Setup, Use and Care Guide

Gates F717 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 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 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 Housing Setup and Use
For Gates F717 Digital Still Camera Housing

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 Sony F717 digital still camera for a compact and easily transportable package. Please read through this entire guide to familiarize yourself with the Gates F717 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 Sony F717 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.

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

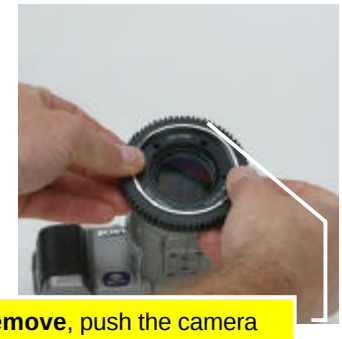
Preparing the F717 Camera

Your Sony F717 camera will need some preparation before placement into the housing.

- ✓ **Remove lens cap** from camera. If it is attached by a tether, remove it completely from the camera as well.
- ✓ **Install manual focus gear** onto focus ring of camera lens (if provided with your housing). Note that the gear has a 'step' on the inside of the ring, and only on one face. This 'step' will be toward the front of the camera as you slide it over the lens and onto the camera focus ring. It will stop as the step contacts the camera focus ring. This is the installed position for the focus gear.

Focus Gear will install over camera focus ring

Gently press Focus Gear onto camera. It will stop in position



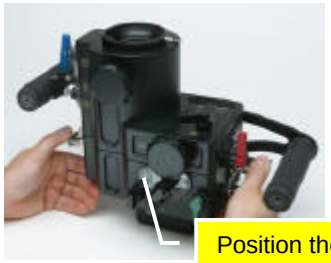
To remove, push the camera down through the Focus Gear while lifting the Focus Gear with your fingers.

✓ ***Note on removing the focus Gear***: To remove the ring, care must be exercised. Place your thumbs on the end of the lens barrel on opposite sides, then place your fingers on the back side of the focus gear. PUSH the camera barrel back through the focus gear.

Caution: *Do not simply pull the focus gear off the lens barrel*. Use the method previously described or damage to the camera may result.

✓ **Install** a Memory Stick, and charged battery.

Preparing the Housing



Position the F717 Housing Upright

✓ **Position the housing**. Using a clean soft cloth (like the Gates drying towel), position the F717 housing on it's back with the lens facing up. This will give you good access to the housing for installing the camera and checking the controls. Place additional support around the shade and other connectors/controls to keep the housing stable. A coiled towel works quite well.

✓ **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, then you can lift the latch away from the catch hook on the front housing half. Remove the other side latch in a similar fashion.

✓ **Separate** the front half of the housing from the rear, and place the front half on its side on the soft cloth.

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.

✓ **Review**. This is a good time to examine the camera mount plate and the controls. The movement of the controls will illustrate how they actuate the buttons on the camera, and prepare you for using them underwater.

✓ **Prepare controls**. On the back half, turn the Menu/Display, Nav Up/Down, Nav Left/Right, and White Balance (if equipped) controls so the actuator heads are furthest away from where the camera will rest in its mount. (The controls will be discussed further in the next section.) On the front half of the housing, pull the Zoom, A/M Focus, and AE Lock/Meter Mode controls out as far as they will go. The Shutter Release, Exposure Dial and Exposure Set controls need not be pulled out.

Installing the Sony F717

Line up Mount Screw and Camera Mount

✓ **Insert the F717 camera** carefully onto the mount plate. This is best accomplished by inserting the camera with the lens barrel facing slightly upward, and gently pushing the back of the camera down and onto the mount plate while aligning the retaining screw with the tripod mount on the underside of the camera barrel. Note the mount plate has rubber cushions on

either side to grip the camera tightly

- ✓ **Tighten the retaining screw firmly** to draw the F717 camera down onto the mount plate. *Do not over tighten*.
- ✓ **Press the camera down** onto the mount plate firmly. This is necessary to ensure proper operation of all controls.

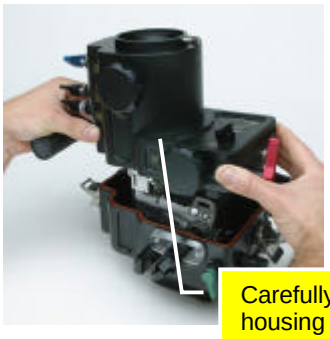
Press the Camera firmly onto Mount Plate

Tip: The F717 camera must be firmly and completely seated on the mount plate for proper operation of all controls. If you find certain controls (like the Exposure Dial) are not operating correctly, check for proper seating of the camera on the mount plate.

- ✓ **Check the controls** for proper operation. With the camera installed on the mount plate, you can make a quick visual check to see that all controls on the back housing are operating properly.

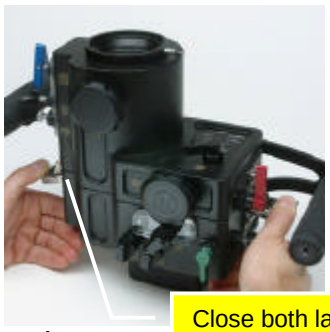
Closing the housing

- ✓ **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**. With the back half resting with the camera lens barrel facing up, bring the front housing half over the camera and onto the back. If equipped, the manual focus control may require slight movement to mesh the teeth of the control with the focus gear installed on the camera. Alignment pins in the housing front will mate with the alignment holes on the back, and the housing halves will come together firmly on the o-ring. You should have no 'rocking' movement between the front and back housings halves. If you do, remove the front and check for control interferences or something in the seal, then re-install the front housing.



Carefully mate the housing front to the back.

- ✓ **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.



Close both latches at the same time and watch for them to lock.

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.*

- ✓ **Carefully inspect** parting line between front and rear. If this line is not even 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!***

✓

✓ **Press** the Zoom, A/M Focus, Manual Focus and White Balance Mode/Set (if equipped) controls back in until they touch camera buttons. Note positioning below:
- Zoom control trigger should be pointed toward the rear on a 45 degree angle from vertical.
- A/M Focus should be pointing straight down.
- White Balance ModeSet should be pointing directly back.
- The Manual Focus control has no neutral position. It should simply be making contact with the Focus Gear on the camera

✓ **Power up the camera** by pushing the green power button ~1/4 turn counterclockwise . At this time, check all the 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 so, remove the port and re-install per directions in a subsequent section.

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 controls. 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 controls, it helps to review 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 are designed to operate properly in this position.

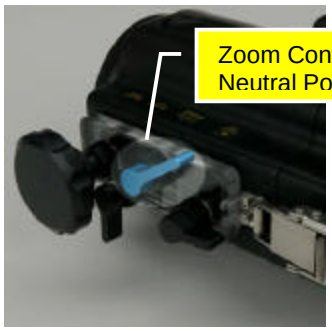
Power
This control is easily identified by the green color. Rotating the control ~1/4 turn will turn the camera on, and the same motion will turn it off.


Power Control

Tip: The F717 camera will shut off automatically after a certain period of non-use to conserve battery life. This is normal, and you can quickly turn the camera back on with the Power control

Zoom
The Zoom control is blue color for easy identification. It operates with a simple up/down rocker motion. You can view the camera zoom control through the viewing window.

Tip: 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.



Shutter Release
The Shutter Release control is red, and will operate with a simple downward motion on the trigger. Note that partial movement of the control will depress the camera shutter release halfway, allowing you to 'frame' the picture before pulling further and recording the image.

Navigator Left/Right
The control swings 180 degrees from the 9 o'clock to the 3 o'clock position, where it actuates the left and right navigator buttons, respectively.

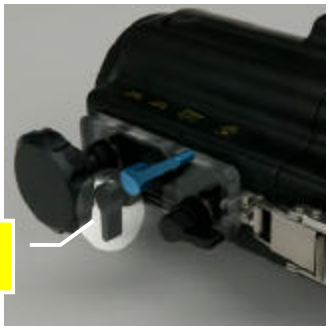
Note that this control has a 'park' position in ~ 8 o'clock location. This is necessary to allow the Navigator Up/Down control to function. If you find the Nav Up/Down control is not operating properly, check that this control is 'parked'.

Navigator Up/Down
The control also swings 180 degrees from the 12 o'clock to the 6 o'clock position, where it actuates the up and down navigator buttons, respectively.

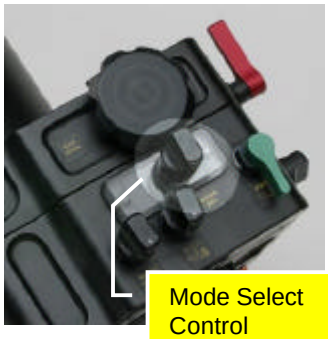
This control has a 'park' position as well, in ~ 7 o'clock location. This is necessary to allow the Navigator Left/Right control to function. If you find the Nav Left/Right control is not operating properly, check that this control is 'parked'.

Menu/Display
Similarly, this control swings 180 degrees from the 9 o'clock to the 3 o'clock position to actuate the display and menu buttons, respectively. The park position for this control is the 6 o'clock position.

Auto/Manual Focus
The A/M Focus control on the housing barrel moves from the 6 o'clock to the 5 o'clock position (when viewed from the side). You can see the camera switch through the viewing window for exact positioning.



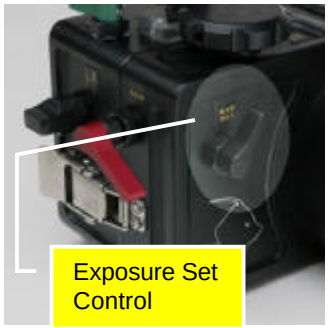
Mode Select
This control uses a simple rotating motion to select the proper mode for shooting, reviewing, or establishing camera settings. You can pull the control back to see which mode is selected.

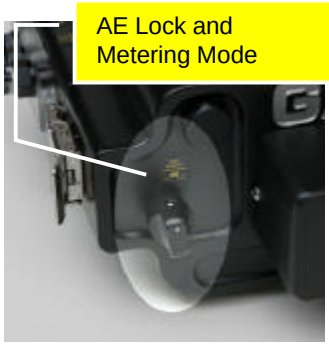


Pro Controls
The following controls are available with the 'Pro' model. If you do not have this version, you may skip the remaining controls description.

Exposure Dial
This knob control is simply rotated either direction to dial the exposure setting up or down.

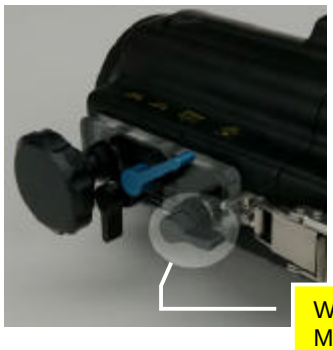
Exposure Set
When you have the proper exposure setting established, push this control slightly toward the barrel to select.





Auto Exposure Lock and Metering Mode
This control, like the Navigator controls, rotates 180 degrees from the 12 o'clock position to the 6 o'clock position to actuate the AE Lock and Metering Mode buttons, respectively. The 'parked' position for this control is ~11 o'clock position.

Manual Focus
With manual focus on, the Manual Focus control rotates the focus ring on the camera in either direction. This control is located furthest forward on the housing barrel.



White Balance Mode/Set
The White Balance Mode/Set control is in a 'neutral' position pointing straight back, or the 3 o'clock position when viewed from the side. Rotation counter-clockwise will actuate the White Balance Mode button, and rotation clockwise will actuate the White Balance Set button.

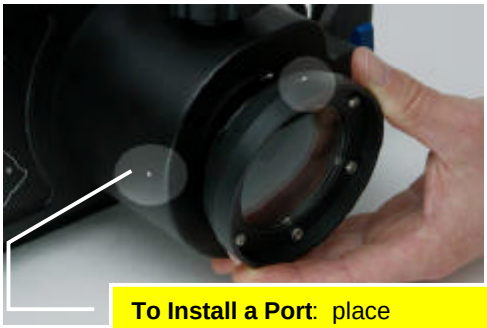
Note: This control should be 'parked' in the ~3 o'clock position

Changing Ports

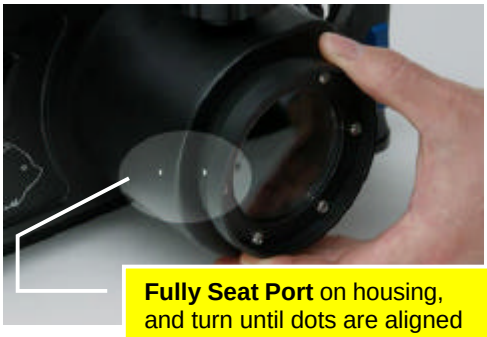
Gates offers several ports for your F717 housing, which are attached with a bayonet-style mount. Port changes are easy and straightforward:

- ✓ 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 ¼ turn in either direction to 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 and 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 ¼ away from the dot on the top or side of the housing.. You may need to gently push the port into the bulkhead, 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.



To Install a Port: place alignment dots 90 degrees, or ¼ turn away from each other



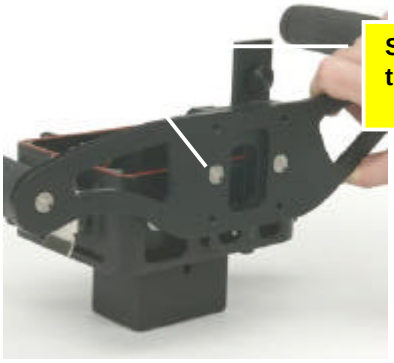
Fully Seat Port on housing, and turn until dots are aligned with each other

Handle Mount Installation and Removal

Your Gates F717 housing has a removable handle mount for easy disassembly, cleaning, and travel.

- ✓ To install the handle mount, first separate the housing halves from each other. The handle mount will attach to the back half.
- ✓ Next, align the the handle mount with the mating dovetail on the bottom of the housing (see photo). Slide the handle mount onto the housing. It may be a tight fit, so apply pressure gently, but firmly until the handle mount comes to a stop.
- ✓ Install the brass retainer knob (see photo) to hold the handle mount firmly in position.

To remove the handle mount, simply reverse the above steps.



Slide the Handle Mount onto the dovetail on the housing.

Secure the Handle Mount with the brass retaining knob.

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)

Attachment of Light/Strobe Arms

The handles on your Gates F717 housing have ¼-20 threaded holes that will accept nearly any light or strobe attachment system.

Video Lights

If you received the NiteRider™ lights with your F717 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 F717 housing, and 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.

Flash/Strobe Units

The Gates F717 housing can also be used with strobe or flash units. The Gates F1000ES External Strobe is a dedicated, matched flash unit for the Sony F717. Setup and use instructions for the F1000ES are in a separate part of this manual.

Nikonos-compatible flash connector.

You may also use any Nikonos-compatible strobe if you have the optional Nikonos-type bulkhead connector installed. There are just a few easy steps to using this feature:

- ✓ **Set the Hot Shoe**. Before installing the camera into the housing, go to the 'setup' menu and activate the 'hot shoe' feature by setting it to the 'on' position. Further details on this can be found in your Sony F717 camera manual.
- ✓ **Attach the Hot Shoe Connector**. After installing the camera onto the mount plate, slide the hot shoe connector onto the F717 camera hot shoe. Direction is unimportant—the hot shoe will function regardless of which way the connector is attached.
- ✓ **Connect your Nikonos-compatible strobe**. After complete setup of your housing and attachment of your strobe/arms, plug in your strobe to the bulkhead connector on the rear of the housing. You must first remove the watertight plug, and then align the dots on the connectors for proper keyed connection.
- ✓ **Test**. Finally, test the function of the entire system. If you have trouble, double check all connections and batteries.

Housing Care and Maintenance

Proper care of your F717 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.

O-Ring Care and Maintenance

Your Gates F717 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 rear of the Port.

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.

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 F717 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*!

GATES
UNDERWATER PRODUCTS

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 you 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 link(s)

Your NiteRider™ light system comes with a light arm mounting link(s) 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 F717 housing. Be sure the countersink side is facing away from the housing so the screws will seat flush with the bracket.

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.

Gates F1000ES External Strobe
Setup and Use

The Gates F1000ES External Strobe is quite simple to setup, use and operate. It incorporates the Sony HVL-F1000 flash unit to achieve dedicated performance from your camera/flash system. As such, the Gates F1000ES External Strobe has no controls: the interface to the Sony F717 camera allows full flash control from the camera menu, including adjustment to flash power output and power on/off. Further, the HVL-F1000 may be removed from the housing for above water use.

Power Modes

The F1000ES has three power modes:

- Off: the power switch on the back of the Sony HVL-F1000 unit is set to "Off".
- Standby: the switch on the back of the Sony HVL-F1000 unit is set to "On". In this mode, the flash unit will not fully power up. It will, however, be in standby mode awaiting a signal from the Sony F717 camera to charge and prepare to fire.
- On: the Sony HVL-F1000 is set to "On", it is connected to the Sony F717 camera, and the camera is set for flash use. In this mode the HVL-F1000 flash will charge and prepare to fire.

The Sony F717 camera flash can be toggled through on/off/auto modes using the 'up' navigator button. When turned off, the F717 camera automatically places the F1000ES back into standby mode to conserve battery life. In standby mode the flash will consume very little power and may be left in this mode for extended periods of time. You need not turn the strobe off between dives. However, Gates recommends you turn the strobe off at the end of each day or prior to storage.

When connected, the F1000ES takes priority over the F717 camera internal strobe which is disabled. Be sure the F1000ES connected when the shutter is released or the internal strobe will fire. This will not harm either the strobe or housing, but light leakage around the barrel of the camera may interfere with images.

Preparing the Gates F1000ES

- **Open the F1000ES External Strobe** -- To open the housing, release the side latches. They will operate the same as those found on the F717 housing. Remove the front (window) housing half.
- **Unplug the flash unit** – lying on top of the flash unit is the flash cord. Unplug it from the housing connector. Note how the cable is coiled to keep it neatly tucked into the housing.
- **Remove the Sony HVL-F1000 flash unit** – the HVL-F1000 may be removed by simply lifting the flash unit top up and rotating slightly downward as it releases from the cushion supports.
- **Turn the HVL-F1000 on** – On the back of the HVL-F1000 flash unit is the power switch. Turn this to the "on" position.
- **Re-install the flash unit** – reversing the above steps, re-install the HVL-F1000. Press the flash unit firmly to fully seat it at the bottom of the housing. Coil the flash

cord, if necessary, just like when it was removed, then plug it into the connector on the housing.

- **Close the housing** – align the front housing half to the back. Check to be sure the flash unit cord is not trapped in the main seal, and close the latches.
- **Attach to the F717 housing** – the flexible link arms provided standard with your F1000 External Strobe connect it to the F717 housing. They are linked by simply pressing them together. All or just a few of the links can be used based on The flexible arm mount base will attach to the top of the F717 housing handle with the ¼-20 socket head screw and washer provided with the strobe.
- **Plug the F1000ES into the F717 housing** – the F1000ES cable has a 4-pin male wet connector that mates with the female bulkhead connector on the back of the F717 housing. The connector is keyed to assure proper alignment. Press the connectors together, and then slide the locking sleeve over to secure them together.

Shooting with the F1000ES

The HVL-F1000 flash unit communicates with the F717 camera through a Sony proprietary method that determines flash sync and metering. As with new technology, experience is a necessary ingredient to successfully shooting underwater photos with this digital system. Some tips and tricks are provided here to assist your endeavors.

Flash Power

The F1000ES power output can be controlled through the F717 menu. High, Medium, and Low settings are available. Refer to the Sony F717 manual for more details.

Flash Ready

The flash charging light on the F717 camera will blink when the F1000ES is charging, visible through the rear LCD window. It will be stop blinking and be dark when the flash is charged.

Modeling Light

Gates recommends the use of a modeling light, especially when light conditions are minimal. A steady light source helps the F717 camera focus and meter an exposure. Indeed, excellent photos can be obtained using standard video lights. In general, a strobe should be used when competing with ambient light to illuminate foreground subject. In nearly all other situations, video lights can be effectively used as a steady light source and shooting photos.

Care and Maintenance

The F1000ES requires very little effort to keep it in good working order. Please refer to the ‘Housing Care and Maintenance” section of this manual for more detailed information.

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 Sony F717 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 you 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, unseen 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 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.

Gates wishes you the best capturing your memories with one of our products. We know it will provide years and 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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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.

Inspection

Begin by ***carefully inspecting the o-rings***. As a matter of habit your 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 su***rface, 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 w***ell. 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, grab the o-ring and gently pull it 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 goove. 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).

- ✓ Put 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 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 20th 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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