



F55 Underwater Housing

Setup, Use, and Care Guide

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Photos by Lee Peterson / Marine Camera Distributors and

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

<http://www.gateshousings.com/documentation.html>

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Introducing the F55 Underwater Housing

Congratulations on owning a new Gates product: the F55 housing. You've selected an underwater imaging tool that will provide years of value and reliable service. We designed the F55 specifically for the Sony F5 and F55 digital cinema cameras.

Please read through this entire guide to learn about the F55 so you can get the most out of this imaging tool. In this section, we'll introduce you to the features of the F55 so you can get started.

Features

F55 has several key features:

- ❑ **Lens flexibility.** The F55 can accommodate a variety of different PL mount and Nikon DSLR lenses with no change to control locations. Focus, Iris, Zoom remain in the same location regardless of optics used.
- ❑ **Full camera control.** All practical controls are accessed directly with the F55 housing, as is the full menu system of the camera.
- ❑ **Cinema-grade design.** Lens choice and control access are just two of the many features designed into the F55. A/R coated glass optics, optional HD-SDI surface feed, and Seal Check are a few of the items any professional will appreciate.

Warranty Disclaimer

The F55 underwater housing is a tool that, like any tool, requires knowledge and understanding to be effective.

Your responsibility is to learn the proper setup, use and care of the F55. 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.

We warrant the F55 as an image acquisition tool for a period of 2 years. The Seal Check unit is warranted for 1 year. Optics (Dome and Flat ports) are warranted for a period of 1 year or 100 hours salt water contact, whichever comes first.

Gates does not warrant optical performance or image quality.

If you have any questions about the setup, use and care of the F55, contact Gates directly. Details are in section 5.

Unpacking F55

After you remove the F55 from its shipping container, carefully inspect it for missing parts or damage that may have occurred during shipment. If you discover any discrepancies, contact Gates or your dealer immediately for assistance.

Standard Parts

- ☐ **F55 Housing.**
- ☐ **Camera Bridgeplate and Mount.**
- ☐ **Lens Gear Drives (1x Clockwise and 2x Counter Clockwise).**
- ☐ **Guide Bars and drive shafts for your lens of choice.**
- ☐ **Hard Sided Rolling Case(s).**
- ☐ **Seal Check system.**
- ☐ **Tool Kit with case.**
- ☐ **Various assembly and spare parts for the F55 including bolts, set screws and o-rings.**
- ☐ **Spare O-Ring Kit.**
- ☐ **Carry Handle.**
- ☐ **Trim Weights (quantity dependent on configuration).**
- ☐ **Port(s) of choice (Dome, either glass or acrylic, or Flat) and shade.**
- ☐ **Focus / Iris Marker Rings.**
- ☐ **EM50 External Color Monitor.**
- ☐ **ND Filter Lockout**
- ☐ **HDMI Adapter Cable.**

Optional Parts

- ☐ **Microphone or Hydrophone.**
- ☐ **Water alarm.**
- ☐ **HD-SDI surface feed bulkhead connector and cable.**
- ☐ **Light System.**
- ☐ **Tripod Adapters / Mounts.**
- ☐ **Port Ring(s) of choice for your lens (as needed).**
- ☐ **Focus / Iris / Zoom Gears for your choice of lens (applicable to DSLR lenses only. Refer to Gates Lens Compatibility Chart for more information).**

1: Cautions

- ▶ **TRANSPORT. NEVER** ship or transport your F55 or F5 camera inside the F55 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 F55. 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 F55 and may void your warranty.

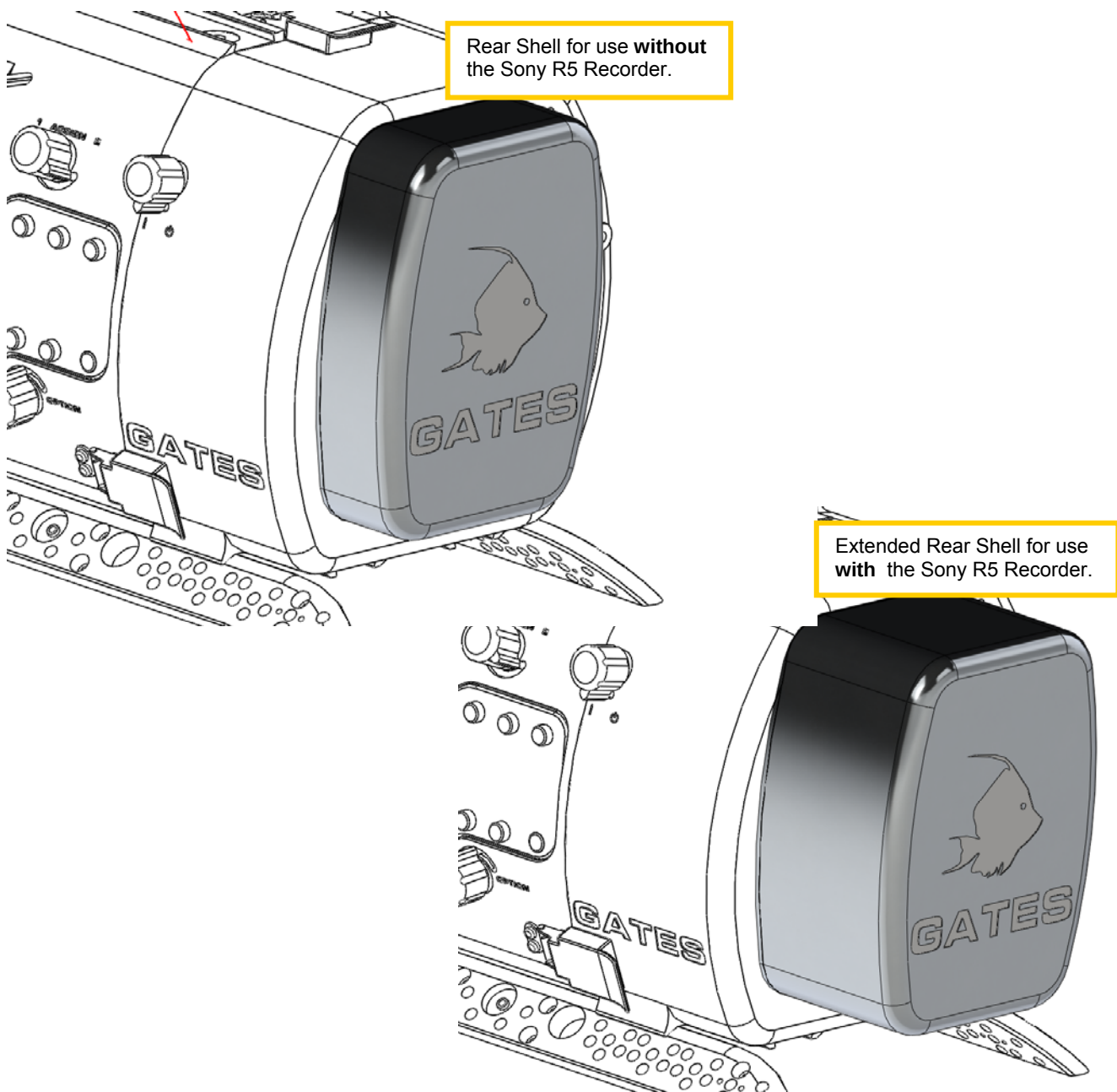
Contact Gates if you have questions this manual or using the F55.

2: F55 Setup

The F55 requires complete and thorough setup prior to use.

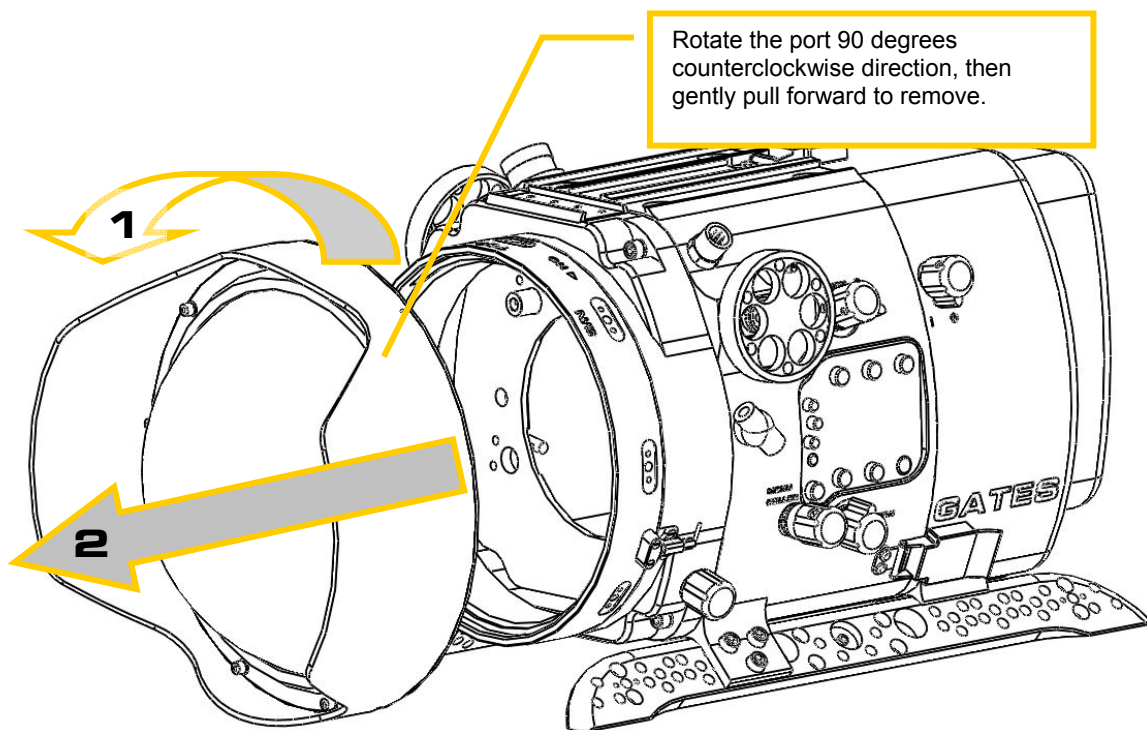
F55 Housing Configuration / R5 Recorder

The F55 comes in two configurations: one when used without the R5 recorder, and one when used with. The difference is only in the depth of the Rear Shell, as shown in the photos.

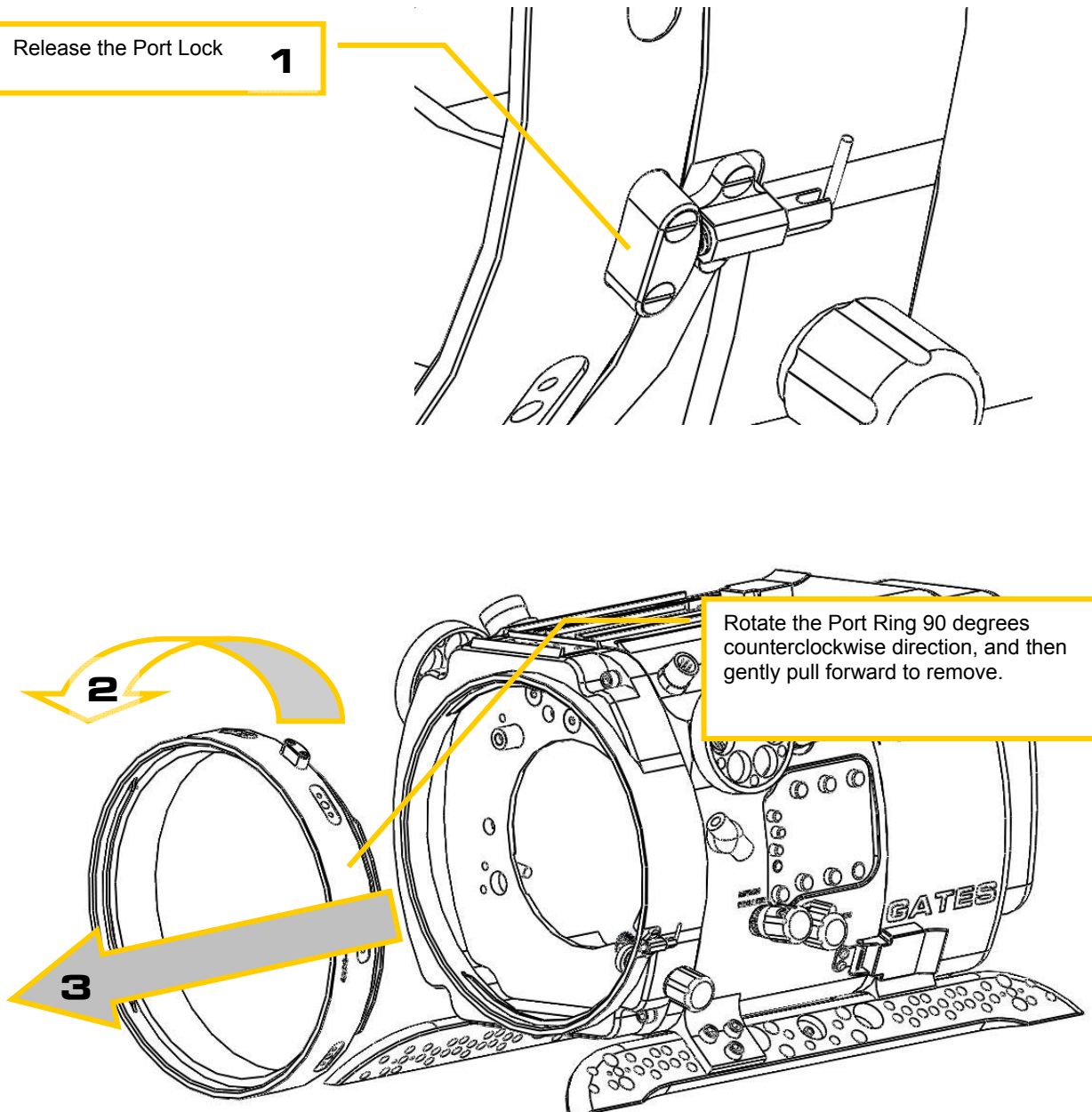


F55 Housing Preparation

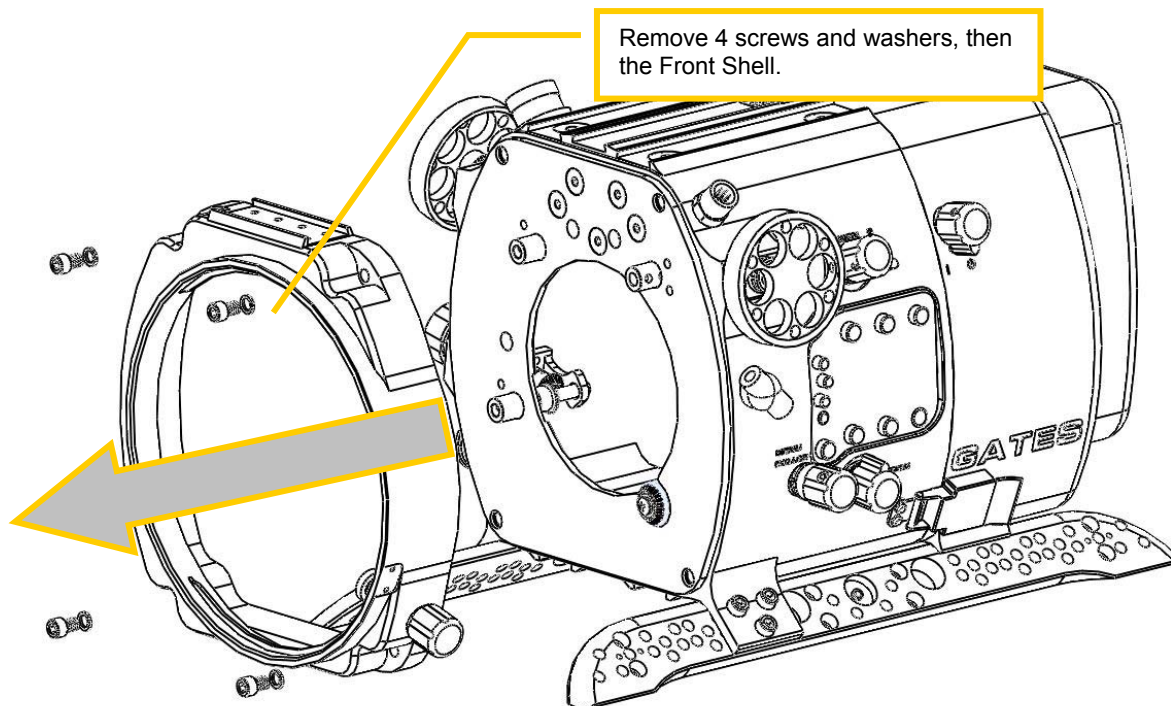
- **Port.** Remove the Port by rotating 90 degrees Counter Clock Wise (CCW) direction while facing the front of the housing. Gently pull the Port away from the Port Ring or Front Bulkhead.
- ▶ **TIP:** Liberal lubrication of the Port o-ring allows easy rotation during installation/removal.



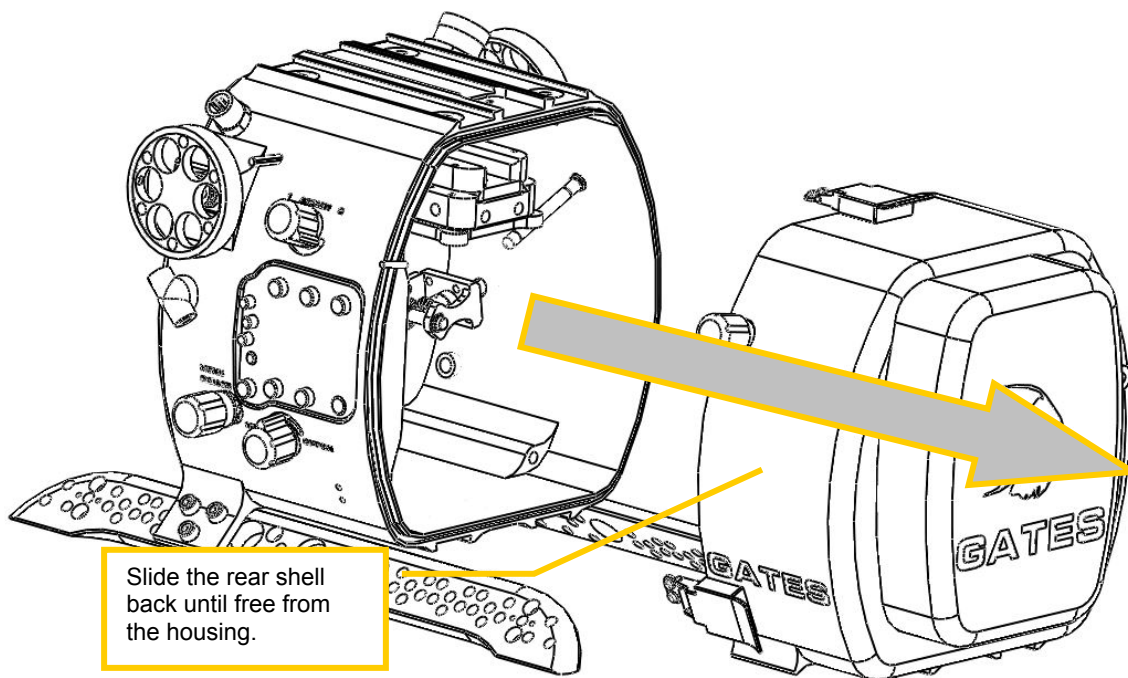
- **Port Lock.** Release the Port Lock on the lower left side of the housing.
- **Port Ring.** Remove the Port Ring by rotating 90° CCW and pulling forward.
- ▶ **NOTE: Some lenses do not require a Port Ring.**



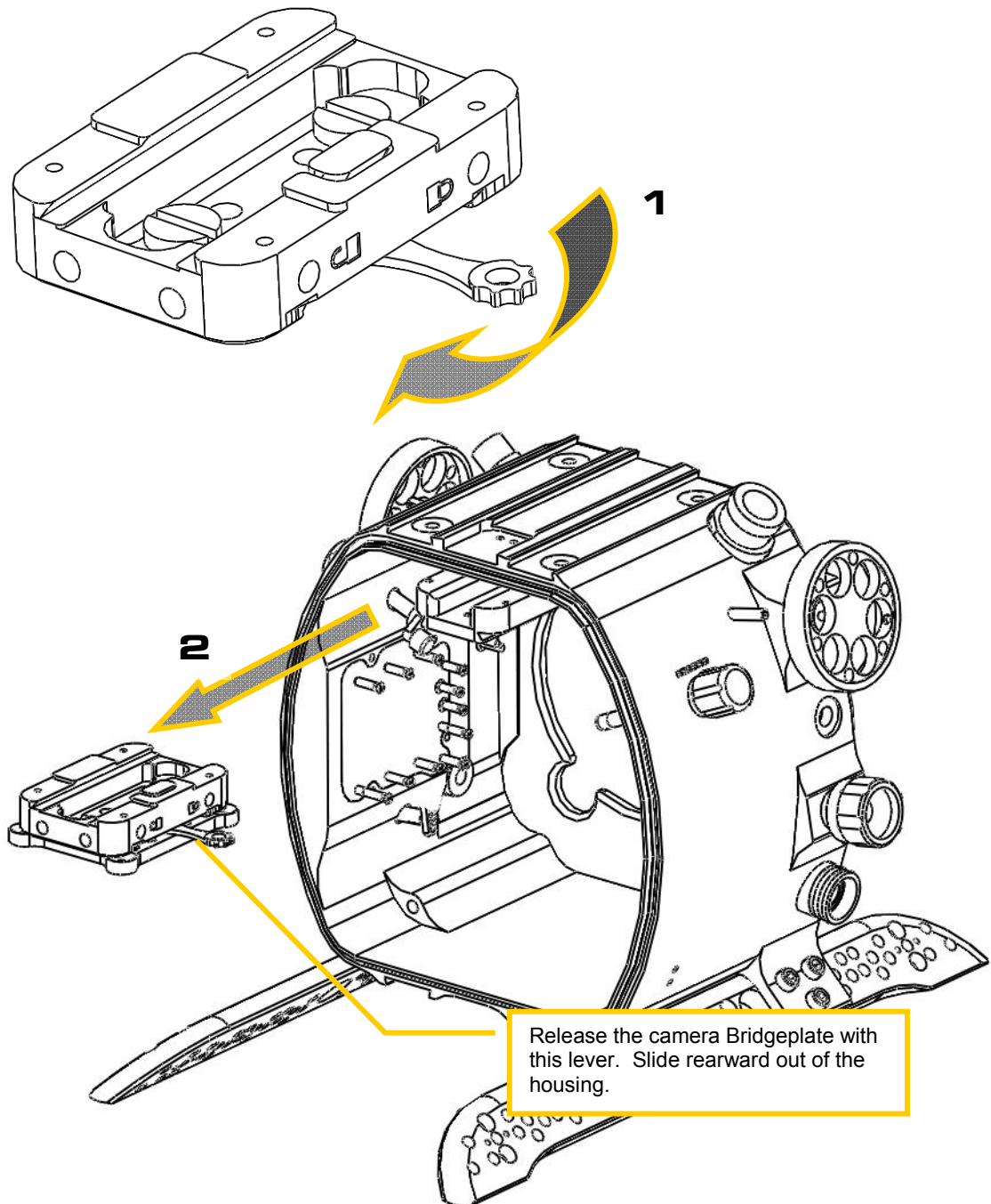
- **Front Shell.** Remove 4 screws, then the Front Shell.



- **Rear Shell removal.** Release three (3) latches by depressing the lock and pulling up on the latch. Once released the rear shell will remove freely.



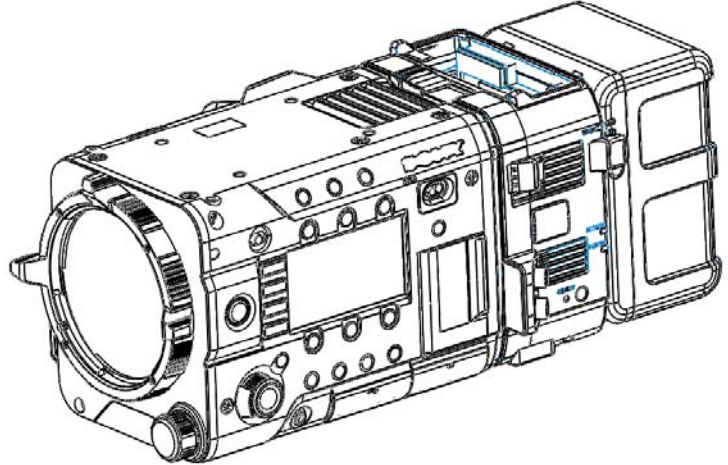
- **Camera Bridgeplate Removal.** Release the lever lock on the right and slide the camera mount to the rear and free of the housing.



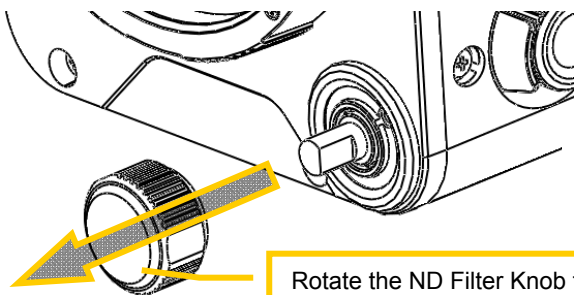
Sony F5 & F55 Camera Preparation

- **Camera Basics** Strip down the F5/F55 cameras to the bare camera body. Remove the following items:

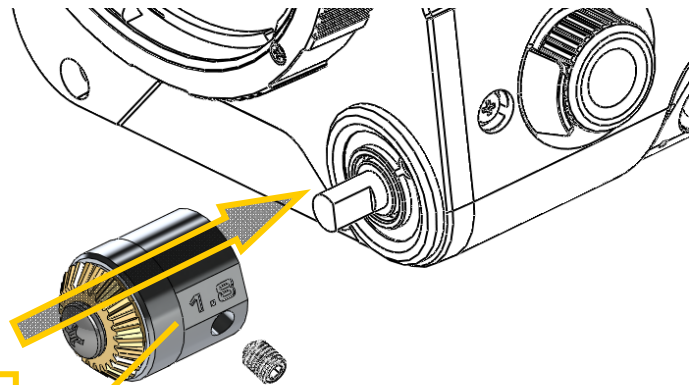
- Entire LCD Monitor unit
- Top Hand Grip Unit
- Tape measure hooks
- Bottom Shoulder Rest
- Remove any Camera Lens



- **ND Filter Knob.** The ND Filter Knob on the F55 camera must be removed, and replaced with a special version by Gates. This is necessary to allow control of ND filter with the F55 Housing.
 - First, **rotate the ND filter knob to the CLEAR POSITION.** Then remove the ND filter knob from the camera by gently pulling it away. It will expose a shaft with a flat on one side.
 - Next, install the Gates ND Filter Knob with the set screw on the same side as the flat on the control shaft. **PRESS AND HOLD** the Gates ND Filter Knob onto the camera while tightening the set screw.



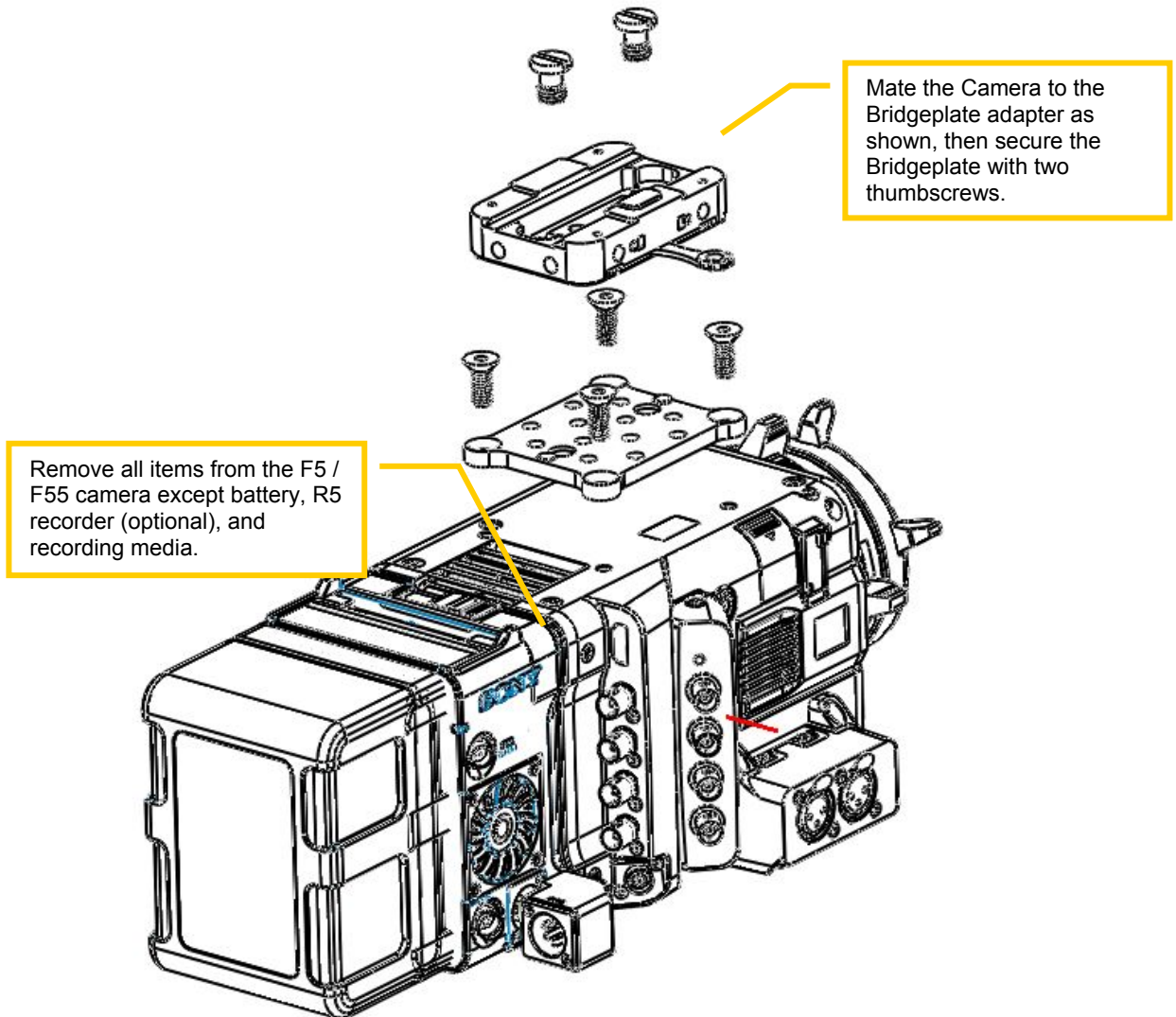
Rotate the ND Filter Knob to the CLEAR position. Then gently pull the ND Filter knob from the camera and expose the shaft with a flat on one side.



Install the Gates ND Filter Knob. **PRESS AND HOLD** the knob against the camera while tightening the set screw.

Camera Installation

- **Camera Bridgeplate Installation.** The F5/F55 camera is mounted first to a Bridgeplate Adapter with four screws, then to the Bridgeplate with two thumbscrews, as shown.



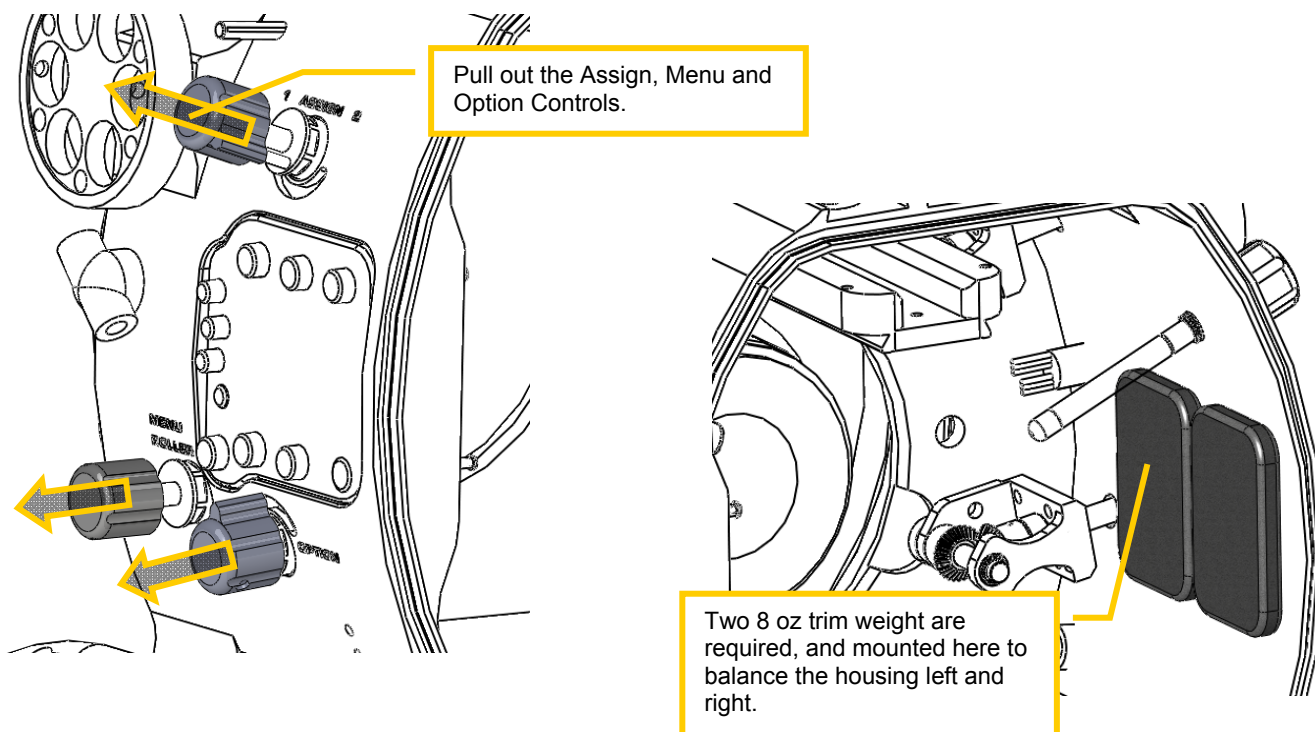
- ❑ **Pull out controls on left side of Front Shell.** Housing controls on the front shell must be retracted for camera clearance during insertion. Assign, Menu and Option controls will retract. Refer to Section 3 Operation for more details on the housing controls.
- ❑ **Interior Trim Weights-- Required.** Mount two 8oz weights to the interior of the shell as shown below. These two trim weights are required to balance the housing left / right.

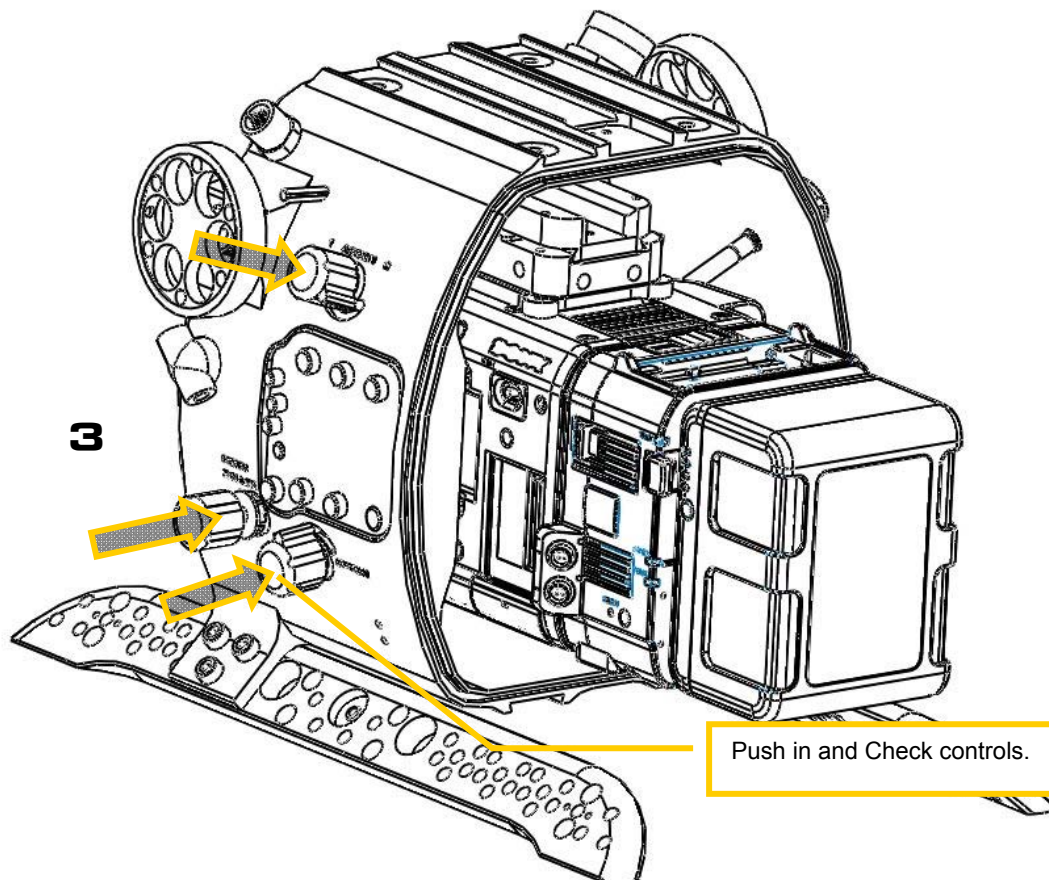
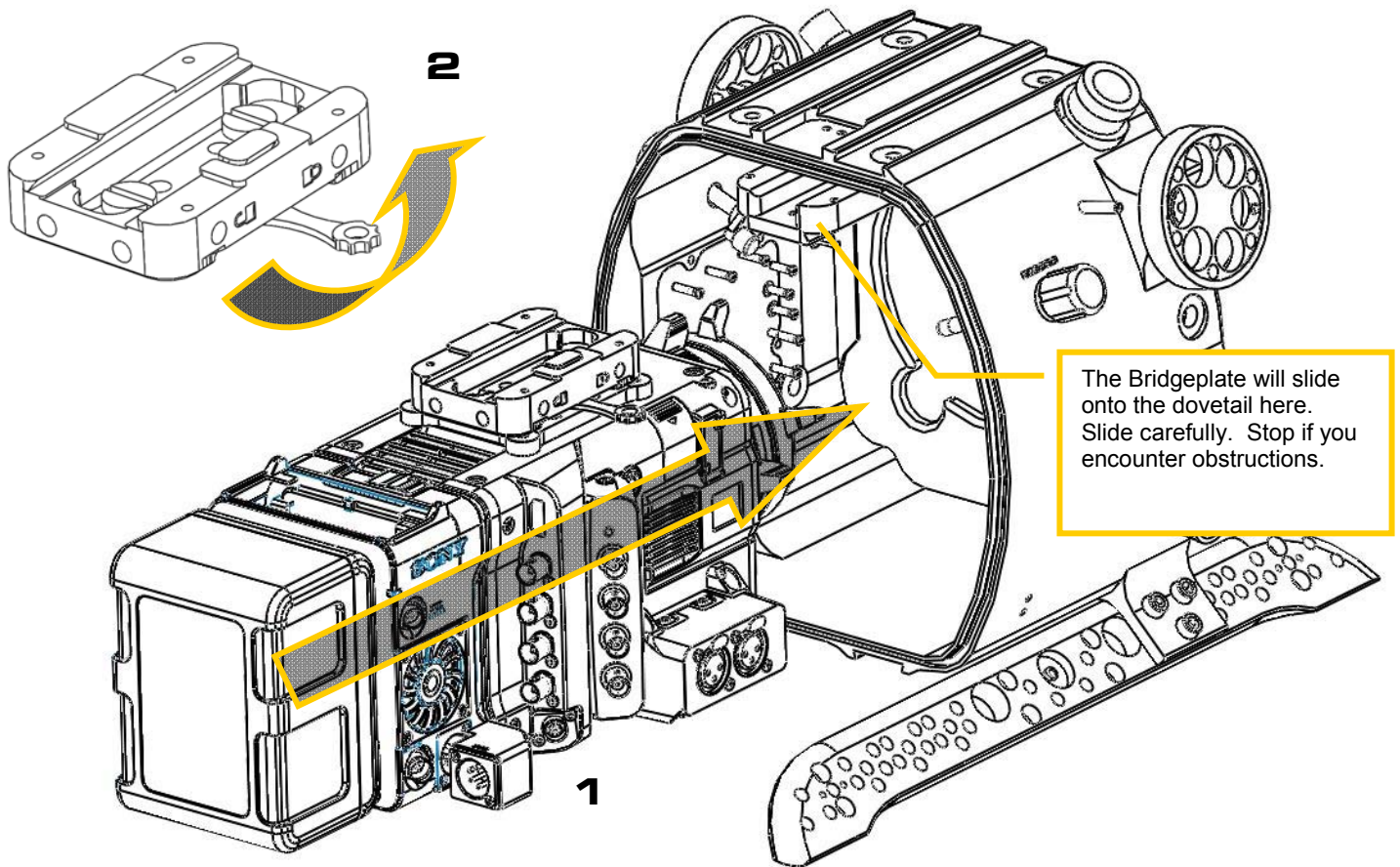
Refer to the 'Buoyancy Adjustment' section below for more details.

- ❑ **Place camera to housing.** Locate the Bridgeplate and the Dovetail receiver.
- ❑ **Insert Camera into housing.** Gently slide the camera on the Tray into the housing until fully seated. The camera should move into the housing without obstruction.

CAUTION: AVOID OBSTRUCTIONS. The camera should insert freely, without obstruction. If obstructions or resistance are encountered, stop. Remove the camera, find the cause of the obstruction, and try again.

- ❑ **Lock the camera** into position with the locking lever.
- ❑ **Mate and Check Controls.** This is a good time to verify operation of all Mid Shell controls. Push in Assign, Menu and Option controls on the left side, confirming that the control touches and operates the associated camera function (see Section 3 Controls for more information). Check all pushbuttons, too.



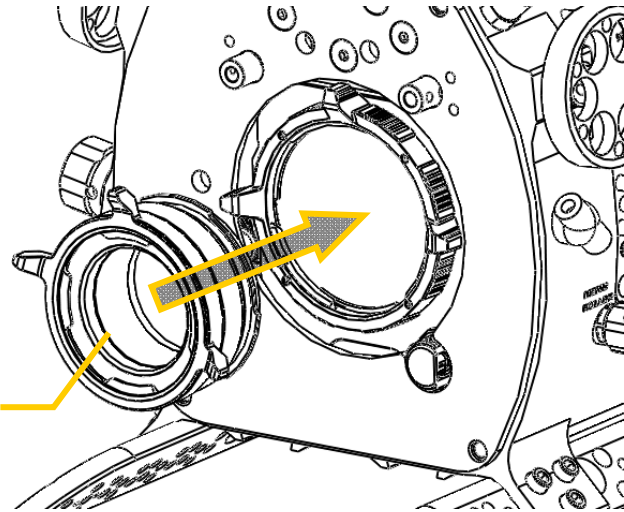


Lens Mount Adapters

If you are using a Sony FZ mount lens then no mount adapter is required. Continue to the next section.

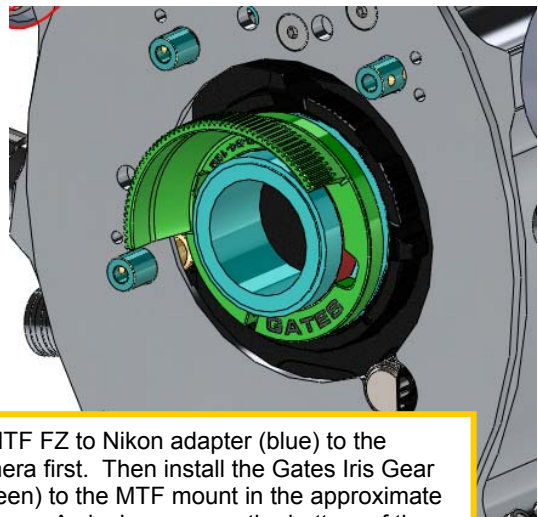
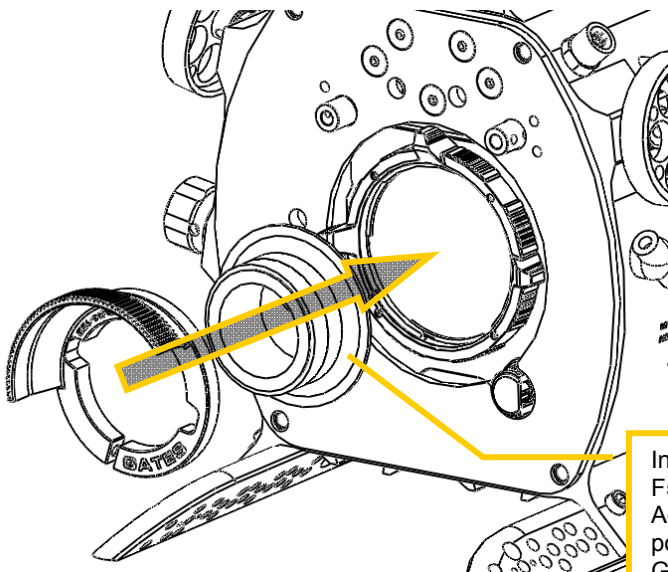
A mount adapter is required to use PL and Nikon DSLR lenses.

- **FZ to PL Mount Adapter.** To use PL mount lenses, install the Sony FZ to PL adapter.



Install the Sony FZ Mount adapter if you are using PL mount lenses.

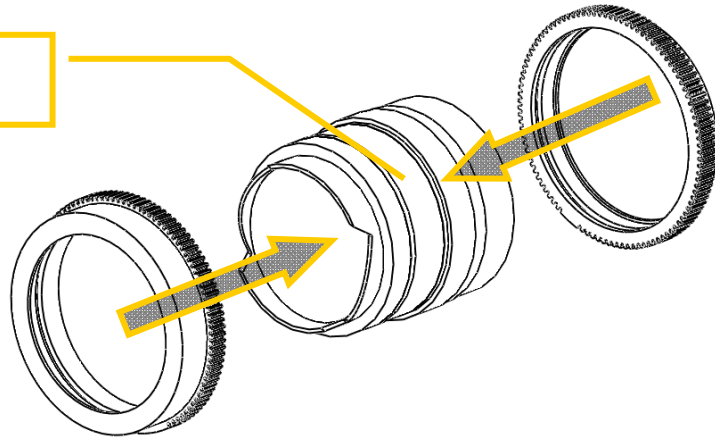
- **FZ to Nikon Mount Adapter.** Nikon DSLR lenses will require 2 mount adapter parts:
 - **MTF Services Adapter** ([MTF FZ to Nikon Adapter](#)). This Third party adapter can be acquired directly from MTF Services
 - **Gates Iris Gear Adapter.** This adapter is available from Gates. It provides a gear interface between the MTF services adapter and the F55 Housing.



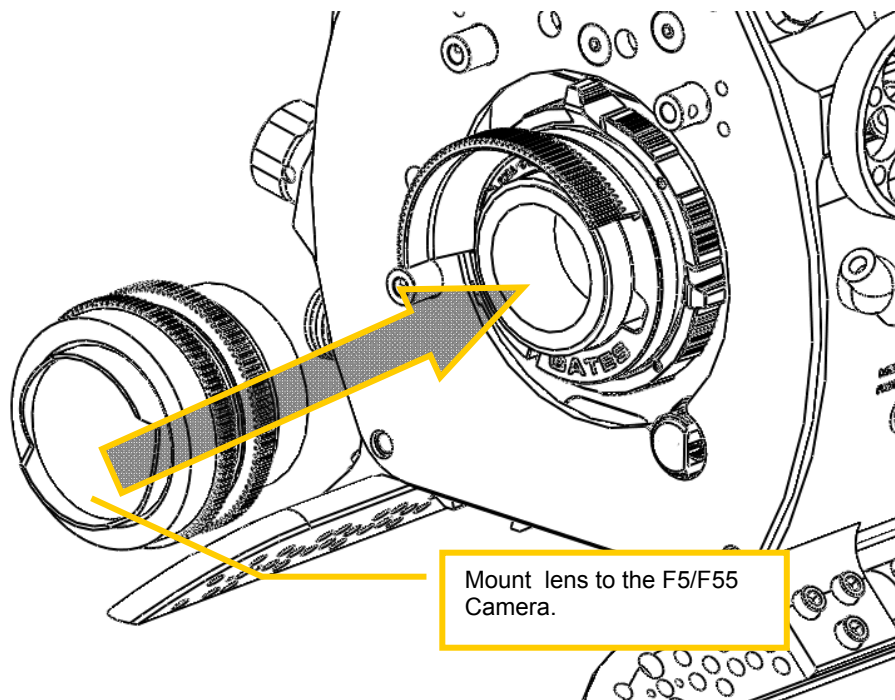
Install the MTF FZ to Nikon adapter (blue) to the F5/F55 camera first. Then install the Gates Iris Gear Adapter (green) to the MTF mount in the approximate position shown. A single screw on the bottom of the Gear Adapter will secure it to the MTF adapter.

- **Gear Rings** When using a DSLR lens, a gear ring is required to slip over the focus or zoom rings on the lens, which in turn interface with the F55 Housing. Gear Rings are very specific to a given lens. Contact Gates for details on the appropriate Gear Rings for a specific DSLR lens.

Install Gear Rings onto your DSLR lens.



- **Mount lens to the camera.** At this time, mount your lens of choice to the F5/F55 camera.



Lens Gear Drives (LGD's)

- **General Notes.** This section addresses the installation of three LGD's – 2 x CCW (Counter Clock Wise) and 1 x CW (Clock Wise). These designators are applied because two LGD's point in a CCW direction and the other in a CW direction, The LGD's are marked CCW and CW.

You will install guide bars and drive shafts that match the lens of your choice. A lens cross reference is included in your F55 documentation package and is updated on a regular basis. Visit GatesHousings.com or contact Gates for a current cross reference.

Secure Guide Bars. Insert the guide bars by threading them into the front bulkhead. Tighten firmly by hand – no tools are required but wrench flats are provided on the guide bars should this be necessary.

- **Install Drive Shafts.** These are 1/4" black delrin and have a flat spot milled into one end. This end inserts into the drive coupler at the face of the front bulkhead. Secure gently with the set screw on the coupler. Do not overtighten.

The F55 includes three LGD's – 1x CCW and 2x CW.



Insert the drive shaft into the coupler. One end of the shaft will have a small flat spot. Align this with the set screw, and tighten gently. Do not overtighten.

Note: Different Gates housing shown.

Thread the Guide Bar into the front shell and tighten by hand.



- **LGD's mounting.** Install the LGD's in their proper orientation with pivot gear screws facing forward. Slide it onto the guide bar and drive shaft, then line up the LGD with the lens gear you wish it to access.

The sequence of tightening screws on the LGD's is important.

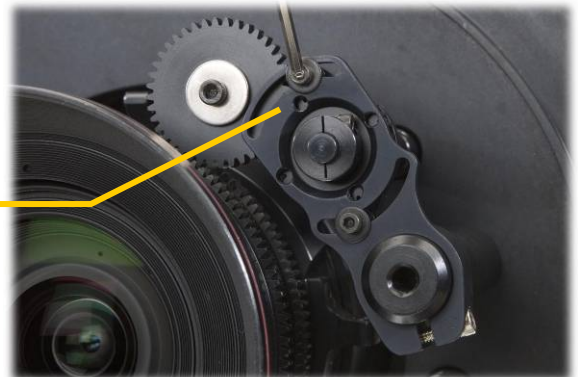
- **Step 1.** Tighten the LGD mount screw securing it to the guide bar. **Critical:** the drive shaft/gear hub must be centered with the opening on the bracket.

Center the drive shaft/gear hub to the bracket. Tighten the screw and secure the LGD to the guide bar.



- **Step 2.** Pivot the larger gear onto the lens gear such that it makes intimate contact. Carefully observe that the gear is still properly aligned and the drive shaft/gear hub is centered with the LGD bracket (see photo). Tighten the two pivot screws gently to secure it in position.

With the drive shaft/hub centered, pivot the larger gear to make intimate contact with the lens gear. Gently tighten 2 pivot screws.



- **Step 3.** Firmly tighten the screw that couples the drive gear hub to the drive shaft.

Couple to Drive Shaft .



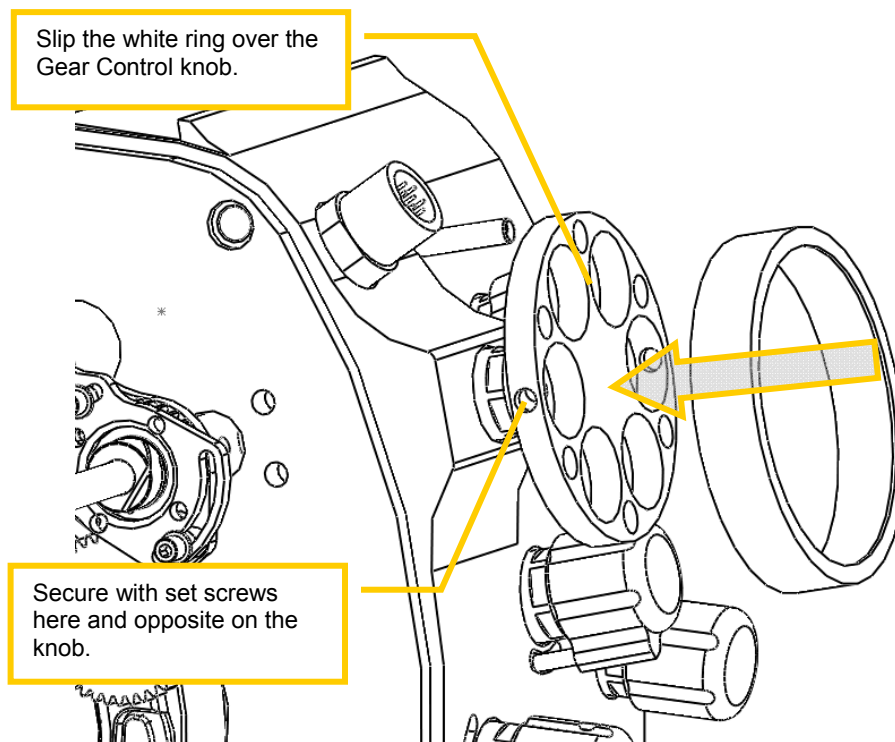
- ▶ **TIP.** The gear hub / drive shaft coupling acts like a clutch – the drive shaft will 'slip' when reaching the end of travel in either direction. Tightening the screw more will allow less slip. Adjust this amount of slip at your discretion.

- **Set the focus/iris indicators.** The left and right side Gear Controls have indicator rings. These shipped in the parts kit. These are white plastic for marking focus / iris indications.

Secure the ring with the two set screws in the knob as shown.

- **Verify Operation.** Once positioned and secured check operation of the Focus and Iris controls. They should rotate freely – but with slight resistance – in both directions and through the entire range of travel. If not, repeat steps 1-3.

In a subsequent section “Check Operation” you will power on the camera and verify the Zoom control is also smooth and operational.



Water Alarm (Optional)

If you have the optional water alarm installed there are three alarm conditions to know:

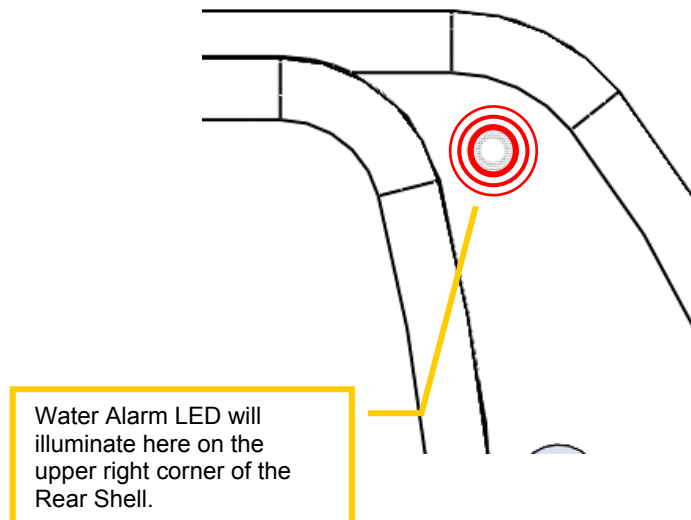
<i>Condition</i>	<i>LED</i>	<i>Siren</i>
New Battery (Insertion)	Bright Intense blink while siren plays	Ascending tones played 4 times
Water Intrusion	Bright Intense Blink	Grating Warble sound. Alarm will sound for duration of detection.
Low Battery	Low Intensity fast blink	Descending tones played 8 times pausing approx. 20 seconds between.

The alarm can be tested by shorting the detection contacts that lead to the water alarm transducer. The water detection condition will activate for 6 seconds. If the battery is drained the low battery condition will sound.

The water alarm requires a single 6V battery like Radio Shack model 23-469 or A544.

Your battery should be removed when stored (e.g. between dive trips). Check the battery prior to every dive to ensure proper operation. Change when indicated.

CAUTION: You must wait a minimum of 30 seconds between battery insertions to allow the unit to fully discharge.



Check Operation

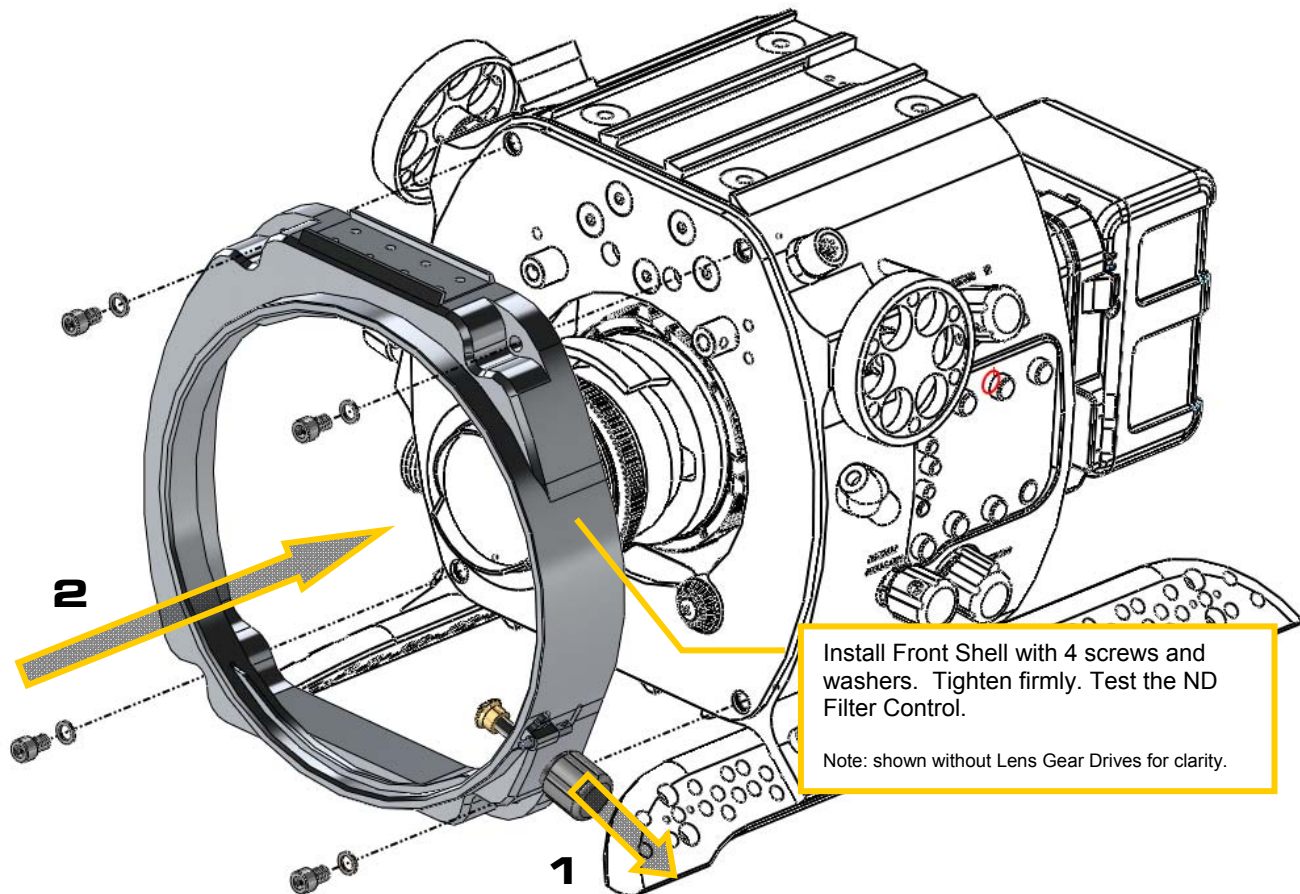
At this point check operation of the system before closing the shell and installing the Front Bulkhead, Port Rings and Ports.

Power on the camera and check the following:

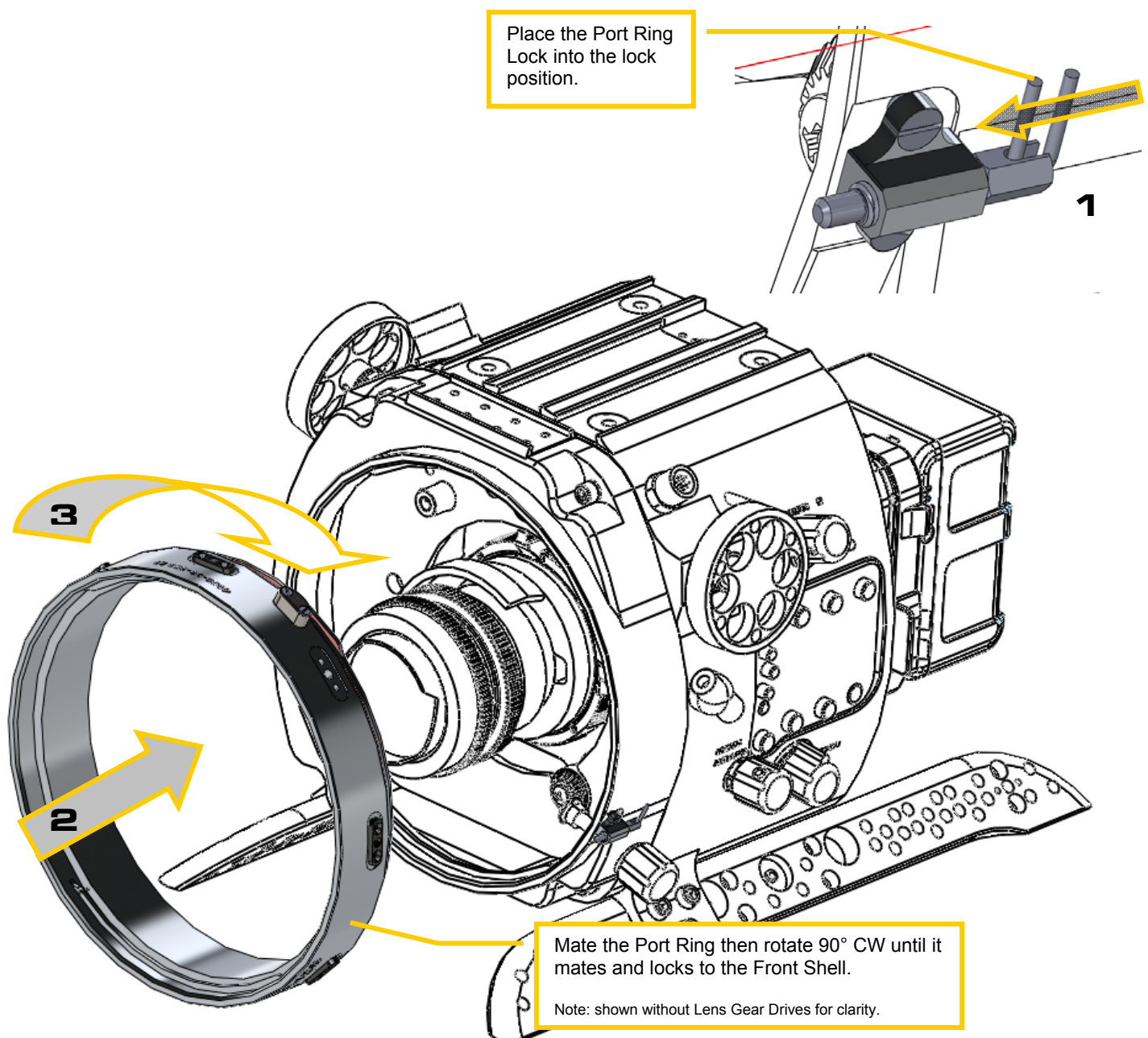
- ☐ **Clear Image** on EM50 External Monitor.
- ☐ **Clean Image** with no dust, fog or other impediments to image quality.
- ☐ **Focus, Iris and Zoom gear controls** are smooth and operational.
- ☐ **Other Controls.** Cycle through all controls to confirm operation.
- ☐ **Power down.** With all functions verified power down the camera.

Front Shell, Port and Port Ring

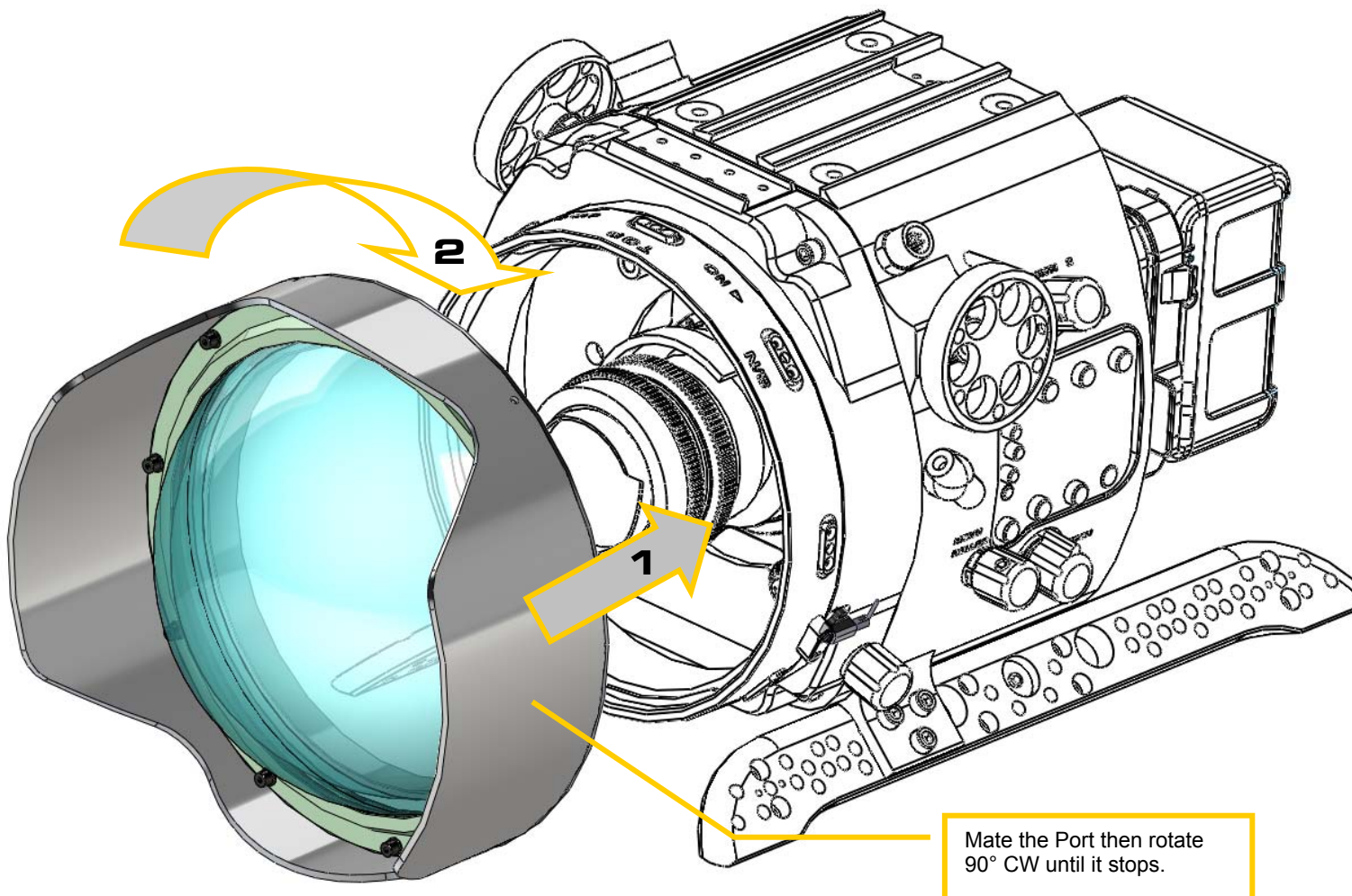
- **Inspection.** Before installing the Front Shell, Port Ring and Port, visually inspect the o-rings for dirt or other foreign matter that may compromise the seals. Do the same with the Front Shell face (where the Front Shell mates) and Port bore where the o-rings seal. **See the separate document “Housing Care and Maintenance Guide” for more details.**
- ▶ **NOTE:** Some lenses do not require a Port Ring. Refer to Gates Lens Compatibility Matrix for details.
- ▶ **CAUTION:** **Do Not lubricate** the orange Front Bulkhead o-ring. It is silicone material and lubricant may cause damage. Only the BLACK and YELLOW o-rings are safe to lubricate.
- **Retract the ND Filter Control.**
- **Install the Front Shell.** Position the Port Extender over the entire lens / LGD's and secure to the front bulkhead with 4 screws. Tighten the 4 screws firmly. Push in and test the ND filter control mates smoothly and freely.



- ❑ **Lubrication.** Lubricate the black Port o-ring with silicone grease. Also liberally lubricate the Port bore. This will greatly aid installation of the Port.
- ▶ **TIP:** Liberal lubrication of the Port and Port Ring o-ring allows easy rotation during installation/removal.
- ❑ **Install the Port Ring (if needed).** Place the Port Ring Lock into the lock position, then carefully mate the Port Ring to the Front Shell. Rotate 90 degrees CW to its normal position where it will lock.

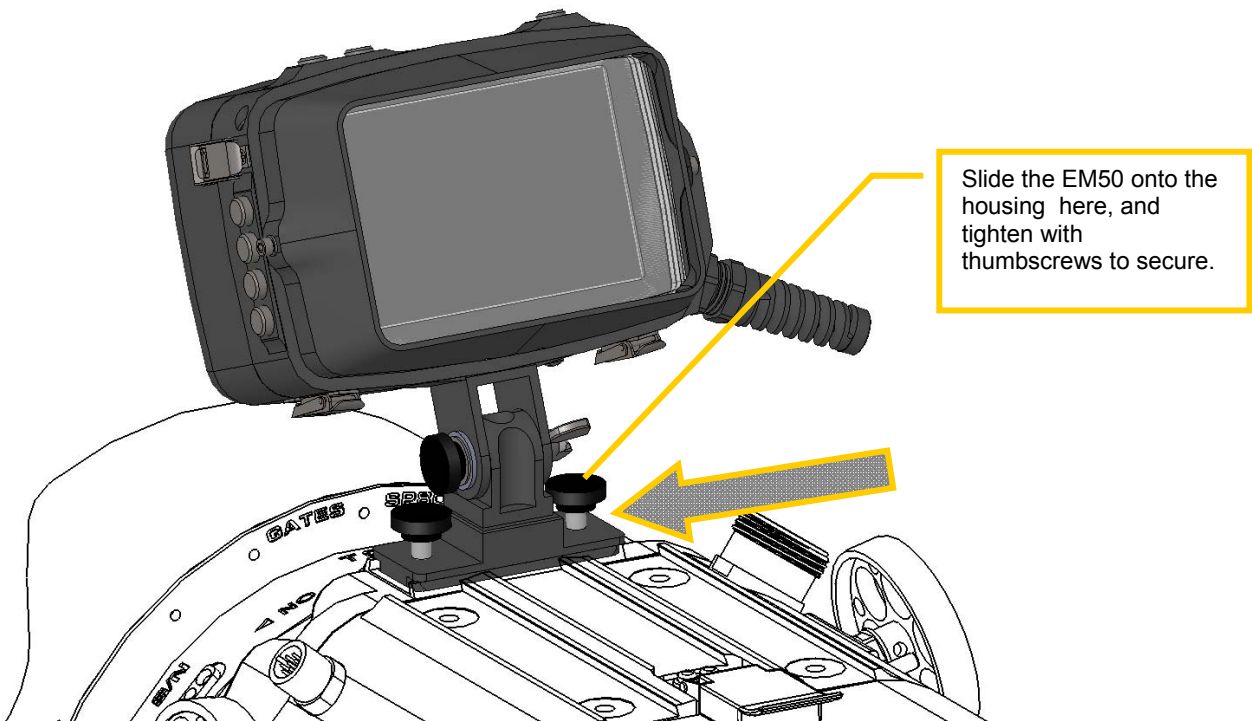


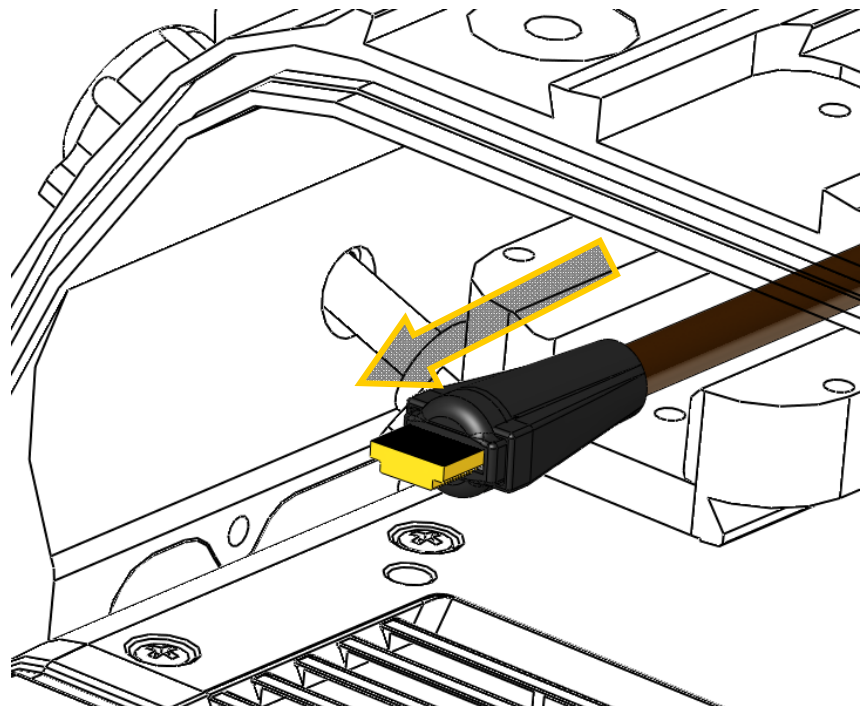
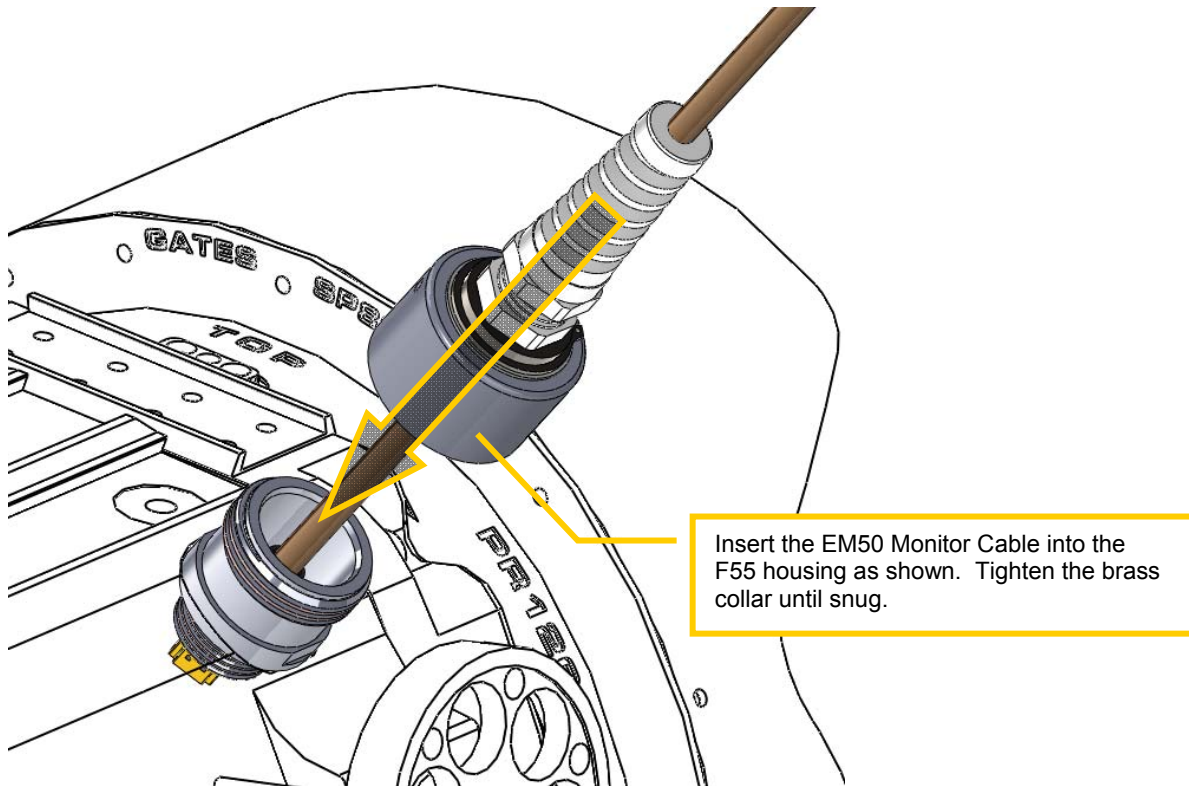
- **Install the Port.** Similarly, the Port will mate with the Port Ring and then rotate 90 degrees clockwise to its normal position where it will stop. Carefully mate the Port to the Port Ring (*or Front Shell* if no Port Ring is Used), and assure alignment.
- **Verify seals.** Inspect the Front Bulkhead, Port Extender and Port are fully seated with no gaps.



Monitor Mount / Video Connections

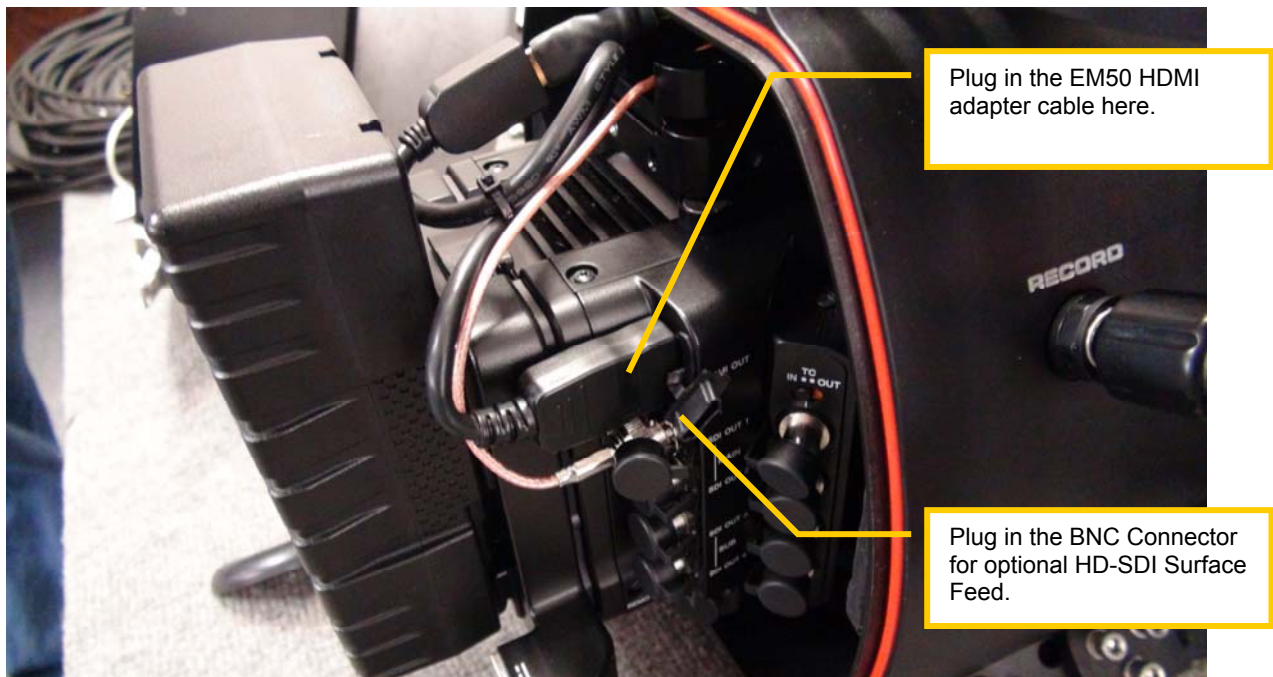
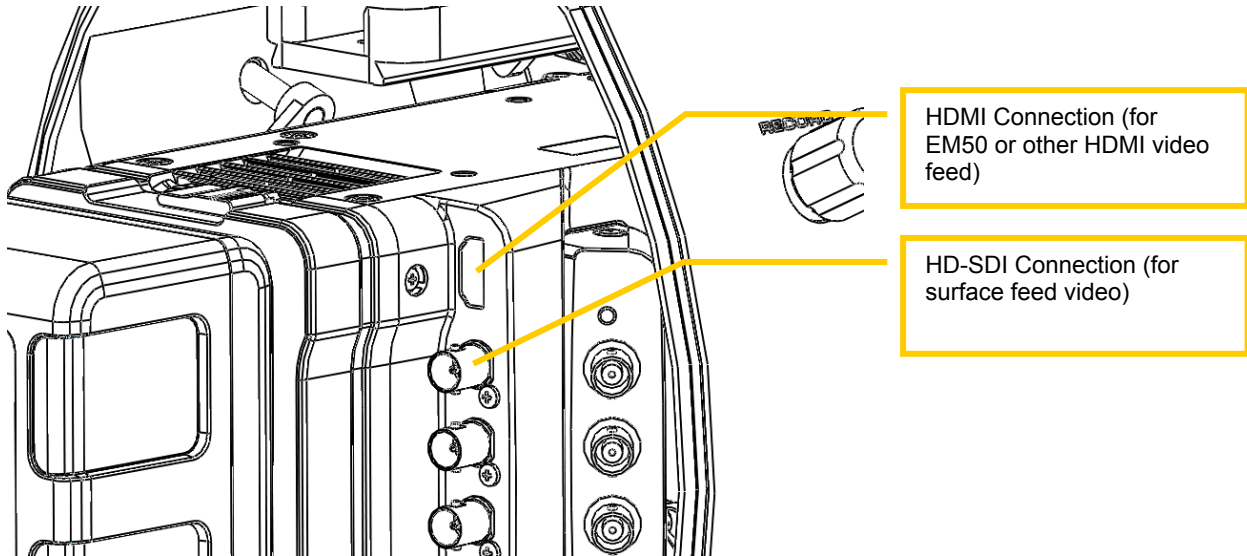
- ❑ **Mount the EM50 monitor .** Secure the monitor to the top of the main shell, as shown and tighten the thumbscrews to secure.
- ❑ **Insert the Monitor Cable to the F55 Housing.** Refer to the illustration. The EM50 monitor cable is a 'pass through' type that inserts into bulkhead opening on the upper right side of the housing. Insert the HDMI connector and route the cable to the rear of the housing to the position shown in the next illustration.
- ❑ **Tighten the brass collar** until snug.
- ❑ **Connect to the camera.** An HDMI adapter cable is supplied with your F55 kit to make the final connection to the camera from the EM50 monitor cable.





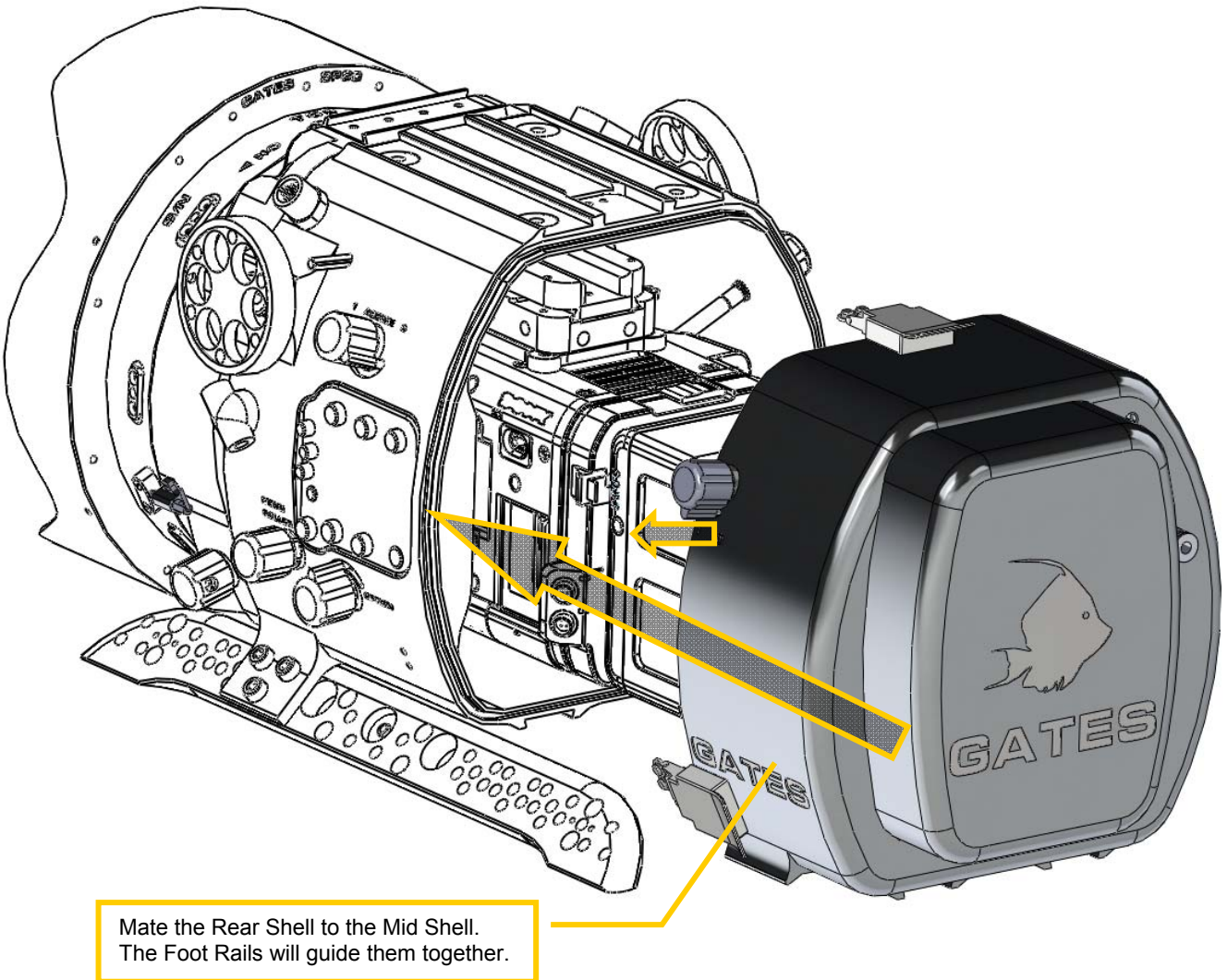
- **HD-SDI Connection.** An HDMI adapter cable is supplied with your F55 kit to make the final connection to the camera from the EM50 monitor cable.

(Photo TBD showing connection to camera)

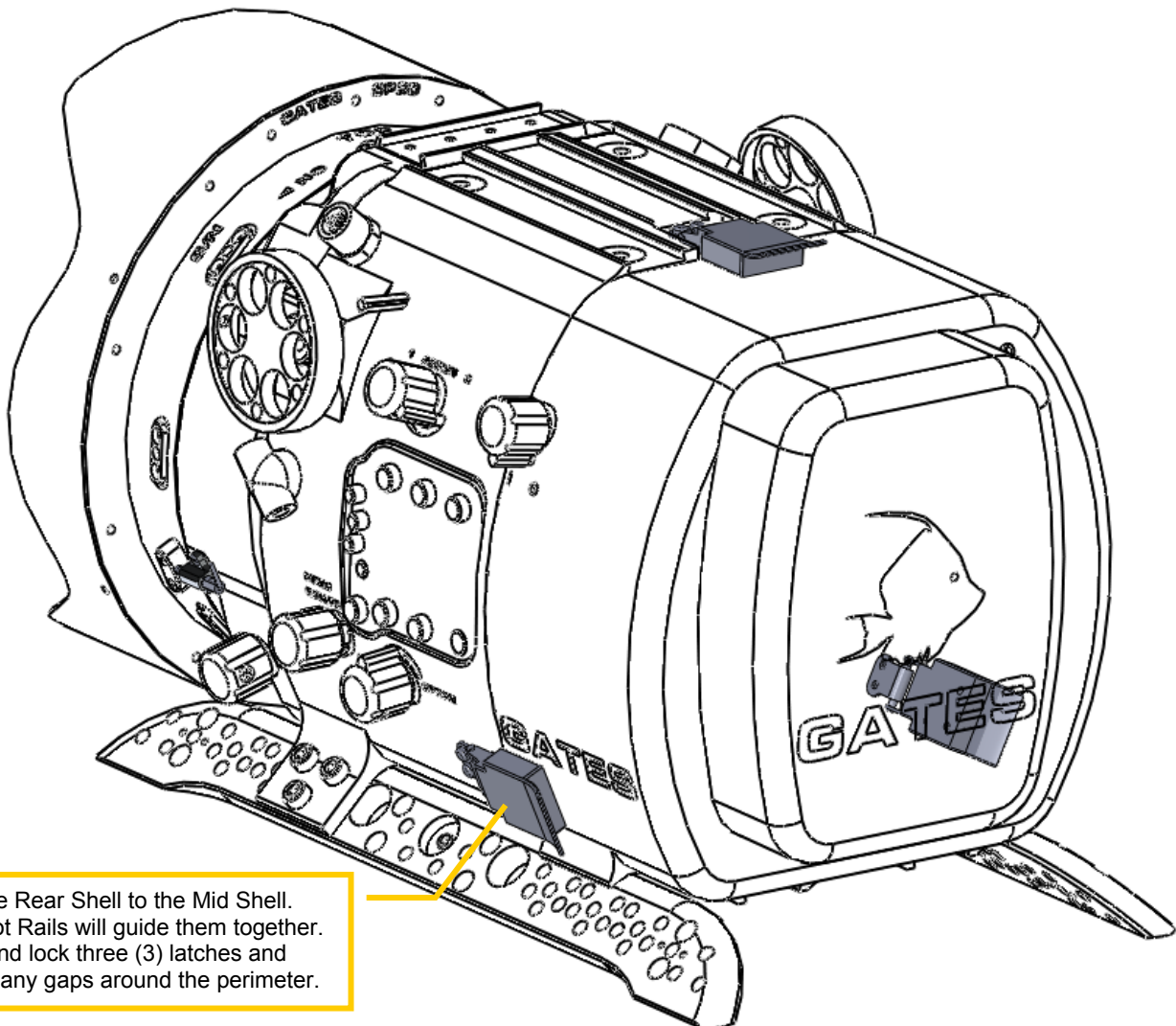


Housing Closure

- ❑ **General.** The Rear Shell slides from the rear onto the foot rails, over the camera and mates with the Mid Shell. If there is obstruction at any time during this process – stop! – remove the shell and locate the obstruction.
 - ❑ **Install Trim Weights.** Trim weight on the bottom of the mid shell can only be installed prior to closing the back shell. See [Buoyancy Control](#) section below for more details.
 - ❑ **Retract controls.** The power on/off control will retract slightly.
 - ❑ **Mate the shell.** Position the shell at the rear and gently move forward over the camera to mate with the Front Shell.
- ▶ **CAUTION: AVOID OBSTRUCTIONS.** The Rear Shell should insert freely, without obstruction. If obstructions or resistance are encountered, stop. Remove the camera, find the cause of the obstruction, and try again.



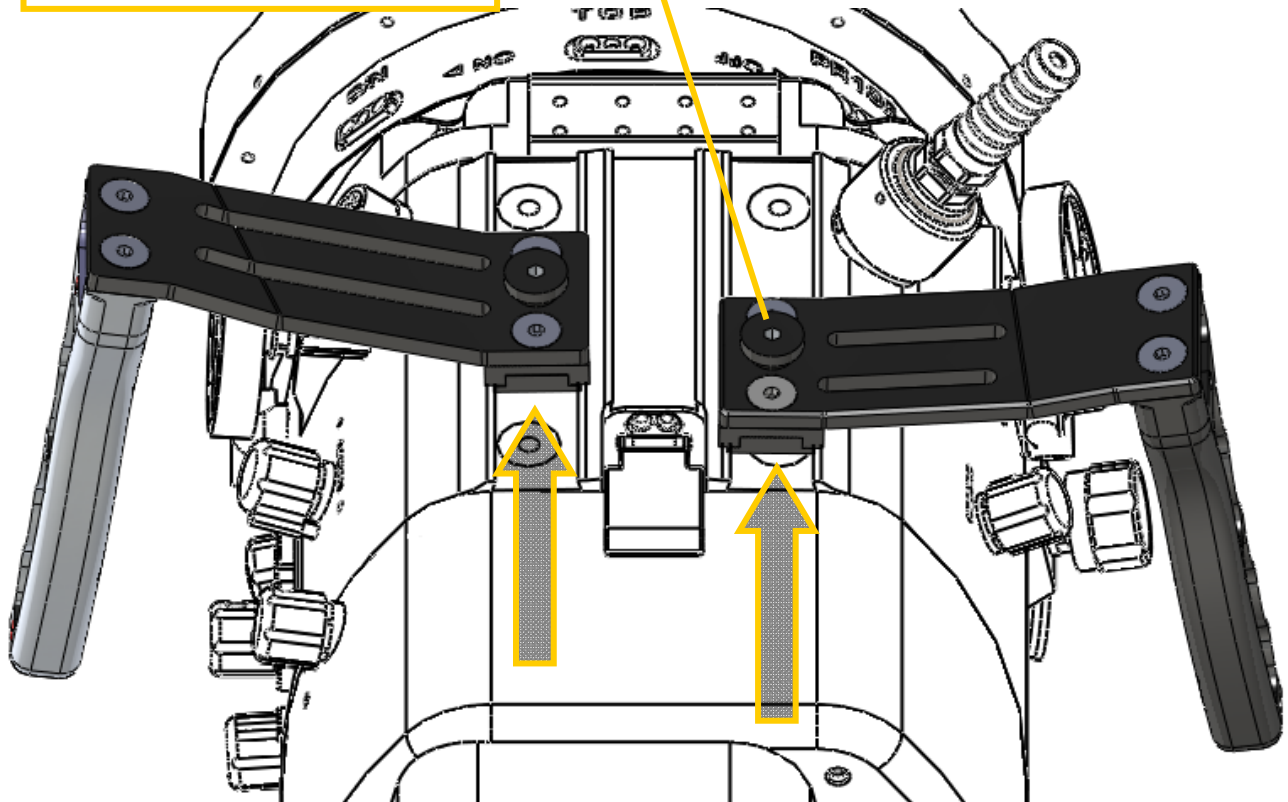
- ❑ **Latches.** Once properly mated, secure the 3 latches. Visually inspect there are no gaps around the perimeter.
- ▶ **CAUTION.** Faulty Latches can lead to a wet camera! Replacements for faulty latches are available at no charge from Gates.
- ❑ **Mate Controls.** At this time the Rear Shell Power Control can be pushed in and mated with the camera.



Adjustable Handle Grips

The F55 housing has adjustable handle grips. These are assembled to the housing from

Slide the Handle Grips onto the top dovetails from the rear. Position and secure with the thumbscrew on top.

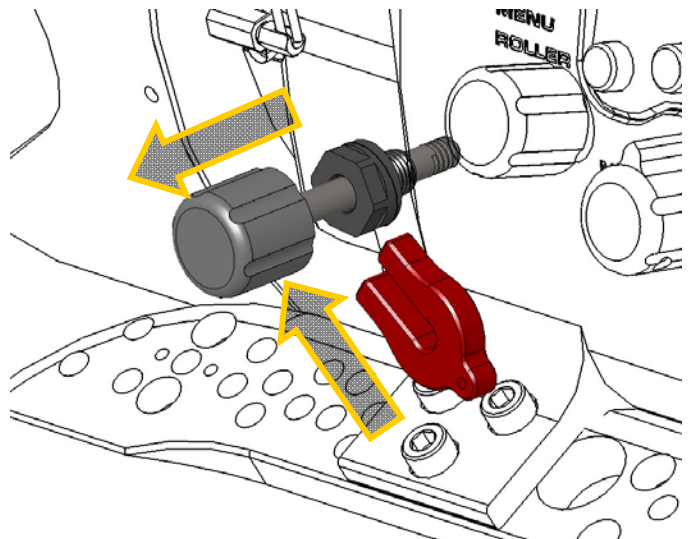


the rear and set with the thumbscrew. If necessary, tighten with the supplied 3/16 hex tool.

ND Filter Lockout

Included with the F55 housing is an ND Filter Control lockout accessory, designed to prevent accidental activation.

As shown in the image, simply pull out the ND Filter Control slightly and insert the lockout over the control shaft. The lockout has a small hole on one end for tethering it to the F55 housing.



Seal Check

- **Seal Check Manual.** Follow the procedures in the Seal Check manual for verifying integrity of the housing.
- ▶ **CAUTION.** ENSURE THE FITTING PLUG IS INSTALLED PRIOR TO SUBMERSION! FAILURE TO DO SO WILL RESULT IN A

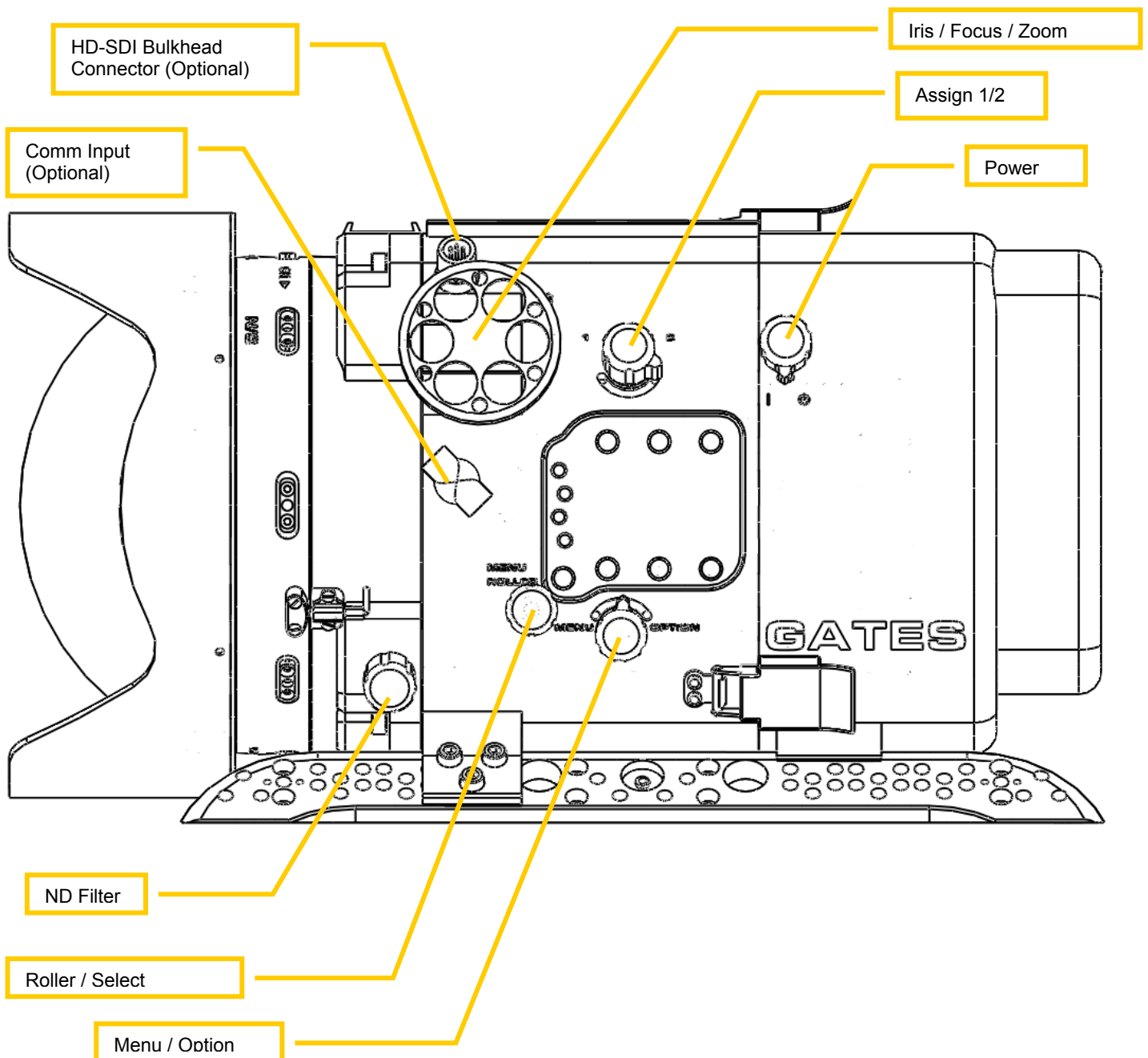


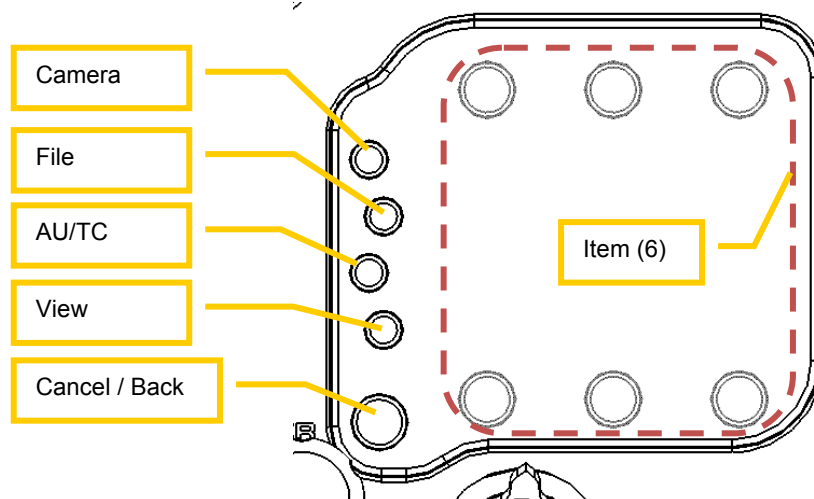
Final Checks

- **Visual Inspection.** Look closely at all seal mates – Port, Port Ring, Front Bulkhead and main Housing seal – for gaps. Look over the housing one final time.
- **Verify operation.** As a final check, power on the camera and verify all controls are functioning normally. If you have the optional HD-SDI surface feed cable, ensure an image is present at the surface end.

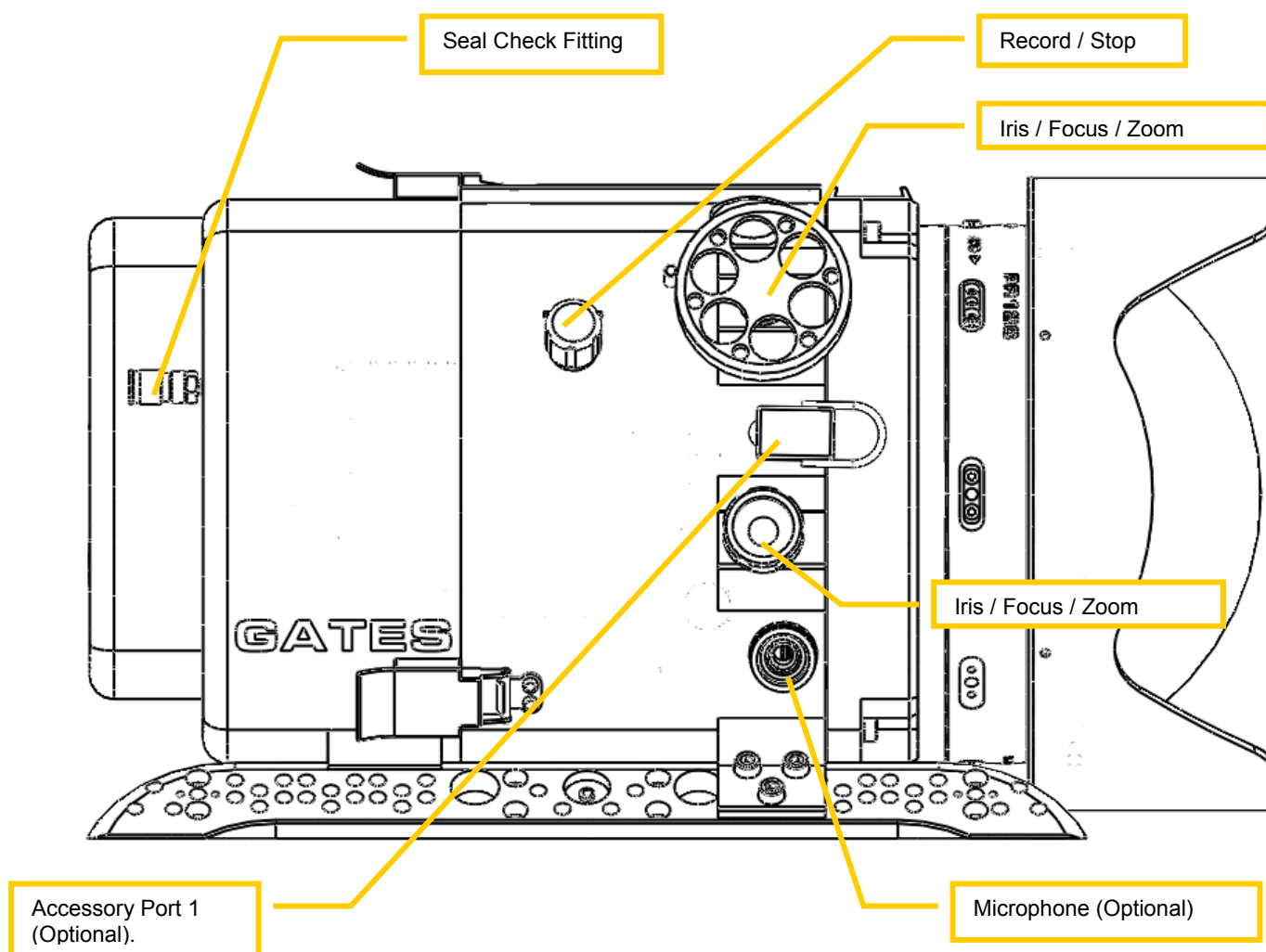
3: F55 Operation

Right Side Controls





Left Side Controls



Buoyancy Adjustment

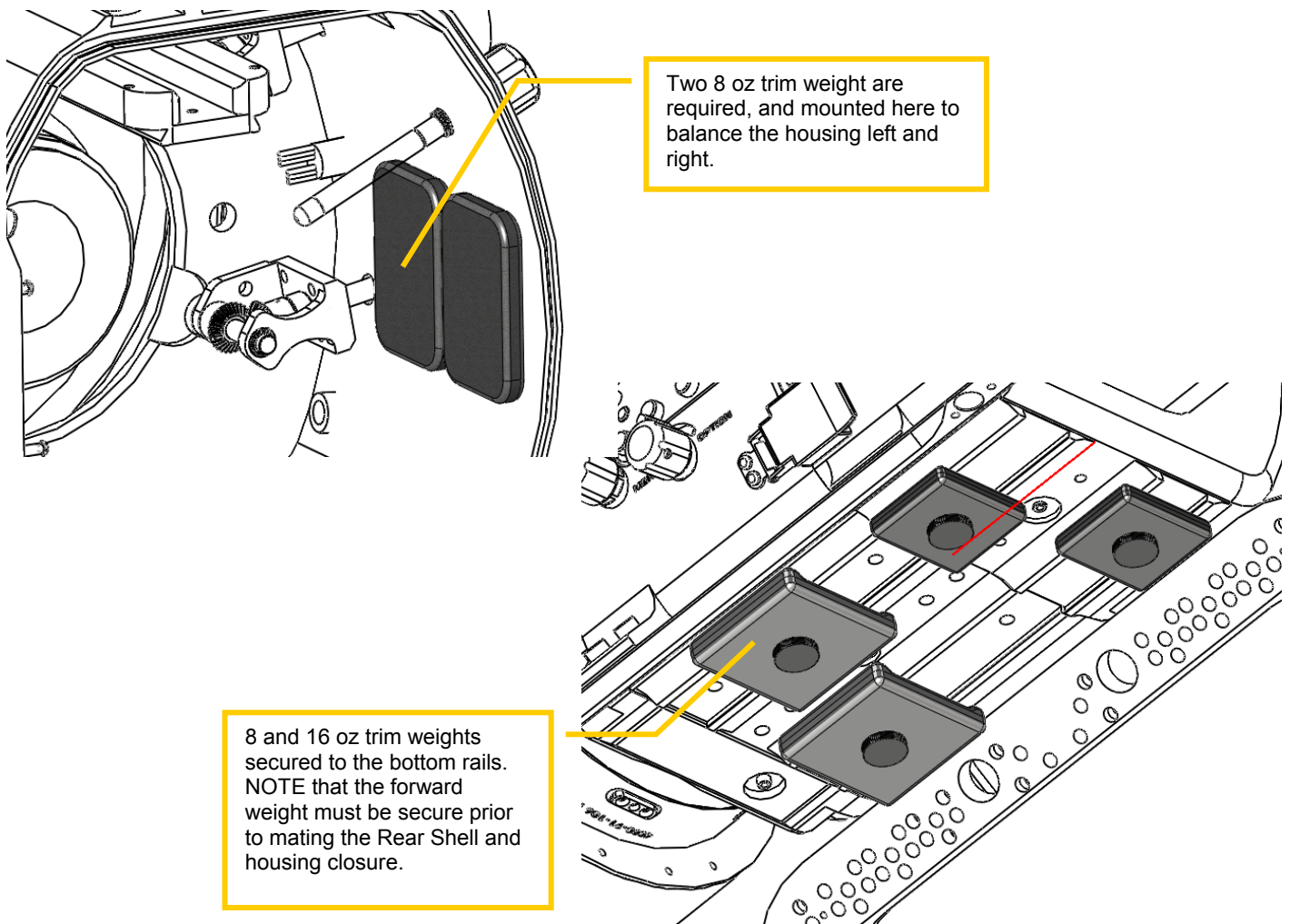
The F55 features adjustable buoyancy and trim. 4, 8 11 and 16 oz trim weights can be secured to the housing – both inside and out – to adjust the housing precisely to your liking.

Four general locations are available to add/remove and adjust trim weights.

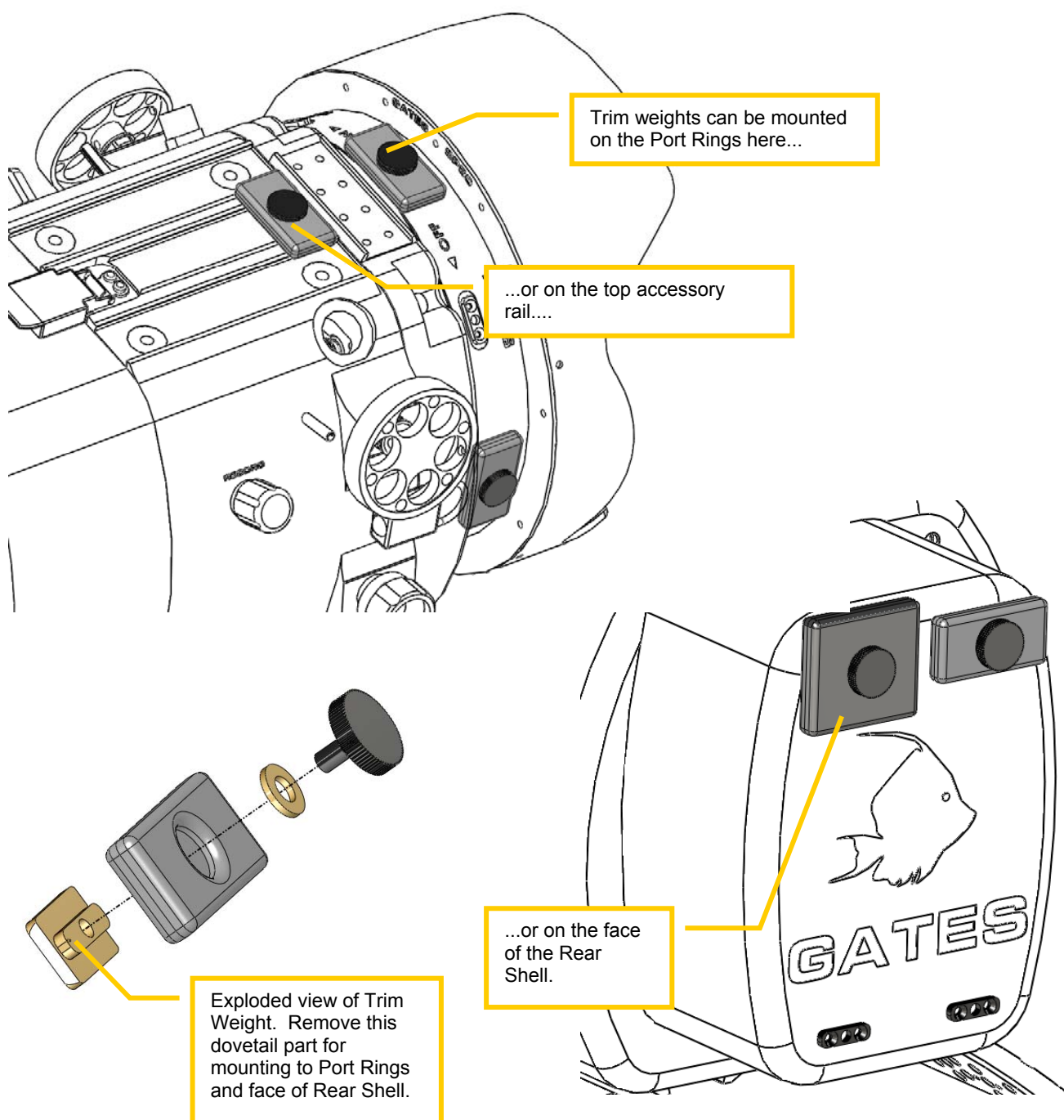
- **Inside Housing.** Two 8oz weights must be placed on the right inside shell as shown to properly balance the system left/right.

Shell Base. The base of the Mid and Rear Shells have accessory rails for 4, 8 and 16 oz weights. They are secured and adjusted forward and aft for trim.

- ▶ **NOTE:** The weights on the Mid Shell can only be mounted prior to mating the Rear Shell. This is to prevent these weights from accidentally slipping off the housing should the thumbscrew loosen.



- ❑ **Top accessory rails.** The top of the shell has three rails (used for handles and monitor) that can accommodate 4 and 8oz weights.
- ❑ **Port Rings.** The top and sides of the Port Rings can also accept 4 and 8oz weights. To do so, unthread the thumbscrew from the base, and then mount directly to the small boss on the Port Ring.
- ❑ **Rear Shell.** Trim weights can be mounted in the back face of the Rear Shell, as shown in the illustration.



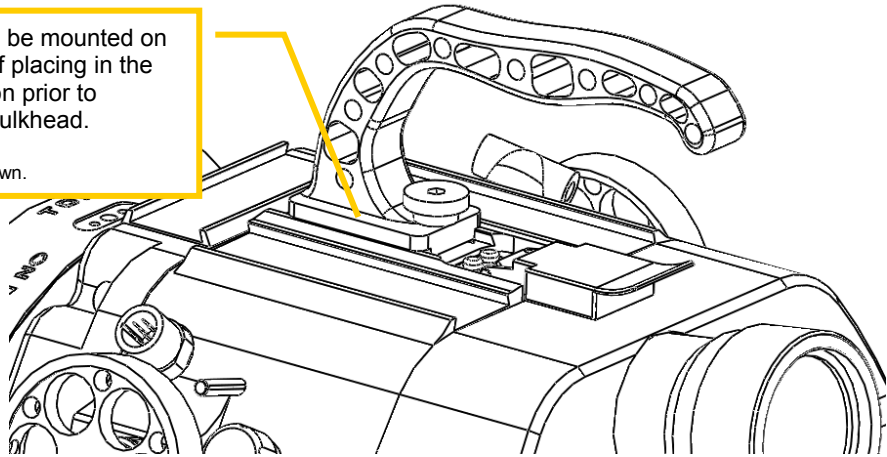
Accessories

Carry Handle (included)

A carry handle is included in your F55 kit. It can go on any of the top rails for a convenient way to move your housing. If you plan to place it on the center top rail, it must go on prior to installing the Front Bulkhead.

The carry handle can be mounted on any of the top rails. If placing in the center, it must slide on prior to mounting the Front Bulkhead.

Note: different housing shown.



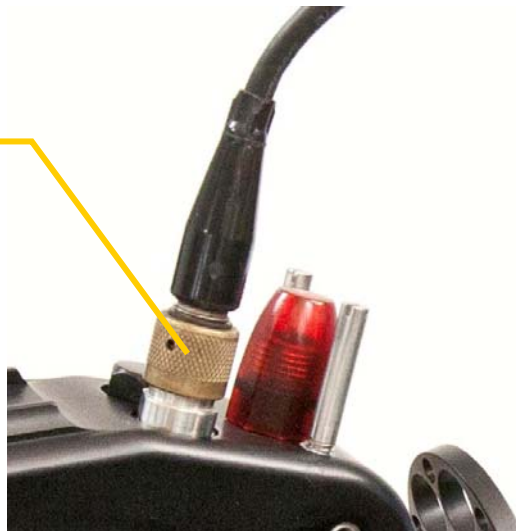
HD-SDI Surface Feed Cable (optional)

If you have the HD-SDI option installed, there are three steps:

- **Camera connection.** See the previous section [Video Connections](#) for details connecting the HD-SDI surface feed to the camera inside the housing.
- **Housing Cable Connection.** Refer to the photo. Connect the surface cable to the HD-SDI bulkhead connection on the housing.
- Refer to the HD-SDI Addendum document for further information.

HD-SDI Surface Feed cable (optional)

Note: DEEP EPIC housing shown

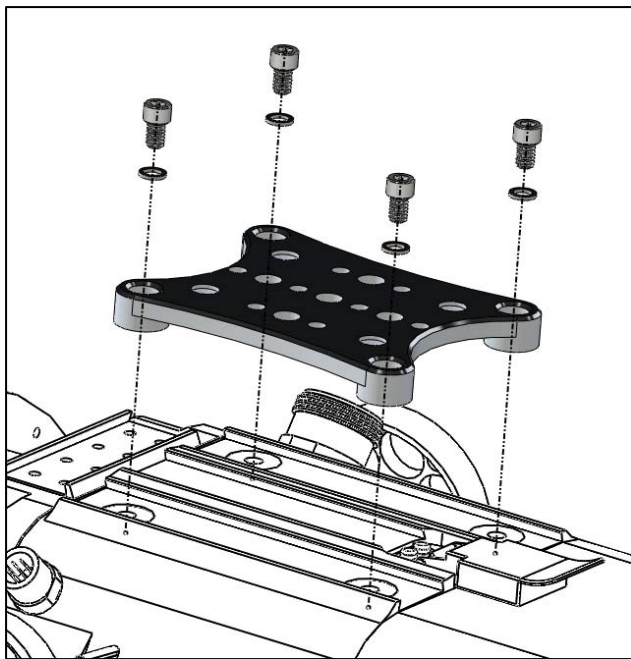


Tripod Adapter / Crane Mount (optional)

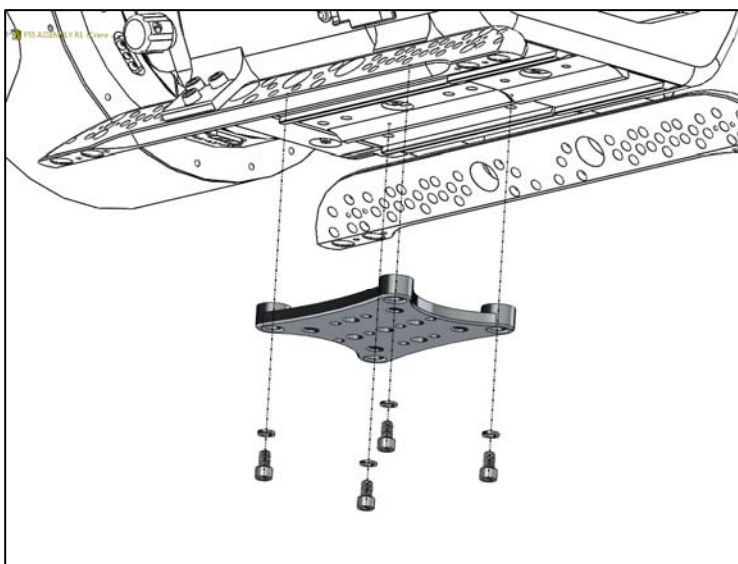
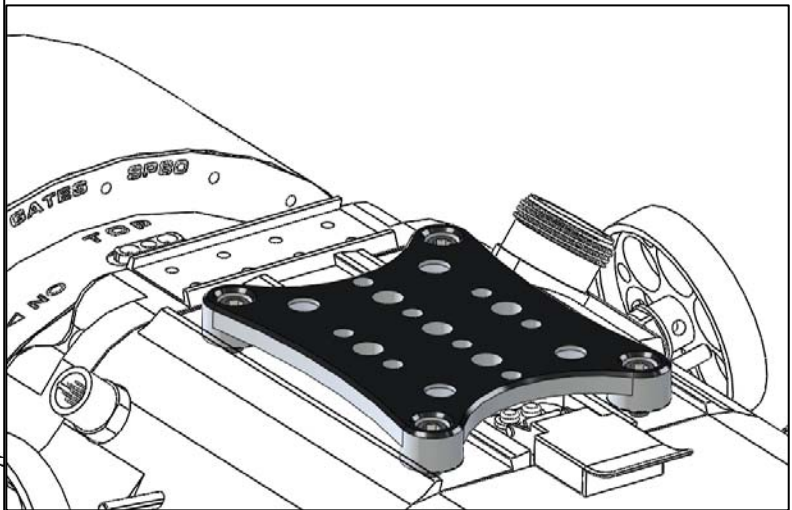
The Tripod Adapter / Crane mount serves a dual purpose:

- ❑ As a Tripod Adapter, it provides 1/4-20 and 3/8-16 mount holes for your tripod. It also is specifically designed to accept an Arri standard dovetail clamp. ([WC Dovetail Clamp](#))
- ❑ As a Crane Mount, allows securing the F55 to a Jib or Boom.

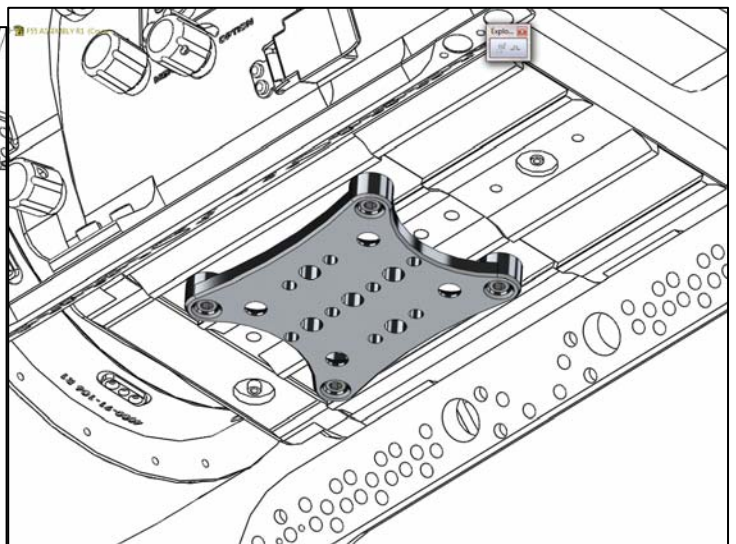
See the illustration below for mount point details.

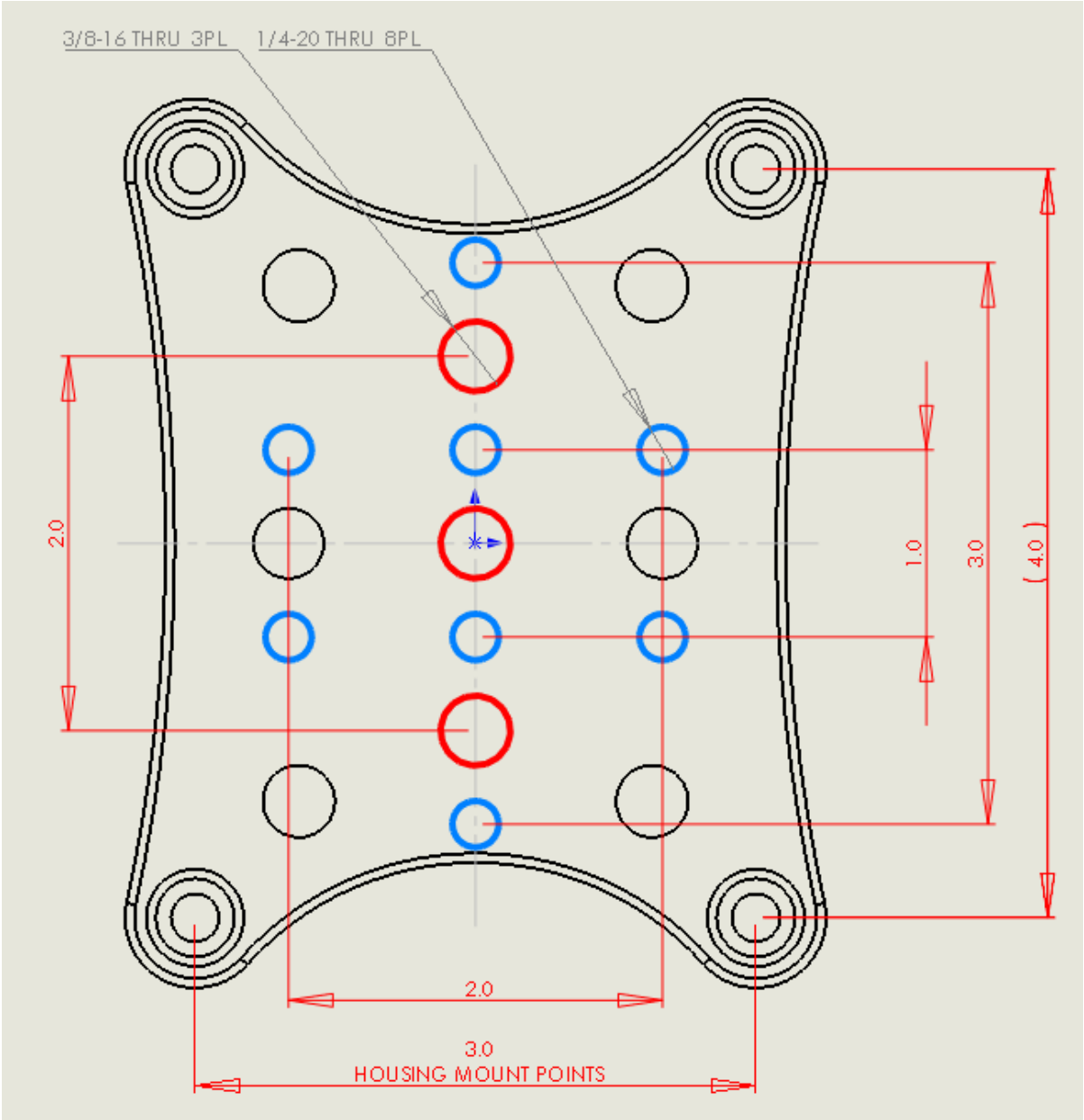


Crane Mount



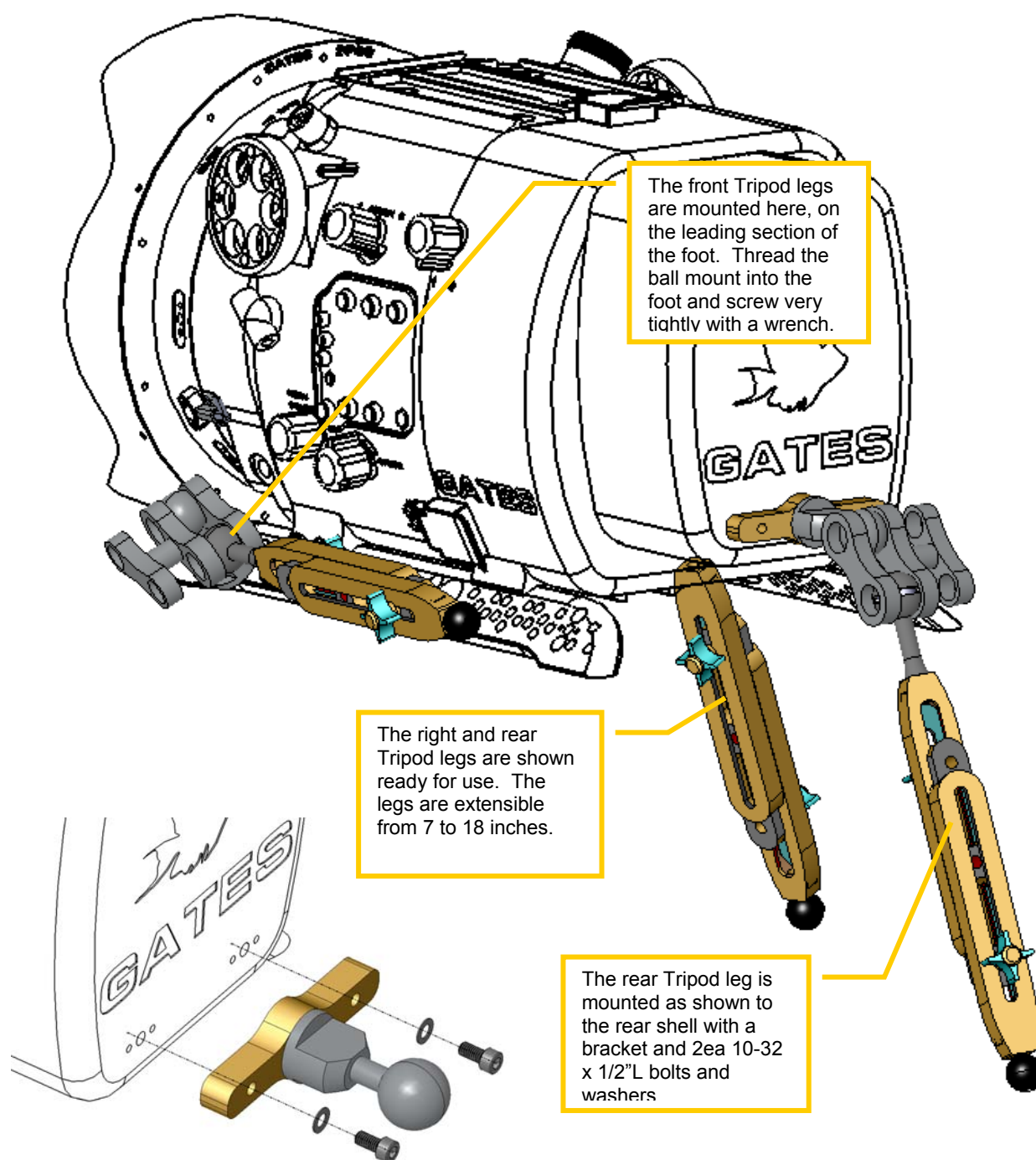
Tripod Mount





Tripod Legs (optional)

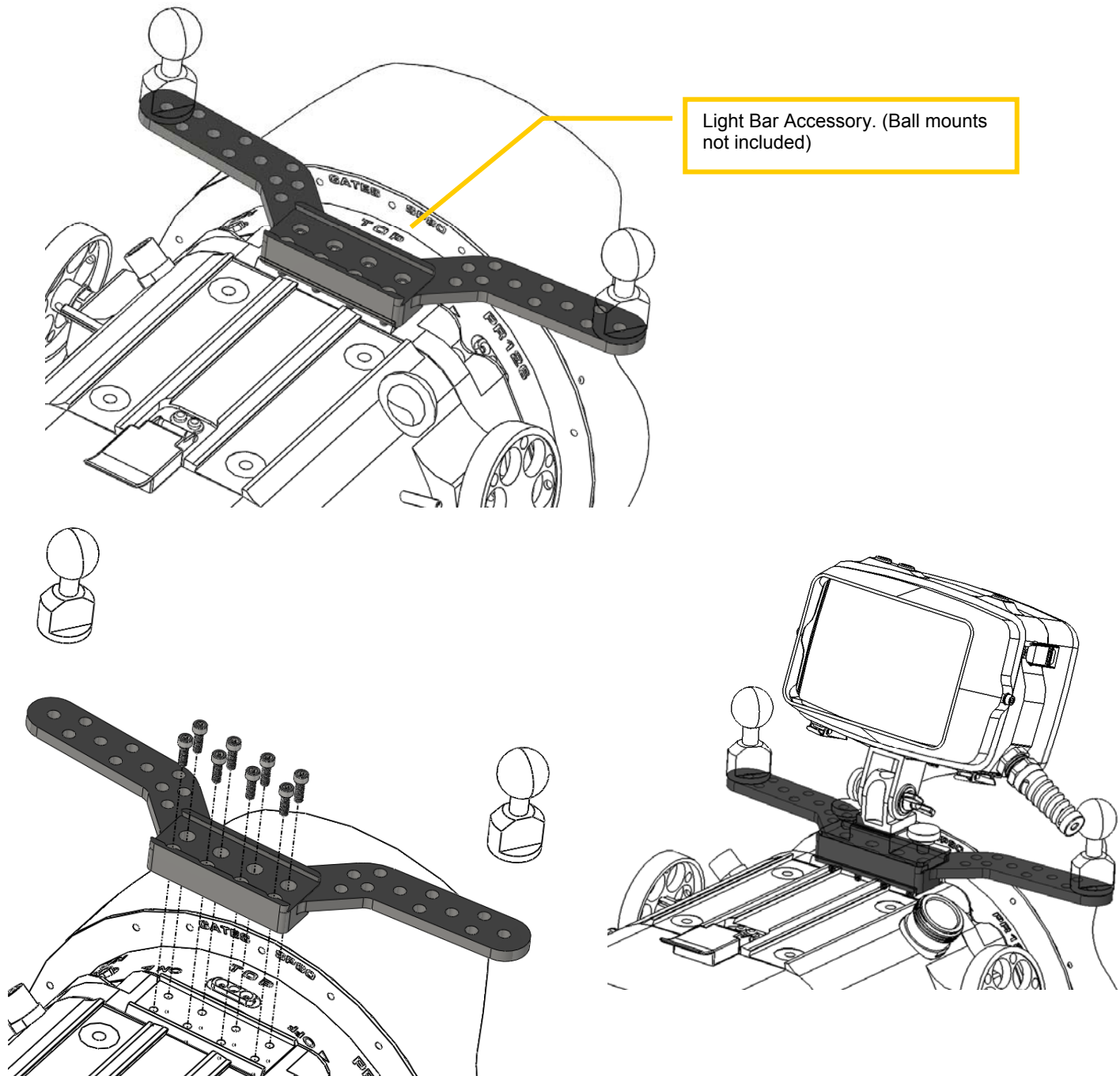
Gates Tripod Legs are three extensible legs mounted to the housing for stabilizing your shots. They pivot in all directions, and allow collapsing close to the housing when not in use.



Light Bar (optional)

The Light Bar is a convenient method to mount lights forward and to the outside edges of the housing. It accepts a wide variety of [Ultralight Controls Systems](#) ball mounts and bases.

The EM50 External Monitor will secure on the top of the Light Bar as shown.



Port Options

At this time of publication Gates SP80 Dome and FP80 Flat Port options are available for the F55. When choosing a Port consider the following tradeoffs and limitations.

- ▶ **NOTE:** The optical interaction between any given lens and a Dome or Flat Port is unpredictable. Distortions and aberrations can occur with either port. As such, Gates does not warrant optical performance or image quality.

Gates endeavors to collect data from the field and our own testing as a resource to customers, but you should always characterize your lens of choice for use underwater.

Dome Port

- ❑ **Optical material:** Optical-grade acrylic or anti-reflective coated glass.
- ❑ **Purpose:** Wide to super wide imaging.
- ❑ **Advantages:**
 - ❑ **Retains FOV.** Corrects for field of view distortions inherent in Flat Ports.
 - ❑ **Wide FOV capable.** Up to 180 degree fisheye are possible depending on the camera lens capability.
- ❑ **Disadvantages:**
 - ❑ **Little or no zoom.** Domes inherently limit zoom through and varies with camera lens employed.



Flat Port

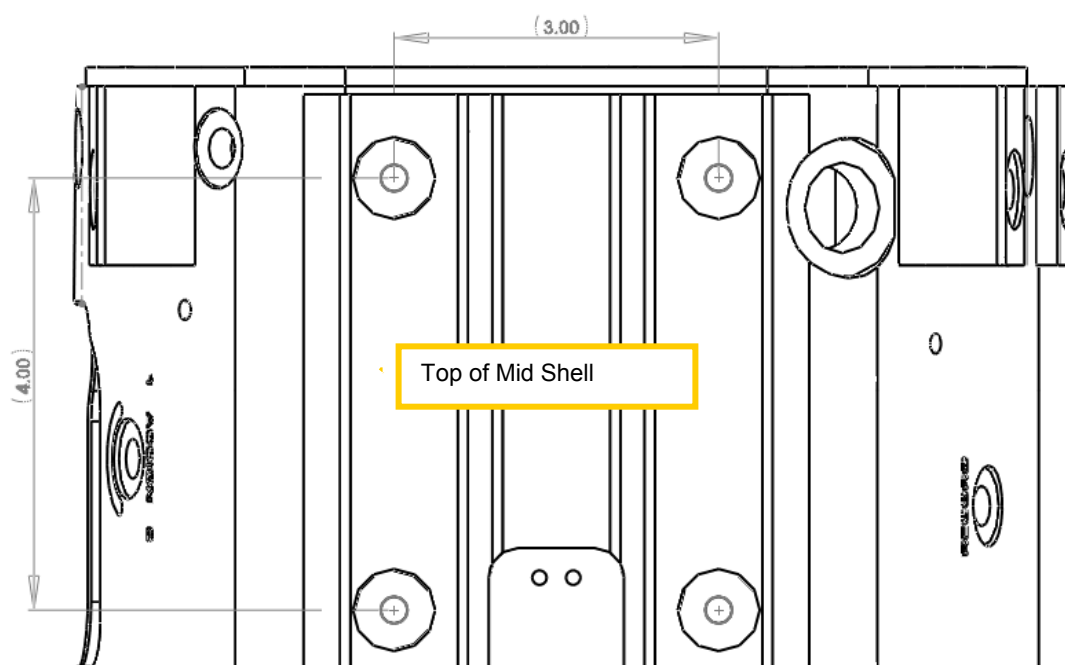
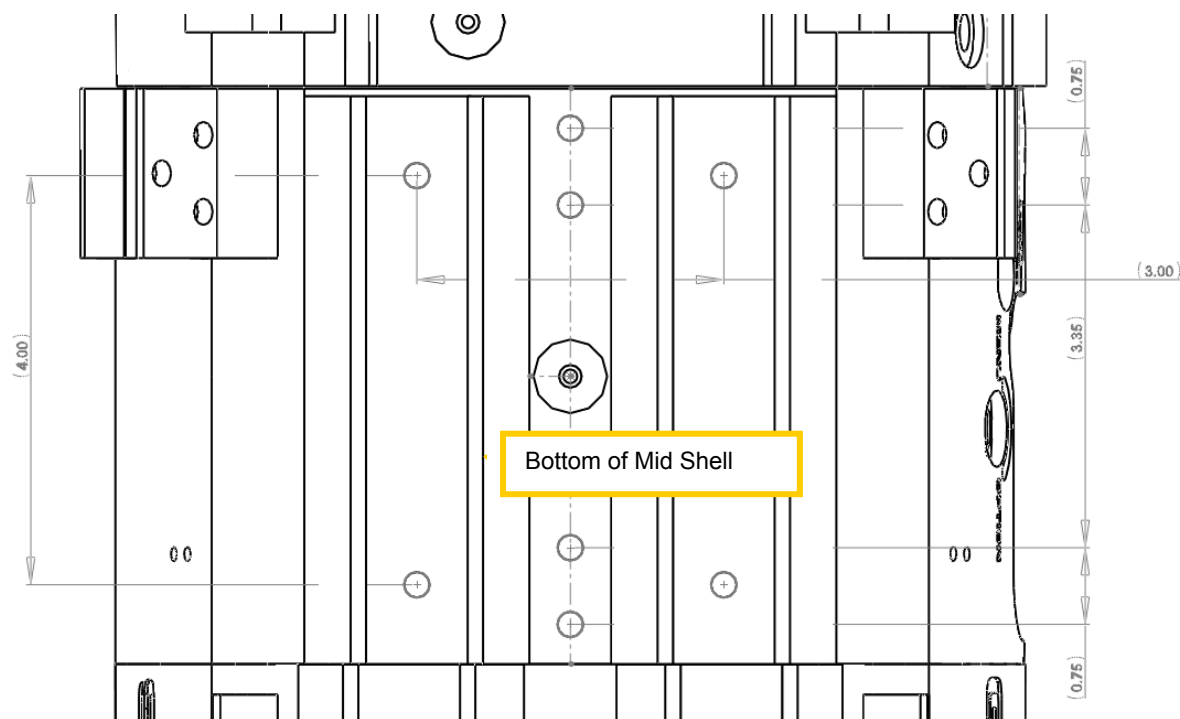
- **Optical material:** Optical grade acrylic.
 - **Purpose:** Medium to macro imaging.
 - **Advantages:**
 - **Zoom through.** Flat Ports retains the zoom capability of a lens.
 - **Macro.** Flat Ports are excellent for macro shots and/or the use of close up diopters to capture small subjects.
 - **Disadvantages:**
 - **No wide shots.** By their nature, Flat Ports do not allow wide shots.
 - **Loss of FOV.** Like a SCUBA mask, Flat Ports decrease FOV by 25%.
- **NOTE:** The optical interaction between any given lens and a Dome or Flat Port is unpredictable. Distortions and aberrations can occur with either port. As such, Gates does not warrant optical performance or image quality.

Gates endeavors to collect data from the field and our own testing as a resource to customers, but you should always characterize your lens of choice for use underwater.



Bracket Mount Locations

The bottom and top of the F55 Housing has mount points for brackets or accessories of your own design. All are 1/4-20 threads



Lighting Systems

The F55 has provisions to utilize a variety of lighting systems. Ball mounts for the light arms may be located in several locations on F55: a) threaded into the top of the Handle Grips; b) on the Foot Rails; or c) onto accessory mounts that slide onto the same dovetail slots as the handle grips.

Controlling Reflections

While it is unlikely, you may encounter reflections from within the port area of F55 from anything shiny.

To control such reflections Gates recommends two easy measures:

- **Blackening the shiny area** with a black permanent marker; or
- **Install a mask over the lens, as shown in the photo.** This measure is rarely needed, but if necessary black neoprene makes an excellent, flexible masking material. Cut to your specific lens and cut the outer ring diameter to fit the port.

Note: Lens masks are not provided by Gates.



Travel / Transport

The F55 requires several preparations for travel.

- ▶ **CAUTION: No Camera.** DO NOT transport your F55 or F5 camera inside the housing. Severe damage may result.
- ▶ **CAUTION: No Trim Weights.** DO NOT transport the F55 housing with trim weights installed. Severe damage may result.
- **Secure Camera Mount.** The Camera Bridgeplate must be well secured. Install and tighten with the lever for travel.
- **Protect connectors.** Cover any housing-to-camera connectors to protect them from damage during transit.
- **Packing.** Ensure the complete system is packed well in transport case(s).

4: F55 Maintenance

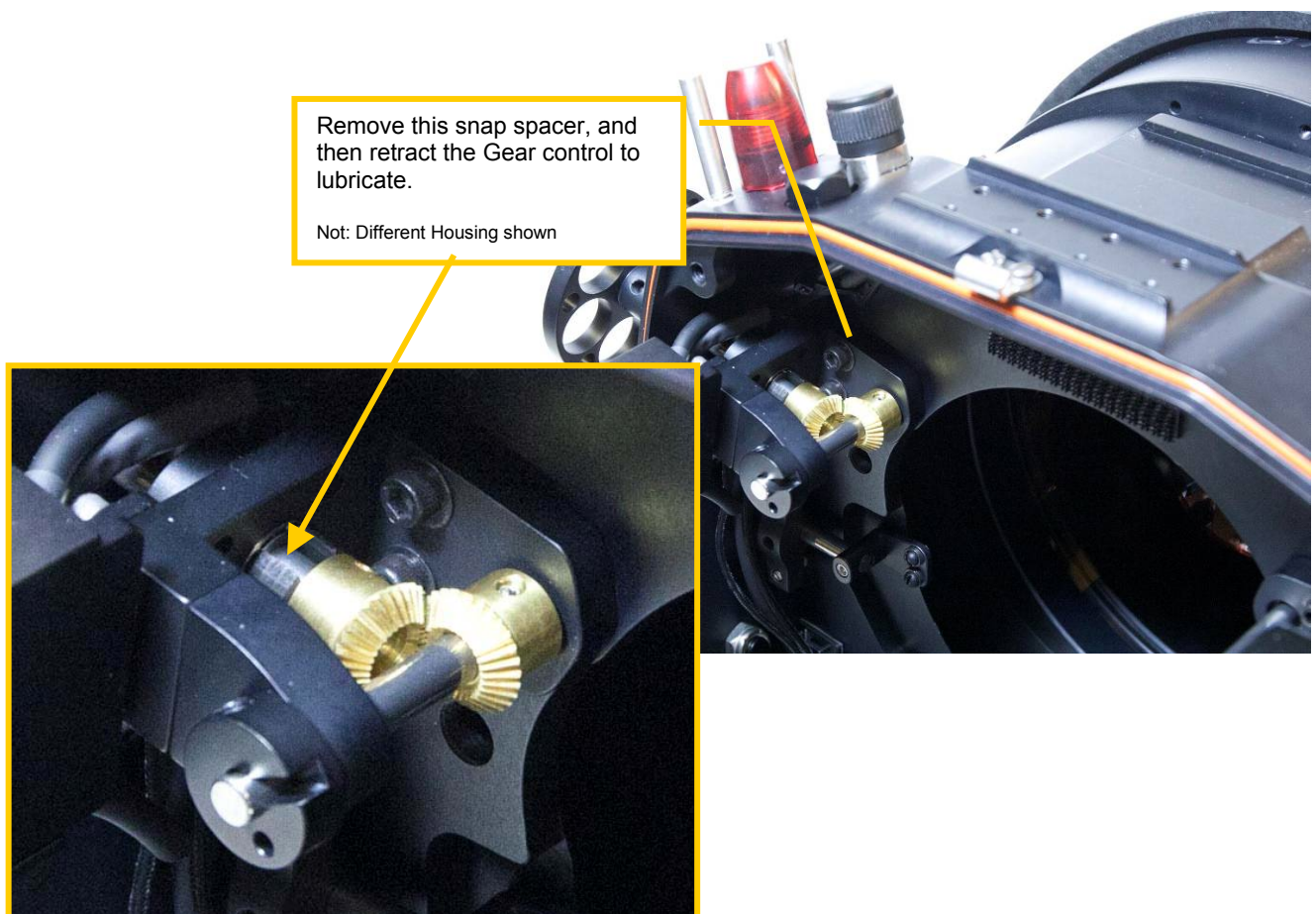
Housing Care and Maintenance

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.

In addition to the guidelines in the Care & Maintenance guide is one additional maintenance item specific to F55.

- **Gear controls.** To lubricate the Gear control shafts requires removal of a snap spacer. Refer to the photo below for the location of this spacer. After removing the spacer, retract the control shaft and lubricate liberally. Push in the control and rotate. Once moving freely, replace the snap spacer.

Make note of any shim washers present, and on which side of the snap spacer they are located.



O-Ring Care and Maintenance

Your Gates housing has 3 serviceable o-rings:

- Housing Main Seal (ORANGE);
- Port (YELLOW); and
- Port Ring (YELLOW).

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. Only the BLACK and YELLOW o-rings are safe to lubricate.
- ▶ **CAUTION:** Never use metal tools or objects for removing o-rings!

5: Customer Support

Should you have any questions about the F55 and its operation, please contact Gates at the numbers below.

Email: Customer.srv@GatesHousings.com

Web: www.GatesHousings.com

Phone: 858.391.0052

Fax: 858.391.0053