

CIGWELD

AN ESAB BRAND



100+
YEARS OF
WELDING
INNOVATION

COMET



500 PRO
700 PRO

OPERATING MANUAL

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 If you are ever in doubt about what you see or read in this manual with the product you received, then check for a newer version of the manual on our website or contact our customer support for assistance.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.



100+
YEARS OF
WELDING
INNOVATION

**WARNING**

Read and understand this entire Manual and your employer's safety practices before installing, operating, or servicing this product. While the information contained in this Manual represents the Manufacturer's best judgement, the Manufacturer assumes no liability for its use.

**CIGWELD COMET
OPERATING MANUAL
NUMBER FOR:****PART NUMBERS:**

**301637, 310638, 310639,
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CIGWELD
AN ESAB BRAND

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**RECORD THE FOLLOWING
INFORMATION FOR WARRANTY
PURPOSES:**

Where Purchased:

Purchase Date:

Equipment Serial #:

SAFETY PRECAUTIONS

This regulator is designed to reduce and control high pressure gas from a cylinder or pipeline to the working pressure required for the equipment using it.

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

SPECIFIC PROCEDURES for the use of regulators are listed below.

- A.** NEVER subject the regulator to inlet pressures greater than its rated inlet pressure.
- B.** DO NOT allow oil, oil-bearing materials, or other combustibles that can ignite readily in the presence of oxygen.
- C.** Use oxygen regulators with equipment suitable for and used only for oxygen service.
- D.** NEVER use non-oxygen regulators in oxygen service.
- E.** NEVER pressurise a regulator 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 until the gas pressure has been relieved. Under pressure, gas can dangerously propel a loose part.
- F.** DO NOT remove the regulator from a cylinder without first closing the cylinder valve and releasing gas in the regulator high and low pressure chambers
- G.** DO NOT use the regulator as a control valve. When downstream 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.
- H.** NEVER use Acetylene at pressure in excess of 150kPa.
- I.** OPEN the cylinder valve SLOWLY. Close after use.
- J.** All oxygen - fuel systems MUST be fitted with minimum an AS4603 compliant flashback arrestor and a non-return valve for each gas line, taking into consideration any pressure drops experienced in all components of the assembled gas control system, at the rated flow capacity of the tip or nozzle in use.
- K.** All Regulators, Flashback Arrestors, Blowpipes, Attachments, Mixers and Cutting Torches MUST be refurbished or replaced after 5-Years of service as noted in AS4839-2001.

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.

CYLINDERS GENERAL

Industrial gas cylinders are made to rigid specifications and are inspected each time they are refilled by your supplier. They are safe if properly handled. All Government and insurance regulations relating to the storage of oxygen, acetylene and LPG cylinders should be closely observed. Keep all cylinders, empty or full, away from radiators, furnaces and other sources of heat. Also avoid contact with electrical circuits. Keep oil and grease away from cylinders. Cylinders standing in the open should be screened against direct rays of the sun. Protect cylinders valves from bumps and falling objects. Keep the valves clean, free from oil, grease and all foreign materials. Close cylinder valves when not in use, when empty, or when moving cylinders. Always remove regulators when moving cylinders. Be sure the cylinder valve is tightly closed before removing regulators. Never allow anyone to strike an arc or tap an electrode against any cylinder. Never try to fill a cylinder or mix gases in a cylinder. Never tamper with or alter cylinder numbers or markings. Never use cylinders as supports or rollers. When transporting cylinders using a crane, do not use slings- use a cylinder cradle. Never draw gas from cylinders except through properly attached pressure regulators or equipment designed for the purpose. If damaged, send the regulator to the supplier or appointed agent for repairs. If unable to make a gas-tight seal between the cylinder valve and a regulator spigot, first check whether the spigot nut is tight. If so check the regulator spigot. If the cylinder valve is damaged notify the gas supplier. Never insert washers of lead or other material between the regulator and the cylinder valve. Never use oil or grease on these connections. Use only standard cylinder keys to open cylinder valves, never extend the length of these keys under any circumstances. If valves cannot be opened by hand, do not use a hammer or wrench; notify the supplier. Open all cylinder valves slowly. Leave cylinder key in position when fuel gas cylinder valves are open.

OXYGEN CYLINDERS

Oxygen cylinders are steel shells of ample strength for their purpose. Besides routine inspections, they periodically undergo a searching examination, which includes a hydraulic pressure test. Always call oxygen “Oxygen” not “Air”. Never use oxygen in pneumatic tools, in oil pre-heating burners, to start engines, to blow out pipelines or to freshen the atmosphere in confined spaces. In short, under no circumstances use oxygen as a substitute for compressed air or other gases.

ACETYLENE CYLINDERS

Acetylene cylinders contain porous material, which is impregnated with acetone. The acetylene is dissolved under pressure in this acetone. All acetylene cylinders are fitted with fusible plugs. These are designed to vent the cylinder contents in the event of an unsafe condition arising in the cylinder due to any cause such as overheating or decomposition arising from either incorrect operating technique, faulty equipment alone, or in conjunction with excessive temperature. In the event of a safety device functioning, always notify the supplier. The reason for the device operating always warrants special investigation. Always call acetylene “acetylene” not Gas. Always keep acetylene cylinders upright, whether in use or in store, full or empty. Always keep acetylene cool, store them upright in a well-protected, well ventilated dry location, away from highly combustible materials and oxygen cylinders. Should an acetylene valve leak around the spindle, close the valve and tighten the gland. If this fails, or if the fusible plug is leaking, remove cylinder to open air. Keep the cylinder well away from anything which could possibly set the escaping acetylene on fire. Tag the cylinder to explain the trouble. Notify suppliers at once. If acetylene, escaping from a leaking cylinder valve gland or from an improperly seated regulator spigot ignites, immediately close the cylinder valve. If this is impossible, treat from point two below. If an acetylene cylinder is heated accidentally or becomes hot through severe flashback, or other cause, action should be taken promptly in the following manner:

1. Shut the cylinder valve
2. Clear all personal from the area
3. Cool the cylinder with a copious supply of water and notify the fire brigade



NOTE

The person directing the fire hose should be protected behind some suitable shelter. If the safety device functions and the issuing gas ignites, cool the cylinder as above, but avoid extinguishing the flames. If the escaping gas does not ignite, care must be taken to avoid an air/acetylene explosion. No source of ignition must be permitted to enter the area. Existing sources of ignition should be rendered safe.

4. Continue cooling the cylinder with copious quantities of water until it is quite cool. This may be determined by removing the cooling water at intervals and watching whether the water on the cylinder fries off, or whether the cylinder remains wet.
5. Notify the supplier
6. In cases where the supplier's representative is unavailable or cannot reach the scene of the incident within half an hour, the cylinder may after this period be removed carefully to an open space away from buildings and any source of ignition provided it remains cool and wet.
7. The cylinder valve should then be opened until the cylinder is empty. During this period a copious quantity of water should be poured on the cylinder.
8. When the cylinder is empty check whether the cylinder is cool, if so, close the valve.

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, by cracking the valve (open then close) momentarily, pointing the outlet away from people and sources of ignition. Always crack a fuel gas valve in a well ventilated area and never near a source of ignition. (Figure 1)
2. Match regulator to cylinder. Before connecting, check that the regulator label and cylinder marking agree and that the regulator inlet and cylinder outlet match. NEVER CONNECT a regulator designed for a particular gas or gases to a cylinder containing any other gas.
3. Connect the regulator inlet connection to cylinder or pipeline and tighten it firmly but not excessively, with a suitable spanner. (Figure 2)
4. Connect and tighten the outlet hose firmly and attach down-stream equipment.
5. To protect sensitive down-stream equipment a separate safety device may be necessary if the regulator is not fitted with a pressure relief device. (Figure 3)



Figure 1



Figure 2



Figure 3

OPERATION

With the regulator connected to cylinder or pipeline, and the adjustment screw/knob fully disengaged, pressurise as follows:

1. Stand to one side of regulator and slowly open the cylinder valve. If opened quickly, a sudden pressure surge may damage internal regulator parts. (Figure 4)
2. With valves on downstream equipment closed, adjust regulator to approximate working pressure. It is recommended that testing for leaks at the regulator connection points be carried out using a suitable leak detection solution or soapy water.
3. Purge air or other unwanted gas from equipment connected to the regulator by individually opening then closing the equipment control valves. Complete purging may take up to ten seconds or more, depending upon the length and size of the hose being purged.



Figure 4

CAUTION

DO NOT purge oxidising or flammable gases in the presence of flame, lighted cigarettes, or other sources of ignition or in a confined space. Open each downstream valve in turn, if more than one regulator is used. Close one valve before opening the next one. This procedure will prevent explosive gas mixtures occurring in the welding hose between regulators and equipment.

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 PRESSURE

With the regulator ready for operation, adjust working pressure as follows:

1. Slowly turn adjusting screw/knob in (clockwise) direction until the outlet gauge indicates the required pressure. All valves downstream of the regulator must be opened to obtain a true working pressure reading on the outlet gauge. Close the valves after the pressure has been set. (Figure 5)
2. To reduce pressure, allow the gas to discharge from regulator by opening the downstream valve. Bleed gas into a well ventilated area and away from any ignition source. Turn adjusting screw counter clockwise, until the required pressure is indicated on the gauge. Close downstream valve. (Figure 6)



Figure 5



Figure 6

SHUTDOWN

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

1. Close cylinder or upstream valve tightly. (Figure 7)
2. Open downstream equipment valves to drain the lines. Bleed gas into a well ventilated area and away from any ignition source.
3. After gas is drained completely, disengage adjusting screw and close downstream equipment valves.
4. Before transporting cylinders that are not secured on a cart designed for such purposes, remove regulators. (Figure 8)



Figure 7



Figure 8

NOTES FOR CARBON DIOXIDE (CO₂) REGULATORS



WARNING

CO₂ IS ASPHYXIATING IN HIGH CONCENTRATION. LOCATE REGULATOR IN A WELL VENTILATED AREA.

CO₂ regulators are fitted with pressure relief valves to protect the regulator against minor component failures. It cannot be considered a safety device for the protection of downstream attached equipment. The pressure relief valve is not intended to replace a primary pressure relief valve or bursting disc as may be required by local legislation. To reduce the risk of asphyxiation due to the concentration of CO₂ resulting from leaks or discharge through pressure relief valves, equipment should be located in a well ventilated area.



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



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.
CIGWELD Pty Ltd A.B.N. 56007226815
71 Gower Street, Preston Victoria, Australia, 3072
Phone: 1300 654 674
Email: support@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.

Note: In the interest of continuous improvement, CIGWELD Pty Ltd reserves the right to change the specifications or designs of any of its products without prior notice.

WARRANTY PERIOD

Gas Regulators (excluding seat assembly, pressure gauges, Elastomer seals and “O” rings)	5 Years
Regulator seat assemblies and pressure gauges	6 months
Elastomer seals and “O” rings used in the equipment	3 months

COMET 700 & 500 REGULATOR SPARE PARTS

P/N:	Manual
310450	COMET Acetylene Regulator High Pressure Gauge with Guard, 4000kPa, 50mm
310451	COMET Acetylene Regulator Low Pressure Gauge with Guard, 150kPa, 50mm
310452	COMET Oxygen Regulator High Pressure Gauge with Guard, 30000kPa, 50mm
310453	COMET Oxygen Regulator Low Pressure Gauge with Guard, 1600kPa, 50mm
310454	COMET Oxygen Regulator Low Pressure Gauge with Guard, 400kPa, 50mm
310455	COMET Inert Regulator High Pressure Gauge with Guard, 30000kPa, 50mm
310456	COMET Inert Regulator Low Pressure Gauge with Guard, 1600kPa, 50mm
310457	COMET Hydrogen Regulator High Pressure Gauge with Guard, 30000kPa, 50mm
310458	COMET Hydrogen Regulator Low Pressure Gauge with Guard, 1600kPa, 50mm
310459	COMET Nitrogen Regulator High Pressure Gauge with Guard, 30000kPa, 50mm
310460	COMET Nitrogen Regulator Low Pressure Gauge with Guard, 1600kPa, 50mm
310461	COMET Argon Regulator High Pressure Gauge with Guard, 30000kPa, 50mm
310462	COMET Argon Regulator Low Pressure Gauge with Guard, 55L/min, 50mm
310463	COMET CO2 Regulator High Pressure Gauge with Guard, 30000kPa, 50mm
310464	COMET CO2 Regulator Low Pressure Gauge with Guard, 55L/min, 50mm
310465	COMET LPG Regulator Low Pressure Gauge with Guard, 600kPa, 50mm
315355	COMET 700 Red Gauge Guard (Acetylene & Hydrogen)
315356	COMET 700 Black Gauge Guard (Oxygen)
315357	COMET 700 Blue Gauge Guard (Nitrogen & Inert)
315358	COMET 500 Blue Gauge Guard (Argon)
315359	COMET 500 Grey Gauge Guard (CO2)
315360	COMET 500 Orange Gauge Guard (LPG)
315361	COMET Acetylene Regulator Seat Capsule Assembly
315362	COMET Oxygen Regulator Seat Capsule Assembly
315363	COMET 500 Regulator Seat Capsule Assembly (Argon & CO2)
315364	COMET Regulator Type 10 Inlet Nipple & Type 10 Nut Kit (Oxygen, Inert & Argon)
315365	COMET Regulator Type 20 Inlet Nipple & Type 20 Nut Kit (Acetylene & Hydrogen)
315366	COMET Regulator Type 50 Inlet Nipple & Type 50 Nut Kit (Nitrogen)
315367	COMET Regulator Type 21 Inlet Nipple & Type 21 Nut Kit (LPG)
315368	COMET Regulator Type 30 Inlet Nipple & Type 30 Nut Kit (CO2)
315369	COMET Regulator O-Ring, Inlet (Oxygen & Acetylene)
315370	COMET Regulator O-Ring, Inlet (Nitrogen)
315371	COMET Regulator O-Ring, Inlet (Argon & LPG)
315372	COMET 500 Regulator Diaphragm Assembly
315373	COMET Regulator Outlet (Oxygen)
315374	COMET Regulator Outlet (Acetylene)
315375	COMET 500 Regulator Seat Capsule Assembly (LPG)

COMET 700 PRO



P/N: 301637
OXYGEN VI
1000kPa



P/N: 310638
OXYGEN SI
1000kPa



P/N: 310639
OXYGEN VI
400kPa



P/N: 301532
ACETYLENE VI
150kPa



P/N: 310803
HYDROGEN SI
1000kPa



P/N: 310801
NITROGEN SI
1000kPa



P/N: 310802
INERT VI
1000kPa

COMET

500 PRO



P/N: 310601
ARGON VI
45 L/min



P/N: 310602
ARGON VI PRESET
200kPa



P/N: 301525
LPG SI
400kPa



P/N: 310795
CO₂ SI
20 L/min

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