



EM503 Underwater Monitor Housing

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

GatesHousings.com

Gates Underwater Products, Inc.

13685 Stowe Drive
Poway, California 92064 USA

Phone: 858.391.0052
Fax: 858.391.0053
Web: GatesHousings.com

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1: Introducing the EM503

Congratulations on owning a new Gates product: the EM503 Underwater Monitor Housing (EM503) for the SmallHD 503 Ultrabright LCD (503 UB): You've selected an underwater imaging tool that will provide years of value and reliable service.

Please read through this entire guide to learn about the EM503 so you can get the most out of this imaging tool. In this section, we'll introduce you to the features of the monitor housing so you can get started.

Features

The EM503 has several key features:

- ✓ **'Bulletproof' construction.** Gates legendary reliability is inherent in the EM503: machined aluminum shell, stainless hardware and reliable mechanical controls.
- ✓ **Designed specifically for the SmallHD 503 Ultrabright LCD** to create the smallest, most compact and low-profile Underwater Monitor housing.
- ✓ **Bright 2200 nit LCD** with access to assignable buttons.

Warranty Disclaimer

The EM503 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 monitor housing. Because we can only provide you with the information necessary to do so, Gates does not warrant the contents of your housing (e.g. electronics) under any circumstance.

We warrant the EM503 as an image acquisition tool for a period of 2 years.

If you have any questions about the setup, use and care of the EM503, contact Gates directly. Details are in section 4.

Unpacking the EM503

After you remove the monitor housing 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

- ✓ **EM503 External Monitor Housing (EM503)**
- ✓ **EM503 Shade**
- ✓ **Dovetail Swivel Mount.** May be attached to EM503
- ✓ **Spare Kit / Tool Kit**
- ✓ **O-Ring Removal Tool**
- ✓ **Trim Float**

Optional Parts

- ✓ **Shade Extension(s)** (*Additional Shade Extensions are stackable and available for purchase.*)
- ✓ **Battery Shell Extension** for powering the LCD directly. If using this option, your LCD will require the SmallHD Dual L-Series Battery Plate #PWR-ADP-UB-SONY-BATTPLATE + 2x Sony L-series batteries up to NP-F970 or equivalent size (Max 2.25 x 2.88 x 1.5" / 57 x 73 x 38 mm).

Cautions

- ▶ **USER RESPONSIBILITY.** This Setup, Use and Care guide contains important detailed procedures for setup and use of the EM503. 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 monitor housing and may void your warranty.

Contact Gates if you have questions regarding this manual or using the EM503.

2: EM503 Setup

The EM503 requires complete and thorough setup prior to use.

Preparing the SmallHD 503 Ultrabright LCD

- ✓ **Auto boot.** Setup the 503UB LCD to boot when power is present at the rear connector.

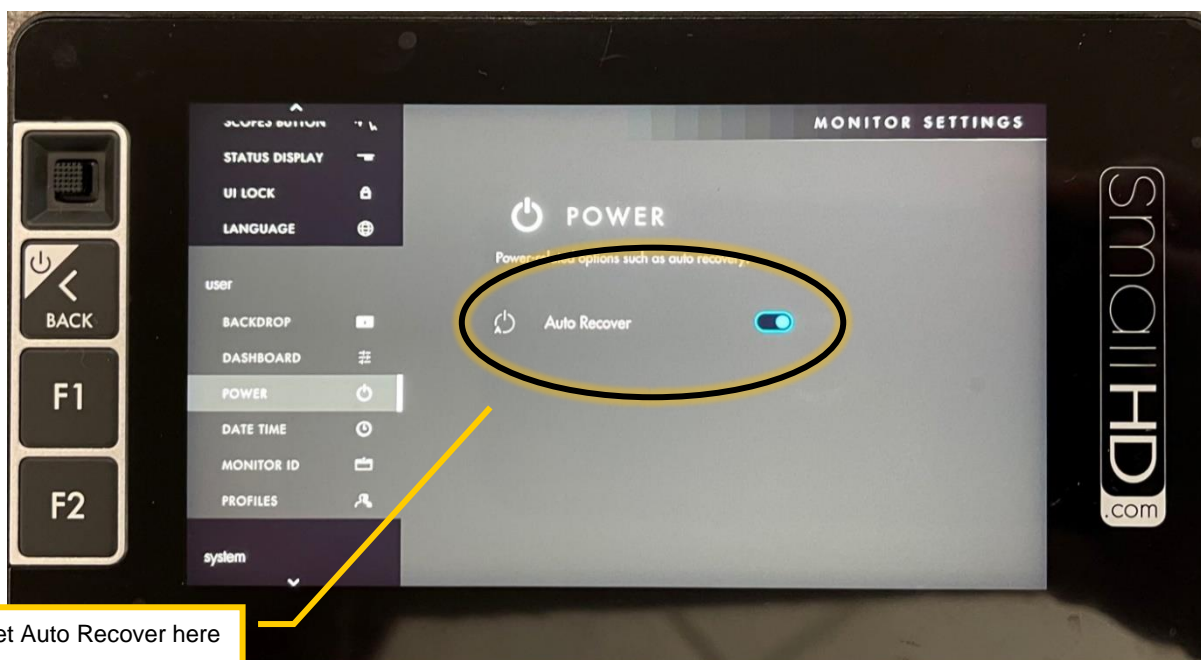
MENU → POWER → AUTO RECOVER → ON

- ✓ **Pages.** Refer to the 503UB User Guide for details on the 'Pages' feature. The LCD will boot into a default page that must be set, as follows:

* With the LCD on, navigate to the 'page' you wish to use in DEEP KOMODO.

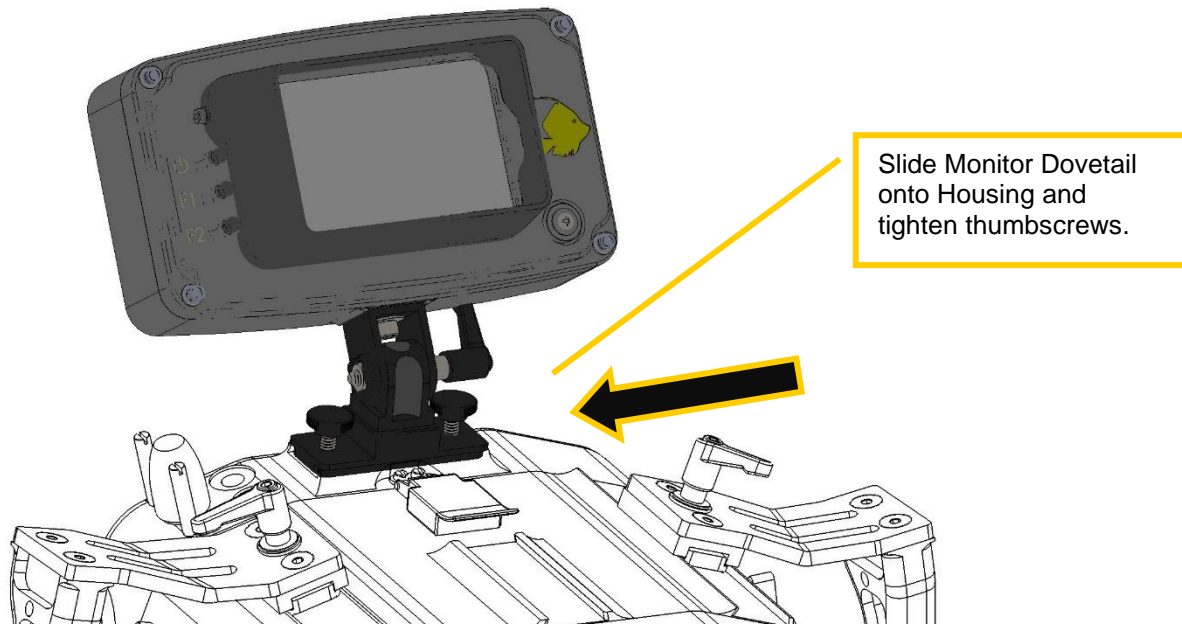
* Turn off the LCD via the POWER button. Then power back on. This 'sets' this page as default for any auto boot.

- ✓ **Install Batteries.** *Only* if using the extended battery shell option, install the Dual Battery plate onto the LCD and 2x Sony L-Series batteries up to NP-F970 or equivalent size (Max 2.25 x 2.88 x 1.5" / 57 x 73 x 38 mm).



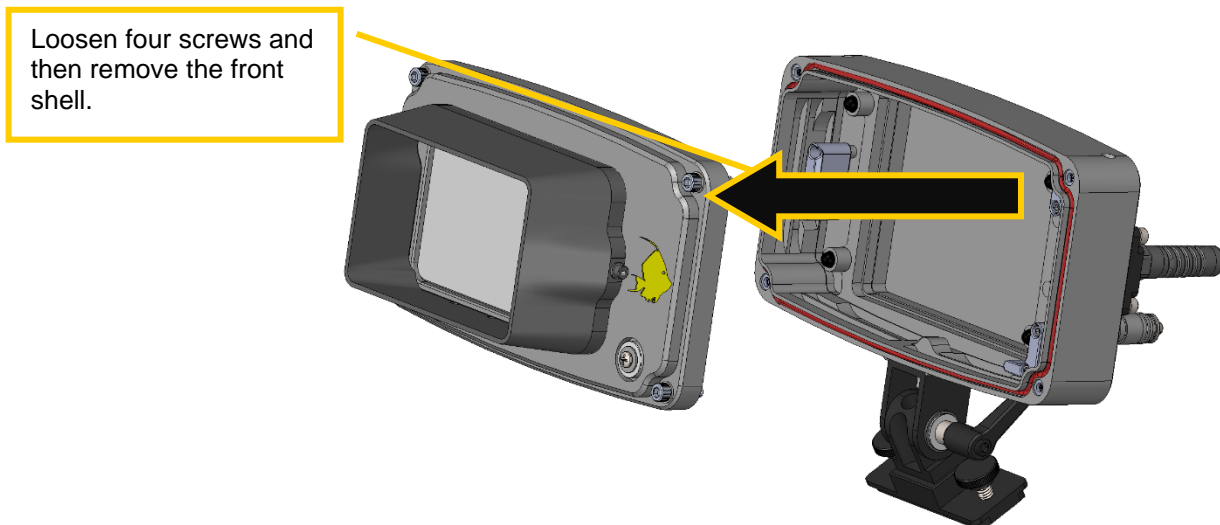
Secure EM503 to Camera Housing

- ✓ **EM503 Setup is best conducted** with it secured to a camera housing.
- ✓ **Refer to the image** for a typical mounting of the EM503 to a housing.



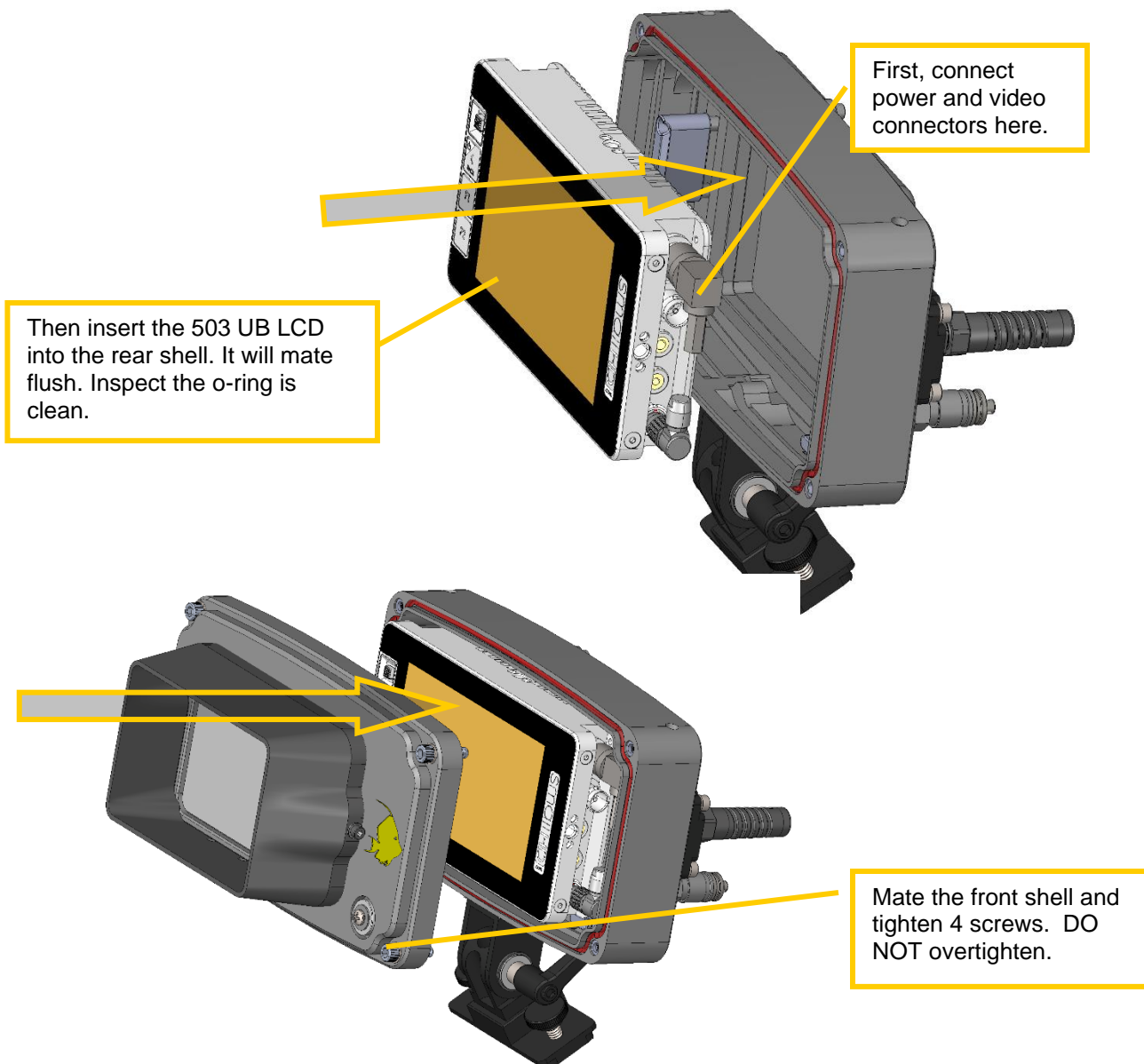
Open the Housing Shell

- ✓ **Loosen four screws** using the 5/32 ball driver. **These screws are captive** and will not remove. Refer to the image below.
- ✓ **Remove the front shell** to expose the LCD and power connector in the rear shell.



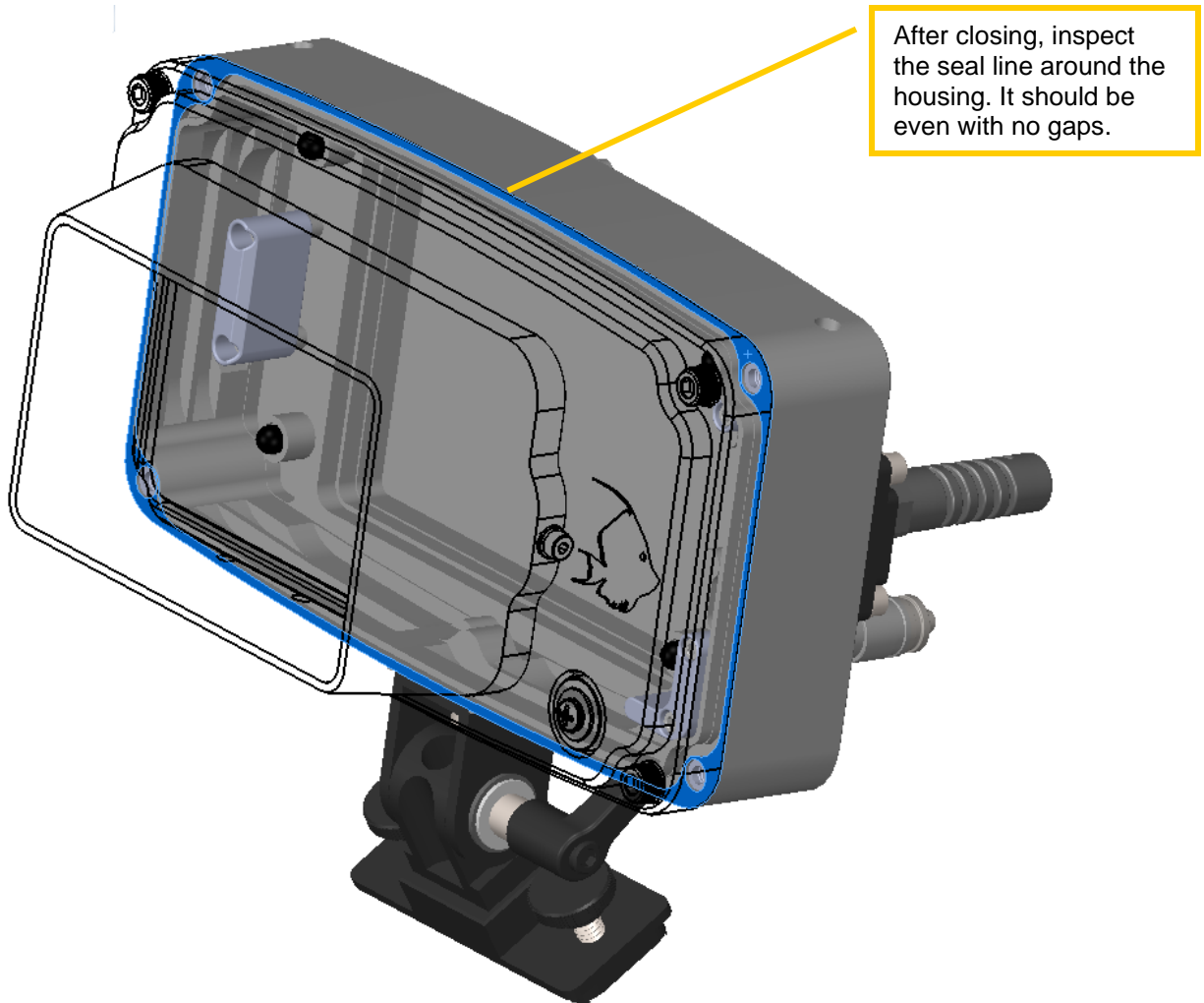
Insert 503 UB LCD into to Rear Shell

- ✓ **First, connect video and power connectors** as shown. Then seat into the rear shell.
- ✓ **Make a visual check to verify the orange o-ring** is clean and free of any foreign matter.
- ✓ **Install the front cover.**
- ✓ **Tighten fours screws** as shown in the image below. Use a cross-pattern, and **DO NOT OVERTIGHTEN.**



Visual Check

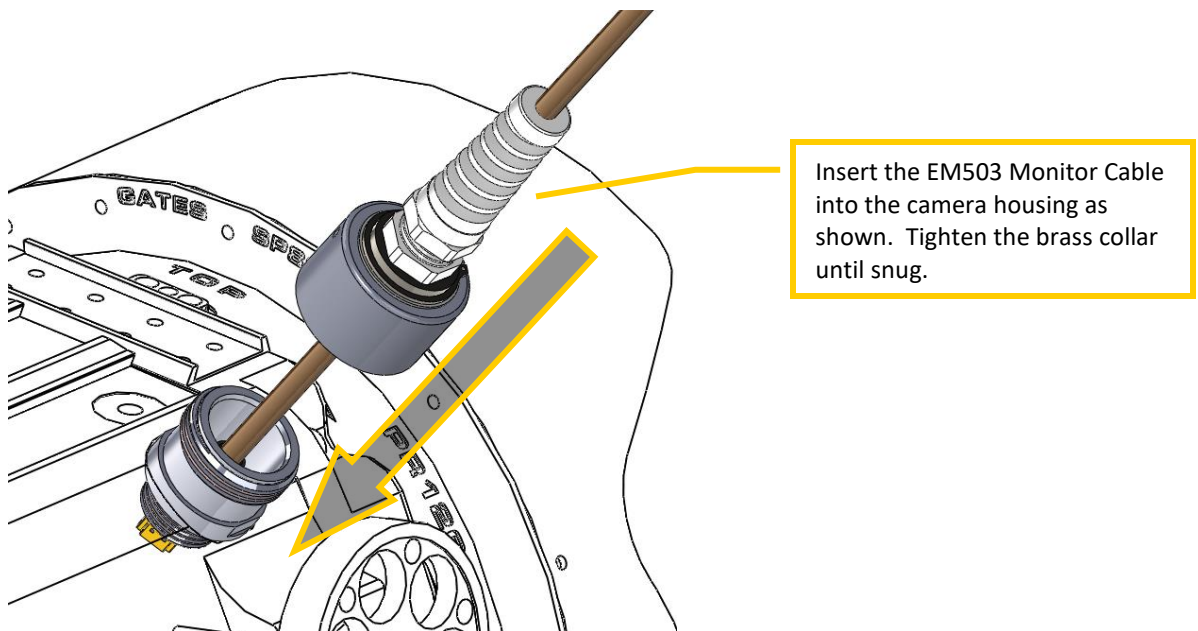
- ✓ **Inspect the gap where front and rear shells meet.** Ensure it is even all around. Refer to the image below, shown in highlight.



Connect to Camera Housing

- ✓ **Insert the monitor cable** into the housing as shown below. Route the cable inside the main housing to connect with the camera.

Connect BNC connector to the camera SDI output, and power to an appropriate D-Tap output. Refer to your Gates housings SU&C Guide for more details on specific camera connections.



EM503 Controls

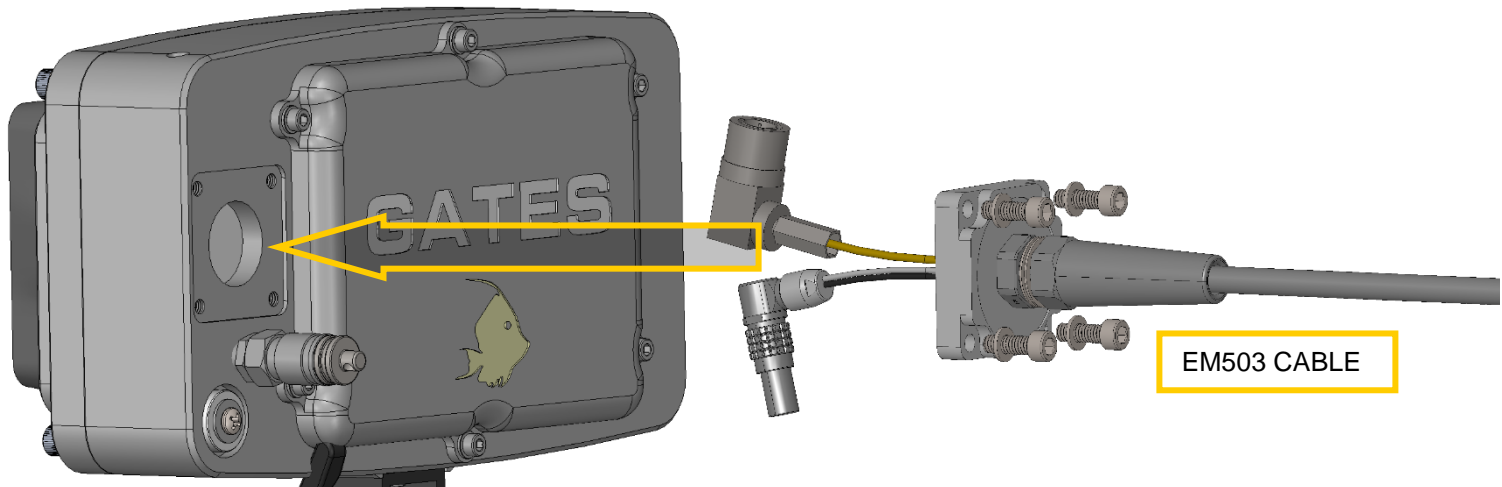
- ✓ **Power.** The power on / off button is located on the front face, as noted below.
- ✓ **F1 / F2.** Also on the front face are F1 / F2 assignable controls. Refer to [SmallHD 503 Ultrabright LCD User Manual](#) for details.



EM503 Cable Replacement

- ✓ Replacing the EM503 cables is straightforward. Referring to the image below, use a 5/32 hex tool to remove 4 screws securing the Bulkhead Adapter to the housing shell. Carefully remove the cable with bulkhead adapter and replace with new.

Tighten the screws until snug. Do not overtighten.



3: EM503 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.

O-Ring Care and Maintenance

Your Gates EM503 has 1 serviceable o-ring. It is located on the main housing the front shell mates. Its color is orange.

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!

4: Customer Support

Should you have any questions about the EM503 and its operation, please contact Gates at the numbers below.

Email: Customer.svc@GatesHousings.com

Web: <https://www.gateshousings.com/contacts/>

Phone: 858.391.0052