The Ultimate Underwater Housing Maintenance Guide

So you bought an underwater housing. Congratulations. Now you want to take it diving, what do you need to do to keep your camera dry? And after you've taken it diving, what do you do after that? How do you keep your housing in perfect condition your next dive?

Successful underwater photography relies not only on technical skill but also on careful preparation of equipment. Camera housings are precision systems, and even a small oversight—such as a forgotten O-ring or uncharged battery—can compromise both the dive and the gear. Establishing a disciplined routine is essential for reducing risks and ensuring consistent results.

Core Rules for Equipment Setup

- ☐ **Avoid post-travel assembly:** Equipment should not be set up immediately after long flights or extensive travel. Fatigue and jet lag increase the likelihood of forgetting critical steps.
- ☐ **No setup after alcohol consumption:** Just as diving is unsafe after drinking, assembling and sealing a housing should never be attempted under the influence.

Consistency is key. Performing tasks in the same order each time minimizes the risk of missing essential steps. A written checklist—used both when packing for a trip and during housing assembly—which definitely provides an added safeguard!

Pre-Dive Camera Preparation Checklist

1. **O-Rings** – Inspect all O-rings for cleanliness, lubrication, and damage. Install for housing, strobes, and ports. This should be verified both at the start and end of setup, as it is the single most critical factor in system integrity.

2. **Lens Port** – Confirm the correct port is in place for the chosen lens.

3. **Adaptors** – Ensure all required adaptors (e.g., EF–RF Canon adaptor, Canon lens to Sony body adaptor) are present and correctly fitted.

4. **Memory Card** – Check that a card is inserted with sufficient free space.

5. **Sync Cables** – Inspect for kinks, breaks, or wear, and confirm proper attachment.

6. **Flash Trigger** – Verify installation, battery charge, and power status.

7. **Camera Housing Plate** – Confirm it is correctly attached.

8. **Vacuum System** – Check battery status and confirm the system is powered on.

Housing Assembly and System Checks

Once preliminary checks are complete, proceed with assembly:

- Power on sealed electronics, including the vacuum system and flash trigger.

- Reinspect O-rings for debris before inserting the camera.

- Close the housing and verify the vacuum seal. On systems such as Nauticam, the lights flash yellow during air removal and turn solid green once the seal is secure.

- Switch on the camera and strobes.

- Test-fire the system several times to confirm:
    - Camera responsiveness
    - Strobe firing consistency
    - Proper adjustment of strobe power levels

Common Oversights

The two most frequently overlooked items are the **flash trigger** (either uninstalled or left switched off) and the **camera plate**. Both omissions quickly halt setup and create frustration. Other divers may encounter different patterns of error, reinforcing the importance of using a standardized checklist for every dive.

Keep the inside of ports clean of dust to keep spots from appearing on photos.

A lot of issues can be caught early by taking a test shot while the camera is still above water.

Catching issues before entering the water is one of the simplest ways to prevent equipment failure. A single test shot taken while the camera is still above water can reveal problems such as non-functioning strobes, allowing for quick troubleshooting on dry land.

Whenever possible, confirm the housing seal by submerging the system in a freshwater dip tank. Watch carefully for escaping bubbles from seals, ports, or buttons. Taking a test shot while the housing is submerged in the tank can further confirm proper operation in a controlled environment. Many housing brands also feature vacuum systems that verify the integrity of the seal before water entry.

Avoiding Contamination During Setup

Housing setup should be performed in a clean, controlled space. Stray hairs, pet fur, and other debris can easily compromise a seal. Even a single strand of hair trapped in an O-ring can cause flooding. Particular attention should be given when handling equipment on boats, where wind, movement, and damp conditions increase the risk of contamination.

All internal components should also be inspected before sealing. Use a microfiber cloth to clean ports and remove dust or dirt that could appear as artifacts in photographs. Ensure that the camera lens is free of smudges or particles.

Precautions Against Opening Housings in Wet Environments

Avoid opening the housing in small boats, on dive decks, or in other wet environments. Attempting to insert forgotten batteries or memory cards in these conditions introduces significant risk. Drips from wetsuits, hair, or even ambient moisture can easily reach the camera’s internals, causing damage.

Curiosity from fellow divers can also be a hazard. Leaning over an open housing or peering inside can unintentionally introduce water droplets or debris. For this reason, housings should remain sealed once properly prepared, unless they can be safely opened in a dry, controlled environment.

Entering the Water and Handling Floods

On most dive boats, crew members will hand cameras to divers after entry. This approach is recommended, as jumping in with a camera risks stressing seals and scratching ports against gear. Once in the water, it is good practice to take a quick test shot at the start of descent. This allows time to return to the boat if a malfunction or leak is detected early.

Responding to a Flood

If a flood occurs, remain calm. Do not rush to the surface or abandon proper diving protocols. Safety always comes first—no camera is worth risking a diver's life. Ascend at a controlled pace, including a safety stop. If the leak appears minor, keep the housing level or slightly angled port-side down during ascent. This positioning may allow water to collect harmlessly in the port or below the tray, protecting the camera until reaching the surface.

Once back on the boat, dry off before opening the housing. Avoid opening the system hastily, as this may spread water onto the camera. Remove the camera carefully, then inspect for moisture. Do not power on the device if water exposure is suspected. Instead, remove the battery, memory card, and other components. Dry all parts thoroughly on a clean surface in good light. Use absorbent materials, such as paper towels, to reach small crevices.

For major floods—such as full housing submersion in seawater—rinsing the camera with freshwater may reduce salt corrosion, though recovery is unlikely. In such cases, the memory card has the best chance of survival. Rinse and dry it thoroughly, ideally for several days, and consider storing it in rice to absorb residual moisture.

Housing Care After Flooding

If the housing has no electronic components, rinse the interior with freshwater. For housings with electronic systems, remove the batteries, rinse if submersion has already occurred, and dry carefully. Even with proper care, electronics often require replacement.

Most floods result from compromised O-rings. After an incident, inspect all O-rings carefully and replace if necessary. Test the housing without a camera in a controlled environment such as a bathtub, then on a dive without the camera to confirm proper sealing. If leaks persist, or if electronic

systems have failed, professional servicing is recommended. Providing detailed information about the failure will help technicians identify and repair the issue more effectively.

Sometimes flooded memory cards and batteries can be saved by putting in a bag of rice.

Before, after, and in between dives, try not to leave housings in direct sunlight as it can heat up on the inside and possibly damaging the camera or cause condensation to form.

O-Ring Care

What keeps water out of your housing? It often comes down to the O-rings. These need to be lightly lubricated, and usually it is best to use your housing manufacturer's brand of O-ring grease. If that's not available, at least make sure it is high-quality silicon grease, as some contain other products that can cause O-rings to swell in size or soften, which might prevent a good seal. Applying grease is a bit of an art: too much can make a slip stream for water to enter past the O-ring, and excess grease can attract sand, dust and hair; on the flip side, too little can lead to dry O-rings that crack.

It’s best to use the housing manufacturer’s brand of silicon grease.

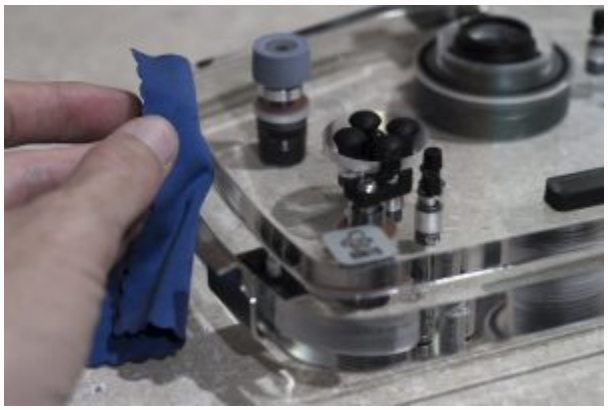
Remove the O-rings from the housing using a non-sharp tool and clean the groove where they sit. A Q-tip can be used, but caution is advised since cotton fibers may be left behind. Alternatives include microfiber cloths or make-up applicator sponges.

To clean and lubricate the O-ring, place a small dab of grease between the thumb and forefinger, then gently pull the O-ring through. Avoid stretching or pulling too firmly. This process helps remove dirt and sand while applying an even coat of lubricant. Check carefully for nicks or breaks as you work. When properly prepared, the O-ring should appear shiny, but not coated excessively.

With silicone grease in between fingers, gently pull the O-ring through.

How often do you clean O-rings? It often depends on the diving conditions. In some environments, it might be once a day or just when you open the housing to change the battery or memory card, and maybe not even every time you open it. Other times, you will need to clean them often, such as when diving in sandy or silty conditions that may allow sand and silt to get on the O-ring, causing floods.

Usually, we are only concerned with the large O-rings for the back of the housing and the ports. Check with your housing manufacturer, but usually the O-rings within the housing buttons and dials do not need to be regularly lubricated. They should be fine until the housing is sent in for servicing every one to two years.



Post-Dive Care

After each dive, rinse the housing and dry it thoroughly before opening. Replace covers on ports to prevent scratches.

Some boats or dive shops provide high-pressure air blowers, sometimes connected to scuba tanks, for drying equipment. If using these, avoid maximum pressure, as it can force water into the housing. Use only low pressure and sparingly. A towel is generally the safest method for drying the housing before opening.

To Leave It in the Dip Tank or Not?

After diving in salt water, it is important to prevent salt deposits from forming on the housing. Many boats provide dedicated camera dip tanks, and soaking the housing for a few minutes while pressing buttons and turning dials helps flush out salt. However, avoid leaving housings in rinse tanks for extended periods, particularly when shared with other divers. Unexpected floods have occurred in dip tanks, and in rough seas, multiple housings in close quarters increase the risk of ports being scratched.

Rinse off salt water by dipping housing in freshwater. Press all buttons and turn knobs.

If no freshwater rinse tank is available on the boat, salt water can be used temporarily to keep the housing wet and prevent salt deposits from forming. However, remain cautious of contact with other cameras, which may cause scratches.

Port scratches may occur despite careful handling. Minor scratches often do not affect image quality underwater, as water can visually “fill” the scratch. Larger scratches, however, may appear in images and typically require professional servicing. Depending on the material, some scratches can be buffed out. For example, small marks on acrylic ports can sometimes be removed with specialized scratch-remover liquids.

For long-term storage, remove O-rings and place them in a sealed bag, such as a Ziplock, to prevent drying, stretching, or molding to the housing’s shape. Always carry spare O-rings and replace them when necessary. As O-rings are relatively inexpensive, replacing them is a simple way to prevent costly flooding incidents.

Servicing

And finally, have your housing serviced by the manufacturer, usually about every year, depending on the manufacturer's recommendation or frequency of use.

With a little time and care, your housing will be able to do its job and keep your camera dry. Happy shooting!