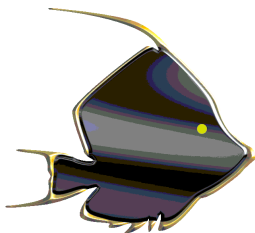


# Setup, Use and Care Guide

## MC200 / MVX2i Housings

### Underwater Housing



**GATES**  
**UNDERWATER PRODUCTS**

Dear Gates Customer,

Welcome to the Gates family! You now own one of the finest underwater housings available, and we thank you for choosing Gates! For over 33 years Gates has crafted the most **reliable, durable** and **dependable** housings to suit many needs, from recreational diving to treasure hunting, marine research and Hollywood productions to U.S. Navy programs.

You see, at Gates, your selection of our product is only the beginning. We are here to service you, the customer, for as long as you own our product. Our Customer Service is second to none. We'll make every reasonable effort to support you wherever your adventures land you, including remote corners of the globe. Anytime you need advice, parts, overhaul, repair, or just want to chat, Gates will take care of you promptly and to your satisfaction.

**Please read through all the documentation** contained in this package to familiarize yourself with a Gates housing **before** diving. It contains important and valuable information so your new housing easy to learn and use. Soon you'll be capturing images and showing your friends and colleagues the splendor of the undersea realm.

**Complete and return the warranty card** enclosed in this package to activate your *2-year warranty*. You'll receive 2 years of warranty coverage for your investment and unprecedented peace of mind, only from Gates.

Gates wishes you the greatest success in your diving adventures. May you capture the memories of a lifetime and the envy of your friends. And remember.....

**Don't take a chance...Take a Gates!**

Sincerely,

**John Ellerbrock**  
President and General Manager

**Gates Underwater Products, Inc**

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# Gates Housing Setup and Use

## For Canon 200mc/MVX2i

**Congratulations** on owning a new **Gates** housing! You've selected a product that will provide years of value and reliable service. This housing was custom designed for the 200mc/MVX2i camera for a compact and easily transportable package. Please read through this entire guide to familiarize yourself with the Gates 200mc/MVX2i housing. The following easy setup guidelines will explain how to prepare and use your camera and housing so you'll get the best results from your video endeavors.

### First Time Use

Every Gates housing is pressure tested before leaving the factory to assure a watertight seal. As a precaution, however, it's a good idea to first use the housing **without** your Canon 200mc/MVX2i inside. Rough or abusive handling during shipment could have caused unnoticed damage after leaving the factory. In addition, you can get a good feel for the use of an underwater housing without worrying about getting a good shot. You can simply concentrate on the technique of holding the housing in position while fine tuning your buoyancy.

After removing the housing from its shipping container or Gates Pak, carefully inspect for any damage that may have occurred during shipment. If you discover any, contact Gates or your dealer immediately for assistance.

### Preparing the 200mc/MVX2i Camera

Your Canon 200mc/MVX2i will need some preparation before placement into the housing.

- ✓ **Remove lens hood and cap** completely from camera.
- ✓ **Install** a tape, Memory Card, and charged battery.
- ✓ **Remove the Handstrap completely.** Four screws hold the handstrap to the camera. Save the handstrap, screws and other pieces for re-attachment later.



⚡ **CAUTION:** Failure to perform this step may result in the hand strap becoming caught in the housing seal and accidental flooding.

Remove the Handstrap completely from the camera

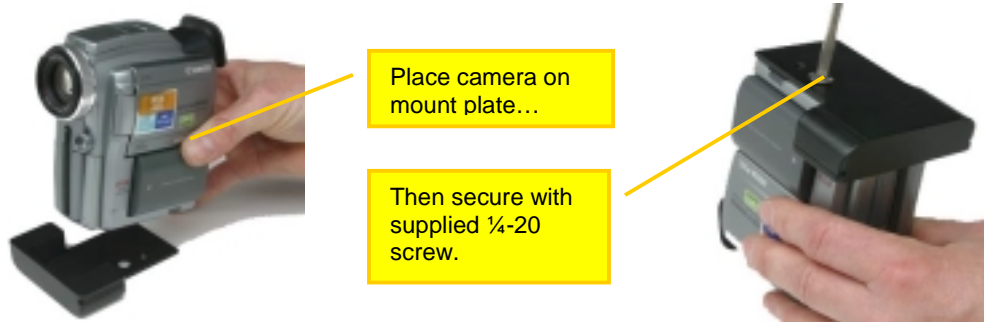
### Preparing the Housing

- ✓ **Open the housing.** Two stainless steel safety latches secure the housing halves. They have a positive locking feature, so to open them you must first depress the center bar release while lifting the rear lever. Depress the bar and lift the rear lever on the top latch, then undo it from its catch hook. Release the two side latches in a similar fashion.
- ✓ **Separate the rear half of housing from the front.**

⚡ **Note:** Your Gates housing was shipped from the factory with the large orange o-ring installed between the housing halves. This is done so you can observe proper

and correct installation of this o-ring. It is recommended you **remove this o-ring for future shipment or air travel** to allow for air pressure changes.

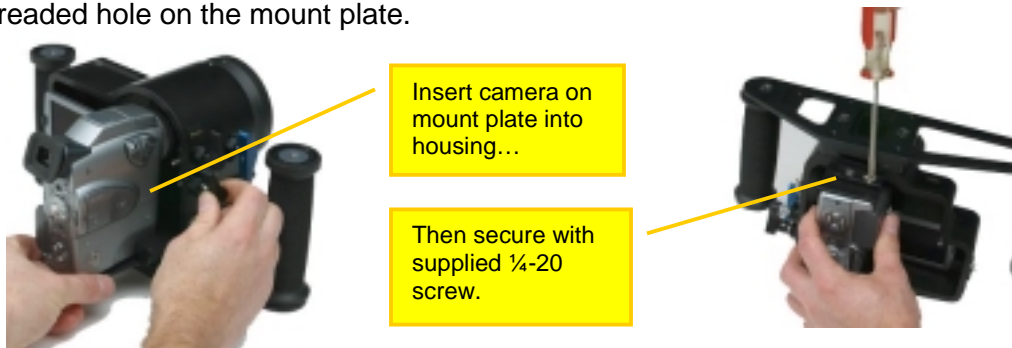
- ✓ **Remove the camera mount plate** from the housing. Note the positioning of the mount plate for later installation with the 200mc/MVX2i camera attached.
- ✓ **Mount the camera to mount plate** using supplied screw, which fastens to the tripod mount on the bottom of the camera.



- ✓ **Pull out all side controls** on the 200mc/MVX2i housing out as far as they will go.

### ***Installing the 200mc/MVX2i Camera Into the Housing***

- ✓ **Insert the camera.** Carefully slide camera on its mount plate into the front housing half. Look to see that the screw hole on the housing mount tab aligns with the threaded hole on the mount plate.



- ✓ **Install the supplied flat head screw** through mounting tab into the mounting plate. Tighten screw snug with medium screwdriver. Be careful not to scratch o-ring sealing surface with the screw driver.
- ✓ **Check the controls.** When the camera is installed into the front housing half, press in controls until they touch the camera and see that they work properly (refer to the next section for more detail on controls). This is a good time to familiarize yourself with the operation of each control.
- ✓ **Open the LCD.** Finally, be sure the LCD screen is open. This will be your viewfinder underwater.

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### **Closing the housing**

- ✓ **Carefully inspect the o-ring** on back half and sealing surface on front half. Make sure they are clean and in good condition.
- ✓ **Mate the housing halves.** Place back half onto the front housing half. Align the alignment pin holes in back with alignment pins on front. You will 'feel' when the housing halves align and seat together properly.
- ✓ **Close latches.** When the housing halves are properly mated, bring the latches up and hook them onto their catches on the front half. Push them simultaneously down until they 'snap' closed and lock.

**⚡ Caution:** The safety latches must be **closed** and **locked** prior to use to avoid leakage or opening underwater. ***It is your responsibility to make sure the latches are secure and locked, and in good condition. DO NOT enter the water with a faulty latch. Gates will replace a damaged or faulty latch free of charge.***

- ✓ **Carefully inspect** parting line between front and rear housing. If this line is not even all the way around, remove the back and determine the reason. (O-ring out of place, housing halves not seated properly, etc.) ***Failure To Do This May Result In A Wet Camera!***
- ✓ **Recheck the controls.** Note positioning of each controls as it touches the camera button/switch it is designed to actuate.
- ✓ **Power up the camera** and check all controls for the proper operation before entering water.
- ✓ **Check the Port.** It should be seated flush on the front bulkhead with no uneven gaps. If the port is not seated properly, remove the port and re-install per directions in a subsequent section of this document.

## Controls

Your Gates housing utilizes 100% mechanical controls to provide you the most reliable operation possible. They are all rotational in nature: that is, there are no push buttons that can become sticky or depress under pressure. There are no batteries to change and little maintenance to perform (see 'Housing Care and Maintenance' section).

The housing controls are designed by Gates engineers, to the extent possible, to feel and behave like the camera. With time and use the housing controls will become quite familiar, and you'll find operating them requires similar 'finesse' as the camera controls.

To help familiarize you with the housing controls, Gates recommends reviewing each control individually, how it actuates the corresponding camera control, and actually operating it to get a 'feel' for the control. You can view all front housing controls with the housing open. After reviewing all controls, perform a 'simulated' dive by operating the controls as you would in the water.

One final note about controls: when operating any control *out of water*, you may need to press the control against the housing, into the position it would naturally find while subject to water pressure. The controls are designed to operate properly in this position.

### Power (Camera/VCR)

This control is easily identified by the **green** color. It has three positions: 'Camera' (for video), 'VCR' (for playback of your video) and 'Off'. The positions are exactly like that found on the camera switch, and you will 'feel' the switch move into each position as it passes the tactile detents.

### Zoom

The Zoom control is **blue** color for easy identification. It operates with a simple up/down motion on the lever trigger. *Note: this control must be returned to the 'neutral' position after setting the desired zoom distance.* Other functions on the camera may not properly operate if the zoom switch is depressed in either 'zoom' or 'telephoto' conditions. If you find that other functions will not operate properly, check that the zoom control is in the 'neutral' position.

### Record/Standby

The Record Standby control is red, and operates by a short upward motion on the lever trigger. Press once to record, press again for Standby. You will 'feel' the record/standby button on the camera actuate through the control as it is depressed. This control will return to its neutral position automatically.

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### **A/M Focus (Auto/Manual Focus) and Card/Tape select.**

This trigger control performs two functions. You can see the action of this control through the rear viewing window.

With the trigger pointing down, the control will press the Auto/Manual focus button. It acts as a 'wiper' across the button to toggle between auto and manual focus modes.


Pointing up, the trigger allows you to switch the camera between 'Card' and 'Tape' modes to determine how your images are recorded.

The control should be "parked" with the trigger pointing left when not being used.

 **Tip:** Auto focusing underwater can cause a 'seeking' effect as the camera attempts to focus and re-focus on your subject. This can be very distracting when viewing your shots later. To avoid this, let the camera focus on your subject in auto focus mode, then switch to manual focus mode. The camera will 'freeze' at this focus setting, your subject will remain in focus, and no 'seeking' effect will occur.

### **Still Photo**

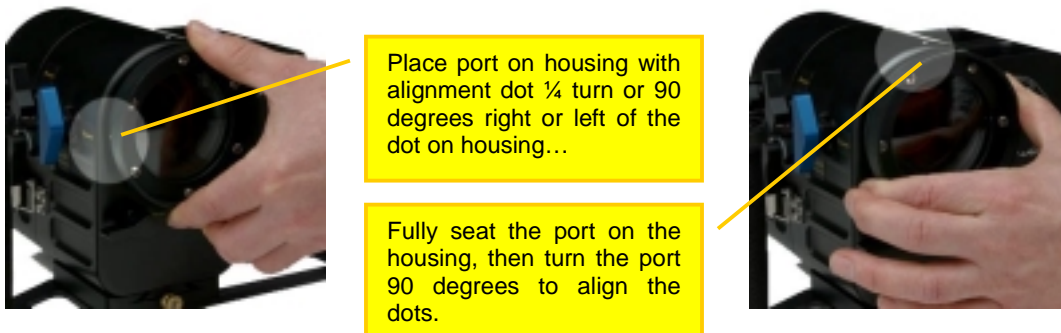
This control operates with a short forward motion on the lever trigger, and you should feel the photo button on the camera depress.

 **Tip:** with the 'Tape' button selected, depressing the photo button will capture a still image to tape for about 7 seconds. In 'Card mode, the image will be captured to the memory card. In this mode, the image will be recorded the full camera resolution (1.3 megapixel). This is much higher resolution than the same image recorded to tape. Gates recommends you switch to 'Card' mode when capturing digital still images.

## Changing Ports

Gates offers several ports for your 200mc/MVX2i housing, which are attached with a bayonet-style mount. Port changes are easy and straightforward:

- ✓ You will see alignment dots on the housing and on the port. When aligned the port is fully engaged and ready for underwater use. Turning the port 90 degrees, or  $\frac{1}{4}$  turn in either direction so the dot faces left or right will allow the port to release from the front of the housing. Gently pull the port directly away from the housing to do so.
- ✓ Before installing the next port, perform an inspection and lubrication of the sealing o-ring. See "O-ring Care and Maintenance" in this Use and Care Guide for specific details.
- ✓ Installing a different port is directly the opposite: insert the port into the front bulkhead of the housing with the alignment dot on the port facing left or right, or  $\frac{1}{4}$  turn away from the dot on the top of the housing. You may need to gently push the port into the bulkhead, and then turn the port until the dot on the port aligns with the dot on the housing. Be sure the port is fully seated and flush with the housing. You should see no gaps between the port and the housing.



**⚡ Caution:** The Port must be fully seated and flush with the housing to avoid accidental flooding.

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## **Lighting Systems**

Your housing comes ready to accept different lighting systems depending on your requirements. The handle is quite versatile and designed to suit most any application, from strobes to video lights. (For more information on shooting digital still images with strobes or video lights, visit the Gates website at [www.GatesHousings.com](http://www.GatesHousings.com))

### **NiteRider Video Lights**

If you received the NiteRider™ lights with your 200mc/MVX2i housing, you'll find setup instructions in a separate part of this manual. The NiteRider™ system is powerful, lightweight, and well suited to the Gates 200mc/MVX2i housing –perfect for traveling.

For other light systems, the handle assembly has several mounting holes for securing batteries to the bottom of your housing. They will accept many different configurations and are quite versatile. They can be used for other brackets, mounts, arms, etc. The top of each handle also has threaded holes to mount light arms, monitors, brackets, accessories, or virtually anything necessary for shooting your video.

## Housing Care and Maintenance

Proper care of your Gates 200mc/MVX2i housing is important to provide you reliable operation and long life. You'll find all the guidelines in the "Housing Care and Maintenance" pages of this document. You can also find it on Gates web site at [www.gateshousings.com](http://www.gateshousings.com).

## O-Ring Care and Maintenance

Your Gates 200mc/MVX2i housing has 2 serviceable o-rings. One is located between the mating halves of the housing (the large orange one), and the other is located on the base of the Port where it mates with the housing.

Servicing the o-rings is easy, and covered in the "O-Ring Care and Maintenance" pages of this document. You can also find it on Gates web site at [www.gateshousings.com](http://www.gateshousings.com).

**⚡ Caution:** Do not lubricate the large orange o-ring! It is a special silicone o-ring and can be damaged by petroleum-based lubricants.

**⚡ Caution:** *Never* use metal tools or objects for removing o-rings!

Gates wishes you the best for capturing your images with the 200mc/MVX2i housing. We know it will provide years of service to your diving adventures and give you memories of a lifetime. Thanks for choosing Gates, and remember....

**Don't take a Chance...Take a Gates!**



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# **NiteRider™ Underwater Video Lighting System Setup and Use**

If you purchased the NiteRider™ underwater lights with your Gates housing, you have a versatile and effective addition to your video or camera system. Your NiteRider™ lights are powerful, lightweight and have a long “burn” time. They will provide ample illumination for your nighttime underwater shots as well as excellent daylight fill in. The following instructions will guide you through the easy setup and use.

## **Before You Begin**

This guide addresses assembly of the NiteRider™ lights to your Gates housing. It does not cover operation of the light, as this is covered in the User Manual included with your NiteRider™ light system.

## **Light Arm Mounting Links**

Your NiteRider™ light system comes with a light arm mounting links that will mount to the handle of your Gates housing. The mounting links resemble a single link of the arm, but with a threaded bolt attached.

To install the mounting links onto your Gates housing, simply **thread them into the top of the handles** on your Gates housing. Screw them in until fully seated, and tighten them snugly, but do not over tighten.

## **Light Arm Attachment**

Notice the attachment arms consist of locking, movable links that provide a flexible arm for easy positioning of your light beam. Each link can be separated and re-assembled easily.

With one hand firmly on the handle of your Gates housing, grasp the light arm at the end that will attach to the housing. The light arm will mate to the link you just installed in the previous step. **Firmly press them together** until they “snap” and lock together. You may need to apply some effort, but they will lock securely.

## **Removing the Light Arms**

When you are ready to separate the arms, grasp the handle of your Gates housing and the light in the same way you did to assemble them. **DO NOT PULL the links apart.** Rather, **bend the light arm sideways** until the arm and mounting link separate.

## **Battery Mount Bracket**

The NiteRider HID system includes a battery mounting bracket that allows the battery to be secured to the bottom of the housing. The bracket has two parts: a flat part with four holes in the center and two at the edges, and a ‘U’ shaped part with holes only on the edges.

First, take the flat bracket part and attach it to the housing handle. Four ¼-20 screws will thread into mating locations on the handle dovetail where it slides on and off the 200mc/MVX2i housing. Be sure the countersink side is facing away from the housing and the flat edge of the bracket is facing to the rear of the housing.

Next, attach the 'U' shaped bracket with the shorter ¼-20 screws at the edges of the bracket. It now has a pocket to accept the HID battery.

The battery can now be installed into the bracket. Starting from the rear, insert the battery with the battery top facing you, and the battery clip facing down. As you insert, the clip will slide over the bottom of the bracket and 'snap' into place once fully seated, and is locked in place.

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## **Gates Housing Care and Maintenance**

**Congratulations** on your new ownership of a Gates housing, the worlds most reliable underwater housing! It is manufactured from “bulletproof” machined aluminum, given a type II “hard” anodized coating for durability, and then finished with a dichromate or clear sealing process to lock out corrosion. Reliable mechanical controls, preferred by the pros, are standard. Positive locking safety latches hold the mating halves securely in place, too, so your equipment stays protected and dry. You can get virtually a lifetime of memories from your Gates housing.

It is important to understand that while your housing is very durable, designed to withstand the rigors of diving operations and the harsh salt-water environment, *it is your responsibility* to care and maintain your Gates housing and protect your investment. A few easy, common sense steps are outlined here to guide you in appropriate care. Regular attention will assure continued proper operation of your Gates housing, and indeed is *required by the warranty agreement*. Failure to take proper care of a Gates housing voids this agreement, so be sure to read through this entire section prior to operating your new Gates housing.

### **First Time Use**

Every Gates housing is pressure tested before leaving the factory to assure a watertight seal. As a precaution, however, it's a good idea to first use the housing **without** your camera inside. Rough or abusive handling during shipment could have caused unnoticed damage after leaving the factory. In addition, you can get a good feel for the use of an underwater housing without worrying about getting a good shot. You can simply concentrate on the technique of holding a camera in position while fine tuning your buoyancy.

**Follow all the guidelines** as described below to prepare, execute and finish a dive. Then, dry the outside of the housing; open it up, and then look for any leakage. Water that has seeped in is usually quite visible. Also feel the inside for any moisture by running your finger across interior surfaces near the port openings, windows and housing mating surfaces. If you feel or observe any water that has penetrated, contact your Gates reseller or Gates directly.

### **Preparing to Dive**

Each time you prepare to enter the water with your Gates housing there are several important checks to make.

- **Install the camcorder/camera** inside the housing per the instructions you received with the housing. Make sure it is secured firmly to the housing and will not move around during use.
- **Check all the o-rings.** Follow the guide called “O-Ring Care and Maintenance” from Gates that was included with your housing.

- **Move all the controls.** They should rotate freely without binding or roughness.
- Close the housing. See that the halves are **mated and aligned** properly. Close the safety latches into their locked position.
- **Check the port** for proper installation (if it has been removed). The port should be *flush to the housing* and secured with the bayonet tabs on the inside (it should not pull off when secured properly).
- **One final check** should be made to look for anything unusual. This could be a pinched o-ring, damage from impact or drop, cracked window, etc.

## During the Dive

When you enter the water and during the dive, some important tips to remember:

- **Detecting a leak** -- Contrary to popular belief, a leaking housing will *not* spew a stream of bubbles to flag a leak. Water will be forced inside, but air will not escape. Look inside the housing from any viewport as you carefully submerge the housing. A good way to do this is hold the camera lens down as you look inside. If there is any water whatsoever, it will pool at the lens, telling you to exit the water post haste.
- **Optional Audio Moisture Detector Alarms** are available for most Gates housing models. If you hear the loud, annoying buzz it creates during your dive, immediately exit the water and examine your housing.
- **Severe impacts** to rocks, coral or anything solid should naturally be avoided. Your Gates housing is designed to withstand these incidents, but rough or abusive handling could compromise the integrity of the seals. Should you encounter a heavy impact or other extreme conditions, look immediately for leaks. It is highly recommended you exit the water and thoroughly inspect your equipment after such an event.

## After the Dive

As you may know, salt water is highly corrosive when left in contact with metal. It can quickly turn iron into rust, and aluminum into aluminum oxide. Even though your Gates housing comes anodized and sealed for protection against salt water, even the best protection can be compromised when left exposed to salt water for extended periods of time, and indeed a deep scratch or dent can expose aluminum, making it susceptible to salt water corrosion. *This is bad.*

Once again, some easy steps can prevent any problems due to corrosion.

- When you are finished diving, completely **submerge or rinse your sealed housing immediately in fresh water**. If you cannot do so directly, then as soon as possible after the dive. Soaking your housing in fresh water is not necessary – a thorough rinse will suffice.
- If you submerge your housing in a dip tank, take care that other cameras and equipment do not adversely contact the housing. Many floods have occurred due to carelessness in the rinse tank.
- If you open the housing to change batteries, tapes, film, etc. between dives, **thoroughly dry the housing before opening**. Use compressed air whenever possible to blow away water from around the mating surfaces and avoid any drips

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inside when the housing is opened. Do the same around the port if you intend to remove or change it.

- When you are ready to close the housing again for another dive, start with “Before you Dive” guidelines above.

## ‘Wet’ Connectors

Your housing may come equipped with one or more ‘wet’ style connectors for video out, strobe, or other electrical signals. While Gates selects only the most robust connectors designed to provide years of service, the contacts may degrade from salt water corrosion over time.

If you suspect the contacts of a connector may require service, simply soak them in a solution of vinegar and a small amount of salt until they are once again bright and shiny. This is a simple yet time proven method of restoring electrical contacts.

If necessary, also apply silicone lubricant on the connector rubber (not the contacts) to help them mate smoothly and easily.

## Storing a Gates Housing

When the dives are over and it’s time to store your Gates housing, there are several significant actions to take.

- **Dry the housing completely** with a towel. Remove ports, handles, and accessible o-rings. Then use compressed air to blow out water around seals, mating parts, ports, etc. **Remove every visible trace of water.** Do the same with the accessories and other parts you used underwater or were exposed to salt water, or even salt air during your diving adventures.
- **DO NOT store your housing in the travel case.** Water that may have absorbed into the foam will return to attack the housing over extended periods of time. Rather, put your housing on a shelf, preferably in a cool, dry place where it is exposed to the air. Leave your travel case cracked open to allow air circulation.
- Be sure to **leave the housing open when stored** to allow air to circulate inside as well. Do the same with any battery cases, video monitor cases, etc.
- If the housing will be stored for some time, **remove batteries** from the water alarm and external monitor, if you have either.



## O-Ring Care and Maintenance


If you're like many owners of underwater video or camera equipment, you may wonder: just how does one provide proper care to the o-ring seals that keep water safely away from my expensive electronics? This is an excellent question. The answer seems to pervade the world of SCUBA, passing from mouth to mouth, but there seems lacking a consolidation that brings all that useful advice together. Well, this brief guide will help de-mystify o-rings, their proper care, and provide a good useful summary information.

### What is an O-Ring?

An o-ring is really quite simple, resembling a thick rubber band. They are almost always round or "O"-shaped, but can be rectangular, oval, trapezoidal, or any shape required to establish a watertight seal. In all cases, O-rings are manufactured to precision tolerances required to hold a pressure seal on your housing. O-Rings are made of an elastomeric material, which is a fancy way of saying they can stretch and deform. They can be made of natural rubber, latex, silicone, viton, buna, or many other stretchy materials. This is an important feature of o-rings as it provides the means by which a watertight seal is formed.

### How Do I Care for O-Rings?

As you may have reasoned, o-rings must be free of dirt and debris to work. Any foreign material that compromises the o-ring being squeezed into the o-ring groove will allow water to enter. *This is bad.* Fortunately, it's very easy to maintain the integrity of this seal by simply inspecting, cleaning and lubricating the o-rings when required.


 **Caution:** Your Gates housing contains *two types* of o-rings: one large *orange* o-ring and one or more *black* o-rings. The following instructions apply to both types of o-rings except for lubrication—**Do Not Lubricate the orange o-ring!** It is a special silicone o-ring and can be damaged by petroleum based lubricants.

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## Inspection

Begin by ***carefully inspecting the o-rings***. As a matter of habit you should inspect your equipment o-rings *before every use*. Once you gain experience, this step will be quick and easy.

 **Caution:** **Never** use metal tools or objects for removing o-rings! These devices can easily damage the surface of the o-ring, the groove, or both.

- ✓ ***Only if necessary, remove the o-rings*** from the recessed groove where they may be stretched or secured.
- ✓ One at a time, ***run each o-ring between your fingers and feel for any dirt or foreign material***. You should also feel a thin film of silicone lubrication on the o-ring surface of the ***black o-rings only***. This helps keep the o-ring flexible and readily able to seal the o-ring groove of the mating surfaces. If you feel dirt or grittiness, clean the o-ring.
- ✓ Next, under good lighting, ***closely examine the o-ring surface***, especially if you felt imperfections on the surface during the previous step. There should be no nicks, scratches, tears, or scars. Pull slightly on the o-ring as you rotate it through your hands to illuminate any cracks. The surface should be smooth and clean. If not, replace it with a new o-ring.
- ✓ ***Carefully inspect the recessed groove as well***. There should be no foreign material here, either. Dirt, hair, sand or any “gritty” feeling stuff means you’ll need to clean ***both*** the o-ring and groove.

## Cleaning

For o-ring cleaning you’ll need a lint-free cloth and Q-Tips.

- ✓ Holding the cloth in your hand, pull the o-ring gently through the cloth. Pull the entire loop through several times until all the foreign material has been removed and the silicone lubricant is gone. Once again inspect the o-ring under good lighting as described above, since imperfections may be seen more easily without the silicone lubricant coating.
- ✓ Using a Q-Tip or the lint-free cloth, thoroughly clean the recessed groove. Press the Q-Tip deeply into the groove to access corners and remove residual silicone.
- ✓ After the groove has been cleaned, inspect for and remove any cotton fibers that may have been shed from the Q-Tip.

## Lubrication

⚡ **Caution:** The **large orange o-ring** on your Gates housing requires no lubricant. It is a special silicone o-ring and can be damaged by petroleum based lubricants. **Do not lubricate!**

Now you're ready to lubricate the **black** o-rings. For this you'll need pure silicone lubricant or silicone grease (available at dive shops).

- ✓ Place a generous amount of silicone between your thumb and forefinger, then run the entire loop of the black o-ring between your fingers several times. You need to coat the entire surface of the o-ring with a film of lubricant. **The lubricant film should be thin, uniform and completely cover the o-ring, and have a 'wet' feel.**
- ✓ **Place or stretch the o-ring back into its recessed groove** and be sure it's well seated. Give the o-ring one last look for hair or other dirt that may have fallen on your work.

## A Few Final Tips

- ✓ If you don't need to service an o-ring, *don't*. A sealed o-ring will remain so unless disturbed, such as when cleaning. A good example is a Port: there is no need to service a Port o-ring between dives if it is not removed or changed.
- ✓ Some o-rings are inaccessible, such as those inside the shaft of a mechanical control (called a gland). These o-rings require little maintenance. You need only lightly lubricate the shaft of the control (inside and outside) with silicone lubricant periodically, about every 20<sup>th</sup> use. After applying, move the control in and out several times to distribute the lubricant.
- ✓ Every two years Gates recommends a complete overhaul of o-rings regardless of the amount your equipment gets used.



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