

CIGWELD

AN ESAB BRAND



DESIGNED
& TESTED
IN AUSTRALIA
FOR OVER 100 YEARS

BLUEVENOM PULSEMATE

REMOTE PULSE PENDANT

MIG

SINGLE AND DOUBLE PULSE



FOR USE WITH
BLUEVENOM
WHEELED POWER
SOURCES
AND 4R-ROVER
WIREFEEDER



OPERATING MANUAL

PULSEMATE, P/N: W4200PM1

SYNERGIC MIG
SINGLE & DOUBLE PULSE*

QUICKSET
PLATE THICKNESS CONTROL

MEMORY FUNCTION
FOR WELD REPEATABILITY

2 YEAR*
WARRANTY

CIGWELD

AN ESAB BRAND

WE APPRECIATE YOUR BUSINESS!

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

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

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

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 If you are ever in doubt about what you see or read in this manual with the product you received, then check for a newer version of the manual on our website or contact our customer support for assistance.

YOU ARE IN GOOD COMPANY!

The Brand of Choice for Contractors and Fabricators Worldwide.

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

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

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



**DESIGNED
& TESTED
IN AUSTRALIA
FOR OVER 100 YEARS**



WARNING

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

CIGWELD BLUEVENOM PULSEMATE OPERATING MANUAL NUMBER 0-5712 FOR: PART NUMBER W4200PM1

Published by:



CIGWELD Pty Ltd
CIGWELD An ESAB Brand

71 Gower Street, Preston VIC 3072 Australia

CUSTOMER CARE:

Tel: 1300 654 674 | Intl Tel: +61 3 9474 7400

Email: enquiries@cigweld.com.au

| [CIGWELD.COM.AU](https://www.cigweld.com.au)

© Copyright 2023 CIGWELD Pty Ltd
All rights reserved.

Reproduction of this work, in whole or in part, without written permission of the publisher is prohibited.

The publisher does not assume and hereby disclaims any liability to any party for any loss or damage caused by any error or omission in this Manual, whether such error results from negligence, accident, or any other cause.

For Printing Material Specification refer to document 47x1915.
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 O-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

Arc Welding Accessory

TYPE DESIGNATION

BLUEVENOM PulseMate Pendant with serial number from: GC344 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

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
2024-21-03

SIGNATURE

Jarrod Brennan
Managing Director

THE FOLLOWING HAS BEEN USED IN THE DESIGN:

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

ADDITIONAL INFORMATION:

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

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 RELATED PRODUCTS 17

SECTION 3:

INSTALLATION 18

- 3.01 ENVIRONMENT 18
- 3.02 LOCATION 18
- 3.03 VENTILATION 18
- 3.04 ELECTROMAGNETIC COMPATIBILITY 18

SECTION 4:

PULSEMATE OPERATION 20

- 4.01 PULSEMATE CONNECTION TO XF353 POWER SOURCE 20
- 4.02 PULSEMATE CONNECTION TO 4R-ROVER WIREFEEDER 21
- 4.03 INTRODUCTION TO PULSE MIG WELDING 22
- 4.04 SINGLE PULSE AND DOUBLE PULSE EASY STEP SETUP GUIDE 23
- 4.05 INDICATORS AND CONTROLS 24

SECTION 5:

PULSEMATE MAGNETIC STAND 31

- 5.01 PULSEMATE MAGNETIC STAND 31
- 5.02 PULSEMATE REPLACEMENT PARTS 31

SECTION 6:

BLUEVENOM XF353 POWER SOURCE OPTIONAL ADD-ON DEVICES 32

- CIGWELD - LIMITED WARRANTY TERMS 34
- WARRANTY SCHEDULE - BLUEVENOM XF353 INVERTER 35



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 (GMAW) (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
	Greater than 350	14
Gas Tungsten Arc Welding (GTAW) (TIG)	Less than or equal to 100	10
	100 to 200	11
	200 to 250	12
	250 to 350	13
	Greater than 350	14
Flux-cored Arc Welding (FCAW) - with or without shielding gas	Less than or equal to 300	11
	300 to 400	12
	400 to 500	13
	Greater than 500	14
Air - Arc Gouging	Less than or equal to 400	12
Plasma - Arc Cutting	50 to 100	10
	100 to 400	12
	400 to 800	14
Plasma - Arc Spraying	—	15
Plasma - Arc Welding	Less than or equal to 20	8
	20 to 100	10
	100 to 400	12
	400 to 800	14
Submerged - Arc Welding	—	2(5)
Resistance Welding	—	Safety Spectacles or eye shield

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

FUMES AND GASES



WARNING
FUMES & GASES CAN BE HAZARDOUS TO YOUR HEALTH.

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

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

WELDING



WARNING
WELDING CAN CAUSE FIRE OR EXPLOSION.

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

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

FLYING SPARKS AND HOT METAL



WARNING

FLYING SPARKS & HOT METAL CAN CAUSE INJURY.

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

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

CYLINDERS



WARNING

CYLINDERS CAN EXPLODE IF DAMAGED.

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

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

MOVING PARTS



WARNING

MOVING PARTS CAN CAUSE INJURY.

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

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



WARNING

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



NOTE

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



WARNING

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

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

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

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

1.02 PRINCIPAL SAFETY STANDARDS

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

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

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

Welding Processes, Code of Practice, JULY 2020 - Safe Work Australia. This document provides "Practical guidance on how to manage health and safety risks associated with welding".

The latest version is available free of charge at:

<https://www.safeworkaustralia.gov.au/doc/model-code-practice-welding-processes>.

Other International Standards and Codes of Practice

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

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

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

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

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

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

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

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

SECTION 2: INTRODUCTION

2.01 HOW TO USE THIS MANUAL

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

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

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

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

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

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

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

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

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

2.02 EQUIPMENT IDENTIFICATION

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

2.03 RECEIPT OF EQUIPMENT

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

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

2.04 SYMBOL CHART

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

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

2.05 DESCRIPTION

OK, so you have in your possession the All-New, ever so versatile, BlueVenom XF353 Power Source and/or 4R-ROVER and now you're-thinking "How do I get TIG likewelds from this beast?" the answer: with the new BlueVenom PulseMate Pendant, you can!

You can connect the hand-held PulseMate Pendant equipped with 8m of lead into either the XF353 Power Source or 4R-ROVER Wirefeeder to activate MIG Single and Double Pulse giving you TIG like looking welds through our simple yet intuitive Simple Pulse MIG system!

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 PULSEMATE PACKAGE (Part No: W4200PM1)

- BlueVenom PulseMate Single & Double Pulse Pendant with 8m Lead
- PulseMate 'MAG-STAND' Holder
- Feed Roller 1.0/1.2mm, Qty 2
- Contact Tips 1.2A (1.4mm), M8, Qty 5
- Tip Holder M8
- Nylon Liner and Collet 0.9-1.2mm 4.5m
- Nylon Inlet Guide
- Nylon Intermediate Guide
- Carry Case
- Operating Manual



NOTE

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



WARNING

FALLING EQUIPMENT can cause serious personal injury and equipment damage

Note: For Aluminium Welding it is recommended to use a 3 metre long MIG Gun.

2.08 RELATED PRODUCTS

PART NUMBER	DESCRIPTION	PART NUMBER	DESCRIPTION
W52BR36E3	Flame MIG Gun BZ36 Euro, 3m	WHAMXC160	Auto Darkening Welding Helmet Variable Shade 9-13 - ArcMaster XC60
W52BR40E3	Flame MIG Gun BZ40 Euro, 3m	WHAMXC170	Auto Darkening Welding Helmet Variable Shade 4-8 / 9-14 - Mayhem
646766	WeldSkill Heavy Duty Welding Gloves - Medium	646764	WeldSkill Magnetic Welding Clamp/Holder - Medium
646755	WeldSkill Heavy Duty Welding Gloves - Large	646765	WeldSkill Magnetic Welding Clamp/Holder - Large
646767	WeldSkill Heavy Duty Welding Gloves - XL	646770	WeldSkill Welding Curtain - Dark Green, 1.74m x 1.74m
646771	WeldSkill Welding Jacket - Medium	646777	WeldSkill Welding Curtain - Red, 1.74m x 1.74m
646772	WeldSkill Welding Jacket - Large	646776	Welding Curtain Frame, 1.8m x 1.8m
646773	WeldSkill Welding Jacket - XL	646778	Welding Blanket, 1.8m x 1.8m
646774	WeldSkill Welding Jacket - XXL		
W4018001	CIGWELD Heavy Duty Backpack		



MIG Pliers
P/N: CWPLIER



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



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



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



WeldSkill Welding Jacket
P/N: 646772 (Large)

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 its 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 its 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: PULSEMATE OPERATION

4.01 PULSEMATE CONNECTION TO XF353 POWER SOURCE

Connect the PulseMate Pendant to the 5 Pin PulseMate Socket located on the Front Panel of XF353 Power Source as shown.



Figure 4-1: Connecting the PulseMate Pendant to the XF353 Power Source

4.02 PULSEMATE CONNECTION TO 4R-ROVER WIREFEEDER

Connect the PulseMate Pendant to the PulseMate 5 Pin Socket located on the rear panel of the 4R-Rover Wirefeeder as shown.

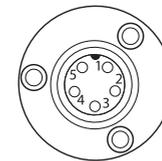


Figure 4-2: Connecting the PulseMate Pendant to the 4R-Rover Wirefeeder

PULSEMATE CONTROL 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	GND
3	RX
4	NC
5	+15V

Figure 4-3: Pulsemate Control Socket 5 Pin



ACHIEVED IN DOUBLE PULSE

Material Type: **Aluminium**
 Material Thickness **2.5mm**
 Wire Type: **AL5356**
 Wire Diameter **1.0mm**

4.03 INTRODUCTION TO PULSE MIG WELDING

MIG pulse welding is a sophisticated welding technique that employs a pulsating current during the welding process. This pulsing mechanism alternates between high and low current levels, creating a distinctive arc pattern. In the single pulse mode, there is one pulse per welding cycle, striking a balance between achieving sufficient penetration and controlling the overall heat input.

On the other hand, double pulse MIG welding involves two pulses per cycle, with a high-energy pulse for enhanced penetration followed by a background pulse that allows for controlled cooling and reduced heat input, making it particularly useful for welding thin materials. This method offers better control over the welding parameters, including pulse width and frequency, enabling welders to tailor their approach for different materials and joint configurations. MIG pulse welding is renowned for its versatility and is applied in various industries, such as automotive, ship building and aerospace, where precision and control are paramount. Additionally, the technique is adaptable to automated welding processes, contributing to improved efficiency, repeatability, and overall weld quality.

SINGLE PULSE MIG WELDING

- A. Single pulse definition:** Single pulse MIG is a type of spray transfer welding that alternates between the peak current and the background current. Unlike some modes of MIG welding, the wire never actually touches the weld, resulting in reduced spatter. The use of Single pulse gives the weld a very smooth and even look, as it uses spray transfer in most cases.
- B. Single pulse application:** Single pulse welding is often used for general-purpose welding on a variety of metals and thicknesses, Single Pulse is very good at welding thicker metal sections from 6mm to 16mm. It provides a balance between good penetration and reduced heat input, making it suitable for a range of applications.
- C. Single pulse advantages:**

- 1. Less Heat:** Single pulse MIG minimizes heat input, making it ideal for thin materials. Less heat means reduced distortion and less risk of burn-through.
- 2. Spatter-Free:** The absence of wire contact with the weld reduces spatter, eliminating the need for anti-spatter application and reduces post-weld cleanup on the job and the MIG Gun Nozzle.
- 3. Higher Welding Speeds:** Especially in single pulse transfer mode which allows for faster welding speeds meaning more MIG wire is being deposited into the weld joint.

DOUBLE PULSE MIG WELDING:

- A. Double pulse definition:** Double pulse MIG builds upon single pulse MIG by introducing an additional pulse. The first pulse stacks a single bead, while the second pulse significantly reduces the welding current and cools the previous bead. This sequence of high current and lower current pulses gives the weld the classical "TIG" or "Stacking-Dimes" look.
- B. Double pulse application:** Double pulse welding is especially useful for welding thin materials (0.5mm – 5mm) and in situations where precise control over the heat input is crucial (like out-of-position welding). It helps reduce

the risk of burn-through on thin metals while maintaining good penetration.

C. Double pulse advantages:

- 1. Enhanced Heat Control:** Double pulse MIG provides improved better heat control than single pulse MIG. This precision helps reduce porosity and improve penetration depth.
- 2. Quality Appearance:** The stacked bead appearance achieved with double pulse MIG resembles TIG welding, resulting in visually appealing welds. Double Pulse MIG welding is very forgiving when welding around pipes, tubes and flanges where slower manual travel speeds are required.
- 3. Suitable for Heat Sink Metals (such as Aluminium, Stainless Steel and Bronzes):** Double pulse MIG maintains cooler welding conditions, still ensuring proper penetration without overheating the material.

COMPARISON WITH REGULAR MIG WELDING:

- A. Both single pulse and double pulse MIG welding offer advantages over regular MIG welding:**
- 1. Reduced Heat Input:** Pulse welding prevents burn-through and warping by alternating between high and low currents.
 - 2. Improved Penetration:** Both techniques allow for better control over penetration depth.
 - 3. Spatter Reduction:** Spatter-free welding simplifies cleanup.
 - 4. Aesthetics:** Double pulse MIG provides visually appealing welds similar to TIG.
 - 5. Speed:** Single Pulse MIG techniques generally offer higher welding speeds.

In summary, the choice between single pulse and double pulse MIG welding depends on the specific application, material thickness, and desired visual results.

4.04 SINGLE PULSE AND DOUBLE PULSE EASY STEP SETUP GUIDE

SIMPLEPULSE™

SINGLE PULSE MIG IN 4 EASY STEPS

- 1 STEP 1:** Choose 'Single Pulse'
- 2 STEP 2:** Select the Job (CS/SS/AL/BZ) you want to work with from the rear list
- 3 STEP 3:** Select the Plate Thickness you are welding using 'PEAK' adjustment
- 4 STEP 4:** Use 'Trim' to adjust Arc Length (if required)



Note: The Plate Thickness range of these settings will depend on the power source used.

Note: For Aluminium Welding it is recommended to use a 3 metre long MIG Gun.

SIMPLEPULSE™

DOUBLE PULSE MIG IN 4 EASY STEPS

- 1 STEP 1:** Choose 'Double Pulse'
- 2 STEP 2:** Select the Job (CS/SS/AL/BZ) you want to work with from the rear list
- 3 STEP 3:** Select the Plate Thickness you are welding using 'PEAK' adjustment
- 4 STEP 4:** Adjust the 'BASE' Current %
- 5 STEP 5:** Adjust 'Double Pulse Frequency' (Pulse Speed)
- 6 STEP 6:** Adjust 'Double Pulse Width' (Ripple Gap)
- 7 STEP 7:** Use 'TRIM' to adjust Arc Length (If required)

4.05 INDICATORS AND CONTROLS

PULSE IN WELDING

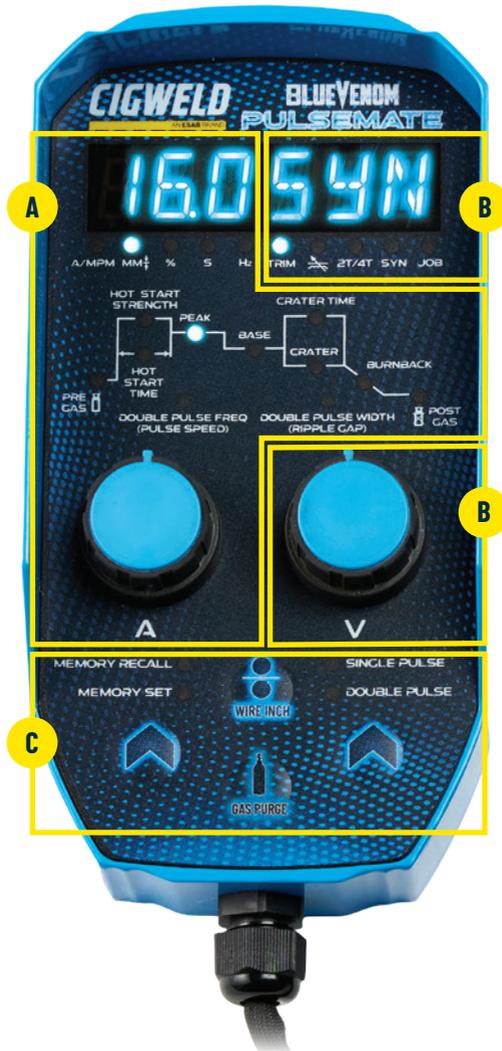
Pulse has a growing relevance in the welding industry, as it allows operators to achieve great results with less effort.

CONNECTING THE PULSEMATE AND TURNING PULSEMATE ON AND OFF.

When the PulseMate Pendant is connected via the 5 pin socket to the XF353 Power Source or 4R Rover Wire Feeder once PulseMate is turned ON it will take control and enable Single and Double Pulse Modes.

To Turn ON the PulseMate hold the Left and Right Control Knobs depressed at the same time until the Digital Display on the PulseMate is turned ON.

To Turn OFF PulseMate hold the Left and Right Control Knobs depressed at the same time until the Digital Display on the PulseMate is turned OFF.



LEFT DIGITAL METER

Left Digital Meter displays shows Amps whilst Welding. When not welding and if SYN YES is selected it displays QuickSet Plate Thickness in MM (Millimetres). if SYN NO is selected it displays Wirefeed Speed in MPM (Metres Per Minute). For further information for these functions see Indicator descriptions.

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, 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.

A/MPM A/MPM INDICATOR

When illuminated AMPS will display on the Left Digital Display when welding. The left Control knob can also adjust the Wire

Feed Speed value MPM (Metres Per Minute). This happens when the option SYN is set to the value "NO" using the Right Control Knob in Section-B.

MM 1/2 MM INDICATOR

Available when SYN is set to YES. When illuminated indicates the value on the Left Digital Meter is shown in MM (QuickSet Plate Thickness) which can be set if Peak Current is selected. Use the Left Control Knob to adjust setting to the desired level.

% PERCENTAGE INDICATOR

When illuminated indicates the value on the Left Digital Meter shown is in % Percentage. The setting value of; Hot Start Strength, Base (current), Crater and Double Pulse Width is able to be set using the left Control Knob.

S SECONDS INDICATOR

When illuminated indicates the value on the Left Digital Meter shown is in Seconds.

Is adjustable in Pre Gas, Hot Start Time, Crater Time, Burnback and Post Gas. Press the Left Control Knob to step through functions. Use the Left Control Knob to adjust setting to the desired level

Hz DOUBLE PULSE FREQUENCY (PULSE SPEED) INDICATOR

When illuminated indicates the value shown on the Left Digital Meter in HZ (Frequency).

Only available in Double Pulse Mode.

It is the amount of times per second that a pulse (also known as cycle) will take place. The unit of measurement is Hertz (Hz). A Pulse cycles between a Pulse Base current (bottom of the pulse) and the Peak Current (top of the pulse). This allows you to control the overall heat input, maintain arc stability and have a better looking weld by improving control over the weld pool. Higher frequencies result in more rapid cycling between the two current levels. As an example, if the Pulse Frequency is set for 2.4 Hz, you will observe 2.4 pulses per second (almost 10 pulses every 5 seconds). Double Pulse Frequency range is 0.1 - 5Hz.

Press the Left Control Knob to cycle through the settings until DOUBLE PULSE FREQUENCY (PULSE SPEED) indicator is illuminated. (Setting value will show on the Left Digital Display). Use the Left Control Knob to adjust setting to the desired level.

Double Pulse Frequency factory setting is 1.0Hz.

PRE GAS PRE GAS

Shielding gas flows for the time specified before the arc is initiated.

Press the Left Control Knob to cycle through the settings until PRE GAS indicator is illuminated. (Setting value will show on the Left Digital Display). Use the Left Control Knob to adjust setting to the desired level. Pre Gas range is 0 – 20 seconds

Pre Gas factory setting is 0 seconds, 0 seconds means the function is OFF.

HOT START STRENGTH HOT START STRENGTH

The Hot Start Strength feature improves the arc start characteristics by momentarily increasing the welding current to a level above the preset amperage (Welding Current). Hot Start Strength range is 0 – 200%

Press the Left Control Knob to cycle through the settings until HOT START STRENGTH indicator is illuminated. (Setting value will show on the Left Digital Meter). Use the Left Control Knob to adjust setting to the desired level.

Hot Start Strength factory setting is 15% which means you have a cold-start, at 100% you have the same full current you have selected on the controls. If you chose 115% you will now have a Hot-Start.

HOT START TIME HOT START TIME

The Hot Start feature improves the arc start characteristics by momentarily increasing the welding current to a level above the preset amperage (Welding Current).

Press the Left Control Knob to cycle through the settings until HOT START TIME indicator is illuminated. (Setting value will show on the Left Digital Meter). Use the Left Control Knob to adjust setting to the desired level.

Hot Start Time range is 0 – 10 seconds

Hot Start Time factory setting is 0 seconds, 0 seconds means the function is OFF.

PEAK PEAK CURRENT

Peak Current is determined by the MM (QuickSet Plate Thickness) setting when SYN is set to YES.

Peak current is able to be set in both Single and Double Pulse Modes.

If SYN Yes is selected the Peak Current is adjusted in MM (Plate Thickness)

Peak Current (MM Plate Thickness) range is 0.9 – 16.0 millimetres

If SYN No is selected the Peak Current is adjusted in MPM

(Wire Feed Speed)

Peak Current (MPM Wire Feed Speed) range is 2.0 – 18.0 metres per minute

The available Range is determined by the Job selected.

Press the Left Control Knob to cycle through the settings until PEAK indicator is illuminated. (Setting value will show on the Left Digital Meter). Use the Left Control Knob to adjust setting to the desired level

Note: Adjusting Wire Feed Speed (MPM) will also change the Voltage Value Synergically.

BASE BASE CURRENT

Base Current is adjustable in Double Pulse Mode and Preset in Single Pulse (not adjustable).

When the Double Pulse function is enabled, the welding current alternates between the base and peak levels according to the Double Pulse Frequency (Pulse Speed) and Double Pulse Width (Ripple Gap). Base Current range is 10 – 90%.

Base Current is set as a Percentage of the Peak Current.

Press the Left Control Knob to cycle through the settings until reaching Base Current (Value will show on the Left Digital Meter). Use the Left Control Knob to adjust to the desired level.

Base Current factory setting is 60%

CRATER CRATER FILL

The Crater Fill reduces the Welding Current (Wire 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.

Press the Left Control Knob to cycle through the settings until CRATER indicator is illuminated. (Setting value will show on the Left Digital Meter). Use the Left Control Knob to adjust setting to the desired level.

Crater Fill range is 10 – 100%

Crater Fill factory setting is 50%

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 2T TRIGGER MODE

Trigger 2T NORMAL MODE (WHEN 4T INDICATOR NOT ILLUMINATED) and Right Digital Meter shows 2T

When Crater Fill is selected 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.

Press the Left Control Knob to cycle through the settings until CRATER TIME indicator is illuminated. (Setting value will show on the Left Digital Meter). Use the Left Control Knob to adjust setting to the desired level.

CRATER FILL IN 4T TRIGGER MODE

Trigger 4T LATCH MODE (ACTIVE WHEN 4T INDICATOR ILLUMINATED) and Right Digital Meter shows 4T.

When Crater Fill is selected 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.

Press the Left Control Knob to cycle through the settings until CRATER TIME indicator is illuminated. (Setting value will show on the Left Digital Meter). Use the Left Control Knob to adjust setting to the desired level.

CRATER TIME CRATER FILL TIME

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.

Press the Left Control Knob to cycle through the settings until CRATER TIME indicator is illuminated. (Setting value will show on the Left Digital Meter). Use the Left Control Knob to adjust setting to the desired level.

Crater Fill Time range is 0.0 – 9.9 seconds.

Crater Fill Time factory setting is 0 seconds, 0 seconds means the function is OFF.

BURNBACK BURNBACK

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). Burnback Time range is 0 – 0.50 seconds

Press the Left Control Knob to cycle through the settings until BURNBACK indicator is illuminated. (Setting value will show on the Left Digital Meter). Use the Left Control Knob to adjust setting to the desired level.

Burnback factory setting is 0.01 seconds

POST GAS POST GAS

Shielding Gas flows for the time specified after an arc has extinguished. Post Gas Time range is 0 – 20 seconds

Press the Left Control Knob to cycle through the settings until POST GAS indicator is illuminated. (Setting value will show on the Left Digital Meter). Use the Left Control Knob to adjust setting to the desired level.

Post Gas factory setting is 0.50 seconds

DOUBLE PULSE FREQ (PULSE SPEED) DOUBLE PULSE FREQUENCY (PULSE SPEED)

Only available in Double Pulse Mode.

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

Double Pulse Frequency (Pulse Speed) range is 0.1 – 5.0 Hz

Double Pulse Frequency (Pulse Speed) factory setting is 1.0 Hz

Press the Left Control Knob to cycle through the settings until DOUBLE PULSE FREQ (PULSE SPEED) indicator is illuminated. (Setting value will show on the Left Digital Meter). Use the Left Control Knob to adjust setting to the desired level.

DOUBLE PULSE WIDTH (RIPPLE GAP)

DOUBLE PULSE WIDTH (RIPPLE GAP)

Only available in Double Pulse Mode.

The Pulse Width, also known as Pulse Duration or Ripple Gap, refers to the length of time the current remains at the peak level before returning to the base level. It is usually expressed as a percentage of the total cycle time. A lower Pulse Width percentage (eg. 10%) produces a wider weld and more distance between ripples.

Increasing the percentage to 90% narrows the weld bead and brings the ripples closer together. Put simply, it refers to the duration of the "on" and "off" periods of the welding current during each pulse.

Double Pulse Width (Ripple Gap) range is 10 to 90%

Press the Left Control Knob to cycle through the settings until DOUBLE PULSE WIDTH (RIPPLE GAP) indicator is illuminated. (Setting value will show on the Left Digital Meter). Use the Left Control Knob to adjust setting to the desired level.

Double Pulse Width (Ripple Gap) factory setting is 50%

Factory setting may change according to the Plate Thickness

NOTE: The Pre-set functionality provided on this power source is intended to act as a guide only. Some differences may be observed between pre-set values and actual welding values due to factors including the mode of welding, differences in consumables/gas mixtures, individual welding techniques and the transfer mode of the welding arc. Where settings are required (in the case of procedural work), it is recommended that you set the machine to show MPM and VOLTS (non SYN Mode) so you can record reasonably accurate measurements for a WPS.



LEFT CONTROL KNOB

Press the Left Control Knob to step through functions:
A/MPM Amps whilst Welding/MPM metres per minute,
MM QuickSet Plate Thickness, **%** Percentage,
S Seconds (see indicator below), **Hz** Frequency

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

For further information for these functions see Indicator descriptions.



RIGHT DIGITAL METER

When not welding this Right Digital Meter shows **TRIM** (Volts Trim), **Inductance**, **2T/4T** Trigger Mode (2T/4T), **SYN** Synergic, and **JOB** Factory Jobs stored. For further information for these functions see Indicator descriptions

When welding Displays Volts.

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 Volts. 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.

TRIM VOLTS TRIM INDICATOR

Volts Trim (TRIM) can be selected by pressing the Right Control Knob until the TRIM (Volts Trim) indicator is illuminated. The LED Meter will display Syn for the QuickSet value for the selected 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. The Trim (Trim Voltage) function also alters the stick out of the arc. A negative figure pushes the wire more into a fillet weld corner, tightening the arc. A positive number, pulls the wire back closer to the contact tip and widens the arc transfer.

INDUCTANCE INDICATOR

Inductance setting can be selected by pressing the Right Control Knob until the Inductance indicator is illuminated and the Inductance value will be displayed on the Right Digital Meter.

The Inductance (arc) control 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.

Inductance range is -10 to 10

Factory setting for Inductance is 0

2T/4T TRIGGER MODE 2T/4T INDICATOR

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 (WHEN 4T INDICATOR NOT ILLUMINATED)

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 (ACTIVE WHEN 4T INDICATOR ILLUMINATED)

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.

Note: When Crater is selected refer to Crater Fill 2T/4T Page 27 for the operation details.

SYN SYNERGIC MODE INDICATOR

When illuminated on the Right Digital Display SYN is shown. This indicates that SYN QuickSet function is selected.

If SYN Yes is selected the Peak Current is adjusted in MM (Plate Thickness)

Peak Current (MM Plate Thickness) range is 0.9 - 16.0 millimetres

If SYN No is selected the Peak Current is adjusted in MPM (Wire Feed Speed)

Peak Current (MPM Wire Feed Speed) range is 2.0 - 18.0 metres per minute

The available Range is determined by the Job selected.

JOB JOB MODE INDICATOR

There are Factory Set Pre Loaded Jobs available. See the Jobs list below.

Once the desired Job No is selected press the Right Control Knob to exit Job mode so that other functions are able to be accessed.

PULSE MATE PROGRAM LIST

Job List	Wire Size	Gas Mix		
		Argon (%)	CO2 (%)	He (%)
SINGLE PULSE				
10-CS	Carbon Steel (CS)	0.9	90%	10%
12-CS	Carbon Steel (CS)	0.9	82%	18%
14-CS	Carbon Steel (CS)	1.2	82%	18%
16-SS	Stainless Steel (SS)	0.9	62.5%	2.5% 35%
18-SS	Stainless Steel (SS)	0.9	98%	2%
20-SS	Stainless Steel (SS)	1.2	98%	2%
22-AL	Aluminium 4043 (AL)	1.0	100%	
24-AL	Aluminium 4043 (AL)	1.2	100%	
26-AL	Aluminium 5356 (AL)	1.0	100%	
28-AL	Aluminium 5356 (AL)	1.2	100%	
30-SB	Silicon Bronze (SiBz)	0.9	100%	
32-SB	Silicon Bronze (SiBz)	1.2	90%	10%
DOUBLE PULSE				
40-CS	Carbon Steel (CS)	0.9	90%	10%
42-CS	Carbon Steel (CS)	0.9	82%	18%
44-CS	Carbon Steel (CS)	1.2	82%	18%
46-SS	Stainless Steel (SS)	0.9	62.5%	2.5% 35%
48-SS	Stainless Steel (SS)	0.9	98%	2%
50-SS	Stainless Steel (SS)	1.2	98%	2%
52-AL	Aluminium 4043 (AL)	1.0	100%	
54-AL	Aluminium 4043 (AL)	1.2	100%	
56-AL	Aluminium 5356 (AL)	1.0	100%	
58-AL	Aluminium 5356 (AL)	1.2	100%	
60-SB	Silicon Bronze (SiBz)	0.9	100%	
62-SB	Silicon Bronze (SiBz)	1.2	90%	10%



RIGHT CONTROL KNOB

Press the Right Control Knob to step through functions: **TRIM** (Volts Trim), **IND** Inductance, **2T/4T** Trigger Mode (2T/4T), **SYN** Synergic, and **JOB** Factory Jobs stored. Once desired function selected turn clockwise to increase or counterclockwise to decrease value

For further information for these functions see Indicator descriptions.



- MEMORY RECALL
- MEMORY SET



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. (keep text together)

The Left Digital Meter shows RCL and the Right Digital Meter 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 store welding parameters to Memory press the Memory button to select Memory Set. The Memory Set indicator will illuminate when selected. The Left Digital Meter shows SET and the Right Digital Meter shows the Memory location. Turn the Right Control Knob to select a Memory location from 1 to 5 that can be loaded or overwritten.

Confirm by pressing the Right Control Knob to Save to that Memory location.

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



WIRE INCH WIRE INCH BUTTON

Hold button depressed to Feed the MIG Wire through the MIG Gun. When Wire Inch Button is depressed INC will appear on the Left Digital Meter and Wire Speed will display on the Right Digital Meter in MPM (Metres Per Minute). Whilst button is held depressed wire speed will start at minimum speed and ramp up to maximum speed and maintain maximum speed (without gas flow) whilst the button is depressed.

Note 1: When the XF353 Power Source is selected and active, use the Wire Inch button located on the XF353 Power Source Front Panel.

Note 2: When the Optional 4R-Rover Wirefeeder is selected and active, use the Wire Inch button located on the 4R-Rover Front Panel.



GAS PURGE 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.

Note 1: When the XF353 Power Source is selected and active, use the Gas Purge button located on the XF353 Power Source Front Panel.

Note 2: When the Optional 4R-Rover Wirefeeder is selected and active, use the Gas Purge button located on the 4R-Rover Front Panel.

SINGLE PULSE SINGLE PULSE

Press the Single Pulse button to select Single Pulse Mode

Refer to Sections 4.04 and 4.05 for Quick Setup Guide and further information. You can select from the Single Pulse Jobs as listed on Page 29.

DOUBLE PULSE DOUBLE PULSE

Press the Double Pulse button to select Double Pulse Mode

Refer to Sections 4.04 and 4.05 for Quick Setup Guide and further information. You can select from the Double Pulse Jobs as listed on Page 29.

SECTION 5: PULSEMATE MAGNETIC STAND

5.01 PULSEMATE MAGNETIC STAND

The PulseMate Magnetic Stand is included in the BlueVenom PulseMate Kit.

The PulseMate Magnetic Stand is equipped with a powerful magnetic base with On/Off Switch to attach to any Ferromagnetic surface.

1. Turn the switch to the ON position to attach to a suitable Ferromagnetic surface.
2. Turn the switch to the OFF position to remove from the surface.

Note: PulseMate Mag Stand is included with BlueVenom PulseMate Package (Part No: W4200PM1)

5.02 PULSEMATE REPLACEMENT PARTS

PART NUMBER	DESCRIPTION
W4200MSB	MAG Stand Base with Arm (No Cradle)
W4200MSC	PulseMate Cradle (Blue) suits PulseMate Mag Stand



Figure 5-1: PulseMate Magnetic Stand



LIMITED WARRANTY TERMS

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

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

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

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

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

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

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

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

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

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

***WARRANTY SCHEDULE - BLUEVENOM PULSEMATE**

WARRANTY	WARRANTY PERIOD (PARTS AND LABOUR)
BLUEVENOM PulseMate Pendant	2 Years

CIGWELD LIMITED WARRANTY DOES NOT APPLY TO;

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

Notes:

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

CIGWELD

AN ESAB BRAND



Version No: AA Issue Date: 21-03-2024 Manual No: 0-5712



CIGWELD Pty Ltd An ESAB Brand 71 Gower Street, Preston VIC 3072 Australia
CUSTOMER CARE: Tel: 1300 654 674 | Intl Tel: +61 9474 7400
Email: enquiries@cigweld.com.au



CIGWELD.COM.AU

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.