



Underwater TTL Housing for Panasonic Lumix LX100, LX100 II, Leica D-Lux (Typ 109)

Product Number 6171.11

Product Registration

Please register your product within 15 days of purchase. Our product registration database is the quickest way for us to contact you in the event of a product update.

To register, send a photo of the above registration label to us via ikelite@ikelite.com along with your name, address, and phone number.

Introduction

Thank you for your purchase of Ikelite products.

Our primary focus is to provide quality, professional grade products for use in and under water. Our products are designed, manufactured, and distributed from our sole facility in Indianapolis, USA where we started in 1962.

We are available if you have any questions or want photo advice. Send us an email 24 hours a day to ikelite@ikelite.com. We strive to reply within 1 business day.

An electronic version of this instruction manual is available for download via the product page on our website:

<https://www.ikelite.com>

In the Box

- Housing
- Main o-ring # 0110 (installed)
- Port cover # 0200.08 (installed)
- Waterproof bulkhead cap # 9104.7 (installed)
- .050" hex key # 0945.11
- 1/16" hex key # 0945.16
- 1/8" hex key # 0945.18
- Silicone lubricant 1cc tube

Important Notices

- » **A bulkhead cap or sync cord must be attached to the housing bulkhead for waterproof operation. Never submerge the housing in water without either a sync cord or bulkhead cap attached.**
- » **Do not pull the shutter trigger without a camera installed. You may accidentally detach or damage the control spring.**
- » **Never leave a housing in a rinse tank, even if it is the only system in the tank. Accidental damage may occur when the user walks away from a housing while it is in the rinse tank.**
- » **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.**

Accessory Port

- » **Do not remove the Accessory Port Plug unless you are installing a compatible accessory.**

Your housing features one spare Accessory Port which may be used for attachment of factory optional or aftermarket housing accessories. The Accessory Port is 1/2-20 threaded.

Visit **ikelite.com** for information on optional accessories.

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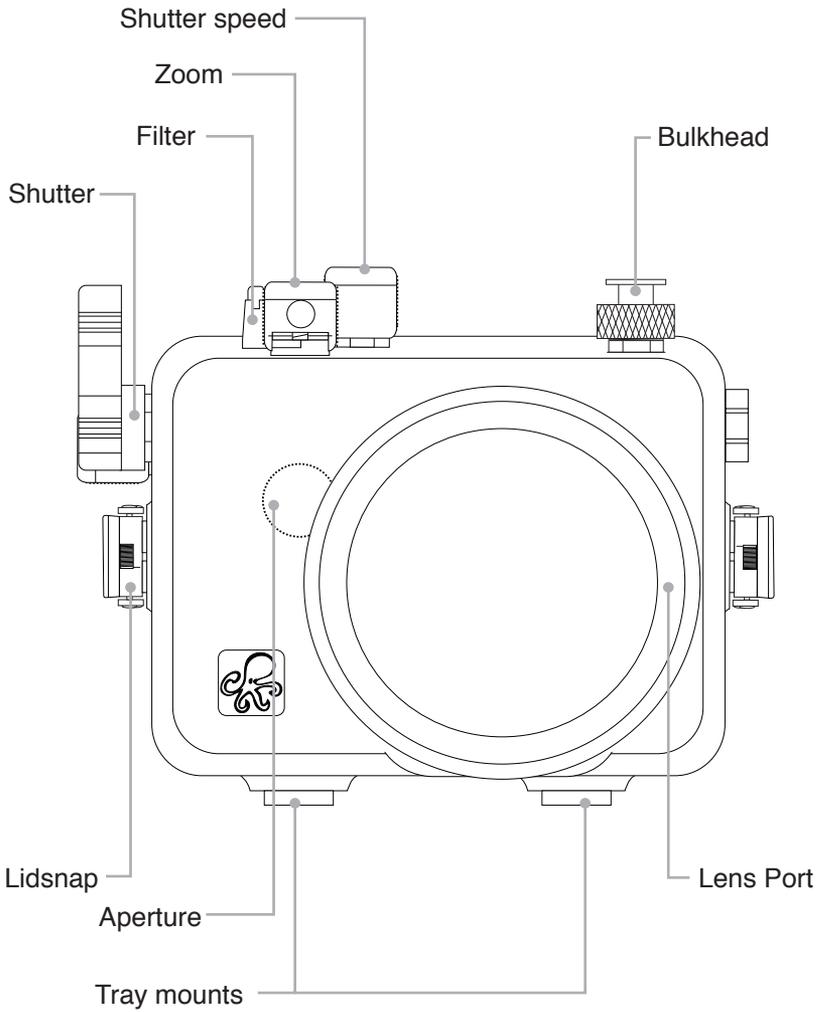
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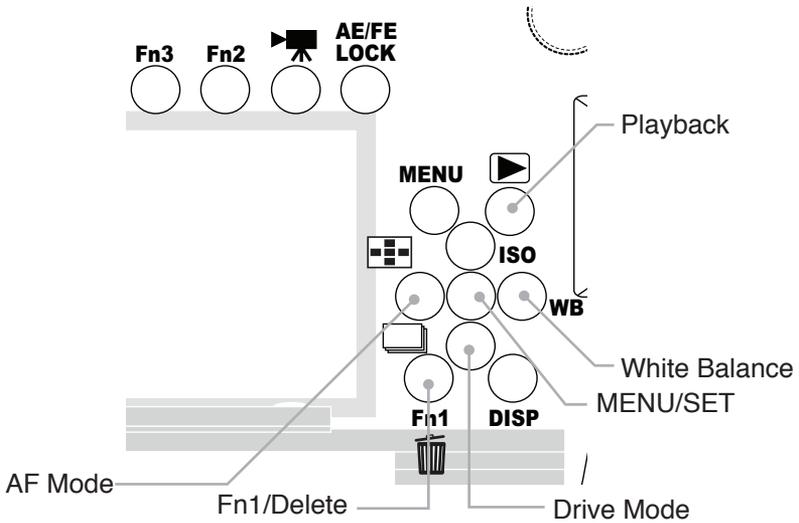
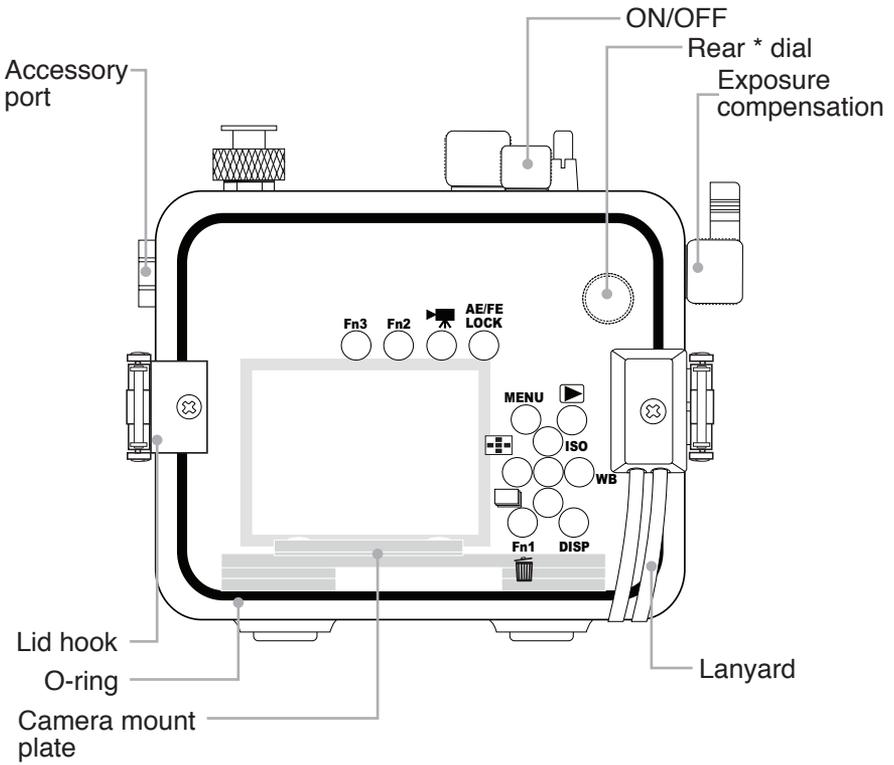
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Getting to Know Your Housing





Tray Mounts

This housing features two 1/4-20 threaded tray mounts on the bottom of the housing. The spacing between the tray mounts is 3" (76.2 mm). Optional tray with handles and mounting hardware are sold separately.

It is recommended to detach and thoroughly rinse the tray mounts, tray, and mounting hardware, with fresh water routinely during continuous use and prior to storage.

Accessory Port

This housing features one spare accessory port which may be used for the attachment of optional accessories. This port accepts fittings designed for a 1/2" through or 1/2-20 threaded hole.

The optional Vacuum Kit # 47012 may be installed in this location. A hand pump with gauge allows you to draw a vacuum on the house to simulate water pressure and check for leaks prior to entering the water.

Visit ikelite.com for an updated list of compatible products.

» **Do not remove or loosen the accessory port plug unless you are installing a compatible accessory.**

Trigger Extension

The shutter lever may be extended to be closer to your hand when using an optional tray with right-hand quick release handle. This requires the Trigger Extension # 4077.93.

Trigger extension and tray with quick release handle are sold separately.

Lanyard Mount

A lanyard with a thin cord may be attached to the housing using the lanyard mount on back of the housing.

Setting Up Your Camera

Pre-Installation Checklist

1. Insert a fully charged camera battery.
2. Insert a properly formatted memory card.
3. Remove any attached lanyard or neck strap.
4. Remove the camera's external flash if attached.

Camera Settings

- Set **Red-Eye Removal** to OFF.
- Set **Shutter AF** to ON.
- Set **Half Press Release** to OFF.
- Set **Quick AF** to ON.
- Set **Eye Sensor AF** to OFF.
- Set **AF Assist Lamp** to OFF.
- Set **Focus/Release Priority** to FOCUS.
- Set **Filter Effects** to OFF when using an external strobe.

Exposure Settings

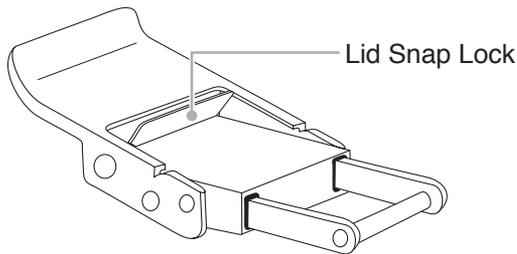
Refer to the **Cheat Sheets** in the Photo School section of our website for recommendations on exposure settings for a wide variety of shooting situations:

<https://www.ikelite.com/blogs/cheat-sheets>

Setting Up Your Housing

Opening the Housing

1. Push the lid snap lock forward and start to 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.

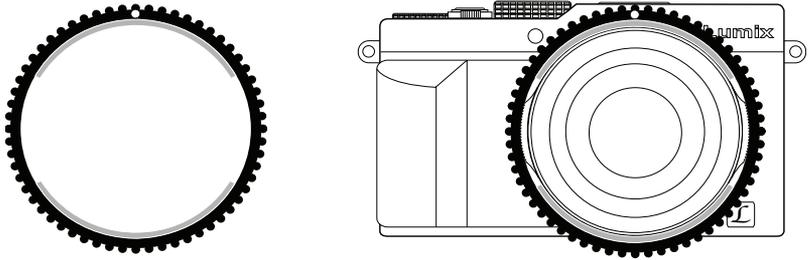


3. Repeat with remaining lid snaps.
4. Remove the housing back.

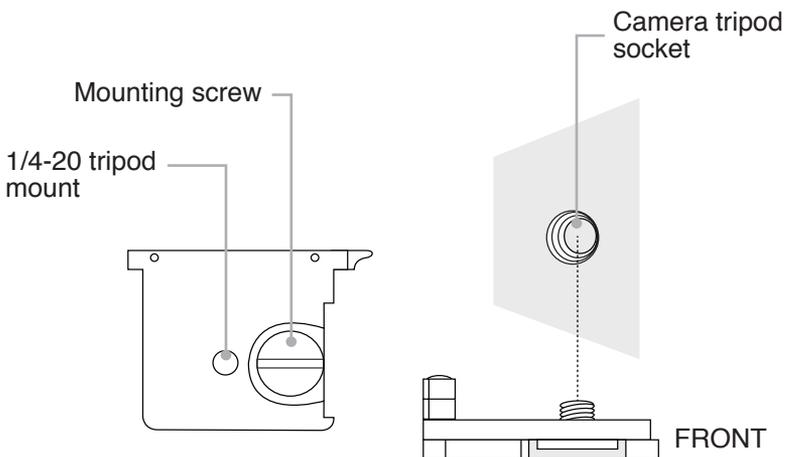
Inserting the Camera

1. Remove any lanyard or neck strap which may be attached to the camera.

2. Orient the Gear Ring with the foam strips on top and bottom and the white dot at the top center. Attach the Gear Ring to the camera by gently pressing it onto the camera's Aperture Ring. The front of the Gear Ring should be flush with the front of the Aperture Ring.



3. Remove the Camera Mounting Plate from the housing.
4. Line up the mounting screw with the camera's tripod socket. Use a flat head screwdriver to tighten the mounting plate to the camera.

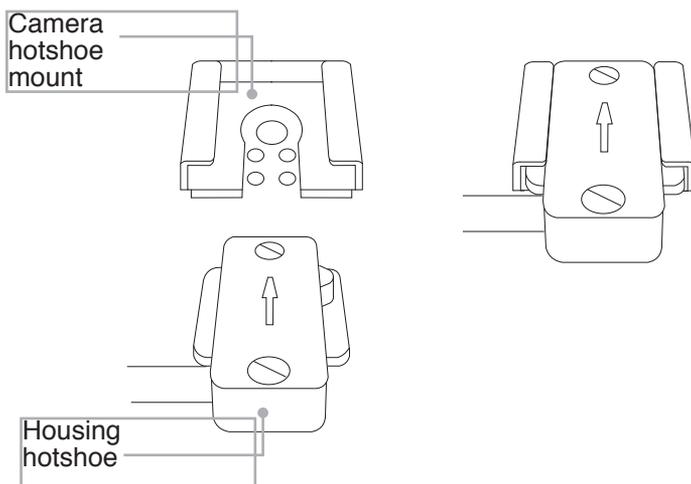


5. Pull out on the housing's ON/OFF, Shutter Speed, and Exposure Compensation knobs to move them out of the way.

6. Insert the Mounting Plate into the corresponding slot on the inside bottom of the housing. Rotate the front aperture knob slightly to assist Gear Ring engagement with housing gear. Slowly push the camera all of the way forward until the back of the Mounting Plate is flush with the back of the housing mount.
 7. Orient the On/OFF control so that the legs of the “U” are on either side of the camera lever.
 8. Check the Gear Ring. If it has slipped backwards slightly, gently push the top forward to engage with the gearing in the front of the housing.
- » **The camera’s Aperture Ring does not rotate 360°. Do not force the control to rotate past its natural stop. Forced over-rotation may damage the housing’s gearing.**

Attaching the Hotshoe

1. If using a strobe connected by electrical sync cord, orient the hotshoe with the arrow on top pointing towards the front of the camera.



2. Slide the housing hotshoe into camera’s hotshoe mount until it stops.

- » **The hotshoe must be all the way forward in the camera mount for proper flash operation.**
- » **Do not attach the hotshoe if using a strobe connected by fiber optic cord. Connecting the hotshoe will disable the camera's built-in flash.**

Closing the Housing

1. Make sure the o-ring is clean and in its proper location on the back of the housing. The main 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 both lid snaps at the same time.
6. Check the o-ring seal. The o-ring should form a uniform, solid line around the back of the housing.
7. Check control functions.

Setting Up An External Strobe

We recommend attaching an external strobe for the optimal color and clarity in a wide variety of photographic situations, including daylight photography.

This housing provides a direct electrical connection to the camera's external flash hotshoe via a manual flash hotshoe. An external strobe may be triggered via electrical sync cord.

TTL Strobe Compatibility

When compatible Ikelite DS strobe(s) are attached by electrical sync cord, the TTL circuitry built into the housing allows the camera to communicate directly with the attached strobe(s). The camera triggers the strobe(s) and adjusts the strobe(s) power automatically for perfect exposure.

The following strobes are TTL compatible with this housing:

- Ikelite DS50 above serial # 70000
- Ikelite DS51
- Ikelite DS125 above serial # 5000
- Ikelite DS160, DS161
- Ikelite DS200 above serial # 7163

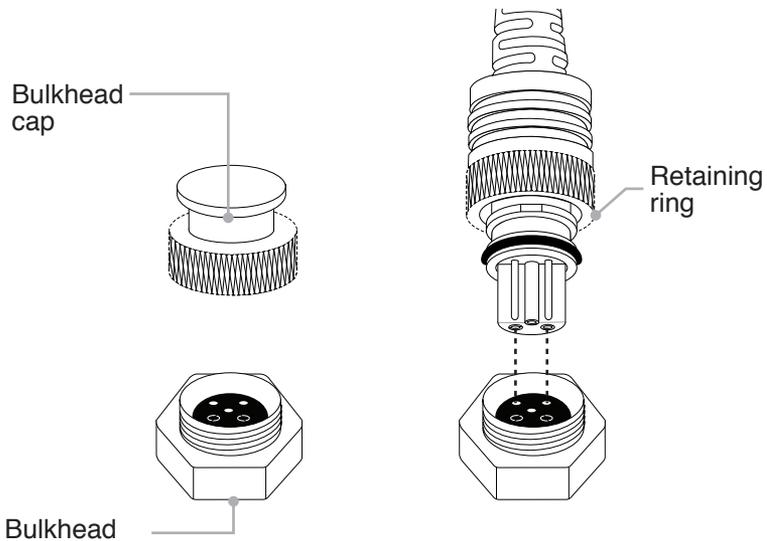
Flash exposure compensation may be added or subtracted using the camera's menu settings. Due to the camera's pre-flash sequence, manual full power setting cannot be used when a DS strobe is attached by fiber optic sync cord.

Strobes from SEA&SEA, INON, and other manufacturers may be attached by electrical sync cord for faster shooting and extended battery life compared to fiber optic triggering. These strobes are not capable of powering the TTL circuitry built into this housing. Non-Ikelite strobes must be used in manual power modes when connected by electrical sync cord.

Attaching an Electrical Sync Cord

1. Remove connector protectors and bulkhead caps from each connection.

2. Apply a very thin, even layer of lubricant on all threads, sealing surfaces, and the exposed portion of the plug o-ring. Do not allow lubricant to get into the pins and receptacles of the plug or bulkheads.



3. Align plug and insert into the housing bulkhead. Each male pin mates with a female receptacle. Failing to line up the contacts properly before tightening may result in damage to the converter plug and/or housing bulkhead.
 4. Hand-tighten the retaining ring.
 5. Attach the other end of the sync cord to the bulkhead on your strobe.
 6. Turn on the strobe(s).
 7. Turn on the camera. Take a test photo to ensure that your strobe(s) are functioning properly.
- » **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.**

8.

Taking your Housing in the Water

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 take a photo.
4. Check camera battery life and available storage space on your memory card.
5. Check your external flash, if using.
6. Draw a vacuum on the housing to check for leaks using the optional vacuum kit, if using (sold separately).
7. Submerge the housing in a fresh water tank dedicated to underwater photography equipment. Visually confirm that there are no signs of water intrusion. One sign of a leak is a steady stream of bubbles coming from one of the housing's seals.

Entering the Water

1. Before entering the water, turn the camera on and operate each of the housing controls to get a feel for using the camera in the housing.
2. We recommend entering the water without your housing to ensure you are comfortable and your life-saving equipment is in working order. Once you are stable, have someone pass your camera housing to you.
3. Submerge the housing at the surface of the water and visually confirm that there are no signs of water intrusion. Look for water droplets or fogging inside of the housing, or a steady stream of bubbles coming from one of the housing seals.

4. Use your hand to gently flush 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.
- » **If water appears to be entering the housing, point the lens port downward and return the housing to the surface immediately. Please observe all necessary safety precautions. NEVER ascend faster than accepted safety limits.**

Shooting Underwater

- Get as close as possible to your subject. For the best results, only photograph subjects that are less than 6' (1.8m) away.
 - Be careful not to stir up sand or silt.
 - Photograph subjects straight on or at a slight upward angle.
 - If you err 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. Get as close as you can to your subjects when taking a photograph, but never touch or disturb the marine life.**

Learning about Underwater Photography

Visit the Photo School section of ikelite.com for a wide range of information on shooting underwater including:

- **Product Tutorials** and **Videos**
- **Cheat Sheets** with exposure setting recommendations for a wide variety of situations

- **Advanced Techniques** with in-depth articles on different shooting techniques
- **Frequently Asked Questions**
- **Photo Galleries** showing examples of real results underwater
- **Feature Articles** and more!

Maintenance

Post-Dive

1. Rinse the housing in fresh water. Rotate the housing controls and press each button several times 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, even if it is the only system in the tank. Collisions with another person's gear can cause scratches or damage to your equipment. Accidental damage occurs most often in the rinse tank.
3. Rinse off any residual residue from the rinse tank with clean, running fresh water.
4. Stow the housing in a shaded place where it is protected from impact and overheating. If no shade is available, cover the housing with a light colored towel or cloth.
5. Check the memory card capacity and battery life of your camera and strobe(s). Recharge as necessary.
6. Always re-check the o-ring seal after opening the housing.
7. Detach the cord plug or bulkhead cap and lubricate the threads, o-ring(s) and sealing surface(s) every 2-3 days during continuous use.

Lens Port

Treat the surface of the lens port like a camera lens. After use, rinse and gently dry the outside lens port to avoid water spotting. Use only a microfiber lens cleaning cloth to avoid scratches. To clean, use a mild soap solution.

- » **Do not rinse the inside of the lens port.**
- » **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.**

Storage

1. Clean the housing and controls thoroughly prior to storage.
 2. Remove the rear o-ring. Place in a small re-sealable plastic bag inside of the housing.
 3. Leave the lid snaps open to release pressure on the lid snap springs.
 4. Store the housing in a cool, dry place away from direct sunlight and chemicals.
 5. Before using the housing, check the tightness of the set screw in each control knob. Check each control gland to make sure they are snug. There is a slight chance that either could vibrate loose during travel.
- » **Do not leave the camera and housing in direct sunlight for prolonged periods. Heat may damage the camera.**
 - » **Do not transport with the camera inside of the housing.**
 - » **Do not store the housing in a humid environment. Prolonged exposure to high humidity may damage electronic components.**

Servicing Recommendations

It is recommended that the housing be sent to Ikelite or an authorized service center annually for routine service and maintenance. Service may be required more or less frequently depending on care and use.

Lubricating Controls

The housing's controls may need to be lubricated if they become particularly difficult to use or if the o-rings have dried out during longer periods of storage.

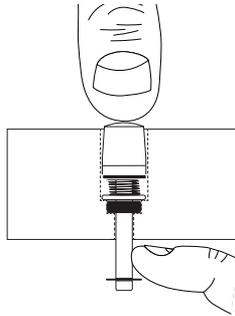
There will be some breaking force required to move the controls initially after the housing has been in storage for long periods of time. Remove controls for lubrication only if they continue to stick after applying a small amount of lubricant to the exposed portion of the shafts and working them many times.

- » **Use only Ikelite lubricant. Other types of lubricant may cause swelling of o-rings or cracking of plastic components.**
- » **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.**
- » **Never use spray lubricants as the propellant ingredient can cause the plastic housing to crack or o-rings to swell.**

Lubricating Push Buttons

1. Press and hold the push button all the way in.

2. Place a small amount of lubricant at the base of the push button shaft inside the housing.

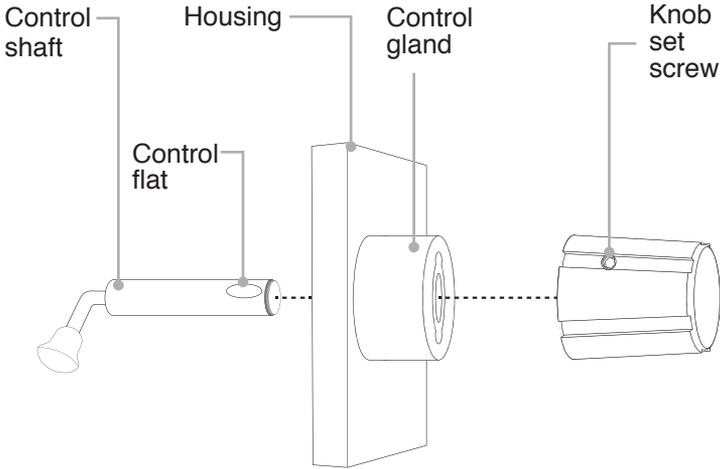


3. Press and release the push button several times to work the lubricant into the o-ring.
 4. If a push button control becomes difficult to push or if it sticks when depressed, soak the housing in warm, soapy fresh water. After a few minutes, operate the push button. If this does not correct the problem, return the housing to Ikelite for maintenance.
- » **To prevent build-up of salt, sand, or debris, the push buttons should be flushed with fresh, clean water after every use. Depress each push button while the housing is submerged in fresh water.**
 - » **If it is necessary to remove a housing push button, NEVER re-use the e-clip. Push button o-ring kits include replacement e-clips.**
 - » **Push buttons look similar but vary in length. Remove and re-install one push button at a time.**

Lubricating Control Shafts

1. Loosen the knob set screw using a hex key.
2. Remove the control shaft from the inside of the housing.

3. Clean and lightly lubricate the shaft, including the large outer end of the shaft.
4. If there is a spring associated with the control, make sure it is in its proper position.



5. Re-install the shaft from the inside of the housing. Rotate the shaft gently for smooth installation into the gland. Push the control shaft all of the way through until the flat of the shaft is visible on the outside of the housing.
 6. Align the knob set screw with the control flat.
 7. Tighten the set screw firmly against the flat of the control shaft using a hex key.
 8. Check that the set screw is oriented properly by holding the control shaft in place on the inside of the housing while attempting to rotate the control knob on the outside of the housing. If there is rotation, loosen the set screw and realign with control flat; retighten and recheck.
- » **We do not recommend removing the control gland from the housing.**

- » **Always take the housing underwater to depth without a camera after removing and re-installing controls.**
- » **Remove and re-install one control at a time.**
- » **DO NOT pull the shutter trigger without a camera installed. You may accidentally detach or damage the control spring.**

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) farther away from your subject.
- Adjust exposure compensation in the camera.
- Adjust lighting power.

Strobe will not fire

- Turn on strobe.
- Make sure that the camera's flash is set to fire on every photo.
- Check that the sync cord is 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.
- Check each housing control while underwater to ensure that they are disengaged. An inadvertently engaged control may limit functioning of the camera.

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.

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.
- Check that the zoom control is returned to the center position.

Backscatter or “snow” in images

- Position strobes or lights farther away from your lens and at a slight angle.
- Avoid using strobes in extremely low-visibility conditions.

Spare Parts

Rear o-ring # 0110

Port cover # 0200.08

Trigger lever extension # 4077.93

Waterproof bulkhead cap # 9104.7

Silicone lubricant # 5020

Push button o-ring kit # 6201.03

.050” hex key # 0945.11

1/16” hex key # 0945.16

1/8” hex key # 0945.18

Limited Warranty

This Ikelite product is warranted against any manufacturing defects for a period of two (2) years 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.

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
Attention: Service Department
50 W 33rd St
Indianapolis, IN 46208 USA
+1 (317) 923-4523
service@ikelite.com

For detailed instructions on returning your product for service including important information on international customs documentation, please refer to our website at:

<https://www.ikelite.com/pages/service-repairs>

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.

Ikelite Underwater Systems
50 W 33rd St
Indianapolis, IN 46208 USA
+1 (317) 923-4523
ikelite@ikelite.com