CIGWELD

AN **ESAB** BRAND

DESIGNED
& TESTED
IN AUSTRALIA
FOR OVER 100 YEARS

BLUEVENOM 4R-ROVER

MIG

SINGLE AND DOUBLE PULSE WITH OPTIONAL PULSEMATE

WIREFEEDER

FOR USE WITH
BLUEVENOM WHEELED POWER SOURCES

OPERATING MANUAL

4R-ROVER, P/N: W3200401

350A	SYNERGIC MIG	QUICKSET	3 YEAR
60%	SINGLE & DOUBLE PULSE	PLATE THICKNESS CONTROL	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 If you are ever in doubt about what you see or read in this manual with the product you received, then check for a newer version of the manual on our website or contact our customer support for assistance.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.

CIGWELD BLUEVENOM 4R-ROVER WIREFEEDER OPERATING MANUAL NUMBER 0-5713 FOR:

PART NUMBER W3200401

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Publication Date: 21-03-2024

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!

CIGWELD
AN ESAB BRAND

DECLARATION OF CONFORMITY

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

TYPE OF EQUIPMENT

Wirefeeder

TYPE DESIGNATION

BlueVENOM 4R-ROVER with serial number from: GC343 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/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
IEC 60974-5 :2019	Arc Welding Equipment, Part 5: Wirefeeders

ADDITIONAL INFORMATION:

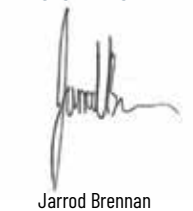
Restrictive use, Class A equipment, intended for use in location other than residential. This equipment is also in compliance with the essential requirements of EU Directives 2014/30/EU and 2014/35/EU.

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
21-03-2024

SIGNATURE



Jarrod Brennan
General Manager

TABLE OF CONTENTS

SECTION 1:

ARC WELDING SAFETY INSTRUCTIONS AND WARNINGS 8

1.01 ARC WELDING HAZARDS 8
1.02 PRINCIPAL SAFETY STANDARDS 13

SECTION 2:

INTRODUCTION 14

2.01 HOW TO USE THIS MANUAL 14
2.02 EQUIPMENT IDENTIFICATION 14
2.03 RECEIPT OF EQUIPMENT 14
2.04 SYMBOL CHART 15
2.05 DESCRIPTION 16
2.06 USER RESPONSIBILITY 16
2.07 WHAT'S IN THE BOX 16
2.08 TRANSPORTING METHODS 16
2.09 SPECIFICATIONS 17
2.10 OPTIONAL ACCESSORIES 18

SECTION 3:

INSTALLATION 19

3.01 ENVIRONMENT 19
3.02 LOCATION 19
3.03 VENTILATION 19
3.04 ELECTROMAGNETIC COMPATIBILITY 20

SECTION 4:

OPERATION 22

4.01 POWER SOURCE CONTROLS, INDICATORS AND FEATURES 23
4.02 INDICATORS AND CONTROLS 25

SECTION 5:

MIG (GMAW/FCAW) WELDING 31

5.01 SHIELDING GAS REGULATOR/FLOWMETER OPERATING INSTRUCTIONS 31
5.02 ATTACHING THE MIG GUN (EURO) 34
5.03 INSTALLING HANDISPOOL (200MM DIAMETER) 34
5.04 INSTALLING 300MM SPOOL 34
5.05 CHANGING INLET GUIDE FOR ALUMINIUM AND OTHER SOFT WIRES 35
5.06 SPOOL HUB BRAKE 35
5.07 INSERTING WIRE INTO THE WIRE FEED MECHANISM 36
5.08 FEED ROLL PRESSURE ADJUSTMENT 37
5.09 CHANGING THE FEED ROLL 37
5.10 SETUP FOR MIG (GMAW) WELDING WITH GAS SHIELDED MIG WIRE 38
5.11 SETUP FOR MIG (FCAW) WELDING WITH GASLESS MIG WIRE 40
5.12 SETUP WITH SPOOL GUN OR PUSH-PULL GUN FOR GAS SHIELDED MIG WIRE 42
5.13 SETUP WITH SPOOL GUN FOR GASLESS MIG WIRE 45
5.14 MIG QUICKSET MODE 47
5.15 MIG MANUAL MODE 51
5.16 QUICKSET MIG AND MANUAL MIG MODES 54
5.17 CONNECTIONS FOR SOLID MIG WIRES WITH SHIELDING GAS AND GASLESS FLUX CORED WIRES 54
5.18 OPTIONAL ADD-ON DEVICES 55
5.19 CIGWELD MIG WIRE SELECTION CHART 56
5.20 MIG (GMAW/FCAW) WELDING TROUBLESHOOTING 58
5.21 MIG (GMAW) WELDING PROBLEMS 61

SECTION 6:

ROUTING SERVICE REQUIREMENTS, RESTORE FACTORY DEFAULT SETTINGS AND ERROR CODES 63

6.01 ROUTINE MAINTENANCE & INSPECTION 63
6.02 CLEANING THE WELDING POWER SOURCE 63
6.03 CLEANING THE FEED ROLLS 63
6.04 BASIC TROUBLESHOOTING 64
6.05 RESTORE FACTORY DEFAULT SETTINGS 64
6.06 BLUEVENOM 4R-ROVER ERROR CODES 65

SECTION 7:

KEY SPARE PARTS 67

7.01 BLUEVENOM 4R-ROVER KEY SPARE PARTS 67

APPENDIX 1: BLUEVENOM 4R-ROVER CIRCUIT DIAGRAM 68
CIGWELD - LIMITED WARRANTY TERMS 69
WARRANTY SCHEDULE - BLUEVENOM 4R-ROVER WIREFEEDER 70

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 35 ft (10.7 m) 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 unit's 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
	AMPERAGE
	VOLTAGE
	HERTZ (CYCLES/SEC)
	FREQUENCY
	NEGATIVE
	POSITIVE
	DIRECT CURRENT (DC)
	PROTECTIVE EARTH (GROUND)
	LINE
	LINE CONNECTION
	AUXILIARY POWER
	RECEPTACLE RATING- AUXILIARY POWER
	SINGLE PHASE

	THREE PHASE
	THREE PHASE STATIC FREQUENCY CONVERTER-TRANSFORMER-RECTIFIER
	REMOTE
	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
	VOLTAGE INPUT
	WIRE FEED FUNCTION
	WIRE FEED TOWARDS WORKPIECE WITH OUTPUT VOLTAGE OFF
	WELDING GUN

	PURGING OF GAS
	CONTINUOUS WELD MODE
	SPOT WELD MODE
	SPOT TIME
	PREFLOW TIME
	POSTFLOW TIME
	QUICKSET PLATE THICKNESS PRE-SETS
	OUTPUT CURRENT
	3-YEAR WARRANTY
	BURNBACK TIME
	DISTURBANCE IN GROUND SYSTEM
IPM	INCHES PER MINUTE
MPM	METRES PER MINUTE
	SPOOL GUN
	QUICKSET FOR MIG
	SINGLE PULSE
	DOUBLE PULSE
	PULSE FREQ. (PULSE SPEED)
	PULSE BASE CURRENT
	PULSE WIDTH

2.05 DESCRIPTION

The new BlueVenom4R-ROVER Digital Wirefeeder has been engineered to be as compact a 300mm spool feeder can be. With a low line carry handle the 4R-ROVER can fit in the most tight and constrained spaces.

The 4R-ROVER does just that –your wire feed companion ready to go where you need it. Its robust design coupled with an 8m interconnection cable and in-built hanging mount, allows the user to position the feeder conveniently to make the job easy –on the welding machine, floor, bench, gantry or boom setups!

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 4R-ROVER (Part No. W3200401)

- BLUEVENOM 4R-ROVER Wirefeeder
- Feed Rolls: 0.9/1.2mm V Groove (fitted)
- 8m Interconnection Lead
- 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 SPECIFICATIONS

DESCRIPTION	BLUEVENOM 4R-ROVER WIREFEEDER
Wirefeeder Plant Part Number	W3200401
Wirefeeder Dimensions	(H) 418mm x (W) 303mm x (D) 643mm
Wirefeeder Weight	14.5kg
Wirefeeder Motor Voltage	24 VDC
Gas Solenoid Voltage	24 VDC
MIG (GMAW) Welding Output, 40°C, 10 min	60% @ 350A 100% @ 271A
BLUEVENOM 4R-ROVER Wire Speed Range Minimum Wire Speed Maximum Wire Speed	 2.0 MPM 18 MPM
Operating Temperature Range	-10°C - 40°C
Interconnection Plug	10 Pin
Protection Class	IP23S

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

2.10 OPTIONAL ACCESSORIES

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

P/N:	DESCRIPTION
W4200PM1	BlueVenom Pulsemate suits BlueVenom 4 Wheeled Power Sources and 4R-Rover Wirefeeder
W52BS24E6	Cigweld SGBZ24E6 Spool Gun BZ24, 6m, Euro
W52BP36E8	Cigweld PPBZ36E8 Push Pull Gun BZ36 8m, Euro
W4016008	8m Interconnection Lead, 10 Pin with Joiner Kit*
7977729	Feed Roll 0.6/0.8mm V groove (hard wires)
7977703	Feed Roll 0.9/1.2mm V groove (hard wires) (fitted)
7977346	Feed Roll 1.2/1.6mm V groove (hard wires)
7977733	Feed Roll 0.8/0.9mm U groove (soft wires)
7977730	Feed Roll 1.0/1.2mm U groove (soft wires)
7977348	Feed Roll 1.2/1.6mm U groove (soft wires)
7977734	Feed Roll 0.8/0.9mm V groove knurled (flux cored wires)
7977347	Feed Roll 1.2/1.6mm V groove knurled (flux cored wires)
W7007437	Spring Steel Inlet Guide (Steel and Stainless Steel Wires)
W7007384	Nylon Inlet Guide (Soft Wires)
W7007487	200mm Spool Adaptor

* Extending the Interconnection Cable from 8m to 16m:

The BlueVenom 4R-Rover Feeder is supplied standard with an 8m Interconnection lead set. An additional 8m Interconnection Lead with Joiner Kit can be purchased as an optional accessory, which simply adds-on to the existing 8m Interconnect Lead.

Please Note, longer Interconnection leads equalling 16m will on average have a slight decrease in welding output. Furthermore, if you add on an 8m Push-Pull MIG Gun (so extend your reach to 24m) then you should expect to also decrease welding output.

CAUTION

It is not recommended to extend the Interconnection Lead Length any longer than 16m or it could compromise the welding performance.

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 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.
2. **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.
3. **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.
4. **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.

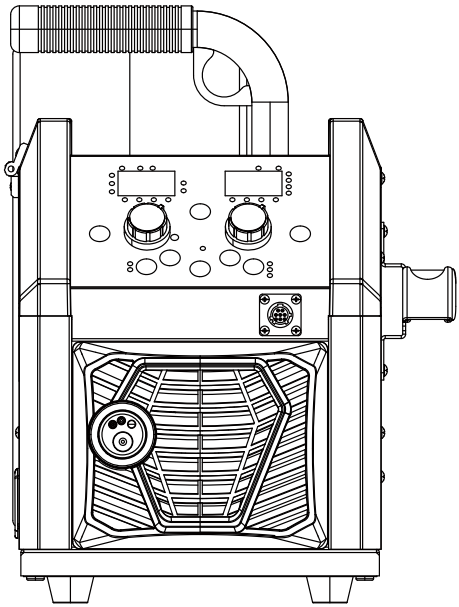
5. **Earthing of the Workpiece**
   Where the workpiece is not bonded to earth for electrical safety, nor connected to earth because of it's size and position, e.g. ship's hull or building steelwork, a connection bonding the workpiece to earth may reduce emissions in some, but not all instances. Care 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.

6. **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:
4R-ROVER WIREFEEDER 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

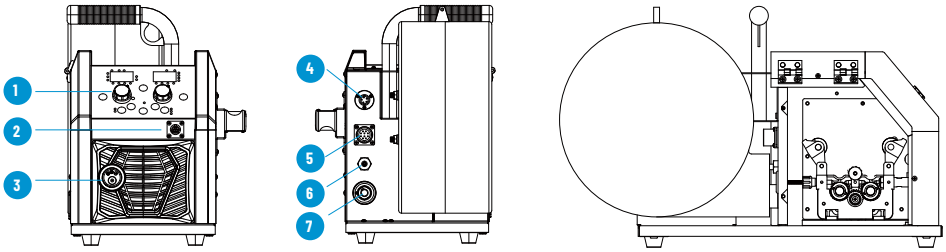


Figure 4-1: Wirefeeder Controls, Indicators and Features

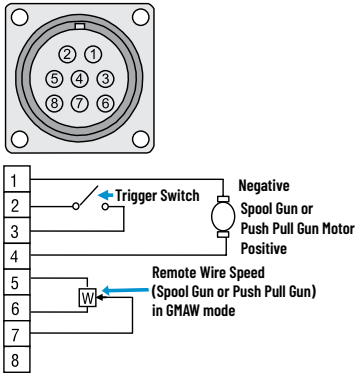
1. Control Panel. Refer to page 23 & 25-30
2. Remote Control Socket 8 Pin. Refer to page 23
3. MIG gun Adaptor (Euro Style). Refer to page 24
4. Pulsemate Socket 5 Pin. Refer to page 24
5. Wirefeeder Control Socket 10 Pin. Refer to page 24
6. Shielding Gas Inlet. Refer to page 24
7. Output Welding Terminal. Refer to page 24

1 CONTROL PANEL

The BLUEVENOM 4R-ROVER is equipped with bright blue Sharp LED displays which provide optimal clarity both indoors and outdoors. Easy press push buttons for selection of features to toggle through settings including: Process Modes, Gas Type, Trigger Modes, Quickset MIG, Memory Feature, Gas Purge, Wire Inch & other Advanced Settings.

2 REMOTE CONTROL SOCKET 8 PIN

The 8 pin Remote Control Socket is used to connect remote control devices (i.e. Spool Gun or Push pull Gun) to the 4R Rover Wirefeeder. 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.
8	Not connected

Figure 4-2: Remote Control Socket 8 Pin

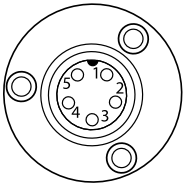
3 MIG GUN ADAPTOR (EURO STYLE)

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.

4 PULSEMATE SOCKET 5 PIN

This 5 Pin PulseMate Control Socket is used to connect the Optional BlueVenom PulseMate.

If further details are required refer to an Accredited Cigweld Service Provider.

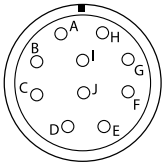


Socket Pin	Description
1	TX
2	Common
3	RX
4	NC
5	+15V

5 REMOTE CONTROL SOCKET 10 PIN

This 10 Pin Remote Control Socket is used to connect the BlueVenom Wheeled Power Source.

If further details are required refer to an Accredited Cigweld Service Provider.



Socket Pin	Description
A	CAN H
B	CAN Common
C	CAN L
D	NC
E	+24V
F	+40V
G	+24V & +40V Common
H	NC
I	NC
J	NC

6 SHIELDING GAS INLET

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.

7 OUTPUT WELDING TERMINAL

The welding terminal is used to connect the welding output of the power source to the Wirefeeder. 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 to the power source, the female plug is inserted to Wirefeeder and turned securely to achieve a sound electrical connection. Refer to section 5.10.

4.02 INDICATORS AND CONTROLS

POWER ON INDICATOR

When Illuminated when the correct mains power is applied to the power source and when the ON/OFF switch located on the rear panel is in the ON position. Then connect the Wirefeeder to the power source using the supplied 8m Interconnection Cable.

OVER TEMPERATURE INDICATOR

The welding power source is protected by a self resetting thermostat. The Over Temp indicator will illuminate if the duty cycle of the power source has been exceeded. Should the Over Temp indicator illuminate the output of the power source will be disabled. Once the power source cools down this Over Temp indicator will go OFF and the over temperature condition will automatically reset.

PULSE PULSE INDICATOR

When Illuminated the PulseMate (Sold Separately) has been connected and turned ON. Single and Double Pulse Functions are now available. Pulse Settings are set using the Remote PulseMate Pendant.

18 LEFT DIGITAL DISPLAY

MIG QUICK SET MODE

At times of non-welding this digital meter shows QuickSet Plate Thickness →|←, Wire Diameter ⌀, Material MTL , and Wire Feed Speed WFS. Press the Left Control Knob to step through functions. Process functions can be adjusted by turning the Left Control Knob.

When welding this digital meter will display the MIG Welding Amps.

At the completion of welding, the digital meter will hold the last recorded amperage value for a period of approximately 10 seconds in all modes. The amperage meter will hold the value until; (1) any of the front panel controls are adjusted in which case the unit will revert to preview mode, (2) welding is recommenced, in which case actual welding amperage will be displayed, or (3) a period of 10 seconds lapses following

the completion of welding in which case the unit will return to preview mode.

MIG MANUAL MODE

When not welding this digital meter shows pre-set (preview) Wirefeed Speed WFS in Metres Per Minute MPM. This Wire Feed Speed WFS value can be adjusted by turning the Left Control Knob. When welding this digital meter will display the MIG Welding Amps.

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

ADVANCED FEATURES MENU MODE

In the Advanced Settings Menu the Left Digital Display is also used to show the Advanced Setting selected.

AMPS AMPS INDICATOR

The Value showing on the Left Hand Display is in Amps. Displays actual Welding Amps whilst welding.

MPM MPM INDICATOR

When WFS (Wire Feed Speed) is selected the Value showing on the Left Hand Digital Display is MPM (Metres Per Minute).

MM MM INDICATOR (MIG QUICKSET MODE ONLY)

Will illuminate in MIG QuickSet Mode when either Plate Thickness or Wire Diameter is selected. The display will show the Plate Thickness or Wire Diameter in Millimetres (MM).

→|← QUICKSET PLATE THICKNESS INDICATOR (MIG QUICKSET MODE ONLY)

When illuminated the Material Plate Thickness is being displayed in Millimetres (MM). Available Plate Thicknesses are shown on the Digital Left Display and are determined by the MIG Wire Diameter and Material Type Selected. Refer to the Table on Page 48 for QuickSet Programme List for further information.

⌀ WIRE DIAMETER INDICATOR (MIG QUICKSET MODE ONLY)

When illuminated the MIG QuickSet Wire Diameter is able to be selected. Available Wire Diameters are shown on the Left Digital Display. QuickSet wire diameters available depend on Plate Thickness and Material type selected.

MTL WELDING MATERIAL INDICATOR (MIG QUICKSET MODE ONLY)

When illuminated the type of Welding Material is able to be selected. Material Types are displayed across both Digital Displays. Refer to the Table on Page 48 for QuickSet Programme List for further information.

WFS WIRE FEED SPEED INDICATOR

When illuminated the Wire Feed Speed is able to be set or adjusted. Wire Feed Speed is displayed in MPM (Metres Per Minute) on the Left Digital Display. In MIG Manual Mode, the WFS range goes from 2 to 18 MPM.

MIG QUICK SET MIG QUICKSET INDICATOR

When Illuminated MIG QuickSet is selected. This allows the user to simply select the Material Plate Thickness, Wire Diameter, and Material Type MTL, and determined welding parameters are set and ready to weld. Wire Feed Speed (WFS) and Voltage (Volts Trim) settings can be adjusted if desired. Refer to MIG QuickSet Welding 5.14.

MIG MANUAL MIG MANUAL INDICATOR

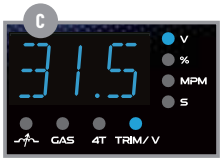
When illuminated MIG Manual Mode is selected. Wirefeed Speed (WFS) and Volts (V) are shown on the digital displays. Refer to Section 5.15 MIG Manual Mode.

PROCESS SELECTION BUTTON

Press to select desired Process Mode. Select either MIG QuickSet, MIG Manual.

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.



V VOLTS INDICATOR

When illuminated the Value showing on the Right Hand Digital Display is Volts.

% PERCENTAGE % INDICATOR

When illuminated the MIG Wire (RIN) Run In Speed (Advanced Features Menu) is displayed as a Percentage % of Wire Feed Speed and is able to be set.

MPM MPM INDICATOR

When illuminated indicates the value on the Right Digital Display is in MPM (Metres Per Minute).

S SECONDS INDICATOR

When illuminated indicates the value on the Right Digital Display is in Seconds.

TRIM / V VOLTS TRIM INDICATOR

MIG QUICKSET MODE

Volts Trim (TRIM/V) can be selected by pressing the Right Control Knob until the TRIM/V (Volts Trim) indicator is illuminated. The LED Display will show Syn for QuickSet value for the selected Wire and Plate Thickness. 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 to display SYN to return to the QuickSet Voltage Value. For example, if the Pre-set Voltage is 20V and in volts trim V+/- mode the setting is changed to -2.0 then the Pre-set voltage will now be 18V. If the Volts Trim V+/- is changed to +3.0 then the Pre-set Voltage will be 23V.

MIG MANUAL MODE

Volts Trim (TRIM/V) can be selected by pressing the Right Control Knob until the TRIM/V (Volts Trim) indicator is illuminated. In MIG Manual Mode the Preview Welding Volts are displayed on the Right Digital Display. It is different to QuickSet mode and is not adjusted in Volts Trim format but is able to be adjusted for the full MIG Voltage Range of 13 to 40V.

4T TRIGGER MODE 2T/4T INDICATOR

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

2T NORMAL MODE

In this mode, the torch trigger must remain depressed for the welding output to be active. Press and hold the torch trigger to activate the power source (weld). Release the 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 torch trigger and the output will remain active. To deactivate the power source, the trigger switch must again be depressed and released, thus eliminating the need for the operator to hold the torch trigger.

GAS SHIELDING GAS INDICATOR (MIG QUICKSET MODE ONLY)

When this indicator is illuminated the Digital Displays will show the Shielding Gas setting available depending on the MIG Wire Diameter and Material Type selected.

INDUCTANCE INDICATOR

When illuminated the Inductance value can be adjusted. The Inductance (arc) control operates in MIG (GMAW) modes only and is used to adjust the intensity of the welding arc.

Higher Arc Control settings make the arc softer with less weld spatter. Lower 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.

RIGHT DIGITAL DISPLAY

MIG QUICKSET MODE

When not welding this digital meter shows Inductance, GAS Shielding Gas, 4T Trigger Mode (2T/4T), and TRIM / V Volts Trim. Press the Right Control Knob to step through functions. Process functions can be adjusted by turning the Right Control Knob.

When welding this digital meter will display the MIG Welding Amps.

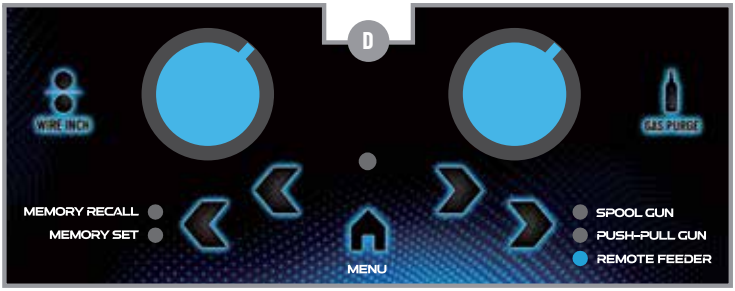
At the completion of welding, this digital meter will hold the last recorded Volts value for a period of approximately 10 seconds in all modes. The Volts meter will hold the value until; (1) any of the front panel controls are adjusted in which case the unit will revert to preview mode, (2) welding is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

MIG MANUAL MODE

When not welding this digital meter shows Inductance, Trigger Mode (2T/4T) and Volts Trim (TRIM/V). Press the Right Control Knob to step through functions. Process functions can be adjusted by turning the Right Control Knob.

When welding this digital meter will display the MIG Welding Amps.

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



MEMORY FUNCTION

MEMORY RECALL

To recall welding parameters from the stored Memory, press the Memory button to select Memory Recall. The Memory Recall indicator will illuminate when selected. The Left Digital Display shows RCL and the Right Digital Display shows the Memory location.

Turn the Right Control Knob to select a Memory location from 1 to 5 that can be recalled. Confirm by pressing the Right Control Knob to Recall the stored Memory from that location.

MEMORY SET

To recall welding parameters from the stored Memory, press the Memory button to select Memory Recall. The Memory Recall indicator will illuminate when selected. The Left Digital Display shows LOD and the Right Digital Display shows the Memory location.

Turn the Right Control Knob to select a Memory location from 1 to 5 that can be recalled. Confirm by pressing the Right Control Knob to Recall the stored Memory from that location.

Note: Initial factory settings are loaded into the Memory Locations which can be overwritten when new user settings are required.

LEFT CONTROL KNOB

Press to step through available options in each Process;

Once desired function selected turn Left Control Knob clockwise to increase or counterclockwise to decrease value.

- Turn the Left Control Knob 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.

MIG Quickset Mode: QuickSet Plate Thickness, Wire Diameter, MTL Material, and WFS Wire Feed Speed

MIG Manual Mode: WFS Wire Feed Speed only

WIRE INCH BUTTON

Hold button depressed to Feed the MIG Wire through the MIG Gun. When Wire Inch Button depressed INC will appear on the Left Digital Display. Whilst button is held depressed wire speed will start at minimum speed and ramp up to maximum speed and maintain maximum speed whilst the button is depressed.

RIGHT CONTROL KNOB

Press to step through available options in each Process;

Once desired function selected turn clockwise to increase or counterclockwise to decrease value

- Turn the Right Control Knob 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.

MIG Quickset Mode: Inductance, GAS Shielding Gas, 4T Trigger Mode (2T/4T), and TRIM / V Volts Trim.

MIG Manual Mode: Inductance, 4T Trigger Mode (2T/4T), and TRIM / V Volts Trim.

ADVANCED SETTINGS MENU

In the Advanced Features Menu the Left Digital Display is used to show the Advanced Setting selected. The Right Digital Display shows the Advanced Setting value.

Once desired function selected use the Right Control Knob to select or turn clockwise to increase or counterclockwise to decrease value.

- Turn the Right Control Knob 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.

MENU BUTTON

Press to access Advanced Settings

(PEG) Pre Gas, (PTG) Post Gas, (BBT) Burnback, (CRF) Crater Fill (OFF/ON), (CFT) Crater Fill Time, (CFW) Crater Fill Wire Feed Speed, (CFU) Crater Fill Voltage, (RIN) Run In and (SPT) Spot (2T only)

Note: Crater Fill must be turned ON to set (CFT) Crater Fill Time, (CFW) Crater Fill Wire Feed Speed and (CFU) Crater Fill Voltage.

Press Forward Button to Scroll Forward in Advanced Features and make selection

Press Back Button to Scroll Backward in Advanced Features and make selection

Menu Button Indicator

When illuminated the Menu for Advanced Features is activated and the Advanced Feature is shown on the Left Digital Display and its value on the Right Digital Display. Right Control Knob adjusts the Advanced Feature Value selected.

DEVICE SELECTION BUTTON

Press button to select device connected.

SPOOL GUN INDICATOR

When illuminated the Spool Gun Mode has been selected. Refer to Section 5.12.

PUSH-PULL GUN

PUSH PULL GUN INDICATOR

When illuminated the Push Pull Gun Mode has been selected. Refer to Section 5.12.

REMOTE FEEDER

REMOTE FEEDER (4R-ROVER) INDICATOR

When illuminated the Wirefeeder Mode has been selected.

GAS PURGE BUTTON

This purges Shielding Gas (MIG) through the MIG Gun when pressed. When the button is pressed and released it will purge the Shielding Gas for 15 seconds. If during that time the Gas purge is required to be stopped press the button again.

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 Power Source 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.

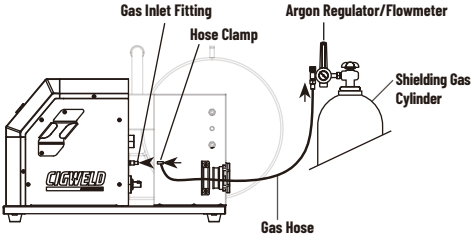


Figure 5-1: Shielding Gas Connection

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.

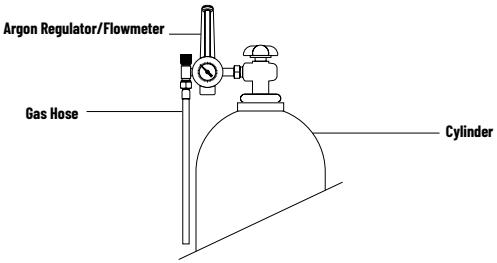


Figure 5-2: Fit Regulator/flowmeter to Cylinder

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.

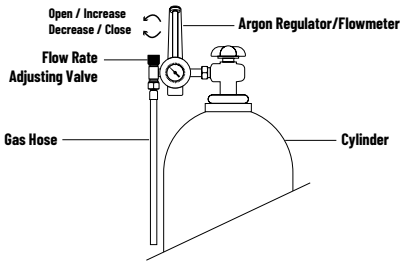


Figure 5-3: Adjust Flow Rate

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 Wirefeeder 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.

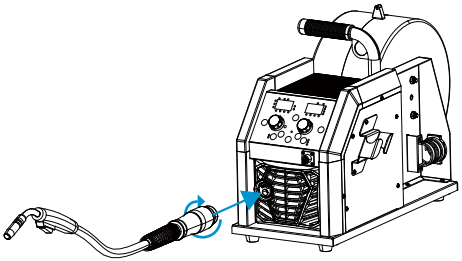


Figure 5-4: Attaching the Euro MIG Gun

5.03 INSTALLING HANDISPOOL (200mm DIAMETER)

In order to fit a Handi Spool of 200mm diameter the supplied 200mm Spool Adaptor is to be used.

Remove the Wire Spool Retaining Nut as shown. With the 200mm Spool Adaptor in place ensuring the locating the hole in the 200mm Spool Adaptor aligns with the alignment pin on the Spool Hub as shown in Figure 5-5.

Install the 200mm wire spool over the spool hub locating the hole in the 200mm Wire Spool with the alignment pin on the 200mm Spool Hub adaptor.

Replace the Wire Spool Retaining Nut tightening firmly to secure the Wire Spool in Place.

5.04 INSTALLING 300MM SPOOL

In order to fit a 300mm wire spool the supplier adaptor for 200mm Wire Spools is NOT required to be used.

Remove the Wire Spool Retaining Nut by turning in a counter clockwise direction. Install the 300mm Wire Spool over the Spool Hub, locating the hole in the Wire Spool with the alignment pin on the Spool Hub as shown in Figure 5-6.

Replace the Wire Spool Retaining Nut by turning in a clockwise direction until firmly tightened to secure the Wire Spool in place.

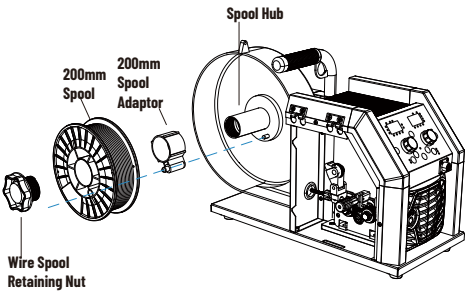


Figure 5-5: 200mm Handi Spool Installation

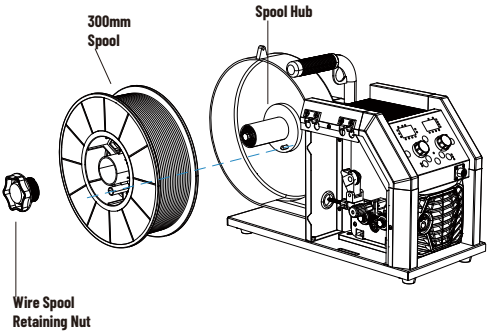


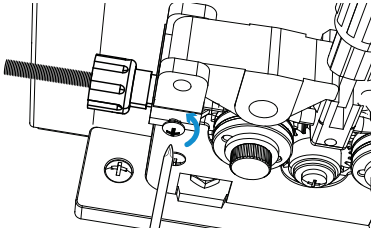
Figure 5-6: 300mm Handi Spool Installation

5.05 CHANGING INLET GUIDE FOR ALUMINIUM AND OTHER SOFT WIRES

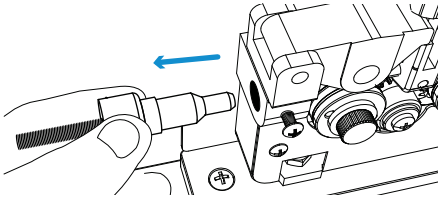
The Optional PulseMate Kit (P/N: W4200PM1) contains a Nylon Inlet Guide. It is recommended to use this with Aluminium and soft wires.

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

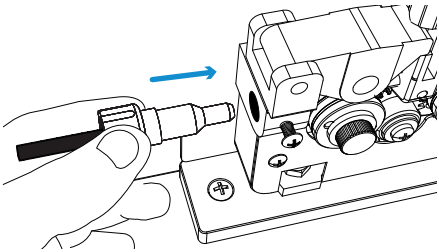
A. Loosen Inlet Guide retaining screw as shown.



B. Remove the Steel Inlet Guide as fitted to the machine from factory from the Wire Drive Assembly.



C. Fit the Nylon Inlet Guide (Yellow) into the Wire Drive Assembly as shown and tighten the retaining screw.



D. Fit the appropriate feed roll to suit the Aluminium or Soft wire being used. Refer to sections 5.09 Changing Feed Roll and section 2.10 Optional Accessories.

E. Install the wire spool and carefully without bending or kinking the wire feed the Aluminium or Soft wire into the feed mechanism. Refer to sections 5.03, 5.04, 5.05 and 5.07 for further information.

A replacement Nylon Inlet Guide is available. Refer to section 2.10 Optional Accessories.

5.06 SPOOL HUB BRAKE

When fitting the Wire Spool, the adjustment of the Wire Reel Brake Adjustment Nut will control the MIG Wire Spool Brake. Rotating the Wire Reel Brake Adjustment Nut clockwise increases the brake and rotating the Wire Reel Brake Adjustment Nut counterclockwise reduces the brake. To access the Wire Reel Brake Adjustment Nut remove the Wire Spool Retaining Nut. 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.

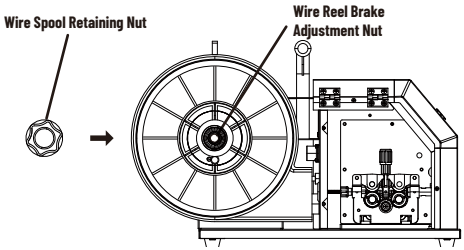


Figure 5-7: Wire Reel Brake

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 arms (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 on the front Control Panel, 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.

WARNING

Moving Parts can cause injury!

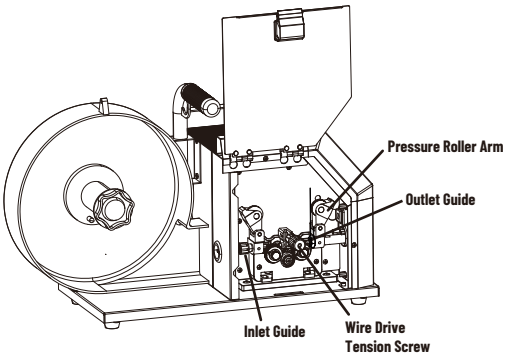


Figure 5-8: Wire Drive Assembly Components

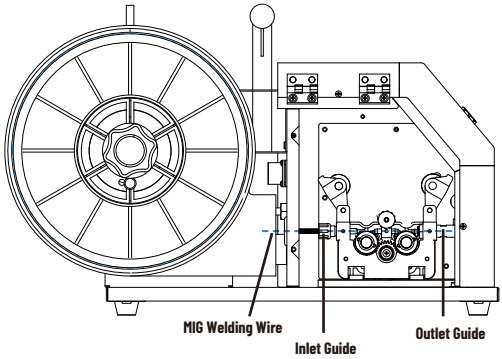


Figure 5-9: Inserting Wire into the Wire Feed Mechanism

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.

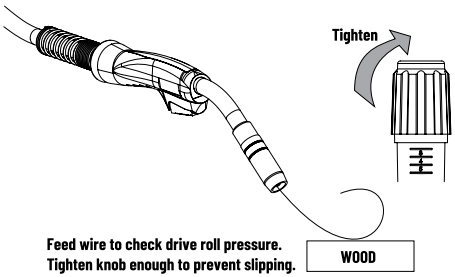


Figure 5-10: Feed Roll Pressure Adjustment

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 V groove feed roll is fitted as standard. It can accommodate 0.9/1.2mm (Steel or Stainless Steel Wires). Markings are indicated on the side edge of the feed roll, for example 0.9V, 1.2V.

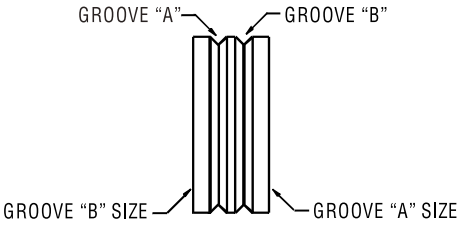


Figure 5-11: Dual Groove Feed Roll

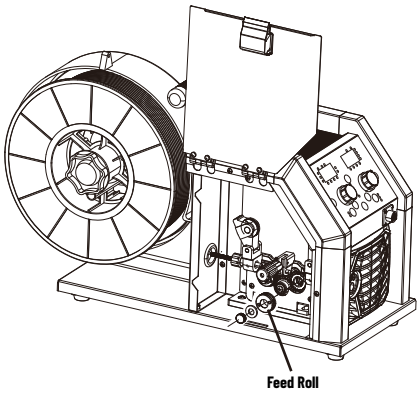


Figure 5-12: Changing the Feed Roll

WARNING

Moving Parts can cause injury!

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

A. The BlueVenom Wheeled Power Source is supplied with a MIG Gun BZ36 "Style", 4m, Euro MIG Torch that can be used with the Blue Venom 4R Rover Wirefeeder.

Connect the MIG Gun to the front of the 4R-Rover Wirefeeder as you would to the front of the BlueVenom Wheeled Power Source. Refer to Section 5.02.

Refer to Section 2.10 Optional Accessories for consumable parts to suit this MIG Gun.

B. The 4R-Rover Wirefeeder is supplied with an 8 metre Interconnection Lead assembly to connect from the rear of the 4R-Rover Wirefeeder to the front of the BlueVenom Wheeled Power Source.

C. Connect the Interconnection Lead Welding Power Cable from the Male "Welding Power"Terminal located on the Rear Panel of the 4R-Rover to the positive + terminal on the front of the BlueVenom Wheeled Power Source.

Check with wire manufacturer for recommended polarity.

D. Connect the Interconnection Lead Control Cable with 10 Pin Plug from the "Remote" 10 Pin socket on the rear of the 4R-Rover to the Wirefeeder to the 10 Pin Socket on the front of the BlueVenom Wheeled Power Source.

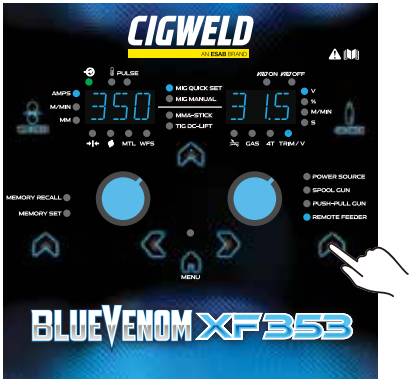
E. When using a Gas Shielded wire with the 4R-Rover Wirefeeder you need to have an external Shielding Gas source connected to the 4R-Rover via the Gas Hose included in the supplied 8m Interconnection Lead.

F. Fit the correct Feed Rolls for the Gas Shielded MIG wire being used. Refer to section 2.10 Options and Accessories for Feed Roll types and Part Numbers.

G. Place the MIG wire spool onto the spool holder. Refer to sections 5.03 for 200mm diameter spools or 5.04 for 300mm diameter spools.

H. Switch the BlueVenom Wheeled 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.

I. On the BlueVenom Wheeled Power Source press the Device Selection Button to select Remote Feeder.



Refer to the BlueVenom Wheeled Power Source Operating Manual for further details.

J. On the 4R-Rover select the Gas Shielded MIG Mode for the application. Refer to Section 4.02 (B).

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

L. 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.

M. 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

Wirefeeder settings are adjusted using the front panel controls. Refer to Section 4.02 Indicators and Controls, Section 5.14 MIG QuickSet Mode or Section 5.15 MIG Manual Mode.

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 Wirefeeder.

WARNING

Moving Parts can cause injury!

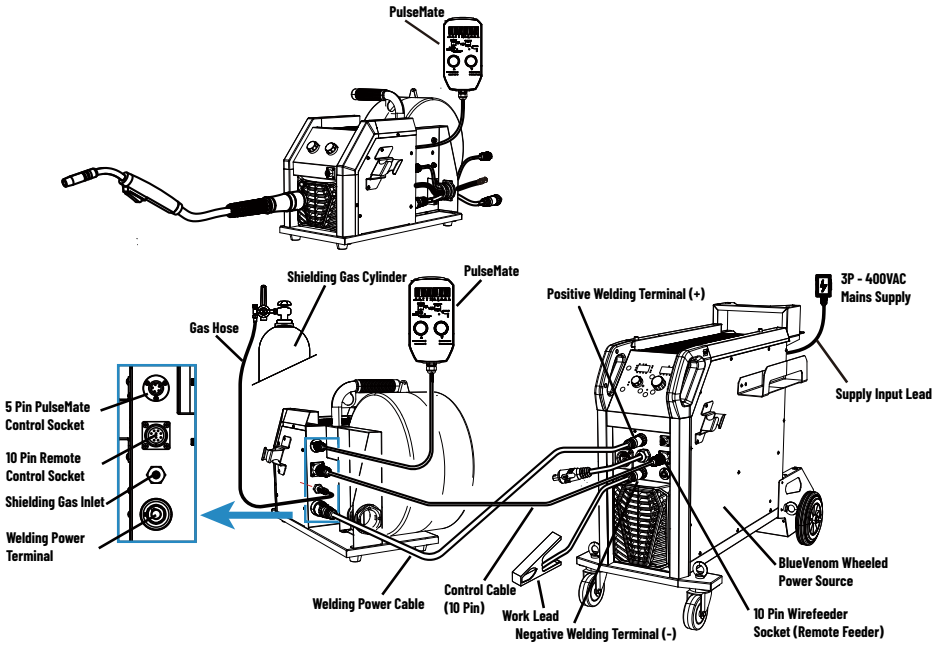


Figure 5-13: Setup for MIG Welding with Gas Shielded MIG Wire

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

A. The BlueVenom Wheeled Power Source is supplied with a MIG Gun BZ36 "Style", 4m, Euro MIG Torch that can be used with the Blue Venom 4R Rover Wirefeeder.

Connect the MIG Gun to the front of the 4R-Rover Wirefeeder as you would to the front of the BlueVenom Wheeled Power Source. Refer to Section 5.02.

Refer to Section 2.10 Optional Accessories for consumable parts to suit this MIG Gun.

B. The 4R-Rover Wirefeeder is supplied with an 8 metre Interconnection Lead assembly to connect from the rear of the 4R-Rover Wirefeeder to the front of the BlueVenom Wheeled Power Source.

C. Connect the Interconnection Lead Welding Power Cable from the Male "Welding Power" Terminal located on the Rear Panel of the 4R-Rover to the negative (-) terminal on the front of the BlueVenom Wheeled Power Source.

Check with wire manufacturer for recommended polarity.

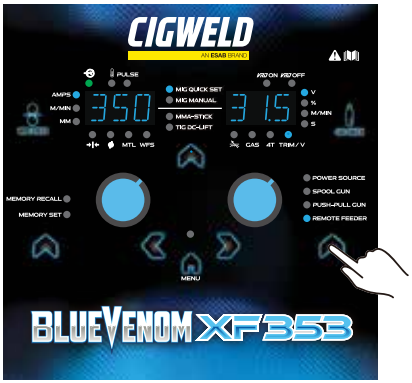
D. Connect the Interconnection Lead Control Cable with 10 Pin Plug from the "Remote" 10 Pin socket on the rear of the 4R-Rover to the Wirefeeder to the 10 Pin Socket on the front of the BlueVenom Wheeled Power Source.

E. Fit the correct V Knurled Feed Rolls for the Gasless MIG wire being used. Refer to section 2.10 Options and Accessories for Feed Roll types and Part Numbers.

F. Place the MIG wire spool onto the spool holder. Refer to sections 5.03 for 200mm diameter spools or 5.04 for 300mm diameter spools.

G. Switch the BlueVenom Wheeled 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.

H. On the BlueVenom Wheeled Power Source press the Device Selection Button to select Remote Feeder.



Refer to the BlueVenom Wheeled Power Source Operating Manual for further details.

I. On the 4R-Rover select the Gasless MIG Mode for the application. Refer to Section 4.02 (B).

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

K. 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.

NOTE
Wirefeeder settings are adjusted using the front panel controls. Refer to Section 4.02 Indicators and Controls, Section 5.14 MIG QuickSet Mode or Section 5.15 MIG Manual Mode.

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.

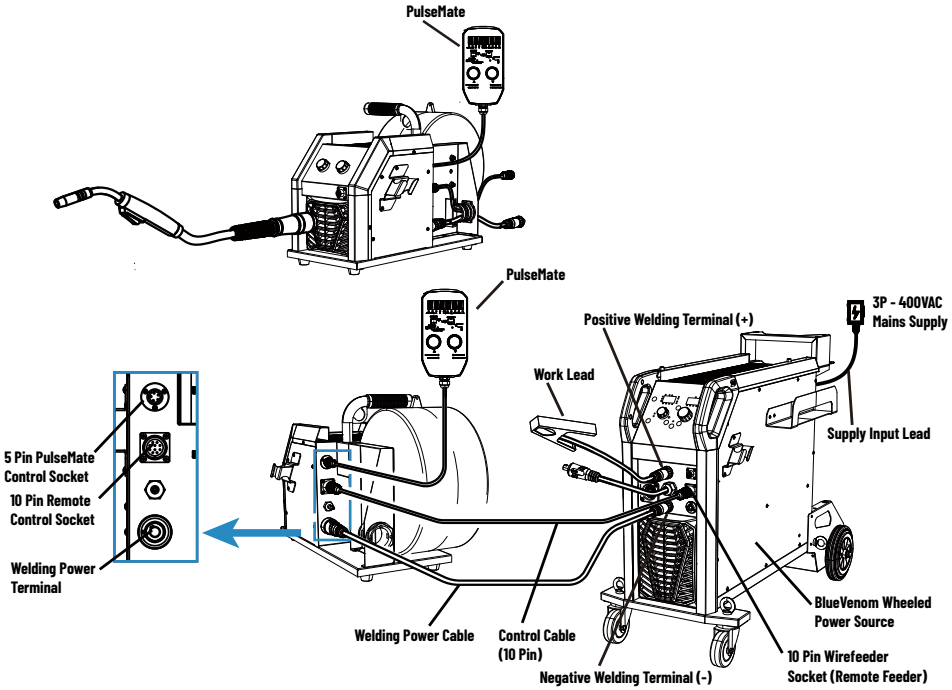


Figure 5-14: Setup for MIG Welding with Gasless MIG Wire

5.12 SETUP WITH SPOOL GUN OR PUSH-PULL GUN FOR GAS SHIELDED MIG WIRE

A. Connect the Euro MIG Spool Gun / Push-Pull Gun to the front of the 4R-Rover Wirefeeder as you would to the front of the BlueVenom Wheeled Power Source. Refer also to Section 5.02.

Connect the Spool Gun or Push Pull Gun 8 pin Control Plug to the 8 pin Remote Control Socket on the Front Panel of the Remote Feeder. Ensure 8 pin plug is correctly fitted to the 8 pin socket and the collar on plug is tightened firmly.

B. The 4R-Rover Wirefeeder is supplied with an 8 metre Interconnection Lead assembly to connect from the rear of the 4R-Rover Wirefeeder to the front of the BlueVenom Wheeled Power Source.

C. Connect the Interconnection Lead Welding Power Cable from the Male "Welding Power"Terminal located on the Rear Panel of the 4R-Rover to the positive + terminal on the front of the BlueVenom Wheeled Power Source.

Check with wire manufacturer for recommended polarity.

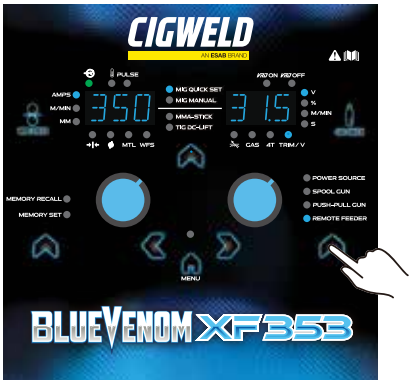
D. Connect the Interconnection Lead Control Cable with 10 Pin Plug from the "Remote" 10 Pin socket on the rear of the 4R-Rover to the Wirefeeder to the 10 Pin Socket on the front of the BlueVenom Wheeled Power Source.

E. When using a Gas Shielded wire with the 4R-Rover Wirefeeder you need to have an external Shielding Gas source connected to the 4R-Rover via the Gas Hose included in the supplied 8m Interconnection Lead.

F. Fit the correct Feed Roll in Spool Gun / Push-Pull Gun for the Gas Shielded MIG wire being used. Refer to section 2.10 Options and Accessories for Feed Roll types and Part Numbers.

G. Switch the BlueVenom Wheeled 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.

H. On the BlueVenom Wheeled Power Source press the Device Selection Button to select Remote Feeder.



Refer to the BlueVenom Wheeled Power Source Operating Manual for further details.

I. On the 4R-Rover select the Spool Gun / Push-Pull Gun Mode for the application. Refer to Section 4.02 (B).

J. Feed wire wire through the wire drive mechanism in the Spool Gun. / Feed wire through the wire drive mechanism in the push-pull Gun and Wirefeeder. Refer to section 5.07.

K. 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.

L. 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
Wirefeeder settings are adjusted using the front panel controls. Refer to Section 4.02 Indicators and Controls, Section 5.14 MIG QuickSet Mode or Section 5.15 MIG Manual Mode.

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.

WARNING
Moving Parts can cause injury!

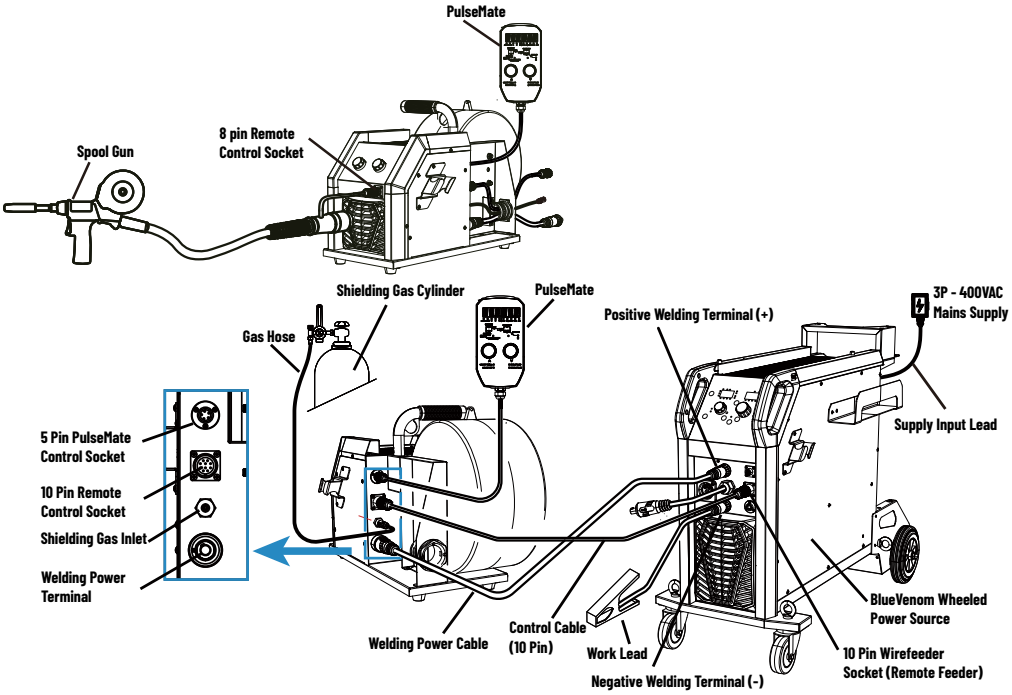


Figure 5-15: Setup with Spool Gun for Gas Shielded MIG Wire

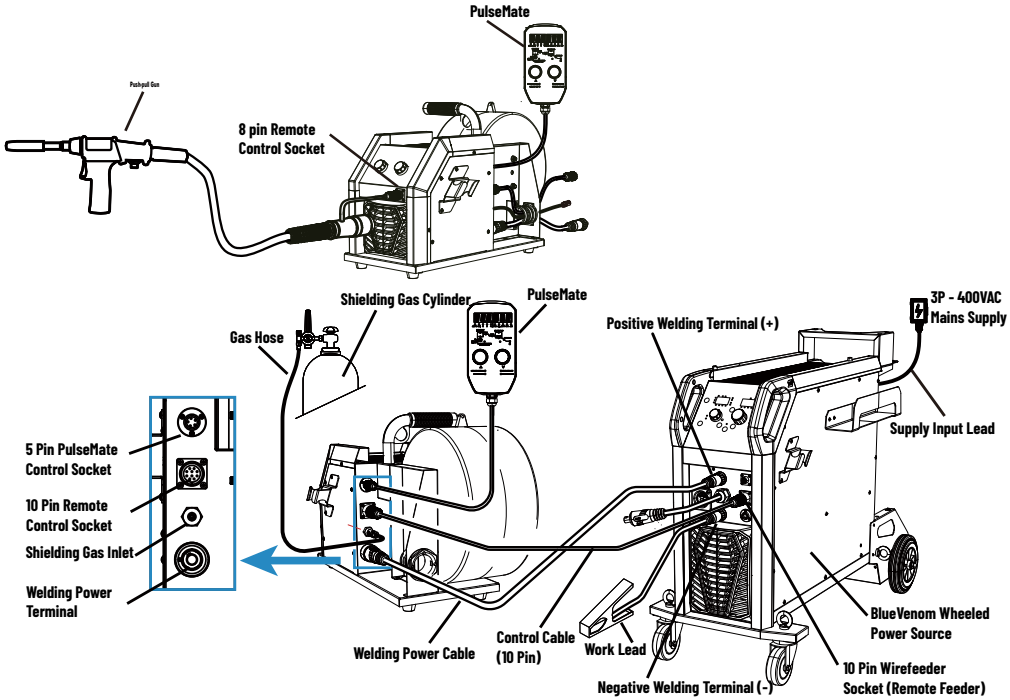


Figure 5-16: Setup with Push-Pull Gun for Gas Shielded MIG Wire

5.13 SETUP WITH SPOOL GUN FOR GASLESS MIG WIRE

A. Connect the Euro MIG Spool Gun / Push-pull Gun to the front of the 4R-Rover Wirefeeder as you would to the front of the BlueVenom Wheeled Power Source. Refer also to Section 5.02.

Connect the Spool Gun 8 pin Control Plug to the 8 pin Remote Control Socket on the Front Panel of the Remote Feeder. Ensure 8 pin plug is correctly fitted to the 8 pin socket and the collar on plug is tightened firmly.

B. The 4R-Rover Wirefeeder is supplied with an 8 metre Interconnection Lead assembly to connect from the rear of the 4R-Rover Wirefeeder to the front of the BlueVenom Wheeled Power Source.

C. Connect the Interconnection Lead Welding Power Cable from the Male "Welding Power" Terminal located on the Rear Panel of the 4R-Rover to the negative (-) terminal on the front of the BlueVenom Wheeled Power Source.

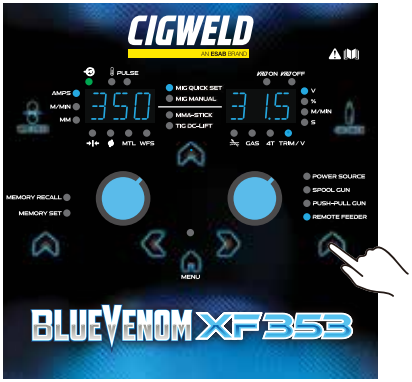
Check with wire manufacturer for recommended polarity.

D. Connect the Interconnection Lead Control Cable with 10 Pin Plug from the "Remote" 10 Pin socket on the rear of the 4R-Rover to the Wirefeeder to the 10 Pin Socket on the front of the BlueVenom Wheeled Power Source.

E. Fit the correct V Knurled Feed Rolls for the Gasless MIG wire being used. Refer to section 2.10 Options and Accessories for Feed Roll types and Part Numbers.

F. Switch the BlueVenom Wheeled 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. On the BlueVenom Wheeled Power Source press the Device Selection Button to select Remote Feeder.



Refer to the BlueVenom Wheeled Power Source Operating Manual for further details.

H. On the 4R-Rover select the Gasless MIG Mode for the application. Refer to Section 4.02 (B).

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

J. 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.

NOTE
Wirefeeder settings are adjusted using the front panel controls. Refer to Section 4.02 Indicators and Controls, Section 5.14 MIG QuickSet Mode or Section 5.15 MIG Manual Mode.

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.

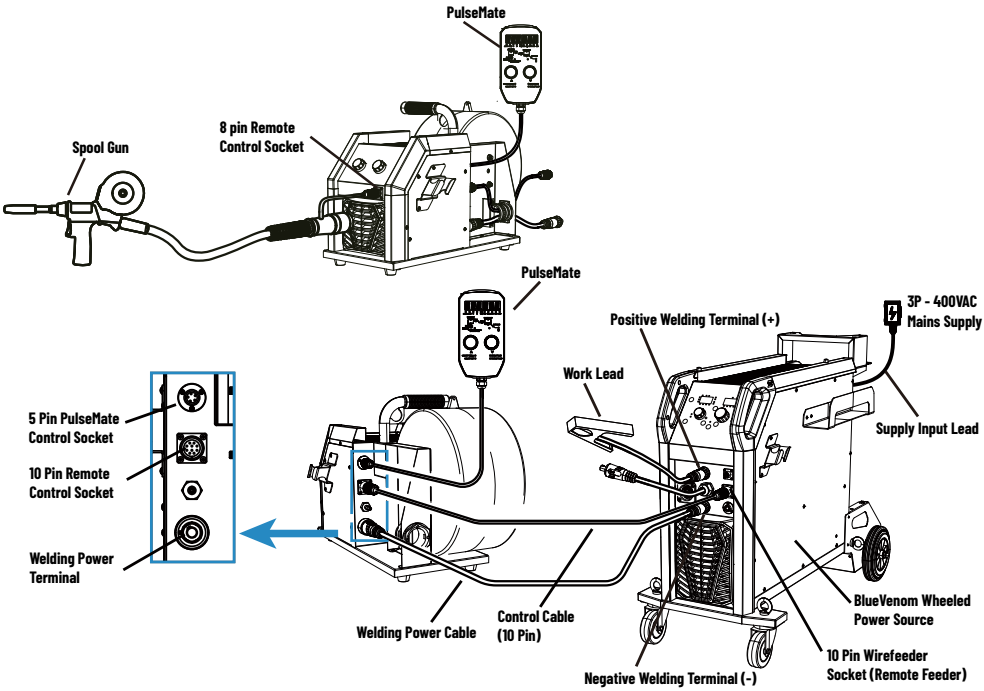


Figure 5-17: Setup with Spool Gun for Gasless MIG Wire

5.14 MIG QUICKSET MODE

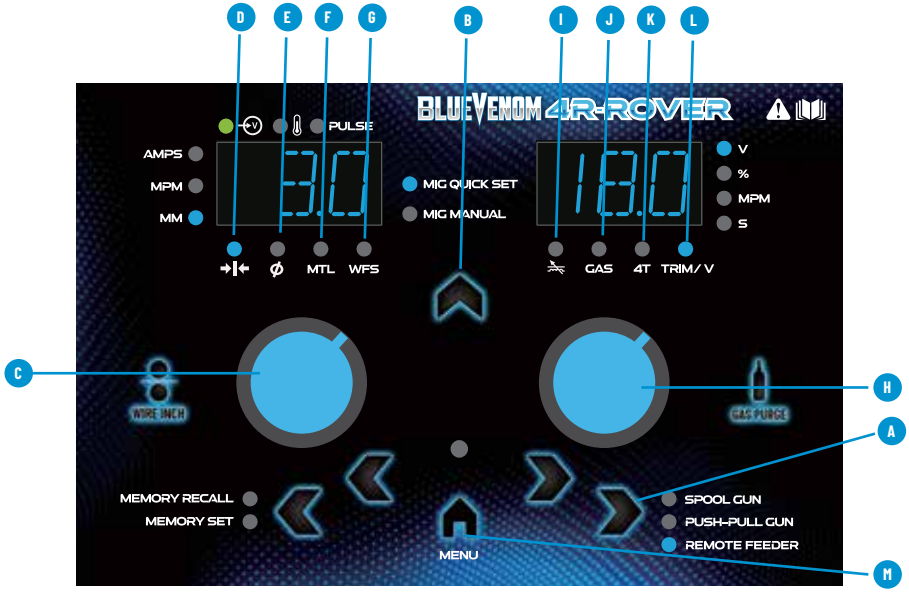


Figure 5-18: MIG QuickSet Mode

A MODE SELECTION BUTTON

Select Remote Feeder, Spool Gun or Push-Pull Gun mode.

B PROCESS SELECTION BUTTON

SELECT MIG QUICKSET MODE

QuickSet Plate Thickness, Wire Diameters or Gases available depend on options selected.

C LEFT CONTROL KNOB

PRESS TO STEP THROUGH AND SELECT OPTIONS IN MIG QUICKSET MODE

QuickSet Plate Thickness, Wire Diameter (mm) , MTL Material Type (MTL), and WFS Wire Feed Speed (WFS)

Once desired function selected use the Right Control Knob to select or turn clockwise to increase or counterclockwise to decrease value.

D QUICKSET PLATE THICKNESS INDICATOR

When illuminated the Material Plate Thickness is able to be selected. Plate Thicknesses are shown on the Digital Display. Use the Left Control Knob to select and adjust. Available Plate Thicknesses will be determined by the MIG Wire Diameter and Material Type Selected. Refer to QuickSet Programme List Page 48.

E WIRE DIAMETER INDICATOR

QuickSet wire diameters available depend on Plate Thickness and Material type selected.

F MTL MATERIAL TYPE INDICATOR

When illuminated the type of Welding Material is able to be selected. Material Types are displayed across both Digital Displays. Refer to QuickSet Programme List Page 48.

G WFS WIRE FEED SPEED

If the Welding Current is found to be too High or too Low for the application the Wire Feed Speed can be adjusted to the desired value. Once WFS function is selected by pressing the

Left Control Knob, the setting can be adjusted by turning the Left Control Knob Clockwise to increase value or turning the Control Knob Anti-clockwise to decrease the value.

If the Control Knob is turned slowly it will adjust in small increments, if turned quickly, adjust in larger increments.

Note: Adjusting Wire Feed Speed (WFS) may also change the Voltage Value Synergically.

QUICKSET PROGRAMME LIST TABLE

(MTL) MATERIAL TYPE & DIGITAL DISPLAY NAME	WIRE CLASSIFICATION	(GAS) SHIELDING GAS TYPE & DIGITAL DISPLAY NAME	WIRE DIAMETER (mm)	PLATE THICKNESS RANGE (mm)
Carbon Steel CS-MTL	ER70S-6	Argon 90% - CO2 10% AR 9010	0.6	0.6-6.0
			0.8	0.8-11.0
			0.9	0.9-13.0
			1.0	1.0-14.0
			1.2	1.2-16.0
		Argon 82% - CO2 18% AR 8218	0.8	0.8-11.0
			0.9	0.9-13.0
			1.0	1.0-14.0
			1.2	1.2-16.0
		Argon 75% - CO2 25% AR 7525	0.8	0.8-11.0
			0.9	0.9-13.0
			1.0	1.0-14.0
			1.2	1.2-16.0
Carbon Steel Gasless NO-GAS	E71T-11	NO-GAS	0.8	0.8-10.0
			0.9	0.9-12.0
			1.2	1.2-16.0
Carbon Steel Flux Cored FLX GAS	E71T-1M	Argon 82% - CO2 18% (AR8218)	1.2	1.2-16.0
Stainless Steel SS-MTL	ER316LSi	Argon 98% - CO2 2% (AR982)	0.8	0.8-10.0
			0.9	0.9-13.0
			1.0	1.0-14.0
			1.2	1.2-16.0
Aluminium 5356 AL5XXX	ER5356	Argon 100% (AR-100)	0.9	0.9-10.0
			1.0	1.0-13.0
			1.2	1.2-14.0
Aluminium 4043 AL40XX	ER4043	Argon 100% (AR-100)	1.0	1.0-13.0
			1.2	1.2-14.0
Silicon Bronze SI-BRZ	ERCuSi-A	Argon 100% (AR-100)	0.9	0.9-13.0
		Argon 90% - CO2 10% (AR9010)	1.2	1.2-14.0

* Please Note:
AL5XXX refers to AL5356 and AL5183 and other usable AL5000 series wires available on the market.
AL40XX refers to AL4043 and AL4047 and other usable AL4000 series wires available on the market.

H RIGHT CONTROL KNOB

PRESS TO STEP THROUGH SELECTIONS AND SELECT OPTIONS IN MIG QUICKSET MODE

Inductance, GAS Shielding Gas, 4T Trigger Mode (2T/4T), and TRIM / V Volts Trim.

I INDUCTANCE

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.

J GAS SHIELDING GAS (GAS)

SELECT SHIELDING GAS TYPE OR GASLESS MODE

Select the correct Shielding Gas Type depending on the MIG Wire Diameter and Material Type selected or (NO-GAS) for Gasless mode. If in doubt, consult the MIG wire manufacturer.

K 4T TRIGGER MODE

SELECT TRIGGER MODE BUTTON

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 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.

L TRIM / V VOLTS TRIM

Volts Trim format is not available in MIG Manual Mode. The LED Display will show Syn for QuickSet value for the selected Wire and Plate Thickness. 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 to display Syn to return to the QuickSet Voltage Value.

For example, if the Pre-set Voltage is 20V and in volts trim V+/- mode the setting is changed to -2.0 then the Pre-set voltage will now be 18V. If the Volts Trim V+/- is changed to 3.0 then the Pre-set Voltage will be 23V.

M MENU MENU BUTTON

PRESS THE MENU BUTTON TO ACCESS ADVANCED SETTINGS
PRE GAS (PEG)

Shielding Gas flows for the time specified before an arc is initiated.

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Pre Gas (PEG). Once selected use the Right Control Knob to set the desired value. This parameter has an adjustment range of 0 - 20 seconds.

Factory setting for Pre Gas is 0 seconds.

Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

POST GAS (PTG)

Shielding Gas flows for the time specified after an arc has extinguished.

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Post Gas (PTG). Once selected use the Right Control Knob to set the desired value. This parameter has an adjustment range of 0 - 20 seconds.

Factory setting for Post Gas is 0.5 seconds.

Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

BURNBACK (BBT)

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).

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Burnback (BBT). Once selected use the Right Control Knob to set the desired value. This parameter has an adjustment range of 0.01 – 0.5 seconds.

Factory setting for Burnback is 0.01 seconds.

Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

CRATER FILL (CRF)

The Crater Fill reduces the Welding Current (Wire Feed Feed Speed and Voltage) at the end of the weld over a period of time (user adjustable) to fill and finish the end of the weld eliminating craters from the weld .

Craters at weld ends can be a starting point for cracking.

CRATER FILL IN 2T TRIGGER MODE

When Crater Fill is turned On the operator is able to use Crater Fill to complete the weld. In Trigger 2T mode the operator can engage Crater Fill by following this procedure. Press and hold trigger to weld then release the trigger to finish the weld and within 0.4 seconds (press-release, press-hold trigger) to enable Crater Fill. Whilst the trigger is held depressed the weld will continue with the set Crater Fill parameters and will stop once the trigger is released. If Crater Fill is not required simply finish your weld by releasing the Trigger.

Note: If Crater Fill is turned ON and the weld is finished without engaging the Crater Fill trigger sequencing it will continue to weld for a period of 0.4 seconds. This time allows for Crater Fill Trigger sequencing to be engaged.

CRATER FILL IN 4T TRIGGER MODE

When Crater Fill is turned On the operator is able to use Crater Fill to complete the weld. In Trigger 4T mode the operator can engage Crater Fill by following this procedure. Press and release trigger to weld then (press-release, press-hold trigger) to enable Crater Fill. Whilst the trigger is held depressed the weld will continue with the set Crater Fill parameters and will stop once the trigger is released. If Crater Fill is not required simply finish your weld by pressing and releasing the Trigger.

Note: If Crater Fill is turned ON and the weld is finished without engaging the Crater Fill trigger sequencing it will continue to weld for a period of 0.4 seconds. This time allows for Crater Fill Trigger sequencing to be engaged.

CRATER FILL TIME (CFT)

Crater Fill Time is the time in seconds that the Crater Fill parameters ramp down to achieve Crater Fill finish at the end of the weld.

Crater Fill Time operates when Crater Fill (CRF) is ON (refer above).

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Crater Fill Time (CFT). Once selected use the Right Control Knob to set the desired value. This parameter has an adjustment range of 0.1 – 9.9 seconds.

Factory setting for Crater Fill Time is 0.5 seconds.

Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

CRATER FILL WIRE FEED SPEED (CFW)

Crater Fill Wire Feed Speed is used to set the finish wire feed speed for MIG.

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Crater Fill Wire Feed Speed (CFW). Once selected use the Right Control Knob to set the desired value. This parameter has an adjustment range of 2.0 – 18.0 metres per minute (M/Min). Factory setting for Crater Fill Wire Feed Speed is 2.5 metres per minute (M/Min).

Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

CRATER FILL VOLTAGE (CFU)

Crater Fill Voltage is used to set the finish voltage for MIG.

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Crater Fill Voltage (CFU). Once selected use the Right Control Knob to set the desired value. This parameter has an adjustment range of 13.0 – 40.0 Volts. Factory setting for Crater Fill Voltage is 14.0 Volts.

Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

RUN IN (RIN)

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Run In (RIN). Once selected use the Right Control Knob to set the desired value. This parameter is adjusted as a Percentage % of the Set Wire Feed Speed. Adjustment Range is 1 – 100%. Factory setting for Run In is 100%.Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

The user can set the MIG wire Run In speed before the Arc is initiated. Once the Arc is initiated the MIG Wire Speed will revert to the user set Wire Feed Speed (WFS) setting.

SPOT WELDING MODE (SPT)

Spot welding is used to weld two thin plates together at a desired location by melting the top and bottom plates together to form a nugget between them.

Operates in Trigger 2T mode only.

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Spot Welding Mode (SPT). Once selected use the Right Control Knob to set the desired value. This parameter has an adjustment range of 0 – 5.0 seconds. Factory setting for Spot Time is 0 seconds.

Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

5.15 MIG MANUAL MODE

Figure 5-19: MIG Manual Mode

A MODE SELECTION BUTTON

Select Remote Feeder, Spool Gun or Push-Pull Gun mode.

B PROCESS SELECTION BUTTON

Select MIG Manual mode.

C LEFT CONTROL KNOB

PRESS TO STEP THROUGH AND SELECT OPTIONS IN MIG MANUAL MODE

Turn clockwise to increase or counterclockwise to decrease WFS Wire Feed Speed (WFS) value.

D RIGHT CONTROL KNOB

PRESS TO STEP THROUGH SELECTIONS AND SELECT OPTIONS IN MIG MANUAL MODE

Inductance, 4T Trigger Mode (2T/4T), and TRIM / V Volts Trim.

INDUCTANCE

The Inductance (arc) control operates in MIG (GMAW) modes The Inductance (arc) control operates in MIG (GMAW) modes only and is used to adjust the intensity of the welding arc. Higher arc control settings make the arc softer with less weld spatter. Lower 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.

4T TRIGGER MODE

SELECT TRIGGER MODE BUTTON

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 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.

V VOLTS INDICATOR

When illuminated the Value showing on the Right Hand Digital Display is Volts.

MPM MPM INDICATOR

When illuminated WFS (Wire Feed Speed) is selected and the value showing on the Right Hand Digital Display is MPM (Metres Per Minute).

E MENU MENU BUTTON

PRESS THE MENU BUTTON TO ACCESS ADVANCED SETTINGS

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings. Use the Right Control Knob to set values.

PRE GAS (PEG)

Shielding Gas flows for the time specified before an arc is initiated.

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Pre Gas (PEG). Once selected use the Right Control Knob to set the desired value. This parameter has an adjustment range of 0 - 20 seconds.

Factory setting for Pre Gas is 0 seconds.

Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

POST GAS (PTG)

Shielding Gas flows for the time specified after an arc has extinguished.

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Post Gas (PTG). Once selected use the Right Control Knob to set the desired value. This parameter has an adjustment range of 0 - 20 seconds.

Factory setting for Post Gas is 0.5 seconds.

Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

BURNBACK (BBT)

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).

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Burnback (BBT). Once selected use the Right Control Knob to set the desired value. This parameter has an adjustment range of 0.01 – 0.5 seconds.

Factory setting for Burnback is 0.01 seconds.

Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

CRATER FILL (CRF)

The Crater Fill reduces the Welding Current (Wire Feed Feed Speed and Voltage) at the end of the weld over a period of time (user adjustable) to fill and finish the end of the weld eliminating craters from the weld .

Craters at weld ends can be a starting point for cracking.

CRATER FILL IN 2T TRIGGER MODE

When Crater Fill is turned On the operator is able to use Crater Fill to complete the weld. In Trigger 2T mode the operator can engage Crater Fill by following this procedure. Press and hold trigger to weld then release the trigger to finish the weld and within 0.4 seconds (press-release, press-hold trigger) to enable Crater Fill. Whilst the trigger is held depressed the weld will continue with the set Crater Fill parameters and will stop once the trigger is released. If Crater Fill is not required simply finish your weld by releasing the Trigger.

Note: If Crater Fill is turned ON and the weld is finished without engaging the Crater Fill trigger sequencing it will continue to weld for a period of 0.4 seconds. This time allows for Crater Fill Trigger sequencing to be engaged.

CRATER FILL IN 4T TRIGGER MODE

When Crater Fill is turned On the operator is able to use Crater Fill to complete the weld. In Trigger 4T mode the operator can engage Crater Fill by following this procedure. Press and release trigger to weld then (press-release, press-hold trigger) to enable Crater Fill. Whilst the trigger is held depressed the weld will continue with the set Crater Fill parameters and will stop once the trigger is released. If Crater Fill is not required simply finish your weld by pressing and releasing the Trigger.

Note: If Crater Fill is turned ON and the weld is finished without engaging the Crater Fill trigger sequencing it will continue to weld for a period of 0.4 seconds. This time allows for Crater Fill Trigger sequencing to be engaged.

CRATER FILL TIME (CFT)

Crater Fill Time is the time in seconds that the Crater Fill parameters ramp down to achieve Crater Fill finish at the end of the weld.

Crater Fill Time operates when Crater Fill (CRF) is ON (refer above).

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Crater Fill Time (CFT). Once selected use the Right Control Knob to set the desired value. This parameter has an adjustment range of 0.1 – 9.9 seconds.

Factory setting for Crater Fill Time is 0.5 seconds.

Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

CRATER FILL WIRE FEED SPEED (CFW)

Crater Fill Wire Feed Speed is used to set the finish wire feed speed for MIG.

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Crater Fill Wire Feed Speed (CFW). Once selected use the Right Control Knob to set the desired value. This parameter has an adjustment range of 2.0 – 18.0 metres per minute (M/Min). Factory setting for Crater Fill Wire Feed Speed is 2.5 metres per minute (M/Min).

Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

CRATER FILL VOLTAGE (CFU)

Crater Fill Voltage is used to set the finish voltage for MIG.

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Crater Fill Voltage (CFU). Once selected use the Right Control Knob to set the desired value. This parameter has an adjustment range of 13.0 – 40.0 Volts. Factory setting for Crater Fill Voltage is 14.0 Volts.

Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

RUN IN (RIN)

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Run In (RIN). Once selected use the Right Control Knob to set the desired value. This parameter is adjusted as a Percentage % of the Set Wire Feed Speed. Adjustment Range is 1 – 100%. Factory setting for Run In is 100%.Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

The user can set the MIG wire Run In speed before the Arc is initiated. Once the Arc is initiated the MIG Wire Speed will revert to the user set Wire Feed Speed (WFS) setting.

SPOT WELDING MODE (SPT)

Spot welding is used to weld two thin plates together at a desired location by melting the top and bottom plates together to form a nugget between them.

Operates in Trigger 2T mode only.

Press the Menu Button then the Forward and Back Menu Arrow Buttons to cycle through the Advanced Settings until reaching Spot Welding Mode (SPT). Once selected use the Right Control Knob to set the desired value. This parameter has an adjustment range of 0 – 5.0 seconds. Factory setting for Spot Time is 0 seconds.

Once set exit Advanced Settings by pressing the Menu Button and the Menu indicator will turn off.

5.16 QUICKSET MIG AND MANUAL MIG MODES

QuickSet MIG Mode in 4 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 Material Type, Shielding Gas Type or Gasless (if applicable), MIG Wire Diameter 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 WFS WFS Wire Feed Speed must be manually set. Refer to Section 5.15.

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

Changing the Power Source MIG Gun Polarity in MIG Mode.

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

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

1. The Power Source MIG Gun Polarity Lead must be connected to the Positive (+) Terminal on the front panel 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 Power Source front panel socket and then tighten it clockwise. Connect the clamp to the work piece.

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

1. The Power Source MIG Gun Polarity Lead must be connected to the Negative (-) Terminal on the front panel 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.

MANUAL SETTINGS IN MIG (VOLTAGE & WIRE FEED SPEED)

Wirefeeder setting requires some practice by the operator, (however with the QuickSet feature of the 4R-Rover, setting up the correct parameters is a very simple procedure - refer to sections 5.14 and 5.15), as the wirefeeder 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 slightly alters the current level, but mainly 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 (which sounds like sizzling steak on a barbecue). 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

5.18 **OPTIONAL ADD-ON DEVICES**

Refer to Section 2.10 Optional Accessories for Part Numbers.
For further information on these Add-On Devices refer to their respective Operating Manuals or Cigweld.com.au

Figure 5-20: Optional Add-on Devices

5.19 CIGWELD MIG WIRE SELECTION CHART

CLASS. AUS/ NZ STD (NEW)	CLASS. AWS STD	DESCRIPTION	DIA (mm)	PACK	P/N:	APPLICATION
B G 49A 3U C1/M21/M24 S6	ER70S-6	WELDSKILL SOLID WELDING WIRE	0.6	Handispool 5kg	WS5006	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.
		AUTOCRAFT LW1-6	0.8	Handispool 5kg	721109	Autocraft LW1-6 is a high quality copper coated welding wire suitable for the all positional Gas Metal Arc Welding (GMAW) of mild and low alloy steels, used in general fabrication and structural work. The high quality copper coating ensures problem free feeding, smooth current pick-up and minimal contact tip wear. The higher silicon content of Autocraft LW1-6 ensures excellent operator appeal, improved fillet shape / side wall wash at weld toes and very low spatter levels important for welding light to medium gauge sheet and tubular steel sections.
			0.8	Spool 15kg	720114	
			0.9	Handispool 5kg	720161	
			0.9	Spool 15kg	720090	
			1.0	Spool 15kg	720094	
			1.2	Spool 15kg	720096	
B T 49 Z T11 1 NA	E71T-11	WELDSKILL GASLESS WELDING WIRE	0.8	Handispool 5kg	WG4508	Self-shielded flux cored wire. For single pass applications only. Versatile, all positional capabilities. Excellent tolerance to joint misalignment or poor joint fit-up. Smooth rippled fillets with good edge wetting. Ideal for welding thin section mild and galvanised steels.
			0.9	Handispool 5kg	WG4509	
			1.2	Handispool 5kg	WG4512	
B T 49 2 T1 C A U H10; B T 49 2 T1 M A U H10	E71T-1M H8; E71T-1 H8	VERTI-COR XP	1.2	Spool 15kg	720915	Low cost and great quality, Verti-Cor XP is a versatile rutile type flux cored wire designed for all positional fillet and butt welding applications using Argon + 18-25% CO2 and CO2 shielding gases. Verti-Cor XP is characterised by its smooth transfer arc characteristic and all positional capabilities while offering smooth genuine mitre fillets in all positions. Vacuum packed
B T 49 3 T12 1 C A U H10; B T 49 3 T12 1 M A U H10	E71T-1 H8	VERTI-COR 3XP H4	1.2	Spool 15kg	720919	Verti-Cor 3XP is a Grade 3 micro-alloyed Rutile type flux cored wire designed for downhand, vertical-up and overhead fillet and butt welding applications. A micro-alloyed, Rutile type fluxed cored wire. Versatile, all positional capabilities, Excellent operator appeal, Formulated to give smooth(low spatter) arc transfers, flat mitre filled welds and excellent slag lift in all positions (except vertical-down), on a wide range of mild and medium strength steels
B T 49 3 T15 0 M A U H5; A T 42 3 M M21 3 H5	E70C-6M H4	METAL-COR 3	1.2	Spool 15kg	722909	Metal-Cor 3 is a next generation metal cored wire offering the operator appeal of a metal cored wire with deposition rates similar to that of solid wire and combining impressive low temperature impact values comparable to those of a Grade 3 wire. Metal-Cor 3 offers a wide range of operating parameters and is ideal for high productivity welding of mild and medium strength carbon steels. Metal-Cor 3 produces low fume levels, low spatter and excellent edge wetting for outstanding operator appeal.

CLASS. AUS/ NZ STD (NEW)	CLASS. AWS STD	DESCRIPTION	DIA (mm)	PACK	P/N:	APPLICATION
B SS309LSi.	ER309LSi	AUTOCRAFT 309LSI	0.9	Spool 15kg	721276	Autocraft 309LSi is a premium quality, low carbon 24% Cr/13% Ni stainless steel wire for the Gas Metal Arc Welding (GMAW) of matching 309L type stainless steel. Autocraft 309LSi is also suitable for a wide range of other welding applications including: The dissimilar joining of "300 series" and selected "400series" stainless steel grades to mild or low alloy steels, An intermediate or buttering layer in the butt welding of clad steels, A stainless steel overlay on mild or low alloy steel, A 'buttering' layer prior to hardfacing.
			1.2	Spool 15kg	721277	
B SS316LSi	ER316LSi	AUTOCRAFT 316LSI	0.8	Handispool 5kg	720288	Autocraft 316LSi is a premium quality, low carbon 19% Cr/13% Ni / 2.5Mo stainless steel wire for the Gas Metal Arc Welding (GMAW) of Molybdenum bearing stainless steels; in particular 316, 318 and 316L alloys. Autocraft 316LSi is also suitable for the general welding of other 300 and 400 series stainless steels including 301, 302, 304/304L, 321, 347, 410 and 430.
			0.9	Handispool 5kg	720283	
			0.9	Spool 15kg	721286	
			1.2	Spool 15kg	721287	
S Al 5183	ER5183	AUTOCRAFT 5183	1.0	Spool 7kg	722239	Autocraft AL5183XP is a premium quality Aluminium welding wire that is typically used in the marine and structured industries, where higher strength and good fracture toughness is required. Autocraft AL5183XP is ideally suited to the welding of Alloy 5083. Autocraft AL5183XP is not suitable for heat treatment.
			1.2	Spool 7kg	722240	
		AUTOCRAFT 5183XP	1.2	Spool 7kg	722245	
S Al 5356	ER5356	AUTOCRAFT AL5356	0.9	Spool 7kg	722226	Autocraft AL5356 is a premium quality, Aluminium - nominal 5% Magnesium alloy suitable for the Gas Metal Arc Welding (GMAW) of a wide range of cast and wrought Aluminium alloys. Autocraft AL5356 is the most popular Aluminium alloy in the CIGWELD range. It produces intermediate deposit strength and good ductility and corrosion resistance for the GMA welding of a wide range of 3XXX, 5XXX, 6XXX and 5XX Aluminium alloys.
			1.0	Handispool 2kg	723224	
			1.0	Spool 7kg	722224	
			1.2	Spool 7kg	722227	
–	ERCuSi-A	AUTOCRAFT SILICON BRONZE	0.8	Handispool 5kg	720159	Autocraft Silicon Bronze is a Copper based wire recoended for the Gas Metal Arc Welding (GMAW) of Copper-Silicon alloys used extensively in hot water systems, heat exchangers, calorifiers and marine components for their corrosion resistance. Autocraft Silicon Bronze is highly recoended for the fillet welding of galvanised steels and irons and for the lower strength 'brazing' of light gauge steel sections as used in the automotive industry. It is also suitable for the MIG welding of Copper-Zinc alloys to themselves and to steels.
			0.9	Spool 13kg	720015	
			1.2	Spool 13kg	720255	

5.20 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 Wirefeeder.
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 2.10 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	**A** Decrease voltage or increase the Wire Feed Speed.
	B Incorrect gun angle	**B** Adjust angle.
	C Excessive heat input	**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	**A** Increase welding current by increasing Wire Feed Speed and increasing voltage.
	B Joint preparation too narrow or gap too tight	**B** Increase joint angle or gap.
	C Incorrect shielding gas	**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	**A** Decrease voltage or increase the Wire Feed Speed control.
	B Voltage too low	**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.	**A** Adjust voltage and current by adjusting the voltage control and the Wire Feed Speed control.
	B Wire is wandering.	**B** Replace contact tip.
	C Incorrect shielding gas	**C** Check shielding gas.
	D Insufficient or excessive heat input	**D** Adjust the Wire Feed Speed control or the voltage control.
6 Weld cracking	**A** Weld beads too small	**A** Decrease travel speed.
	B Weld penetration narrow and deep	**B** Reduce current and voltage and increase MIG Gun travel speed or select a lower penetration shielding gas.
	C Excessive weld stresses	**C** Increase weld metal strength or revise design.
	D Excessive voltage	**D** Decrease voltage.
	E Cooling rate too fast	**E** Slow the cooling rate by preheating part to be welded or cool slowly.
7 Cold weld puddle	**A** Loose welding cable connection.	**A** Check all welding cable connections.
	B Low primary voltage	**B** Contact supply authority.
	C Fault in power source	**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.

5.21 MIG (GMAW) WELDING PROBLEMS

	PROBLEM		CAUSE		REMEDY
1	Mains Supply Voltage is connected to the Power Source, the On/Off switch on the rear panel of the Power Source is in the On position, the Power Source Front Panel Digital Display is illuminated and the Remote Feeder is correctly connected however there are only Dashes displayed on the Remote Feeder Front Digital Displays and it will not MIG weld.		Power source is not in the correct mode of operation for the Remote Feeder.	A	Set the power source to Remote Feeder mode. Refer to Section 4.02 D.
2	Mains Supply Voltage is connected to the Power Source, the On/ Off switch on the rear panel of the Power Source is in the On position, the Power Source Front Panel Digital Display is illuminated and the Remote Feeder Front Digital Display is illuminated and functional but will not MIG weld.	A	Power Source MIG Gun Polarity Lead is not connected	A	Connect the Power Source MIG Gun Polarity Lead to the positive or negative output terminal. Refer to Section 5.17. or Setups for MIG Welding Sections 5.10 – 5.13.
		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. Refer to Setups for MIG Welding Section 5.10 - 5.13.
		C	MIG Gun is not correctly connected to the Euro Style MIG Gun Adaptor.	C	Ensure that the MIG Gun is correctly connected to the Euro Style MIG Gun Adaptor. Refer to Section 4.01.3 & 5.02.
3	Mains Supply Voltage is connected to the Power Source, the On/Off switch on the rear panel of the Power Source is in the On position, the Power Source Front Panel Digital Display is illuminated but the Remote Feeder Front Digital Display is Not illuminated and will not MIG weld.		10 Pin Interconnection Lead Control Plugs are not connected correctly.		Check the 10 Pin Control Plug connections at both the Power Source Socket and the Remote Feeder Sockets are connected correctly and firmly. Refer to Setups for MIG Welding Section 5.10 - 5.13.
4	When welding at maximum output (WFS and Volts) the machine stops welding.	A	When output amperage exceeds the rated maximum output of the machine the welding machine will sense this and initiates a safety circuit which stops the output current and displays an Output Over Current Error Code 08. Refer to Section 6.06 Error Codes 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

PROBLEM		CAUSE		REMEDY
5	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 2.10 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.
6	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.
7	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 4.10.3.
		B	Poor or no work lead contact.	**B**	Clean work clamp area and ensure good electrical contact.
8	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.
9	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.
10	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:
ROUTINE SERVICE REQUIREMENTS AND POWER SOURCE PROBLEMS

6.01 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.

6.02 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.

6.03 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.

6.04 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 Wirefeeder 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.

6.05 RESTORE FACTORY DEFAULT SETTINGS

The BLUEVENOM 4R-ROVER can have Factory Default Settings restored.

To reset to factory settings hold the Memory and Device Buttons depressed at the same time until a series of dashes display onboth of the Front Digital Displays indicating that a Factory Reset has been completed.

Figure 6-1: Restore to Factory Default Settings

6.06 BLUEVENOM 4R-ROVER ERROR CODES

ERROR CODE	CAUSE	REMEDY
	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 the Power Source front and rear Panel Air Louvers 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 Power Source fan is running normally during welding. If the Power Source fan is not running during welding it may be faulty and need replacing. Contact an Accredited CIGWELD Service Provider. Note the BlueVenom 4 Wheeled Power Source has Fan on Demand fitted. Refer to Power Source Operating Manual for details.
	MIG gun Trigger Signal Issue	**A** Check that the Torch Trigger Switch is not pressed. **B** MIG Gun Trigger leads or switch shorted. Turn Off the Power Source and repair or replace Torch lead or switch. **C** If Error Code is still present on the Display contact an accredited Cigweld Service Provider.
	Output Over Current	**A** Set the output current according to the Power Source Rating Label located on the Rear Panel of Power Source. **B** If Error Code is still present on the Display contact an accredited CIGWELD Service Provider.
	Output Short Circuit	**A** Check that MIG Wire is not short circuited to the workpiece. **B** If Error Code is still present on the Display contact an Accredited Cigweld Service Provider.

ERROR CODE	CAUSE	REMEDY
	Wirefeed Motor Overload	**A** MIG wire jammed in conduit liner or contact tip. (burn-back jam). Check for clogged / kinked MIG torch conduit liner or worn contact tip. Replace faulty components. **B** Check Feed Roll Pressure adjustment and adjust if necessary. Refer to Section 5.08. **C** Check Wire Reel Brake setting and adjust if necessary. Refer to Section 5.06. **D** If Error Code is still present on the Display contact an Accredited Cigweld Service Provider.
	Loss of Supply Phase	**A** Check the Power Source Supply Plug is correctly connected to the Supply Socket. **B** Check the Power Source Supply Lead is not damaged. If damaged turn off the supply and contact an Accredited Cigweld Service Provider. **C** If Error Code is still present on the Display contact an Accredited Cigweld Service Provider.

SECTION 7:
KEY SPARE PARTS

7.01 BLUEVENOM 4R-ROVER KEY SPARE PARTS

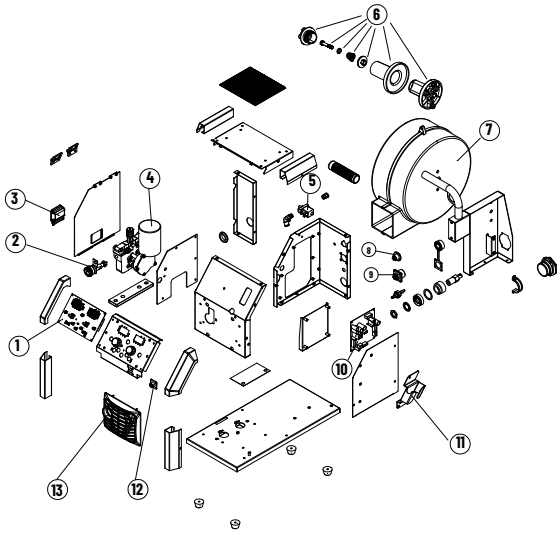


Figure 7-1: BLUEVENOM 4R-ROVER Key Spare Parts

BLUEVENOM 4R-ROVER KEY SPARE PARTS

ITEM	PART NUMBER	DESCRIPTION
1	W7007488	PCB Display
2	W7007472	Euro MIG Adaptor
3	W7007471	Door Latch
4	W7006662	Wire Drive Assembly
5	W7007474	Gas Solenoid Valve
6	W7007473	Spool Hub Assembly
7	W7007489	Spool Cover Assembly

ITEM	PART NUMBER	DESCRIPTION
8	W7007483	Control Socket 5 Pin c/w wiring
9	W7007484	Control Socket 10 Pin c/w wiring
10	W7007490	PCB Control
11	W7007491	MIG Gun Holder
12	W7007485	Control Socket 8 Pin c/w wiring
13	W7007492	Front Louvre Panel

APPENDIX 1:
BLUEVENOM 4R-ROVER CIRCUIT DIAGRAM

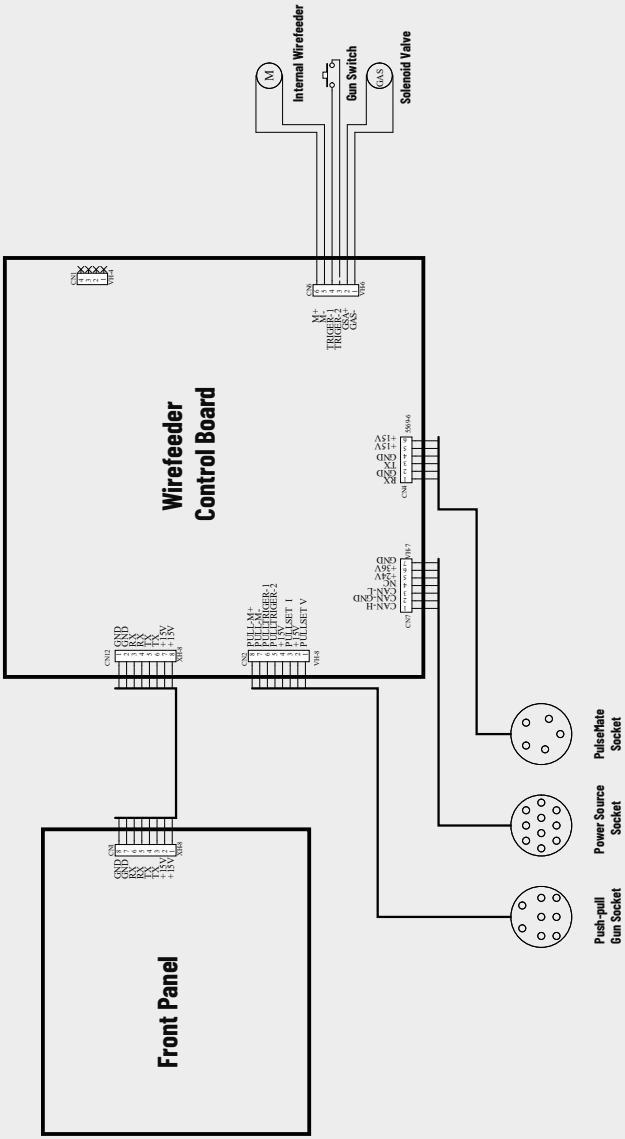


Figure A-1: BLUEVENOM 4R-ROVER Circuit Diagram

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. Notwithstanding 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.
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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 4R-ROVER WIREFEEDER

WARRANTY	WARRANTY PERIOD (PARTS AND LABOUR)
BLUEVENOM 4R-ROVER Wirefeeder	3 Years

ACCESSORIES	WARRANTY PERIOD
8m Interconnection Lead	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.

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CIGWELD

AN **ESAB** BRAND

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In the interest of continuous improvements, CIGWELD Pty Ltd ABN 56 007 226 815 (An ESAB Brand) reserves the right to change specifications or design on any of its products without prior notice.