



# Setup, Use and Care Guide

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## XHA 1/G1 HOUSING

**Gates Underwater Products, Inc**

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## Gates Housing Setup and Use

**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 XHA1/G1 camera for a compact and easily transportable package. Please read through this entire guide to familiarize yourself with the Gates XHA1/G1 housing. The following setup guidelines will explain how to prepare and use your camera and housing so you'll get the best results from your imaging endeavors.

### First Time Use

Every Gates housing is pressure tested before leaving the factory to ensure a watertight seal. As a precaution, however, ***it's a good idea to first use the housing without your Sony XHA1/G1 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 then contact Gates or your dealer immediately for assistance.

### Camera / Housing setup

#### ***Preparing the XHA1/G1 Camera***

Your Sony XHA1/G1 will need some preparation before installing into the housing.

- ✓ **Remove the lens hood, cap and external lenses/filters** you may have added to the front of the camera.
- ✓ **Remove the boom microphone and holder** from the camera. The holder will require a small precision phillips screwdriver.
- ✓ **Remove the hand strap** completely from the right side.
- ✓ **Install the power ring** over the power dial on the camera. Align the slot in the ring with the 'OFF' marker on the dial. Slip the ring onto the dial from the right (while looking at the dial) so that the lockout button on the dial is depressed first. Then push the ring over the entire dial until it is fully seated. See photo for detail.

✗ **CAUTION:** Failure to perform this step may result in the hand strap becoming caught in the housing seal and allow water intrusion.

- ✓ **Install** a tape and charged battery.

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Remove any caps, lenses or filters from the camera lens.

Remove the boom microphone and holder from the XHA1 and XHG1 cameras using a small screwdriver.

Remove Handstrap completely



Install the power ring. Lead in from the rear where the ring will depress the lock button on the camera. Fully seat the power ring onto the camera.



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### ***Preparing the Housing***

- ✓ **Release the latches.** First, pull out and rotate the record/standby control clockwise ~90 degrees to clear the latch prior to opening. Next, release the two stainless steel safety latches that 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 both latches at the same time.
- ✓ **Open the housing.** Separate the rear half of housing from the front.
- ✓ **Remove the camera mount plate from the housing.** The plate is held in place by two small thumbscrews underneath. Loosen but do not remove the thumbscrews.



### ***Installing the XHA1/G1 Camera into the Housing***

- ✓ **Pull out controls** on the left side of the front shell as far as they will go. Note that controls will be addressed in greater detail in a subsequent section.
- ✓ **Pull out video and audio connectors** and wrap to the side or top of the housing out of the way for camera insertion.
- ✓ **Secure the camera** to the camera mount plate with the small flat head screw with a coin or screwdriver. Tighten snug but do not over tighten.



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- ✓ **Position the camera** to enter the housing, but do not insert.
- ✓ **Plug the mic connector** (optional) into the camera at this time. The connection is found at the front right side of the handle.
- ✓ **Carefully slide camera on its mount plate** into the front housing half. It should insert without obstruction and mate with the alignment collar found just behind the port opening. The gold thumbscrews will slide into the slots in the tab below the rear of the camera.



Position the camera for insertion. Plug in the microphone.

The camera will seat fully forward into the alignment collar (shown in silver for emphasis)



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- ✓ **Secure the camera** by tightening the gold thumbscrews.
- ✓ **Check controls.** With the camera turned on and installed into the housing front, press in each control and confirm proper operation (refer to the next section for more detail on controls).

**Tip:** With the camera installed you can now get a good view inside the front half of the housing and most controls. Use a flashlight if necessary to become familiar with the operation and 'feel' of each control in their proper position prior to closing the housing.

- ✓ **Plug in the video connector** if you are using an external monitor. Both the SD and HD connection are at the rear of the camera. Note that the HD connection will wrap around the viewfinder as shown in the photo.

Video connector plugs in here.



Insert camera, secure thumbscrews, and plug in the video connector (optional with monitor). Note the connector cover is tucked behind the camera.

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### **Closing the housing**

- ✓ **Carefully inspect** o-ring on back half and sealing surface on front half. Make sure they are clean and in good condition.
- ✓ **Pull out the Custom Key / WB Set control** and the **Custom Preset** controls on the left rear of the back shell.
- ✓ **Pull out the Rec/Stdb control** and rotate to the 9 o'clock position. This is required for the control head to clear the camera when mating the back shell to the front.
- ✓ **Mate the two halves of the housing.** Use the 'drip lip' to guide the alignment and the housing halves should mate easily with no obstructions. If there are any obstructions, separate the halves and identify the problem before trying again.
- ✓ **Locate and close** the two latches at the same time.

✗ **Caution:** The safety latches must be **closed** and **locked** prior to use to avoid opening underwater. **It is your responsibility to make sure the latches are secure, 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 the 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, hand strap interference, etc.) *Failure To Do This May Result In A Wet Camera!*

⚡ **Tip:** A simple test of the main seal is to try and slip a piece of paper past the o-ring. A properly sealed housing will have no gaps through which the paper can pass.



The housing shells should mate without obstruction. Close and lock the latches at the same time.

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- ✓ **Mate the Power control** with the power ring on the camera. To do so, align the Power trigger with the upper mark on the housing shell and gently press into the housing, moving slightly as you do (see photo). The control will mate with the pin on the power ring inside the housing. You can verify operation by turning on the camera.
- ✓ **Press in the Custom Preset and Gain/WB controls** until they touch camera buttons. Note positioning of each control as it touches the camera button/switch it is designed to actuate.
- ✓ **Rotate the Rec/Stbdy control** into the 6 o'clock position, then gently press into the housing. Do not force the control into the shell – it should easily move fully into position on the shell. Verify operation with the camera under power.
- ✓ **Check all controls** for the proper operation.
- ✓ **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. Also check that the dot or indent on the port is aligned with the dot on the housing.

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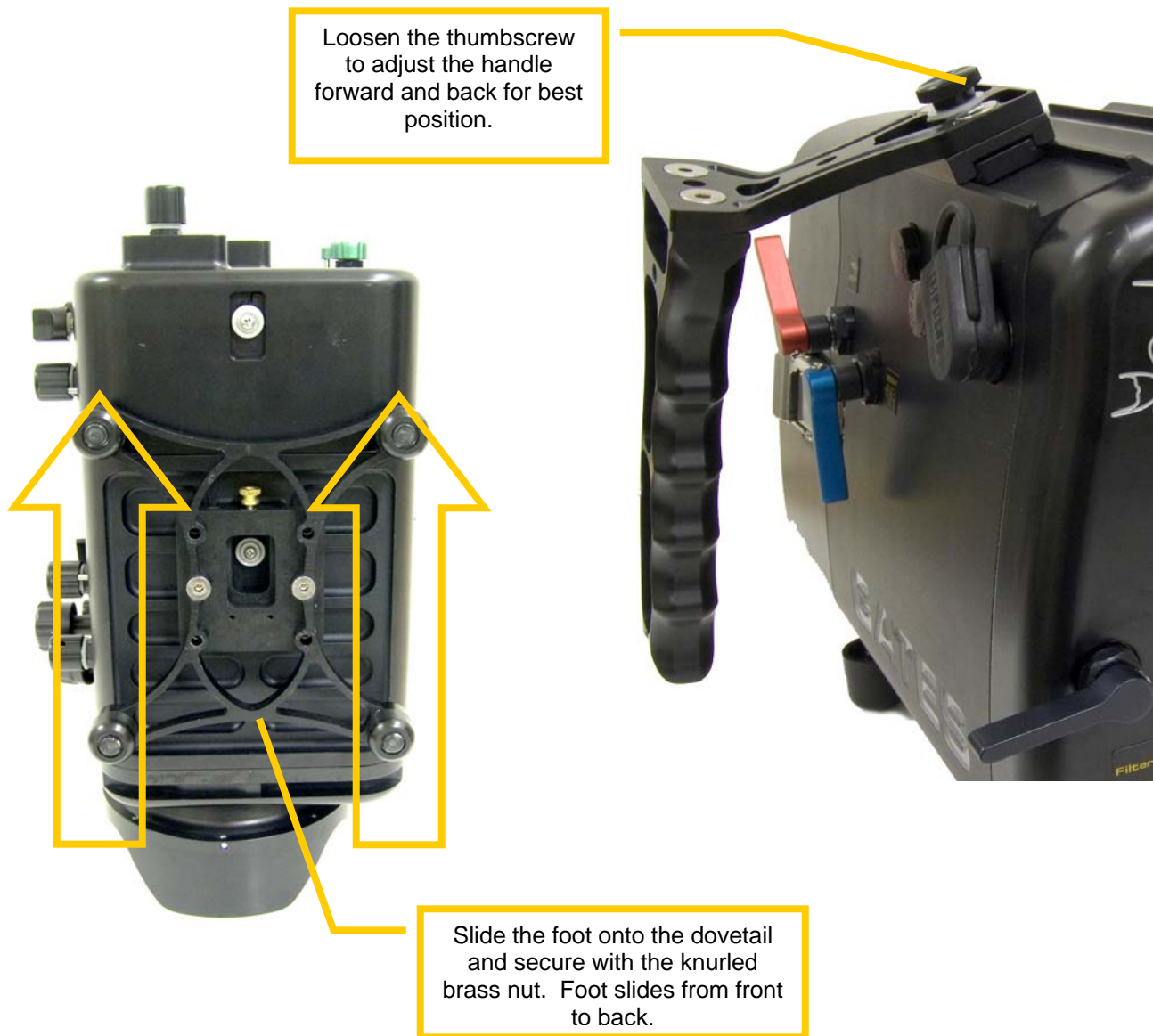
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### **Handle Adjustment**

- ✓ **Loosen the thumbscrew** at the top of each handle, and move forward or back for optimal control access.
- ✓ **Tighten the thumbscrews** to secure the handle in position.

### **Foot Plate Installation**

- ✓ **Remove the knurled brass retainer** from the screw on the dovetail and slide the dovetail onto the housing from front to back until fully seated. Replace the knurled brass retainer to secure the foot plate.



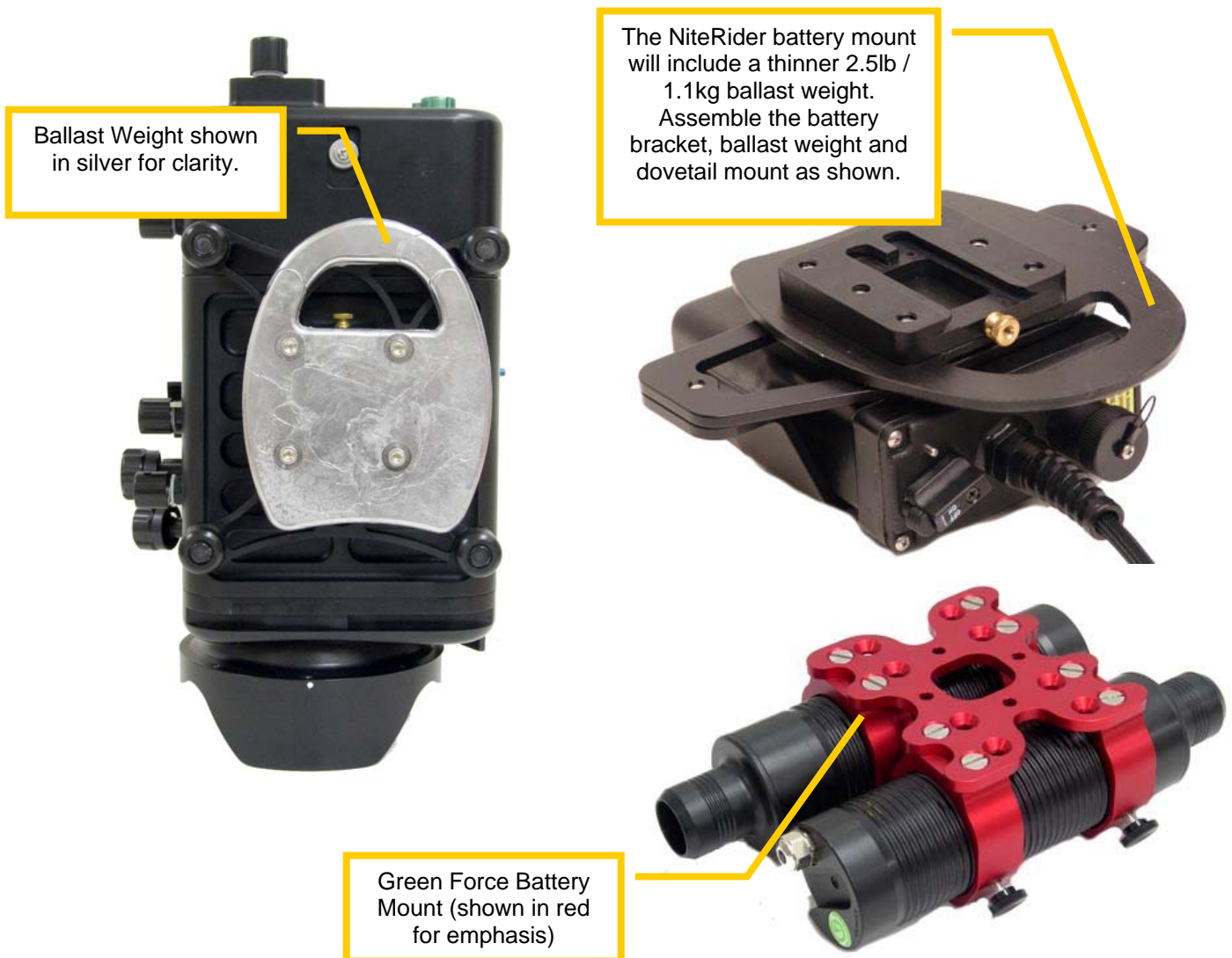
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## Ballast Weight

The XHA1/G1 housing utilizes a 4 lb / 1.8 kg ballast weight secured to the foot plate to achieve neutral buoyancy and trim.

- ✓ **For travel** the foot plate and/or the ballast weight can be removed for packing into a different bag.
- ✓ **The ballast weight can also be left at home** and a standard 4 lb / 1.8 kg scuba weight secured to the foot plate at your destination. An optional kit is available from Gates to facilitate this method.
- ✓ **When using Green Force lights**, the ballast weight is removed. The weight of the light system batteries will act as the ballast.
- ✓ **When using NiteRider lights**, a 2.5lb / 1.1kg ballast weight is used, and included with the mounting hardware for the battery. See photos for proper assembly.



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## Controls

Your Gates housing utilizes 100% mechanical controls to provide you with the most reliable operation possible. They are all rotational in nature to provide smooth and consistent operation. There are no batteries to change and require little maintenance (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 controls. With time and use, the housing controls will become quite familiar and you'll find operating them requires similar skill as the actual camera controls.

To help acquaint yourself with the housing controls, Gates recommends reviewing each control individually, how it actuates the corresponding camera control, and 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 under water pressure.* The controls are designed to operate properly in this position.

### **Power**

This control is green and rotated clockwise through ~ 40 degrees to change modes from OFF→AUTO→Tv→Av→M. Do not rotate the control further past the 'M' manual setting.

### **Record/Standby**

The Record Standby control is red and operates by a counterclockwise 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.

### **Zoom**

The Zoom control, identified by a blue color, is operated by a slight rotation in either direction.

### **Iris**

The Iris control rotates the iris ring on the camera.

### **Neutral Density Filter**

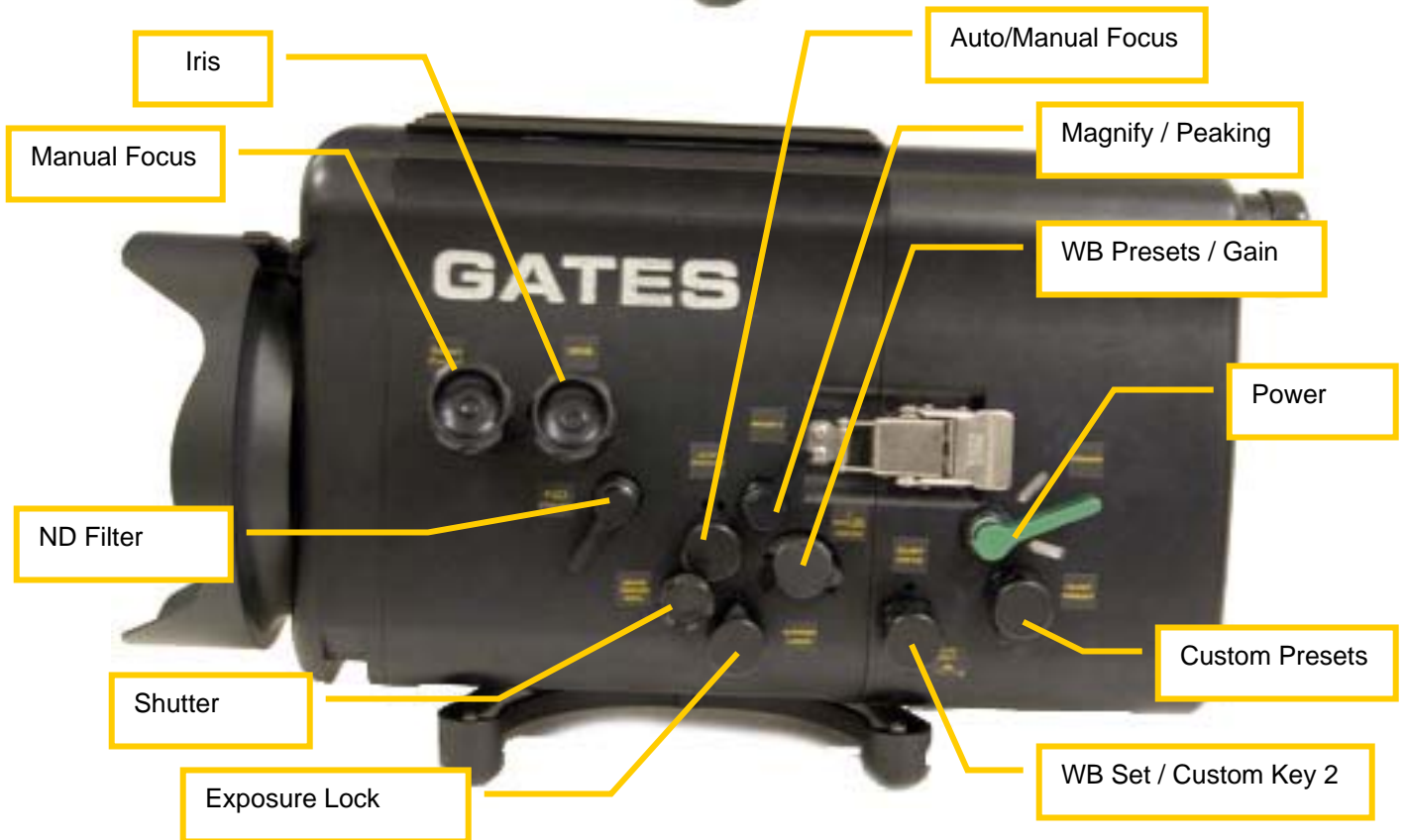
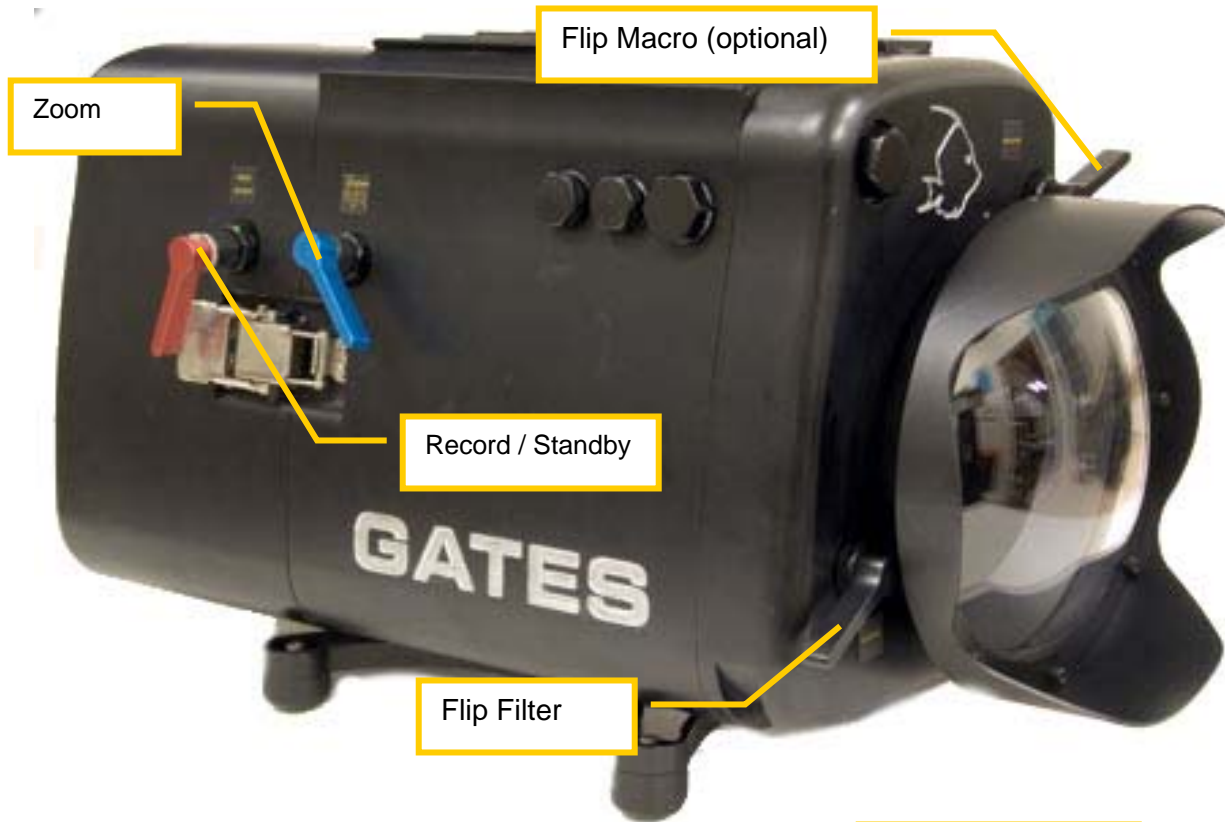
This control moves the ND filter on the camera amongst the settings Off, 1/6 and 1/32.

### **Auto/Manual Focus**

The A/M focus switch on the camera can be changed with this control.

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### ***Manual Focus***

This control found on the left front of the housing and rotates the focus ring on the camera. Note that the camera must be in manual focus mode, as actuated by the previous control.

### ***Exposure Lock***

Depressing this control actuates the exposure lock button on the camera. Note that the control cannot depress unless the pin on the knob is aligned with the corresponding hole on the housing.

### ***Custom Presets***

This control depresses the custom preset 'ON/OFF' button and 'SELECT' button on the camera. This control cannot depress unless the pin on the knob is aligned with the corresponding hole on the housing. To avoid inadvertent actuation, rotate the knob so the pin is aligned with neither hole location.

### ***Custom Key (#2) / WB Set***

This control actuates custom key #2 button and the white balance set button on the camera. Similar to the Custom Preset control, the pin on the knob must be aligned with the corresponding hole on the housing to actuate the button.

### ***Shutter***

This control rotates the shutter dial on the camera.

### ***Magnify/Peaking***

By rotating this control in opposite directions the 'MAGN' and 'PEAKING' buttons on the camera are actuated.

### ***Gain / WB Presets***

This control operates two different lever switches on the camera. With the knob pointer toward the front the gain switch can be moved through all three positions (L-M-H). To access the white balance presets, pull the control out slightly and rotate the pointer toward the rear. It will then move the lever through the WB preset positions (B-A-PRE).

### ***Color Filter***

The Color Correction Filter control is found on the front of the housing. Rotation of the trigger arm will move the filter in or out of position in front of the camera. Note that the filter has a positive detent to keep it in the 'up' position when not in use.

### ***Flip Macro (optional)***

If you have this optional control installed, operation is similar to the filter. Simple rotation will place it in and out of the camera view. Note again that this control has a positive detent to keep it 'up' and away from the camera when not in use.

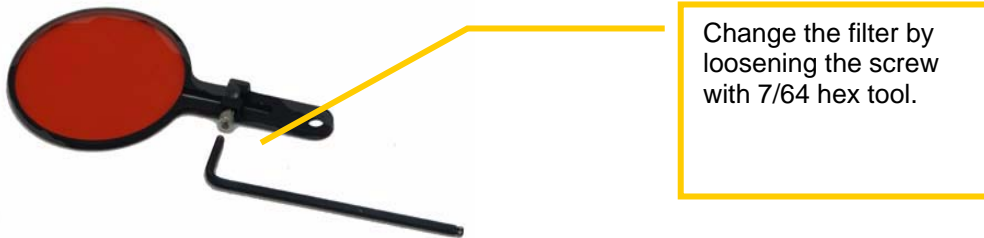
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## Use and change of the Color Correction Filter

The internal color correction filter is specially designed by UR Pro to correct for color loss underwater. A “blue water” version (orange in color) is provided standard with the XHA1/G1 housing, however a “green water” version (pink in color) is available as an option.

- ✓ **Changing the filter** is accomplished by loosening the screw on the filter holder closest to the filter element using a 7/64” hex tool. Remove the filter element gently while stabilizing the filter holder. Reverse this process to install new filter element.



- ✓ **Cleaning.** You will likely have fingerprints on the filter after installing, so clean the filter according to the directions in the “Cleaning Ports and Filters” section.

## Use and change of the Flip Diopter

The optional flip diopter allows convenient close up/macro imaging with a simple ‘flip’ of the diopter element in front of the camera. If this option is installed you can change the diopter amongst the +1, +2 and +4 strengths provided with your kit.

- ✓ **Changing the diopter** is nearly identical to the process for changing a filter (see photo above). Loosen the screw on the diopter holder closest to the diopter element using a 7/64” hex tool. Remove the filter element gently while stabilizing the holder arm.
- ✓ **Installing a diopter** is the reverse, however the diopter must be oriented with the ‘flat’ side closest to the camera and the convex side toward the port.
- ✓ **Cleaning.** Again, you will likely have fingerprints on the diopter after installing, so clean the filter according to the directions in the “Cleaning Ports and Filters” section.

⚡ **Tip:** The flip diopter is designed for macro imaging with the camera partially or fully zoomed to telephoto. At full wide angle you may see vignetting (cut off corners). *This is normal.*

## Use of other diopters

The XHA1/G1 housing can accommodate the use of diopters affixed to the camera body in conjunction with the FP44 flat port. Depending on the manufacturer the diopters may be stacked. Note that the color correction filter cannot be used in this configuration.

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## Changing Ports

Gates offers several ports for your XHA1/G1 housing, which attach with a bayonet-style mount. Port changes are easy and straightforward:

Align dot or indent on port and housing.



- ✓ **Removal.** 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 counterclockwise will release the port from the front of the housing. Gently pull the port directly away from the housing to do so.
- ✓ **Inspect the o-ring** -- Before installing a new 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.



The seal o-ring should be inspected and lubricated.

The buffer o-ring does not require lubrication but it is OK to do so.

- ✓ **Installation.** Mounting 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 right or left. You may need to firmly push the port into the bulkhead to fully seat the port. Then turn the port clockwise until the silver dot on the port aligns with the dot on the housing. The port has a built in stop to prevent further rotation. Be sure the port is fully seated and flush with the housing. You should see no gaps between the port and the housing.

**⚡ Caution:** Perform a final check after installing a port to ensure it is flush with the front bulkhead of the housing. If not, remove the port and reinstall. Failure to do so may result in a wet camera.


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## Cleaning Ports and Filters

Gates ports can be cleaned readily by following these simple guidelines.

- ✓ **Do not clean the surfaces if it is unnecessary.**
- ✓ **Dust or Lint** can be blown with compressed air, preferably from a can.
- ✓ **Salt deposits or sand** may also be removed with compressed air. Use a soft lens brush if necessary to brush away foreign material that remains.
- ✓ **If necessary, rinse fresh water** over the outside of the port to loosen any residual salt or sand that may remain. Do this with the **port sealed** on your housing to keep water away from the rear of the port.
- ✓ **Only if necessary, clean the port** using a mild glass cleaning solution and a non-abrasive, lint free cloth. **Use light circular strokes** when wiping away cleaning solution and any foreign material. Excessive pressure used when cleaning dirty lenses (e.g., rubbing sand into the lens surfaces) may damage coatings. *Use a light touch.*

 **Caution:** Not all cloths are lint free and non-abrasive! Use of an abrasive material (such as cotton balls and cotton fabric) may scratch the glass and/or coating of Gates ports and will void the warranty.

 **Tip:** Gates offers approved cleaning solutions and lint free cloths as accessory items. Use of these materials will not void your warranty.

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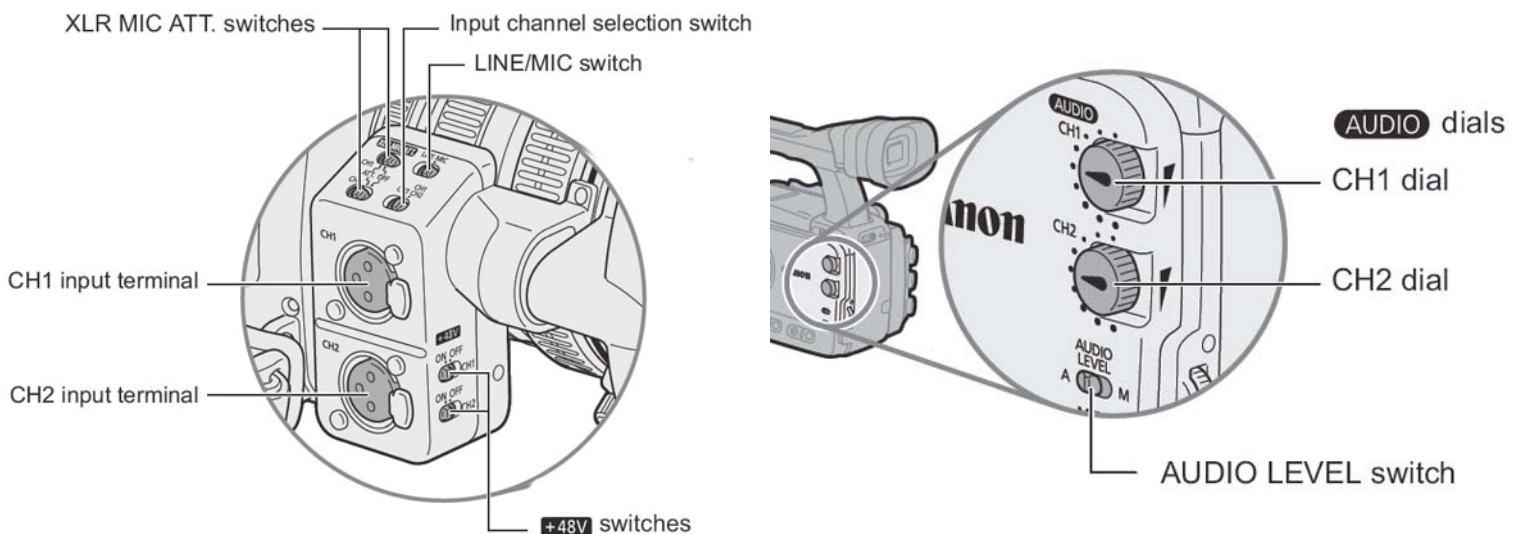
## Optional Submersible Microphone

If you have the submersible microphone installed on your Gates housing, there are special considerations for setting up your camera and connections to capture external audio.

The XHA1/G1 cameras require the use of the XLR audio adapter. Plug this into the **Input 2** connector on the camera and then plug the submersible microphone into this adapter. Be sure to fully engage the connectors.



- ✓ On the XLR Audio Panel set the switches as follows:
  - INPUT CHAN SELECT:
    - CH1 (to record sound to 1 track on the tape);
    - CH1, CH2 (to record to both audio tracks on the tape).
  - AUTO / MAN
    - Set to MAN to adjust audio volume manually.
    - Set to AUTO to allow the camera to adjust volume automatically.
  - LINE/MIC switch
    - Set to LINE
  - XLR MIC ATT. switch
    - Set to
  - +48V must be set to ON for both channels.
- ✓ Next, enter the menu and make the following settings:
  - MENU→AUDIO SET→XLR INPUT→ON
  - MENU→AUDIO SET→XLR SET→INPUT1 LEVEL→MIC
- ✓ On the rear left of the camera you can choose to set audio gain automatically or manually. By selecting 'M' on the switch, you can adjust the audio level as desired.



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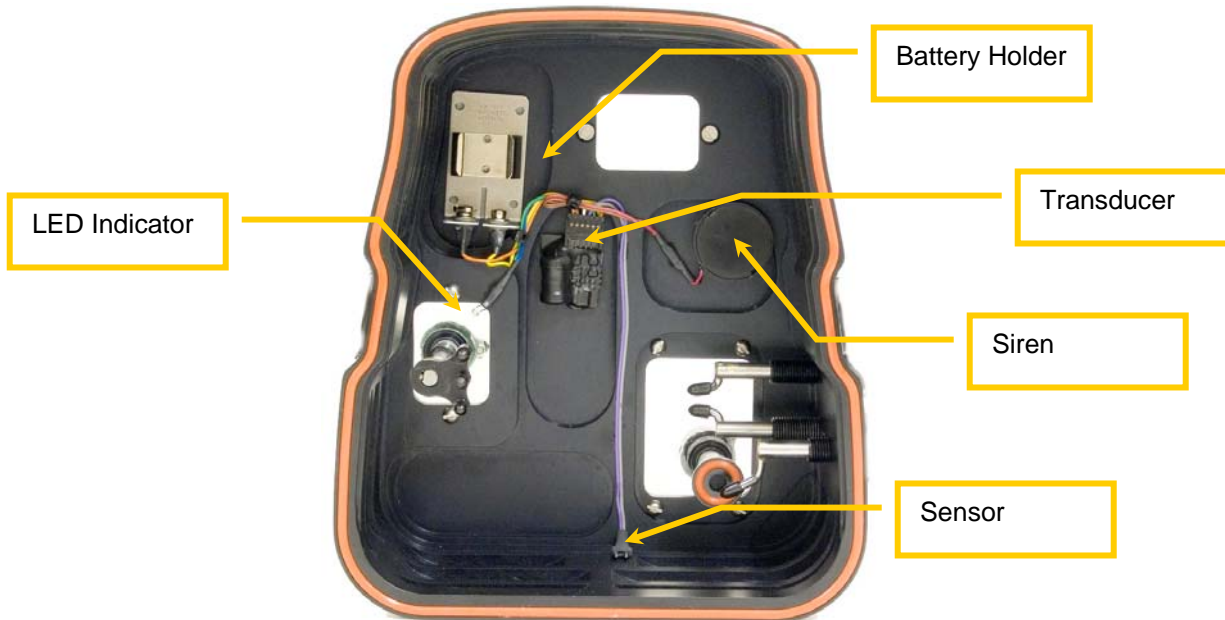
## Optional Water Alarm

If your XHA1/G1 housing includes the optional water alarm, there are three alarm conditions to watch for:

Condition	LED	Siren
New battery (when inserted)	Bright intense blink for 6 seconds.	Screaming sound for 6 seconds.
Water intrusion	Bright intense blink.	Screaming sound. Alarm will sound for duration of water intrusion sensing +6 seconds.
Low battery	Low intensity fast blink.	Intermittent chirp for 40 seconds after water intrusion condition.

You can test the alarm anytime by shorting the flood contacts that lead to the water alarm transducer. The flood condition will activate for 6 seconds. If the battery is low, the low battery condition will sound.

Gates recommends checking the water alarm prior to every dive to ensure operation. The battery for the water alarm is a single 9V type. Remove the battery when stored. A fresh battery is recommended prior to any dive travel.



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## Optional External Monitor

This section covers *mounting* of the optional monitor to the XHA1/G1 housing and connection to the camera. Refer to the Setup, Use and Care guide for the monitor to be used with the XHA1/G1 housing for other details. The Gates EM43 monitor is shown here for reference.

### Camera connection and setup

- ✓ **Connect to the camera** by plugging in the video cable located inside the housing. The video cable will plug into the connector on the right rear of the camera just to the right of the battery.
- ✓ **Tuck the connector cover under the camera** as shown in the photo to prevent obstructions with other controls.
- ✓ **Verify operation.** You can check proper operation at this time by plugging in the monitor (see below) and turning on the camera. The camera must be setup to display recording data and other information on the monitor by setting the following menu selection:

MENU→DISPLAY SETUP→TV SCREEN→ON



Tuck connector cover under the connector and across the rear of the camera.

Video connection to camera

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## Monitor mount and connection

- ✓ **Slide the dovetail and monitor** into the grooves on top of the housing and tighten in place with the thumbscrews.
- ✓ **Plug in the monitor cable** to the housing bulkhead connector, which is found on the right side of the housing. You will have either a single pin standard definition (SD) connection or a 6 pin high definition (HD) connection.

**⚡ Caution:** If you are not using the monitor for any reason, do not plug the RCA connector into the camera.

- ✓ **Verify operation** once again to ensure all is working properly prior to use in water.

Loosen the thumbscrews, slide the monitor onto the top rail, then tighten gently to secure.



Connect and secure the video connection. The 6 pin HD connector is shown. Other monitors may use single pin SD connector.



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## Lighting Systems

Your housing comes ready to accept different lighting systems depending on your requirements. If you purchased lighting systems from Gates you will find a separate document to guide you through installation to your Gates XHA1/G1 housing.


## Housing Care and Maintenance

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

## O-Ring Care and Maintenance

Your Gates 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 each Port.

Servicing the o-rings is easy and covered in the "Housing Care and Maintenance" document in this package. It can also be found on the Gates website 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!

## Customer Support

If you have any questions or require further assistance with your Gates housing, contact your dealer or Gates directly and we'll be happy to assist.

Email: [Customersrvc@GatesHousings.com](mailto:Customersrvc@GatesHousings.com)  
Phone: 858-272-2501  
Fax: 858-272-1208

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