



Setup, Use and Care Guide

HC1/A1U Housing

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 36 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, or repair, Gates will take care of you promptly and to your satisfaction.

Please read through all the documentation contained in this package to become familiar with your Gates housing **before** diving. It contains important and valuable information to make using 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 renewable 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 Owner

Before You Begin

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 setup and dive the housing without your Sony 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.

Camera and Housing Setup

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 Sony HC1/A1U Camera

Your Sony camera will need some preparation before placement into the housing.

1. **Remove any lens hood, cap or filters** from the camera.
2. **Set the video out information display** (when using External Monitor), the HC1/A1U camera must be set by entering the menu of the camera and selecting as follows:
 - ***PMENU> MENU>STANDARD SET> DISPLAY OUTPUT> V-OUT/PANEL***
3. **To set display format** (when using External Monitor):
 - **For HC1:**
PMENU>MENU>STANDARD SET>TV TYPE>4:3 or 16:9
Gates suggests 4:3 so the entire 16:9 image will appear in Letter Box format
 - **For A1U:**
PMENU>MENU>STANDARD SET>DOWNCONVERT>SQUEEZE or LETTER BOX or EDGE CROP
Gates suggests Letter Box so that the entire 16:9 image will appear.
4. **Tighten the handstrap** to its shortest position and tuck in the 'tail' back into the handstrap.



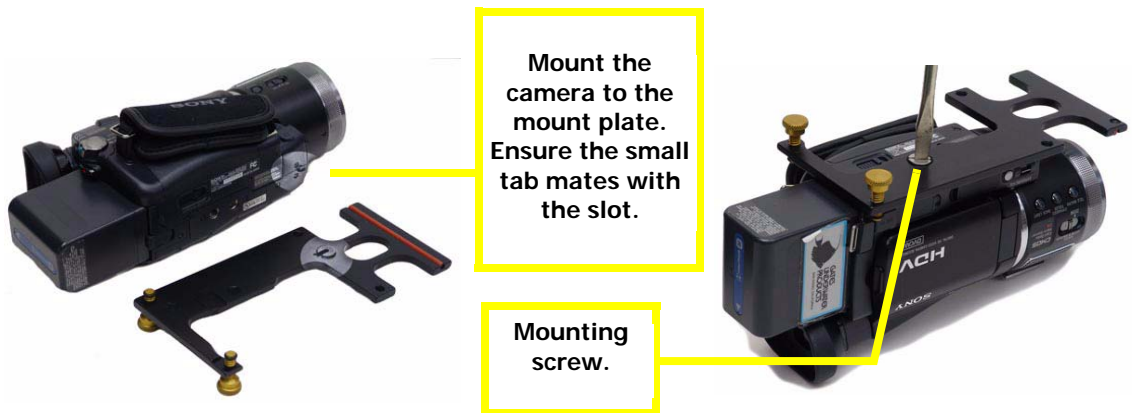
5. **Install 2 manual focus elastic-rings** onto the focus ring of the camera lens if you plan to use manual focus. These are not necessary if you plan to use auto focus only. Stretch the elastic rings over the front of the lens.
Note the alignment over the manual focus rings on the lens , the rings are adjacent to each other and are centered on the camera focus ring.



6. **Install a tape, memory stick and charged battery.**
7. **Disable the flash (on the HC1 only).** With the camera turned on, press the 'Flash' button on the front right side of the lens barrel until the "No Flash" icon appears on the screen.

Preparing the Housing

1. **Release the latches.** Three stainless steel safety latches secure the housing halves. *They have a positive locking feature*, so to open them you must 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. Remove the two side latches in a similar fashion.
2. **Open the housing.** Separate the rear half of housing from the front.
3. **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.
4. **Mate and secure the camera to the mount plate.** Turn the camera over, mate the camera mount plate by aligning the hole in the center with the tripod mount on the camera. The tab on the front of the camera will mate with the slot on the front of the mount plate. Secure the camera to the mount plate with the small pan head screw with a coin or screwdriver. Tighten snug but do not over tighten.



Installing the Sony camera.

1. **Pull out all controls** as far as they will go (Controls will be discussed in greater detail in a subsequent section).



2. If you plan on using the **White Balance control**, you will need to open the LCD, flip it around and lay it flat back on the camera side.



Flip the LCD screen around.

3. If you will be using an external monitor, plug in the external monitor cable at this time. Locate the external monitor cable and plug it into the Audio/Video jack at the back of the left side of the camera.

Note: A subsequent section of this guide details mounting and use of the External Monitor.



Plug in the external monitor cable.

4. If you intend to use the **manual functions** of the camera, be sure the **Auto Lock button** on the lower left side of the camera behind the LCD screen is **set to OFF**.
5. **Insert the camera.** Slide the camera mount plate into the housing until the mount plate is flush with the tabs at the bottom of the housing. When the mount plate is fully seated in the housing, the camera lens will be centered within the port opening.



Push evenly on the mount plate so that it is flush with the tabs on the housing.

Tighten gold thumbscrews snugly.

6. **Secure the camera.** Underneath the mount plate, use the two gold thumbscrews to secure the camera mount plate to the housing. Tighten until snug.
7. **Check controls.** When the camera is 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.

8. **Set the camera viewfinder** in its lowest position for proper alignment with the viewfinder on the housing.

Set the viewfinder in its lowest position .



Closing the housing

1. **Carefully inspect** the orange o-ring on the back and the sealing surface on the front. Make sure they are clean and free of debris or marks that could compromise the seal.
2. **Mate the two halves of the housing.** Mate the housing halves using the 'drip lip' to guide the alignment. The housing halves should mate easily with no obstructions. If there are any obstructions, separate the halves and identify the problem before trying again.

Photo control trigger must be pointing towards the back.

On/Off must be in the "Off" position.




Mate the housing halves carefully, ensuring proper alignment.

3. **Align all three latches** -- Each latch should fall over the catch on the front of the housing. Close the two side latches at the same time, close the latch on top of housing last. Each latch will 'snap' and lock into position when closed.


Secure side latches first and then top latch.



4. **Position controls for mating** by pushing them inward and aligning the control heads with the camera. With the camera turned on, ensure that you have proper alignment of each control with the camera buttons.


 **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 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.*

5. **Carefully inspect** parting line between front and rear. If this line is not even and free of gaps all the way around, remove back and find the reason why. (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.

6. **Check the Port.** It should be seated flush on the front bulkhead and no uneven gaps should exist. If a gap is found, remove the port and re-install per directions in the 'Port' section on page 13 of this guide.

7. **Power up camera and check all controls.** Check all controls for the proper operation before entering water. The following section describes each control in detail for proper operation.

 **Caution:** It is important to keep the viewfinder cap on the housing viewfinder above water to protect the camera from direct sunlight damage.

Controls

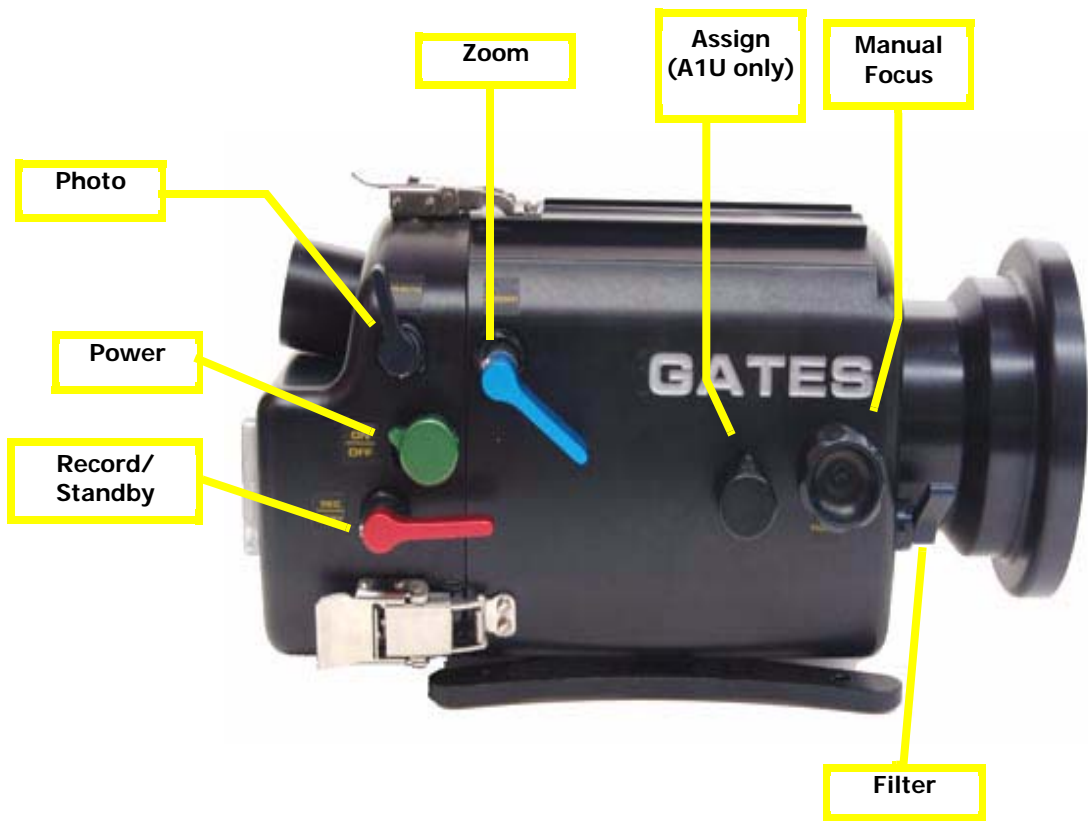
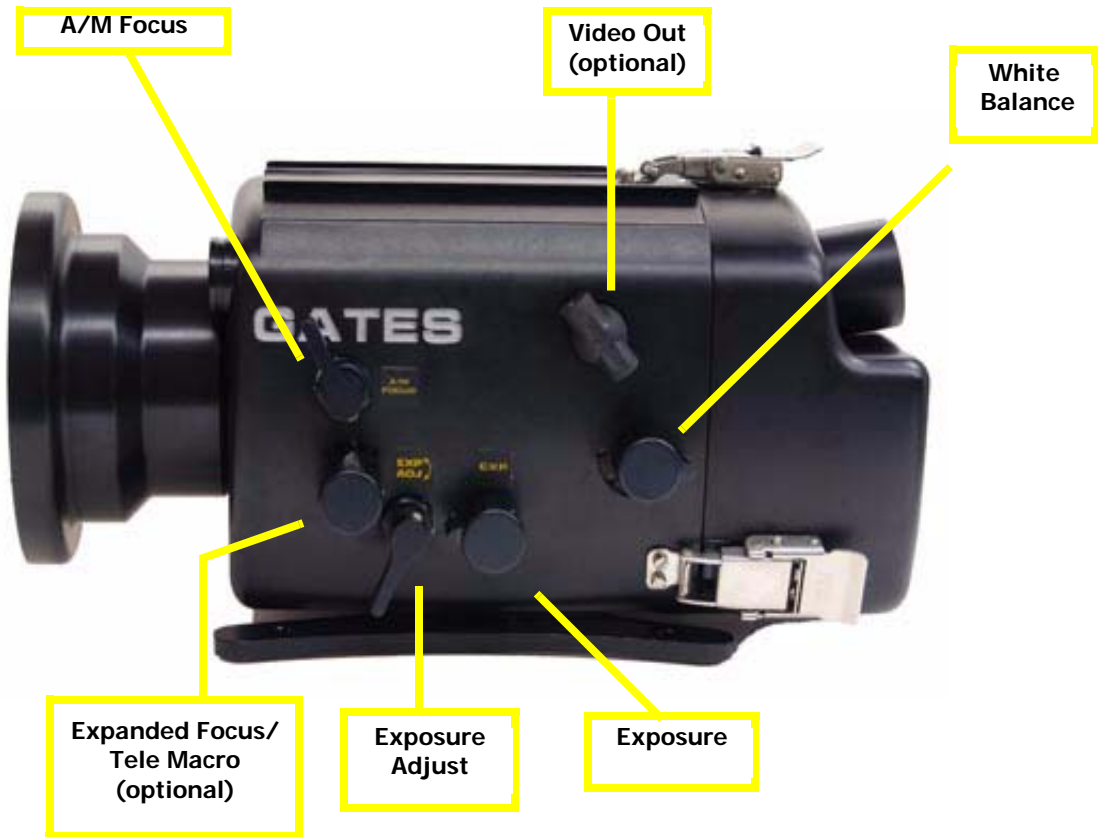
General Information

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.

The housing controls are designed by Gates engineers, to the extent possible, to feel and behave like the camera controls. You can also verify operation on nearly every function on the external monitor. 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.

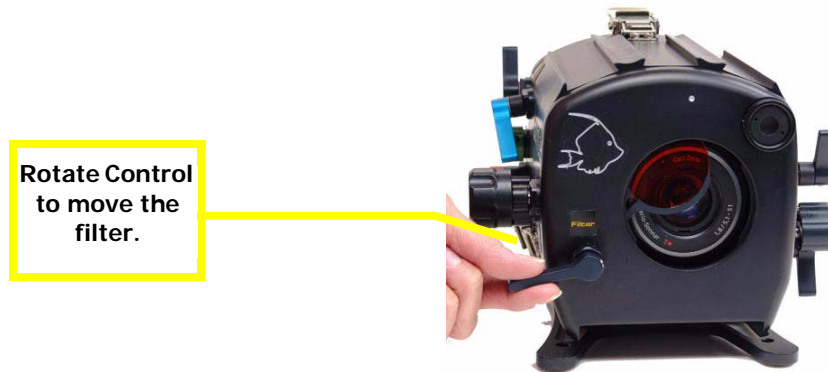
To help acquaint you with the housing controls, Gates recommends reviewing each control individually, how it actuates the corresponding camera control, and actually operating it to get a 'feel' for the control. You can view all front housing controls with the housing open. After reviewing all controls, 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 under water pressure.*** The controls will operate properly in this position.



Control Operation

- **Power (Camera/Off)** This control is easily identified by the **green** color and has 3 positions, On, Off, Mode. As you rotate this control counter-clockwise, you will 'feel' the switch stop in the On position first. Each time you rotate this control further counter-clockwise and back to On position, it will cycle through the "Tape", "Memory", and "Play/Edit" modes of the camera. The mode selected will display in the monitor for verification.
- **Record/Standby** The Record Standby control is **red** and operates by a short motion clockwise 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.
- **Zoom** The Zoom control is **blue** for quick identification. It operates with a simple rotational movement of the lever trigger. Note that the zoom is variable – that is, the further you move the control, the faster the camera will zoom from wide to telephoto and vice-versa.
- **Auto/Manual (A/M) Focus** The A/M Focus control toggles the camera between manual and auto focus modes. When in manual focus, the manual focus knob can be used to focus on subjects.
- **Manual Focus Knob** The Manual Focus Knob is located on the left side in front of the side window, and provides fine control of focus. The A/M focus control must be used to set the camera into manual focus mode to utilize this control.
- **Filter Control** Rotate this control to move the color correction filter in and out of position in front of the camera lens. It will stop when centered over the lens.



- **Exposure** Align the pin and depress into the indent to allow exposure to be adjusted. **Rotate this control head away from the indents when diving to prevent unintended activation of the camera functions.**
- **Exposure Adjust** Rotate this control in either direction to adjust exposure as desired. Push the Exposure control to turn off the icon when you are satisfied with your adjustment level.
- **White Balance** To use this control, you must turn the LCD screen around so that the screen is facing outward from the camera.

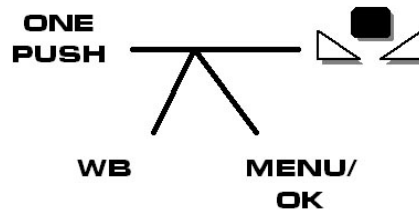
Note: With the LCD screen facing outward, the battery life on the camera will be less. Gates recommends using the largest battery available for the camera (model #NP-QM91D). If you do not plan to use the white balance, leave the screen in its closed position.

The control has four positions which must be activated in the following sequence:

- P-Menu/OK** to enter the menu
- White Balance** to enter the white balance menu
- One Push** to allow manual white balance
- Set** to set the white balance
- P-Menu/OK** to exit the menu.

You can exit the menu at any time by pressing the Record/Standby control

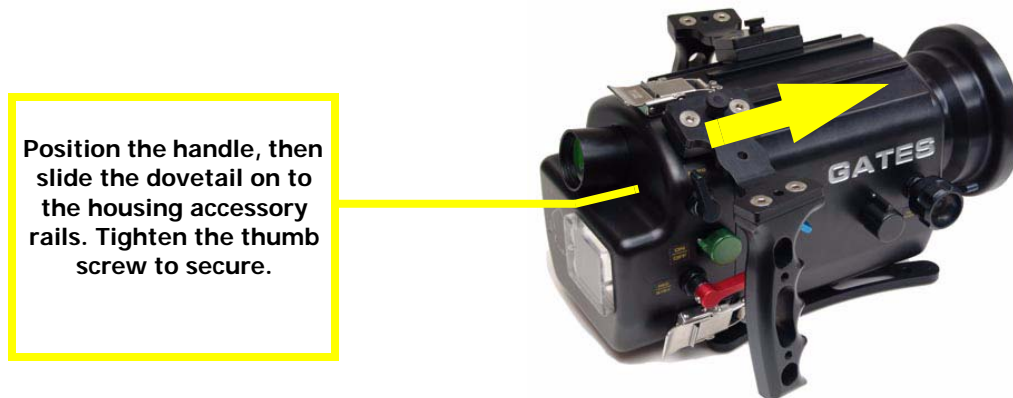
Rotate this control head away from the indents when diving to prevent unintended activation of the camera functions.



- **TeleMacro/Expanded Focus (if installed)** Rotate this control to the forward indent and depress to activate Tele Macro. Rotate to the back indent to activate Expanded focus.

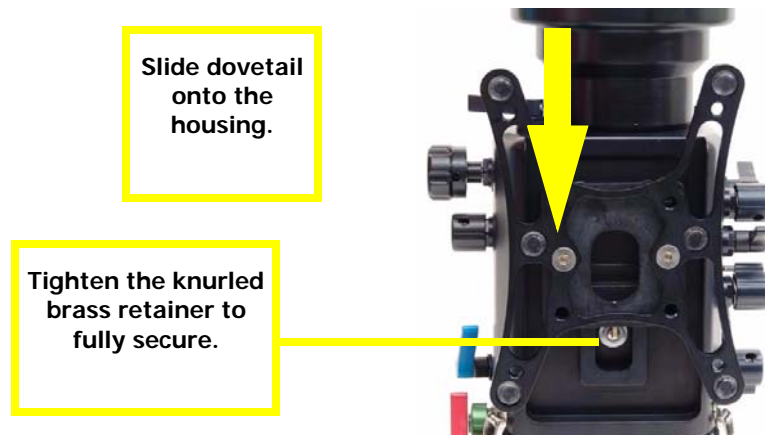
Attaching the Handles

1. **Loosen the knurled thumb screws** from the handles, then slide the dovetail found onto the accessory rails on top of the housing (see photo). Position them to suit your own preference.
2. **Tighten the thumb screws** to secure the handles onto the housing.



Attaching the Foot Plate

1. **Loosen the knurled brass retainer** from the screw on the dovetail, slide the dovetail onto the housing until fully seated. Replace the knurled brass retainer to secure the foot plate onto the housing.



Ports

Change

The ports for the *HC1/A1U* housing are attached with a bayonet-style mount. Port changes are easy and straightforward:

1. To remove a port:

- Rotate the port 90 degrees counter-clockwise until it stops. The alignment dots will be 90 degrees apart from each other.
- Pull the port away from the housing.
- If you have trouble, look inside the front half of the housing and ensure the bayonet tabs of the port are lined up with the cut-outs of the port opening.

✦ **Tip:** If the port has been on the housing for an extended period of time, it may be difficult to turn. You may find that a strap wrench helps to remove it.

- #### 2. Inspect the o-ring --
- Before installing a port, perform an inspection and lubrication of the **sealing o-ring**. The **buffer o-ring** is a cushion between the housing and the port and does not require lubrication. See "O-ring Care and Maintenance" in this Use and Care Guide for specific details.



- #### 3. Insert the port
- with the bayonets on the port aligned with the cut-outs of the port opening on the inside of the front bulkhead. Press the port onto the housing until it is flush with the front bulkhead. Then turn the port 90 degrees clockwise so the silver dot on the port is aligned with the silver dot on the front of the housing above the port.

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



Use of Diopters

- The 37mm diopter can be mounted on the front of your camera. Swing the color correction filter up, you will not be able to use it with diopters on the camera.

Use 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 HC1/A1U housing, however a "green water" version (pink in color) is available as an option.
- **Removal** The color filter is held in place by the spring action of the filter holder. Notice also the filter rests against a small step around the edge of the filter holder. To remove, push the filter away from this step. You may find the filter has a small amount of silicone adhesive to secure it in place. Remove any residue of this adhesive before installing another filter.
- **Installation** Rest the filter against one side of the filter holder, then gently spread the filter holder apart while pressing the filter into it. It will 'snap' into place when seated.



Cleaning Ports

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

- **Dust or Lint** can be blown with compressed air, preferably air from a can. ***Do not clean the surfaces if it is unnecessary.***
- **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.

External Monitor (Optional)

This section covers mounting of the optional monitor to the *HC1/A1U* housing and connection to the Sony camera. Note that the monitor has no controls; it will power up automatically when a video signal is present, it senses a PAL or NTSC signal automatically and displays a proper image regardless of video format.

The EM253, shown below, offers a 2.5"/64.26mm color active LCD and the EM419 offers a 4.1"/104mm color active LCD.



Camera Display Set Up

1. **Set the video out information display** (when using External Monitor), the HC1/A1U camera must be set by entering the menu of the camera and selecting as follows:

- ***PMENU> MENU>STANDARD SET> DISPLAY OUTPUT> V-OUT/PANEL***

2. **To set display format** (when using External Monitor):

- **For HC1:**

PMENU>MENU>STANDARD SET>TV TYPE>4:3 or 16:9

Gates suggests 4:3 so the entire 16:9 image will appear in Letter Box format

- **For A1U:**

PMENU>MENU>STANDARD SET>DOWNCONVERT>SQUEEZE or LETTER BOX or EDGE CROP

Gates suggests Letter Box so that the entire 16:9 image will appear.

Camera Connection and Setup

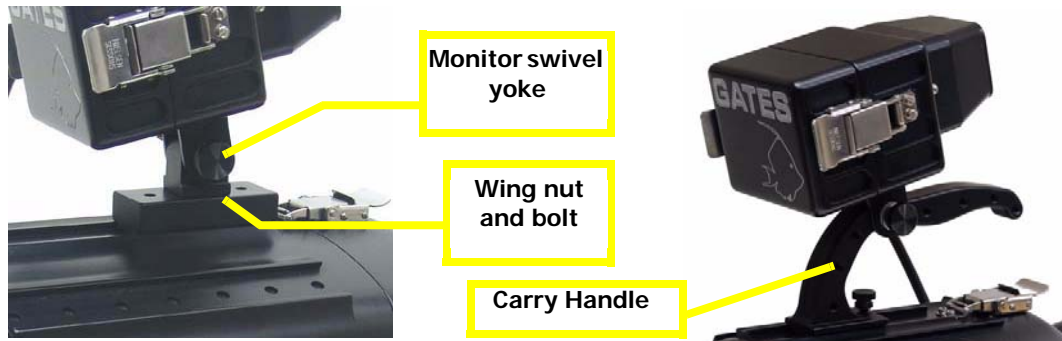
1. **Connect to the Sony Camera** by plugging in the video cable located inside the housing. The video cable will plug into the Audio/Video jack on the back left side of the camera.

You can verify operation at this time by plugging in the monitor (see below) and turning on the camera. Note – your Sony camera must be set to display external video, as well as camera information. If you have not already set the external video mode, please refer to the ***“Preparing the Camera”*** section for directions.

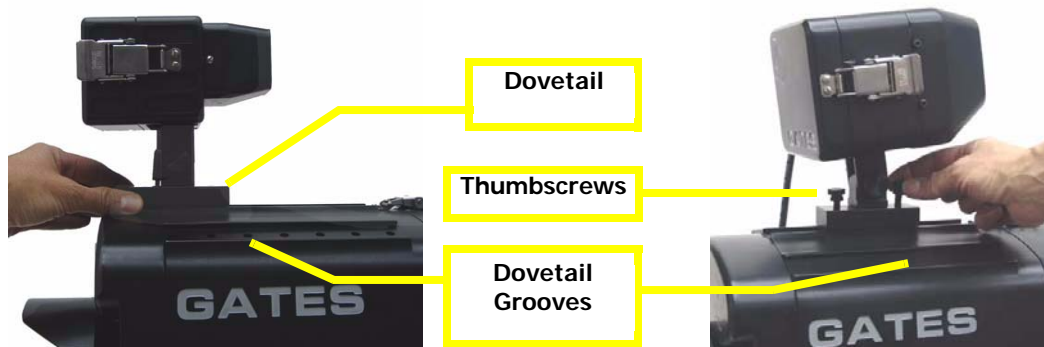
**Plug cable into
Audio/Video
jack.**



2. **Attach the monitor bracket** to the swivel base on the small metal dovetail. (see photo). Remove the wing nut and bolt from the monitor swivel yoke, and then mate the swivel yoke and swivel base together far enough to re-insert the bolt. Tighten until the monitor moves, but with some resistance. You may also attach the monitor bracket on to the carry handle if desired.



3. **Slide dovetail and monitor** into the grooves on top of the housing and tighten in place with nylon thumb screws.



4. **Plug in the monitor cable** to the *HC1/A1U* housing bulkhead connector, which is found on the left side of the housing. Mate the cable until fully seated into the bulkhead connector. Use water or silicon lubricant for easier mating of the connectors.



Plug in the monitor cable to the bulkhead connector. If necessary, use water or silicone lubricant for easier mating of the connectors.

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

5. **Verify operation** by turning on the camera. If properly connected, the monitor will automatically turn on and display an image. You may have to wait 3-4 seconds before an image will appear.

Monitor Setup, Use and Care

The Monitor SU&C Guide is included as a separate document with your *HC1/A1U* Guide.

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" pages of this document. You can also find it on Gates web site at www.gateshousings.com.

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.

1. **Connect to the Camera** by plugging in the microphone cable located inside the housing. The cable will plug into the mic jack on the front right side of the camera.



2. **The camera is set to auto level (gain).** When using the submersible microphone, you may wish to set the level (gain) to manual for better audio pickup. To set the level to manual:
 - ***PMENU>MENU>STANDARD SET>MIC LEVEL>MANUAL> +/- (as desired)***

Optional Water Alarm

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

Condition	Siren	LED (if installed)
New Battery (when inserted)	Screaming sound for 6 seconds	Bright intense blink for 6 seconds
Flood	Screaming sound. Alarm will sound for duration of flood + 6 seconds	Bright intense blink.
Low Battery	Intermittent chirp for 40 seconds after flood condition.	Low intensity fast blink

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 and the battery should be changed.

The battery in your housing is a single 6V 1/2 AA Alkaline battery. Gates recommends the battery be checked each diving day and changed as needed.

O-ring Care and Maintenance

Servicing the o-rings is easy, and is covered in the "O-Ring Care and Maintenance" document in this package. You can also find it on Gates web site at 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 *HC1/A1U* housing, contact your dealer or Gates directly and we'll be happy to assist.

Email: Customersrvc@GatesHousings.com

Phone: 858-272-2501

Fax: 858-272-1208

