

# THE MH CO-PILOT

## **Aviator's Oxygen System**

*The small, light-weight and portable hand-held oxygen system that can go anywhere you need it to go.*



## **THANK YOU**

Thank you for choosing the MH CO-PILOT oxygen system. You have made a wise decision to use oxygen at the higher altitudes. The MH CO-PILOT is a small, lightweight and very capable low cost supplemental oxygen breathing system for the higher altitude activities. We are positive the MH CO-PILOT system is just what you have been looking for. Please be responsible and use the system safely. Take some time to read this short manual and learn the few things you need to know and practice while using this oxygen system.

## **BASIC SAFETY**

The MH CO-PILOT Oxygen system delivers pure oxygen for the purpose of supplemental breathing. It is not intended for SCBA or SCUBA use. *(The administration of medical oxygen should be done by a doctor or emergency medical technician with equipment made for that use).* Pure oxygen is a highly oxidizing gas in nature and vigorously accelerates combustion. If not used properly and with caution, it can provide a catalyst for spontaneous combustion.

- **DO NOT attempt to refill an empty cylinder!**
- **DO NOT use the system or open the valve near an open flame!**
- **DO NOT use any type of oil or grease on any fittings or cylinders!**

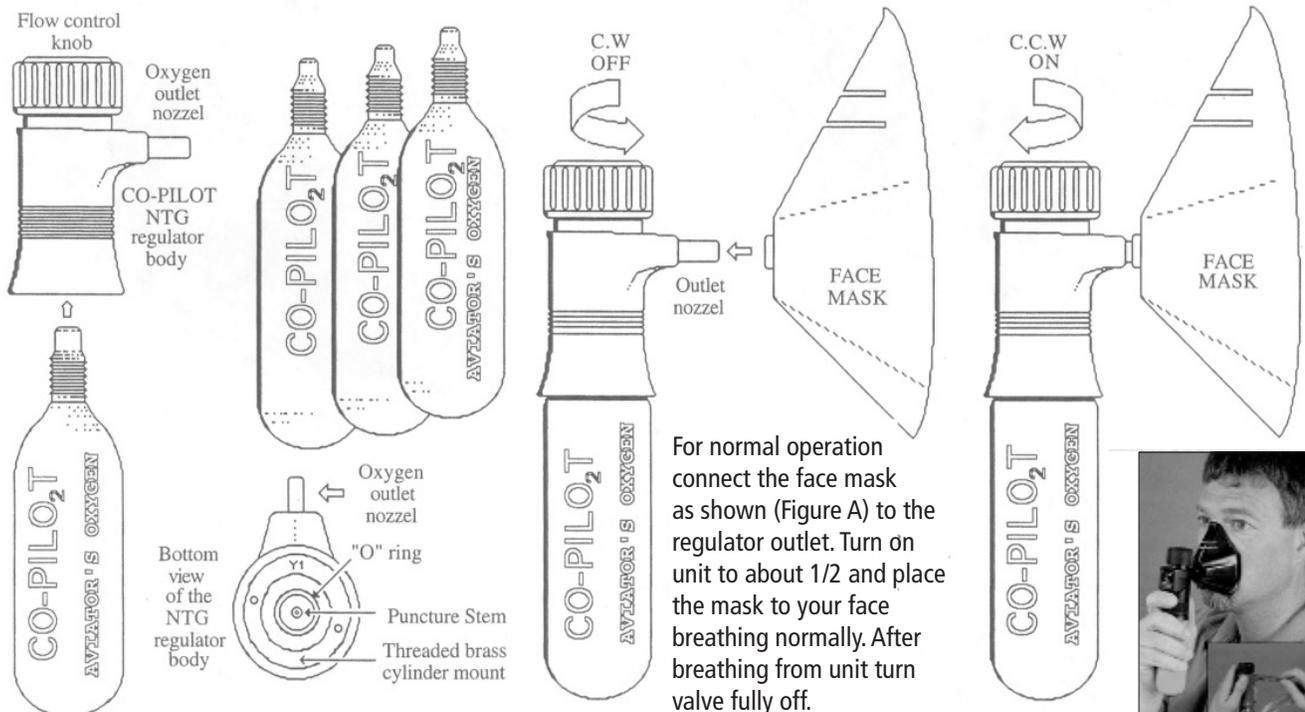
## **DESCRIPTION AND OPERATION**

The basic MH CO-PILOT oxygen system comes as a kit with the following items:

- Qty 1: Owners & operation manual from Mountain High Equipment & Supply Company.
- Qty 3: 18 liter non-refillable oxygen cylinders.
- Qty 1: NTG-18 regulator unit.
- Qty 1: Quick-connect face mask.

The MH CO-PILOT oxygen system uses a hand adjustable constant flow type regulator. It is precision manufactured for MH in Japan and imported for the use of supplemental breathing while at high altitudes. The regulator is adjustable from off to full ON delivering up to two liters per minute of pure oxygen. At the full open 100% rate a

full cylinder will last, at sea level, about 9 to 10 minutes. To prepare the MH CO-PILOT oxygen system for use be sure that the plastic bag is completely removed from the regulator body. Make certain that the regulator cylinder mounting threads are free of any pieces of the plastic bag or foreign objects. Keep oil and dirt from the threads. Turn the regulator valve full OFF (clockwise). Insert a new cylinder and turn it (screw) clockwise in until it is hand tight. The regulator body will puncture the cylinder aperture allowing the oxygen to flow into the valve, see below. With the regulator valve off, check for any leaks by closely listening around the regulator body. Tighten cylinder firmly by hand to remedy any leaks. If leakage cannot be stopped by tightening the cylinder, you may have dirt or some foreign object on the "O" ring in the regulator. You will have to wait until the cylinder is empty to correct it. You should not remove cylinders with oxygen remaining. Always keep the regulator valve OFF while removing or installing cylinders and while not in use.



For normal operation connect the face mask as shown (Figure A) to the regulator outlet. Turn on unit to about 1/2 and place the mask to your face breathing normally. After breathing from unit turn valve fully off.

Figure A

***If use of the face mask is not desired or practical, breathing directly from the regulator outlet through an extension tube is possible, providing you follow these instructions;***

1. With the regulator on at 1/2 setting and with your lips slightly open, lightly bite the tube with your teeth, inhaling ambient (outside air) through your lips along with the supply of oxygen taking a full or normal breath.
2. Close your lips around the tube and exhale through your nose. Your mouth will fill up with the next pocket of oxygen.
3. Repeat steps 1 and 2 for as many times desired.

**NOTE:**

You can optionally use a nasal cannula with the CO-PILOT oxygen system for applications where the face mask may not be practical

**GENERAL INFORMATION**

The MH CO-PILOT oxygen system can be shut off and stored for several months without any noticeable leakage. However, nothing in life is perfect and there may be some leakage after a few years of storage. **Therefore, you should always check your system before use, making sure that the feed nozzle is not obstructed.** If you

are using the MH CO-PILOT oxygen system for hang gliding, paragliding or hiking and keep a log book of your flights, also make notes of your oxygen usage along with your flights. This will help you in determining how much oxygen is left in a cylinder. Although not convenient, you could change cylinders in flight. Some pilots fly with two units. As one runs out the other is turned on, and the empty cylinder is replaced at a convenient time.

How long will a cylinder last, and how can I use it best? You first need to know how the regulator works. This is a constant flow type regulator, you must observe some considerations in using the system. The regulator, fully open, will deliver a flow of oxygen at a rate of about 2 liters per minute, (Please consult the table below). At this valve setting a full cylinder will last for about 9 minutes. (Please consult the table below).



Regulator on/off control knob

Regulator Setting	Flow rate liters per minute	Fresh cylinder life in minutes
 100% full-open	2.0	9:00
 66% Moderate	1.32	13:38
 33% Light duty	0.66	27:16

For regulator settings less than 100%: First turn to 100% then back down to the desired setting. This will assure the proper flow rate

NTG Regulator flow rate & cylinder life table

It has been our experience from those who report back about their use with the MH CO-PILOT kit that they do not use it at a constant flow rate. Some report using it in scheduled steps such as a 3 breath period lasting about 10 seconds every 30 minutes at a full open setting. At this rate a fresh cylinder will last about 24 hours. With this information you should be able to determine your needs and cylinder life quite easily. For example if you should take a 10 second length breath from the kit every 15 minutes the cylinder life would be cut in half to about 12 hours.

## **IMPORTANT**

Consult your physician before use. The MH CO-PILOT oxygen is not intended for medical use. The administration of oxygen in medical or emergency situations should be performed by a doctor or medical technician with equipment made for that purpose. Cylinders contain pure oxygen under pressure. Do not heat over 120° F. Keep from fire or flame. Never attempt to service the unit. Lubrication of any portion of the unit may cause an explosion. Keep system and cylinders from children. Federal law prohibits anyone from attempting to refill the disposable cylinders. They are, however, made from a high-grade steel making them candidates for material recycling. Therefore, once a cylinder is empty, please remove the plastic wrapper from the spent cylinder and recycle it. By definition any container with more than 90 cu. in. of compressed oxygen is considered, by the U.S. Dept. Of Transportation (DOT), as a hazardous material. See CFR 172.101. Any container of compressed oxygen may not be taken aboard any commercial aircraft or included in common luggage. You may, however ship filled oxygen cylinders via a common carrier such as "Federal Express" or "UPS" ahead of your flight.

## **REQUIRED INFORMATION IF YOU WISH TO SHIP THE OXYGEN CYLINDERS BY AIR**

**DOT Shipping Name of Material: OXYGEN COMPRESSED**  
**DOT Hazard Class: NON FLAMMABLE GAS**  
**DOT Identification Number: UN 1072**  
**DOT type Label: OXIDIZER**

---

## **WARRANTY**

Mountain High Equipment & Supply Co. warrants your MH CO-PILOT system against defects from materials and workmanship for one year after date of purchase. The conditions are simple; should any part of the system become defective during this period, ship it to us and we will repair or replace it free of charge (you pay only shipping). This warranty is not valid if Mountain High Equipment & Supply Co. has determined that the system or any of its components have been damaged from being used improperly or in an abusive manner. If the MH CO-PILOT is damaged from abuse, but still salvageable, it may still be repaired by Mountain High Equipment & Supply Company at a nominal charge. Before this warranty can be valid Mountain High Equipment & Supply Co. must have your owners guarantee & registration form properly filled out and in our files. Mountain High Equipment & Supply Co. is not liable for any property or personal damage caused by the possible misuse of the system or cylinder. Operating conditions including, but not limited to cylinder and ambient conditions i.e. open flames or combustible materials and gasses must be considered when using the system. Improper use could possibly cause kit and or cylinder failure and lead to possible property damage and personal injury.

---

## **MH CO-PILOT OWNERS REGISTRATION & WARRANTY FORM**

*Please copy and fill out this OWNERS REGISTRATION & WARRANTY FORM, then mail to:  
Mountain High Oxygen Systems, 2244 Airport Way, Suite 100, Redmond OR 97756*

Date of purchase: \_\_\_\_\_

Where purchased: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_

Country: \_\_\_\_\_

Telephone: \_\_\_\_\_

Zip: \_\_\_\_\_

---

