DEEP EPIC

Setup, Use, and Care Guide

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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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1: Introducing DEEP EPIC

Congratulations on owning a new Gates product: the DEEP EPIC housing. You've selected a product that will provide years of value and reliable service. We designed DEEP EPIC specifically for the RDCC EPIC™ and Scarlet™ digital cinema cameras.

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

Features

DEEP EPIC has several key features:

- **Lens flexibility.** DEEP EPIC can accommodate a variety of different cinema and DSLR lenses with no change to control locations. Focus, Iris, Zoom and Rec/Stdby remain in the same location regardless of optics used.
- **Full control access.** All controls are accessible on DEEP EPIC, including the REDMOTE™.
- **Cinema-grade design.** Lens choice and control access are just two of the many features designed into DEEP EPIC. A/R coated glass optics, tally light, HD-SDI surface feed, comm. inputs and Seal Check are a few of the items any professional will appreciate.

Warranty Disclaimer

DEEP EPIC 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 DEEP EPIC. 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 DEEP EPIC 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 DEEP EPIC, contact Gates directly. Details are in section 6.

Unpacking DEEP EPIC

After you remove DEEP EPIC 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

- **DEEP EPIC Housing**
- **Camera Mount**
- **Lens Gear Drives (2x upper and 1x lower)**
- **Monitor Shell**
  - 5.6” LCD Monitor Shell or
  - 5” RED PRO Monitor Shell
- **Hard Sided Rolling Case x 2**
- **Seal Check system**
- **Tool Kit with case**
- **Various assembly and spare parts for DEEP EPIC including bolts, set screws and o-rings.**
- **Spare O-Ring Kit**
- **Carry Handle**
- **Trim Weights (quantity dependent on configuration)**

Optional Parts

* = necessary for operation

- **Port Extender(s) of choice for your lens***
- **Port(s) of choice (Dome, either glass or acrylic, or Flat) and shade***
- **Port Mask (as applicable for specific lenses)**
- **Focus / Iris Indicator Rings**
- **Guide Bars and acetyl drive shafts for your lens of choice***
- **Microphone or Hydrophone**
- **Water alarm**
- **HD-SDI surface feed bulkhead connector and cable**
- **Light System**

2: Cautions

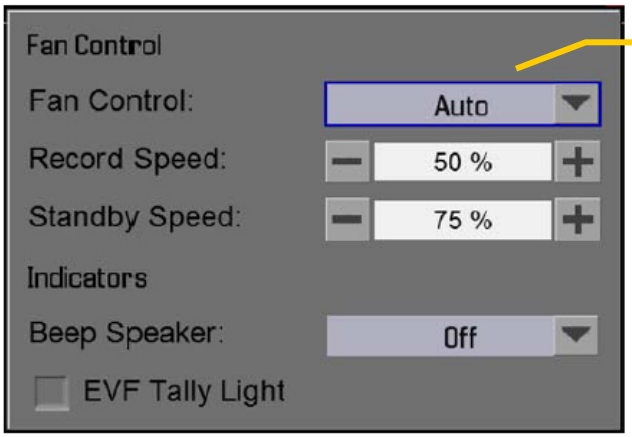
- SEAL CHECK VACUUM must remain below 6 in Hg. More vacuum can inhibit the transfer of heat away from the housing.

Keep the vacuum on DEEP EPIC below 6 in Hg.

- **Camera Fan. Set EPIC or Scarlet camera fan to 75% or 100% to maximize heat dissipation. SETTINGS → SETUP → SYSTEM → FAN CONTROL. Settings are**

Fan Control: MANUAL
Record Speed: 75% or 100%
Standby Speed: 75% or 100%

Do not block any ventilation openings or obstruct cooling fan airflow. The intake is in the front just below the lens and the exhaust is on the top of the camera.



Fan Settings:
- Fan Control to MANUAL
- Record Speed to 75% or 100%
- Standby Speed to 75% or 100%

- LEMO CONNECTOR MATING. When mating LEMO connectors, ensure alignment of the red dots on the plug and receptacle before engagement. It is the user's responsibility to verify alignment, proper connection, and connector integrity.

Ensure alignment before engaging any LEMO connector. Also ensure the SYNC and CTRL connectors are mated properly to the SYNC and CTRL locations on the EPIC / Scarlet cameras.

- TRANSPORT. NEVER ship or transport your EPIC or Scarlet™ cameras inside the DEEP EPIC 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 DEEP EPIC. 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 DEEP EPIC and may void your warranty.

  Contact Gates if you have questions this manual or using DEEP EPIC.

- REPLACE FAN. RED Digital Cinema has issued a warning on page 33 of the EPIC user guide. If you have a camera that requires fan replacement, you must do so prior to operating the EPIC camera in DEEP EPIC housing. **Failure to follow this instruction may result in camera damage.**

IMPORTANT: If after upgrading your EPIC to v1.6.20 or higher series firmware, you receive a "New fan available, please contact RED" notification on the camera, please contact RED technical support for assistance.

Press OK to use your camera as normal - the message will appear each time the camera is powered up. Pressing OK, HIDE will hide the message when the camera is powered up, however, be mindful that until the fan is changed, the camera temperature should be monitored. If the fan is not replaced as RED recommends and the camera is damaged by overheating, the camera warranty will be voided.

Once the updated fan has been installed and the camera is powered up, the message will continue to appear. Press OK, then go to SECONDARY MENUS > SETTINGS > MAINTENANCE > REDISCOVER and perform the rediscover procedure to clear the message.

3: DEEP EPIC Setup

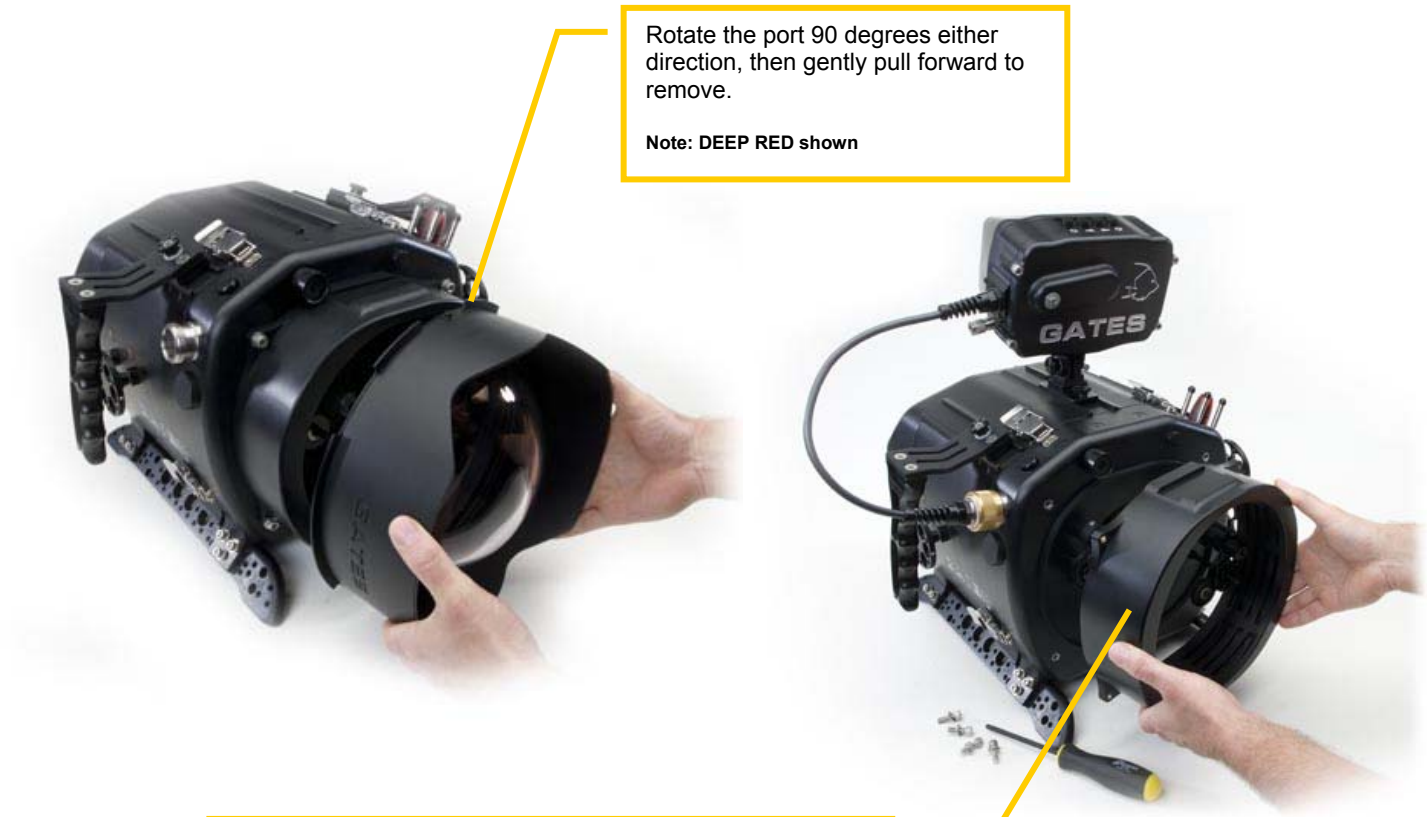
DEEP EPIC requires complete and thorough setup prior to use.

DEEP EPIC Housing Preparation

- **Port.** Remove the Port by rotating 90 degrees either direction. Gently pull the Port away from the Port Extender.

▶ **TIP:** Liberal lubrication of the Port o-ring allows easy rotation during installation/removal.

- **Port Extender.** Remove the Port Extender by removing 4 screws around the perimeter.



- **Shell removal.** Before releasing the 3 latches on the shell, retract the Zoom, Iris and Power control on the right side, and the Assignable control on the left (see the controls section for additional details).

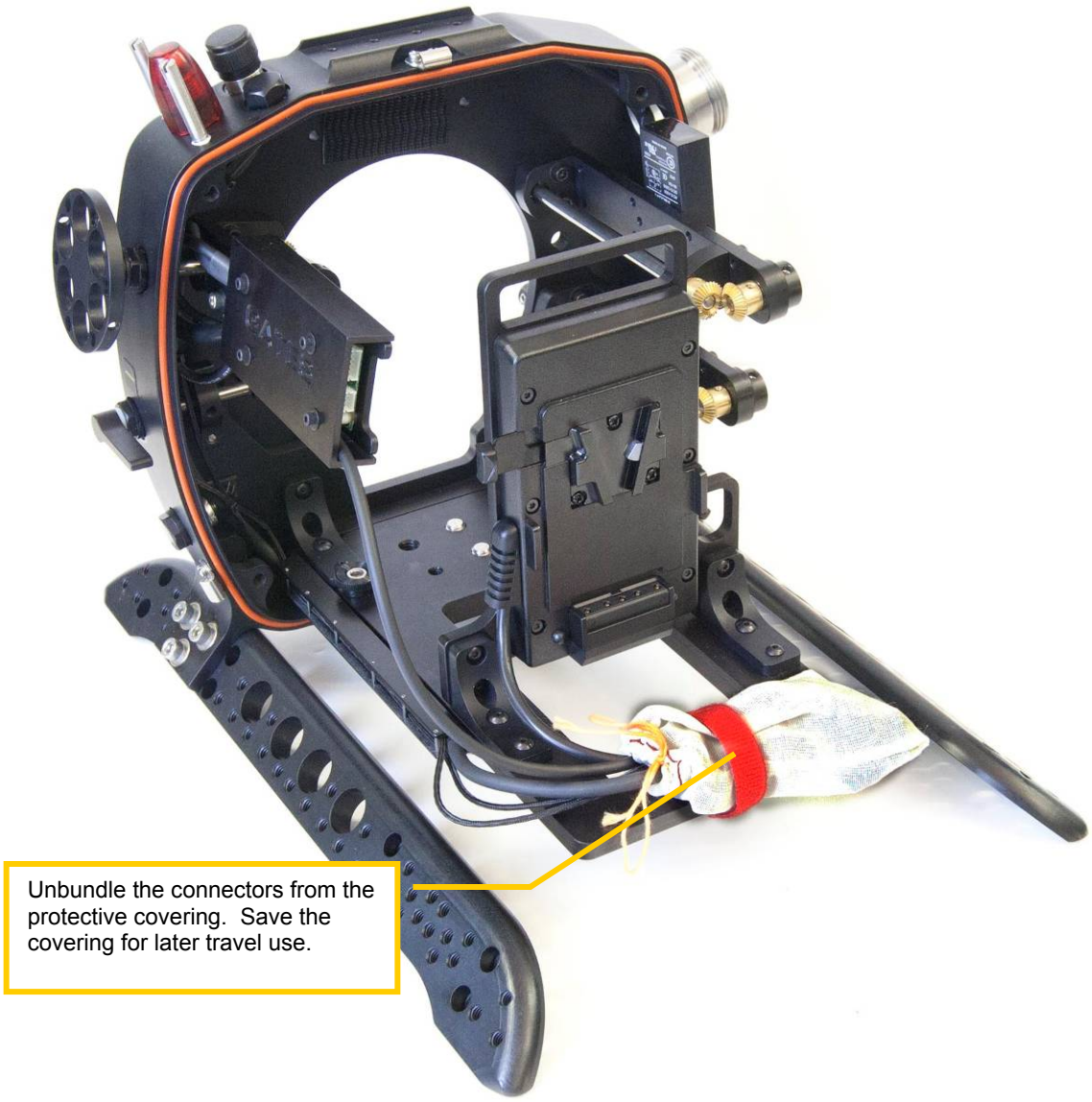
  Release the latches by depressing the lock and pulling up on the latch. Once released the shell will slide to the rear on the foot rails until free.

Step 3. Slide the shell back until free from the housing.

Note: If you are opening the shell after a dive, secure the monitor to the top of the front shell or set off to the side of the housing.

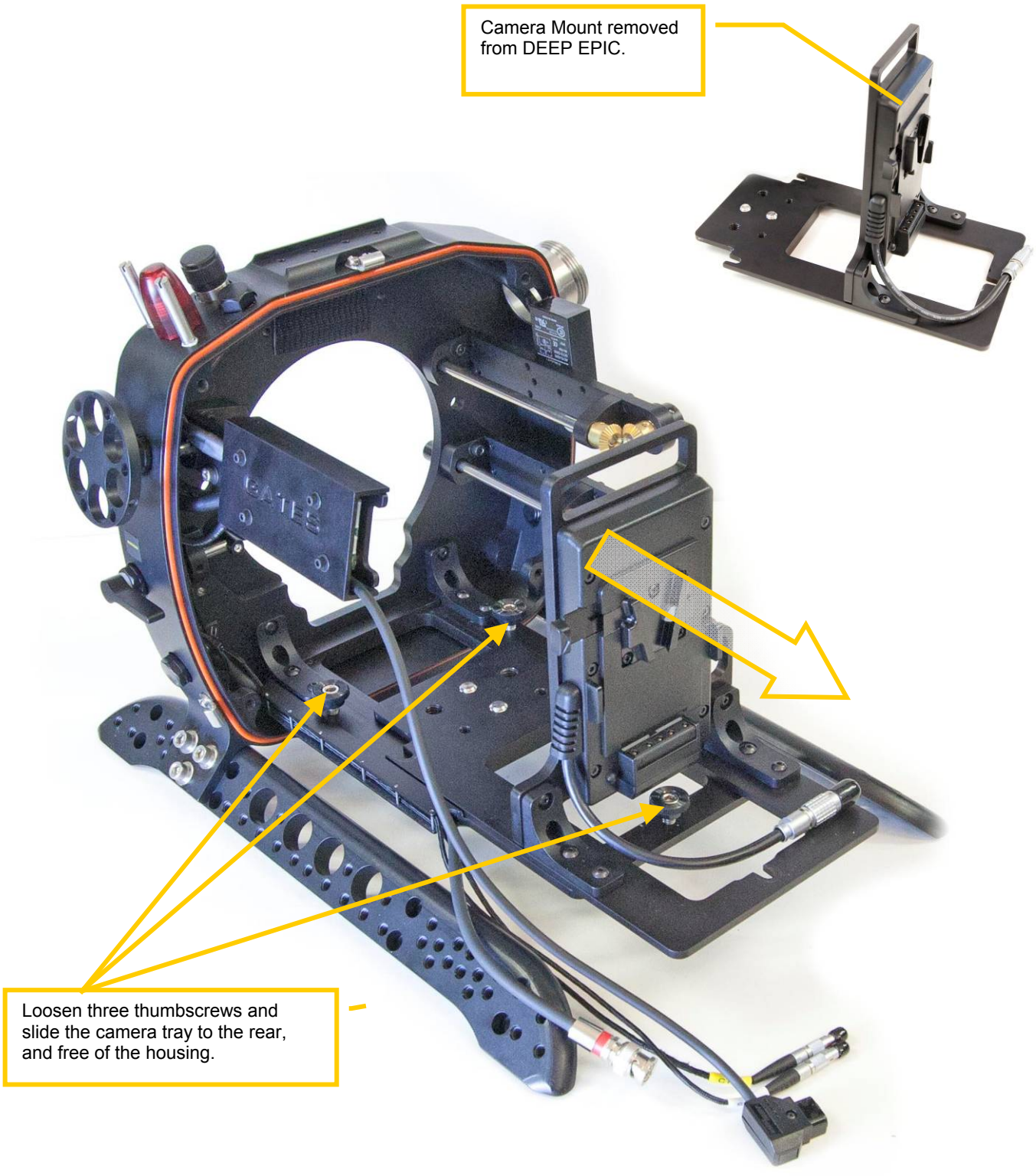
Note: DEEP RED shown

- **Unwrap Connectors.** Several connectors are bundled together for travel and protection. Remove the protective covering and separate the cables.



- **Camera Tray Removal.** Lay the SYNC, CTRL, Power, and other connectors that may be optionally installed to the side, away from camera installation

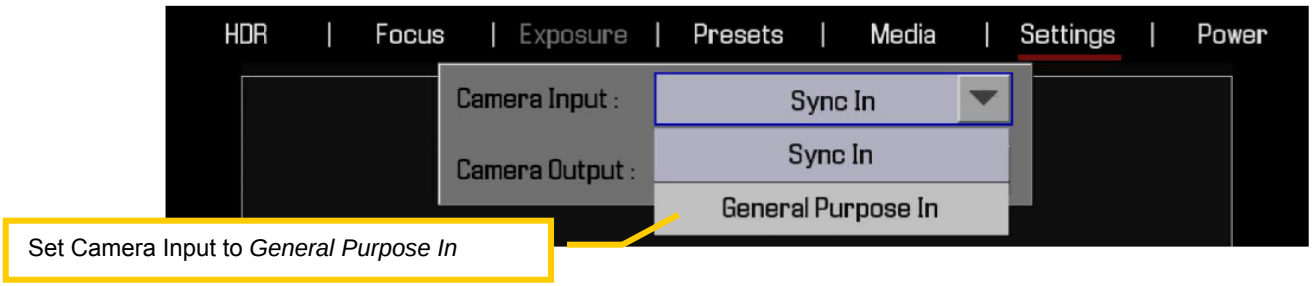
  Loosen 3 thumbscrews and slide the camera mount to the rear and free of the housing.



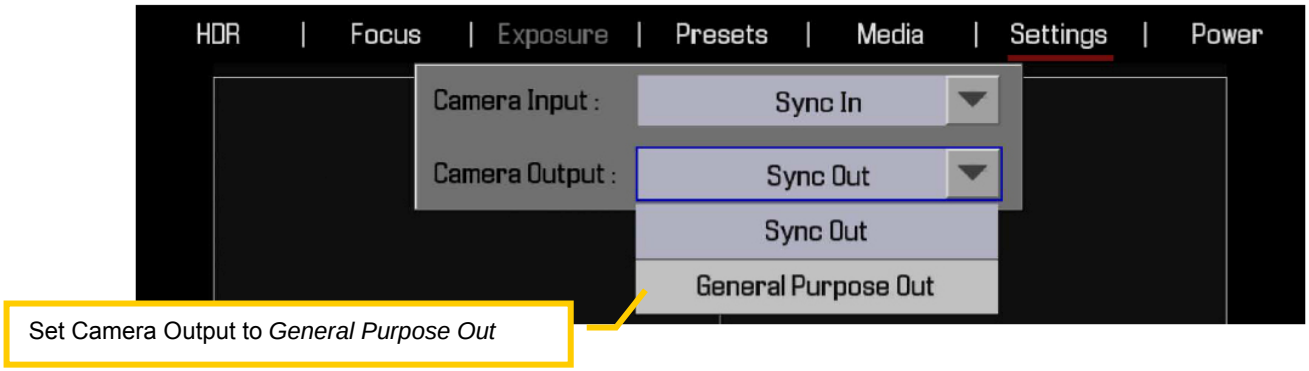
EPIC / Scarlet Camera Preparation

- **Camera Settings.** Prior to preparing the camera for setup, check the following settings are made:
  - **GPI / GPO.** The SYNC and CTRL ports must be set for proper interface to DEEP EPIC. At this writing for the current firmware release, the ports are set as follows:

    GPI: SETTINGS → SYSTEM → GPIO → Set Camera Input to *General Purpose In*

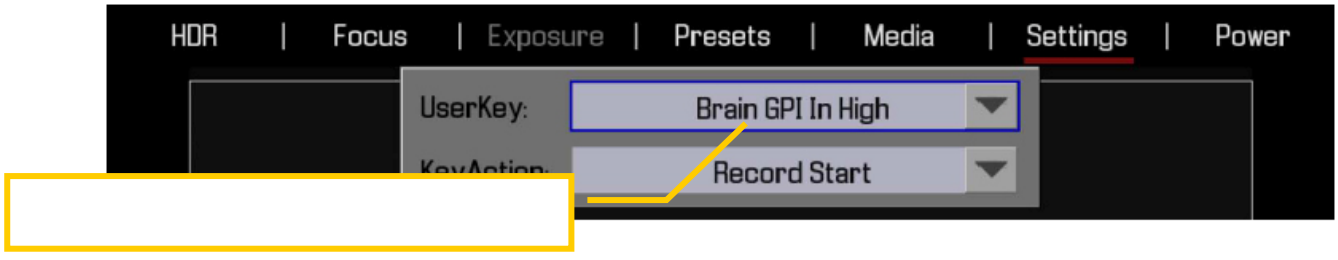


    GPO: SETTINGS → SYSTEM → GPIO → Set Camera Output to *General Purpose Out*



  - **USER KEY / KEY ACTION.**

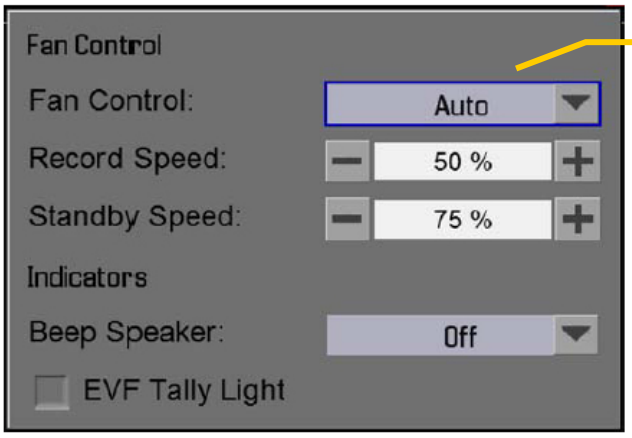
    SETTINGS → SETUP → KEYS / SHORTCUTS→ Set User Key “Brain GPI In High” to *‘Record Sart”*



- **Fan.** Set EPIC or Scarlet camera fan to 75% or100% to maximize heat dissipation. SETTINGS → SETUP → SYSTEM → FAN CONTROL. Settings are

  Fan Control: MANUAL
  Record Speed: 75% or 100%
  Standby Speed: 75% or 100%

  Do not block any ventilation openings or obstruct cooling fan airflow The intake is in the front just below the lens, and the exhaust on the top of the camera.



Fan Settings:
- Fan Control to MANUAL
- Record Speed to 75% or 100%
- Standby Speed to 75% or 100%

- **Camera Basics** Strip down your EPIC / Scarlet to the camera body only. Remove all accessories, battery/drive and lens and other accessories.

Remove all accessories and lenses from EPIC or Scarlet.

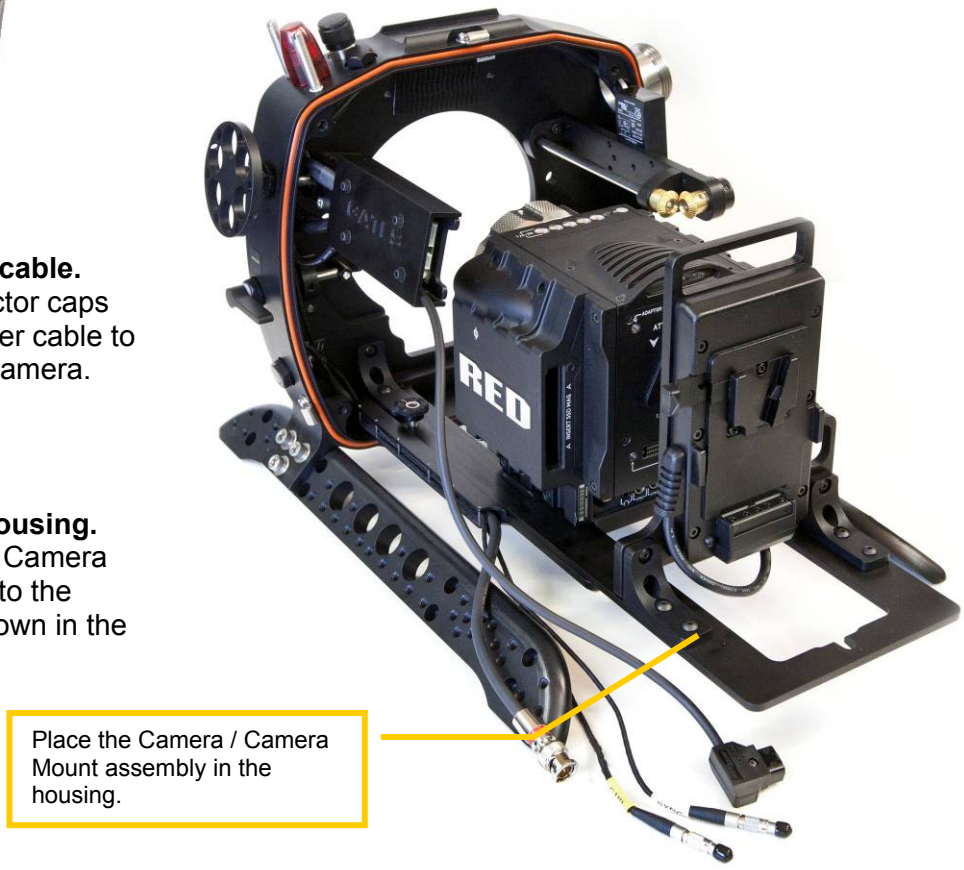
Camera / Lens Installation

- **Camera Mount Installation.** The Camera Mount is secured to the EPIC / Scarlet camera by two mounting screws on the bottom.

  Locate the two screws to the mating 3/8-16 threaded holes on the camera. Thread by finger tight first, then finish with a coin or wide-bladed screwdriver. Tighten firmly.

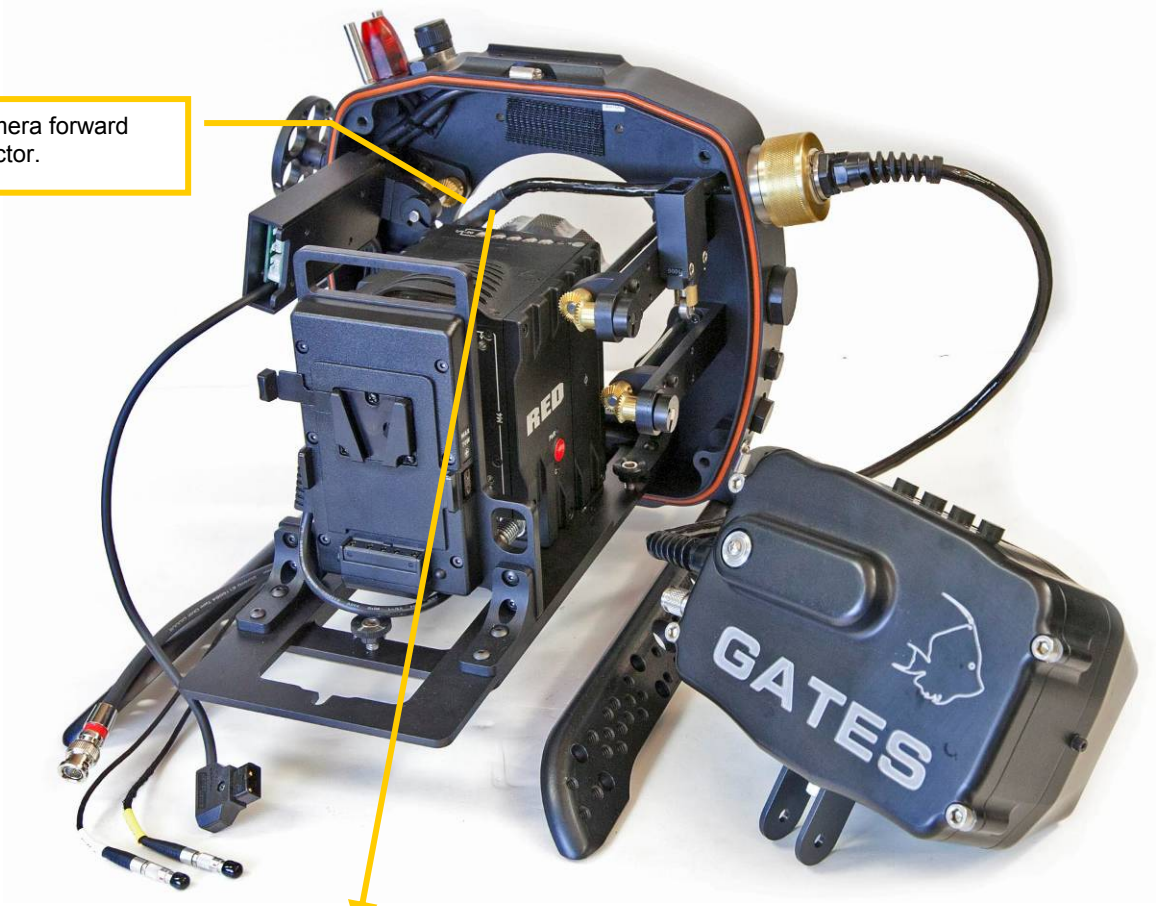
- **Plug in the Power cable.** Remove the connector caps and plug in the power cable to the EPIC / Scarlet camera.

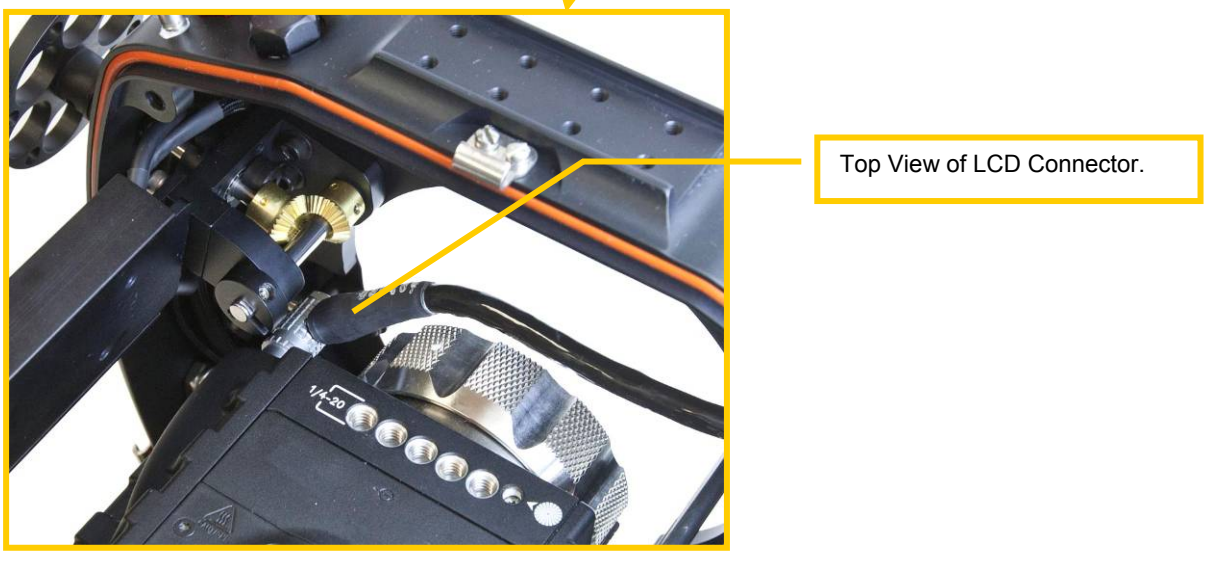
- **Place camera to housing.** Place the Camera / Camera Mount assembly onto the Camera Tray as shown in the photo.



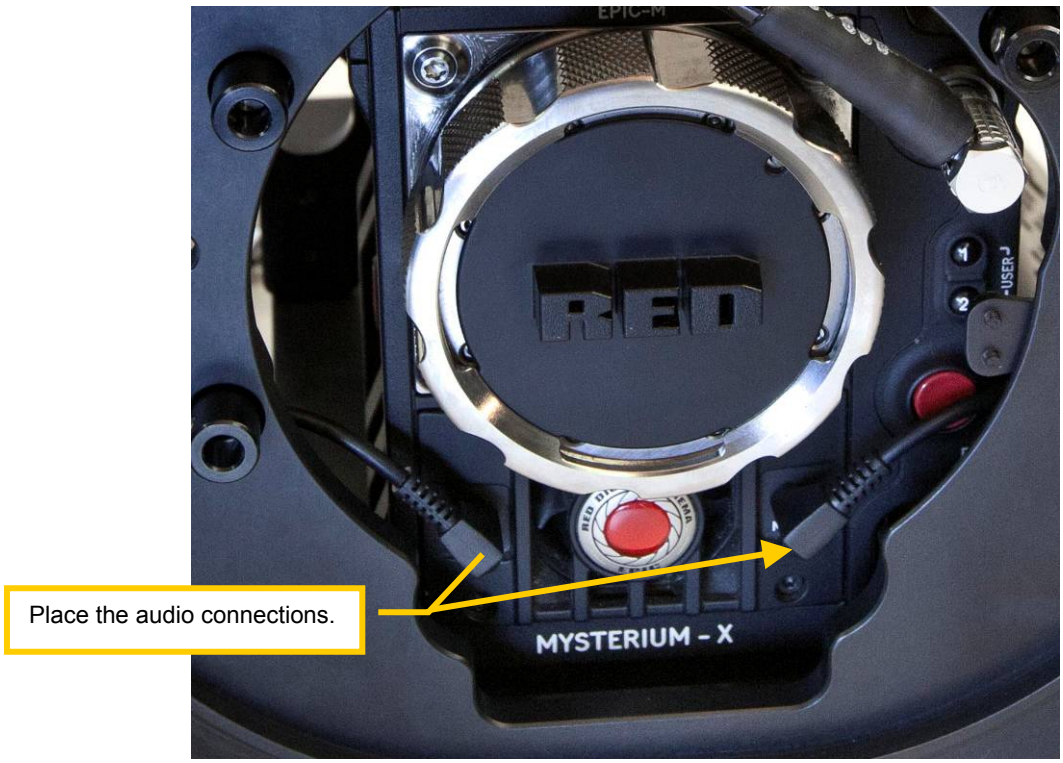
- **Connect External LCD.** Slide the assembly forward until 2 in / 5 cm from fully seating into the housing. This is a good point to connect the LCD cable on the front of the EPIC / Scarlet camera.

  See the subsequent sections on installing the RED 5.6 in or RED PRO 5 in external monitor shells to the housing.





- Plug in the optional Submersible Mic, Hydrophone, or Comm input to Mic-1 or Mic-2 locations on the EPIC / Scarlet cameras



- **Fully insert and secure the camera.** Slide the assembly forward until it stops firmly under the thumbscrews. If there is obstruction, inspect for the reason. A thumbscrew or cable are likely the obstruction.

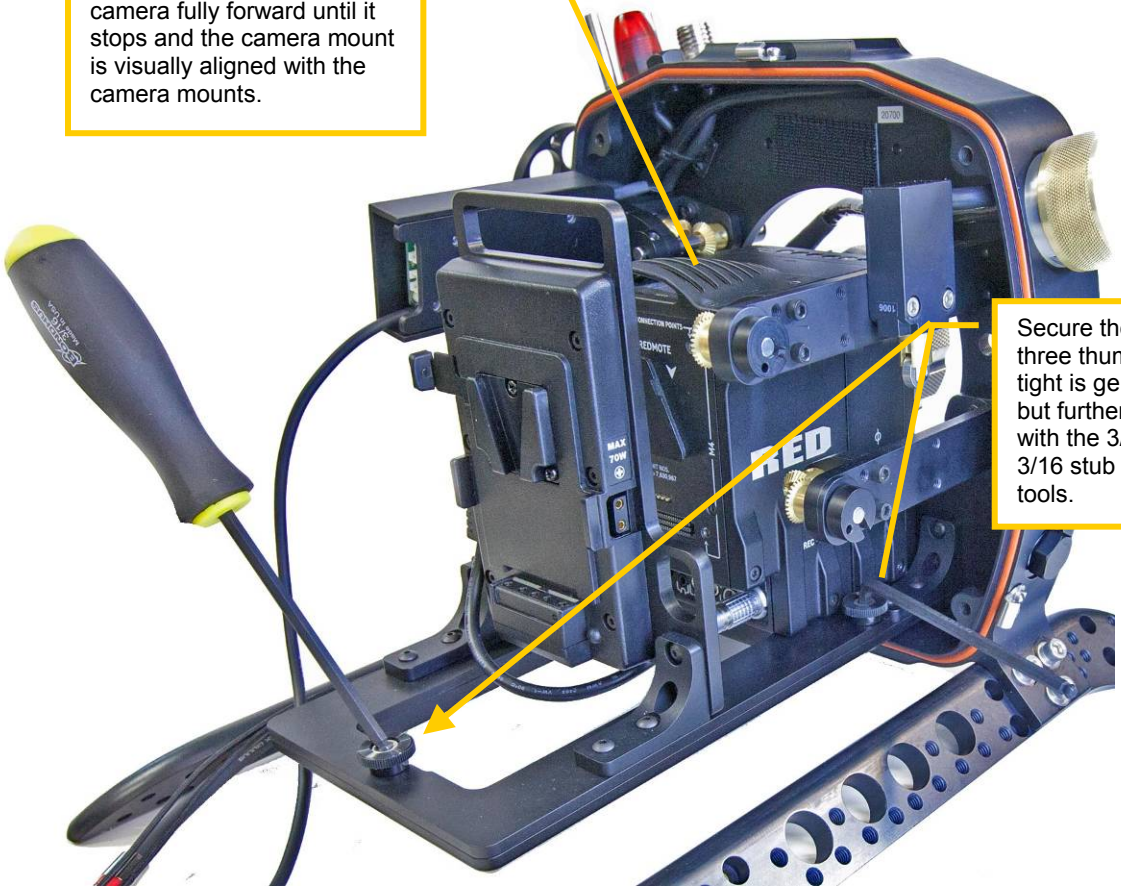
- **Tighten thumbscrews.** Three thumbscrews secure the EPIC / Scarlet camera to the housing. Tighten by hand, and if desired use the 3/16 hex tool to tighten firmly (this is usually not necessary).

- **SYNC / CTRL Connections.** Plug in the SYNC and CTRL connectors to the corresponding ports on the camera. These are clearly marked as shown in the photos.

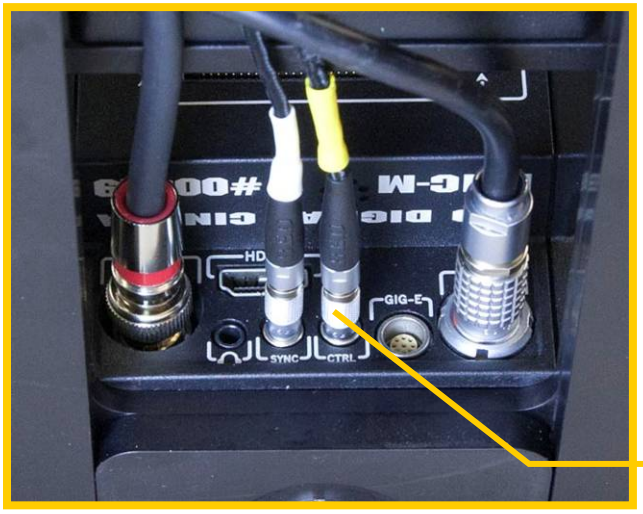
► CAUTION: SYNC / CTRL CONNECTIONS. Failure to properly connect the SYNC / CTRL connections may damage your EPIC / Scarlet camera.

- **Other Connections.** Plug in HD-SDI (optional) if installed.

Slide the EPIC / Scarlet camera fully forward until it stops and the camera mount is visually aligned with the camera mounts.



Secure the camera with three thumbscrews. Finger tight is generally sufficient, but further tightening is OK with the 3/16 ball drive or 3/16 stub length hex key tools.



Tilt the housing forward and plug in the SYNC and CTRL Connections. The connectors are clearly marked.

Plug in the optional HD-SDI connector if installed.

- **Power Connector.** Plug in the power connector on the side of the V-Lock battery mount as shown. Install a charged REDBRICK battery. The red LED just above the EPIC / Scarlet record button will verify power is available to the camera.

  At this time, the following batteries are reported by customers to fit in DEEP EPIC: · IDX E10 · IDX E10S · IDX E9 · Hawkwood V90

Install the Power connector here, on the side of the V-Lock battery mount.

Install a charged battery

- **Mount lens.** Mount the lens you plan to use at this time.

Mount the lens to the EPIC / Scarlet camera.

Lens Gear Drives (LGD's)

DEEP RED includes three LGD's – 2x CCW and 1x CW.

- **General Notes.** This section addresses the installation of three LGD's – 2 x CCW (CounterClock 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 DEEP EPIC 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 ¼" 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.

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: DEEP RED 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.

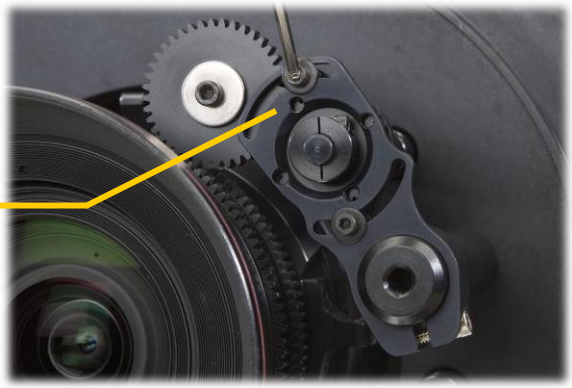
The sequence of tightening screws on the LGD's is important.

- **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.

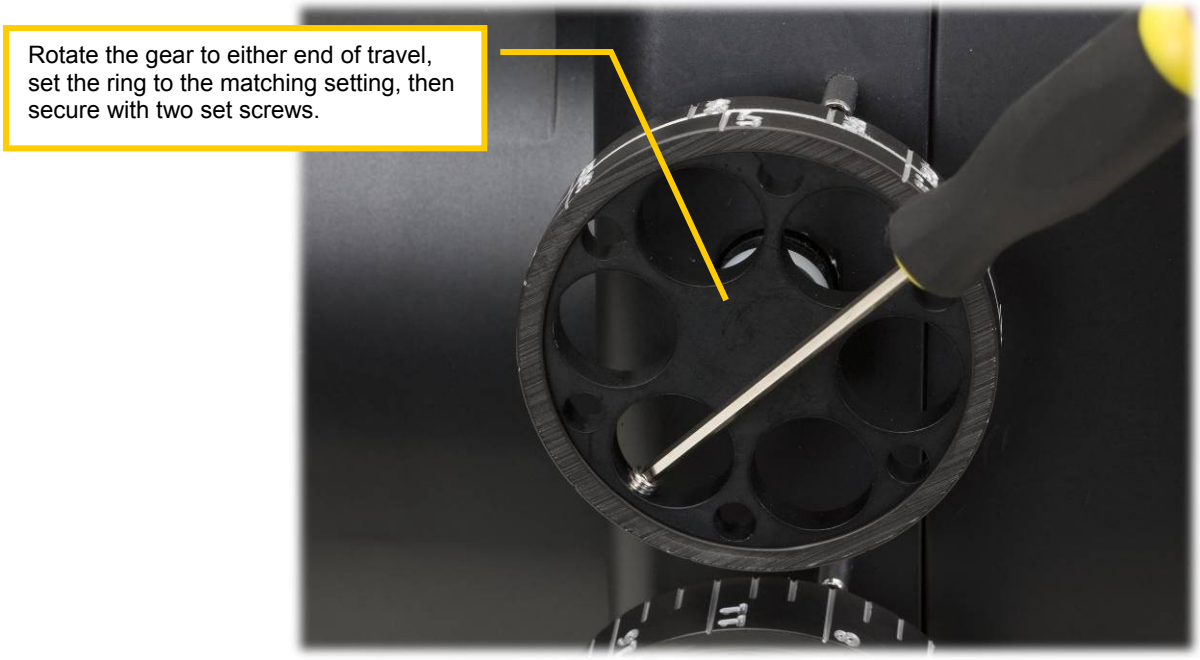


- **Step 3.** Firmly tighten the screw that couples the drive gear hub to the drive shaft.

- **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. Greater tightening the screw will allow less slip. Adjust this amount of slip at your discretion.

- **Set the focus/iris indicators.** The left side Focus control and right side Iris control have focus and iris dials. These shipped in the parts kit. These may be aluminum and pre-marked for the lens, or white plastic for marking focus / iris indications yourself.

  Rotate the focus or iris knob to either end of the lens travel, then position the indicator ring to that setting aligned with the marker pin on the housing. Secure the ring with the two set screws in the knob to retain. The indicator rings now display lens settings on the knob during use.



- **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.

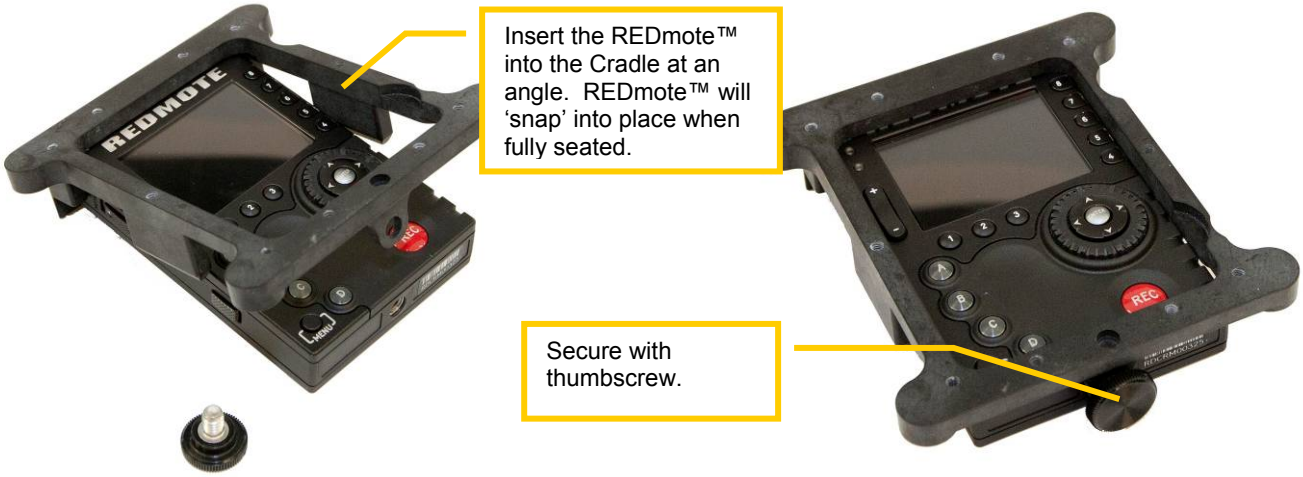
REDMOTE Controller Installation

The RDCC REDmote™ is installed in the rear shell of DEEP EPIC. The following photos show the REDMOTE Controller as separated from the housing. ***This is for illustration purposes only – do not remove the entire REDMOTE Controller from the housing.***

- **Remove REDMOTE Cradle.** The REDMOTE Cradle is secured only by magnets. Pull the cradle away from the REDMOTE Controller to separate.

REDMOTE Controller Parts:
- REDMOTE Controller Panel (shown removed from the housing
- REDMOTE Cradle;
- Mount Screw;
- RDCC REDmote™ (not included)

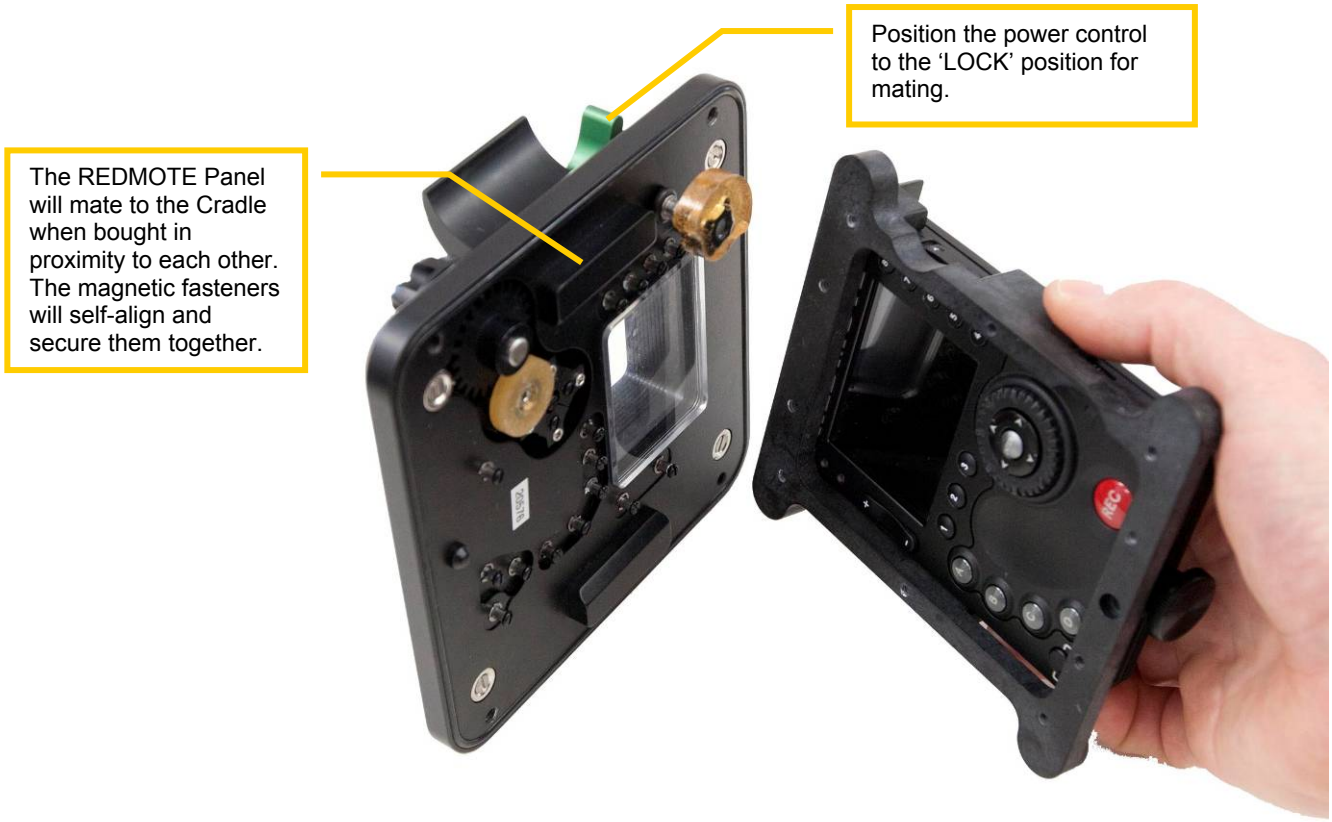
- **Install REDmote™.** Insert the REDmote™ at an angle as shown in the photo. It will fully seat into the cradle. Secure with the small thumbscrew.

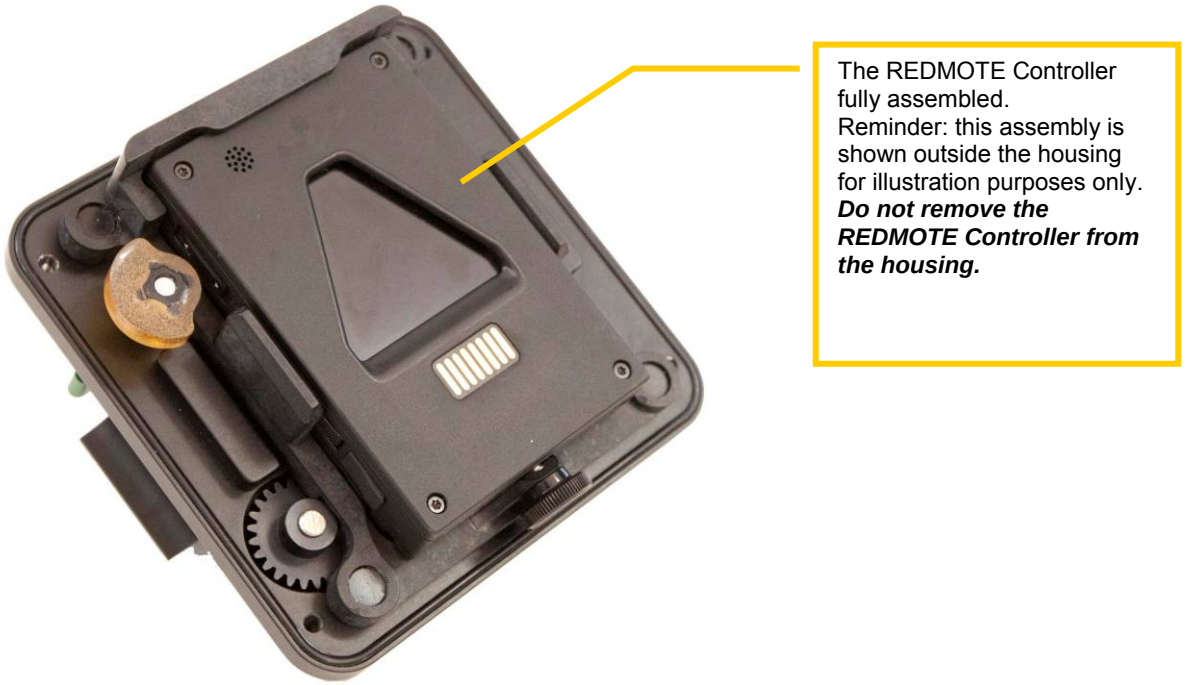


Insert the REDmote™ into the Cradle at an angle. REDmote™ will 'snap' into place when fully seated.

Secure with thumbscrew.

- **Mate REDMOTE Cradle to REDMOTE Controller.** When the REDMOTE Cradle is near the REDMOTE Controller, the magnets will self align and guide the Cradle into position. It will 'snap' when seated. Be sure to position the Power control to the 'LOCK' position to clear the cradle when mating.



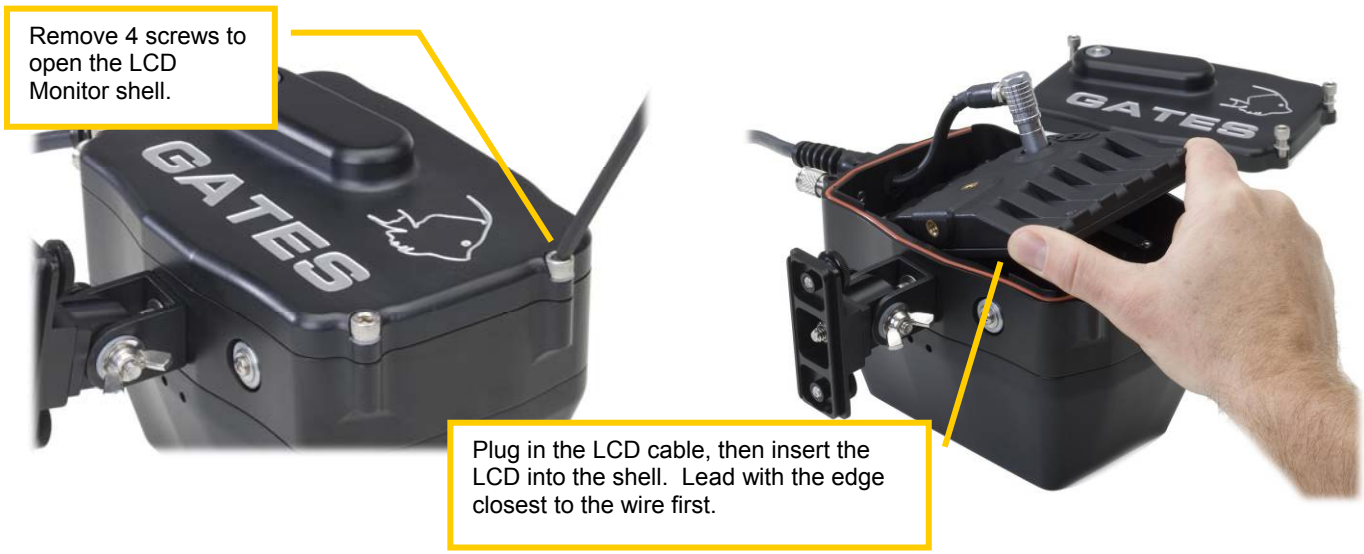


External Monitors

Two monitor options are available for use with DEEP EPIC: the RED 5.6 in and RED PRO 5 in.

RED 5.6 in External Monitor

- **Open the case.** Remove the 4 screws that secure the back to the monitor shell.



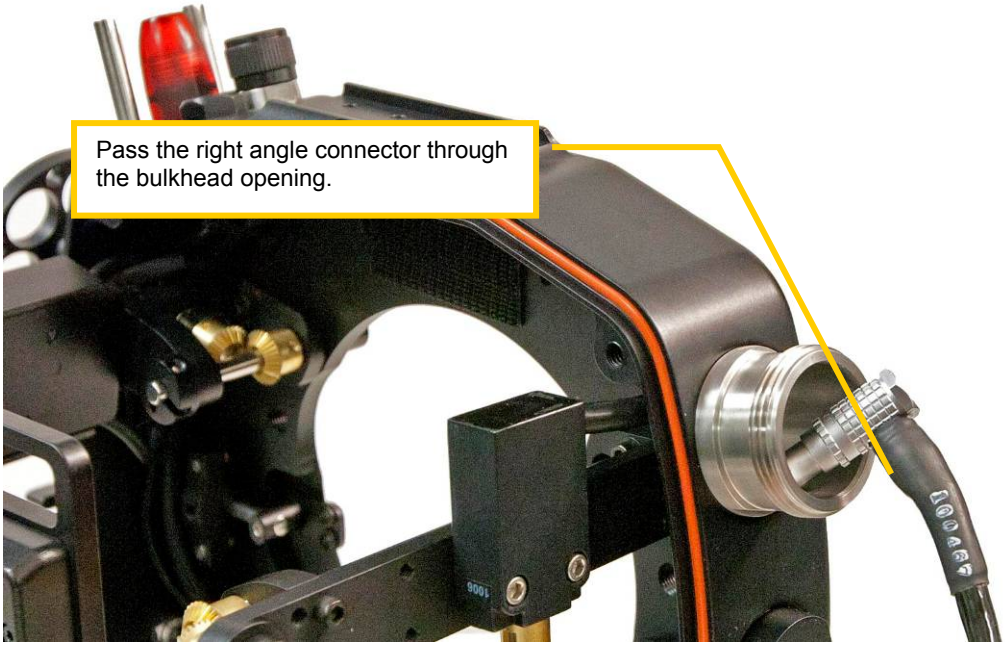
Clean the window / LCD. If necessary, clean the inside of the window and blow out any foreign matter. Clean the LCD screen as well.

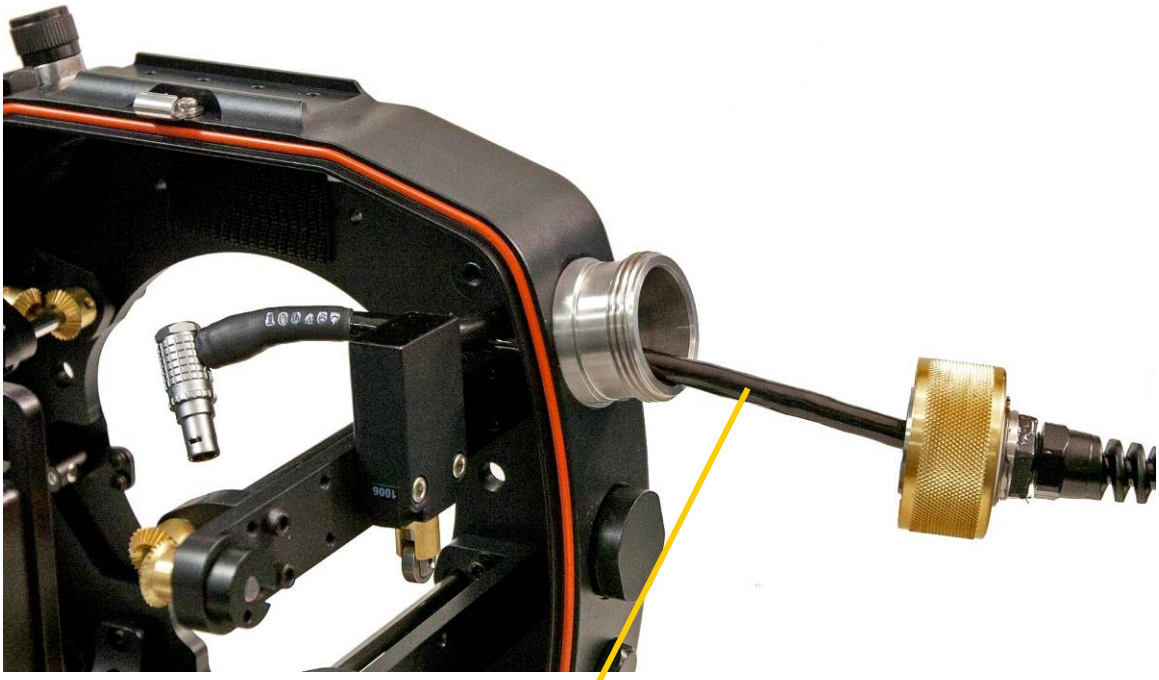
- **Connector.** Plug in the LCD connector. Be sure it is fully seated to the LCD.
- **Install the LCD.** The RED LCD will insert face down (against the window) with the connector facing the rear. Insert the left edge first (closest to the wire). It should rest inside the shell without obstruction.
- **Inspect the o-ring.** As always, inspect the o-ring for foreign matter. Wipe your finger around the silicone o-ring to clear away any dirt, hair, etc. DO NOT LUBRICATE the silicone o-ring.

- **Close the monitor shell.** Mate the rear shell to the housing. Insert and tighten the 4 screws until snug. Tighten until there is no visible gap between shells. A good indicator is when the orange o-ring is no longer visible.

- **Plug in the external monitor to the camera.** The LEMO connection to the camera is accomplished by passing the connector through the bulkhead opening on the right side of the front shell. Pass the connector through then tighten the bulkhead connection. Lastly, plug the connector into the camera LCD port.

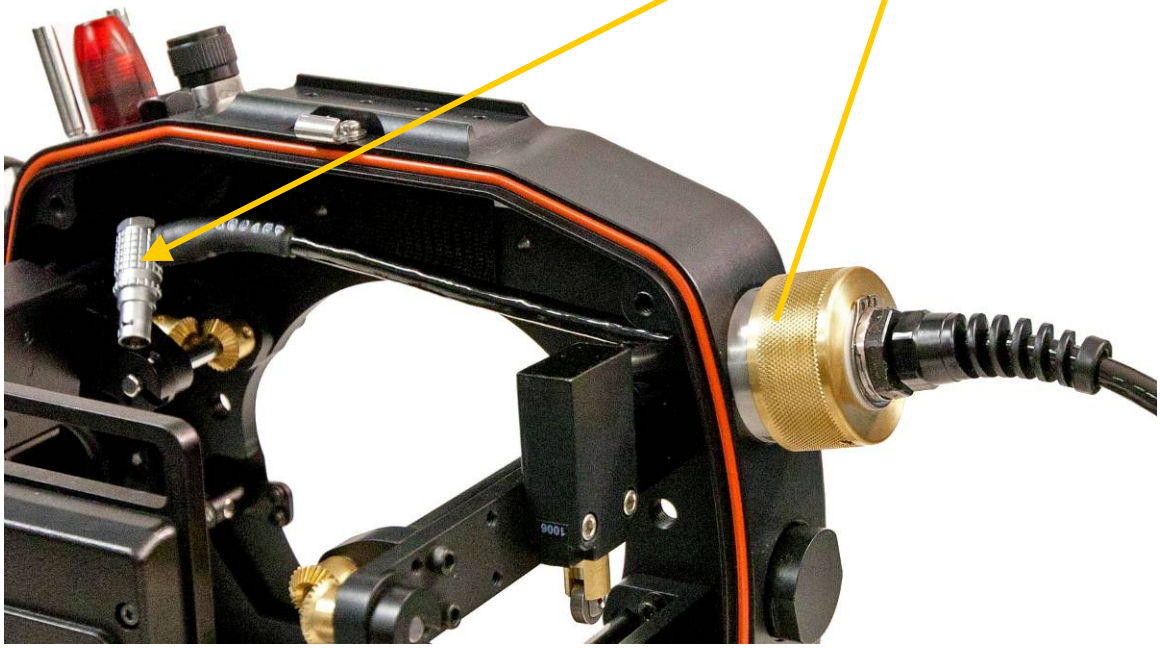
  See the section above “Camera / Lens Installation” for detail on connecting to the EPIC / Scarlet cameras.





Pass the cable through up to the mating collar.

Face the right angle LEMO connector to the rear, then tighten the collar until it stops.



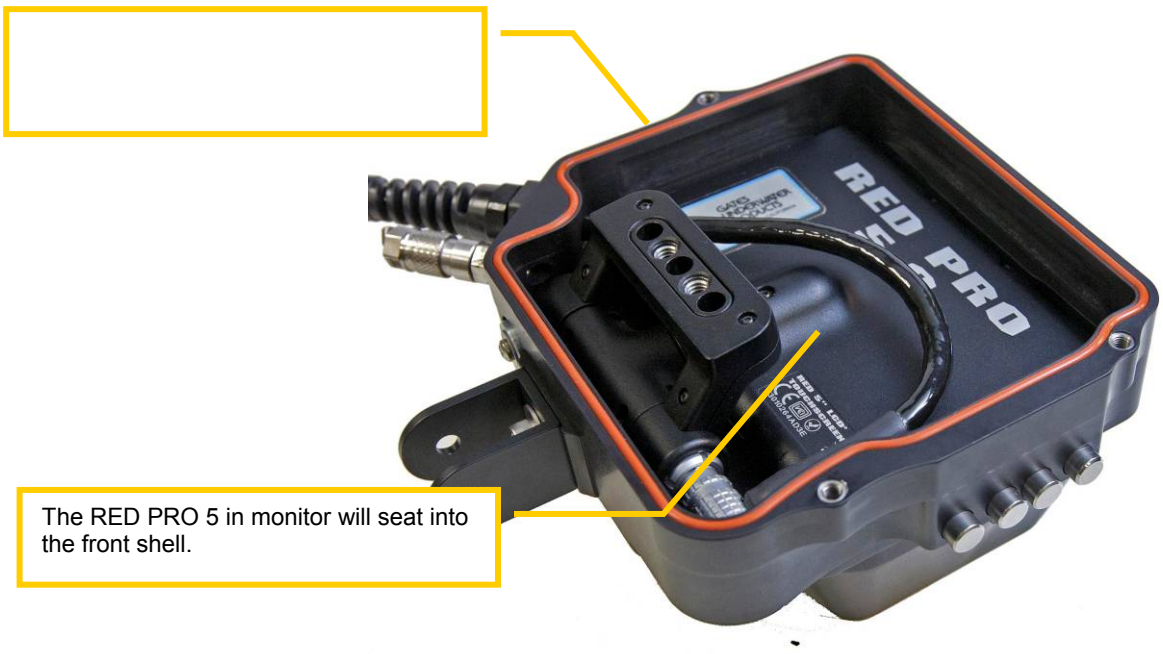
RED PRO 5 in External Monitor

- **Open the case.** Remove the 3 screws that secure the back to the monitor shell.

Clean the window / LCD. If necessary, clean the inside of the window and blow out any foreign matter. Clean the LCD screen as well.

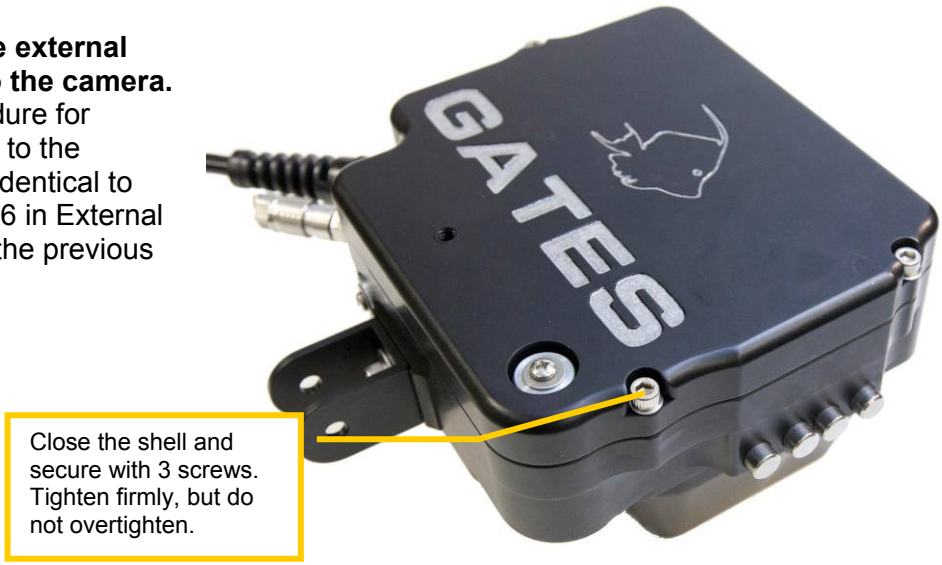
- **Connector.** Plug in the LCD connector. Be sure it is fully seated to the LCD.
- **Install the LCD.** The RED LCD will insert face down (against the window) with the connector facing the rear. Insert the left edge first as shown in photo. It should rest inside the shell without obstruction.

- **Inspect the o-ring.** As always, inspect the o-ring for foreign matter. Wipe your finger around the silicone o-ring to clear away any dirt, hair, etc. DO NOT LUBRICATE the silicone o-ring.



- **Close the monitor shell.** Mate the rear shell to the housing. Insert and tighten the 3 screws until snug. Tighten until there is no visible gap between shells. A good indicator is when the orange o-ring is no longer visible.

- **Plug in the external monitor to the camera.** The procedure for connecting to the camera is identical to the RED 5.6 in External Monitor in the previous section.



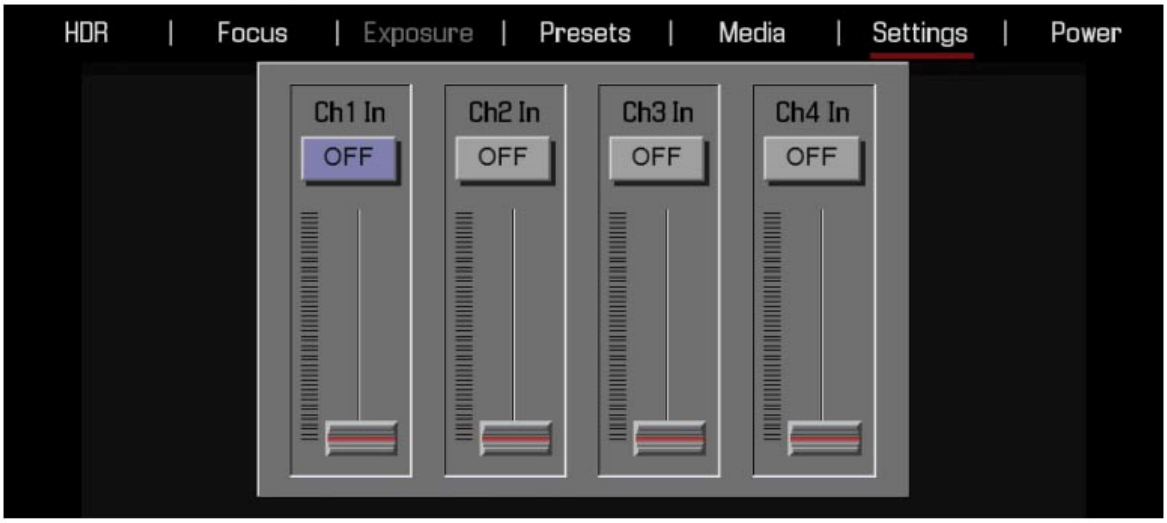
Audio Connections (Optional)

All audio connections are controlled via one screen on the EPIC / Scarlet cameras. The Submsersible Microphone, Hydrophone and Diver Comm will plug into Mic-1 or Mic-2 of the (depending on your configuration). Adjust the input levels as described in the EPIC and Scarlet manuals.

- SETTINGS → AUDIO / VIDEO → AUDIO INPUT

AUDIO INPUT

Allows you to enable / disable and adjust levels for audio inputs (Channel 1-4). Available options for each input are OFF and UNB (Unbalanced). Default is OFF.

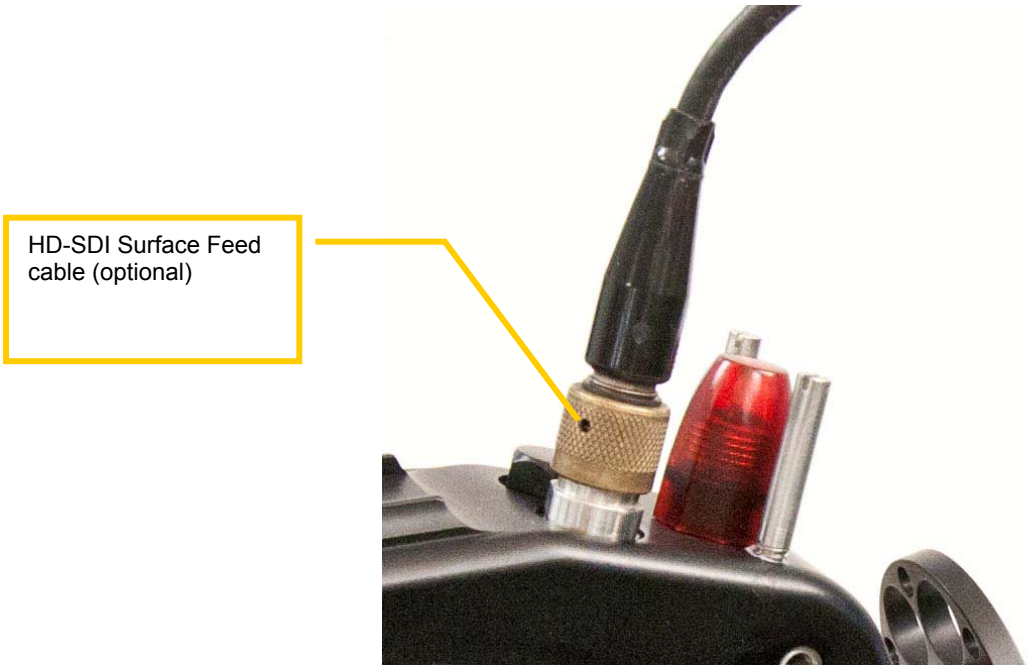


Audio channel level inputs are displayed in the lower section of the UI.

When audio is enabled and an audio jack is plugged in (detected by the camera), the circle next to CH1, CH2 etc… will be Green and the box around the signal will be highlighted.

Video Connections (Optional)

If you have the HD-SDI option installed, no special camera setup is required. You need only connect the HD-SDI surface feed cable to the bulkhead connector as shown in the photo.



Water Alarm (Optional)

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

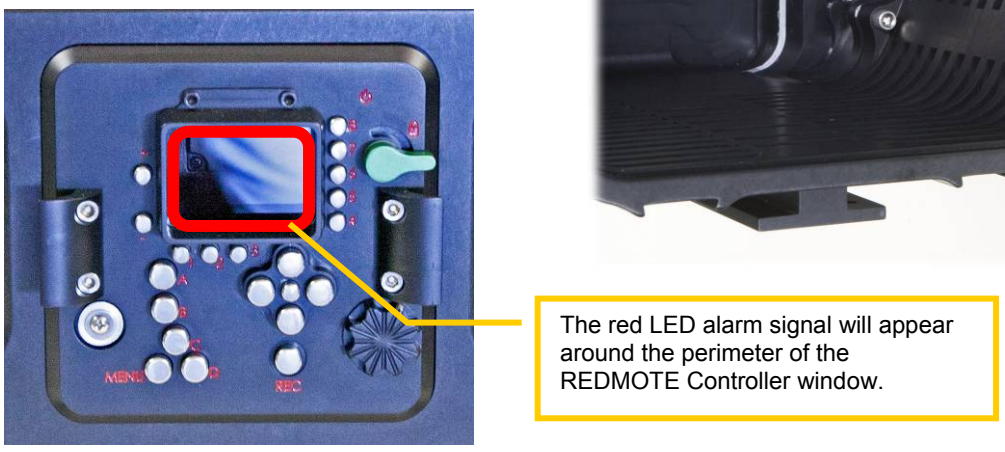
Condition	*LED*	*Siren*
New Battery (Insertion)	Bright Intense blink while siren plays	Ascending tones played 4 times
Water Intrusion	Bright Intense Blink	Grating Warble sound. Alarm will sound for duration of detection.
Low Battery	Low Intensity fast blink	Descending tones played 8 times pausing approx.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

The alarm can tested anytime 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 die 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 Ports. Power on the camera and check the following:

- **Verify LCD** image and operation of External Monitor switches.
- **Verify Zoom Control (servo motor option only)** Rotate the zoom control (if used on your lens of choice) and verify it operates the lens in both directions through the entire range of travel. If not, repeat the steps in the “Lens Gear Drives” section above until smooth operation is achieved.
- **Verify Focus, Iris and Zoom controls on** are smooth and operational.
- **Verify Record/Stdby.** Depress the record switch and verify it activates the camera record function and tally light illuminates. The record switch is momentary: that is, depress it for no longer than 2 seconds to activate. If this step does not operate properly, verify the GPIO port setting as noted in the “Camera Preparation” section and verify the SYNC and CTRL connectors are fully seated.
- **Verify the EPIC / Scarlet Camera Fan** is set to 75% or 100% for both record and standby modes.
- **Verify Audio/Video Feeds** are functional (to the extent possible).
- **Power down.** With all functions verified power down the camera.

- **Controller PCB.** Note the Controller PCB may have two LED lights during operation. This is normal, and not germane to DEEP EPIC operation.

Port and Port Extender

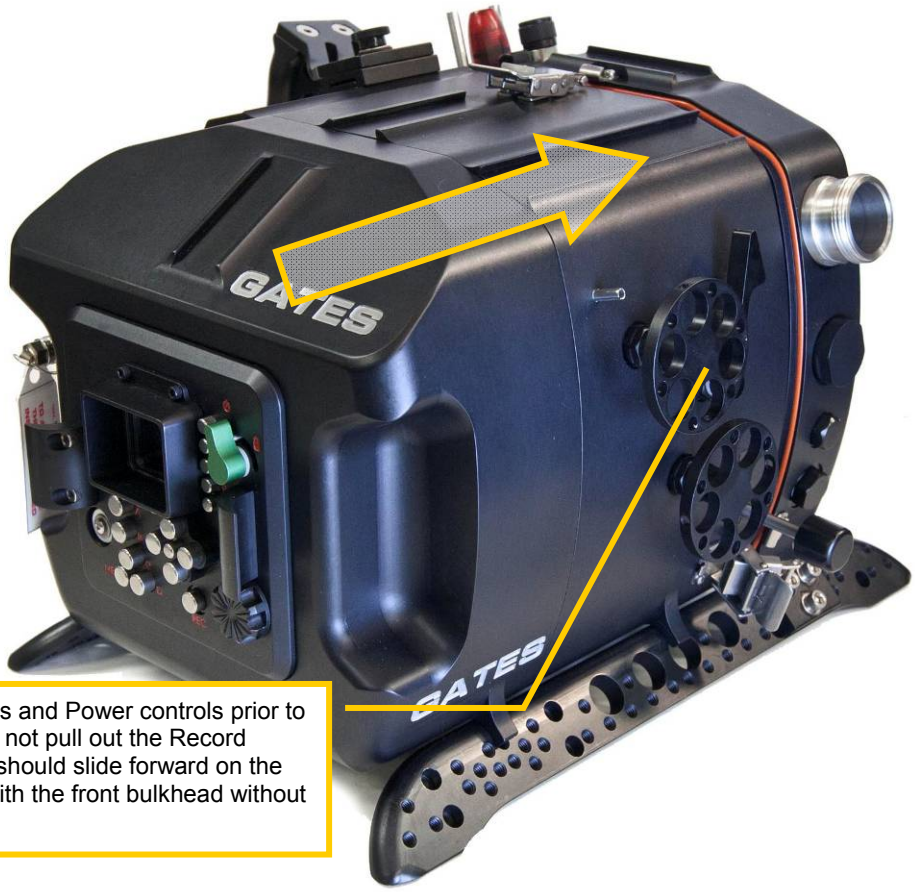
- **Inspection.** Before installing the Port Extender and Port, visually inspect the o-rings for dirt or other foreign matter that may compromise the seal. Do the same with the bulkhead face and Port bore where the o-rings seal. **See the document "Housing Care and Maintenance Guide" for more details.**
- **Lubrication.** Lubricate the Port o-ring with silicone grease. Also liberally lubricate the Port bore. This will greatly aid installation of the Port.

► CAUTION**:** Do Not lubricate the orange Port Extender o-ring. It is silicone material and lubricant may cause damage.

- **Install the Port Extender.** Position the Port Extender over the entire lens / LGD's and secure to the front bulkhead with 4 screws. Tighten the 4 screws firmly.
- **Install the Port Mask.** If you have need of a port mask to control reflections (see subsequent section on this topic), install it now. It should slip over the front of the lens with just enough tension to remain in place.
- **Install the Port.** The Port will mate with the Extender when rotated 90 degrees from its normal position. Insert the Port into the port opening, ensuring it is fully seated prior to rotation. Once seated, rotate either direction until the shade is aligned top and bottom.
- **Verify seals.** Inspect the Port Extender and Port are fully seated with no gaps.

Housing Closure

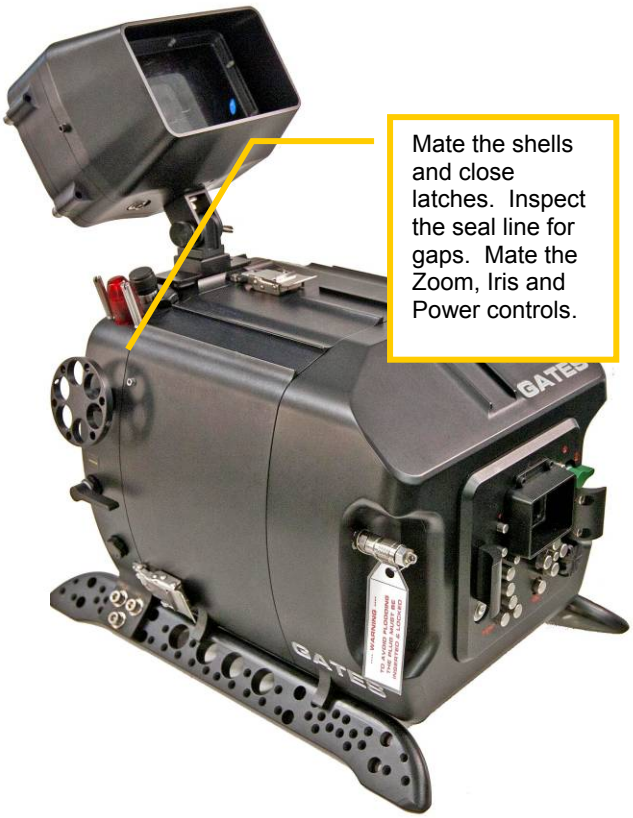
- **General.** The shell slides from the rear on the foot rails, over the camera and mates with the front bulkhead. If there is obstruction at any time during this process – stop! – remove the shell and locate the obstruction.
- **Mount Trim Weights.** Mount trim weights to the interior and exterior of the shell. Refer to the section below 'Buoyancy Adjustment' for more details.
- **Retract controls.** It is necessary to retract the Zoom, Iris and Power controls prior to mating. Do no retract the Rec/Stdby Control.
- **Mate the shell.** Position the shell at the rear. Note the 'toe' on either side toward the front of the shell. Rest the toe on the foot rails to guide the shell into position. Gently move the shell forward until it mates with the front bulkhead. At the rear of the shell are two more 'feet' that will ride on the foot rails as well.



Pull out the Zoom, Iris and Power controls prior to mating the shell. (Do not pull out the Record control). The shell should slide forward on the foot rails and mate with the front bulkhead without obstructions.

- **Latches.** Once properly mated, secure the 3 latches. Visually inspect there are no gaps around the perimeter.
- **Mate Controls.** At this time all controls can be pushed in. The Zoom and Iris control must be rotated until it couples with the gear mechanism on the inside. When properly mated, there is no gap between the Zoom / Iris control knobs and the gland. Refer to photo.

  If you do not have the LGD's installed at this point, it will be necessary to hold the shaft coupler at the front bulkhead and keep it from spinning while you mate the controls.
- **Mount the monitor.** Secure the monitor to the top or rear of the main shell, as desired and tighten the screws to secure.



Seal Check

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

- CAUTION. DO NOT draw more than 6 in Hg vacuum on DEEP EPIC. More vacuum can inhibit the transfer of heat away from the housing.

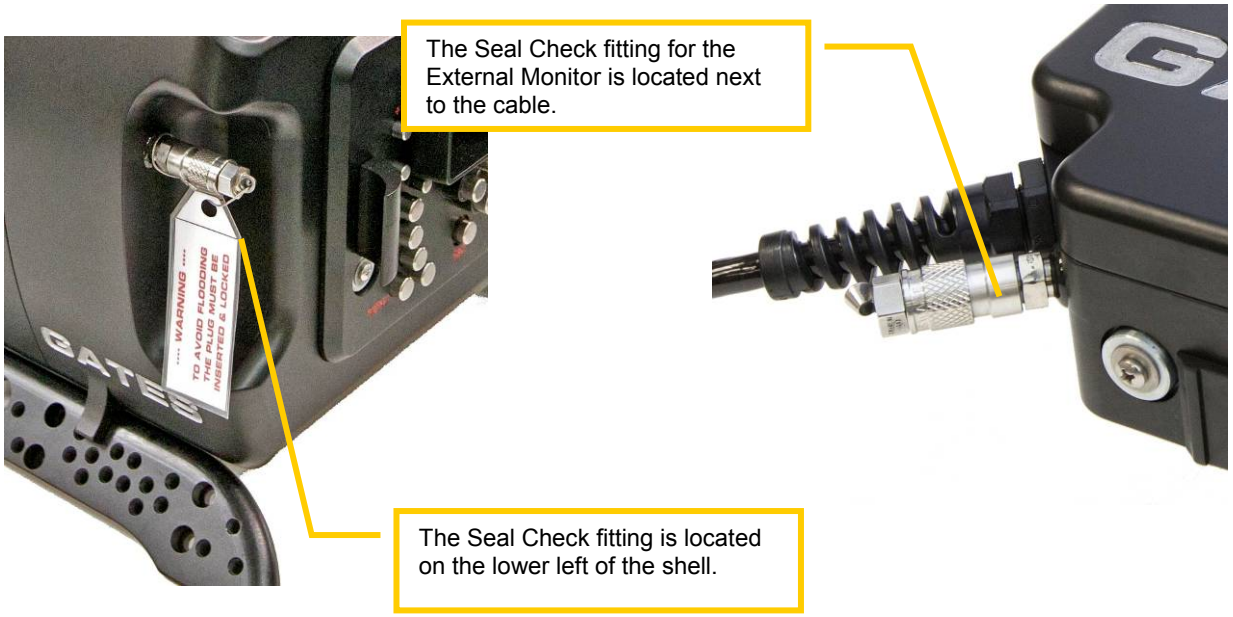
- **NOTE.** Pulling a vacuum on DEEP EPIC will take several minutes or more. Further, the vacuum indication will take several minutes to 'settle' due to the size of DEEP EPIC.

- **Seal Check both Housing and RED PRO Monitor.** The RED PRO monitor also has a Seal Check fitting. After drawing a vacuum on the housing, note the vacuum level on the gage.

  Next, move the Seal Check hose to the RED PRO monitor. Draw a vacuum close (within 1 in Hg) to that of the main housing. Remove and plug the Seal Check fitting on the RED PRO monitor.

  Move the Seal Check hose back to the main DEEP EPIC housing and start the monitoring process.

  Why do this? The LCD cable, while waterblocked, is not air-blocked. After drawing vacuum on the monitor, air passes from there to the main shell until the vacuum is equalized between them. By drawing a vacuum on the monitor, very little air must pass between the shells, so the 'settling' process and determination of housing integrity takes far less time.



- **NOTE.** The nature of the ‘pass through’ monitor cable means a vacuum is drawn on the monitor shell at the same time as the DEEP EPIC housing. After verifying Seal Check integrity on DEEP EPIC, the external monitor is now under vacuum and cannot be opened independently.
- **NOTE.** Inspect the monitor cable regularly. While it is a durable marine grade cable, care must be exercised to avoid cuts or abrasions that could compromise the cable, and thus the housing seal.

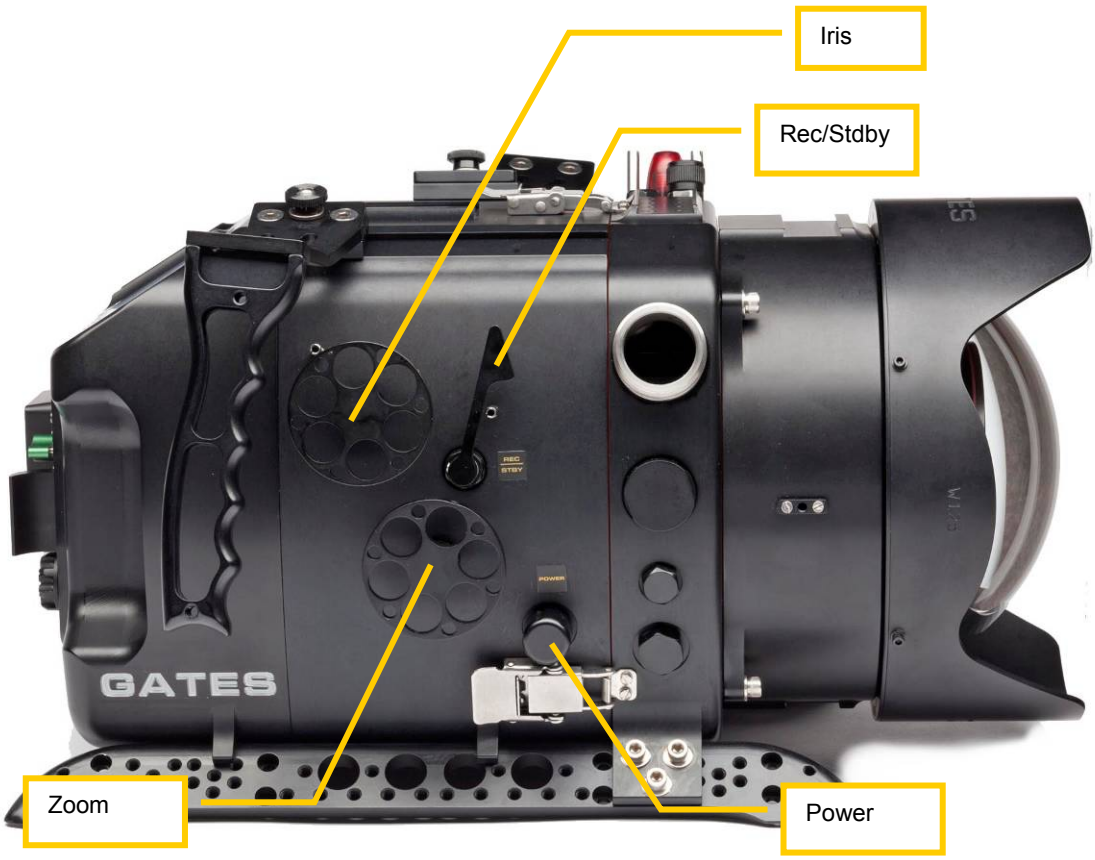
Final Checks

- **Visual Inspection.** Look closely at all seal mates – Port, Port Extender 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.

4: DEEP EPIC Operation

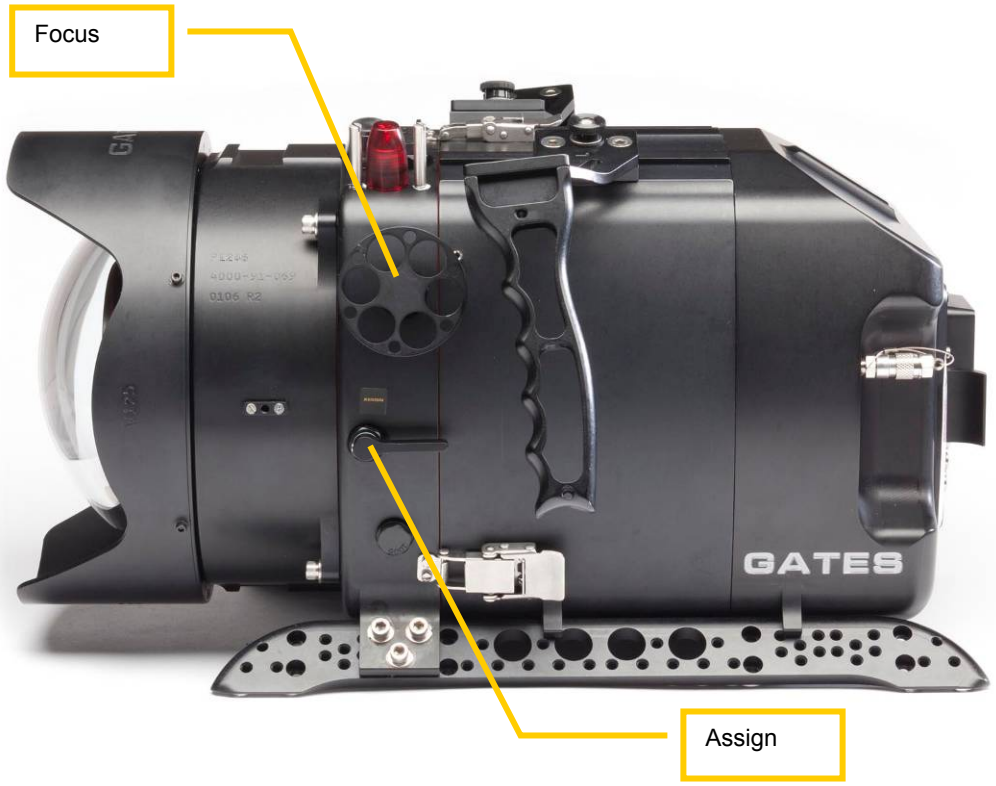
Right Side Controls

- **Zoom – Mechanical (optional).** If you have a mechanical zoom control installed, simply rotate the control either direction.
- **Zoom – Servo (optional).** The Servo Zoom Control operates by rotation CW for zooming in one direction, and CCW for zooming in the opposite direction.
- **Record / Standby.** The Rec/Stdby control is black and operates with a momentary counterclockwise rotation.
- **Power.** Push in the power control fully to activate the power button on the camera. This control may also be used for Rec/Stop if necessary.
- **Iris.** The Iris Control operates by rotation in either direction.



Left Side Controls

- **Focus.** The Focus control operates with a CW or CCW motion to adjust lens focus.
- **Assign Control.** A movement up or down of the Assign control trigger will activate the camera assignable buttons 1 or 2.



Rear Controls

- **REDMOTE Controller.** The REDMOTE Controller operates all functions on the RDCC REDmote™. The pushbuttons operate the corresponding buttons on the face of the REDmote™.

  The Power control is green and rotates 90 degrees. Move the control from the 'Lock' position to the 'On' position momentarily to activate power. Return the control to the 'Lock' position.

  Below the Power control is the Dial control. This rotates the ring on the outside of the navigation buttons (left / right / up / down). Rotate the control either direction.

Monitor Controls

The RED 5.6 in External Monitor and the RED PRO 5 in External Monitor both have 4 slide switches that activate the corresponding buttons on the top of the LCD. To activate the buttons on the RED 5.6 in External Monitor, slide the switches toward the shade, then release. The switch will retract by itself.

On the RED PRO 5 in Monitor, direct depression of the buttons will activate the corresponding buttons on the side of the RED PRO monitor.

Buoyancy Adjustment

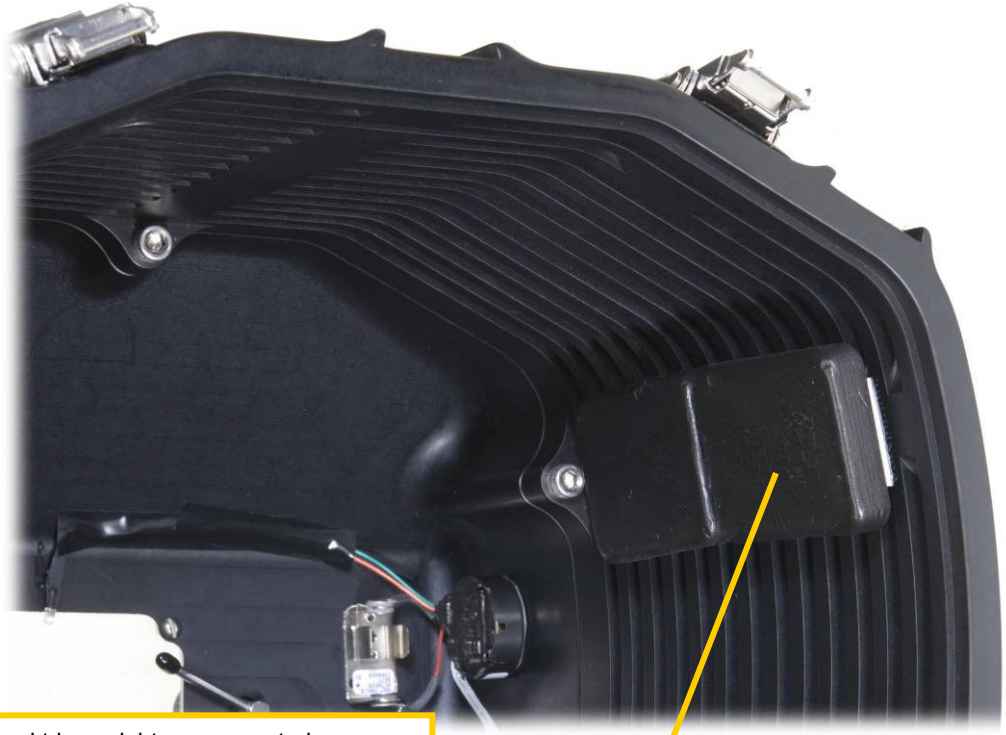
DEEP EPIC features adjustable buoyancy and trim. 4, 8 11 and 16 oz trim weights can be secured to the housing – both inside and out – to adjust the housing precisely to your liking.

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

- **Internal – shell walls.** The interior sides of the shell have a lock strip for securing weights. You can secure up to four 8oz weight to each side (for a total of 8).

  The trim weights will 'snap' and lock onto the strips on the inside wall. To remove, pull gently at one edge until it releases.

- CAUTION**.** To avoid internal damage DO NOT travel or transport DEEP EPIC with trim weights installed.

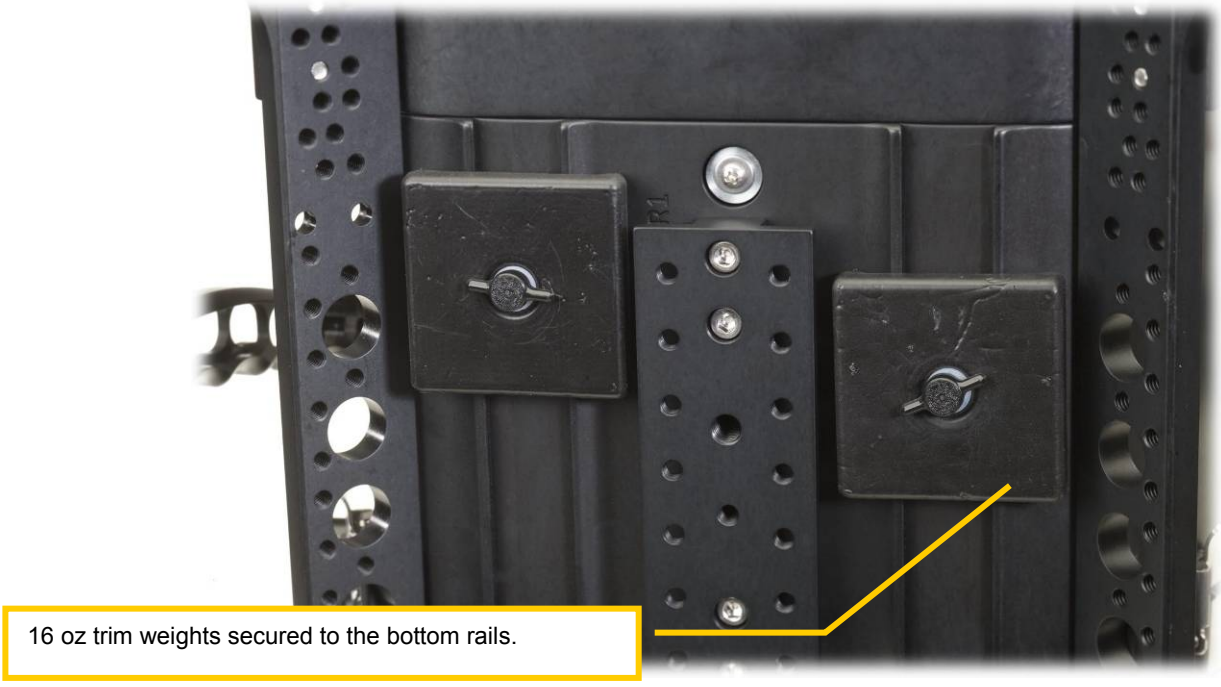


Internal trim weights are mounted on either side of the shell.

Note: DEEP RED shown.

- **Internal – Camera Mount.** Trim weights can be installed on the battery plate as shown in the photo.

- **Shell Base.** The base of the main shell has two accessory rails for securing 16 oz weights. Two of these can be secured and adjusted forward and aft for trim. 4 and 8 oz weights can also be secured here as needed.



- **Top accessory rails.** The top of the shell has three rails (used for handles and monitor) that can accommodate 4 and 8oz weights.

- **Port Extender.** The top and sides of the Port Extenders can also accept 4 and 8oz weights.

Adjustable Handles

DEEP EPIC includes adjustable handle grips. They slide forward and back on the top rails for positioning exactly as you desire.

Loosen the thumbscrew to slide back and forth, then tighten to secure. If necessary you can use the 3/16 ball drive to tighten more firmly.

Port Options

At this publication a Dome and Flat Port options are available for DEEP EPIC: When choosing a Port consider the following tradeoffs and limitations.

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

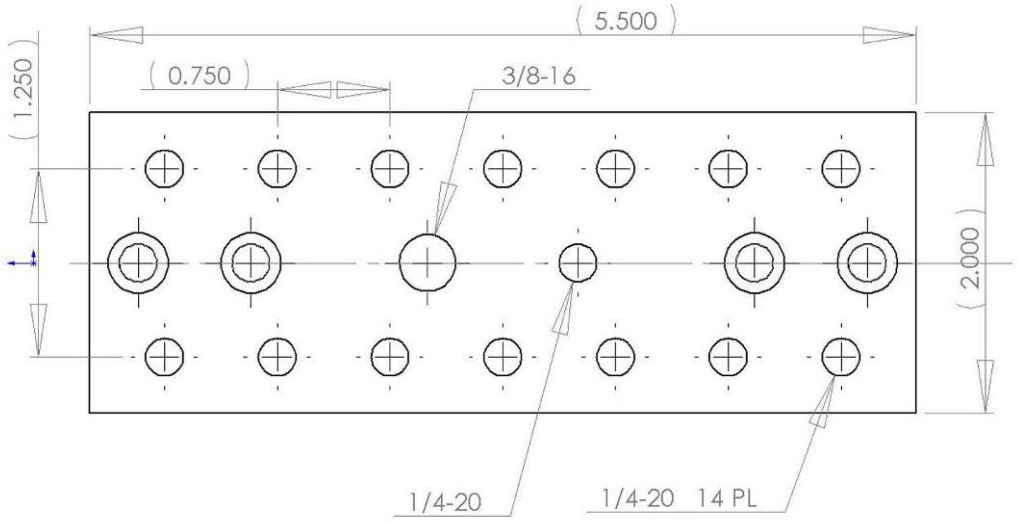
- **Optical material:** Optical grade acrylic.
- **Purpose:** Medium to macro imaging.
- **Advantages:**
  - **Zoom through**. Flat Ports retains the zoom capability of a lens.
  - **Macro.** Flat Ports are excellent for macro shots and the use of close up diopters to capture small subjects.
- **Disadvantages:**
  - **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.

Tripod Mount (Optional)

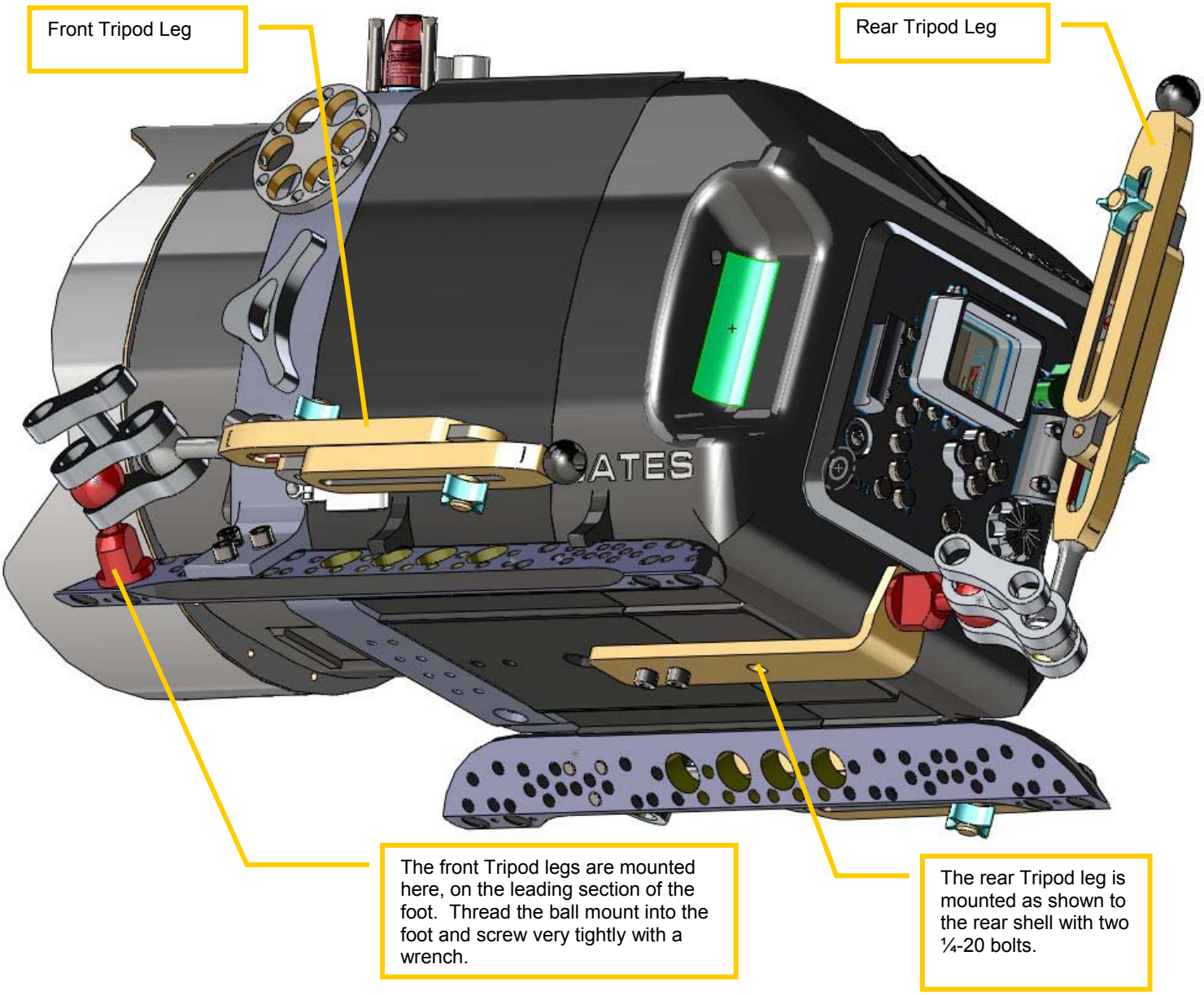
An optional Tripod Mount (for use with third party tripods) can be secured the base of the shell. The Tripod Mount has additional ¼-20 threaded holes for mounting other items as you need.



Tripod Legs (Optional)

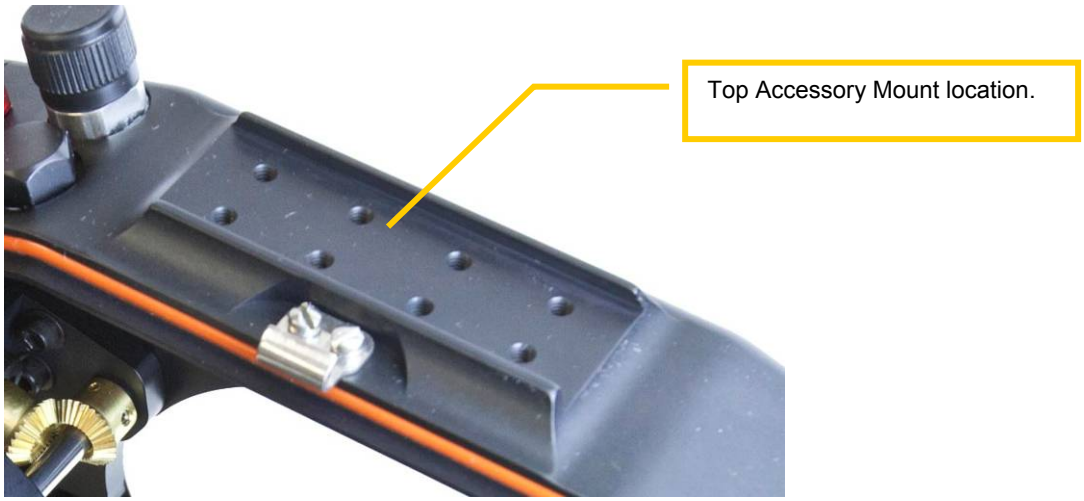
Tripod Legs are optionally available to mount directly to the DEEP EPIC housing.

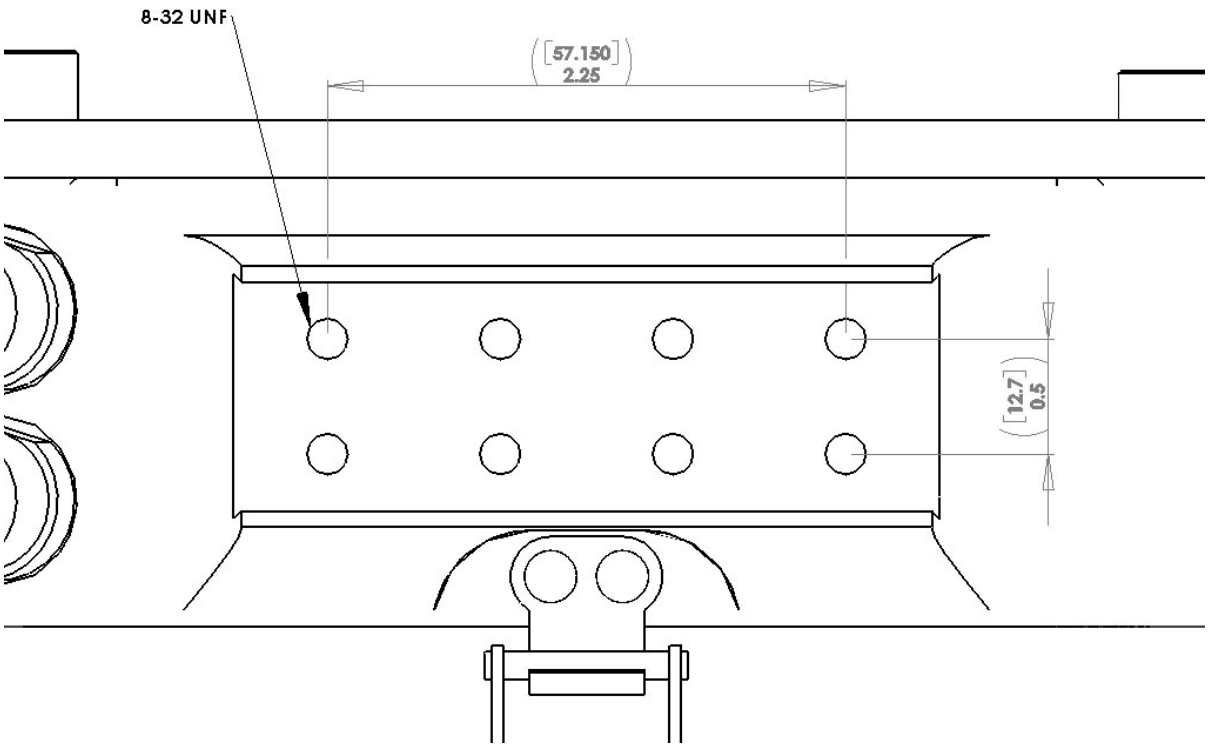
- **Rear Tripod Leg** is installed as shown in the photo with two ¼-20 bolts.
- **Front Tripod Leg** is secured to the front foot as shown. First install the ball mount and secure very tightly with a wrench to prevent accidental unthreading. Then attach the Tripod Leg and clamp.



Accessory Mount Locations

DEEP EPIC has provisions for attaching accessories or mounting the housing to a crane or jib. Both locations are on the Front Shell, and both have the same patter of 8-32 UNF holes.





Lighting Systems

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

Controlling Reflections

You may find two sources of reflections from within the port area of DEEP EPIC: the LCD LEMO connector, and the Red Digital Cinema Logo on the front face of the EPIC camera.

To control reflections Gates recommends installing a mask over the lens, as shown in the photo. Gates has masks available for certain commonly used lenses, and also mask material which can be used to fashion masks for other lenses as well. Contact Gates for details.

Port Masks will help control reflections.

Note: DEEP RED shown.

Travel / Transport

DEEP EPIC requires several preparations for travel.

- **No Camera.** DO NOT transport your EPIC™ or Scarlet™ camera inside the housing. Severe damage may result.
- **No Trim Weights.** DO NOT transport DEEP EPIC with trim weights installed. Severe damage may result.
- **Secure Camera Mount.** The Camera Mount must be well secured. Use the tools provided to tighten three thumbscrews firmly.
- **Secure thumbscrews.** Place caps on each thumbscrew to eliminate the possibility of vibrating free during travel.
- **Bundle connectors.** Bundle all connectors together and secure in the provided mesh back.
- **Packing.** Ensure the complete system is packed well in transport cases.

5: DEEP EPIC Maintenance

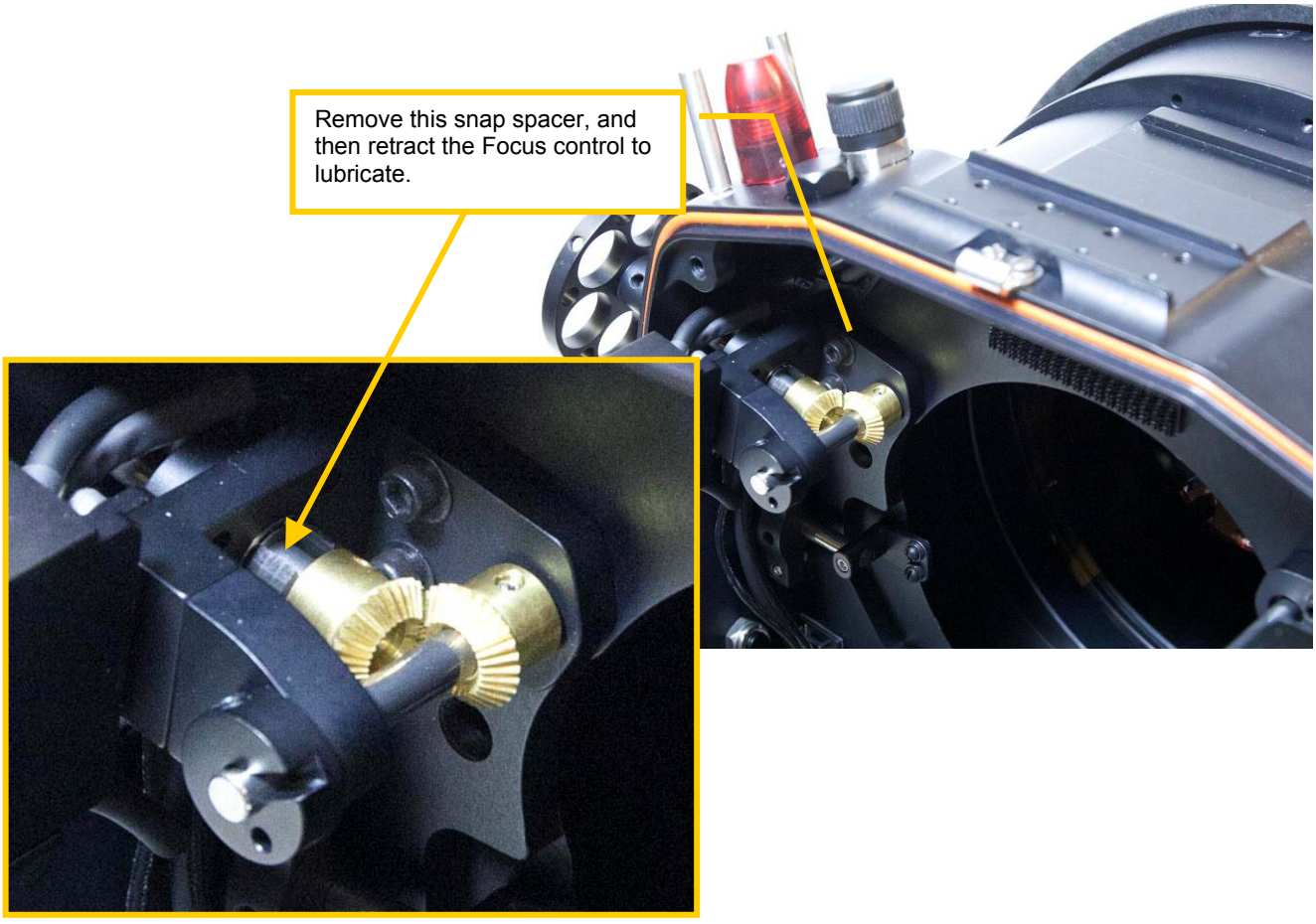
Housing Care and Maintenance

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 DEEP EPIC.

- **Focus control.** To lubricate the Focus control shaft 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. One is located between the mating halves of the housing (the large orange one), one is located on the Port, and the third on the Port Extender.

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!**

6: **Customer Support**

Should you have any questions about DEEP EPIC 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