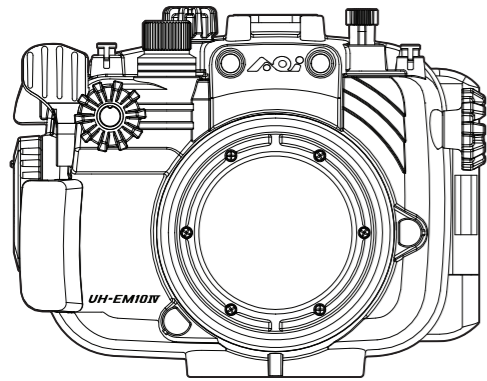




# AOI UH-EM10 IV UNDERWATER HOUSING

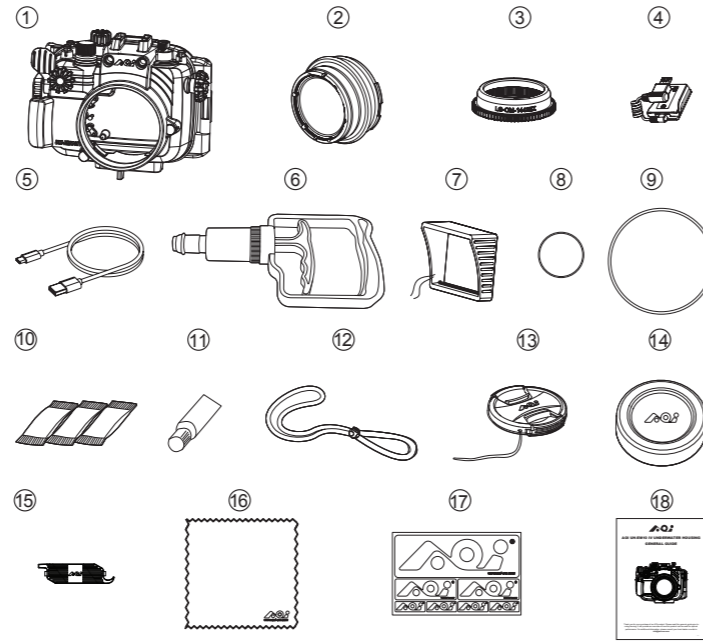
## GENERAL GUIDE



Thank you for your purchase of an AOI product. Please read this general guide prior to using the housing. It will provide an overview of how this product can be used for optimal performance. For additional information, please consult your local dealer or write to [info@aoi-uw.com](mailto:info@aoi-uw.com)

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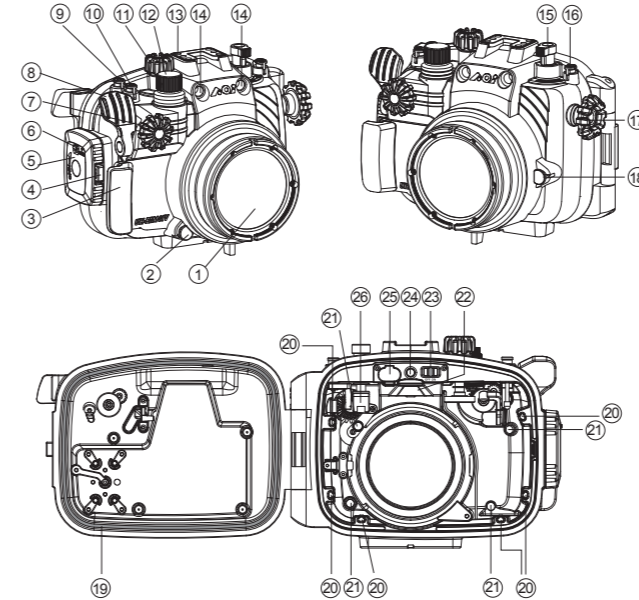
### Items Included in the package



- |   |  |
|---|--|
| ① AOI UH-EM10 IV Housing Body                                       | ⑪ Silicone Grease (AOI SIGR-5)               |
| ② Flat Port (AOI FLP-06)  | ⑫ Lanyard (AOI LYD-01)                       |
| ③ Lens Gear (AOI LG-OM-1442EZ)                                      | ⑬ Port Front Cap for M67 Thread (AOI LFC-01) |
| ④ Hot Shoe Connector (AOI HSC-02)                                   | ⑭ Port Rear Cap for PEN Mount (AOI PRC-02)   |
| ⑤ USB Type-C Charging Cable (AOI USBC-02)                           | ⑮ O-ring Remover (AOI ORR-02)                |
| ⑥ Vacuum Pump (AOI VP-02)   | ⑯ Micro-Fiber Cleaning Cloth (AOI MC-01)     |
| ⑦ LCD Monitor Hood (LCDH-01)  | ⑰ AOI Logo Sticker                           |
| ⑧ Spare O-Ring for Vacuum Valve Protection Cap x 1pc. (AOI SRVV-01) | ⑱ General Guide                              |
| ⑨ Spare Main Seal O-ring x 1pc. (AOI HOR-01)                        |  |
| ⑩ Silica Gel (AOI SIGE-3) x 1pc.                                    |  |

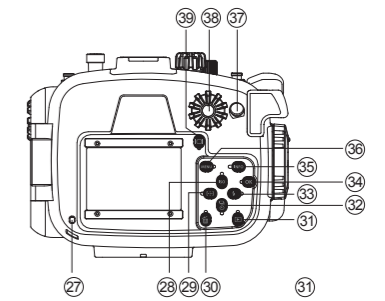
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### Names of the Parts



- |                                   |                                      |
|-----------------------------------|--------------------------------------|
| ① Flat Port (AOI FLP-06)          | ⑭ Fiber Optic Cable Ports            |
| ② Port Release Button             | ⑮ Camera ON/OFF Lever                |
| ③ Finger Grip                     | ⑯ (Shortcut) Button                  |
| ④ Cam Lock Release                | ⑰ Lens Gear Control Knob             |
| ⑤ Cam Lock                        | ⑱ Lens Release Button                |
| ⑥ Security Lock                   | ⑲ Main Seal O-ring                   |
| ⑦ Front Dial                      | ⑳ Camera Positioning Bumpers         |
| ⑧ Shutter Release Lever           | ㉑ Camera Front Stoppers              |
| ⑨ (Movie) / (Movie) button        | ㉒ Camera Top Stopper                 |
| ⑩ (Digital Tele-converter) Button | ㉓ Multi-control Device ON/OFF Switch |
| ⑪ Mode Dial                       | ㉔ Multi-control Signal Indicator     |
| ⑫ Vacuum Valve                    | ㉕ USB Type-C Port                    |
| ⑬ Cold Shoe                       | ㉖ Camera ON/OFF Actuation Lever      |

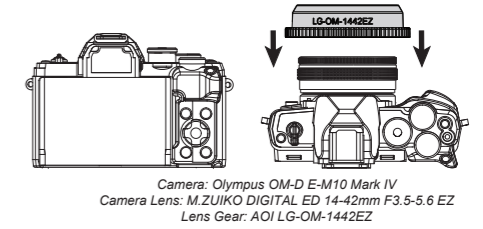
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- |                          |                    |
|--------------------------|--------------------|
| ⑳ LCD Hood String Eyelet | ㉔ OK Button        |
| ㉑ ISO(▲) Button          | ㉕ INFO Button      |
| ㉒ [::] (◀) Button        | ㉖ MENU Button      |
| ㉓ (Erase) Button         | ㉗ AEL / AFL Button |
| ㉘ (Playback) Button      | ㉙ Rear Dial        |
| ㉚ (▼) Button             | ㉛ (LV) Button      |
| ㉜ (▶) Button             |                    |

### Installing the camera in the housing

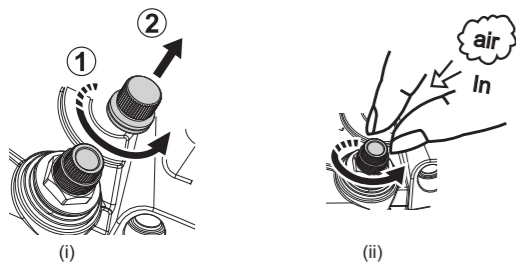
a. Before use, ensure that the camera and camera lens are compatible with the housing, lens port and lens gear.



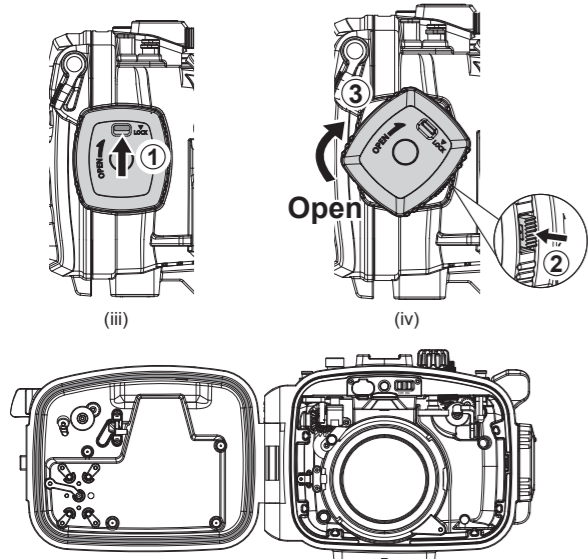
For more information about AOI UH-EM10 IV Expansion Pathway and PEN Mount Lens Ports System, please download UH-EM10IV Family Chart from [www.aoi-uw.com](http://www.aoi-uw.com) or consult with your local dealer.

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b. Before opening the housing Rear Cover, remove the Vacuum Valve Protection Cap by unscrewing it counterclockwise (fig. i). To equalize the housing internal & external pressure, twist the red colored Vacuum Release Tip counterclockwise (fig. ii).



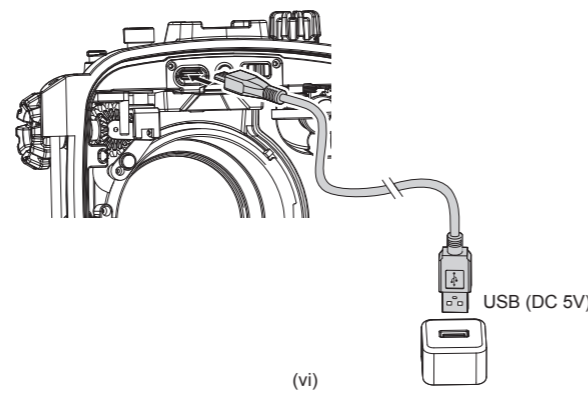
c. Unlock the Security Lock on the Cam Lock (fig. iii). Press down the Cam Lock Release and rotate the Cam Lock clockwise at the same time (fig. iv). Rotate the Cam Lock until the Rear Cover is fully separated from the Cam Lock (fig. v).



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d. Turn on the Multi-control Device. If its battery power is low, the Signal Indicator will show Blue Quick Blinking or Red & Blue Quick Blinking (4 times/sec). You should connect the supplied USB Type-C Charging cable to the USB Type-C Port on the Multi-control Device and the other end to a USB Charger DC 5V, minimum 0.5A (not supplied) (fig. vi). It will take approx. 1.5 hours to fully charge the battery. Table 1 below shows the status of the battery charging and the corresponding colors of the Signal Indicator.

e. Battery operation time per charge is approx. 2 days (based on 3 dives/day and approx. 1 hour/dive).



Signal Indicator	Indication	Next Action
Blue Quick Blinking or Red & Blue Quick Blinking	Charging is required	Connect it to a USB charger for charging
Green Blinking	Charging in progress	Continue charging
Green Still	Charging is completed	Remove from USB charger and stop charging

Table 1

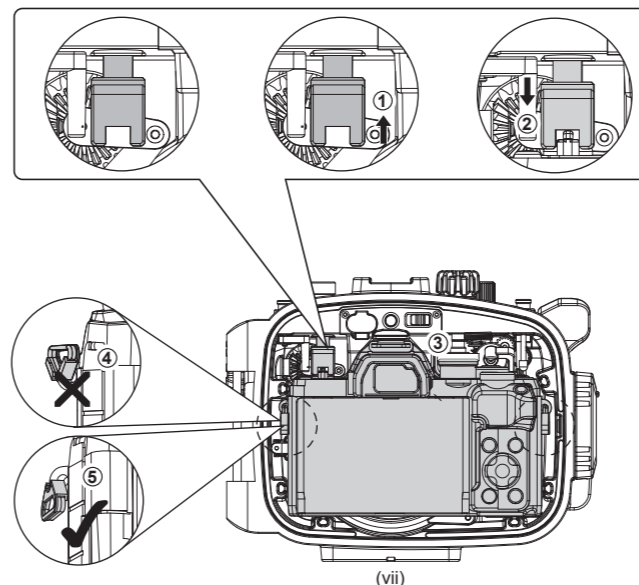
f. Turn off the camera before installing it into the housing. Remove all camera accessories such as Lanyard, Lens Filter or Hand Grip, etc.

g. Pull up the Camera ON/OFF Actuation Lever before you install the camera into the housing (fig. vii ①).

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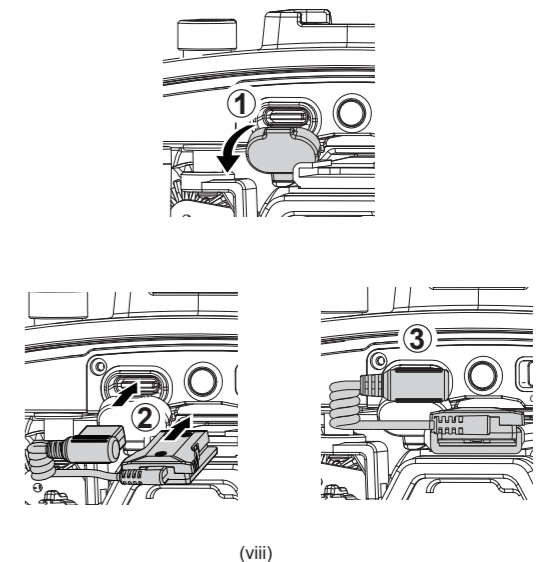
h. Return the Camera Monitor back to its original position with the display facing outside and ensure the Camera Strap Eyelets are folded down against the camera body (fig. vii ④ & ⑤). Load the camera into the housing gently and do not hold the camera by the Monitor Screen while inserting (fig. vii ③).

i. After the camera is properly loaded, push down the Camera ON/OFF Actuation Lever and engage with the camera ON/OFF Lever (fig. vii ②).

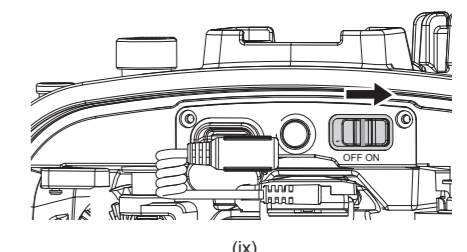


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j. If using the Optical Flash Trigger for the external Slave Strobes, the Hot Shoe Connector must be connected between the camera's Hot Shoe and the USB Type-C Port on the Multi-control Device (fig. viii).



k. Turn on the power of the Multi-control Device (fig. ix).

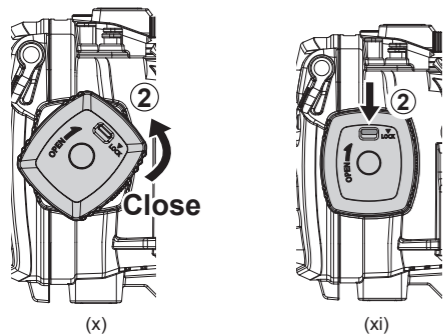


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- To check if the Hot Shoe connector is connected properly, go to the RC menu on the camera. If the connection is good, the RC Menu text will show solid white. Otherwise, all text will show gray and can't be activated.
- Before closing the housing, ensure the camera is positioned properly against the Camera Positioning Bumpers in the front of the housing. Check that the Main Seal O-ring is clean, intact, and properly positioned. There are no obstacles such as the lanyard or strips preventing the secure closure of the housing.
- Clean or replace the Main Seal O-ring if necessary.
- Close the Housing Rear Cover by rotating the Cam Lock clockwise until a "Click" sound is heard (fig. x). If you encounter resistance, clear obstacles before continuing.
- Switch the Security Lock on the Cam Lock to the "LOCK" position in order to prevent Cam Lock from opening accidentally (fig. xi).



Once the camera is installed and housing is closed, turn on the power of the camera and make sure all housing controls and lens gear function properly. Check that the Optical Flash Trigger is functioning with the external slave strobe(s).

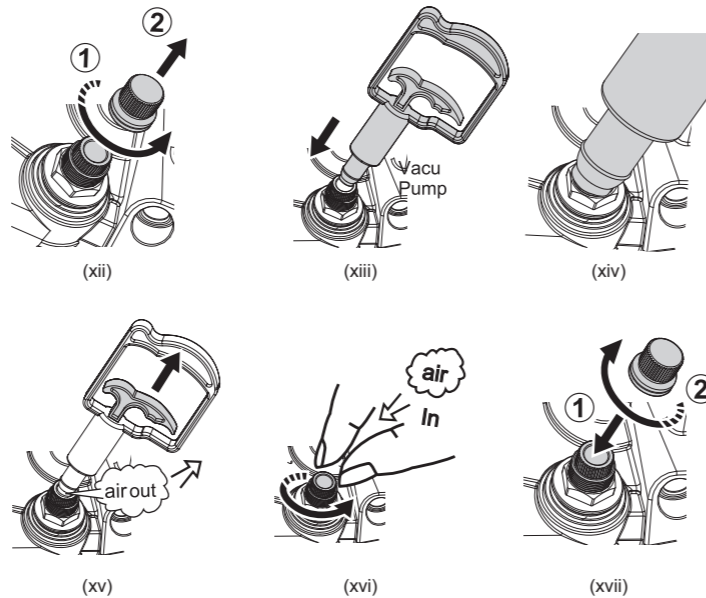
## Pre-checking before Diving

### 1. Perform Vacuum Analyzation

Turn on the Vacuum Analyzation and Wet Detection System (VWS) by power on the Multi-control Device, the Signal Indicator will show Blue Blinking or Blue Quick Blinking (once/sec). If it is not operated for more than 10 minutes, the Vacuum Analysis and Wet Detection System will go into standby mode and the Signal Indicator will show Blue Blinking (once/5 sec). Close the Rear Cover according to the steps described in [Installing camera into the housing](#).

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- Take off the Protection Cap from the Vacuum Valve and connect the Vacuum Pump onto the red colored Vacuum Valve Tip. Pull and Release the Vacuum Pump handle gently and repeatedly for Vacuum Pumping. During the Vacuum Pumping process, check carefully for changes in color on the Signal Indicator (fig. xii ~ xv).



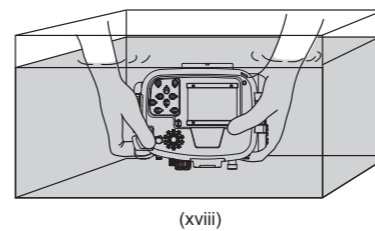
- Color Codes Indication:
  - Yellow Quick Blinking  
Internal pressure has started to drop. Continue to pump.
  - Yellow Slow Blinking  
Internal vacuum level is close to the desired value. Slow down pumping.
  - Yellow Still  
Internal vacuum level has been reached. Stop pumping and the Vacuum Analyzation Process will start automatically.
  - Yellow and Red Blinking alternately  
Internal vacuum level is above the desired value. Stop pumping and carefully release air by gently twisting the red colored Vacuum Release Tip counterclockwise

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- slightly until the Signal Indicator shows Yellow Still (fig. xvi). If too much air is released from the housing, the Signal Indicator will change back to Yellow Blinking again. Resume vacuum pumping until Signal Indicator shows Yellow Still.
- The Vacuum Analyzation Process will start automatically once the Signal Indicator shows Yellow Still. Disconnect the Vacuum Pump from the Vacuum Valve carefully and then put back Protection Cap to the Vacuum Valve (fig. xvii). Do not move or shake the housing or put the housing under the sun when the analyzation process has started.
- The Vacuum Analyzation Process takes approx. 3 minutes. Once the process is completed, the Signal Indicator will show different color depending on the result:
  - Green Blinking – Vacuum Analyzation passed and Housing is ready to go into the water.
  - Red Blinking or Red & Blue Blinking – Vacuum Analyzation failed and inspection for the leakage is required.
- In case of a significant air leakage detected anytime during/after the Vacuum Analyzation Process, the Signal Indicator will show Red & Blue Blinking.
- When the housing internal pressure is resumed to ambient pressure, the Signal Indicator will show Blue Blinking or Red & Blue Blinking .

### 2. Perform Water Leakage Test

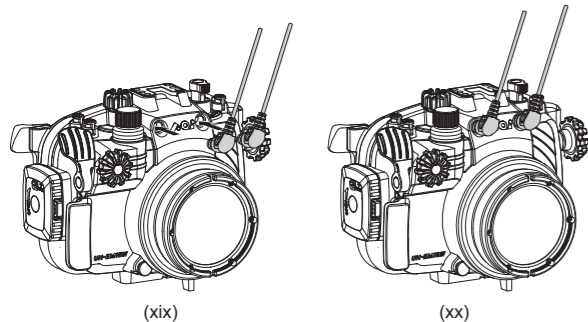
Once Vacuum Analyzation is completed successfully and Vacuum Valve Protection Cap is secured, review the housing further by checking for water leakage. Submerge it in a shallow water tank. While submerged, activate all the control buttons, control switches, and control knobs in order to have a dynamic test to prove all the sealed moving parts are water sealed properly. If there is no water droplet observed inside the housing after Underwater Dynamic Test, it means the housing is fully watertight. If water leaks into the housing, the water droplets will be detected by the Wet Sensor Strip located in the lowest part of the housing. Signal Indicator will show Red Still and 5 Sec audible alarm "BEEP-BEEP" will be heard (fig. xviii).



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## Connecting the Fiber Optic Cable

- The housing is built-in with an Optical Flash Trigger in the Multi-control Device. This feature prolongs the camera battery life by not using the built-in camera flash to trigger the external underwater strobe. The housing is equipped with two Fiber Optic Cable Ports and they are compatible with AOI Fiber Optic Cable with SS cable plug or other fiber optic cable brands using the standard Sea & Sea plug.
- Insert one end of the fiber optic cable into the Fiber Optic Cable Port of the housing (fig. xix) and then insert the other end into the fiber optic cable port on the external strobe.



- The flash trigger signals (electrical signals) will be transferred from the camera Hot Shoe to the Multi-control Device through the Hot Shoe Connector (included in the package). The Optical Flash Trigger in the Multi-control Device will convert the electrical flash triggering signals into optical signals and then will deliver them to the Fiber Optic Cable. The Fiber Optic Cable (not included in package) picks up the optical signals and delivers them to the external strobe.

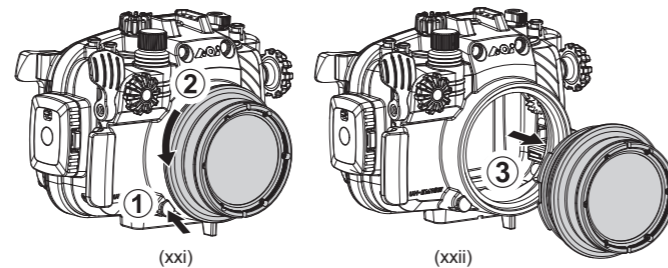
### IMPORTANT:

- For getting the best result of Flash Triggering, Multi-core Fiber Optic Cable is recommended to be used.
- Rinse the Fiber Optical Cable Ports with running fresh water after every use, then let it dry naturally. Do not dry inside of the ports with any tool, this may result in scratches and reduce the capacity of the optical signal transfer.

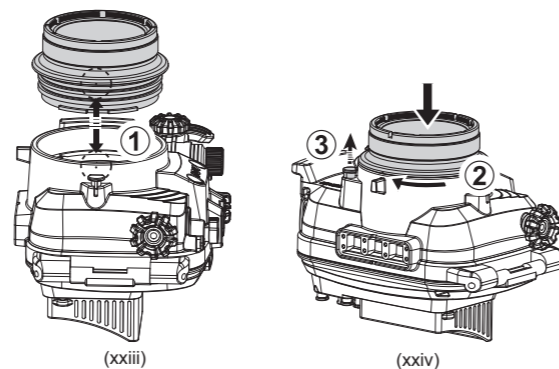
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## Removing and Replacing the housing Lens Port

- The ultra-compact Flat Port (AOI FLP-06) comes standard with the housing and it can be removed for cleaning, inspection, and lubrication of the lens port O-rings (AOI POR-02) on it.
- While depressing the Port Release Button, rotate the Lens Ports counterclockwise until it stops (fig. xxi). Remove the Lens Port by pulling it evenly out from the housing body (fig. xxii). If the resistance is too great when rotating the Lens Port, the use of an optional tool (sold separately) - Port Remover (AOI PR-01) may be required.



- To install the Port Lens, align the Alignment Marks on the Lens Port and the Housing Body and then push the Lens Port completely down into Housing Body (fig. xxiii). Rotate the Lens Port clockwise until a "Click" sound is heard. When the Port Release Button is no longer depressed, the Lens Port is properly installed and locked (fig. xxiv).



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## Care and Maintenance

- Rinse the housing exterior thoroughly with running fresh water after every use. Depress buttons and rotate knobs/dials repeatedly in fresh water to eliminate trapped salt water or debris. Dry the housing and Lens Port with a soft, clean cloth to avoid water spotting and damage.
- To clean the Lens Port Glass, use a mild soap solution or lens cleaner. Do not rinse the inside of port glass. Do not use alcohol or window cleaner on the Lens Port Glass.
- In order to better inspect, position, clean or lubricate the Housing Main Seal O-ring or Lens Port O-rings, carefully remove the required O-ring by using the provided AOI O-Ring Remover.
- Clean the Main Seal O-ring and its O-ring groove by using a microfiber cloth only. Use AOI O-Ring Remover to clean the O-Ring groove. Do not use cleaning substances other than fresh water. Remove sand, dirt, hair or fibers that can prevent a proper housing seal.
- To lubricate O-rings, apply a small amount of silicone grease (AOI SGR-5) on your fingertips, gently pull the O-ring through the fingertips. This will lightly coat the entire O-ring with silicone grease. Only use the AOI Silicone Grease supplied or those approved by AOI. Using other brands of silicone grease may damage the O-ring. Do not over stretch the O-ring.
- Do not leave the camera and housing in direct sunlight for prolonged periods. Heat may damage the camera and housing.
- Dry well and remove the camera prior to travel and storage.
- Store the housing in a cool and dry place.

**IMPORTANT:** Wipe the housing dry and keep water away prior to opening the housing. Do not allow water to be in contact with the interior of the housing. This will cause irreparable damage to the Vacuum Analyzation and Wet Detection System (VWS) and other electronic/electrical components!

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## Summary of Signal Indicator Color Codes Indication

Signal Indicator	Indication	Next Action
Blue Slow Blinking	Ready for Vacuum analyzation	Vacuum Pumping
Yellow Blinking	Vacuum below desired level	Continue pumping
Yellow and Red Blinking alternately	Vacuum above desired level	Twist the red colored Vacuum Release Tip counterclockwise
Yellow Still	Vacuum analyzation in progress	Wait approx. 3 minutes for vacuum analyzation
Green Slow Blinking	Vacuum analyzation test has passed	Ready to go into the water
Red Blinking or Red & Blue Blinking	Vacuum analyzation test has failed	Inspect the housing for any potential air leakage sources
Red Still + 5 Sec Audible Alarm	Wet Sensor Strip detects water droplet or moisture	Inspect the housing for any potential water leakage sources

## Using the Housing and Camera after testing passed

- Please ensure that the Vacuum Valve Cap is in place and completely closed.
- When using the housing, make sure that it is properly secured to you and accessories are properly secured to the housing.
- Do not exceed the housing maximum depth rating of 45 Meters (148 ft.)
- If the wet detection alarm is triggered during use, it means water has entered into the housing. If that happens, try to position the housing lens port facing down and exit the water safely in accordance with diving procedure and regulation. Upon returning to land, remove the camera from the housing. If only a few droplets of seawater entered the housing, thoroughly wipe off the seawater droplets with a moist towel and dry the inside of the housing thoroughly with tissue paper.
- If seawater leaked into the housing and the Multi-control Device is flooded, take out the camera, rinse the housing cavity thoroughly with running fresh water for a few minutes. Then, dry the housing cavity completely and bring it to your local dealer for servicing immediately.

## Auto Sleeping Mode

When the Multi-control System is connected with the camera by the Hot Shoe Connector, it will follow to the status of the camera. When the camera is in Sleeping Mode, the Multi-control System will go into Sleeping Mode. When the camera is waked up, the Multi-control System will be waked up, too.

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## Specifications

Model Number	AOI UH-EM10 IV	
Description	Underwater Housing for Olympus OM-D E-M10 Mark IV Camera	
Housing Color	AOI UH-EM10 IV-WHT White	AOI UH-EM10 IV-BLK Black
Compatible Camera Models	Olympus OM-D E-M10 Mark IV	
Main Material	Housing Body: Polycarbonate	
Depth Rating	45 Meters	
Lens Port System	AOI / Olympus PEN Ports System	
Built-in LED Flash Trigger	Compatible with a) Manual Flash Trigger (with and without Pre-flashes Functions) b) Olympus RC Mode (TTL AUTO, MANUAL, FP TTL AUTO, FP MANUAL)	
Water Leakage Protection	Built-in Vacuum Analyzation and Wet Detection System (VWS)	
Battery Power	Built-in Rechargeable Lithium Polymer Battery (3.7V 110mAh)	
Battery Charging	By USB Charger DC5V, 0.5A (not included) Approx. 1.5 Hours for a full charge	
Battery Operation Time	Approx. 2 Days (Based on 3 Dives/Day and 1 Hour/Dive)	
Dimensions	177.9mm (W) x 139.8mm (H) x 151.2mm (D)	
Weight	On Land : Approx.835 g (Only included the Housing Body and Flat Port)	

\*Specifications and Appearances are subject to change without prior notice.



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