

POVCAM Underwater Housing

Setup, Use, and Care Guide

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Last document revision: August, 2018

This manual and current revision is available in 8.5 x 11 size and full color at

<http://www.gateshousings.com>

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Table of Contents

	Setup, Use, and Care Guide	1
1:	Introducing the POVCAM UMR20-UCK20	4
	Features	4
	Warranty Disclaimer.....	4
	Unpacking the POVCAM housing	5
2:	Cautions	7
3:	The UCK20 Camera Head Housing	8
	Getting to know the UCK camera head housing:.....	8
	Preparing the Housing	8
	Preparing the Camera Head for Installation	9
	Installing the Camera Head.....	11
	Seal check(Optional).....	14
	Carry Handle (Optional)	14
	Tripod Mounting Cheeseplate(Optional).....	15
	Final Checks	15
4:	The UMR20 Recorder Housing	16
	Getting to know the UMR20 recorder housing.....	16
	Preparing the housing.....	16
	Installing the Recorder	19
	Final Checks	22
	Recorder Housing Options:.....	22
5:	UMR Recorder controls and menu setup	23
	UMR push button controls.....	23
	UMR user assignable buttons	24
	Using the touch screen buttons.....	24
	Other functions	25
6:	Additional Information	26
	Changing Ports	26
	Cleaning Ports and Filters.....	26
	Tips for Shooting Video with the POVCAM	27
	Housing Care and Maintenance.....	27
	O-Ring Care and Maintenance	27
7:	Customer Support.....	28

1: Introducing the POVCAM UMR20-UCK20

Congratulations on owning a new Gates product: the POVCAM UMR20-UCK20 housing. This product will provide years of reliable service and value. We designed the POVCAM UMR20-UCK20 specifically for the Panasonic AG-UMR20 portable recorder and AG-UCK20GJ compact camera head.

Please read through this entire guide to learn about the housing so you can get the most out of this imaging tool. In this section, we'll introduce you to the features of the POVCAM housing so you can get started.

Features

The POVCAM has several key features:

Small and Travel-friendly. The POVCAM system packs easily into luggage or dive gear.

Versatility. Due to its unique design, the POVCAM system can be used as a fully submerged diver operated unit or as a pole mounted system. There are also optional short or long cables.

Up to 60 feet of Cable Separation between the camera head and recorder.

Designed to last. Gates legendary reliability is built into the POVCAM: machined aluminum shells, stainless hardware and reliable mechanical controls.

Precision optics. The POVCAM uses custom designed ports by Gates.

Professional Imaging. The POVCAM system includes many features for broadcast TV and other professional uses.

Warranty Disclaimer

The POVCAM is a tool that, like any tool, requires knowledge and understanding to be effective.

It is the user's responsibility to learn the proper setup, use and care of the POVCAM system. Because we can only provide you with the information necessary to do so, Gates does not warrant the contents of your housing (e.g. your camera and lenses) under any circumstance. For the same reasons, Gates does not warrant optical performance or image quality.

We warrant the POVCAM as an image acquisition tool for a period of 2 years. The optional Seal Check unit is warranted for 1 year. Optics are warranted for a period of 1 year or 100 hours water contact, whichever comes first. The warranty period for the cables is 1 year.

If you have any questions about the setup, use and care of the POVCAM, contact Gates directly. Details are in section 5.

Unpacking the POVCAM housing

After you remove the POVCAM from its shipping container, carefully inspect it for missing parts or damage that may have occurred during shipment. If any discrepancies are discovered, please contact your Gates dealer immediately for assistance.

Standard Configuration

The POVCAM comes with the following standard items:

- **POVCAM UMR Recorder Housing**
- **POVCAM UCK Camera Head Housing**
- **5/32" and 3/16" hex wrenches**
- **Various assembly tools and spare parts for the POVCAM including: mounting screws, o-rings and lubricant**

Required User Configurable Items:

These user options are required to operate the housing

POVCAM custom pass through cable

1 of the following is required

- **3m(9.84 ft)* cable or**
- **20m(65.62 ft)* cable**

Gates 32 Series Port

1 of the following is required:

- **GP32A wide angle port**
- **SP32A or SP32B standard dome port**
- **FP32A or FP32B flat macro port**

Optional Parts

Your housing may also come with optional items:

- **Additional 32 Series Gates Ports**
- **Additional custom POVCAM cables**

- **Gates Light System (User Install)**
- **Gates Seal Check II or Seal Check Lite System**
- **Carry Handle kit for POVCAM UCK camera head housing**
- **Carry Handle kit for POVCAM UMR recorder housing**
- **Tripod/Cheese plate adapter for UCK housing**
- **Gates Tripod**
- **Diver comm system adapter kit**
- **SDI Video Out kit**
- **Surface Power Kit**

Custom Configurations:

Included items vary for custom configurations.

2: Cautions

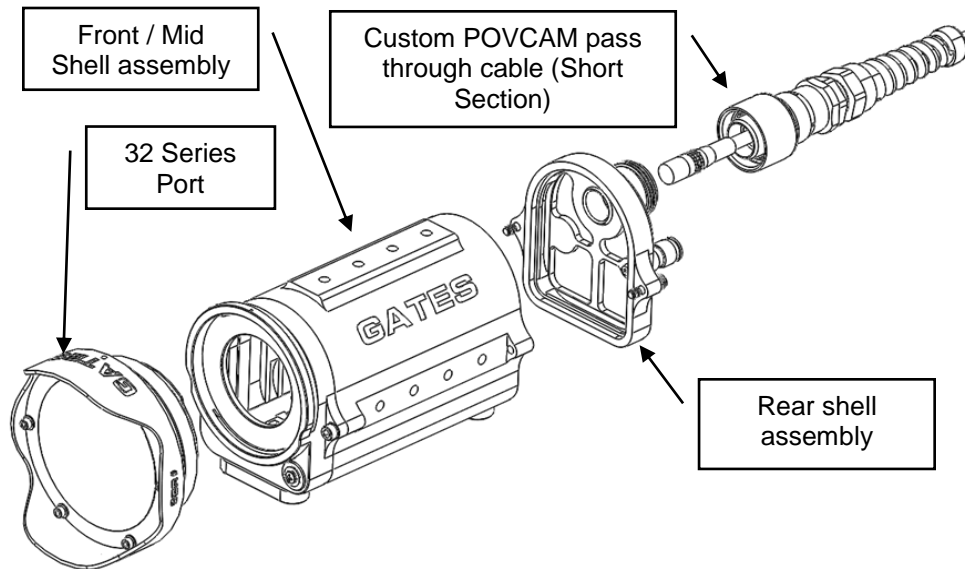
- ▶ **TRANSPORT.** NEVER ship or transport your POVCAM camera inside the housing. The housing was not designed for this purpose and severe damage may result.

- ▶ **USER RESPONSIBILITY.** This Setup, Use and Care guide contains important detailed procedures for setup and use of the POVCAM. It is the user's responsibility to read, understand and employ these procedures. Failure to do so can result in poor or non-operation of the POVCAM and may void your warranty.

Contact Gates if you have questions about this manual or using the POVCAM.

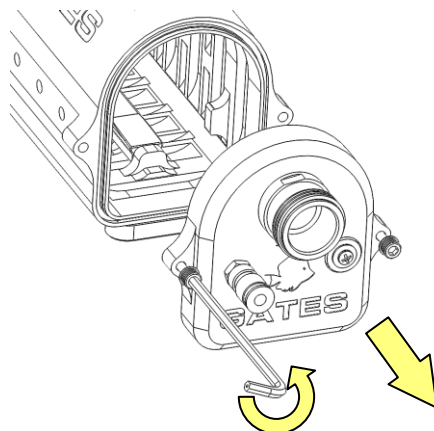
3: The UCK20 Camera Head Housing

Getting to know the UCK Camera Head Housing:

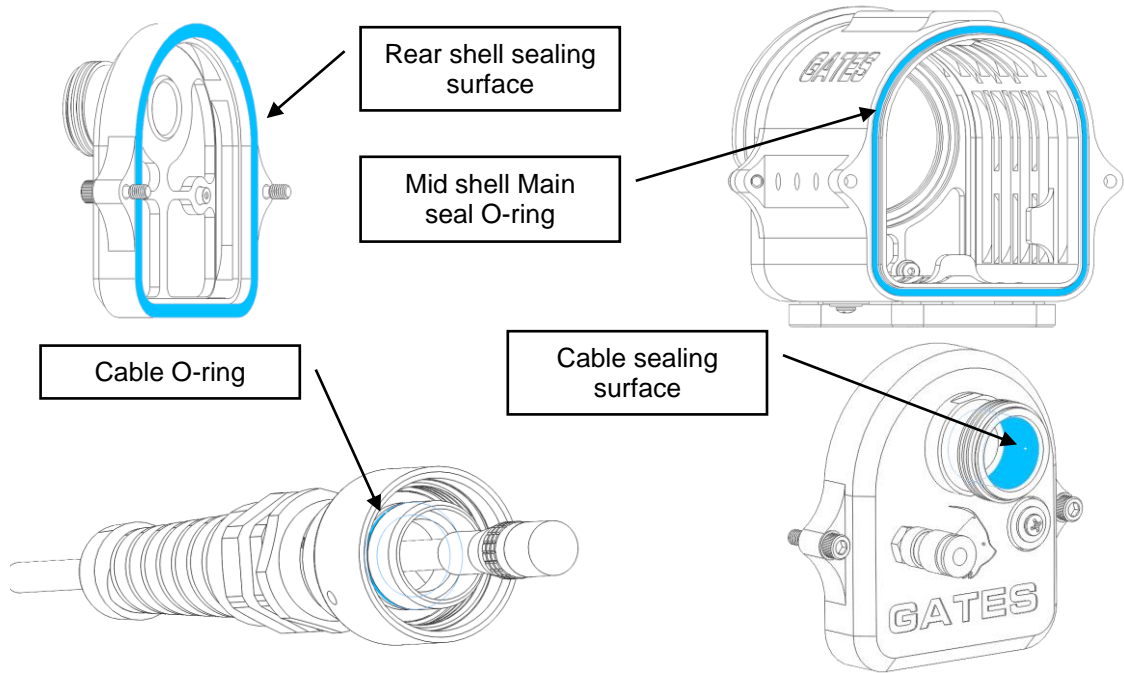


Preparing the Housing

- **Unscrew** the rear shell mounting screws:
 - Use the supplied 5/32" hex wrench to unscrew the 10-32 mount screws from the mid shell.
 - *Please note: these screws are designed to be held captive in the rear shell. Do not fully unscrew them from the rear shell.*
- **Separate** the rear half of housing from the front/mid shell assembly.

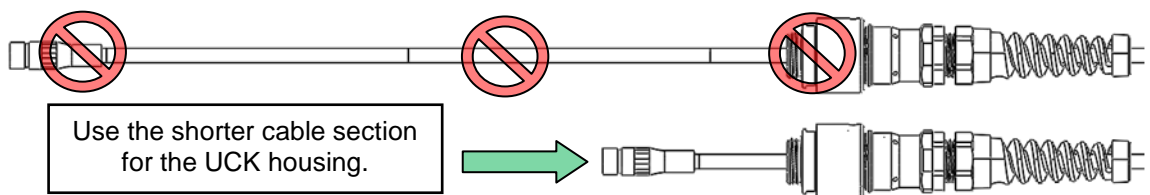


- **Inspect O-Rings** on the Front/Mid shell assembly and custom pass through cable for cuts, cracks, foreign material or any other condition which would prevent a good seal.
- **Inspect sealing surfaces** on the rear shell and on the pass through connector.

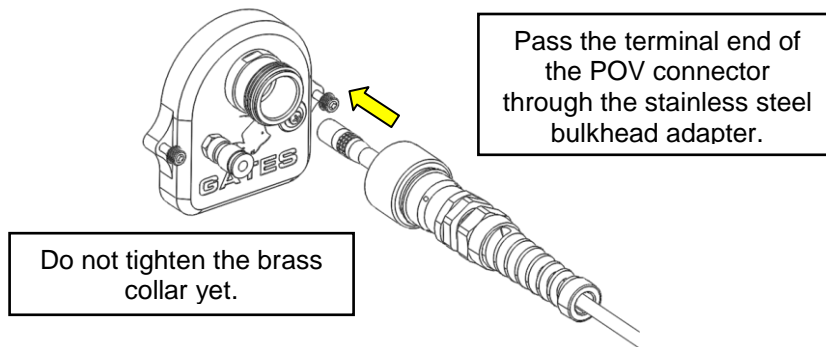


Preparing the Camera Head for Installation

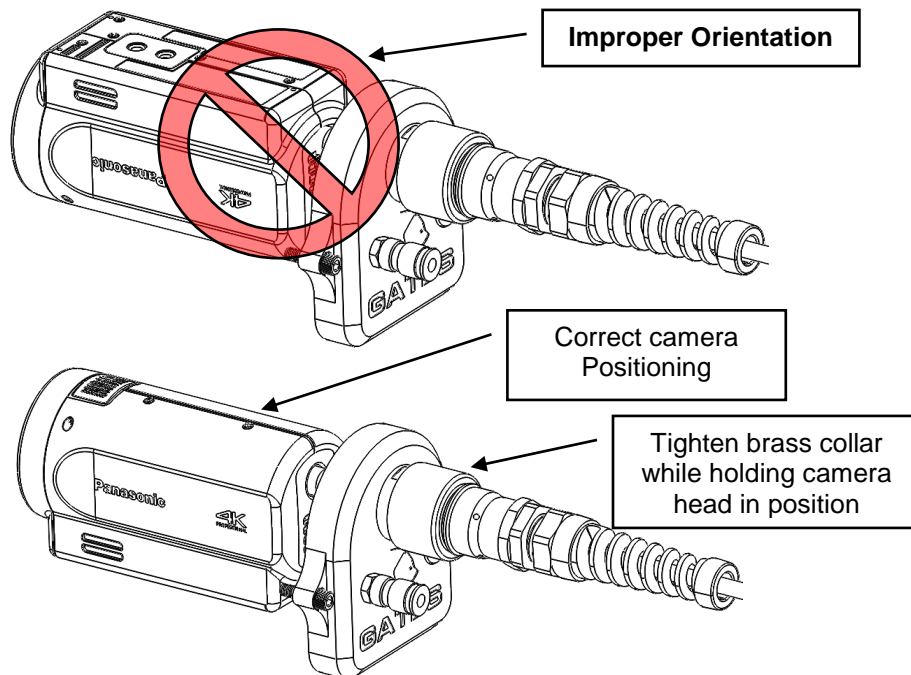
- **Locate** the side of the pass through cable that has a shorter section of signal cable protruding from the bulkhead connector.



- **Insert** the connector end of the cable through the stainless steel bulkhead adapter on the rear shell.
 - Do not tighten the brass collar at this time.

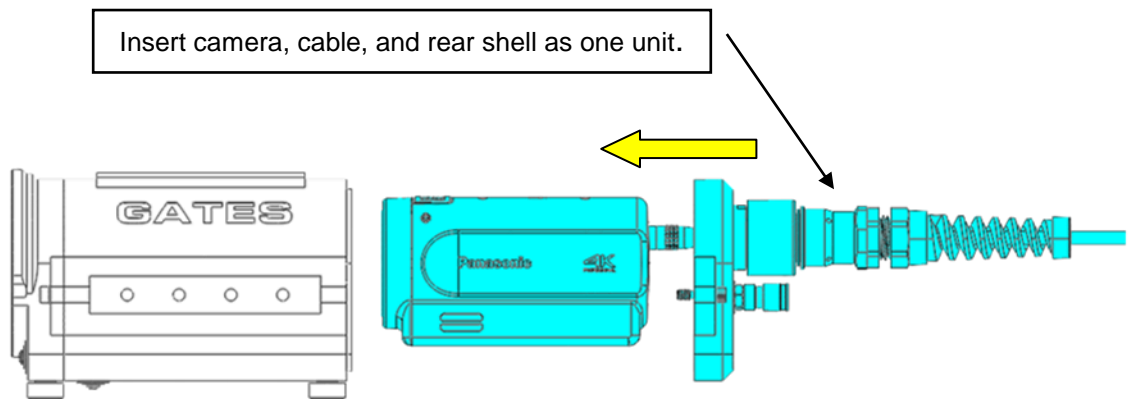
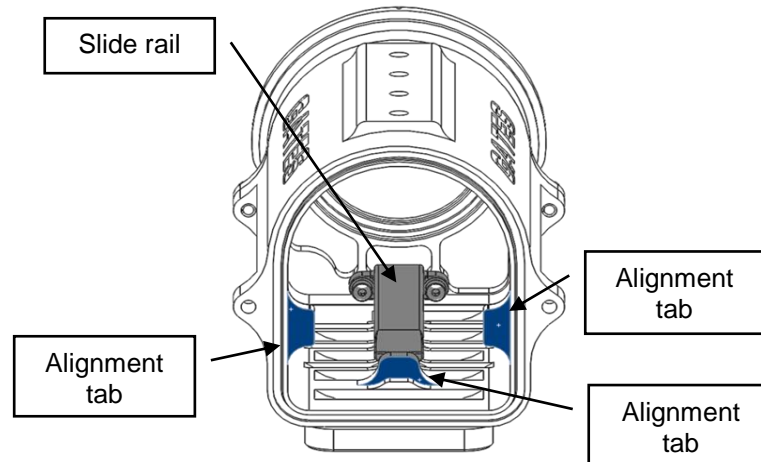


- **Locate** the Cable Connector on the Camera Head, align the keyway, and rotate the collar by hand until the connector is securely seated.
 - *Please note: the cable must be connected before inserting the camera into the housing.*
- **Rotate** the camera head into position relative to the rear shell.
 - *Do not skip this step. It is important to minimize cable twisting.*
- **Tighten the brass collar by hand.**
 - *Do not use a tool. The collar is designed to be tightened by hand only.*



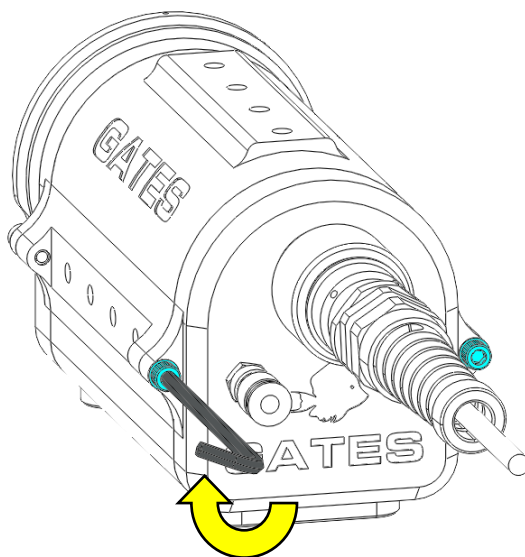
Installing the Camera Head

- **Remove** the lens cap. If you plan to use a thinner 49mm screw-on filter or diopter it can be installed at this point. They will be difficult to screw on when the camera head is in the housing.
 - *Please note: The outer diameter of any filter must be 52mm or less.*
- **Align the Camera Head between the 3 alignment tabs.** Use the slide rail as guidance while you insert the assembled camera head/rear shell/cable into the mid shell.
- **Gently slide** the assembled camera and cable into the front/mid shell subassembly until it stops at the base of the Front Shell.

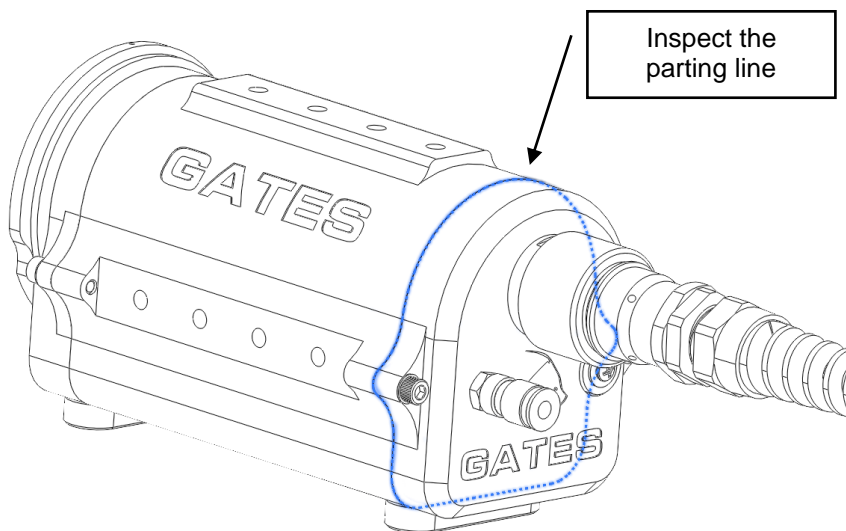


- **Secure the rear shell by evenly tightening the two 10-32 captive screws.**

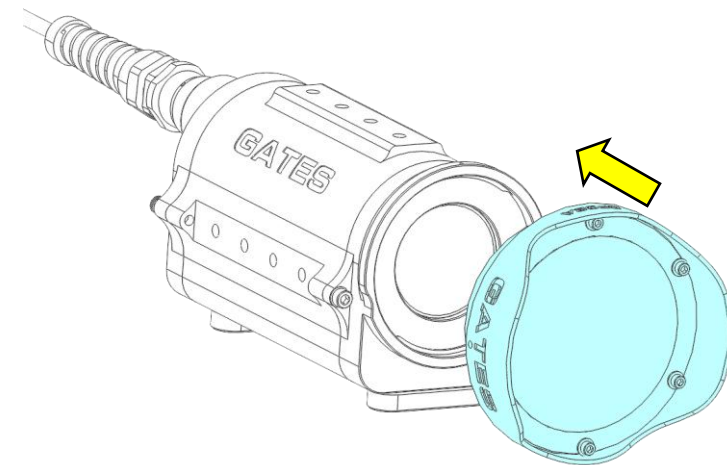
▶ **CAUTION:** The screws must be securely and evenly tensioned prior to using the housing. Do not over torque the screws. Immediately replace screws that are stripped or have worn hex pockets.



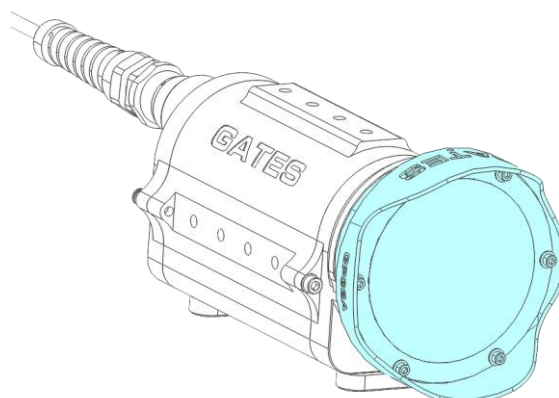
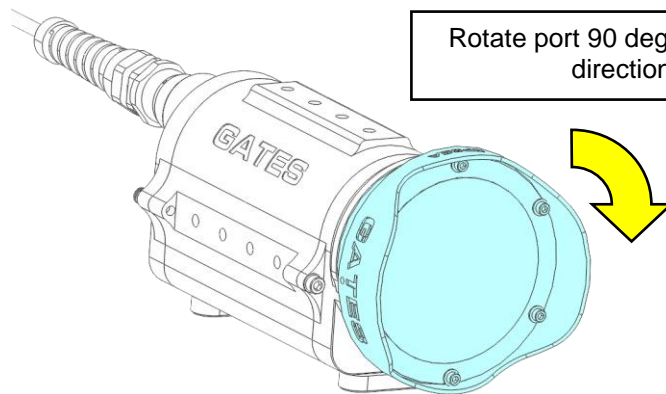
- **Carefully inspect the parting line** between the front/mid shell subassembly and rear shell assembly. If this line is not even all the way around, remove the rear shell to determine the reason. (O-ring out of place, etc.) Failure To Do This May Result In A Wet Camera!



- **Install a port.** Visually align the bayonet mount on the port with the housing. Mate the port to the housing, and press. It should seat fully with no gaps around the base. **Rotate the port 90°** either direction to fully engage the port. For specific details, see the section Changing Ports.



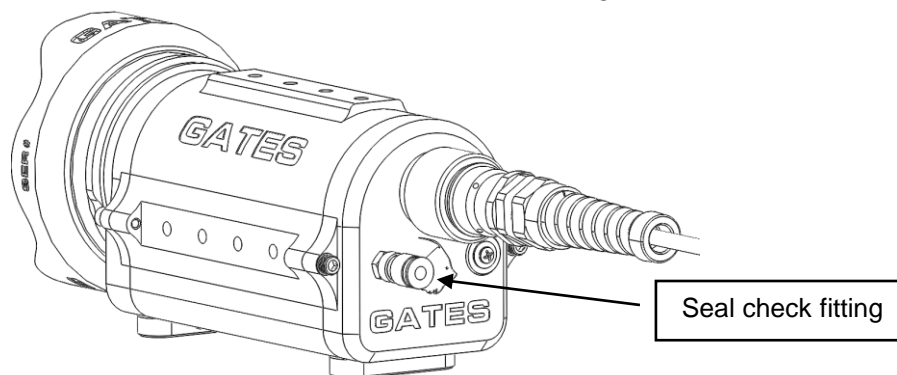
Rotate port 90 degrees either direction



Seal check(Optional)

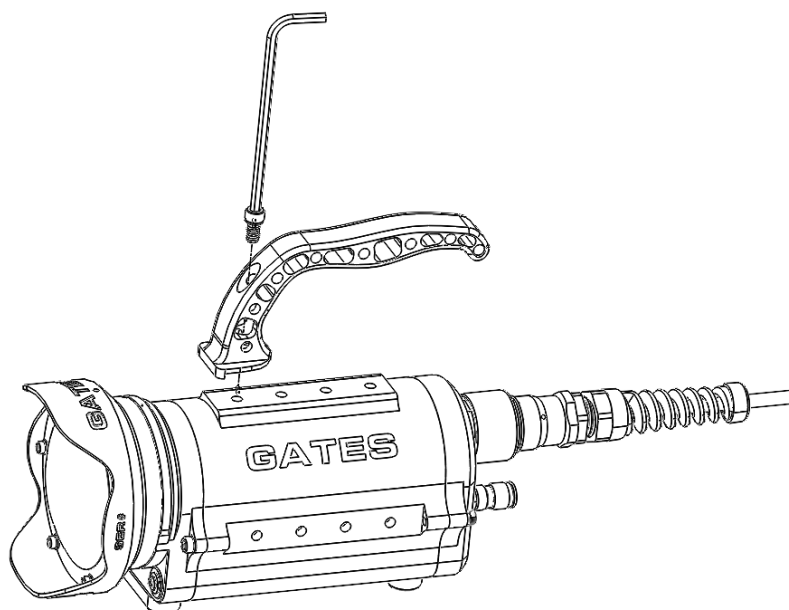
- **Seal Check Manual.** Follow the procedures in the Seal Check manual for verifying integrity of the housing and monitor.

- ▶ **NOTE.** Pulling a vacuum on the UCK Camera Head housing will take only a few seconds. Be careful to avoid excessive vacuum greater than 100 mbar.



Carry Handle (Optional)

- **Position the Carry Handle** on the top of the housing, then secure it by tightening the supplied 1/4-20 screw with a 3/16" hex wrench. The carry handle can only be mounted to the forward most hole.

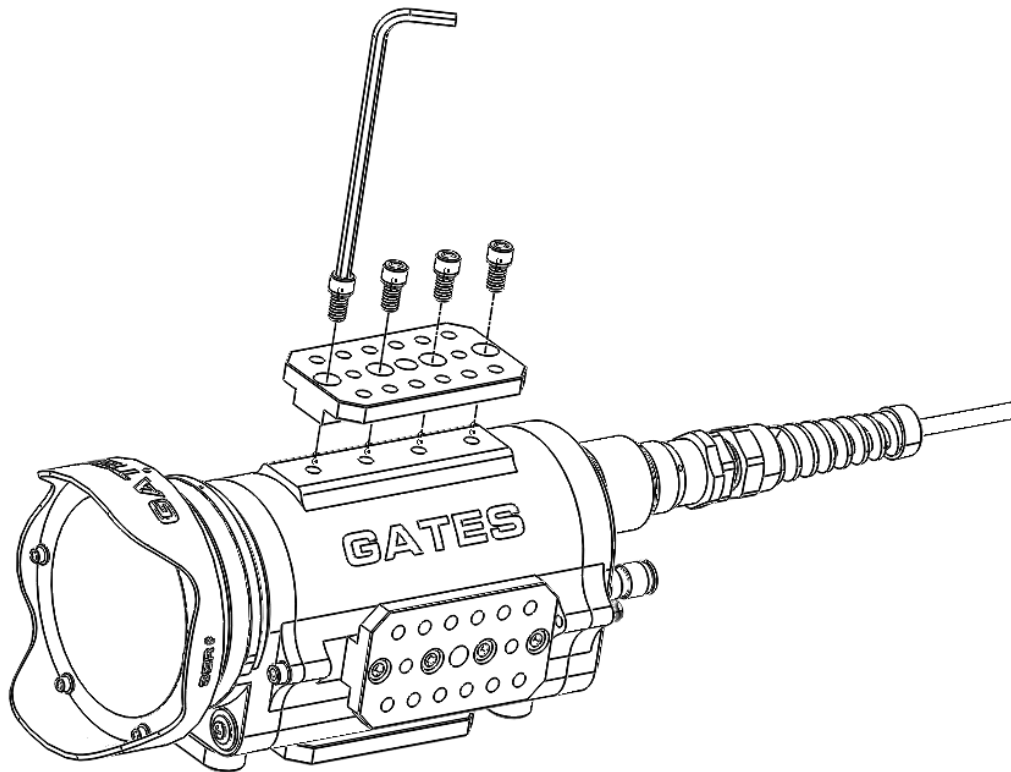


Tripod Mounting Cheeseplate(Optional)

The top, bottom, and both sides of the camera head housing each have a four hole pattern designed to mount an accessory plate. The plate is designed to allow mounting of the Gates Tripod, a pole mount bracket, or simply add more mounting points for the user to create their own rig.

The Gates Tripod is a useful accessory for steady, locked down shots. The Gates Tripod has extendable arms up to 18in/ 45cm long that collapse close to the housing when not in use.

To install the accessory plate, use a 3/16" hex wrench and the screws supplied with your kit.

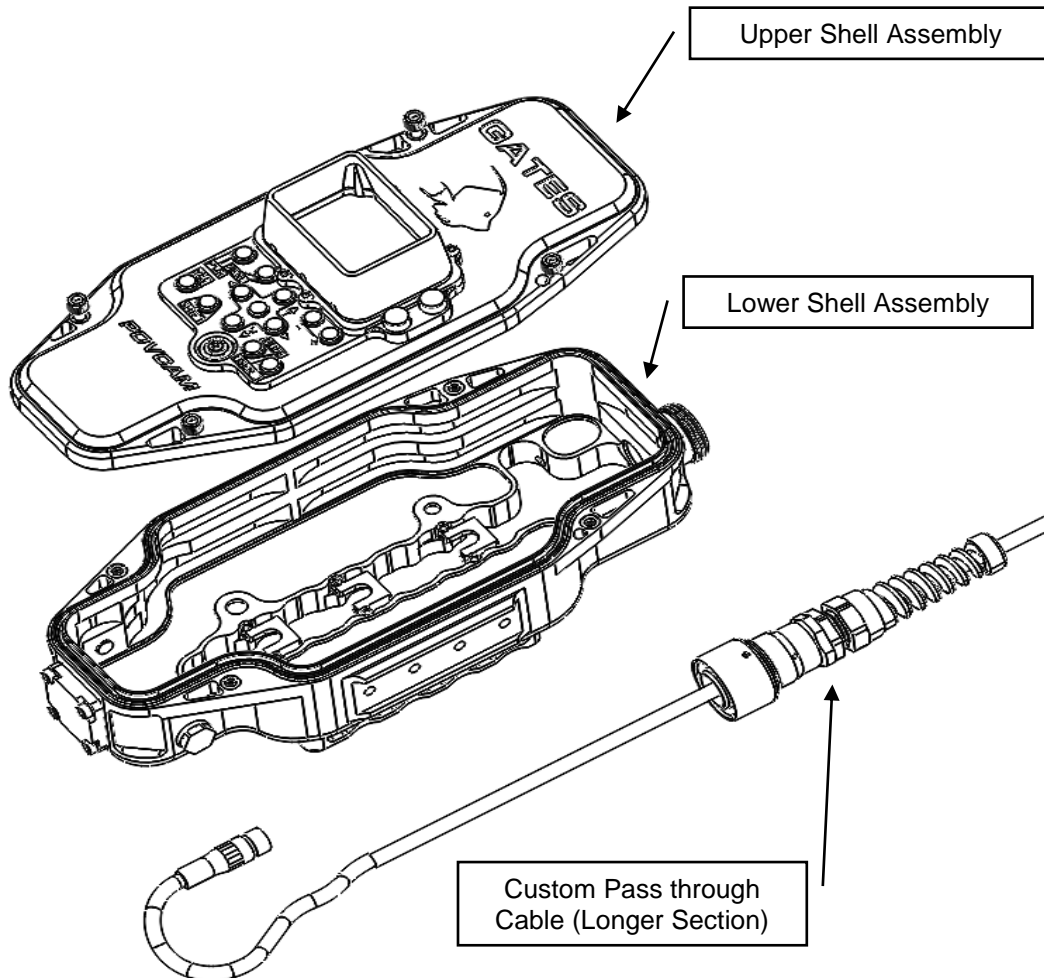


Final Checks

- **Visual Inspection.** Look closely at all seal mates – port, pass through cable and main housing seal. Check for gaps. Look over the housing one final time.
- **Verify operation.** If using the UCK as stand along housing power on the system and make sure you get a signal to the recorder.

4: The UMR20 Recorder Housing

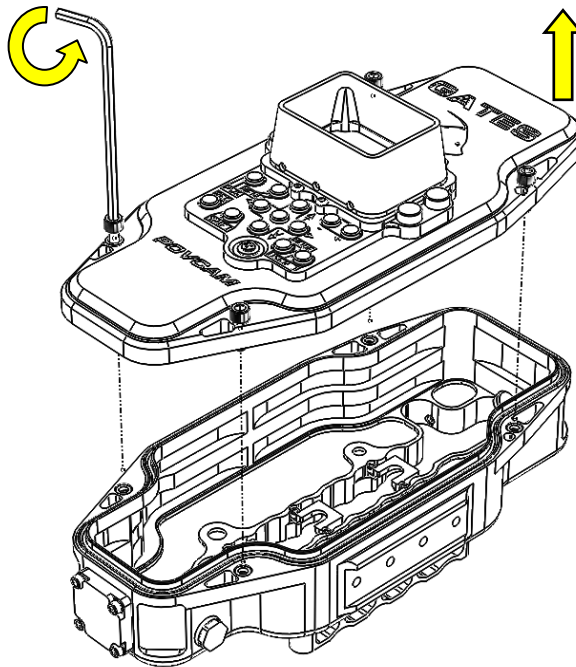
Getting to know the UMR20 Recorder Housing



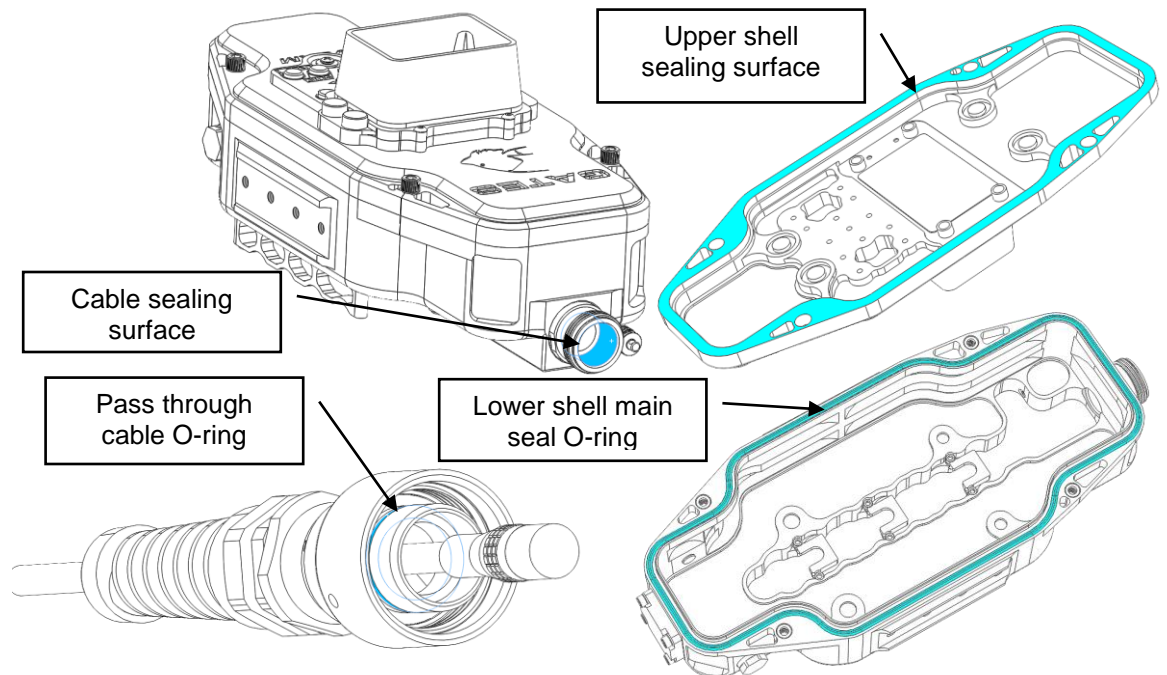
Preparing the housing

- **Unscrew the rear shell mounting screws:**
 - Use the supplied 3/16" hex wrench to unscrew the 1/4-20 mount screws from the lower shell.
 - *Please note: these screws are designed to be held captive in the upper shell. Do not fully unscrew them from the lower shell.*

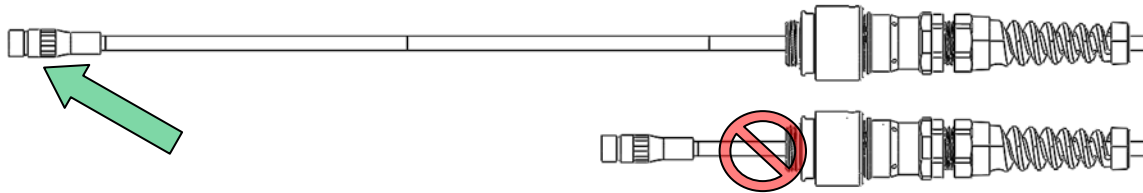
- **Separate** the upper shell from lower shell.



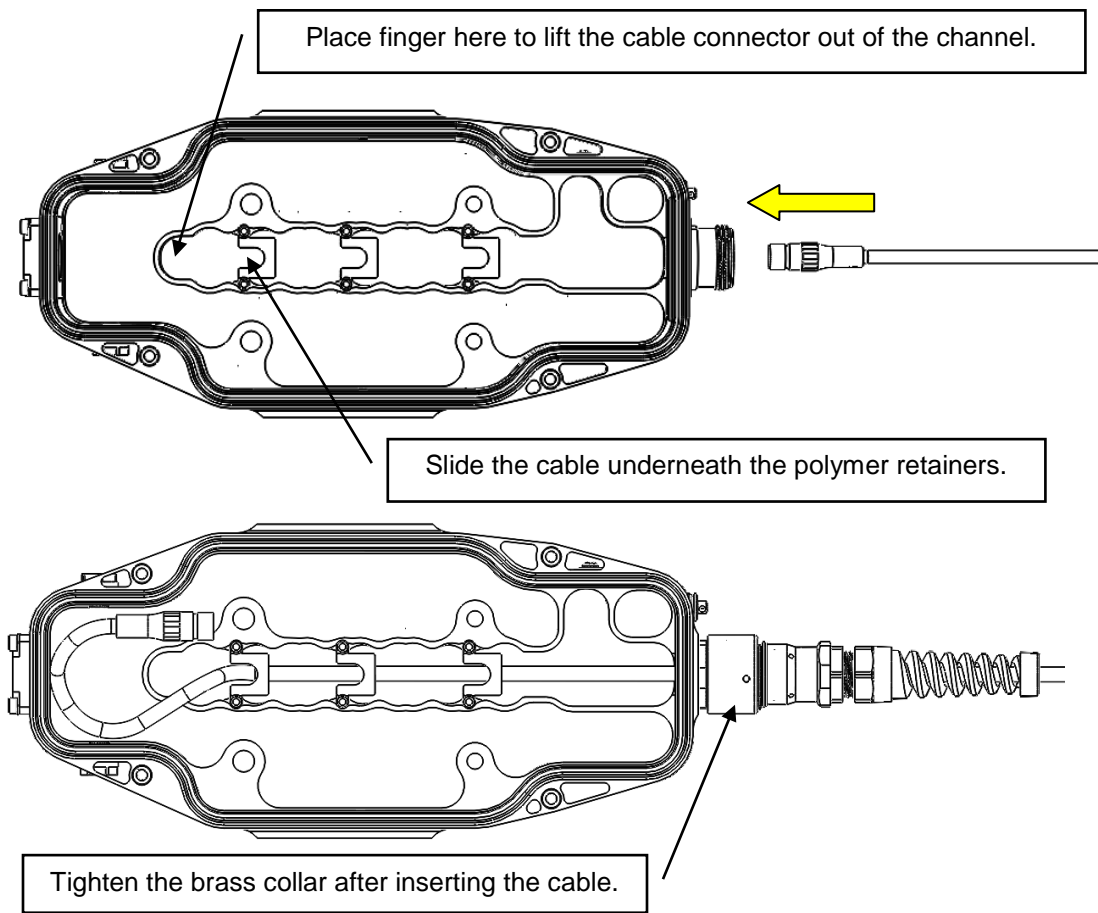
- **Inspect O-Rings** on the lower shell assembly and custom pass through cable for cuts, cracks, foreign material or any other condition which would prevent a good seal.
- **Inspect sealing surfaces** on the upper shell and the pass through connector.



- **Locate** the side of the pass through cable that has a longer section of signal cable protruding from the pass through connector.

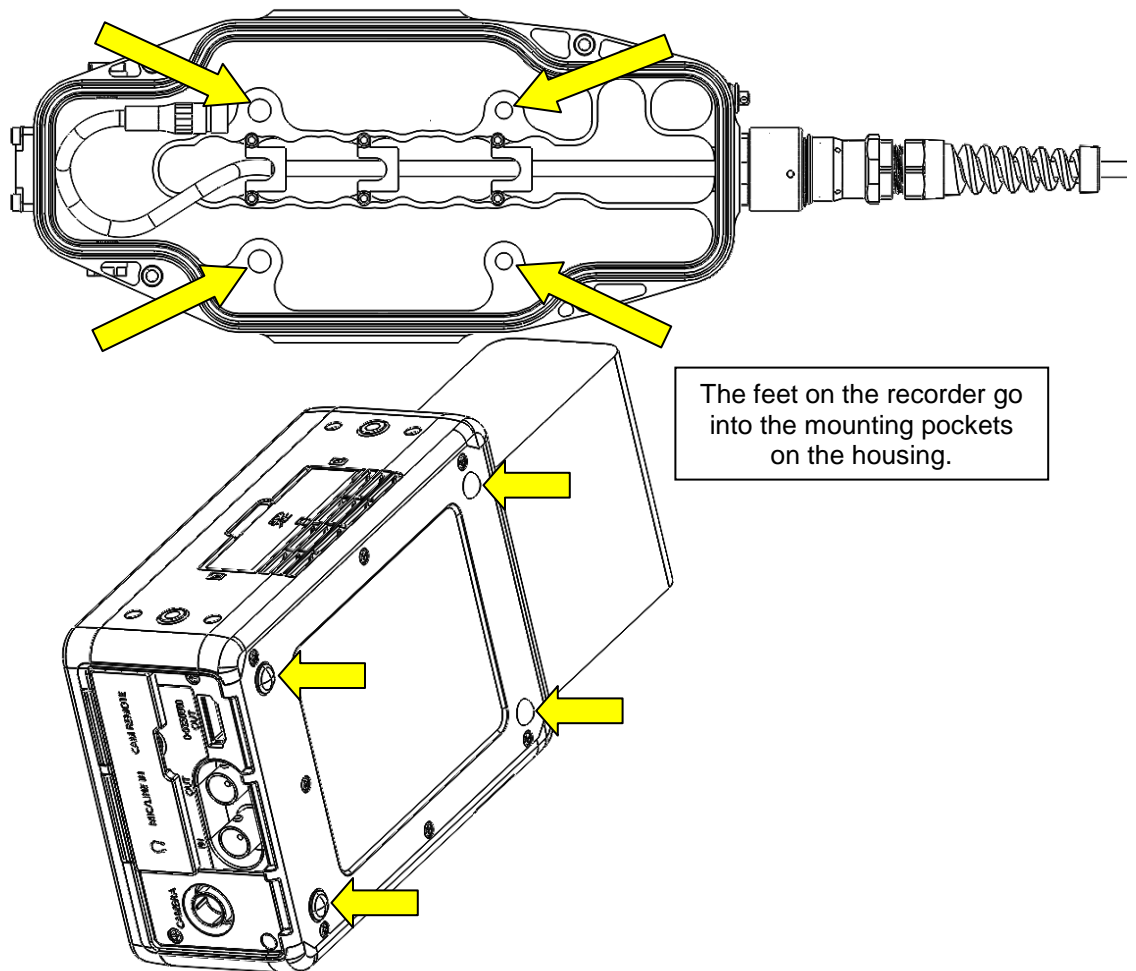


- **Insert** the connector end of the cable through the stainless steel bulkhead adapter on the lower shell.
 - Thread the connector into the channel and under the polymer cable retainers. Place a finger at the end of the cable channel to help lift the cable connector out.
- **Tighten** the brass collar to seal the cable to the housing.
 - *Please note: The brass collar is designed to be turned by hand only. Do not use pliers or a tool to install.*

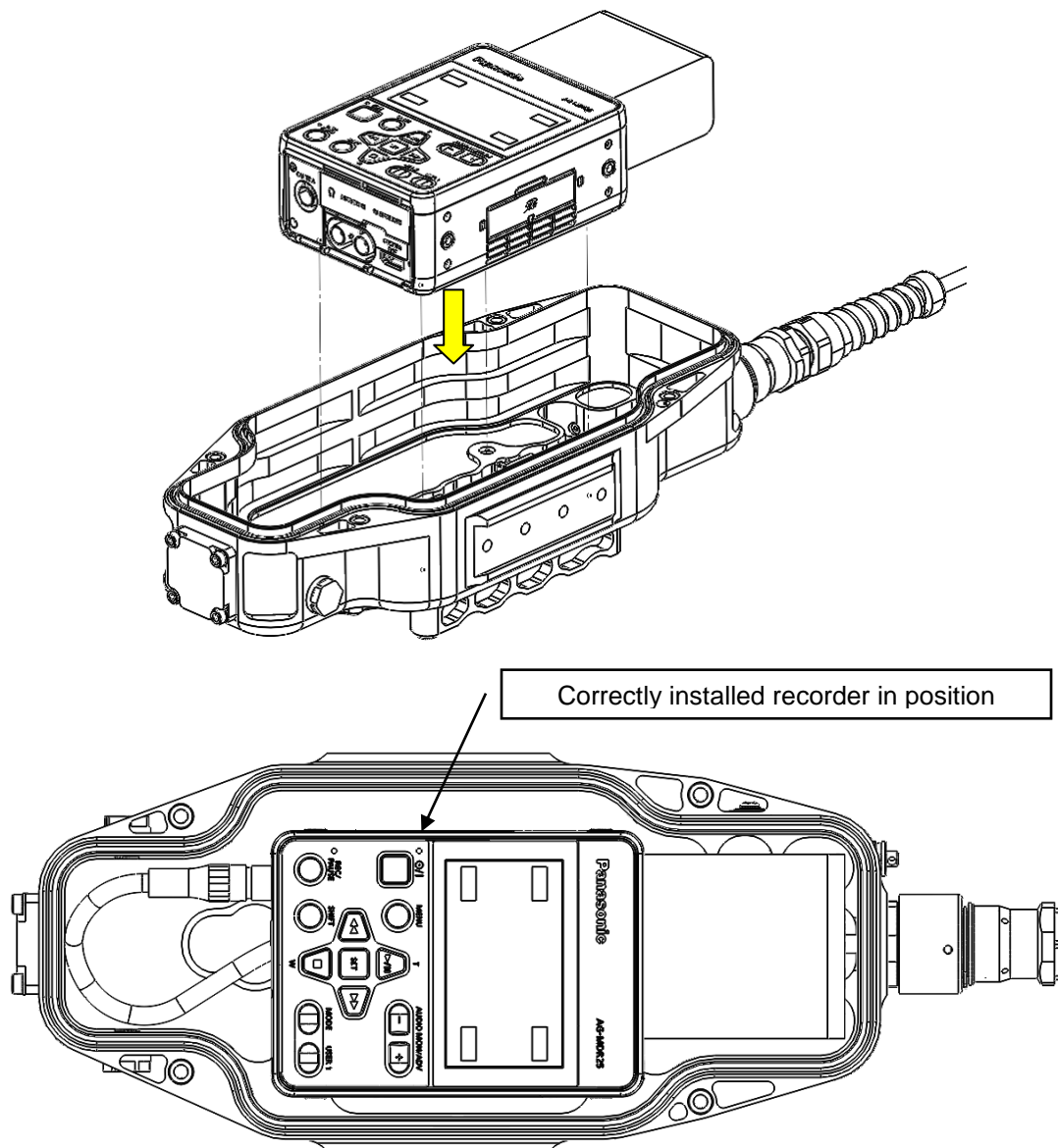


Installing the Recorder

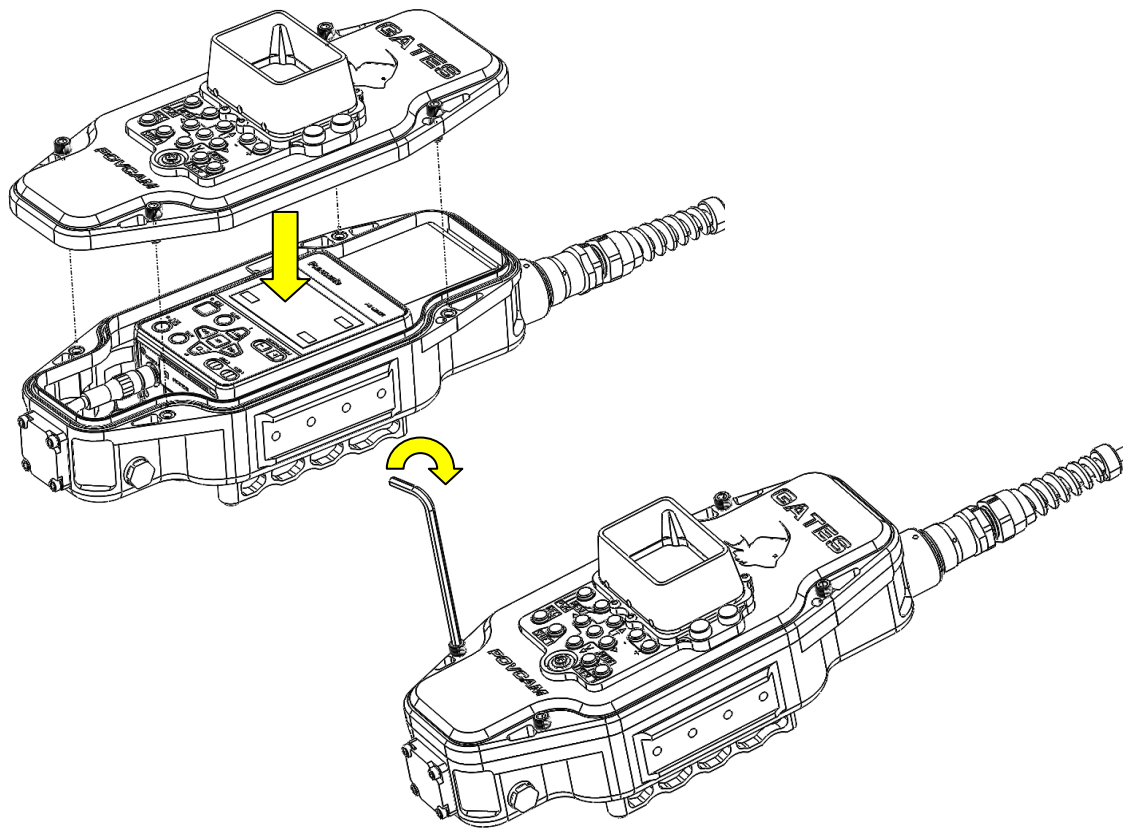
- **Insert a fully charged battery** into the UMR20 recorder.
- **Install recording media card(s).**
- **Connect all cables to the recorder.**
 - *Please note: the UMR20 recorder should be off before connecting any cables. If this is not done it may fail to sync to the camera head.*
- **Locate the mounting points** on the bottom of the recorder and on the inside floor of the lower shell.



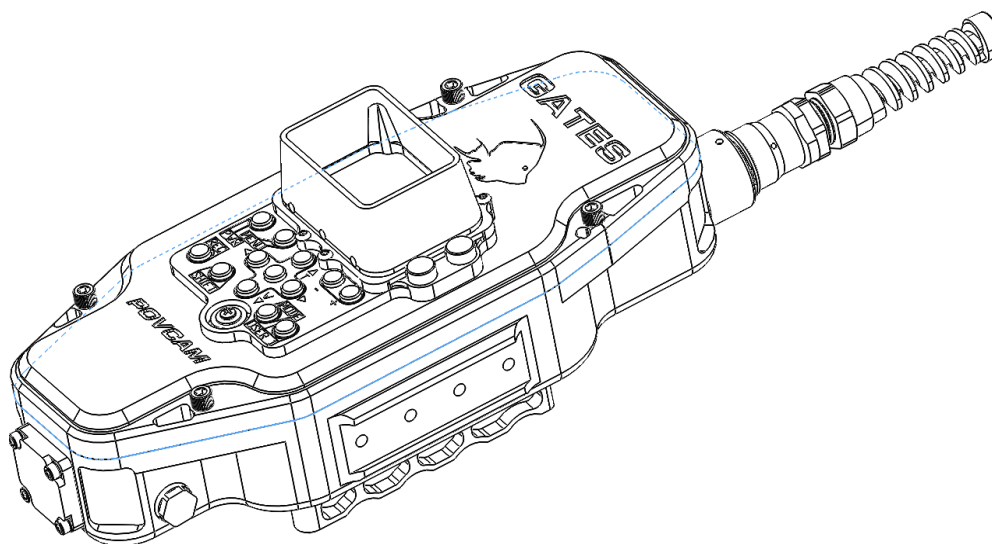
- **Place the recorder into the housing, making sure the recorder feet fully seat into the locating pockets on the housing.**
 - *Make sure no cables have moved underneath the recorder.*



- Turn on the system and perform a brief function check.
- Close up the housing by placing the upper shell onto the lower shell and evenly tightening the four ¼-20 captive screws.
 - *Important: do not force the screws. You may damage the recorder or housing by trying to tighten the screws when the recorder is out of alignment.*
 - *It is recommended to snug all four screws by hand before using the hex wrench to finish securely tightening the screws.*



- **Carefully inspect the parting line** between the upper and lower shell. If this line is not even all the way around, remove the upper shell to determine the reason. (O-ring out of place, cable interference, recorder out of alignment, etc.) *Failure To Do This May Result In A Wet Recorder!*

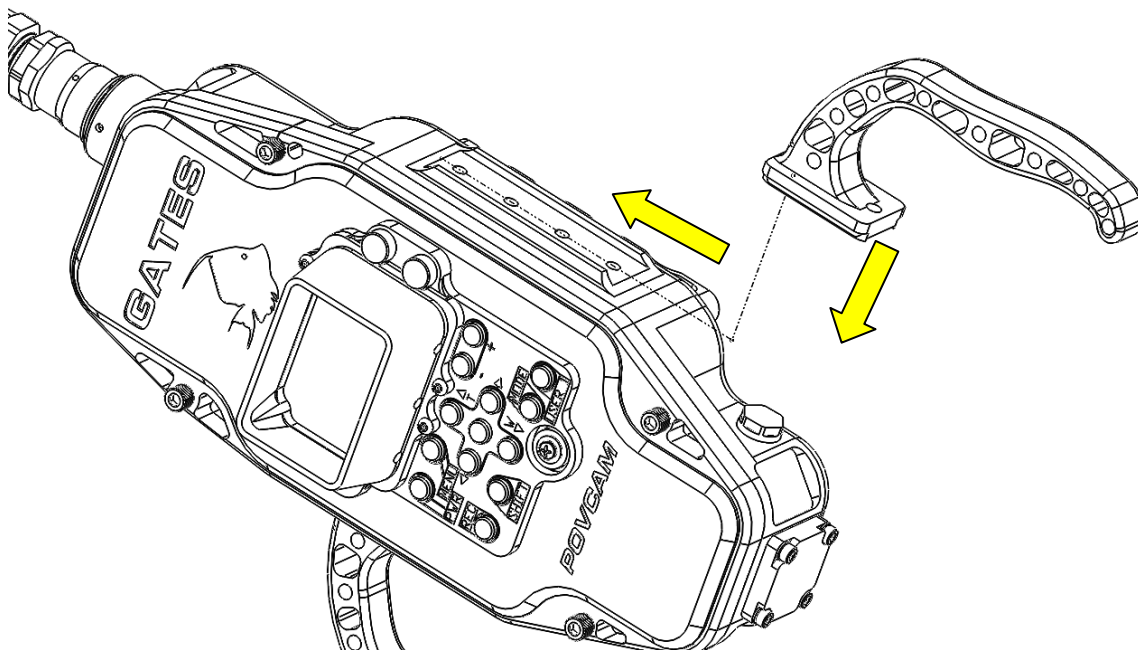


Final Checks

- **Visual Inspection.** Look closely at all seal mates – port, pass through cable and main housing seal. Check for gaps. Look over the housing one final time.
- **Verify operation.** As a final check, power on the system and verify all the controls are functioning normally.

Recorder Housing Options:

- **Carry Handles:**
 - The UMR has a built in rail to help you hold it. If additional grip is required the Gates dovetail mount carry handle is available.



- **Other Options:** the recorder housing is also designed for:
 - SDI surface feed output
 - Surface power feed
 - Diver comm system
- If you require anything else contact Gates for a custom design quote.

5: UMR Recorder controls and menu setup

Gates housings utilize 100% mechanical controls to provide you with the most reliable operation possible. They either rotate and/or depress to provide smooth and consistent operation. (see 'Housing Care and Maintenance' section).

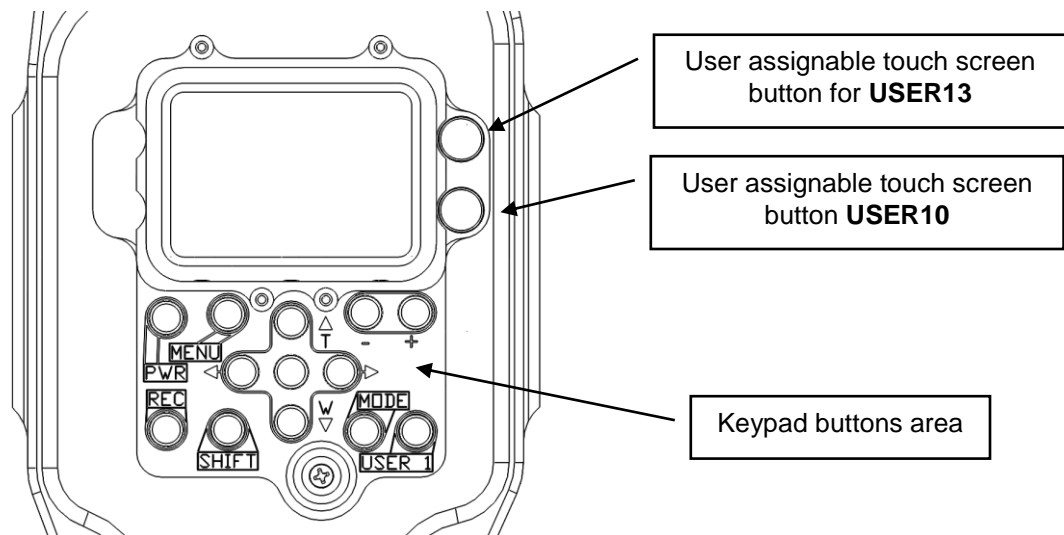
The housing controls are designed by Gates engineers, to the extent possible, to feel and behave like the camera controls. With time and use, the housing controls will become quite familiar and easy to use.

To help familiarize you 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.

UMR push button controls

Every button on the UMR recorder's keypad is available for use when the housing is sealed and submerged. Familiarize yourself with the button layout and the housing will be very easy to use underwater.

The following sections describe the use of the controls. However, this is not a substitute for reading the Panasonic manual. It is ultimately the user's responsibility to read the camera's manual and learn the controls.



UMR user assignable buttons

- Three user assignable buttons are available for use when the housing is submerged.
- **User 1** is available with a pushbutton on the lower right corner of the Keypad.
- **User 10 and User 13** are available via 2 larger pushbuttons to the right of the screen. These buttons use a conductive pad to directly activate the touch screen on the UMR recorder's LCD screen. User 10 and 13 were chosen by the Gates design team because the conductive pads obscure what we felt was the least important data from the recorder's overlay in these positions.

Using the touch screen buttons

- **You may have to press the button twice** to activate the assigned function. The first time you press the button it will bring up the user button menu overlay. The second press will activate the function.
- **Tip:** single pressing the touch screen buttons will bring up a menu that includes Panasonic's scene presets, **AUTO ,F1 ,F2 and F3**. You can use the left and right directional controls and the SET button to easily select a scene from this menu.
- **Please note: the touchscreen must be enabled to use the 2 user assignable buttons. User button display mode must also set to ON.**
 - **To enable the touchscreen go to MENU>OTHER FUNCTION>TOUCHSCREEN and select ENABLE.**
 - **To set User button Display to ON go to MENU>USER SW>USER BUTTON DISPLAY and then select ON.**
- **How to assign the buttons:**
 - **MENU>USER SW>USER1, 10 or 13>** and then press SET. This will navigate to a second menu where you can select the function.
 - **Use the up down and left right functions to highlight the desired function and then press SET.**
 - **TIP:** to avoid cluttering the user menu display, set any unused assignable slots to **INHIBIT**.
- **Tips on user assignables:**
 - **Avoid assigning Waveform monitor (WFM) to User10 or User13**
 - **User10 or User13 will only be able to toggle WFM ON, not OFF.**

- **WFM toggle is already available with the built in hotkey SHIFT+DOWN BUTTON so not necessary to use an assignable.**
- **User1 is ok for WFM if you desire a 1 button press.**

Other functions

- **How to use the auto white balance set function underwater:**
 - **Point the camera at a white reference object such as a slate or white fins.**
 - **Set white balance to ACH or BCH.**
 - **Press the hotkey SHIFT+UP BUTTON on the keypad to auto set the white balance.**

6: Additional Information

Changing Ports

Gates offers quality ports for your POVCAM housing, which attach with a bayonet-style mount. Port changes are easy and straightforward:

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 ¼ turn in either direction to face the dot left or right allows the port to release 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.

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 left or right, or ¼ turn away from the dot on the top of the housing. You may need to gently push the port into the bulkhead to fully seat the port. 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 flooding.

Cleaning Ports and Filters

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

Dust or Lint can be blown with compressed air, preferably 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.

Rinse fresh water over the outside of the port, if necessary, 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.

- ▶ **CAUTION:** Do not submerge the GP32A wide angle port in water when separated from the housing! This port is not sealed from the backside and damage will result if submerged.

Only if necessary, **clean the port using a mild 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.

Tips for Shooting Video with the POVCAM

Manual Focus. A common technique is allowing the camera to auto focus on your subject (or on something about the same distance from you as your subject), then switch to manual focus. This ‘freezes’ the focus at that distance – no hunting or seeking. The GP32A wide angle port further provides a large depth of field (DOF), so most everything in front of your camera will be in focus, too.

Image Stabilization. The Panasonic POVCAM camera has a built-in image stabilization function. This is useful above water for steady, even shots.

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.

O-Ring Care and Maintenance

Your Gates housing has several serviceable o-rings. One is located between the mating halves of the housings (the large orange one), and one is located on the 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.

- ▶ **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!

7: Customer Support

Should you have any questions about the POVCAM and its operation, please contact Gates at the numbers below.

Email: Customer.srvc@GatesHousings.com

Web: www.GatesHousings.com

Phone: 858.391.0052

Fax: 858.391.0053