



# **WORKHORSE**

REGULATOR

OWNER'S MANUAL



Item numbers:  
**R236C**  
**R-239**



OMS LLC

CE Approved OMS® Workhorse Regulator

**Table of Contents**

<u>Introduction</u>	<u>1</u>
<u>Warnings and Precautions</u>	<u>1</u>
<u>Mounting the First Stage with DIN or Yoke Adapter</u>	<u>2</u>
<u>Pre-Dive Checkout</u>	<u>3</u>
<u>Inspection Checklist</u>	<u>3</u>
<u>Anti Freeze Protection</u>	<u>4</u>
<u>Use of regulator with Oxygen</u>	<u>4</u>
<u>Post Dive Care and Maintenance</u>	<u>4</u>
<u>Required Maintenance</u>	<u>5</u>
<u>Dealer Inspection and Service</u>	<u>6</u>
<u>Warranty Information</u>	<u>7</u>



R-239 Yoke Adapter  
(Optional)

**Introduction**

You purchased the right Regulator!  
It is important to pay special attention to information provided in warnings, cautions and notes, which are accompanied by the following symbols:

A **WARNING** indicates any situation that, if not avoided, could result in serious injury or death



A **CAUTION** indicates any situation or technique that could cause damage to the product, and could subsequently result in injury to the user.



A **NOTE** is used to emphasize important points or reminders.



**General Precautions and Warnings**

1. Use of SCUBA equipment by uncertified, or untrained persons, is dangerous and can result in serious injury, or death.
2. Before using your OMS® Workhorse Regulator, you must have successfully completed a training and certification course in the techniques of SCUBA diving from a recognized certification agency (or any U. S. Military or government operated diving school). Use of OMS® Workhorse Regulator by any person who is not certified by a recognized agency shall render all warranties, expressed or implied, null and void.
3. The OMS® Workhorse Regulator is not configured for use with surface supplied air
4. Always pressurize the Workhorse Regulator gradually by opening the cylinder valve slowly.
5. Never lubricate any part of the Workhorse Regulator or cylinder valve with any lubricant. Only an OMS trained technician is qualified to do lubrication.
6. DO NOT apply any type of aerosol lubricant spray or any aerosol spray on the Workhorse Regulator. Doing so may cause permanent damage to certain plastic parts, including the second-stage housing.
7. NEVER leave the cylinder standing unsecured with the Workhorse Regulator attached to the valve as this may cause permanent damage to the Workhorse Regulator and cylinder valve if the cylinder accidentally falls.
8. Do not use oxygen mixtures of gas exceeding a maximum pressure of 2640 psi as serious personal injury or death could result from fire or explosion.

### Mounting the First-Stage onto the Cylinder Valve with the Yoke Adapter (R-239)

1. With the air outlet opening of the valve facing away from you, release a small amount of air from the cylinder by turning the valve hand wheel counterclockwise to open the valve only slightly. When air is heard exiting the valve, immediately turn the valve hand wheel clockwise to close the valve. This will clear out any water or debris that may be inside the cylinder valve outlet opening.

2. Remove the dust cover from the R-239 adapter. Next take the R-239 adapter and screw it on the DIN threads of the first stage by turning clockwise.

3. Place the first-stage Workhorse Regulator yoke over the cylinder valve so that the inlet fitting of the Workhorse Regulator aligns with the O-ring of the cylinder valve (be sure to inspect the O-Ring for cracks etc.). While holding the first stage in place against the valve O-ring, turn the Black yoke screw Knob clockwise to tighten. Ensure that the yoke screw mates properly into the small dimple on the backside of the cylinder valve, and tighten the yoke screw finger tight only.

4. If a submersible pressure gauge is attached to the first-stage, ensure that the gauge is facing away from you and others. Pressurize the Workhorse Regulator by slowly turning the cylinder valve hand wheel counterclockwise. Continue to turn the valve hand wheel counter clockwise until it is fully open.

5. Inspect the first-stage Workhorse Regulator for leaks at just under the surface of the water or with a soap solution. If leakage is detected, immerse the first-stage and cylinder valve in water while pressurized to determine the source.

6. If leakage has been detected, follow the procedures for removing the Workhorse Regulator from the cylinder valve on page 5. If air was leaking between the first-stage Workhorse Regulator and the cylinder valve, replace or re-seat the cylinder valve O-ring and repeat the above procedure. If leakage persists, return the cylinder and Workhorse Regulator to an authorized OMS LLC Dealer for inspection and repair.



### Mounting the DIN First-Stage in the Cylinder Valve

1. With the air outlet opening of the valve facing away from you, release a small amount of air from the cylinder by turning the valve hand wheel counterclockwise to open the valve only slightly. When air is heard exiting the valve, immediately turn the valve hand wheel clockwise to close the valve. This will clear out any water or debris that may be inside the threaded cylinder valve outlet opening.

2. Remove the protective cap from the first-stage Workhorse Regulator threaded DIN connector.

3. Position the first-stage near the cylinder valve so that the LP hose of the primary second-stage Workhorse Regulator



Will be configured properly (possibly over the right shoulder). Rotate the first-stage Workhorse DIN connector into the cylinder valve by turning the hand wheel clockwise by hand until it is lightly snug. Never use tools to tighten hand wheel.

4. If a submersible pressure gauge is attached to the first-stage, ensure that the gauge is facing away from you and others. Pressurize the Workhorse Regulator by slowly turning the cylinder valve hand wheel counterclockwise. Continue to turn the valve hand wheel counterclockwise until it is fully open.

5. Listen near the first-stage Workhorse Regulator to check for leaks. If leakage is detected, immerse the first-stage and cylinder valve in water while pressurized to determine the source.

6. If leakage has been detected, follow the procedures for removing the Workhorse Regulator from the cylinder valve on page 5. If air was leaking between the first-stage Workhorse Regulator and the cylinder valve, replace or re-seat the Workhorse Regulator DIN connector O-ring and repeat the above procedure. If leakage persists, return the cylinder and Workhorse Regulator to an Authorized OMS LLC Dealer for inspection and repair.

### **Pre-Dive Checkout**

Before each use, the OMS® Workhorse Regulator must be given a thorough visual inspection and functional test. NEVER dive with a Workhorse Regulator that shows signs of damage, or provides substandard performance until it has received complete inspection and service from an Authorized OMS LLC Dealer or OMS®.

### **Inspection Checklist:**

1. Carefully inspect all hoses fittings to ensure that they are securely connected into their respective ports on the first-stage Workhorse Regulator. Inspect the hoses themselves to ensure that the hoses are not worn, blistered, cut, or otherwise damaged. If hose protectors are present, slide the protector's back to expose the hose fittings, and inspect the hoses as described above.

2. Visually inspect both the first and second-stage OMS® Workhorse Regulator parts for any signs of external damage, such as bending or cracks.

3. Remove the Protection cap and closely inspect the condition of the first-stage filter. The filter should appear clean and free of any corrosion or discoloration. If a green residue is visible on the surface of the filter, moisture has entered the first-stage Workhorse Regulator and may have caused corrosion to begin forming inside the Workhorse Regulator. This can seriously impair the Workhorse Regulator performance. White/gray powder may indicate that the Workhorse Regulator has been used with an aluminum cylinder that has internal corrosion. Red (rust) indicates a steel cylinder with internal corrosion. In the event corrosion is found, the Workhorse Regulator (and cylinder) must be serviced.

**CAUTION:** If discoloration or contamination residue is found on the surface of the filter, it is strongly recommended that you DO NOT attempt to dive with the Workhorse Regulator until it has been serviced from by an Authorized OMS LLC Dealer or OMS®.

4. Connect the first-stage Workhorse Regulator to a fully charged SCUBA cylinder. For mounting instructions, read the Preparation and Setup section of this manual on pages 2 and 3.

5. SLOWLY open the cylinder valve to pressurize the OMS® Workhorse Regulator. Depress the purge button several times to ensure that there is sufficient airflow. This will also clear any Protection or debris, from the second stage.

6. Release the purge button and listen to the second-stage OMS® Workhorse Regulator for any airflow. Ensure that the second-stage does not continue to flow once the purge button is released. If gas does continue to flow after several attempts do not dive the regulator until it is service by OMS® or an authorized OMS® service center

7. Place the second-stage Workhorse Regulator mouthpiece in your mouth, and inhale slowly and deeply several times. The Workhorse Regulator should deliver enough air for you to breathe easily without noticeable resistance.

8. Go ahead start to explore.

### **Anti Freeze Protection**

Whenever your cylinder is filled, request verification that the water vapor content of the supplied gas is less than -65F dew point. Most dive stores and operators obtain testing and certification to provide evidence of compliance with pure gas standards. Excessive water vapor can increase the potential for Workhorse Regulator freeze-up and subsequent regulator failure.

**WARNING:** Gas with excessive water vapor can cause the OMS® Workhorse regulator to freeze up and result in regulator failure.

### **Post Dive Care and Maintenance**

#### **Removal of the Workhorse Regulator from the Cylinder Valve (DIN Connector)**

1. Shut your gas off by turning the Valve Handwheel(s) clockwise until they stop.
2. Push the purge cover of the Workhorse Regulator second-stage until the gas stops flowing and your submersible pressure gauge reads "0" psi.
3. Rotate counterclockwise the first-stage DIN hand wheel to loosen and remove the Deco Regulator First Stage from the cylinder valve(s).
4. Install the protector cap (Dry it if necessary) over the threads of the Deco First Stage.

## USING ENRICHED AIR NITROX (EAN)



**WARNING:** This section of your owner's manual contains important information regarding the use of your equipment with enriched air (EAN/Nitrox). Do not attempt to use this product with enriched air until you have read and understand this section of the manual. To do otherwise increases your risk of injury or death.

Obtain an EAN (Nitrox) Certification. In order to enjoy the special benefits that EAN/Nitrox can provide, it is extremely important to obtain special training from a nationally recognized training agency in addition to that which is provided for open water scuba.

Your OMS<sup>®</sup> regulator has been prepared for use with Enriched Air Nitrox (EAN) where the percentage of oxygen in the EAN does not exceed 40%. This is possible because each regulator is built to a high standard of cleanliness using EAN compatible components and lubricants. In addition, each regulator design has passed stringent adiabatic compression testing to ensure its safety and compatibility with increased percentages of oxygen. If it is your intention to use your new OMS<sup>®</sup> regulator with EAN (O<sub>2</sub> not to exceed 40%), it is imperative that you maintain the internal cleanliness of the regulator (see section on Care and Maintenance). If it is your intent to use the regulator interchangeably with breathing air, the breathing air should be oxygen-compatible and the hydrocarbons do not exceed 0.1 mg/m<sup>3</sup>. Your local authorized OMS<sup>®</sup> dealer can help you determine whether the breathing air that they provide meets this criteria.

Standard compressed breathing air, often referred to as Grade E in the United States, does not necessarily meet this criteria. Grade E breathing air may contain a certain level of hydrocarbons, including traces of compressor oil that while not considered harmful to breathe, can pose a risk in the presence of elevated oxygen content.

### Regulator Owner's Manual



#### **NOTE: OVERVIEW OF FEATURES**

##### **Second Stage Hose Configuration**

Passing hydrocarbons through a valve and regulator creates a cumulative effect where the hydrocarbons build up over time along the internal passageways of the equipment. When these hydrocarbons come in contact with high-pressure oxygen enriched air, they can pose a very real hazard that can lead to combustion.

Therefore, if a regulator has had use with Grade E breathing air, it should be returned to an authorized OMS<sup>®</sup> dealer for overhaul service including hydrocarbon cleaning, prior to being put back into Nitrox service. Although second stage components are not exposed to high pressure EAN, OMS<sup>®</sup> recommends that the same cleaning procedures be followed for the complete regulator. This prevents the possibility of cross contamination and guarantees the cleanliness of the entire regulator.

OMS<sup>®</sup> offers additional models of regulators that are designed and manufactured for use with Enriched Air Nitrox where the percentage of oxygen does not exceed 40%. For information about these models, consult your authorized OMS<sup>®</sup> dealer.

### **Removal of the Workhorse Regulator from the Cylinder Valve when using the optional Yoke Adapter (R-239)**

1. Shut your gas off by turning the Valve Handwheel(s) clockwise until they stop.
2. Push the purge cover of the Workhorse Regulator second-stage until the gas stops flowing and your submersible pressure gauge reads "0" psi.
3. Turn the Black Knob on the Yoke Adapter (R-239) counterclockwise and remove the Workhorse Regulator first stage from the cylinder valve.
4. Dry the Protection cover and install it over the inlet opening of the first stage by tightening the Yoke Adapter knob.

### **Required Maintenance**

**NOTE:** Lack of maintenance, improper cleaning and/or prolonged or improper storage can cause internal corrosion and/or deterioration of O-ring seals, filter and seating surfaces. This type of abuse will void your OMS® warranty.

1. When the Workhorse Regulator is removed from the SCUBA cylinder valve, it is important that the Protection Cover is installed in the R-239 Yoke Adapter inlet or over the threaded DIN connector. This is necessary to prevent damage to the threads of the DIN Connector, or entrance of water and debris into the first-stage. This protector must be completely dry before securing it in the inlet fitting of the R-239 Adapter or over the threaded DIN connector or damage to the regulator may result.
2. Always soak your First and Second Stage thoroughly with a solution of OMS® Corrostop (this will remove destructive salt and mineral deposits) or clean fresh water while the regulator is attached to the cylinder(s) and pressurized with air. Do not clean your regulator if it is not pressurized as water may enter the internal parts of the regulator and cause damage. Be sure to actively move the Second stage through the solution to dislodge debris and remove all salt water.
3. If soaking the Workhorse Regulator while it is pressurized is not possible, it may be briefly soaked unpressurized. Be sure the Protection cap or DIN protector cap is secure over the first-stage inlet or threaded DIN connector. DO NOT depress the purge button or turn the adjustment knob while Workhorse Regulator is submerged. Failure to do this will allow water to enter the internal parts of the second stage causing damage.
4. After soaking the Workhorse Regulator in a solution of Corrostop or water, remove it and the cylinder(s) from the bath. While the valve(s) is still open position, depress the second stage purge cover several times to remove the residual water.
5. Next, depressurize the Workhorse Regulator by first turning the cylinder valve hand wheel(s) clockwise until they stop. Then depress the purge cover of the second stage until the gas stops flowing and your SPG reads 0 PSI". Remove the first stage from the cylinder valve(s) (see Removal of Workhorse Regulator from Cylinder Valve Section of this Manual for details).
5. Dry by laying the regulator on an adsorbent lint free surface or securely hang by the first stage.
6. When the Workhorse Regulator is completely dry, store it laying flat in a clean equipment bag

***Equipment for Underwater  
Exploration™***



OMS LLC

P.O. Box 146    Montgomery, NY 12549

Tel: 845.457.1501    ■ Fax: 845.457.1504    ■ [www.omsdive.com](http://www.omsdive.com)

© OMS LLC