

OPERATING AND MAINTENANCE MANUAL

- GAS REGULATOR - COMPACT STYLE



Preset at 50 or 60 psi


GR - XXX - [(TT) (UU) - (XX)(Z)]

GR	XXX	(TT)	(UU)	(-)	(XX)	(Z)
	Gas Connection	Outlet	Flowrate		Additional Outlet	Additional Options

*Basic matrix shown. Consult the Amvex Catalogue for full matrix or contact your Amvex representative.
For more information refer to product label for model. Not all products are available in all regulatory jurisdictions*

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RX ONLY



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IMPORTANT: SAFETY INSTRUCTIONS

This manual provides you with important information about the Flowmeter and should be read carefully to ensure the safe and proper use of this product.

Read and understand all the safety and operating instructions contained in this booklet before using this product.

If you do not understand these instructions, or have any questions, contact your supervisor, dealer or the manufacturer before attempting to use the apparatus.

WARNING:	Indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury
ATTENTION:	Indicates a potentially hazardous situation, which if not avoided, could result in minor or moderate injury
CAUTION:	Indicates a potentially hazardous situation, which if not avoided, could result in damage to the device or other property
	Consult operating manual
	Use no oil

RECEIVING INSPECTION

Remove product from package and inspect for damage. Verify that the model received is in working order. If product is damaged or incorrect, do not use. Contact your dealer, equipment provider or manufacturer. S/N # is located on the Gas Regulator body between the inlet and relief valve.

ATTENTION: It is very important to allow product to remain in original packaging for 24 hours to acclimatize to room temperature before use.

USER RESPONSIBILITY

WARNING: Service of this device should only be performed by properly trained individuals.

This product performs as explained in this manual. This holds true as long as the assembly, use, repair and maintenance are properly followed according to our instructions. Periodic review of this device is recommended. If any damage or defects are present, the product should not be used. This includes parts that are worn or missing. If any of the above are noted, immediate repair/replacement is required. If this device is subject to improper maintenance, repair, use and / or abuse leading to malfunction of the device, replacement is the sole responsibility of the user.

WARNING: DO NOT attempt to operate this device unless you are properly trained in its use or are supervised by someone educated on the proper use of the apparatus (Always follow CGA standards for medical gas products and oxygen handling). DO NOT use this device on patients who have stopped breathing without using proper resuscitation equipment.

TO MINIMIZE THE RISK OF EXPLOSION OR FIRE:

- Make sure that the person installing or using the cylinder, Gas Regulator and other gas apparatus has clean hands that are free of hand lotions, petroleum based product, hair spray or any other similar products.
- Inspect the cylinder valve and Gas Regulator thoroughly for dust, oil and grease. DO NOT USE THE CYLINDER IF OIL OR GREASE OR ANY OTHER PETROLEUM-BASED FLAMMABLE SUBSTANCE IS PRESENT. Inform your gas supplier of this condition immediately.
- DO NOT allow Oxygen or Oxygen equipment to be exposed to fire, heat, sparks, electrical switches or other possible sources of ignition. DO NOT store or use oxygen equipment at temperature of less than 0°F or more than 120°F
- NO SMOKING – Remove matches, cigarettes, lighters and lighter fluids from the patient and from the oxygen therapy area before administering oxygen. Remove other flammable materials from the area.
- DO NOT allow cylinders to tip or fall. Never allow the temperature of the cylinder contents to exceed 120°F. DO NOT store cylinders near sources of heat or flame

INTENDED USE

The Amvex Gas Regulator is used to control the gas pressure of medical compressed gas accurately under the direction of a healthcare professional. The Gas Regulators are available for both Nut and Nipple or Yoke style CGA fittings. The units are machined brass finished with a chrome body. The Amvex Gas Regulators are preset at 50PSI or 60PSI, depending on model.

SPECIFICATIONS

<p>50 PSI Preset Pressure Compact Gas Regulator</p> <p>Preset Pressure: 45-50 PSI dynamic and <60PSI static (calibrated at 1200 PSI)</p> <p>Outlet Dynamic Pressure Variation: 0.27 PSI per 100 PSI input (250 PSI – 3000 PSI)</p> <p>Minimum Flow: 100 LPM when fully open</p> <p>Safety Relief Valve: 90 PSI</p>	<table border="1"><caption>Graph Data: Outlet Pressure vs Inlet Pressure</caption><thead><tr><th>Inlet Pressure (PSI)</th><th>Outlet Pressure (PSI)</th></tr></thead><tbody><tr><td>250</td><td>45.0</td></tr><tr><td>1000</td><td>47.7</td></tr><tr><td>2000</td><td>50.4</td></tr><tr><td>3000</td><td>52.7</td></tr></tbody></table>	Inlet Pressure (PSI)	Outlet Pressure (PSI)	250	45.0	1000	47.7	2000	50.4	3000	52.7
Inlet Pressure (PSI)	Outlet Pressure (PSI)										
250	45.0										
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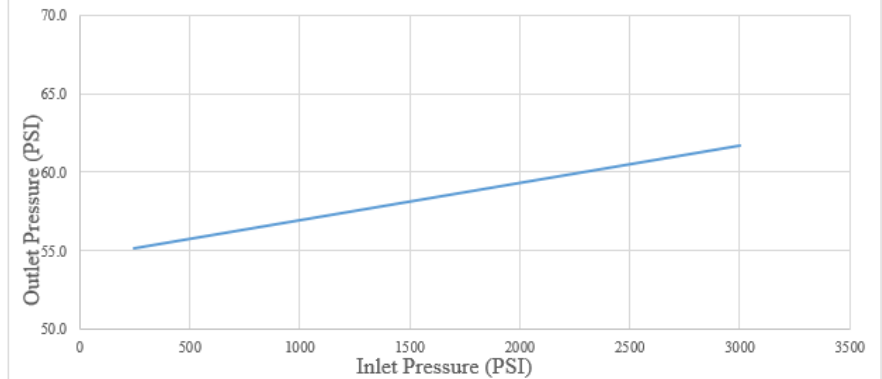
60 PSI Preset Pressure Compact Gas Regulator

Preset Pressure: 55-60 PSI dynamic and <70 PSI static (calibrated at 1200 PSI)

Outlet Dynamic Pressure Variation: 0.24 PSI per 100 PSI input (250 PSI – 3000 PSI)

Minimum Flow: 100 LPM when fully open

Safety Relief Valve: 90 PSI



Preset medical Gas Regulators are equipped with CGA Nut & Nipple, Yoke or Bull Nose (BNO) inlet connections. Outlet connection is the appropriate gas specific fitting.

1. CGA 870 with Swivel Yoke (used on small D and E size cylinders). This connection must have a sealing washer.
2. CGA 540 with Nut and Nipple. There is no sealing washer used with this connection. Tighten this fitting to the larger cylinder valves with a wrench.

MRI WARNING: This product contains magnetic, ferrous material that may affect the result of an MRI. MR Conditional options may be available, contact your Amvex sales representative at 1-866-462-6839 or 905-764-7736.

OPERATING INSTRUCTIONS

Inspect the gas cylinder valve for leaks before putting it into service. If a leak is found around the cylinder valve stem, close the valve, place the cylinder outdoors in a safe area and inform your gas supplier immediately.

CONNECTING THE Gas Regulator TO A CYLINDER

1. Chain or secure the cylinder to a wall, stand or cart. Remove the protective dust cover from the cylinder valve. Keep this cover and reinstall it on the cylinder valve if the Gas Regulator is removed and the cylinder is to be used again.
2. Purge the cylinder valve of foreign materials by opening and closing it. See your oxygen cylinder dealer for more detailed information.
3. a. If the Gas Regulator has a yoke type inlet connection, be sure that the sealing washer is in place on the Gas Regulator yoke connection. Place the two pins on the Gas Regulator yoke into the matching holes on the cylinder valve. Be sure that the pointed end of T-handle fits into the small round recess on the opposite side of the valve. Hand tighten the T-handle.
b. If the Gas Regulator has a CGA 540 connection, install the end swivel on the cylinder valve and tighten with a wrench.
4. Sealing washers should be checked for damage or contamination before each use. It is recommended that a new seal be used each time the cylinder is changed.

PRESSURIZING THE Gas Regulator FOR OPERATION

1. This type of Gas Regulator requires no adjustment. Confirm that any resuscitation equipment connected to a preset Gas Regulator is in the "OFF" position.
2. Stand so that the cylinder valve is between you and the Gas Regulator.

WARNING: Never stand in front or behind a Gas Regulator when opening the cylinder valve. Always stand so that the cylinder is between you and the Gas Regulator.

WARNING: Open the cylinder valve slowly.

WARNING: Slowly and carefully turn the cylinder valve counterclockwise until you hear the oxygen begin to flow into the Gas Regulator. Wait approximately Ten (10) seconds and turn the cylinder valve fully open. Leak test according to instructions listed in "REGULATOR LEAK TESTING".

3. Attach oxygen supply tubing to the Gas Regulator's outlet fitting.
4. After oxygen therapy is complete, close the cylinder valve. See steps listed in "Closing the Gas Regulator." Activate resuscitation equipment until gauge shows no pressure.

PRESET REGULATORS WITH DISS SELF-SEALING OUTLET CONNECTION

1. The DISS outlet connection is designed to CGA Pamphlet V-5, "Diameter Index Safety System Non-Interchangeable Low Pressure Connections for Medical Gas Applications").
2. Positive shut off of the DISS outlet connection is achieved by disconnecting the inlet nut and nipple.
3. The DISS outlet connection has a minimum flow of 100 LPM.

REGULATOR LEAK TESTING

TEST FOR LEAKS AS FOLLOWS BEFORE PUTTING THE SYSTEM INTO OPERATION.

1. Connect the Gas Regulator to the cylinder as described in section "CONNECTING THE REGULATOR TO A CYLINDER".
2. Pressurize the Gas Regulator as described in section "PRESSURIZING THE REGULATOR FOR OPERATION".
3. Check all Gas Regulator connections using an approved oxygen compatible liquid leak detector. Bubble will appear if a leak is present. If a leak is detected, DO NOT use the Gas Regulator. Take it to a qualified technician for repair.

WARNING: At any time the Gas Regulator, cylinder or other apparatus does not operate in its usual or normal manner, stop using the apparatus and notify your dealer immediately.

ATTENTION: Flow rates are not accurate when a back-pressure of more than 2 PSIG exists downstream of the Gas Regulator.

Back-pressure is caused by a restriction in the apparatus connecting the Gas Regulator unit to the patient. Metering valves, kinked hoses, or even very long hoses can cause back-pressure. In applications where back-pressure of more than 2 PSIG may be expected, use a Gas Regulator equipped with a flowmeter. Contact your dealer about concerns related to back pressure.

CLOSING THE REGULATOR

1. When you have finished using gas, close the system by turning the cylinder valve clockwise to the "OFF" position.
2. The Gas Regulator may be kept attached to the cylinder as long as necessary. After closing the system as described above, recheck the cylinder contents gauge and verify that the cylinder valve is not leaking. If pressure shows on the gauge, retighten the cylinder valve.
3. To start the flow of gas again, repeat the steps listed in "PRESSURIZING THE REGULATOR FOR OPERATION".

CAUTION: Gas will continue to flow from the outlet until the cylinder valve is closed. It is very important to always close the cylinder valve after using.

REMOVING THE REGULATOR FROM A CYLINDER

1. Close the cylinder valve.
2. The gauge will indicate no pressure when all pressure is drained from the apparatus.
3. Remove the Gas Regulator from the cylinder by loosening the T-handle or removing the inlet nut.

- When not attached to a cylinder, store the Gas Regulator in its original container in a clean protected area free from grease, oil and other contamination.

CLEANING INSTRUCTIONS

Clean the external surfaces of the Gas Regulator with a damp cloth. If more cleaning is required, return the regulator to your dealer.

CAUTION: DO NOT submerge the Gas Regulator in any form of liquid. This will cause damage and void any warranty on the product.

TROUBLESHOOTING

Contact your dealer or the technical support department at Amvex for assistance if the Gas Regulator does not function properly.

MAINTENANCE PREVENTION

Inspect the product before and after use for any damage and ease of operation.

ATTENTION: This Gas Regulator is equipped with a relief valve. If you hear a hissing or popping sound coming from the Gas Regulator, close the cylinder valve or gas inlet and contact your dealer. The regulator relieve valve is not designed to protect any downstream device or apparatus.

CAUTION: Disconnect the Gas Regulator from gas supply before servicing.

WARRANTY

The Amvex Series Flowmeter here known as "Product" is sold by Amvex LLC (the "Company") under the express terms of the warranty set forth below. For a period of SIXTY (60) MONTHS [with the exception of the 0-200 CCM and 0-1 LPM and 70 LPM Flowmeter for TWELVE (12) MONTHS] from the date the Company ships, this Product is warranted to be free from functional defects in materials and workmanship and to conform in all material respects to the description for the Product contained in this operation manual, if this Product is properly operated under conditions of normal use, regular periodic maintenance and service is performed and repairs are made in accordance with this operation manual.

The Company's sole and exclusive obligation and customer's sole and exclusive remedy under the above warranty is limited to repair or replacement, at the Company's option, of the defective Product.

The foregoing warranty shall not apply if the Product has been repaired or altered by anyone other than the Company or an authorized dealer; or if the Product has been subjected to abuse, misuse, negligence, or accident.

The Company reserves the right to stop manufacturing any product or change materials, designs, or specifications without notice.

This warranty is extended to only the initial customer with respect to the purchase of this Product directly from the Company or an authorized dealer as new merchandise. Dealers are not authorized to alter or amend the warranty of any Product described in this agreement. Any statements, whether written or oral, will not be honored or be made part of the agreement of sale.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE COMPANY SHALL NOT BE LIABLE FOR INCIDENTAL, COLLATERAL, CONSEQUENTIAL, OR SPECIAL DAMAGES INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, OR LOSS OF USE. THE COMPANY'S LIABILITY, IN THE AGGREGATE, SHALL NOT EXCEED THE PURCHASE PRICE OF THE PRODUCT.

In order to file a warranty claim, customer is required to return Product prepaid to the Company at 25B East Pearce Street, Richmond Hill Ontario, L4B2M9 Canada. As determined at the sole discretion of the Company, Products which qualify under the warranty will be repaired or replaced, at the Company's option, and returned to customer via ground delivery at the Company's expense.

All claims for warranty must first be approved by Amvex Customer Service Department: (customerservice.ca@ohiomedical.com or 866-462-6839/905-764-7736). Upon approval the customer service department will issue a Return Goods Authorization (RGA) number.

An RGA must be obtained prior to commencement of any warranty claim.

Authorized Representative
in the European Union:

EC REP

Oxygen Care Ltd.
2 Holfeld Business Park
Kilmacanogue Co Wicklow
Ireland