au** for further MIG (GMAW/FCAW) Welding information

SOLVING PROBLEMS BEYOND THE WELDING TERMINALS - INCONSISTENT WIRE FEED

Wire feeding problems can be reduced by checking the following points

FAULT	CAUSE
1 Feed roll driven by motor in the wirefeed compartment slipping.	**A** Spool Hub Brake is too tight. (Refer 5.06). **B** Incorrect feed roll fitted for wire used, or incorrect pressure set on wire feed pressure roller. Check and change to correct feed roll if necessary. (Refer options and accessories table 2.11 for feed roll options)
2 Wire spool unwound and tangled.	Spool Hub Brake is too loose. (Refer 5.06)
3 Worn or incorrect feed roll size.	**A** Use a feed roll matched to the size wire you are using. **B** Replace feed roll if worn.
4 Wire rubbed against the mis-aligned guides and reduced wire feedability.	Mis-alignment of inlet/outlet guides.
5 Liner blocked with swarf	**A** Increased amounts of swarf are produced by the wire passing through the feed roll when excessive pressure is applied to the pressure roller adjuster. **B** Swarf can also be produced by the wire passing through an incorrect feed roll groove shape or size. **C** Swarf is fed into the conduit liner where it accumulates thus reducing wire feedability.
6 Incorrect or worn contact tip.	**A** The contact tip transfers the weld current to the electrode wire. If the hole in the contact tip is too large then arcing may occur inside the contact tip resulting in the wire jamming in the contact tip. **B** When using soft wire such as aluminium it may become jammed in the contact tip due to expansion of the wire when heated. A contact tip designed for soft wires should be used.
7 Poor work lead contact to work piece.	If the work lead has a poor electrical contact to the work piece then the connection point will heat up and result in a reduction of power at the arc
8 Bent liner.	This will cause friction between the wire and the liner thus reducing wire feedability.

BASIC MIG (GMAW) WELDING TROUBLESHOOTING

FAULT	CAUSE	REMEDY
1 Undercut	**A** Welding arc voltage too high **B** Incorrect gun angle **C** Excessive heat input	**A** Decrease voltage or increase the Wire Feed Speed. **B** Adjust angle. **C** Increase the gun travel speed and/or decrease welding current by decreasing the voltage or decreasing the Wire Feed Speed.
2 Lack of penetration	**A** Welding current too low **B** Joint preparation too narrow or gap too tight **C** Incorrect shielding gas	**A** Increase welding current by increasing Wire Feed Speed and increasing voltage. **B** Increase joint angle or gap. **C** Change to a gas which gives higher penetration.
3 Lack of fusion	Voltage too low	Increase voltage.
4 Excessive spatter	**A** Voltage too high **B** Voltage too low	**A** Decrease voltage or increase the Wire Feed Speed control. **B** Increase the voltage or decrease Wire Feed Speed.
5 Irregular weld shape	**A** Incorrect voltage and current settings. Convex, voltage too low. Concave, voltage too high. **B** Wire is wandering. **C** Incorrect shielding gas **D** Insufficient or excessive heat input	**A** Adjust voltage and current by adjusting the voltage control and the Wire Feed Speed control. **B** Replace contact tip. **C** Check shielding gas. **D** Adjust the Wire Feed Speed control or the voltage control.
6 Weld cracking	**A** Weld beads too small **B** Weld penetration narrow and deep **C** Excessive weld stresses **D** Excessive voltage **E** Cooling rate too fast	**A** Decrease travel speed. **B** Reduce current and voltage and increase MIG Gun travel speed or select a lower penetration shielding gas. **C** Increase weld metal strength or revise design **D** Decrease voltage. **E** Slow the cooling rate by preheating part to be welded or cool slowly.
7 Cold weld puddle	**A** Loose welding cable connection. **B** Low primary voltage **C** Fault in power source	**A** Check all welding cable connections. **B** Contact supply authority. **C** Have an Accredited CIGWELD Service Provider to test then replace the faulty component.
8 Arc does not have a crisp sound that short arc exhibits when the Wire Feed Speed and voltage are adjusted correctly.	The MIG Gun has been connected to the wrong voltage polarity on the front panel.	Connect the MIG Gun to the positive (+) welding terminal for most solid wires and gas shielded flux cored wires. Connect MIG Gun to the negative (-) welding terminal for most Gasless Wires. Refer to the electrode wire manufacturer for the correct polarity.

5.19 MIG (GMAW) WELDING PROBLEMS

PROBLEM	CAUSE	REMEDY
1 Mains Supply Voltage is On, the On/Off switch on the rear panel is in the On position and the Front Control Panel Digital Displays are illuminated however the power source will not MIG weld.	**A** Power source is not in the correct mode of operation.	**A** Set the power source to MIG mode. Refer to Section 5.10.
	B MIG Gun Polarity Lead is not connected.	**B** Connect the MIG Gun Polarity Lead to the positive or negative output terminal. Refer to Section 4.10.3.
	C Work Lead is not connected to the work piece.	**C** Ensure that the Work Lead is connected to the work piece and has a good connection to the work piece. Refer to Set Up for MIG Section 5.13 or 5.14.
	D MIG Gun is not correctly connected to the Euro Style MIG Gun Adaptor.	**D** Ensure that the MIG Gun is correctly connected to the Euro Style MIG Gun Adaptor. Refer to Section 4.01.2 & 5.02.
2 Mains Supply Voltage is On, the On/Off switch on the rear panel is in the On position and the Front Control Panel Digital Displays are illuminated however the power source will not MMA (Stick) weld.	**A** Power source is not in the correct mode of operation.	**A** Set the power source to MMA (Stick) mode. Refer to Section 7.01.
	B Work Lead is not connected to the work piece.	**B** Ensure that the Work Lead is connected to the work piece and has a good connection to the work piece.
	C Ensure that the Electrode Holder lead is connected to the positive welding terminal (+). If in doubt, consult the electrode manufacturer. It is essential, that the male DINSE type plug is inserted and turned securely to achieve a sound electrical connection.	
	D Ensure that the work lead is connected to the negative welding terminal (-). If in doubt, consult the electrode manufacturer. It is essential, that the male DINSE type plug is inserted and turned securely to achieve a sound electrical connection.	
3 When welding at maximum output (WFS and Volts) the machine stops welding.	**A** When output amperage exceeds the rated maximum output of the machine by 15%, the welding machine will sense this and initiates a safety circuit which stops the output current and displays an Over Current Warning Screen. Refer to Section 8.06 Warning Screens for further detail.	**A** Reduce output amperage (WFS and Volts).
	B Contact Tip of the MIG gun is too close to the work piece.	**B** Increase distance between the Contact Tip of the MIG gun and the work piece.
	C The Pre-set voltage is too high.	**C** Decrease the Pre-set voltage.
	D The MIG Welding Wire in use is not consistent with the selected MIG wire diameter, e.g. 0.8mm wire is selected but 0.9mm wire is used.	**D** Ensure that the correct MIG Welding Wire Diameter is selected for MIG Wire being used. Refer to Section 5.10
4 Mains Supply Voltage is On, the On/Off switch in the rear panel is in the On position but the Front Control Panel Digital Displays are Not illuminated and the power source will not weld.	This may occur due to the activation of an in-built protective device if the Power Source is repeatedly switched On then Off rapidly or the supply to the Power Source is switched On then Off rapidly.	If this occurs leave the Power Source On/Off switch in the Off position for several minutes to allow the protective device to reset.

	PROBLEM		CAUSE		REMEDY
5	The power source will not commence welding when the gun trigger switch is depressed and Over Temperature Warning Screen is showing on the Front Panel Display. This indicates an Over Temperature condition has occurred. Refer to Section 8.06 Warning Screens for further detail.		Duty cycle of power source has been exceeded.		Leave the power source switched ON and allow it to cool. Note that Over Temperature Warning Screen must be cleared from the Front Panel Display prior to commencement of welding.
6	Unit will not feed wire in MIG mode.	A	Incorrect Feed Roll fitted for wire type being used.	A	Fit the correct feed roll for MIG wire type being used. Refer to section 2.11 for optional feed rolls available and Section 5.09 for feed roll fitting details.
		B	Pressure Roller Arm is not secured in the correct position or not correctly adjusted.	B	Secure Pressure Roller in the correct position and ensure that it is correctly adjusted. Refer to Section 5.07 and 5.08.
		C	Electrode wire stuck in conduit liner or contact tip (burn-back jam).	C	Check for clogged / kinked MIG Gun conduit liner or worn contact tip. Replace faulty components.
		D	Internal fault in power source	D	Have an Accredited CIGWELD Service Provider investigate the fault.
7	Welding wire continues to feed when MIG Gun trigger is released.	A	MIG Gun Trigger in 4T Mode	A	Change MIG Gun Trigger Mode to 2T.
		B	MIG Gun trigger leads shorted, or faulty MIG Gun Trigger.	B	Repair or replace MIG Gun trigger switch/lead.
8	Welding arc cannot be established in MIG mode.	A	MIG Gun polarity lead is not connected into a welding output terminal.	A	Connect the MIG Gun polarity lead to either the positive welding output terminal or the negative welding output terminal as required. Refer to Section 4.01.3.
		B	Poor or no work lead contact.	B	Clean work clamp area and ensure good electrical contact.
9	Inconsistent wire feed.	A	Worn or dirty contact tip.	A	Replace if necessary.
		B	Incorrect or worn feed roll.	B	Replace if necessary.
		C	Excessive brake tension on wire reel hub.	C	Reduce brake tension on spool hub.
		D	Worn, kinked or dirty conduit liner	D	Clean or replace conduit liner.
		E	Pressure Roller Arm is not secured in the down position or not correctly adjusted.	E	Secure Pressure Roller in the down position and ensure that it is correctly adjusted. Refer to Section 5.07 and 5.08.
10	No gas flow in MIG mode.	A	Gas hose is damaged.	A	Replace or repair.
		B	Gas passage contains impurities.	B	Disconnect gas hose from the rear of power source and blow out impurities.
		C	Machine set in MIG Gasless mode.	C	Set Machine to MIG Gas mode.
		D	Empty gas cylinder.	D	Replace gas cylinder.
		E	Cylinder Valve not turned on.	E	Turn Cylinder valve in anticlockwise direction until gas is flowing.
11	Gas flow continues after the MIG Gun trigger switch has been released (MIG Gas Solid mode).		Gas valve has jammed open due to impurities in the gas or the gas line.		Have an accredited CIGWELD service provider repair or replace gas valve.

SECTION 6:
TIG (GTAW) WELDING

6.01 TIG MODE AND SETUP

Figure 6-1: MIG Mode And Setup

From the Home Screen using the Left Control Knob select MMA (put symbol here from home page) then use the Left Control Knob to make selection. Refer to the Settings Screen Overview Page

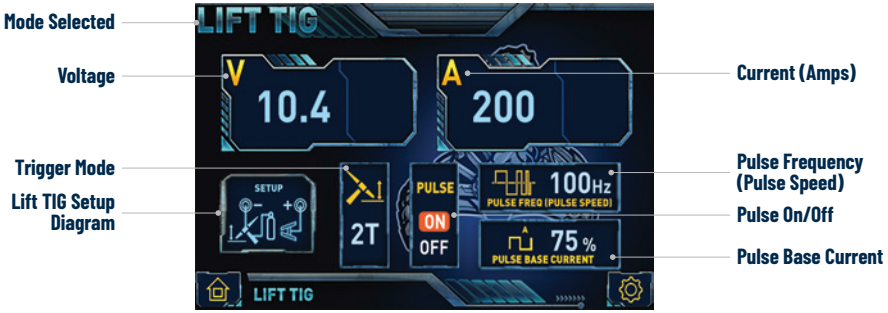


Figure 6-2: Lift TIG DC Mode

Welding Current (AMPS)

In LIFT TIG Mode this Digital Meter is used to display the actual welding amperage.

Welding Current in TIG can be set using the Right Control Knob.

Refer to the Weld Guide located on the Wire Feed Compartment Door for recommended setting values.

At the completion of welding this digital meter holds the last recorded welding amperage for 10 seconds. It will hold the value until; (1) any of the front panel controls are adjusted in which case the unit will revert to viewing mode, (2) welding is recommenced, in which case actual welding amperage will be displayed, or (3) a period of 10 seconds elapses following the completion of welding in which case the unit will return to viewing mode.

Mode Selected

Displays the Welding Mode Selected.

Voltage

In Lift TIG Mode this Digital Meter displays the Pre-set Voltage (not adjustable).

Trigger Mode

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Trigger Mode (It will highlight). Use the Right Control Knob to adjust to the desired mode.

The Trigger Mode control is used to switch the functionality of the Lift TIG Trigger between 2T (normal) and 4T (latch mode). Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

2T Normal Mode

In this mode, the TIG Torch Trigger must remain depressed for the welding output to be active. Press and hold the TIG

Torch Trigger to activate the power source (weld). Release the TIG Torch Trigger switch to cease welding.

4T Latch Mode

This mode of welding is mainly used for long welding runs to reduce operator fatigue. In this mode the operator can press and release the TIG Torch Trigger once welding has commenced and the output will remain active. To deactivate the power source, the TIG Torch Trigger switch must again be depressed and released, thus eliminating the need for the operator to hold the TIG Torch Trigger.

Lift TIG Setup Diagram

Displays the Setup Diagram for Lift TIG Welding.

Refer to Section 6.03 for further information regarding Setup for Lift TIG Welding.

Pulse ON/OFF

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Pulse (It will highlight). Use the Right Control Knob to turn Pulse Function ON or OFF.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

By utilizing the pulse function welders can achieve improved weld quality, better control over the process, and enhanced productivity, especially when working with challenging materials or in demanding welding applications.

Pulse Frequency (Pulse Freq or Pulse Speed)

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Pulse Freq (Pulse Speed) (It will highlight). Use the Right Control Knob to adjust to the desired level. Pulse Frequency Range is 0.2 – 100Hz. Factory setting is 2Hz. Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

It is the amount of times per second that a pulse (also known as cycle) will take place. The unit of measurement is Hertz (Hz). A Pulse cycles between a Pulse Base current (bottom of the pulse) and the Peak Current (top of the pulse). This allows you to control the overall heat input, maintain arc stability and have a better looking weld by improving control over the weld pool. Higher frequencies result in more rapid cycling between the two current levels. As an example, if the Pulse Frequency is set for 2 Hz, you will observe 2 pulses per second (10 pulses every 5 seconds).

Pulse Base Current (A)

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Pulse Base Current (It will highlight). Use the Right Control Knob to adjust to the desired level. Pulse Base Current Range is 25 - 75%. Factory setting is 50%. Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

It's the percentage of current that your Pulse will have at the Bottom (base). This percentage is calculated from your peak current. It is the low-current pulse that follows the peak current. It helps maintain the arc stability and keeps the weld pool in a controlled state while minimizing heat input. The background current is usually set at a lower value compared to the peak current. For example, if a Pulse Base Current of 60% is set, the variation will be 40% between Peak and Base. This will make the weld much hotter when the pulse is at the Top compared to the Bottom.

Note: If the unit is in TIG mode and a TIG Torch with Remote Current Control is connected to the 8 Pin Control Socket on the front panel the power source will automatically detect the TIG Torch

The TIG current output value will be controlled only by the TIG Torch Remote Current Control. Should a TIG Torch fitted with Remote Current Control be connected the maximum setting will be determined by the Power Source front panel control setting, irrespective of the TIG Torch remote control setting. As an example, if the output current on the power source front panel is set to 100A and the remote control device is set to maximum, the maximum achievable output from the unit will be 100A. Should 200A output be required, the respective power source front panel control must be set to 200A, in which case the remote device will then be able to control between 0-200A output.

NOTE

Note: If the unit is in TIG mode and a TIG Torch with Remote Current Control is connected to the 8 Pin Control Socket on the front panel the power source will automatically detect the TIG Torch

The TIG current output value will be controlled only by the TIG Torch Remote Current Control. Should a TIG Torch fitted with Remote Current Control be connected the maximum setting will be determined by the Power Source front panel control setting, irrespective of the TIG Torch remote control setting. As an example, if the output current on the power source front panel is set to 100A and the remote control device is set to maximum, the maximum achievable output from the unit will be 100A. Should 200A output be required, the respective power source front panel control must be set to 200A, in which case the remote device will then be able to control between 0-200A output.

6.02 SHIELDING GAS REGULATOR/FLOWMETER OPERATING INSTRUCTIONS

WARNING
This equipment is designed for use with welding grade (Inert) shielding gases only.

SHIELDING GAS CONNECTION

Connect the BlueJet Preset Argon Regulator/Flowmeter onto the gas cylinder/bottle by hand, keeping the round sight gauge in the vertical position. Then tighten the nut with a spanner, but do-not over tighten. Connect the gas hose to the threaded outlet on the right-hand side of the regulator (Picture A) and tighten with a spanner. Connect the other end of the gas hose to gas inlet fitting on the rear panel of the welding machine using the supplied quick connector. Check for any leaks with soapy water in a squeeze bottle, and look for bubbles (when the gas is on), this will highlight any gas leaks.

The gas flow (in Litres Per Minute) for shielding the molten weld metal from the atmosphere is adjustable and depends on the job and atmospheric conditions you encounter when welding.

Gas flow rate from the Regulator is based on the Gas Nozzle Inside Diameter (ID). The rule is 1/LPM flow based on ID Size of the Nozzle, e.g. ID of Nozzle = 9mm, Gas Flow = 9/LPM

Post Flow Gas should be set at a **minimum of 5-seconds** for every "mm" thickness of the **tungsten electrode** being used for the welding.

1.6mm Tungsten = 8/Sec | 2.4mm Tungsten = 12/Sec | 3.2mm Tungsten = 16/Sec

Finished TIG welds that have a black, dark grey or grey surface finish are not good welds – you need more gas. Welds should be shiny, silver or gold appearance.

The flow rate is measured at the middle of the float ball.

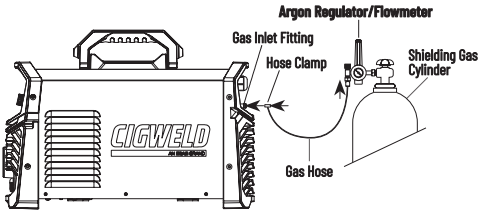


Figure 6-3: Shielding Gas Connection

SHIELDING GAS REGULATOR/ FLOWMETER SAFETY

This Regulator/Flowmeter is designed to reduce and control high pressure gas from a cylinder to the working pressure required for the equipment using it.

If the equipment is improperly used, hazardous conditions are created that may cause accidents. It is the users responsibility to prevent such conditions. Before handling or using the equipment, understand and comply at all times with the safe practices prescribed in this instruction.

SPECIFIC PROCEDURES for the use of regulators/flowmeters are listed below.

1. **NEVER** subject the Regulator/Flowmeter to an inlet pressure greater than its rated inlet pressure.
2. **NEVER** pressurize a Regulator/Flowmeter that has loose or damaged parts or is in a questionable condition. NEVER loosen a connection or attempt to remove any part of a Regulator/Flowmeter until the gas pressure has been safely released. Under pressure, gas can dangerously propel a loose part.
3. **DO NOT** remove the Regulator/Flowmeter from a cylinder without first closing the cylinder valve and releasing gas in the Regulator/Flowmeter high and low pressure chambers.
4. **TURN OFF** when equipment is not in use for extended periods of time, shut off the gas at the cylinder valve and release the gas from the equipment.
5. **OPEN** the cylinder valve SLOWLY. Close after use.

USER RESPONSIBILITIES

This equipment will perform safely and reliably only when installed, operated and maintained, and repaired in accordance with the instructions provided. Equipment must be checked periodically and repaired, replaced, or reset as necessary for continued safe and reliable performance. Defective equipment should not be used. Parts that are broken, missing, obviously worn, distorted, or contaminated should be replaced immediately.

The user of this equipment will generally have the sole responsibility for any malfunction, which results from improper use, faulty maintenance, or by repair by anyone other than an accredited repairer.

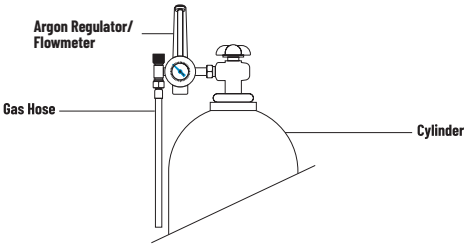


Figure 6-4: Fit Regulator/flowmeter to Cylinder

CAUTION

Match Regulator/Flowmeter to cylinder. NEVER CONNECT a Regulator/Flowmeter designed for a particular gas or gases to a cylinder containing any other gas.

INSTALLATION

1. Remove cylinder valve plastic dust seal. Clean the cylinder valve outlet of impurities that may clog orifices and damage seats before connecting the Regulator/Flowmeter. Crack the valve (open then close) momentarily, pointing the outlet away from people and sources of ignition. Wipe with a clean lint free cloth.
2. Match Regulator/Flowmeter to cylinder. Before connecting, check that the Regulator/Flowmeter label and cylinder marking agree and that the Regulator/Flowmeter inlet and cylinder outlet match. NEVER CONNECT a Regulator/Flowmeter designed for a particular gas or gases to a cylinder containing any other gas.

3. Connect the Regulator/Flowmeter inlet connection to cylinder or pipeline and tighten it firmly but not excessively, with a suitable spanner.
4. Connect and tighten the outlet hose firmly and attach the hose to the welding machine with a suitable hose clamp. Ensure no gas leakage. The flowmeter must be in the vertical position to read accurately.

OPERATION

With the Regulator/Flowmeter connected to cylinder or pipeline:

1. Stand to one side of Regulator/Flowmeter and slowly open the cylinder valve. If opened quickly, a sudden pressure surge may damage internal Regulator/Flowmeter parts.
2. Since the regulator is a preset type, no adjustments to the regulator are necessary. Before opening the cylinder valve, be sure that the flow adjusting valve is in a finger-tight "OFF" position (clockwise).
3. Slowly and carefully, open the cylinder valve until the maximum pressure registers on the high pressure gauge.

CAUTION

DO NOT purge oxidising or flammable gases in the presence of flame, lit cigarettes, or other sources of ignition or in a confined space.

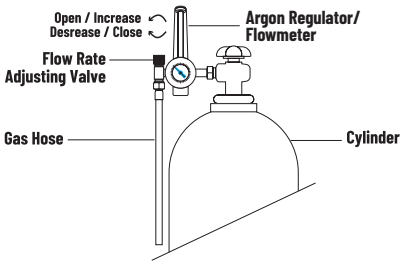


Figure 6-5: Adjust Flow Rate

ADJUSTING FLOW RATE

With the Regulator/Flowmeter ready for operation, adjust working flow rate as follows:

1. Slowly turn adjusting valve in anti-clockwise direction to open and increase until the bobbin in the flow tube indicates the required flow rate.

NOTE

It may be necessary to re-check the shielding Gas Regulator/Flowmeter flow rate following the first weld sequence due to back pressure present within shielding gas hose assembly

2. To reduce flow rate, allow the shielding gas to discharge from Regulator/Flowmeter by opening the TIG Torch Gas Valve. Bleed welding grade shielding gas into a well ventilated area. Turn the Flow Rate Adjusting Valve clockwise, until the required flow rate is indicated on the gauge.
3. The correct flow rate will depend on the place and conditions you are working in. For indoors work shielding gas flow rate can be from 12L/min for welding thin metals (0.6-1.0mm) when using 0.6mm MIG wire, up to 15L/min when using thicker metals and using 0.8mm MIG wire. When welding near draughty doorways then the gas flow rate can go up to 18-20L/min. The tell tale sign is to ensure your finished welds do-not have porosity holes in the surface.

SHUTDOWN

Close cylinder valve whenever the Regulator/Flowmeter is not in use. To shut down for extended periods (more than 30 minutes).

1. Close cylinder valve tightly.
2. Bleed Gas into a well ventilated area.
3. After gas is drained completely, turn off the machine.
4. Before transporting cylinders that are not secured on a cart designed for such purposes, remove regulators/flowmeters.

6.03 SETUP FOR LIFT TIG DC (GTAW) WELDING

A. Connect the TIG Torch to the negative welding terminal (-). Welding current flows from the power source via DINSE terminals. It is essential, however, that the male plug is inserted and turned securely to achieve a sound electrical connection.

B. Connect the TIG torch trigger switch via the 8 pin socket located on the front of the power source as shown below. The TIG torch will require a trigger switch to operate in TIG Mode.

C. Switch the Power Source ON/OFF switch located on the rear of the Power Source to the ON position and ensure the Power indicator on the Front Panel is illuminated.

D. Select TIG mode with the process selection control (refer to section 6.01 for further information).

Figure 6-6: Select TIG (GTAW) Mode

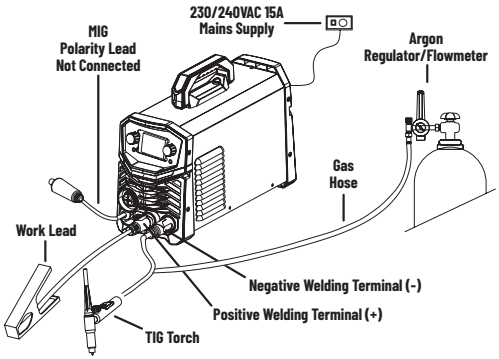


Figure 6-7: Lift TIG DC (GTAW) Welding

CAUTION

Loose welding terminal connections can cause overheating and result in the male plug being fused in the terminal. Remove any packaging material prior to use. Do not block the air vents at the front or rear of the Welding Power Source.

E. Connect the work lead to the positive welding terminal (+). Welding current flows from the Power Source via DINSE terminals. It is essential, however, that the male plug is inserted and turned securely to achieve a sound electrical connection.

F. Fit the welding grade shielding Gas Regulator/Flowmeter to the shielding gas cylinder (refer to Section 6.02) then connect the shielding gas hose from the TIG torch to the Regulator/Flowmeter outlet. Note that the TIG torch shielding gas hose is connected directly to the Regulator/Flowmeter. Refer to Section 6.04 for recommended Shielding Gas flow rates and other TIG Welding information.

WARNING

Before connecting the work clamp to the work make sure the mains power supply is switched off.

CAUTION

Secure the welding grade shielding gas cylinder in an upright position by chaining it to a suitable stationary support to prevent falling or tipping.

6.04 TIG TUNGSTEN ELECTRODES AND FILLER RODS

ELECTRODE DIAMETER	DC CURRENT (AMPS)
0.040" (1.0mm)	30-60
1/16" (1.6mm)	60-115
3/32" (2.4mm)	100-165
1/8" (3.2mm)	135-200

GUIDE FOR SELECTING FILLER WIRE DIAMETER

FILLER WIRE DIAMETER	DC CURRENT RANGE (AMPS)
1/16" (1.6mm)	20-90
3/32" (2.4mm)	65-115
1/8" (3.2mm)	100-165

TUNGSTEN ELECTRODE TYPES

ELECTRODE TYPE (GROUND FINISH)	WELDING APPLICATION	FEATURES	COLOUR CODE
3T Rare Earth	Suitable for AC and DC TIG welding	Excellent ignition characteristics and consistent welding properties. Long service life compared to Thoriated Electrodes. Non Radioactive to improve health and safety for operator and environment.	Purple

BLUEVENOM XF200P³ TIG WELDING FILLER RODS SELECTION CHART

DESCRIPTION	CLASS. AUS/ NZ STD (NEW)	CLASS. AWS STD	DIA.	PACK	PART NO	APPLICATION
COMWELD SUPER STEEL	R2	ER70S-2	1.6mm	5kg Pack	321370	Comweld Super Steel is a copper coated 'triple deoxidised' steel welding rod recommended for the high quality Gas Tungsten Arc (TIG) welding of carbon and carbon-Manganese steels. Comweld Super Steel is deoxidised with Titanium, Aluminium and Zirconium in addition to Manganese and Silicon for improved weld deposit quality. It is the ideal choice for TIG welding rusty or mill scaled plates and pipes and the root pass welding of pipes, tanks and heavy walled root toughness and radiographic soundness are achieved under high dilution.
			2.4mm	5kg Pack	321373	
COMWELD LW1-6	R6	ER70S-6	1.6mm	5kg Pack	321417	Comweld LW1-6 is a copper coated, low carbon steel filler rod suitable for Gas Tungsten Arc (TIG) welding of a wide range of mild and medium strength steels. Comweld LW1-6 is recommended for the TIG welding of steel pipes, plates and castings with a tensile strength in the 500 MPa class. It is tolerant to surface rust and mill scale and is ideal for root pass welding applications where tough and ductile welds are produced. Please Note: A suitable shielding gas is required
			2.4mm	5kg Pack	321418	
COMWELD CRM01	RB2	ER80S-B2	2.4mm	5kg Pack	321379	Comweld CrMo1 is a copper coated steel TIG welding rod alloyed with nominally 1.25% Chromium (Cr) and 0.50% Molybdenum (Mo). It is recommended for the TIG welding of 1/2Cr-1/2Mo, 1Cr1/2Mo and 1 1/4Cr-1/2Mo steel pipes, plates and castings used at elevated service temperatures (up to 550°C) in the power and petrochemical industries etc. Comweld CrMo1 is also suitable for the dissimilar TIG welding of Cr-Mo steel to carbon steel and for the welding of case hardenable steels or steels which can be subsequently heat treated.

BLUEVENOM XF200P[3] TIG WELDING FILLER RODS SELECTION CHART

DESCRIPTION	CLASS. AUS/ NZ STD (NEW)	CLASS. AWS STD	DIA.	PACK	PART NO	APPLICATION
COMWELD CRM02	RB3	ER90S-B3	2.4mm	5kg Pack	321383	Comweld CrMo2 is a copper coated steel TIG welding rod alloyed with nominally 2.5% Chromium (Cr) and 1.0% Molybdenum (Mo).It is recommended for the TIG welding of 2 1/4Cr - 1 Mo and CrMo-V steel pipes, plates and castings used at elevated service temperatures (up to 600°C) in the power and petrochemical industries etc. Comweld CrMo2 is also suitable for the dissimilar TIG welding of selected Cr-Mo steels to carbon steel and for the TIG welding of heat treatable steels and case hardenable steels with up to 3% Chromium content.
COMWELD 308L	R308L	ER308L	1.6mm	5kg Pack	321406	Comweld 308L stainless steel is a high quality low carbon rod for the Gas or Gas Tungsten Arc (TIG) welding of a wide range of low carbon and stabilised 300 series stainless steels. It is recommended for the critical welding of 304 and 304L stainless steels in corrosion resistant and cryogenic applications.
			2.4mm	5kg Pack	321407	
COMWELD 309L	R309L	ER309L	1.6mm	5kg Pack	321403	Comweld 309L stainless steel is a high quality low carbon rod for the Gas or Gas Tungsten Arc (TIG) welding of highly alloyed 309 or 309L type stainless steels. Comweld 309L is also suitable for the dissimilar joining of other 300 series austenitic stainless steels to ferritic steels.
			2.4mm	5kg Pack	321404	
COMWELD 316L	R316L	ER316L	1.6mm	5kg Pack	321400	Comweld 316L stainless steel is a high quality low carbon rodfor the Gas or Gas Tungsten Arc (TIG) welding of Molybdenum bearing stainless steels; in particular matching 316 and 316L alloys. Comweld 316L is also suitable for the general welding of other 300 series stainless steels including 302 and 304; as well as ferritic stainless steels grades such as 409, 444 and 3Cr12.
			1.6mm	25 Rod Handypack	322054	
			2.4mm	5kg Pack	321401	

TIG WELDING SETUP CHART						
BASE METAL THICKNESS	DC CURRENT FOR MILD STEEL	DC CURRENT FOR STAINLESS STEEL	TUNGSTEN ELECTRODE DIAMETER	FILLER ROD DIAMETER (IF REQUIRED)	ARGON GAS FLOW RATE LITRES/MIN	JOINT TYPE
0.040″ 1.0mm	35-45 40-50	20-30 25-35	0.040″ 1.0mm	1/16″ 1.6mm	5-7	Butt/Corner Lap/Fillet
0.045″ 1.2mm	45-55 50-60	30-45 35-50	0.040″ 1.0mm	1/16″ 1.6mm	5-7	Butt/Corner Lap/Fillet
1/16″ 1.6mm	60-70 70-90	40-60 50-70	1/16″ 1.6mm	1/16″ 1.6mm	8	Butt/Corner Lap/Fillet
1/8″ 3.2mm	80-100 90-115	65-85 90-110	1/16″ 1.6mm	3/32″ 2.4mm	8	Butt/Corner Lap/Fillet
3/16″ 4.8mm	115-135 140-165	100-125 125-150	3/32″ 2.4mm	1/8″ 3.2mm	12	Butt/Corner Lap/Fillet
1/4″ 6.4mm	160-175 170-200	135-160 160-180	1/8″ 3.2mm	5/32″ 4.0mm	16	Butt/Corner Lap/Fillet

TIG Welding is generally regarded as a specialised process that requires operator competency. While many of the principles outlined in the previous section are applicable a comprehensive outline of the TIG Welding process is outside the scope of this Operating Manual. For further information please refer to www.cigweld.com.au or contact CIGWELD.

HANDY HINT

Welding Amperage Rule for Stainless and Steel; for every 1mm in Thickness allow 25Amps,
e.g. 1.6mm = 40Amps | 3mm = 75Amps | 6mm = 150Amps etc

6.05 TIG (GTAW) WELDING PROBLEMS

	FAULT	CAUSE	REMEDY
1	Excessive bead build up or poor penetration or poor fusion at edges of weld.	Welding current is too low	Increase weld current and/or faulty joint preparation.
2	Weld bead too wide and flat or undercut at edges of weld or excessive burn through.	Welding current is too high	Decrease weld current.
3	Weld bead too small or insufficient penetration or ripples in bead are widely spaced apart.	Travel speed too fast	Reduce travel speed.
4	Weld bead too wide or excessive bead build up or excessive penetration in butt joint.	Travel speed too slow	Increase travel speed.
5	Uneven leg length in fillet joint	Wrong placement of filler rod	Re-position filler rod.

	FAULT	CAUSE	REMEDY
6	Electrode melts or oxidises when an arc is struck or porosity in the weld.	**A** Torch lead connected to positive welding terminal. **B** No gas flowing to welding region. **C** Torch is clogged with dust or dirt. **D** Gas hose is cut. **E** Gas passage contains impurities. **F** Gas regulator turned off. **G** Torch valve is turned off. **H** The Tungsten is too small for the welding current. **I** Power source is set for MIG welding.	**A** Connect torch lead to negative welding terminal. **B** Check the gas lines for kinks or breaks and gas cylinder contents. **C** Clean torch. **D** Replace gas hose. **E** Blow out the impurities. **F** Turn on. **G** Turn on. **H** Increase Tungsten diameter or reduce the welding current. **I** Set Power Source to TIG mode.
7	Dirty weld pool	**A** Tungsten contaminated by contact with work piece or filler rod material. **B** Work piece surface has foreign material on it. **C** Gas contaminated with air.	**A** Clean the Tungsten by grinding off the contaminates. **B** Clean surface. **C** Check gas lines for cuts and loose fitting or change gas cylinder.
8	Poor weld finish	Inadequate shielding gas.	Increase gas flow or check gas line for gas flow problems.
9	Arc start is not smooth.	**A** Tungsten electrode is too large for the welding current. **B** The wrong Tungsten is being used for the welding job. **C** Gas flow rate is too high. **D** Incorrect shielding gas is being used. **E** Poor work clamp connection to work piece.	**A** Select the right size Tungsten. Refer to section 6.04 for TIG Tungsten Electrodes Current Ranges. **B** Select the right Tungsten type. Refer to Section 6.04 TIG Welding Setup Chart. **C** Select the correct Gas Flow rate for the welding job. Refer to Section 6.04 TIG Welding Setup Chart. **D** Select the right shielding gas. **E** Improve connection to work piece.
10	Arc flutters during TIG welding.	Tungsten electrode is too large for the welding current.	Select the right size electrode. Refer to Section 6.04 TIG Welding Setup Chart.

Refer to **cigweld.com.au** for further TIG (GTAW) Welding information

SECTION 7:
STICK (MMAW) WELDING

7.01 MMA (STICK) MODE AND SETUP

Figure 7-1: MMA (STICK) Mode

From the Home Screen using the Left Control Knob select MMA then use the Left Control Knob to make selection. Refer to the Settings Screen Overview Page

Figure 7-2: MMA (STICK) Mode

Welding Current (AMPS)

In Stick (MMAW) Mode this Digital Meter is used to display the actual welding amperage.

Welding Current in MMA (Stick) can be set using the Right Control Knob

Refer to the Weld Guide located on the Wire Feed Compartment Door for recommended setting values.

At the completion of welding this digital meter holds the last recorded welding amperage for 10 seconds. It will hold the value until; (1) any of the front panel controls are adjusted in which case the unit will revert to viewing mode, (2) welding is recommenced, in which case actual welding amperage will be displayed, or (3) a period of 10 seconds elapses following the completion of welding in which case the unit will return to viewing mode.

VRD ON/OFF Indicator (MMA/STICK Mode)

The green VRD light illuminates when the VRD is active. Under this condition the open circuit voltage of the unit is limited to below 35V DC, thus reducing the potential of serious electric shock (such as when changing electrodes). The red VRD indicator illuminates when the VRD is inactive during welding operation. Under this condition the output voltage of the unit will be at welding potential which in most cases exceeds 35V DC.

Mode Selected

Displays the Welding Mode Selected

Voltage

In MMA (Stick) Mode this Digital Meter displays the Pre-set Voltage (not adjustable).

MMA (Stick) Setup Diagram

Displays the Setup Diagram for MMA (Stick) Welding.

Refer to Section 7.02 for further information regarding Setup for MMA (Stick) Welding.

Hot Start

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Hot Start (It will highlight). Use the Right Control Knob to adjust to the desired level.

This feature operates in Stick (MMAW) mode. The Hot Start feature improves the arc start characteristics by momentarily increasing the welding current to a level above the preset amperage (Welding Current). This parameter has an adjustment range of 0- 10. Factory setting for Hot Start is 5.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

Arc Force

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Arc Force (It will highlight). Use the Right Control Knob to adjust to the desired level.

This feature operates in Stick (MMAW) mode. The Arc Force can be particularly beneficial in providing the operator the ability to compensate for variability in poor joint fit-up in certain situations. The Arc Force allows greater penetration control to be achieved. Arc Force is automatically increased depending on the welding amperage.

This parameter has an adjustment range of 0- 10.

Factory setting for Arc Force is 5.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

Pulse ON/OFF

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Pulse (It will highlight). Use the Right Control Knob to turn Pulse Function ON or OFF.

By utilizing the pulse function welders can achieve improved weld quality, better control over the process, and enhanced productivity, especially when working with challenging materials or in demanding welding applications.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

Pulse Frequency (Pulse Freq or Pulse Speed)

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Pulse Freq (Pulse Speed) (It will highlight). Use the Right Control Knob to adjust to the desired level. Pulse Frequency Range is 0.2 – 5Hz. Factory setting is 2Hz.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

It is the amount of times per second that a pulse (also known as cycle) will take place. The unit of measurement is Hertz (Hz). A Pulse cycles between a Pulse Base current (bottom of the pulse) and the Peak Current (top of the pulse). This allows you to control the overall heat input, maintain arc stability and have a better looking weld by improving control over the weld pool. Higher frequencies result in more rapid cycling between the two current levels. As an example, if the Pulse Frequency is set for 2 Hz, you will observe 2 pulses per second (10 pulses every 5 seconds).

Pulse Base Current (A)

Press the Advanced Settings (COG Button) to cycle through the settings until reaching Pulse Base Current (It will highlight). Use the Right Control Knob to adjust to the desired level. Pulse Base Current Range is 60 – 80%. Factory setting is 70%.

Note: If no adjustment is made after 5 seconds it will return to the primary adjustment screen.

It's the percentage of current that your Pulse will have at the Bottom (base). This percentage is calculated from your peak current, which you set as a combination of the Wire Feed Speed and Voltage. It is the low-current pulse that follows the peak current. It helps maintain the arc stability and keeps the weld pool in a controlled state while minimizing heat input. The background current is usually set at a lower value compared to the peak current. For example, if a Pulse Base Current of 60% is set, the variation will be 40% between Peak and Base. This will make the weld much hotter when the pulse is at the Top compared to the Bottom.

Anti Stick Feature (Pre-Set and Not Adjustable)

This feature operates in MMA (Stick) mode. The anti stick feature senses when the electrode sticks and automatically reduces the current to prevent the Stick Electrode from sticking to the work piece. This is a preset feature and is not adjustable.

7.02 SETUP FOR STICK (MMAW) WELDING

A. Ensure that the Power Source On/Off switch located on the rear of the Power Source is in the Off position.

B. Connect the Electrode Holder lead to the positive welding terminal (+). If in doubt, consult the electrode manufacturer. Welding current flows from the Power Source via DINSE type terminals. It is essential, that the male plug is inserted and turned securely to achieve a sound electrical connection.

C. Connect the work lead to the negative welding terminal (-). If in doubt, consult the electrode manufacturer. Welding current flows from the power source via DINSE type terminals. It is essential, that the male plug is inserted and turned securely to achieve a sound electrical connection.

D. Select MMA (Stick) mode from the Home Screen. Refer to Section 7.01 for further information.

Figure 7-3: Select MMA (STICK) Mode

For other features including Settings refer to Section 7.01

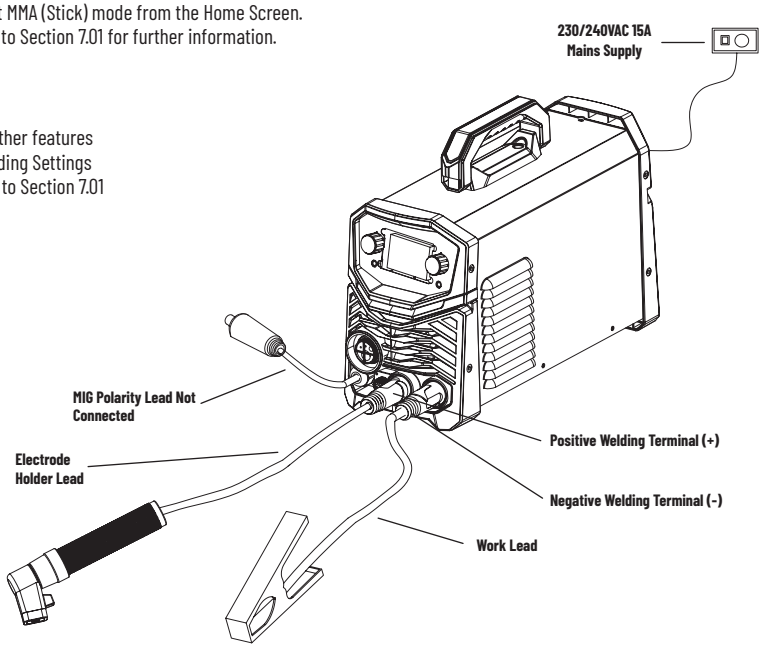


Figure 7-4: Setup for STICK (MMAW) Welding

7.03 ARC WELDING ELECTRODES

Manual Metal Arc Welding (MMAW) electrodes consist of a core wire surrounded by a flux coating. The flux coating is applied to the core wire by an extrusion process. The coating on arc welding electrodes serves a number of purposes:

A. To provide a gaseous shield for the weld metal, and preserve it from contamination by the atmosphere whilst in a molten state.

B. To give a steady arc by having 'arc stabilisers' present, which provide a bridge for current to flow across.

C. To remove oxygen from the weld metal with 'deoxidisers'.

D. To provide a cleansing action on the work piece and a protective slag cover over the weld metal to prevent the formation of oxides while the metal is solidifying. The slag also helps to produce a bead of the desired contour.

E. To introduce alloys into the weld deposits in special type electrodes.

7.04 CLASSIFICATION OF ELECTRODES

Arc Welding electrodes are classified into a number of groups depending on their applications. There are a great number of electrodes used for specialised industrial purposes which are not of particular interest for everyday general work. These include some low hydrogen types for high tensile steel, cellulose types for welding large diameter pipes, etc.

The range of electrodes dealt with in this publication will cover the vast majority of applications likely to be encountered; are all easy to use and all will work on even the most basic of welding machines

CIGWELD ELECTRODE SELECTION CHART

DESCRIPTION	CLASS. AUS/ NZ STD (NEW)	CLASS. AWS STD	DIA.	PACK	PART NO	APPLICATION
SATINCRAFT 13	B E4313 A	E6013	2.5mm	1kg Pack	322135	A high performance General Purpose (GP) welding electrode suitable for all positional welding, except vertical-down, for use on, mild and galvanised steel pipes, plates, angle iron, RHS, tubes and grid mesh.
			2.5mm	2.5kg Pack	612182	
			3.2mm	1kg Pack	322136	
			3.2mm	2.5kg Pack	612183	
			4mm	5kg Pack	611184	
WELDSKILL GP GENERAL PURPOSE WELDING	B E4313 A	E6013	2.0mm	25 Rod Handypack	WEG0220	A user-friendly General Purpose (GP) electrode offering a quiet, smooth arc action with a 6013 classification (min. strength rating of 60,000PSi). Ideal for welding thin section mild, galvanised and rusty steels and weld joints with poor fit-up. Great for use on vertical down fillet welding applications. Weldskill GP produces smooth professional mitre fillet welds in all positions with very low spatter levels, it features positive re-strike (hot or cold) and a self-releasing slag.
			2.0mm	1.0Kg Pack	WEG1020	
			2.0mm	2.5Kg Pack	WEG2520	
			2.5mm	20 Rod Handypack	WEG0225	
			2.5mm	1.0Kg Pack	WEG1025	
			2.5mm	2.5Kg Pack	WEG2525	
			2.5mm	5.0Kg Pack	WEG5025	
			3.2mm	15 Rod Handypack	WEG0232	
			3.2mm	1.0Kg Pack	WEG1032	
			3.2mm	2.5Kg Pack	WEG2532	
			3.2mm	5.0Kg Pack	WEG5032	
WELDSKILL HS HIGHER STRENGTH	B E4916 U A H10	E7016 H8	2.5mm	10 Rod Handypack	WEL0225	Higher Strength (HS) Hydrogen Controlled welding electrodes with a 7016 classification (min. strength rating of 70,000 PSi), well suited to welding steels under stress or with higher load bearing. The full covering slag is easy to control and remove.
			2.5mm	1.0Kg Pack	WEL1025	
			3.2mm	10 Rod Handypack	WEL0232	
			3.2mm	1.0Kg Pack	WEL1032	
WELDSKILL WELDIT ALL DISSIMILAR STEEL WELDING	B ES312-17	E312-17	2.5mm	10 Rod Handypack	WEW0225	WELDiT ALL is a highly alloyed stainless steel electrode that is extremely resistant to cracking (min. strength of 110,000PSi) it provides smooth, stable running in all positions (except vertical down) especially on low current settings. WELDit ALL is recommended for the repair and maintenance of all steels, particularly those of unknown composition. It is suitable for; Joining dissimilar steels, such as stainless steel to carbon steel, Repairing die or tool steels, as a protective overlay against corrosion and as an intermediate or buffer layer prior to hard surfacing. Not Recommended for Welding Cast Irons
			2.5mm	1.0Kg Pack	WEW1025	
			3.2mm	10 Rod Handypack	WEW0232	
			3.2mm	1.0Kg Pack	WEW1032	

CIGWELD ELECTRODE SELECTION CHART

DESCRIPTION	CLASS. AUS/ NZ STD (NEW)	CLASS. AWS STD	DIA.	PACK	PART NO	APPLICATION
WELDSKILL 316L STAINLESS STEEL WELDING	E316L-16	E316L-16	2.0mm	10 Rods	WES316020	WELDSKILL 316L stainless steel electrode has been formulated for the all positional (except vertical-down) fillet and butt welding of stainless steels. 316L produces low spatter levels with a smooth-running bead. Weldskill 316L is suitable for a wide range of Molybdenum bearing stainless steels, suitable for the general-purpose welding of other Austenitic stainless steels including 301, 302, 303 and 304/304L, 305, 3CR12 types. WeldSkill 316L is also suitable for the general welding of 400 series stainless steels including 410 and 430.
			2.0mm	1.0Kg	WES316120	
			2.5mm	10 Rods	WES316025	
			2.5mm	1.0Kg	WES316125	
			3.2mm	10 Rods	WES316032	
			3.2mm	1.0Kg	WES316132	
WELDSKILL HARDA HARDFACING	1855-A4	–	3.2mm	10 Rod Handypack	WEH0232	HARDA is designed for hard surfacing of steel components subjected to wet or dry hard particle abrasion and low to moderate impact loading. The air hardening (~55RHc), low alloy steel deposit of WELDSKILL HARDA remains crack free on most steels and is therefore recommended for hard surfacing components subject to flexing during service. Typical applications include the surfacing of agricultural points, shears and tynes, grader and dozer blades, conveyor screws and post hole augers etc
			3.2mm	1.0Kg Pack	WEH1032	
WELDSKILL CAST2STEEL CAST IRONS & CAST TO STEEL	–	ENiFe-CI	2.5mm	10 Rod Handypack	WEC0225	CAST2STEEL is a Nickel-Iron electrode designed for higher strength repair and maintenance welding of SG, Austenitic, Meehanites and Grey cast irons. It produces a soft stable arc with minimal penetration and spatter. The ductile Nickel-Iron weld deposit is machinable with the higher strength required for welding S.G. irons. Cast2Steel is also used to weld Cast Iron to Mild and Low Alloy Steels.
			2.5mm	1.0Kg Pack	WEC1025	
			3.2mm	10 Rod Handypack	WEC0232	
			3.2mm	1.0Kg Pack	WEC1032	

Refer to **cigweld.com.au** for further Stick (MMAW) Welding information

7.05 SIZE OF ELECTRODE

The electrode size is determined by the thickness of metals being joined and can also be governed by the type of welding machine available. Small welding machines will only provide sufficient current (amperage) to run the smaller size electrodes.

For most work, a 2.5mm or 3.2mm electrode will be quite sufficient. A 2.5mm electrode will give just as strong a joint but may require a few more weld runs to be put down to fill the joint. For thin sections, it is necessary to use smaller electrodes otherwise the arc may burn holes through the job. A little practice will soon establish the most suitable electrode for a given application.

7.06 STORAGE OF ELECTRODES

Always store electrodes in a dry place and in their original containers.

7.07 ELECTRODE POLARITY

Electrodes are connected to the Electrode Holder, and the Work Lead is connected to the work piece. Most MMA Coated Welding Electrodes run on DC+ polarity, unless otherwise noted.

SECTION 8:
ROUTINE SERVICE REQUIREMENTS AND POWER SOURCE PROBLEMS

8.01 ROUTINE MAINTENANCE & INSPECTION

ELECTRICAL WARNING

There are extremely dangerous voltage and power levels present inside this product. Do not attempt to open or repair unless you are a qualified electrical tradesperson. Disconnect the Welding Power Source from the Mains Supply Voltage before disassembling.

Welding equipment should be regularly checked by a qualified electrical tradesperson to ensure that:

- The main earth wire of the electrical installation is intact.
- Power point for the Welding Power Source is effectively earthed and of adequate current rating.
- Plugs and cord extension sockets are correctly wired.
- Flexible cord is of the 3-core tough rubber or plastic sheathed type of adequate rating, correctly connected and in good condition.
- Welding terminals are shrouded to prevent inadvertent contact or short circuit.
- The frame of the Welding Power Source is effectively earthed.
- Welding leads and electrode holder are in good condition.
- The Welding Power Source is clean internally, especially from metal filing, slag, and loose material. If any parts are damaged for any reason, replacement is recommended.

8.02 CLEANING THE WELDING POWER SOURCE

To clean the Welding Power Source, open the enclosure and use a vacuum cleaner to remove any accumulated dirt, metal filings, slag and loose material. Keep surfaces clean as accumulated foreign material may reduce the welders output welding current.

CAUTION

Do not use compressed air to clean the Welding Power Source. Compressed air can force metal particles to lodge between live electrical parts and earthed metal parts within the Welding Power Source. This may result in arcing between this parts and their eventual failure.

8.03 CLEANING THE FEED ROLLS

Clean the grooves in the drive rolls frequently. This can be done by using a small wire brush. Also wipe off or clean the grooves on the upper feed roll. After cleaning, tighten the feed roll retaining knobs.

8.04 BASIC TROUBLESHOOTING

ELECTRICAL WARNING

There are extremely dangerous voltage and power levels present inside this product. Do not attempt to open or repair unless you are a qualified electrical tradesperson and you have had training in power measurements and troubleshooting techniques.

If major complex subassemblies are faulty, then the Welding Power Source must be returned to an Accredited CIGWELD Service Agent for repair.

The basic level of troubleshooting is that which can be performed without special equipment or knowledge.

8.05 RESTORE FACTORY DEFAULT SETTINGS

The BLUEVENOM XF200P³ can have Factory Default Settings restored.

To reset to factory settings switch the Power Source On/Off Switch on the rear panel to the Off position.

Once the Power Source has turned Off hold the COG button on the front panel depressed whilst switching the On/Off Switch to the On position.

Keeping the Cog button depressed, the unit will cycle through 5 screens, as per the following:

Figure 8-1: Restore to Factory Default Settings

When the BlueVENOM Welding logo appears for the second time, let go of the Cog button, it will then go to the MIG Pulse Aluminium 4043 Pulse Settings Screen indicating the Default Settings have been restored.

Figure 8-2: Default Screen

8.06 BLUEVENOM XF200P3 WARNING SCREENS

WARNING SCREEN	CAUSE	REMEDY
OVER TEMPERATURE	Over Temperature	**A** Duty cycle of the Power Source has been exceeded. Leave the power source switched ON with the fan running and allow it to cool.
		B Check front and rear Panel Air Louvres are clean and not blocked by any dirt or obstacles. If damaged they should be replaced by an Accredited CIGWELD Service Provider.
		C Check that the fan is running normally during welding. If the fan is not running during welding it may be faulty and need replacing. Contact an Accredited CIGWELD Service Provider. Note this unit has Fan on Demand fitted. Refer to Section 4 for further details.
OVER CURRENT	Over Current	**A** Power Source has exceeded its Current (Amps) Output Limit. Leave the Power Source turned ON. The machine will resume automatically after 8 seconds and the Over Current Warning will disappear from the screen.
		B Set the output current according to the Rating Label located on bottom panel of the Power Source.
		C If Warning Screen is still present contact an accredited CIGWELD Service Provider.

Figure 8-2: Over Temperature

Figure 8-3: Over Current

SECTION 9:
KEY SPARE PARTS

9.01 BLUEVENOM XF200P³ KEY SPARE PARTS

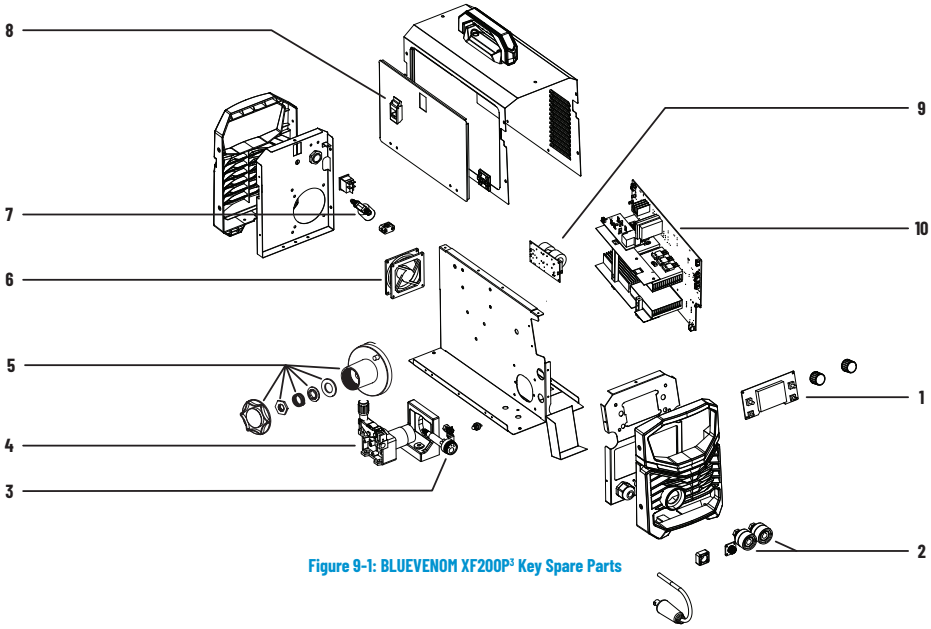


Figure 9-1: BLUEVENOM XF200P³ Key Spare Parts

BLUEVENOM XF200P³ POWER SOURCE KEY SPARE PARTS

ITEM	PART NUMBER	DESCRIPTION
1	W7007430	PCB Display
2	W7007351	DINSE Socket 50mm²
3	W7007431	Euro MIG Adaptor
4	W7007432	Wire Drive Assembly
5	W7007354	Spool Hub Assembly

ITEM	PART NUMBER	DESCRIPTION
6	W7007433	Fan Assembly
7	W7007434	Gas Solenoid Valve
8	W7007357	Door Latch
9	W7007435	EMC PCB
10	W7007436	Power Inverter PCB

9.02 MIG GUN BZ24 EURO 3m SPARE PARTS

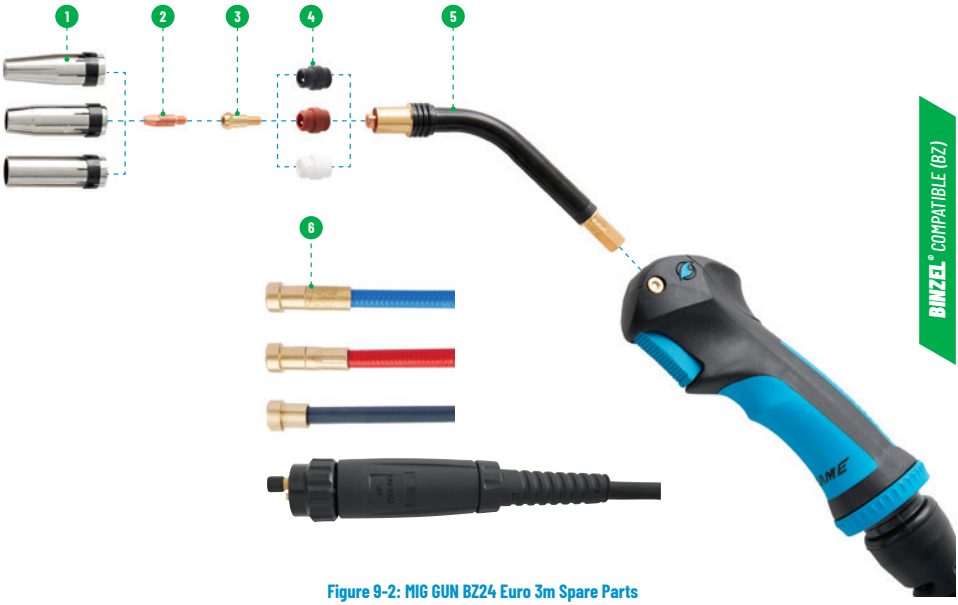


Figure 9-2: MIG GUN BZ24 Euro 3m Spare Parts

MIG GUN BZ24 EURO 3m SPARE PARTS

ITEM	PART NUMBER	DESCRIPTION
1	BZN2410	Nozzle Tapered, 10mm, Pack of 2
	BZN2413	Nozzle Conical, 13mm, Pack of 2
	BZN2417	Nozzle Cylindrical, 17mm, Pack of 2
2	BZT6806	Contact Tip 0.6mm M6 L: 28mm, Pack of 10
	BZT6808	Contact Tip 0.8mm M6 L: 28mm, Pack of 10
	BZT6809	Contact Tip 0.9mm M6 L: 28mm, Pack of 10
	BZT6810	Contact Tip 1.0mm M6 L: 28mm, (Suitable for 0.9mm AL Wires), Pack of 10
	BZT6812	Contact Tip 1.2mm M6 L: 28mm, (Suitable for 1.0mm AL Wires), Pack of 10
	BZT6814	Contact Tip 1.4mm M6 L: 28mm, (Suitable for 1.2mm AL Wires), Pack of 10
3	BZH24M6	Tip Holder M6, Pack of 2
4	BZS24	Swan Neck
5	CML5K0609	Multi Liner Kit Steel 0.6-0.9mm, 5.1m
	CML5K0912	Multi Liner Kit Steel 0.9-1.2mm, 5.1m
	CML5K0916A	Multi Liner Kit Aluminium 0.9-1.6mm, 4.5m
	CML50609	Multi Liner Steel 0.6-0.9mm, 5.1m, (No Collet)
	CML50912	Multi Liner Steel 0.9-1.2mm, 5.1m, (No Collet)
	CML50916A	Multi Liner Aluminium 0.9-1.6mm, 4.5m, (No Collet)
	CMLC.BZ	Multi Liner Collet suit Binzel
	CMLA.BZA	MultiLiner Collet suit Binzel Alloy

APPENDIX 1:
BLUEVENOM XF200P³ CIRCUIT DIAGRAM

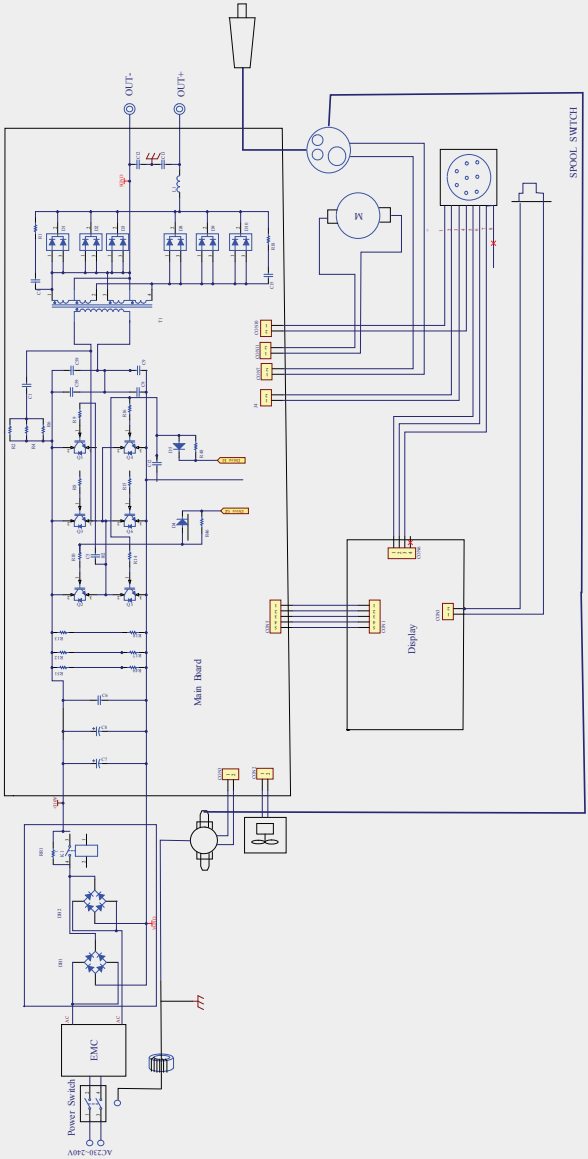


Figure 9-3 BLUEVENOM XF200P³ Circuit Diagram

CIGWELD
AN ESAB BRAND

LIMITED WARRANTY TERMS

LIMITED WARRANTY: CIGWELD Pty Ltd, An ESAB Brand, hereafter, "CIGWELD" warrants to customers of its authorized distributors hereafter "Purchaser" that its products will be free of defects in workmanship or material. Should any failure to conform to this warranty appear within the time period applicable to the CIGWELD products as stated below, CIGWELD shall, upon notification thereof and substantiation that the product has been stored, installed, operated, and maintained in accordance with CIGWELD's specifications, instructions, recommendations and recognized standard industry practice, and not subject to misuse, repair, neglect, alteration, or accident, correct such defects by suitable repair or replacement, at CIGWELD's sole option, of any components or parts of the product determined by CIGWELD to be defective.

CIGWELD 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.

LIMITATION OF LIABILITY: CIGWELD SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, SUCH AS, BUT NOT LIMITED TO, LOST PROFITS AND BUSINESS INTERRUPTION.

The remedies of the Purchaser set forth herein are exclusive and the liability of CIGWELD with respect to any contract, or anything done in connection therewith such as the performance or breach thereof, or from the manufacture, sale, delivery, resale, or use of any goods covered by or furnished by CIGWELD whether arising out of contract, negligence, strict tort, or under any warranty, or otherwise, shall not, except as expressly provided herein, exceed the price of the goods upon which such liability is based. No employee, agent, or representative of CIGWELD is authorized to change this warranty in any way or grant any other warranty.

PURCHASER'S RIGHTS UNDER THIS WARRANTY ARE VOID IF REPLACEMENT PARTS OR ACCESSORIES ARE USED WHICH IN CIGWELD'S SOLE JUDGEMENT MAY IMPAIR THE SAFETY OR PERFORMANCE OF ANY CIGWELD PRODUCT. PURCHASER'S RIGHTS UNDER THIS WARRANTY ARE VOID IF THE PRODUCT IS SOLD TO PURCHASER BY NON-AUTHORIZED PERSONS.

The warranty is effective for the time stated below beginning on the date that the authorized distributor delivers the products to the Purchaser. Not with standing the foregoing, in no event shall the warranty period extend more than the time stated plus one year from the date CIGWELD delivered the product to the authorized distributor.

Any claim under this warranty must be made within the warranty period which commences on the date of purchase of the product. To make a claim under the warranty, take the product (with proof of purchase from a CIGWELD Accredited Seller) to the store where you purchased the product or contact CIGWELD Customer Care 1300 654 674 for advice on your nearest Service Provider. CIGWELD reserves the right to request documented evidence of date of purchase. CIGWELD or our Accredited Distributor must be notified in writing of its claim within seven (7) days of becoming aware of the basis thereof, and at its own expense returning the goods which are the subject of the claim to CIGWELD or nominated Accredited Distributor/Accredited Service Provider

This warranty is given.
CIGWELD Pty Ltd A.B.N. 56007226815
71 Gower Street, Preston Victoria, Australia, 3072
Phone: 1300 654 674
Email: enquiries@cigweld.com.au
Website: www.cigweld.com.au

This warranty is provided in addition to other rights and remedies you have under law: Our goods come with guarantees which cannot be excluded under the Australian Consumer Law. You are entitled to replacement or refund for a major failure and to compensation for other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Please note that the information detailed in this statement supersedes any prior published data produced by CIGWELD.

*WARRANTY SCHEDULE – BLUEVENOM XF200P³ INVERTER

WARRANTY	WARRANTY PERIOD (PARTS AND LABOUR)
BLUEVENOM XF200P³ Power Source	2 Years

ACCESSORIES	WARRANTY PERIOD
MIG Gun, electrode holder lead and work lead	3 Months
MIG Gun consumable items	NIL
Gas Regulator/Flowmeter (excluding seat assembly, pressure gauges, elastomer seals and "O" rings	1 Year
Regulator seat assemblies and pressure gauges	6 Months
Elastomer seals and "O" rings used in the equipment	3 Months

CIGWELD LIMITED WARRANTY DOES NOT APPLY TO;

- Obsolete goods sold at auction, second-hand goods and prototype goods.
- Consumable Parts for MIG, Plasma welding, Plasma cutting and Oxy fuel torches, O-rings, fuses, filters or other parts that fail due to normal wear.

Notes:

* No employee, agent, or representative of CIGWELD is authorized to change this warranty in any way or grant any other warranty, and CIGWELD shall not be bound by any such attempt. Correction of non-conformities, in the manner and time provided herein, constitutes fulfilment of CIGWELD's obligations to purchaser with respect to the product.
* This warranty is void, and seller bears no liability hereunder, if purchaser used replacement parts or accessories which, in CIGWELD's sole judgment, impaired the safety or performance of any CIGWELD product and if the unit is altered or serviced by an unauthorised CIGWELD Service Provider. Purchaser's rights under this warranty are void if the product is sold to purchaser by unauthorized persons.

CIGWELD

AN **ESAB** BRAND

Version: AA **Issue Date: 15-08-2023** **Manual No: 0-5679**

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