

Marine Hand Unit Manual

V 1.1



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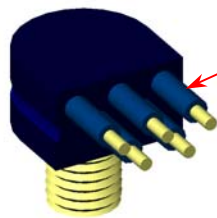
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Important Notice

Seacon Connector Maintenance

The exterior rubber surfaces of the Seacon Connectors must be coated with a thin film of silicone grease before each use. Failure to maintain this coating can result in the rupture of the connector and subsequent damage to the electronic components of the system.



Apply Silicone Grease to all five of the rubber protrusions.

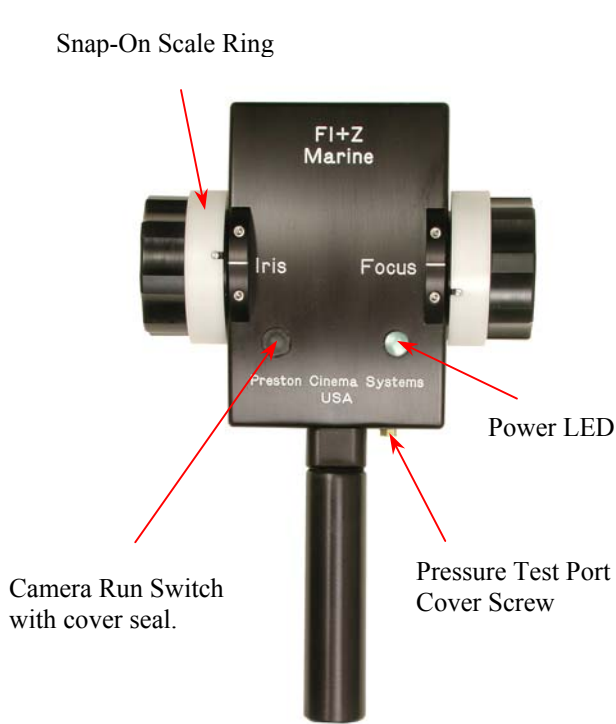


Figure 1a

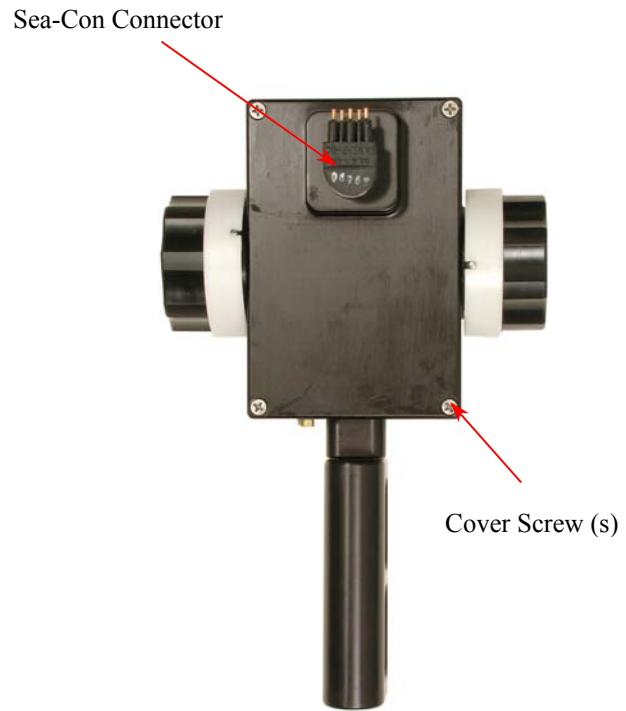


Figure 1b

1. Description. The Marine Hand Unit works in conjunction with the MDR-2 module of the FI+Z system to provide remote Focus and Iris control. It allows underwater operation up to 10m (30ft) depths.

The digital control signals generated by the unit are sent to the MDR-2 motor driver via the 5-pin Seacon connector and associated cable.

The focus and iris knobs are equipped with snap on scale rings. These rings are indexed to the knob with pins assuring excellent repeatability. The knobs operate potentiometers contained in watertight capsules.

A pressure test port allows for both leak testing as well as the removal of any residual moisture using a vacuum pump.

2. Operation.

- a. Before operating underwater, check the unit for leakage.
 - i. Remove the Pressure Test Port Cover Screw and replace with the barbed hose adapter.
 - ii. Connect a vacuum pump with gauge to the barbed hose adapter and evacuate the Marine Hand unit to 60 – 80 torr pressure (700 - 680 torr vacuum) or better. Note the pressure. There should be no change in pressure in an hour. The vacuum pump itself should be checked to confirm that it does not leak. A small hand operated vacuum pump is shown in fig. 2b.
 - iii. For a more sensitive indication of leakage, keep the unit under vacuum for 24 hours. There should be no change in the vacuum reading. This procedure will also remove any residual moisture from the housing interior.
 - iv. Replace the barbed hose adapter with the Cover Screw. Tighten the screw firmly.
- b. Assemble the digital motors (DM-1 and/or DM-2) to the matte box support rods. Couple the motors to the corresponding gears on the lens. Check that the brackets are firmly in place and will not twist.
- c. Connect the motors to the MDR-2 with motor cables (p/n 4410 – 4412). Connect the Marine Hand unit to the MDR using the (user supplied) SEACON cables. Connect the camera to the MDR-2 using the appropriate cable (p/n 4520 – 4529).
- d. Connect 12 – 24VDC power to the MDR-2. The power source should have a current capacity of 6A at 12VDC or 3A at 24 VDC.
- e. Confirm that the lens motors rotate the focus and iris through their full range of motion. (Press the Reset button on the MDR-2 to initiate the calibration process). After calibration is complete, the Focus and Iris knobs on the Marine Hand Unit will move the corresponding lens gears through their entire range of motion.

3. Maintenance.

- a. Coat the exterior rubber surfaces of the Seacon Connector with silicone grease. Keep the gold contacts free of grease contamination.
- b. Check seal integrity with a vacuum pump as described in 2.a. above.
- c. Remove residual moisture by use of the vacuum pump.
- d. Check the 4 x 6-32 cover screws and the Camera Run switch cover seal for tightness. See fig. 1a, b.
- e. Make sure the Seacon connector is tightly mounted to the chassis cover.
- f. Periodically add a fresh coating of silicone grease to the housing O- ring to replace silicone that has migrated. Recommended greases include Dow Corning 976V and LDS 91-S. Remove any sand or debris before re-coating the O-Ring.
- g. Rinse the exterior of the unit with fresh water after use.
 - i. Replace the housing O-Ring if it appears damaged. The housing O-Ring is metric size S120 (120mm ID x 2mm dia).

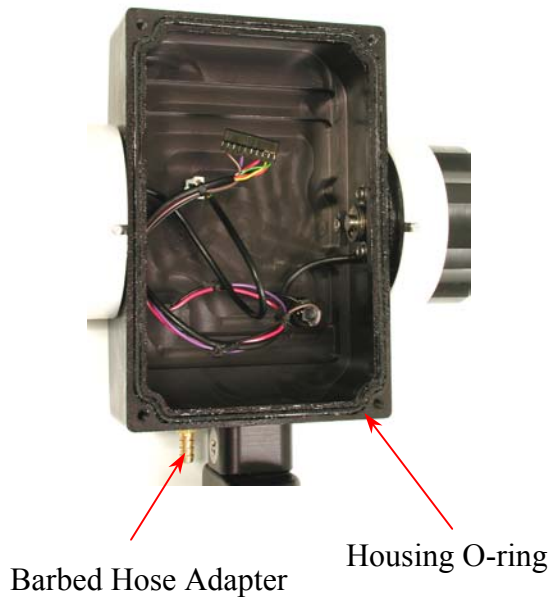


fig. 1a.

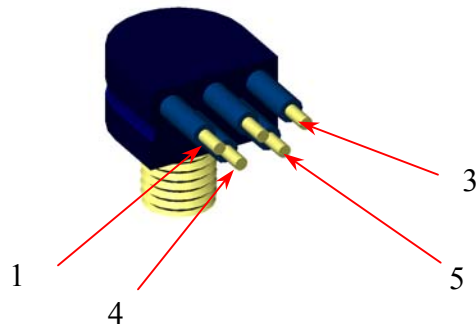


fig. 1b.

4. Reference

a. Seacon connector (FAWL5PBC-RA) pin allocation:

- i. 1 Data
- ii. 2 Data
- iii. 3 (+) power
- iv. 4 (-) power



b. Size (excluding handle): 15cm x 15cm x 5cm (6" x 6" x 2")
 Handle length: 10cm (4")

c. Weight:

- i. In air: 1.0kg (2.2lbs)
- ii. Submerged: 0.25kg (8 oz).