

COMPRESSED GAS REGULATOR/FLOWMETER, REGULATOR/FLOWGAUGE

SAFETY AND OPERATING INSTRUCTIONS

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COMPRESSED GAS REGULATOR/FLOWMETER, REGULATOR/FLOWGAUGE

Introduction:

This booklet is a guide to the safe operation of Weldmark Regulator Flowmeter / Flowgauge. Regulator usage presents several potential hazards, read this booklet thoroughly and carefully before operating this equipment. All operations should conform to applicable Federal, State, County, or City regulations for installation, operation, ventilation, fire prevention, and protection of personnel. ANSI Standard Z49.1, "Safety in Welding and Cutting" contains detailed safety instructions. It is available from the American Welding Society, P.O. Box 351040, Miami, FL 33135.

Operation Manual

Carefully read the operation manual prior to using, installing and maintaining the regulators for the purpose of preventing damages such as fire and electric shock from occurring. The warnings, cautions and instructions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood, by the operator, that common sense and caution are factors which cannot be built into this product, but must be observed by the operator. Please keep the manual for reference in the future.

SAFETY WARNING AND PRECAUTIONS

WARNING: Do not attempt to use this apparatus until you thoroughly read and understand all safety and operating instructions provided. Follow the safety and operating procedures described in this booklet every time you use the apparatus. Deviating from these procedures may result in fire, explosion, property damage and / or operator injury. If at any time the apparatus you are using does not perform in its usual manner, or you have any difficulty in the use of the apparatus, STOP using it immediately. Do not use the apparatus until the problem has been corrected.

WARNING: This product, when used for welding and similar applications, produces chemicals known to the State of California to cause cancer and birth defects (or other reproductive harm). Wash hands after handling. California Health & Safety Code 25249.5, et seq.

WARNING: The brass components of this product contain lead, a chemical known to the State of California to cause birth defects (or other reproductive harm). California Health & Safety Code 25249.5 et seq.

WARNING: Use the regulator for the gas and pressure for which it is designed: NEVER alter a regulator for use with any other gas.

WARNING: Do not use a regulator that delivers pressure exceeding the pressure rating of the downstream equipment unless provisions are made to prevent over-pressurization. Make sure the pressure rating of the downstream equipment is compatible with the maximum delivery pressure of the regulator.

WARNING: Flowgauge models are sensitive to back pressure. Back pressure will cause inaccurate flow readings.

WARNING: DO NOT tamper with the relief valve or remove it from the regulator.

FIRE PREVENTION SAFETY:

Welding and cutting operations use fire or combustion as a basic tool. This process can be extremely destructive if not performed correctly in the proper environment.

- The work area must have a fireproof floor
- Work benches or tables used during welding or cutting operations must have fireproof tops.
- Use heat resistant shields or other approved material to protect nearby walls or unprotected flooring from sparks and hot metal
- Keep an approved fire extinguisher of the proper size and type within easy reach. Inspect it regularly to ensure that it is in proper working order. Know how to use the fire extinguisher.
- Thoroughly clean the object being cut or welded of any paint, grease or other foreign material.
- Move combustible materials to a minimum of 35 feet away from the work site. If you cannot move them, protect them with fireproof covers.

PERSONAL PROTECTION:

- Arc rays and infrared radiation may have harmful effects on the skin and especially on the eyes. Select ANSI approved goggles or a mask with tempered lenses, shaded 4 or darker, to protect your eyes from injury and provide good visibility of the work. Do not allow viewing by visitors without proper eye and body protection.
- Dress properly: do not wear loose clothing or jewelry as they can be caught in moving parts. Always wear protective gloves and flame-resistant clothing to protect skin and clothing from sparks and slag. Wear restrictive hair covering to contain long hair.
- Wear a NIOSH approved dust mask or respirator when working around metal, chemical dusts, fumes and mists.
- Never touch work piece until completely cooled
- Make sure that all persons in the welding area are protected from heat, sparks, and ultraviolet rays. Use additional face shields and flame resistant barriers as needed.

COMPRESSED GAS CYLINDERS:

- The Department of Transportation (DOT) approves the design and manufacture of cylinders that contain gases used for welding or cutting operations.
- Cylinders are highly pressurized. Handle with care. Serious accidents can result from improper handling or misuse of compressed gas cylinders. Do not drop the cylinder, knock it over, or expose it to excessive heat, flames or sparks. Do not strike it against other cylinders. Contact your gas supplier or refer to CGA P-1 “Safe Handling of Compressed Gases in Containers” publication. The publication is available by writing the Compressed Gas Association, 4221 Walney Road, 5th floor, Chantilly, VA 20151-2923
- Keep the cylinder in a vertical position. Properly secure it to a cart, wall, work bench, post, etc.
- Place the valve protection cap on the cylinder whenever moving it, placing it in storage, or not using it. Never drag or roll cylinder in any way. Use a suitable hand truck to move cylinders.
- Store empty cylinders away from full cylinders. Mark them “EMPTY”, close the cylinder valve and install protective cap.
- Never use compressed gas cylinders without a pressure reducing regulator attached to the cylinder valve.
- Do not use a cylinder if you find oil, grease or damaged parts. Inform your gas supplier of this condition immediately.
- Momentarily open and close (called “cracking”) the cylinder valve to dislodge any dust or dirt that may be present in the valve.
 - Open the cylinder valve slightly. If you open the valve too much, the cylinder could tip over. When cracking the cylinder valve, do not stand directly in front of the cylinder valve. Always perform cracking in a well-ventilated area.

VENTILATION:

- Adequately ventilate welding, heating, and cutting work areas to prevent accumulation of explosive or toxic concentrations of gases. Certain combinations of metals, coatings, and gases generate toxic fumes. Use respiratory protection equipment in these circumstances. When welding/brazing, read and understand the Material Safety Data Sheet for the welding/brazing alloy.
- Avoid breathing fumes or gases; they can cause serious health problems.

MAINTAIN EQUIPMENT WITH CARE:

- Inspect equipment every time before and after use. Check for loose screws, misalignment, binding of moving parts, cracked or broken parts, and any other conditions that may affect its safe operation. **DO NOT USE DAMAGED EQUIPMENT** and return product to location of purchase.
- Service or repair of apparatus should be performed only by a qualified repair technician. Improper service, repair, or modification of the product could result in damage to the product or injury to the operator and will void warranty.

- When servicing, use only identical replacement parts. Use of any other parts will void warranty.
- To clean equipment, use a clean cloth. DO NOT immerse any part of the apparatus in liquid, DO NOT use solvents or other flammable agents to clean. DO NOT use oil or grease anywhere on the apparatus. If you detect oil or grease on the regulator, take it to a qualified repair station for cleaning service.
- Store idle equipment in a dry location to prevent rust and oxidation.

REGULATOR/FLOWGAUGE WITH ADJUSTABLE REGULATOR: SAFETY, SET UP AND OPERATION:

- **Section 1**

- Pressure regulators attached to the cylinder valve reduce high cylinder pressures to suitable low working pressures for welding, cutting and other applications.
- Note the maximum inlet pressure on the regulator. Do not attach the regulator to a system that has a higher pressure than the maximum rated pressure of the regulator.
- Make sure that the regulator has the correct pressure rating and gas service for the cylinder used.
- Carefully inspect the regulator for damaged threads, dirt, dust, grease, oil, or other flammable substances. Remove dust and dirt with a clean cloth. Attach the regulator to the cylinder valve. Tighten securely with a wrench.
- Before opening the cylinder valve, turn the regulator flow adjusting valve clockwise to the "off" position.
- Stand to the side of the cylinder, opposite the regulator when opening the cylinder valve. Keep the cylinder valve between you and the regulator. Never stand in front of or behind a regulator when opening the cylinder valve.
- Slowly and carefully open the cylinder valve until the maximum pressure shows on the high pressure gauge.
- On the cylinder, open the valve completely to seal the valve packing.
- Your Flowmeter is calibrated to 50 PSIG and a specific gas. Be sure the pressure source has the same pressure as marked on the Flowmeter. Use only the kind of gas for which the flowtube is calibrated.
- The Flowmeter must be in the vertical position to read accurately.
- Open the flow adjusting valve to attain the desired flow rate.

LEAK TESTING THE SYSTEM

- Leak test the system before operation
- Be sure that there is a valve downstream of the apparatus to turn off the gas flow.
- **Regulator/Flowgauge with adjustable regulator**
 - Install a shut-off valve on the outlet connection.
 - With the outlet shut off valve closed, adjust the regulator to deliver the

desired flow as indicated on the flowgauge.

- Close the cylinder valve.
- Turn the adjusting screw/knob counterclockwise one turn and wait for over 1 minute.
 - If the high pressure gauge reading drops, there is a leak in the cylinder valve, inlet fitting, or high pressure gauge.
 - If the flowgauge reading drops, there is a leak in the downstream equipment, hose, hose fitting, outlet fitting or low pressure gauge. Check for leaks using an approved leak detector solution.
 - If the high pressure gauge drops and the flowgauge increase at the same time, there is a leak in the regulator seat.
 - If the regulator requires service or repair, take it to a qualified repair technician.
- Once leak testing has been performed and there are no leaks in the system, slowly open the cylinder valve and proceed.
- NOTE – if a leak has been detected anywhere in the system, discontinue use and have the system repaired. Do not use leaking equipment. Do not attempt to repair a leaking system while the system is under pressure.
- **Regulator/Flowmeter with preset Regulator**
 - With the outlet shut-off valve closed and the low adjusting valve open, pressurize the regulator.
 - Close the cylinder valve and wait for over 1 minute.
 - If the high pressure gauge reading drops, there is a leak in the inlet fitting, high pressure gauge or regulator seat.
 - Check for leaks on the low pressure side using an approved leak detection solution
 - Close the flow adjusting valve and remove the outlet connection shut-off valve. Use leak detection solution to test for leaks through the flow adjusting valve.
 - If the regulator requires service or repair, take it to a qualified repair station.
 - With the outlet shut-off valve closed and the flow adjusting valve open, pressurize the Flowmeter to the rated inlet pressure.
 - Check for leaks using a leak detection solution
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FINISHED USING THE REGULATOR

- Close the cylinder valve
- Open the valve on the downstream equipment. This drains all pressure from the system.
- Close the valve on the downstream equipment

LIMITED WARRANTY

Statement of Limited Warranty: Weldmark makes every effort to ensure that its products meet high quality standards and warrants to the original end user (purchaser). This warranty is void if Weldmark or its authorized service centers finds that the equipment has been subjected to improper installation, care, unauthorized modification, tampering, inadequate maintenance, improper storage or abnormal use. This limited warranty is not transferable from the original purchaser to a second owner. In no event is Weldmark liable or responsible for any injury, damage, or loss resulting either directly or indirectly from the use or misuse of this product. This warranty is expressly in lieu of all other warranties, expressed or implied, including the warranties of merchantability and fitness.

Weldmark shall not under any circumstances be liable for special consequential damages, such as, but not limited to, damage or loss of purchased or replacement goods or claims of customers of distributor (Purchaser) for service interrupted.

Regulator/Flowmeter & Regulator/Flowgauge: Limited 1 year warranty from date of purchase

Weldmark warrants that the products are free of defects in material and workmanship.

To take advantage of this warranty, the product or part must be returned to Weldmark or its authorized service centers with transportation charges prepaid. Proof and date of purchase, with an explanation of the complaint, must accompany the merchandise. If our inspection verifies a defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily or quickly provide purchaser with a replacement. Weldmark will return repaired products at our expense, but if Weldmark determines there is no defect, or that the defect resulted from causes not within the scope of our warranty, then the purchaser must pay the cost for the return of the product.

This warranty becomes invalid if replacement parts or accessories are used which may impair the safety or performance of this product.

This warranty is invalid if the product is sold by non-authorized persons or companies.

This warranty gives the purchaser specific legal rights and they may also have other rights, which vary from state to state.

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