



200DL Underwater Housing for Canon EOS 90D

Product # 71726

Introduction

Thank you for your purchase of Ikelite products.

Our primary focus is to provide quality, professional grade products for use in underwater. Our products are designed, manufactured, and distributed from our sole facilities 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 ike@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 # 0132.59 (installed)
- Port O-ring # 0132.45 (installed)
- Zoom Gear Retainer # 0072.42 (installed)
- Body Cap # 0200.92 (installed)
- Waterproof Bulbhead Cap # 9104.7 (installed)
- Base with Left-Hand Quick Release Handle (installed)
- Hardware Set for Base with Handle # 9523.23 (installed)
- Tool for Zoom Gear Retainer # 0945.22
- .050" Hex Key # 0945.11
- Silicone Lubricant 1cc tube

Important Notices

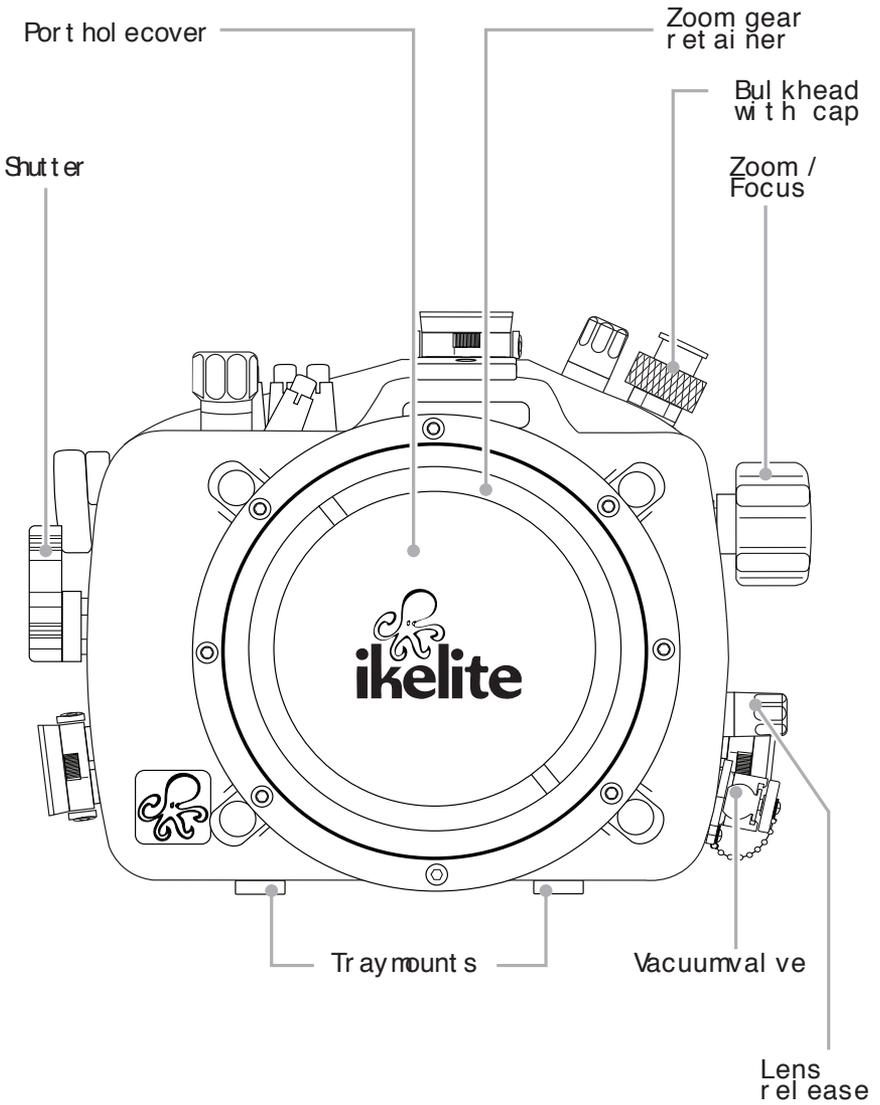
- » **This housing requires a compatible DL lens port for waterproof operation (sold separately). The housing is not waterproof without a DL lens port attached.**
- » **A bulkhead cap or sync cord must be attached to the housing bulkhead for waterproof operation. Never submerge the housing in water without 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.**
- » **If you will be using the system in strong surf it is recommended to draw a vacuum on the housing using the optional vacuum pump (sold separately).**

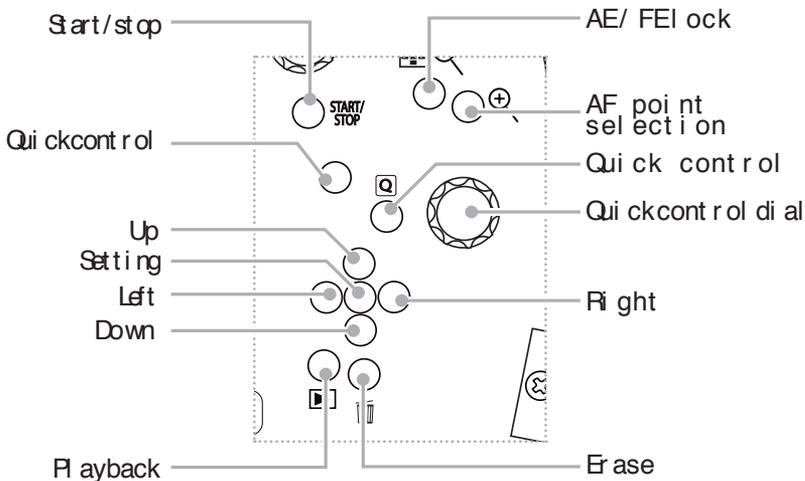
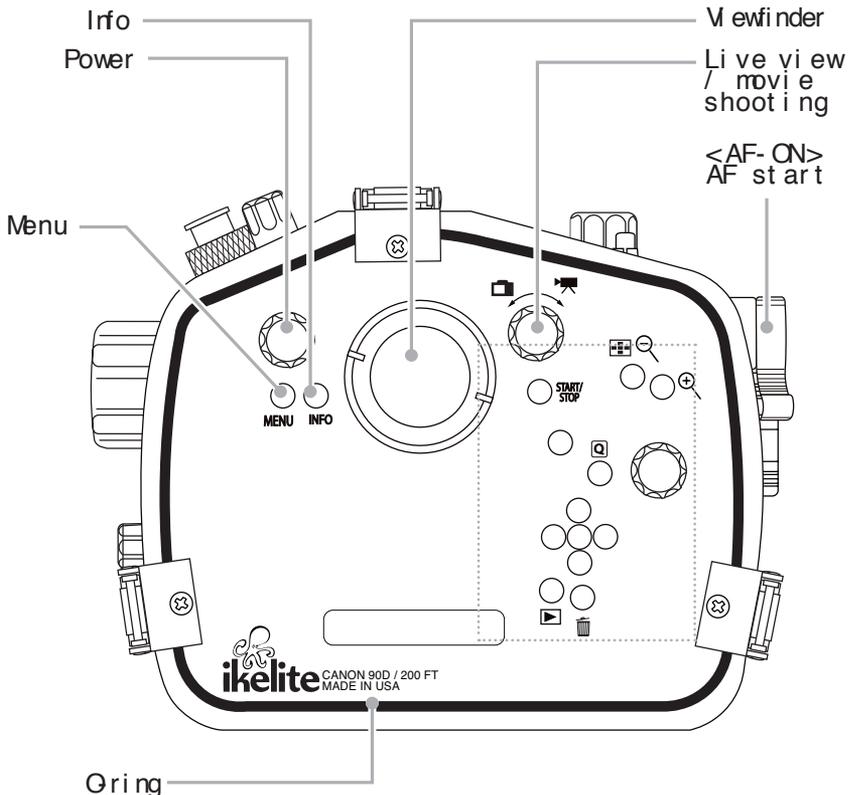
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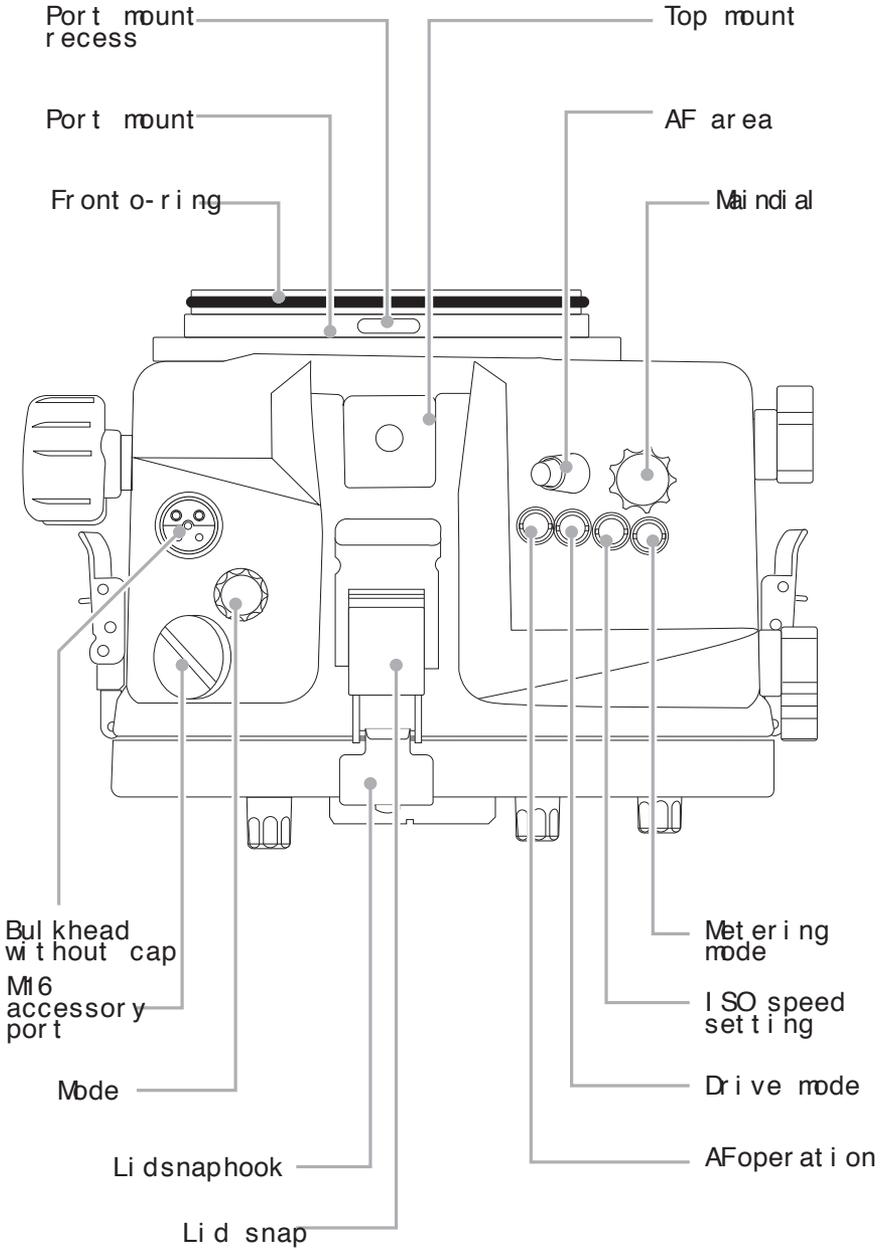
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Getting to Know Your Housing



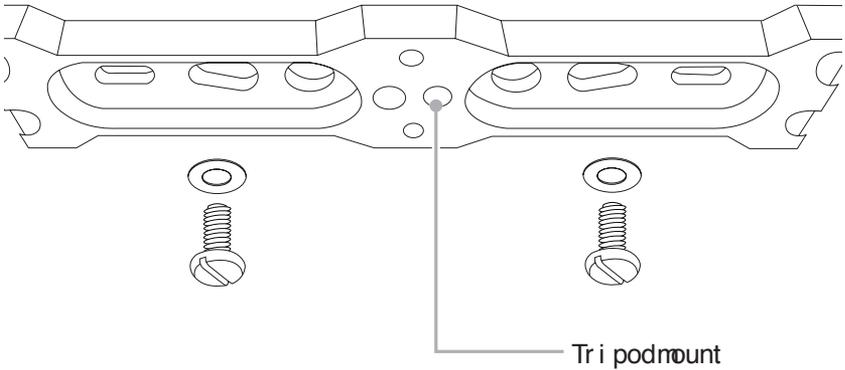




Housing Features

Base with Quick Release Handle

The handle is attached to the base plate at each end of your housing with the two 1/4" nylon washers and 1/4-20 x 3/8" screws.



It is recommended to remove your base with quick release handle and thoroughly inspect the tray, housing, and handle periodically.

Accept a 1/4-20 threaded hole allows attachment of the base plate to a standard tripod.

The base features additional mounting locations for attachment to a variety of lightweight housings (hardware not included).

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 an M6 threaded hole. Visit www.kelite.com for an updated list of compatible products.

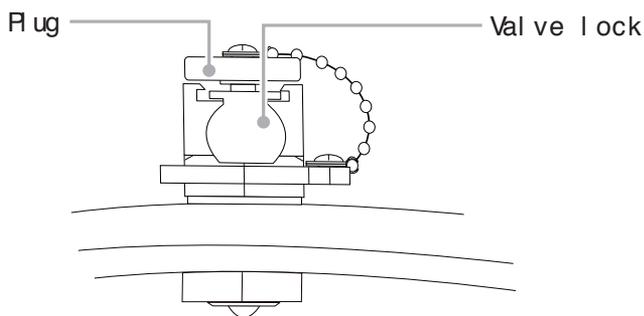
- » **Do not remove or loosen the accessory port plug unless you are installing a compatible accessory.**

Top Accessory Mount

The housing features a 1/4-20 threaded top mount. Ball and flange type mounts are available for attachment of a GoPro camera, focus light, or other lightweight accessories.

Vacuum Valve

Your housing features a valve to check for leaks before entering the water. Use of the vacuum valve requires a pump, sold separately.



- » **DO NOT remove vacuum valve plug unless you are plugging in a vacuum pump.**
- » **DO NOT submerge the housing without the plug installed. The housing will not be waterproof without the plug installed.**

Trigger Extensions

The shutter and AF-C/NI lever may be extended to be closer to your hands when using the optional Right-Hand Quick Release Handle #4077.02. This requires the Trigger Extension #4077.95 (one per control).

Trigger extensions and right-hand quick release handle are sold separately.

Setting Up Your Camera

Pre-Installation Checklist

1. Insert a fully charged camera battery.
2. Insert a properly formatted memory card.
3. Remove lens cap and any attached lanyard or neck strap.
4. The built-in camera flash cannot be used under water and should be left closed.

Camera Settings

- Set **Touch control** to “Disable.”
- Set **Flash control > Flash firing** to “Always fire” when using an external strobe.
- Set **Slow Syncro** to “1/250-1/60sec. auto” to prevent too slow of a shutter speed when shooting in P or Av modes.
- Set **Red-eye reduction** to “Disable” when using an external strobe.
- Set **AF-assist beam firing** to “Disable” when using an external strobe.

Camera Settings Display

Some camera information is displayed on the top of the camera's LCD screen and off using the INFO button.

For a larger display of camera settings, use the camera's Quick Control button.

Power Save

The camera's power save function allows you to extend battery life significantly and yet always be ready for the next shot.

If the camera is not working properly, it may be a problem with the camera. To check the camera, simply press the shutter button and see if the camera works. If the camera does not work, it may be a problem with the camera.

Use the camera's setup menu to set **Autopower off** to 1-5 minutes. This depends on your average period of time between active shooting intervals.

Exposure Settings

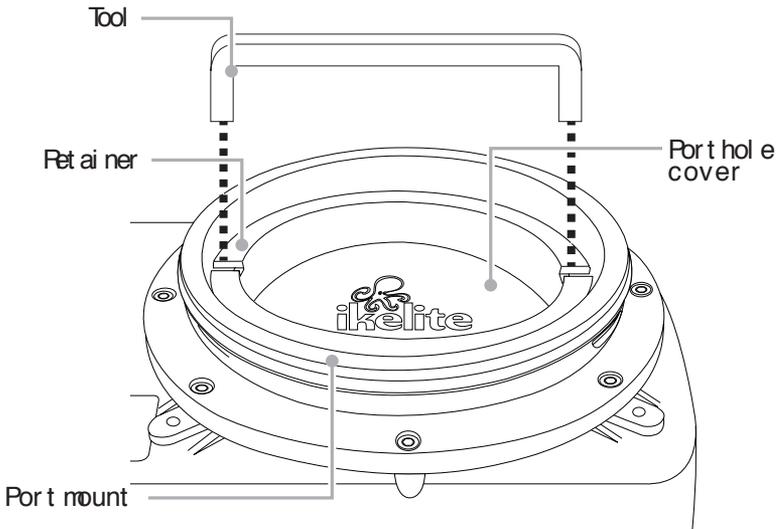
Refer to the **Cheat Sheets** in the Photo School section of our website for recommendations on exposure settings for various shooting situations:

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

Setting Up Your Housing

Removing the Port Hole Cover

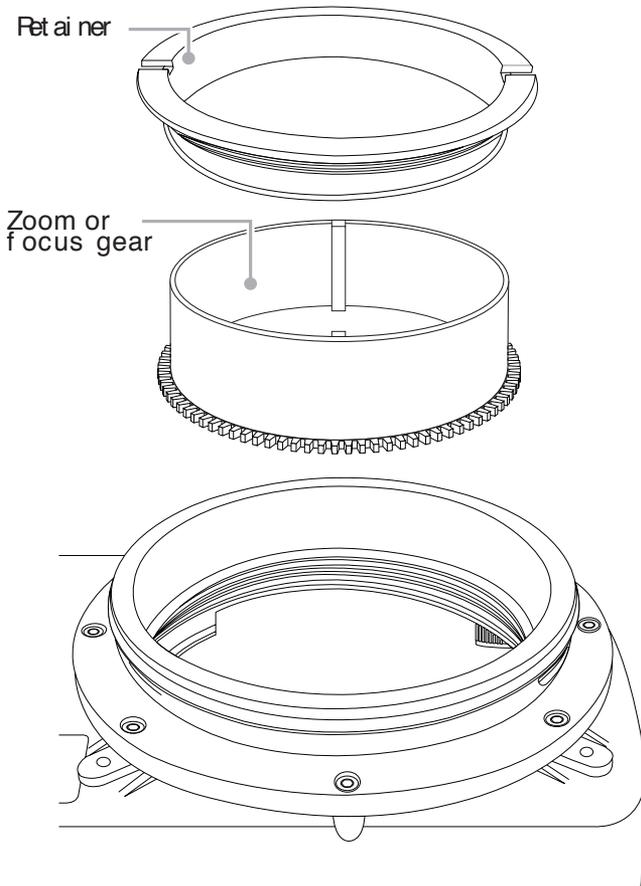
1. Align the zoom gear retainer tool with the notch in the zoom gear retainer.



2. Rotate the removal tool counter-clockwise until the retainer is free from the lens port mount.
3. Remove the port hole cover from the housing.

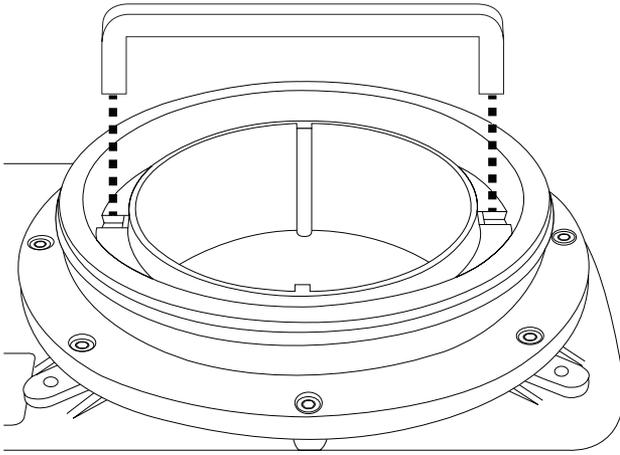
Installing a Zoom or Focus Gear

1. Place the zoom or focus gear (sold separately) into the lens port mount opening with the gear teeth toward the inside of the housing.



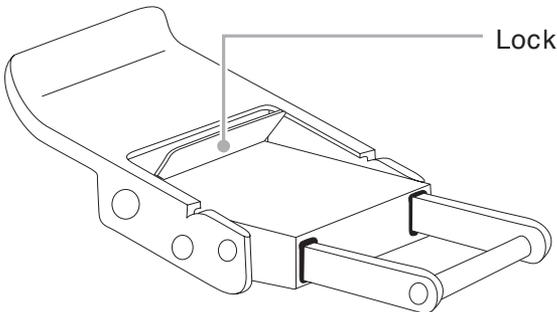
2. Place the gear retainer into the opening around the gear.

3. Tighten the lid until it is snug. Do not over-tighten.



Opening the Housing

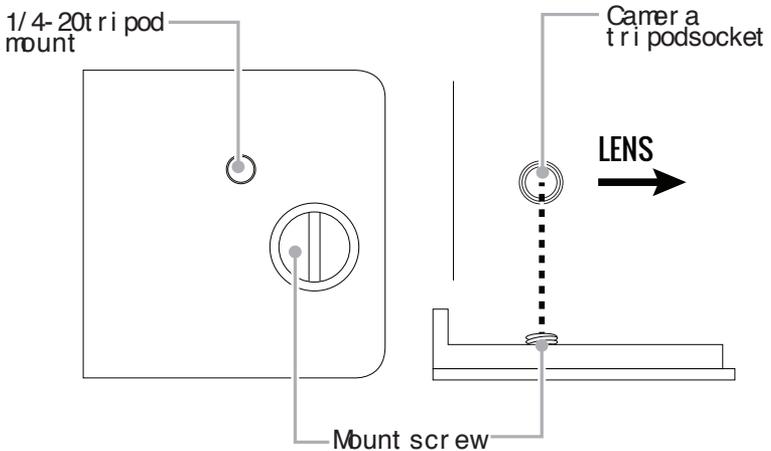
1. Push the lid snap lock forward until the curved end is away from the housing.



2. Lift the lid until the snap lock is compressed against the ring or apron seal. Keep firm pressure against the lid snap while lifting it away.
3. Repeat with remaining lid snaps.
4. Remove the housing back.

Installing the Camera

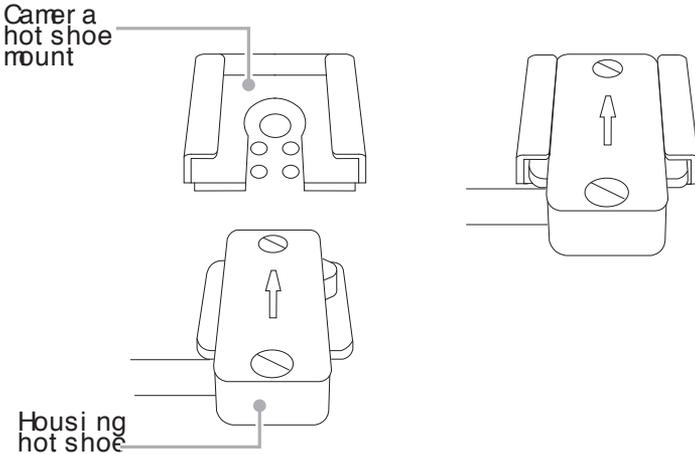
1. Remove any lanyard or neck strap which may be attached to the camera.
2. Check to see whether the camera's lens will fit through the port opening of the housing. If not, the lens will need to be removed from the camera body and re-attached after the camera body is installed in the housing.
3. Remove the camera mount plate from the housing.
4. Insert the mount screw with the camera's tripod socket. Use a flat screwdriver to tighten the mount plate to the camera.



5. Pull out the housing control knob from the control out of the way.
 6. Insert the mount plate into the slot on the inside of the housing. Push the camera all the way forward until it stops.
 7. Push housing control knob in and check orientation with the camera.
- » **The camera may be attached to a tripod using the 1/4-20 threaded mounting hole on the bottom of the mount plate.**

Attaching the Hotshoe

1. Orient the hot shoe with the rear row of mounting points directly in front of the camera.



2. Slide the housing hot shoe into the camera's hot shoe mount until it stops.
- » **The hotshoe must be all the way forward in the camera mount for proper flash operation.**

Closing the Housing

1. Make sure the original seal is in place and the original seal is not damaged. The original seal does not require lubrication. It is not recommended to lubricate the original seal.
2. Place the back onto the housing front.
3. Make sure the control wires are not interfering with the original seal of the housing.
4. Place each lid snap into the corresponding hook on the housing back.

5. Push the lid snapstowardsthehousinguntiltheyareeffectivelyagainst thehousingandthehookhasengaged. Closeoppositelylidsnapsat the same time.
6. Check the ring seal. The ring should be uniformly visible through the back of the housing.
7. Check control functions.
8. Attach the lens to the camera body. If using zoom gear with the clamp, refer to the zoom gear instructions for information on attaching the clamp with the zoom gear.

Attaching a Lens Port

Refer to the appropriate lens port chart for compatibility between lens ports for a wide variety of popular wide-angle, zoom and macro lenses.

Choose a dome port for wide-angle and zoom lenses. Larger diameters are better for split shots (half-in, half-out of the water) and provide sharper images.

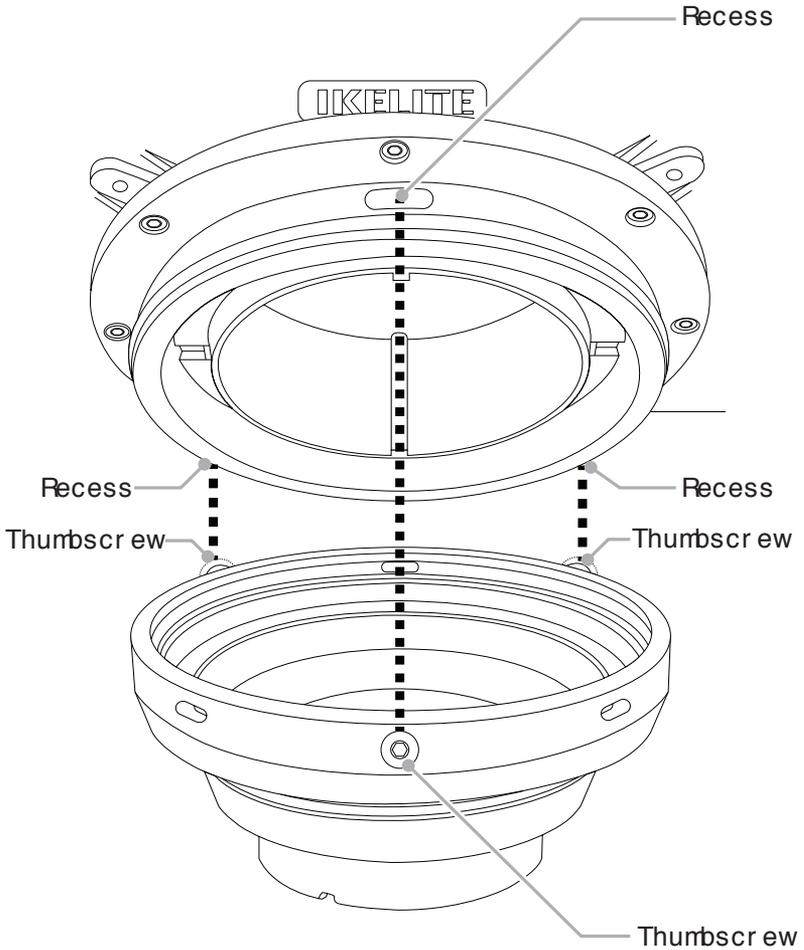
Choose a flat port for macro lenses. Flat ports magnify the subject underwater. Flat ports are not recommended for wide-angle or zoom lenses due to their limited field of view and risk of vignetting (dark shadows around the edges of the image).

- » **This housing requires a compatible DL lens port for waterproof operation (sold separately). The housing is not waterproof without a DL lens port attached.**

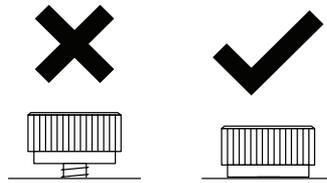
Installing the Lens and Port

1. Attach the lens to the camera. If using zoom or focus gear set the required clamp, make sure the clamp is seated in the gear tabs. Test the function before attaching the port.
2. Check that the port seal is on the surface and free of debris.

3. Apply a very thin, even layer of lubricant to the exposed portion of the front o-ring and the helix sport seal inner surface. Avoid dry spots or uneven build-up of lubricant.
4. Align the sport to the thumb screws with the recesses in the housing sport mount.



5. Press the port firmly onto the housing until the base of the port is flush with the housing's sport mount. If there is resistance, remove the port and re-check that the thumb screws are loosened and the o-ring is properly lubricated.
6. Tighten all three thumb screws while holding the port firmly onto the housing. The thumb screws should be evenly seated until the head touches the port or extension body. If the screws are difficult to turn and/or they bottom out before their heads are flush, it is an indication that the port is not properly aligned.



- » **Proper alignment is critical to waterproof operation. Check that your lens port is oriented correctly and fully seated before entering the water.**
- » **Zoom/focus gear parts and installation vary depending on the lens you are using. Refer to the instructions included with the zoom or focus gear for detailed installation information.**

Setting Up An External Strobe

We recommend attaching an external strobe to the optional color and clarity window for photography situations, including daylight photography.

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

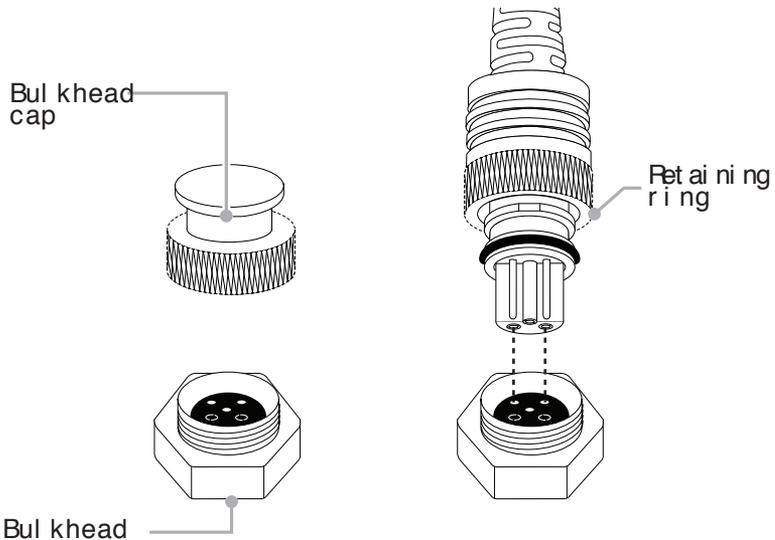
About Sync Cords

Connect i ngast robevi ael ect rical synccordpr ovi desf ast er st robe r ecycl et i mesascompar edt oafi ber opt i cconnect i on, andpr ol ongs camer a batter y l i fe.

- » **To connect two strobes to the camera, you must use a dual sync cord.**
- » **A second slave strobe may be triggered optically off of a primary strobe connected by sync cord.**

Attaching a Sync Cord or TTL Converter

1. Remove connect or pr ot ect or s and bul khead caps f r omeach connect i on.
2. Appl yever ythi n, evenl ayer of l ubri cant onal l t hreads, seal i ng surf aces, andt heexposedpor t i onof t hepl ugo-ri ng. Dnot al l ow l ubri cant t oget i nt ot hepi nsand r ecept acl esof t hepl ugo-ri ng bul kheads.



3. Align plug and insert into the housing bulkhead. Each male pin must sit halfway in the hole. Failure to insert properly may result in damage to the connector 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.**

Getting in the Water

Final Check

1. Re-check the ear o-ring seal. The seal should form an even, solid line visible through 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. If using a 4 diopter, your camera will only be able to obtain focus on subject at a distance of approximately 12" (0.3m) or less.
4. Check camera battery level and available storage space on your memory card.
5. We strongly recommend drawing a vacuum on the housing to check for leaks using a hand-operated vacuum pump (sold separately).

6. Submerge the housing in a fresh water tank dedicated to underwater photography equipment. Visually confirm that the ear sensor of water intrusion. Check for water intrusion immediately after stream of bubbles coming from one of the housing 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 your comfort and your life-saving equipment is not working or der. Once you are stable, have someone pass your camera and housing to you.
 3. Submerge the housing at the surface of the water and visually confirm that the ear sensor of water intrusion. Look for water droplets or fogging inside of the housing, or immediately 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. Bubble 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 subject straight on or at a slight upward angle.

- If your redox exposure, it is better to have the images 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 PhotoSchool section of ikeelite.com for a wide range of information on shooting underwater including:

- **Product Tutorials and Videos**
- **Cheat Sheets** with exposure settings and recommendations for a wide variety of situations
- **Advanced Techniques** with in-depth technical and different shooting techniques
- **Frequently Asked Questions**
- **Photo Galleries** showing examples of real results underwater
- **Feature Articles** and more!

Maintaining Your Housing

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 from the strobe mount before it is used 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. Store the housing in a shaded place where it is protected from impact and overheat. 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 o-ring seals after opening the housing or removing the lens port.
7. Detach the cord plug or bulb headcap and lubricate the heads, o-ring(s) and sealings on 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 of the lens port to avoid water spotting. Use only a microfiber lens cleaning cloth to avoid scratches. To clean, use 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 control thoroughly prior to storage.

2. Remove the ear and front o-rings. Place the nasal re-sealable plastic bag inside of the housing.
 3. Leave the heli dsnaps open or release pressure on the heli dsnaps rings.
 4. Disassemble and thoroughly rinse the base with quick release hand cleaner(s) and hardware prior to storage.
 5. Store the housing in a cool, dry place away from direct sunlight and chemicals.
 6. Before using the housing, check the tightness of the set screws in each control knob. Check each control gland to make sure they are snug. There is a slight chance that either could break at the end of the trip.
- » **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 the manufacturer for service every year or after 1000 hours of use. Service may be required more or less frequently depending on use.

Lubricating Controls

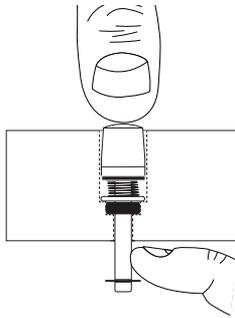
The housing's controls may need to be lubricated if they become difficult to use or if the o-rings have dried out during long periods of storage.

- » **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.

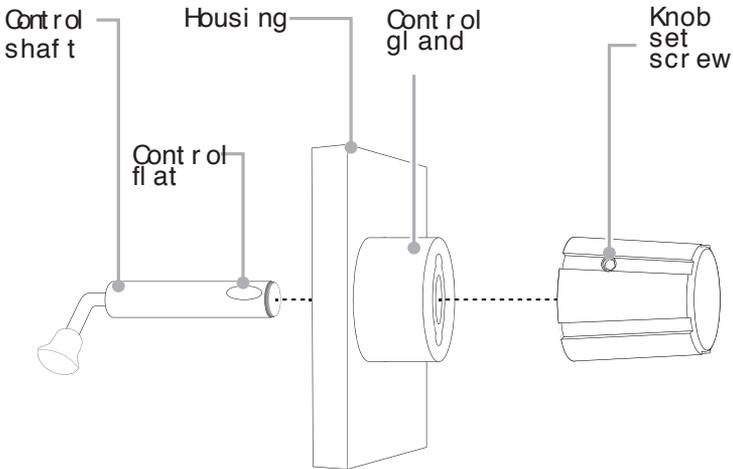


3. Press and release the push button on several times to work the lubricant into the o-ring.
 4. If a push button control becomes difficult to push or if it sticks when depressed, soak the housing in warm soapy fresh water. After a few minutes, operate the push button. If this does not correct the problem, return to the housing to look 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 helical gear end of the shaft.
4. If the reinsertion is associated with the control, make sure it is in its proper position.



5. Reinstall the shaft from the inside of the housing. Fit at the shaft gently for smooth insertion at the end of the helical gear. Push the control shaft all 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 screws are inserted properly by holding the control shaft in place on the inside of the housing while the empty rotor at the control knob is out of the housing. If there is rotation, loosen the set screws and realign the control flange; repeat 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

- Check and re-install the rear and front o-rings.
- Replace the o-rings if there are any signs of cracks or tears.
- Take the housing underwater to depth 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 and make sure they are pointed in the right direction.
- Adjust exposure compensation in the camera.
- Adjust lighting power.

Strobe(s) will not fire

- Turn on strobe.
- Check the strobe(s) battery life.
- Reset or set the camera to of-act or y default settings. There are some camera settings that will prevent an external flash from firing.
- Check camera settings recommended for use with an external strobe in the beginning of this manual.
- Check that the sync cord is properly attached.
- Check that the hot shoe connects or is properly plugged in properly.
- Check that the housing's hot shoe is pushed all of the way forward on the camera.

Button(s) are sticking

- Soak the housing in lukewarm fresh water. Depress each button several times while the housing is submerged. Rinse the housing with running fresh water.
- Lubricate the controls.

Button(s) or control(s) not operating

- Tighten the camera mounting plate with a screwdriver.

- Ensure that not too high speed is set in the camera software of the way into the housing.
- Check that the camera amount is pushed all of the way forward.

Camera is not functioning normally underwater

- Check each housing control while underwater to ensure that they are properly engaged. An inadvertently engaged control may limit functionality of the camera.
- If using a dome port, the lens must be a minimum of 12" (0.3m). If the minimum focal length is greater than 12" (0.3m), add a diopter to the front of the lens.
- Check that no controls are being accidentally pressed.
- Check that the shutter is not half depressed. If the shutter spring has been damaged by activation without a camera attached, it may not return properly. Adjust or replace the shutter spring.

Backscatter or "snow" in images

- Reposition the subject or light source to light up the subject and not the water in-between the camera and subject.
- Avoid using strobes next to the diver's visibility conditions.

Spare Parts

Rear o-ring # 0132.59

Front o-ring # 0132.45

DL port thumbscrews (set of 3) # 9249.7

Port hole cover # 0200.92

Zoom gear retainer # 75900

Trigger lever extension # 4077.95

Hardware set for base with handle # 9523.23

Waterproof bulbhead cap # 9104.7
Silicone lubricant # 5020
Push button o-ring kit # 6201.03
Tool for zoom gear retainer # 0945.22
.050" hex key # 0945.11

Limited Warranty

This limited product warranty is extended against any manufacturer's defect of workmanship for a period of two (2) years from the date of purchase. Defective products should be returned to the retailer for a full refund, at the retailer's discretion, repair or replacement products, and will return to customer postpaid. All other claims of any nature are not covered. Except as mentioned above, no other warranty expressed or implied applies to this limited product.

Service and Repairs

It is the responsibility of the manufacturer to provide the best possible product performance.

For information on our products, you may contact our technical support department through our website. 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 postpaid to:

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

For detailed instructions on returning your product for service including important information on international customer 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.

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