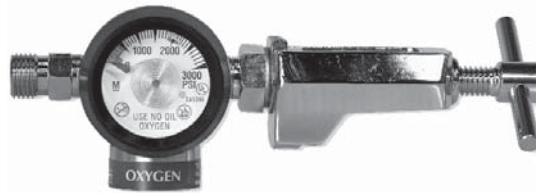


OPERATING AND MAINTENANCE MANUAL

- GAS REGULATOR PRESET MODELS -



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

Gas Connection

Outlet

Flowrate

Additional Outlet

Additional Options

GR-540	GR-870
GR-346	GR-950
GR-326	GR-910
GR-580	GR-BNO
GR-960	GR-DIN

CE
0413

*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*

CAUTION: Federal (USA & Canadian) law restricts this device to sell by or on the order of a physician.

AMVEX

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THIS DEVICE IS CLEANED FOR OXYGEN SERVICE IN ACCORDANCE WITH CGA PAMPHLET G.4.1.

IMPORTANT: SAFETY INSTRUCTIONS

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

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

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 property damage.

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 may have been altered, contaminated, 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 oxygen apparatus has clean hands that are free of hand lotions, Vaseline, 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 58PSI, depending on model.

SPECIFICATIONS

- Degree of accuracy for Gas Regulator with measuring function is 4% of full scale.
- Inlet pressure range 250PSI - 3000PSI
- Regulator is tested at 1200 PSI
- Minimum flow of over 100 LPM
- Outlet pressure will vary a maximum of 10%

Outlet Pressure		
	For Preset 50 PSI	For Preset 58 PSI
Dynamic	50PSI +/- 5PSI @ 7.25LPM Flow Rate	58PSI +/- 5PSI @ 7.25LPM Flow Rate
Static	Below 65PSI	Below 68PSI

Preset medical Gas Regulators are equipped with CGA Nut & Nipple, Yoke or 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 Swivel. 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 oxygen, 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 oxygen again, repeat the steps listed in "PRESSURIZING THE REGULATOR FOR OPERATION".

CAUTION: Oxygen 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.
4. 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 Corporation for assistance if the Gas Regulator does not function.

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

Amvex Corporation warrants its Medical Secondary Equipment to be free from defects in material and workmanship for a period of Five (5) years from the date of shipment. Within the first Twelve (12) months from date of shipment Amvex will repair or replace any part which is proven to be defective at Amvex's cost. After the first Twelve (12) months, Amvex will send the parts to the customer free of charge, but the shipping and installation will be borne by the Customer.

This warranty is valid only when the product has been properly installed according to Amvex specifications, used in a normal manner and serviced according to factory recommendations. It does not cover failures due to damage occurring in shipments or failures resulting from accidents, misuse, abuse, neglect, mishandling, alteration, misapplication or damage that may be attributable to acts of God.

AMVEX CORPORATION DOES NOT HONOR VERBAL STATEMENTS CONCERNING THE WARRANTY.

The distributor and/or dealer are not sanctioned to create verbal warranties about the product described in this agreement. Any statements will not be honored or be made part of the agreement of sale. This document is the final, complete and exclusive terms of the agreement.

THIS WARRANTY IS EXCLUSIVE AND REPLACES ALL OTHER WARRANTIES.

Amvex Corporation shall not, under any circumstances, be liable for incidental or consequential damages including, but not limited to, profit loss, loss of sales or injuries to person(s) or property. Correction of non-compliances as noted above will result in completion of all liabilities of Amvex Corporation whether based on agreement, neglect or otherwise. Amvex Corporation reserves the right to stop manufacturing any product or change materials, designs or specifications without notice. All claims for warranty must first be approved by Amvex's Repair Department: (support@amvex.com or 905-764-7736). A valid Return Goods Authorization (RGA) number must be obtained from Amvex prior to commencement of any warranty claim.

Authorized Representative
in the European Union:

EC	REP
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Oxygen Care Ltd.
2 Holfeld Business Park
Kilmacanogue Co Wicklow
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