

# Operating & Maintenance Manual

## AM 250 High Pressure Regulator



# User Responsibility

The information contained in this Installation, Operation and Maintenance Manual pertains only to the AM 250 High Pressure Regulator. This product will perform as described in this manual when assembled, operated, maintained and serviced in accordance with the installation instructions provided.

The regulator must be checked periodically. Parts that are broken, missing, worn, distorted or contaminated must be replaced immediately. Should such repair or replacement become necessary, please contact Amico Corporation or their distributors.

All regulators should not be repaired or altered without prior written or verbal approval from Amico Corporation or its distributors. Failure to comply will void all warranty on the regulator.

Statements in this manual preceded by the words **WARNING**, **CAUTION**, **DANGER** and **NOTE** are of special significance. Please read these sections carefully.



**WARNING:** Denotes steps which can prevent injury.



**CAUTION:** Denotes steps which can prevent damage to equipment.



**DANGER:** Denotes steps which can prevent electrical shock to equipment or to prevent serious injury and/or death.

# Application and Uses for AM 250 Series

- Medium to high duty capacity
- Ideal for welding and cutting applications
- Compact, single stage construction

## Description of the Regulator

### DIMENSIONS

6-3/8" W x 5-1/8" H x 4-1/4" D (16.5 cm x 13 cm x 11 cm)

### WEIGHT

2 lb. 15 oz. (1.4 kg)

### DESIGN/CONSTRUCTION

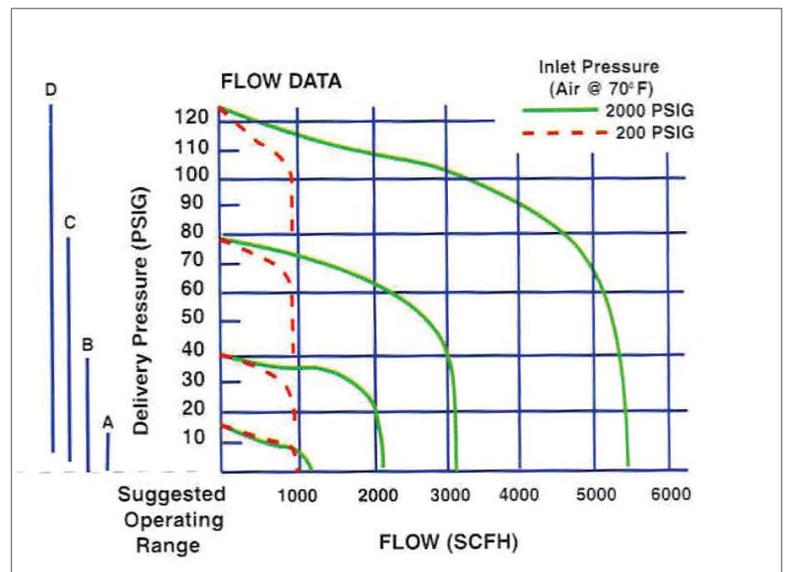
- Ignition tested according to ENISO 10524-2
- Forged brass body and housing cap
- 2" (5.1 cm) gauges
- Stem type seat mechanism
- 2" (5.1 cm) diaphragm
- External self reseating relief valve not designed to protect downstream apparatus
- Sintered inlet filter

### PERFORMANCE

- Maximum Inlet - 3000 PSIG
- Maximum Delivery Range - 350 PSIG
- Delivery Range - See Chart

### SPECIFICATION OF MATERIALS

- Body - Forged Brass
- Diaphragm Fabric - Reinforced Neoprene
- Housing Cap - Forged Brass
- Inlet Filter - Bronze



AM 250 Regulator Flow Data

# Equipment Set-Up

For filled or refilled cylinder set-up, the following steps should be followed:

- i. Support the cylinder in some manner to keep it from falling over.
- ii. Remove the protective dust cover (if present) from the cylinder valve.
- iii. Inspect the inlet and outlet of the regulator for traces of dirt, dust, oil or grease. Dirt or dust can be removed safely with a lint free cloth.



**WARNING:** If oil or grease is visible or suspected, do not use the cylinder. Inform the gas supplier of this condition immediately. Do not attempt to clean or repair the regulator. Have the system serviced by qualified personnel.

Keep cylinder, cylinder valve, all equipment and connections free of oil and grease to avoid violent combustion. Use only equipment cleaned for gas service. When filled, contents will be under pressure and can vigorously accelerate combustion.



**CAUTION:** If any leakage of a cylinder bottle is detected, turn the valve stem or handle clockwise until snug to close the cylinder valve. If leakage persists, place the cylinder outdoors and notify the gas supplier immediately. Do not attempt to clean or repair the regulator. Have the system serviced by qualified personnel.

- iv. Inspect the regulator for dirt, dust, oil or grease, especially in the area of the inlet connection.

## CONNECTING THE REGULATOR TO THE CYLINDER BOTTLE

The regulators are generally supplied with gas specific CGA nut and nipple combination that threads onto a cylinder valve or a CGA yoke type connection, which is secured to the valve by tightening of a "T" handle.

### FOR REGULATORS HAVING A CGA NUT AND NIPPLE INLET CONNECTION

- i. Remove the protective dust cover from the inlet nut.
- ii. With the valve outlet facing away from you, slightly open the cylinder valve to purge any undetectable debris from the valve seat, then close the valve.
- iii. Thread the regulator inlet connection nut onto the cylinder valve in a clockwise direction.
- iv. Tighten the nut with a suitable wrench until snug to provide a leak proof connection.
- v. Attach accessories to regulator outlet connection as required.

# Use and Care When Opening the Cylinder Valve

- i. Before opening the cylinder bottle valve, be sure that the adjusting knob of the regulator is in the off position. This can be accomplished by turning the adjusting knob all the way out (counter-clockwise).
- ii. Position yourself so that the cylinder valve is between you and the regulator.

**IMPORTANT:** For safety, never be directly in front or in back of the regulator when opening the cylinder valve.

- iii. SLOWLY turn the cylinder valve handle or wrench counter-clockwise to open the valve. When using the system, the cylinder valve should be open approximately one turn (360°).
- iv. If any hissing sound can be heard, there is a leak in the cylinder valve, regulator to cylinder connection, or in the regulator. Close the cylinder valve and open the regulator momentarily to relieve all pressure. Return regulator to the off position. Re-tighten the regulator to cylinder and repeat the test. Should the hissing sound, continue one or more of the following conditions exist:
  - a. The sealing washer is leaking and should be replaced. Make sure the cylinder valve is fully turned off before removing the regulator.
  - b. The cylinder valve is leaking. Place the cylinder outdoors and notify the gas supplier immediately. Do not attempt to use the cylinder.
  - c. The regulator is leaking and must be removed from service and returned for repair. Remember to always turn the cylinder valve fully off before removing or loosening the regulator connection.

## FOR PRESET REGULATORS

The outlet pressure of the preset regulator has been factory preset. Do not attempt to re-adjust this setting.

**Note:** Always verify the flow with the patient's end of the tubing before applying. Make sure that the tubing is never folded, kinked or crushed.

## TURNING THE SYSTEM OFF

- i. With the gas still flowing, turn the cylinder valve knob or wrench off clockwise until snug.
- ii. Allow the gas pressure in the regulator to completely escape. The delivery gauge and high pressure gauge needle should come to rest against the stop pin when all gas has escaped from the regulator.
- iii. After all pressure has been relieved, turn the regulator to the off position.

# Cylinder Replacement

## REMOVING THE REGULATOR FROM THE CYLINDER

It is not necessary to remove the regulator unless the cylinder is being exchanged for a new one.

**Note:** A cylinder with less than 300 PSI showing on the high pressure gauge should be exchanged for a full cylinder to ensure an adequate supply of gas.

- i. Be sure the cylinder valve is closed.
- ii. Open the regulator momentarily to relieve all pressure before removing it from the cylinder.
- iii. Remove the regulator from the cylinder, loosening the inlet connection counter-clockwise.
- iv. Once the regulator has been removed, a replacement cylinder from your gas supplier can be put into service. Refer to the section covering EQUIPMENT SET-UP for the proper procedure to attach the regulator to the replacement cylinder.

## REGULATOR CLEANING

If cleaning of the regulator is desired, the exterior surfaces can safely be wiped off with a clean, lint-free cloth and alcohol.



### CAUTION:

- Do not use or store near heat or flame.
- Do not puncture the cylinder in any way.
- Do not attempt to remove the cylinder valve.
- Never throw the cylinder into fire or incinerate.
- Keep out of reach of children.
- Use only with pressure reducing equipment and apparatus designed for use with appropriate gas supply.
- Do not attempt to operate this equipment unless you have been trained in its proper use or are under competent supervision.
- Never change the inlet or outlet connection as these are gas specific. Interchanging is in violation of CGA standards.



**CAUTION:** Never attempt to repair any part of the regulator or cylinder valve. This equipment should be checked and/or repaired on a regular maintenance schedule (annually).

# Notes

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