



## **Underwater Housing for Canon 80D**

Product Number 6870.80

### **Product Registration**

Please register your product at [ikelite.com](http://ikelite.com) within 15 days of purchase. Our product registration database is the best way for us to contact you in the event of a product update or recall.

## About this Product

Thank you for your purchase of Ikelite equipment. Please read this instruction manual completely before attempting to operate or dive with this product. Please visit [ikelite.com](http://ikelite.com) to register your product to receive information on any updates, notices, or recalls pertaining to your equipment.

## Included in the Box

- Housing
- Aluminum tray
- Left-Hand Quick Release Handle with rubberized grip
- Port hole cover
- Waterproof bulkhead cap
- 5509.27 Universal zoom set up to 2.8-inch diameter
- 5509.28 Universal zoom set 2.8 to 3.0-inch diameter
- Silicone lubricant 1cc tube
- Micro-fiber lens cloth

## **Important Notices**

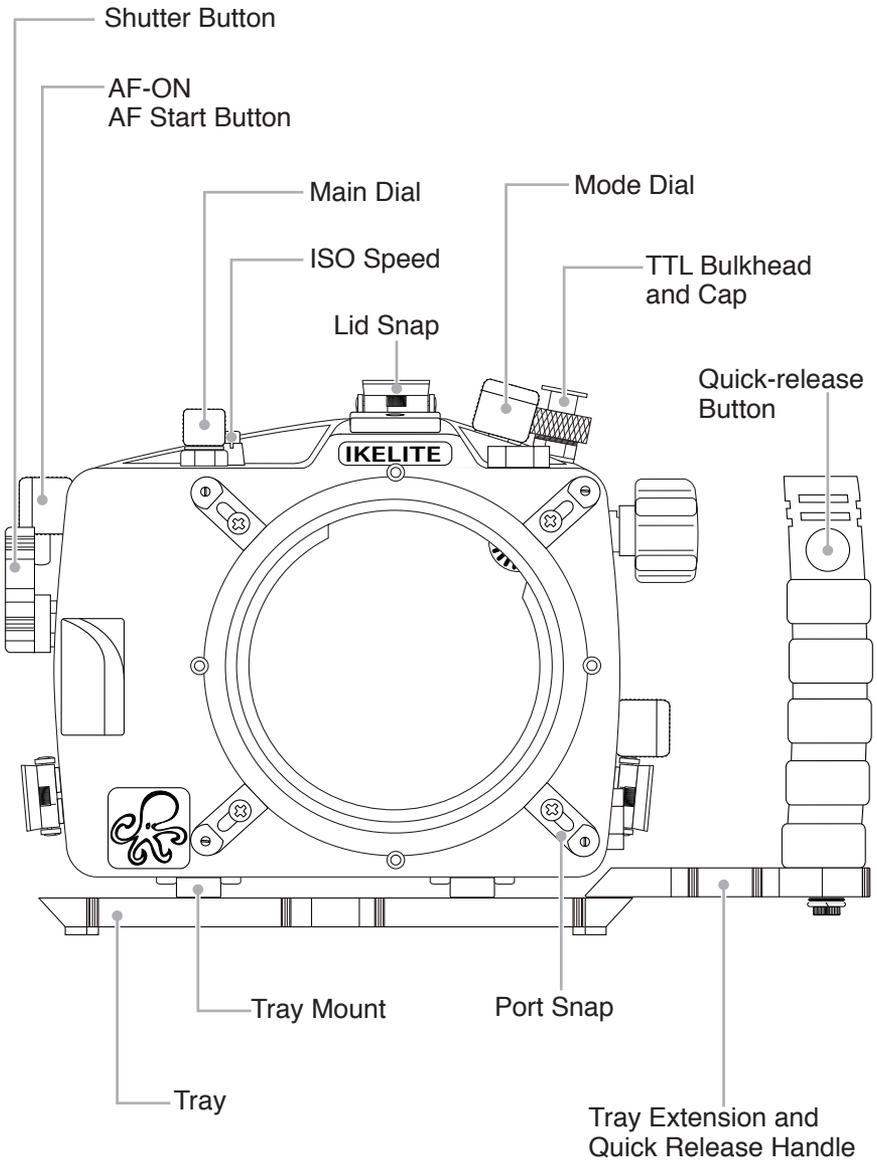
- » **Never leave a housing in a rinse tank, even if it is the only system in the tank. The vast majority of catastrophic floods happen when the user walks away from a housing while it is in the rinse tank.**
- » **To prevent salt build-up and sticking controls, submerge the empty housing in clean, freshwater. Operate the controls several times each while underwater to flush out any residue.**
- » **Do not use alcohol, cleaning agents, spray lubricants, Rain-X, or other solvents on the housing or lens port. Use of an incompatible chemical compound can damage the plastic and o-rings, and may result in leaking.**

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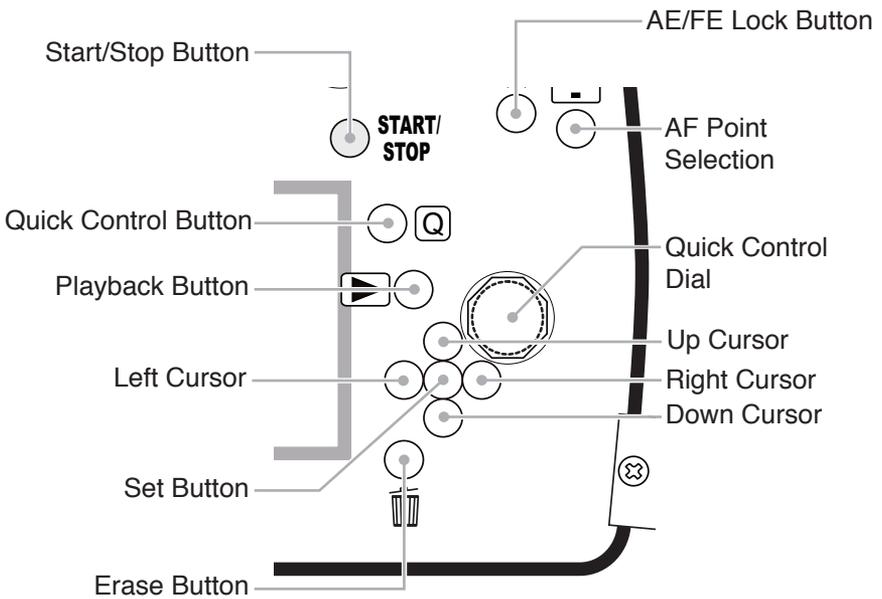
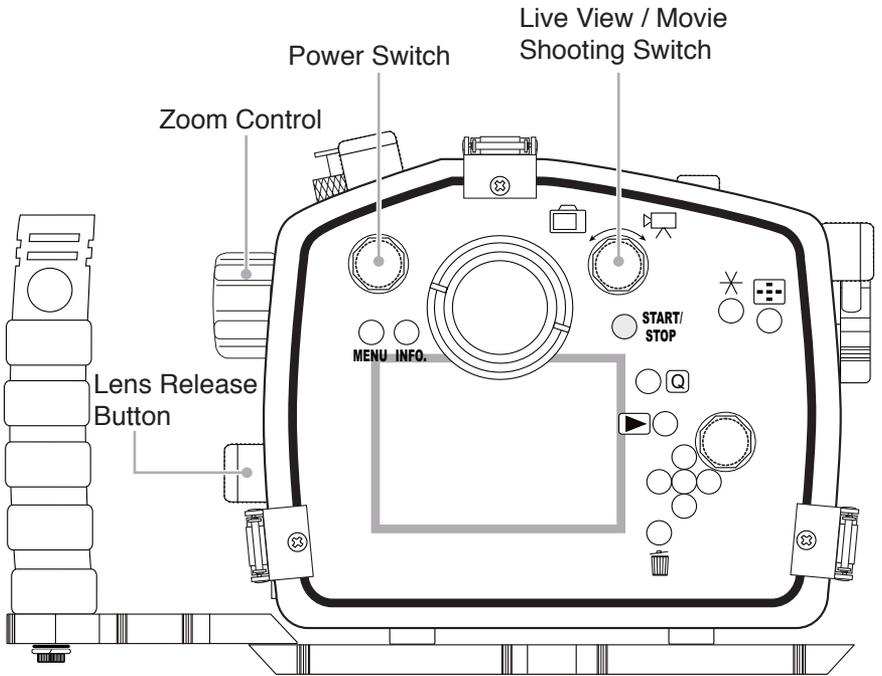
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# Getting to Know Your Housing



# Getting to Know Your Housing - cont.



# Setting Up Your Camera

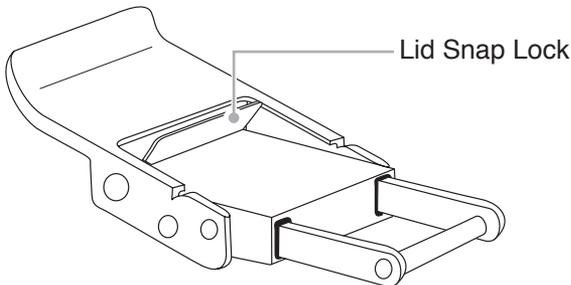
## Pre-Installation Checklist

1. Insert a fully charged camera battery.
2. Insert a properly formatted memory card.
3. Set Touch Control to “Disable.”
4. Set Red-eye reduc. to “Disable.”
5. Set Flash sync. speed in Av mode to “1/250-1/60sec. A.”  
NOTE: When using a non-Canon Manual Flash, set Silent LV Shooting to “Disable.”
6. When using ONLY the optical viewfinder, push the “INFO.” button repeatedly until the Quick Menu settings appear. This will give you an instant glance at the camera settings on the LCD screen and allow quick adjustments.

# Setting Up Your Housing

## Opening the Housing

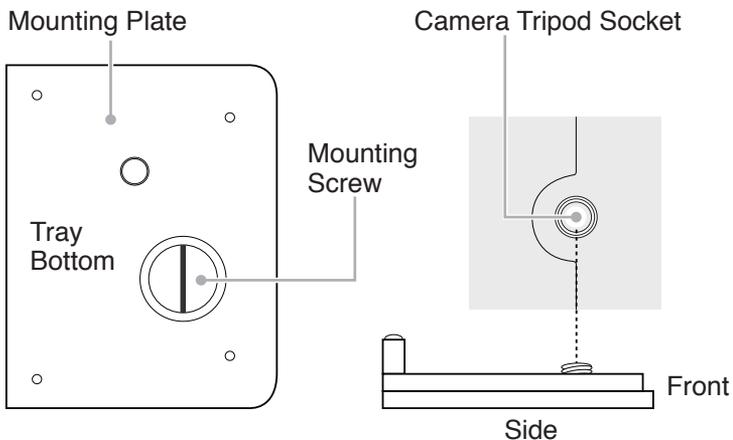
1. Push the lid snap lock forward and lift the curved end away from the housing.
2. Lid snaps are designed to provide enough force to compress the o-ring for a proper seal. Keep firm pressure against the lid snap while lifting it away.



3. Repeat with remaining lid snaps.
4. Remove the housing back.

## Inserting the Camera

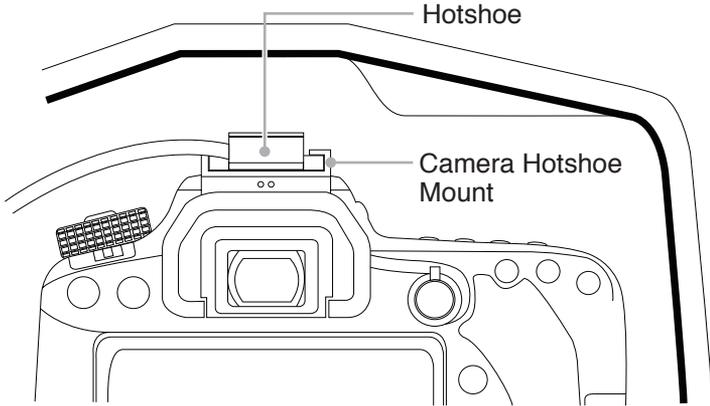
1. Remove any lanyard or neck strap which may be attached to the camera.
2. Check to see whether the camera's lens will fit through the port opening of the housing. If not, the lens will need to be removed from the camera body and re-attached AFTER the camera body is installed in the housing.
3. Remove the camera Mounting Plate from the housing.
4. Line the Mounting Screw up with the Camera Tripod Socket. Use a coin or flat head screwdriver to tighten the mounting plate to the camera.



5. Pull out on the housing control knobs to move them out of the way.
6. Insert the Mounting Plate into the slot on the inside bottom of the housing. Push the camera all of the way forward until the back of the Mounting Plate is flush with the back of the housing mount.

## Attaching the Hotshoe

1. Slide hotshoe into camera hotshoe mount until it stops. **NOTE:** Hotshoe must be all the way forward in the camera mount to ensure a good electrical connection.



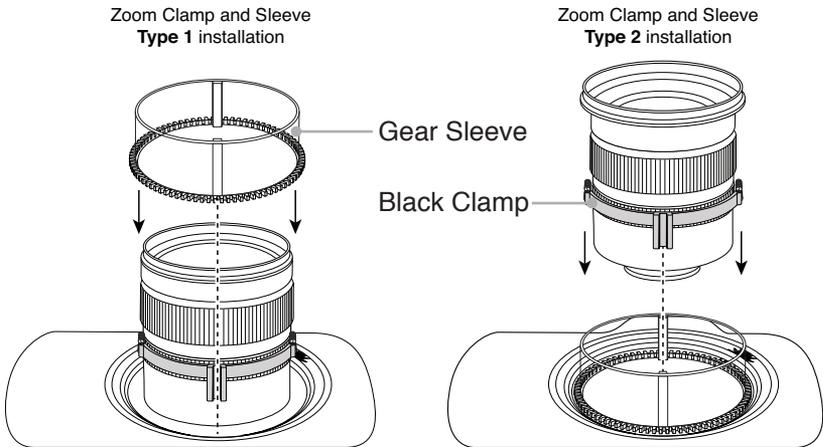
## Closing the Housing

1. Make sure the o-ring is clean and in its proper location on the back of the housing. The main housing o-ring does not require lubricant to make a seal.
2. Place the back onto the housing front.
3. Make sure no controls or wires are interfering with the o-ring or the back of the housing.
4. Place each lid snap into the corresponding hook on the housing back.
5. Push the lid snaps towards the housing until they are flat against the housing and the lock has engaged. Close opposing lid snaps at the same time.

6. Check the o-ring seal and control functions. The o-ring should form a uniform, solid line around the back of the housing. There will be a small, even gap around the housing between the housing back and the housing front.

## Installing Zoom Clamp and Gear Sleeve

If you are using zoom, determine if you have a Type 1 or Type 2 lens and attach zoom clamp and sleeve as shown. Type 2 lenses must be attached to the camera as shown, after the camera has been installed in the housing. **DO NOT** rotate housing zoom control until **AFTER** the port is installed. Before installing the lens port and checking operation, make sure the teeth on the Gear Sleeve mesh with the teeth on the small black housing Drive Gear. Also, if the Black Clamp does not mesh properly with the Gear Sleeve, rubber strips (provided) may be added to the inside of the clamp.



**A compatible lens port is required for waterproof operation.  
Never submerge the housing without a lens port attached.**

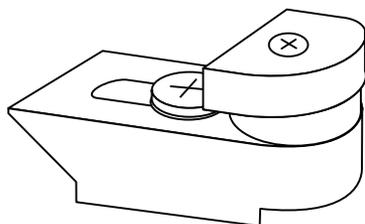
## Attaching the Lens Port

1. Lightly lubricate the o-ring on the port extension base. When properly lubricated, the o-ring should have an even, slightly shiny appearance. Wipe off any excess lubricant.
2. Slide the port over the lens and secure to the front of the housing using the four installed Port Locks. Push each Port Lock in toward the port until you hear or feel a click. The Port Lock Release Button is spring-loaded and will drop into the locked position when properly engaged.

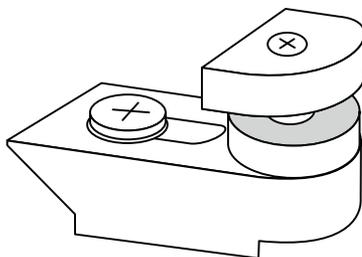
**⚠** The Port Lock Release Buttons must all be in the down or LOCKED position to properly secure the lens port. It will be very difficult to close the Port Locks if the o-ring is extruded or improperly seated.

Slight port movement is normal after port locks have been closed and should not affect the piston-type o-ring seal.

LOCKED Position



UNLOCKED Position



3. After installing the lens and port, turn the Zoom Control knob on the housing. If the Zoom Control is difficult to turn, the Gear Sleeve may be warped. If necessary, reduce or omit any rubber installed on the Zoom Clamp.

4. If using a dome with a shade, rotate the lens port slightly until the wider extensions are oriented on the top and bottom.

 When using the bayonet mount 5510.11 lens extension, remove and reattach the shade for proper orientation if necessary, after port installation. If the shade is misaligned, it may cause vignetting (dark shadows in the corners of the image).

## Manual Focusing

Ikelite DSLR housings are designed for auto-focus DSLR cameras and lenses. Manual focusing is not recommended. In some cases, if you desire to manually focus a lens, the Zoom Clamp can be moved onto the lens's Manual Focus Ring. You can then use the housing Zoom Control Knob to manually focus. This will result in loss of zoom capability.

## Final Check

1. Re-check the o-ring seal. The seal should form an even, solid line around the back of the housing.
2. Turn on the camera and check all control functions.
3. Make sure that the camera can obtain focus and take a photo.
4. Check battery life and open storage space on your memory card.
5. Submerge the housing in a fresh water tank dedicated to underwater photography equipment. Visually confirm that there are no signs of water intrusion or a steady stream of bubbles coming from one of the housing seals.

## Entering the Water

1. If possible, we recommend entering the water without your housing to ensure that you are comfortable and your life-saving equipment is in working order. Once you are stable, have someone pass your camera housing to you.

2. Submerge the housing at the surface of the water and visually confirm that there are no signs of water intrusion or a steady stream of bubbles coming from one of the housing seals. If water does appear to be entering the housing, point the lens port downward and return the housing to the surface as quickly as possible. Please observe all necessary safety precautions. NEVER ascend faster than accepted safety limits.
3. Use your hand to gently wipe away any small bubbles that may be on the face of the lens port. Bubbles will produce soft focus spots in your photo or video.

## Setting Up An External Strobe

We recommend attaching an external strobe for the optimal color and clarity in a wide variety of shooting situations, including daylight photography. Built-in Conversion Circuitry provides real TTL flash exposure when used with Ikelite DS series strobes. An external strobe may be triggered by electrical sync cord.

### Housing Conversion Circuitry

The circuitry is automatically activated once a DS series strobe is attached to the housing and turned on. Once attached, turn the strobe on first before turning on the camera. The circuitry cannot be powered up or used by non-Ikelite or non-DS Ikelite strobes.

The TTL/Manual Switch is located on the back of the housing camera tray mount. Slide the camera tray out of the tray mount and set the switch to match your strobe setup. The switch allows a choice of TTL or manual flash mode with Ikelite DS strobes. All other strobes will operate as manual flash only, regardless of the switch position.

When the switch is set to TTL using Ikelite DS strobes, you are in TTL flash mode and there will be a preflash. When the switch is set to manual with DS strobes, the preflash is disabled and you can set the strobe power manually.

## About Sync Cords

Attaching a strobe via electrical sync cord provides faster strobe recycle times as compared to a fiber optic connection, and prolongs camera battery life.

When a compatible Ikelite DS strobe is attached via sync cord, circuitry built into the housing allows the strobe to communicate directly with the camera. The circuitry will adjust the strobe's power for perfect exposure.

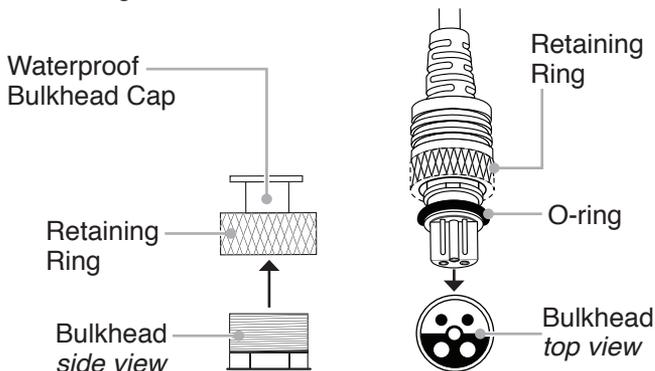
Strobes from SEA&SEA, INON, and Nikonos attached by electrical sync cord are not capable of powering the TTL circuitry. These strobes must be used in manual power modes when connected via electrical sync cord.

## Attaching a Sync Cord

**A bulkhead cap or sync cord must be attached to the housing for waterproof operation. Never submerge the housing without either a sync cord or waterproof bulkhead cap attached.**

1. Remove the bulkhead cap.
2. Lightly lubricate the sync cord o-rings. We recommend using only Ikelite silicone lubricant to eliminate the possibility of swelling due to incompatible compounds.

3. Line up the pins and receptacles and insert the sync cord plug into the housing bulkhead.



4. Rotate the knurled retaining ring until snug on the housing bulkhead. Do not use pliers or tools to tighten the retaining ring.
5. Attach the other end of the sync cord to the bulkhead on your strobe.
6. If using an Ikelite strobe, set the strobe to TTL. If using a non-Ikelite strobe, set the strobe to manual flash and select a manual power setting.
7. Turn on the strobe(s).
8. Turn on the camera.
9. Take a test photo to ensure that your strobe(s) are functioning properly.

## Maintenance

### Post-Dive

1. Rinse the housing in fresh water. Rotate the housing controls and press each button while submerged in fresh water to flush out any salt or debris to ensure smooth operation on future dives.

2. NEVER leave your housing in a fresh water rinse tank. Collisions with other equipment can cause scratches or damage to your equipment.
3. Stow the housing in a shaded place where it is protected from impact or overheating. If no shade is available, we recommend covering the housing with a towel or cloth.
4. Check the memory card capacity and battery life of your camera and strobe(s). Recharge as necessary.
5. Always re-check o-ring seal after opening the housing.

## Travel and Storage

1. Remove the camera from the housing for travel or storage.
2. Check the main housing o-ring.
3. Close the empty housing and submerge in lukewarm fresh water. While submerged, rotate each control and depress each button to flush out any salt or debris.
4. Remove the housing from water and rinse with running water.
5. Do not rinse the inside of the housing or submerge the open housing in water. If the inside of the housing needs to be cleaned, wipe with a clean, slightly damp cloth.
6. Dry the housing with a clean, lint-free cloth.
7. Store in a cool, dry place.
8. Like regulators and other pressure-sensitive equipment, we recommend careful care and cleaning along with annual replacement of the factory seals.

## Troubleshooting

### Water enters the housing

- Re-clean and re-install the main o-ring.

- Take the housing underwater without a camera installed to ensure that the leaking has been corrected.

### **Photos are over-exposed (too light)**

- Adjust aperture (smaller), shutter speed (faster), or ISO (lower) setting.
- Move light(s) farther away from your subject.
- Adjust exposure compensation in the camera.
- Adjust lighting power.

### **Photos are under-exposed (too dark)**

- Adjust aperture (larger), shutter speed (slower), or ISO (higher) setting.
- Move light(s) closer to your subject.
- Adjust exposure compensation in the camera.
- Adjust lighting power.

### **Strobe will not fire**

- Turn on strobe and check battery strength.
- Make sure that the camera menu is set properly to fire an external flash.
- Check that the sync cord is properly attached.

### **Buttons are stuck**

- Soak the housing in lukewarm fresh water. Depress each button several times while the housing is submerged.
- Apply lubricant to the button. Press the button several times to distribute the lubricant.

### **Button(s) or control(s) do not line up**

- Ensure that nothing is preventing the camera from going into the housing.
- Push the camera mounting plate forward until it is flush with the housing base plate.
- Tighten camera mounting bolt.

### **Camera is not functioning normally underwater**

- Ensure that the camera mounting plate is pushed all of the way into the housing mounting plate.
- Check each housing control while underwater to ensure that they are disengaged. An inadvertently engaged control may limit functioning of the camera.
- Tighten camera mounting bolt.
- Check camera and strobe battery power.

### **Backscatter or “snow” in images**

- Reposition strobe(s) or light(s) farther from the camera lens.
- Avoid using strobes in extremely low-visibility conditions.

## **Spare Parts**

- 5512.68 spare o-ring set with main o-ring, port o-ring and lubricant
- 0132.59 Main o-ring
- 0105 Port o-ring
- 9104.5 Waterproof bulkhead cap
- 0200.91 Housing body cap
- Silicone lubricant resealable 2cc tube

# Maintenance

## Lens Port

Treat the surface of the lens port as a camera lens. After use, rinse and gently dry the outside lens port to avoid water spotting. To clean, use a mild soap solution or lens cleaner. It is NOT necessary to remove the Port for cleaning. Do not rinse the inside of the Port. Do not use alcohol or window cleaner on the Lens Port.

## Housing and O-ring Storage

When storing the housing, remove the main housing o-ring. Although the main housing o-ring does not require lubricant to make a seal, a light application will keep the o-ring from drying out and also help to show a dark sealing line.

Lightly lubricate the o-ring until it appears shiny and place in a small resealable plastic bag. Use ONLY Ikelite lubricant. Place the bag inside the housing and store until needed.

Store the housing away from direct sunlight and chemicals.

For extended periods of time, leave the lid snaps open to release pressure on the lid snap springs.

## Lubricant

Ikelite provides silicone lubricant with the housing to lightly lubricate controls and o-rings. We recommend you use ONLY Ikelite lubricant on Ikelite products. Other brands may cause Ikelite o-rings to swell and not seal properly. Lubricant is not a sealant; it is used to reduce friction. Excessive lubricant can collect sand, hair or debris which may interfere with proper sealing.

**⚠ CAUTION: Never use spray lubricants as the propellant ingredient can cause the plastic housing to crack or o-rings to swell.**

## Housing Maintenance

Your Ikelite Digital Housing should be given the same care and attention as your other photographic equipment. In addition to normal maintenance, we recommend that the housing be returned to Ikelite periodically to be checked and pressure tested.

Do not leave the camera and housing in direct sunlight for prolonged periods. Heat may damage the camera.

Do not ship the camera in the housing.

Before using the housing, always check the tightness of the set screw in each control knob. Check each control gland penetrating the housing to make sure they are tight. There is a slight chance that either could vibrate loose during travel.

Keep area where the o-ring fits and sealing surface of the housing clean.

Rinse the housing exterior thoroughly in freshwater after each saltwater use. Depress push buttons repeatedly in freshwater to eliminate trapped saltwater. Dry with a soft cloth. Dry lens port to eliminate water spotting. After several uses in saltwater, soak the housing exterior in a mild soap solution; rinse and dry before storing. When storing the housing, remove the main housing o-ring, lightly lubricate, and place in a plastic bag. Do not stretch the o-ring. Place the plastic bag with o-ring inside the housing for safe keeping.

Leave lid snaps in the open position when not using the housing for extended periods.

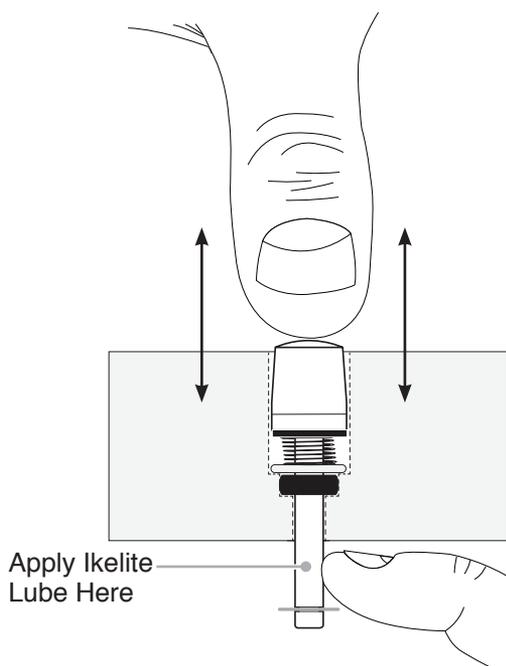
Always disassemble and clean the housing Tray/Handle(s) before storage. Over time, corrosion can make components difficult to disassemble.

## Control Maintenance

Ikelite controls are designed to provide years of reliable service with minimal maintenance.

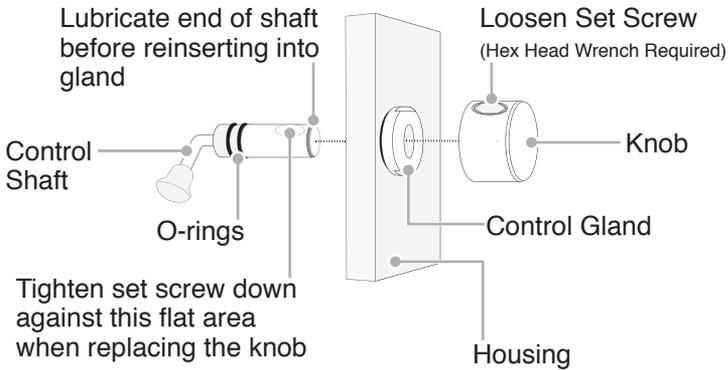
Push button controls normally require no maintenance other than rinsing in fresh water after saltwater use. Depress each push button in fresh water several times to eliminate trapped saltwater. If a push button control becomes difficult to push or if it sticks when depressed, soak the housing in luke warm fresh water. After a few minutes, operate the push button. If this does not correct the problem, return the housing to Ikelite for maintenance. If you are on a trip and unable to return the housing immediately, a push button may be lubricated by pressing and holding the push button all the way in. Then, use your finger or other small non-metal object to place a small amount of lube at the base of the shaft inside the housing.

Press and release the push button several times until the lube is worked up into the o-ring.



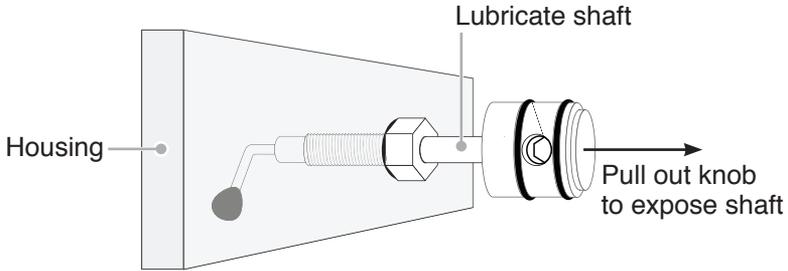
After completing this procedure, close the housing and submerge it in water without the camera inside. Check the control for watertightness. Although not recommended, if it is necessary to remove a housing push button, **DO NOT** re-use the E-clip. Contact Ikelite for replacement E-clips (part #0319.12).

In the unlikely event one of the control shafts sticks or becomes difficult to operate, you can remove the control from the housing and lubricate it, or return the housing to Ikelite for maintenance. Your housing may feature both **round** and **hex** style control glands. To remove a control in a **round** style gland, loosen the set screw in the knob (hex head wrench required); remove the knob.



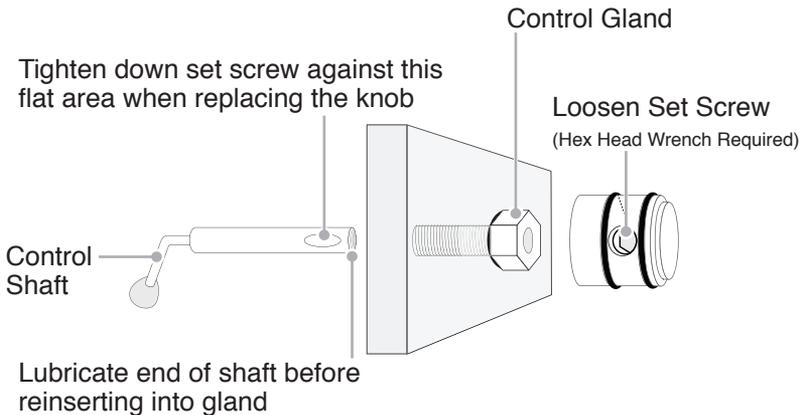
If there is salt or dirt build-up on the exposed control shaft, clean the shaft. Open the housing and gently slide the control shaft out of the control gland. Clean and lightly lubricate the shaft and o-rings, including the large end of the shaft. If there is a shutter spring on the Control Shaft, make sure it is in its proper position. Rotate the Shaft back and forth slightly to aid installation back into the Control Gland. Replace the knob with the Set Screw over the Control Flat. The Set Screw in the knob should be tightened down against the flat area on the Control Shaft so the knob does not turn on the shaft.

Some of the controls have long shafts and feature a **hex** style control gland. These controls can be pulled out, exposing the shaft.



To lubricate the control, gently pull on the knob until the stainless steel shaft is exposed. Lightly lubricate the shaft, then move the shaft in and out several times. This will lubricate the x-ring in the Ikelite control gland. This should be done before using the housing after a prolonged storage period, or once a week when the housing is in constant use.

Some of the controls have a short shaft and cannot be pulled out exposing the shaft for lubrication. In the unlikely event one of these controls sticks or becomes difficult to operate, you can remove the control from the housing and lubricate it, or return the housing to Ikelite for service. To remove the control, loosen the set screw in the knob (hex head wrench required); remove the knob.



If there is salt or dirt build-up on the exposed control shaft, clean the shaft. Open the housing and gently slide the control shaft out of the control gland. Clean and lightly lubricate the shaft, including the end of the shaft. Slide the shaft back into the control gland and gently slide the shaft back and forth a few times without fully removing the shaft from the gland. Replace the knob noting the flat area on the shaft. The set screw in the knob should tighten down against the flat area on the control so the knob does not turn on the shaft. Close housing **without** a camera inside and water pressure test in a bathtub or swimming pool. Rotate\* all knobs to make sure the housing is watertight. Check all controls while the housing is submerged.

**\*Caution:** If your housing has a shutter spring, **DO NOT** rotate the shutter control more than 1/16th of a rotation, otherwise, you may accidentally bend the shutter spring or cause the spring to “pop off” the control shaft.

## Photo Tips

The number one rule in underwater photography is to eliminate as much water between the camera and subject as possible. Get as close as you can to the subject, then use the zoom. If you are using flash for still photos, subjects beyond 6 ft (1.8 m) will not have much color regardless of strobe power.

Photograph in clear water; do not stir up the sand or silty bottom. If backscatter becomes a problem in the environment you are photographing, an external flash will help eliminate much of the backscatter.

Many digital cameras have a slight lag time between when you press the shutter release button and the camera actually takes the picture. Hold the housing steady a second or two after pressing the shutter release button.

Do not shoot down on subjects as they will quite often blend into the background and be difficult to see in the photograph. Shoot subjects straight on or shoot up at a slight angle using the blue water as a contrasting background.

When using daylight or flash, if your camera consistently over or underexposes the image, you may want to adjust your camera's exposure compensation settings.

If you error in exposure, it is better to have the image slightly underexposed rather than overexposed. An overexposed image is missing color information which cannot be adjusted in a photo processing program. A slightly underexposed image has color information that can be adjusted.

It is important to respect all living creatures underwater, including people, marine life, and coral. While we encourage people to get close to their subjects when taking a photograph, we recommend they not touch, lie on, or in any way disturb the things they find underwater.

## **Limited Warranty**

This Ikelite product is warranted against any manufacturing defects for a period of one (1) year from the original date of purchase. Defective products should be returned to Ikelite postage paid. Ikelite will, at its sole discretion, repair or replace such products, and will return to customer postage paid. All other claims of any nature are not covered. Except as mentioned above, no other warranty expressed or implied applies to this Ikelite product.

## **Service and Repairs**

Ikelite is most interested in performing any service to ensure that all products perform as intended. Evidence of purchase date must be provided to obtain warranty service.

No prior authorization is required. You may return directly to us or through your dealer. Please include a brief description of the problem, any relevant email correspondence, and/or description of the service request. Always include name, shipping address, email address, and phone number inside of the package. Send postage paid to:

Ikelite Underwater Systems  
Attn: Service Department  
50 West 33rd Street  
Indianapolis, IN 46208 USA

For the separate international customs documentation form that you complete to accompany the shipment, please state or designate that the enclosed products were originally manufactured in the USA and are being returned to the manufacturer for repair service. Value of the equipment listed for customs purposes should be zero.

## Contact Us

If you have any questions about your product or need advice on getting the images you want, please get in touch with us and we'll do everything we can to help you capture your unique perspective.

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