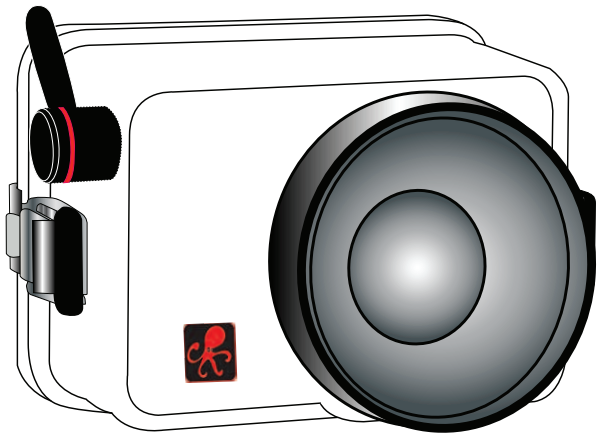
Ikelite Digital Housing

instruction manual

#6170.07 for Panasonic Digital Camera DMC-ZS5, TZ8 and DMC-ZS7, TZ10



Congratulations on your purchase of an Ikelite Digital Camera Housing. Ikelite has over 48 years of experience in the underwater photographic and lighting market. Our products are designed and built in the USA by Ikelite for both the professional and amateur photographer.

The clear housing permits instant visual inspection of the camera and all sealing surfaces as well as complete monitoring of controls and camera LCD screens.

Ikelite Digital Housings are slightly negative in salt water for stability. This housing has been water pressure tested at the factory to 200' (60m).

Please Read

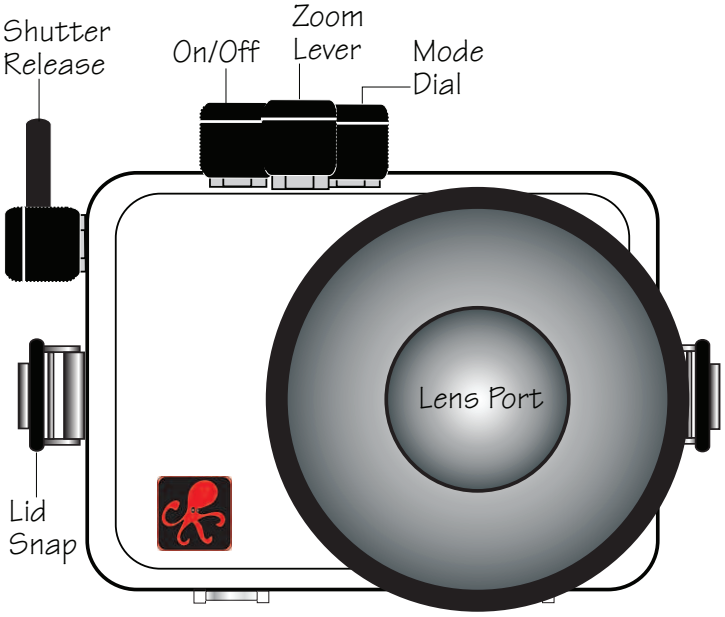
We suggest that you read this instruction booklet thoroughly before use. If you are new to underwater photography, be sure to read the General and Photo Tips sections.

We also suggest that you read your camera manual thoroughly to have a full understanding of each camera function.

Initial Camera Setup

- Set Flash to "Forced Flash On" (lightning bolt in LCD).
- Set camera mode dial to "Av" Aperture priority. In Aperture Priority mode "Av" the shutter speed should automatically go to 1/30 second with the flash turned on. For faster shutter speeds, set mode dial to "M" manual mode.
- For General photography, set aperture to f3.4.
- For Macro photography, set aperture to f8.0.
- Set White Balance to Auto (AWB).
- Set Metering Mode to Center-Weighted Avg (dot inside parenthesis inside square).
- Set AF Mode to "1 Area".
- Set AF-assist lamp to "Off".
- Set ISO to "80".
- Set Face Recognition to "Off".
- Set Image Stabilizer to "Auto".
- Set Macro Mode to"AF Macro"

Housing Controls



Front View

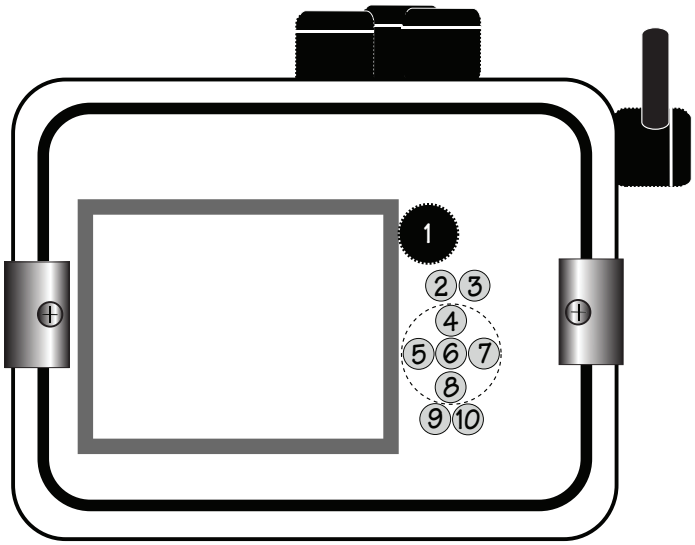
Housing Lens Port and Accessory Lenses

Treat the glass in the lens port as a camera lens. After use, rinse and gently dry the lens port to avoid water spotting. To clean, use a mild soap solution or lens cleaner.

Do not use alcohol or window cleaner on the Lens Port.

See Page #13 for accessory lens information.

Housing Controls



Back View

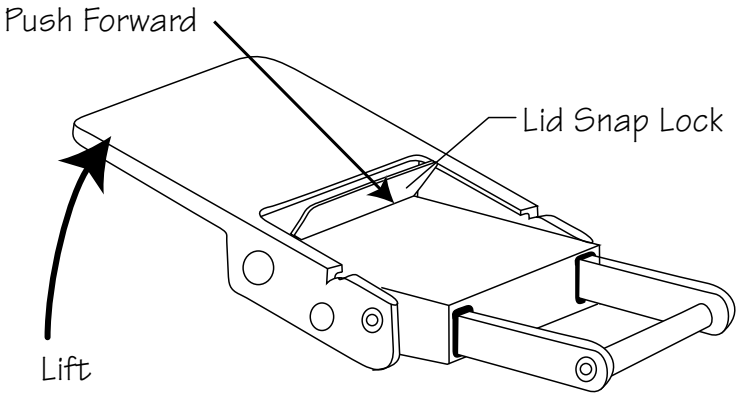
[1] REC/PLAY
[2] Exposure
[3] E. Zoom
[4] +/-
[5] Self-Timer
[6] Menu/Set
[7] Flash
[8] Macro
[9] Display
[10] Q. Menu

NOTE: Some camera buttons may offer multiple functions. Please check your Panasonic owner's manual for further information.

Opening the Housing

1. Lid Snaps have a **Lock**.
   To open, push Lid Snap Lock forward and lift as shown. Keep pressure on the Lid Snap so it does not fly open quickly.

   Some lid snaps have a lot of spring tension once they go over center, so keep a firm grip on the lid snap. Lid Snaps may be opened one at a time.



Installing the Camera

1. Pull out on each housing control until it stops. This will get the controls out of the way for installation of the camera.
2. Remove the back from the housing.
3. The mounting tray for the camera is secured to the housing back. Position the camera on the tray.
4. Using a coin or screwdriver (preferred), secure the camera with the mounting bolt which threads into the camera's tripod socket **(Diagram A)**.

CAUTION:

Some camera tripod socket threads are plastic. The mounting tray bolt is metal. Do not cross thread or over tighten as you may damage the camera tripod socket threads.

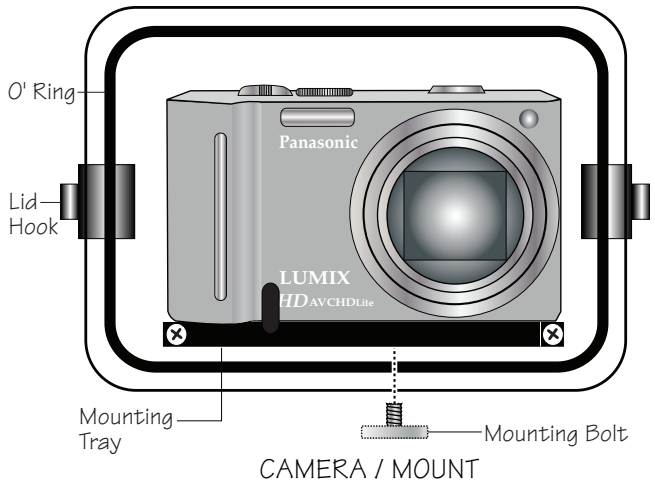
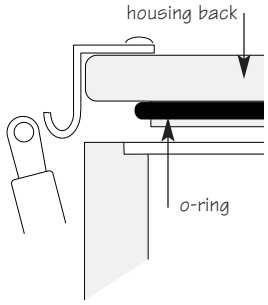
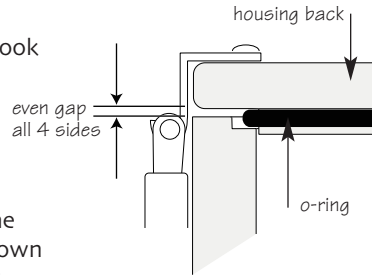


Diagram A

Closing the Housing

1. Place housing face down in your lap or on flat surface.
2. Check to see that there is an o-ring on the housing back and that it is clean and in its proper location.
3. Guide the back into the housing front. The o-ring should touch the housing all the way around. There should be an even gap all the way around between the housing and the housing back.
4. Lift the lid snaps so they are extended and place each lid snap into the corresponding hook on the housing back.
5. To close the housing, push down on the lid snaps until they snap into place . Lid snaps on opposite sides of the housing should be closed at the same time. Be sure they are down far enough to engage the lock.





Double check - Once the housing is closed, check the o-ring seal. Check the gap between the housing back and the housing. It should be even all the way around the housing.
Look through the clear plastic back at the o-ring. You should see a darkened area where the o-ring is compressed against the housing back. If you do not see an even black compression seal all the way around the back, open the lid snaps, reseat the housing back and close the lid snaps. Visually check the seal again.

Checking Controls

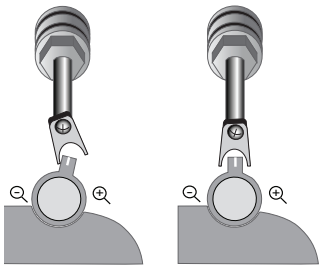
Once the housing has been closed, make sure the housing controls line up with the corresponding camera controls. If the housing controls are misaligned slightly, make sure the camera hold down bolt has been tightened down firmly so the camera is flat against the tray.

Turn Camera On

Turn the camera on and operate each of the housing controls to get a feel for using the camera in the housing. Take a few pictures above water with the camera in the housing.

Zoom Control

(NOTE:) After you have used the housing's zoom control, it must be returned to the center position to disengage. If the housing zoom control is pushing the zoom lever in either direction, you may not be able to take a picture or access any other function because the camera is receiving a signal from the engaged zoom control.



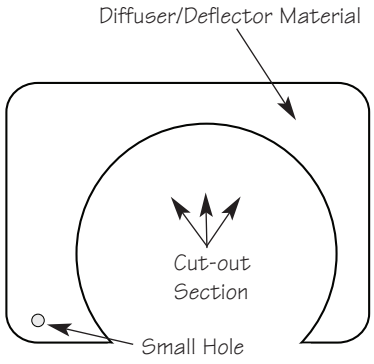
Using the Camera's Built-in Flash

For the best results, we recommend using an external Ikelite Substrobe. If you do not have an external flash, the camera's built-in flash can be used with a diffuser installed. This use is limited due to the housing port blocking a portion of the built-in camera flash. Zoom in slightly with the diffuser installed to eliminate dark areas noted in your photographs, and more evenly expose your pictures. See Diffuser/Deflector Installation below.

NOTE: The camera's built-in flash cannot be used with optional Wide-Angle or Accessory lenses.

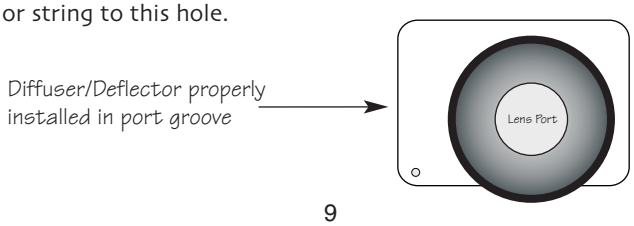
Diffuser and Deflector Installation

A diffuser and deflector are included with the housing. The diffuser is white transparent plastic. The deflector is also white but is not transparent.



To install the diffuser or deflector, push the "Cut-out" Section into the port groove until it stops.

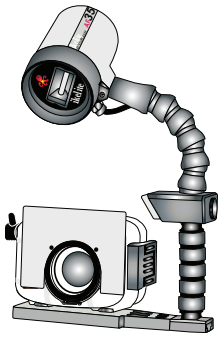
Note the Small Hole. To avoid losing the diffuser/deflector, you can attach a fishing line or string to this hole.



Using Ikelite DS Digital Strobes

Ikelite DS series Substrobes are industry favorites for their warm, even coverage and lightning fast recycle time. Being farther from the camera lens, the optional DS Substrobe aids in reducing the illumination of particles in the water and helps to eliminate backscatter. When used in conjunction with the EV-Controller, the DS51 Mode switch is set to the TTL setting and the EV-Controller provides ten power settings in half-stop increments.

AF35 Strobe Package #4035



The AutoFlash AF35 kit is a great compliment, and an effortless, affordable way to add a flash to your new Ikelite point-and-shoot camera system. Everything you need to get started is in the box. Just attach it to the bottom of your housing and start taking pictures!

AF35 AutoFlash kit includes:

AF35 strobe - Flex arm - AutoFlash sensor Handle with rubber grip - Tray (single or dual) Mounting hardware.

Substrobe DS51

The Substrobe DS51 covers the equivalent of a 28mm lens. It is the ideal choice when using only the camera lens with no accessory wide angle lenses attached.

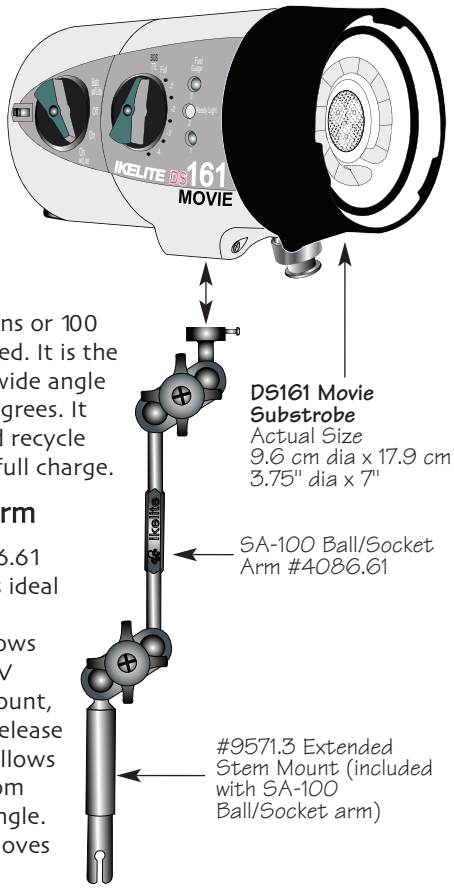


Substrobe DS51

Actual Size
8 cm dia x 12 cm
3.2" dia x 4.7"

DS161 Movie Substrobe

The DS161 Movie Substrobe features a powerful 500 lumen LED video light. Three super-bright LEDs are arranged behind a special optical element to provide 45 degrees angle of coverage free of hotspots.The DS161 flash covers the equivalent of an 18mm lens or 100 degrees w/diffuser installed. It is the ideal choice when using wide angle lenses greater than 80 degrees. It also features a 1.5 second recycle time and 225 flashes per full charge.



SA-100 Ball/Socket Arm

The SA-100 system #4086.61 with its 1" diameter ball is ideal underwater. The #9571.3 extended stem mount allows easy attachment of the EV controller or flashlight mount, and drops right into the release handle. The arm system allows easy strobe placement from macro close-up to wide angle. The complete system removes with a push of the handle button.

Recommended Strobe Packages

Substrobe AF35 AutoFlash Kit #4035 includes Single Tray.

Substrobe AF35 AutoFlash Kit #4035.1 includes Dual Tray.

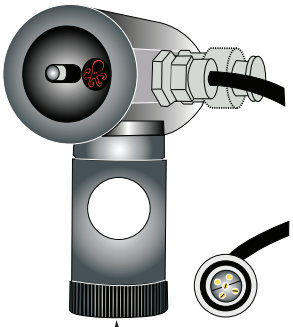
Substrobe DS-51 Package #3944.54 includes #4086.61 Arm System with EV Manual Controller.

Substrobe DS-160 Package #3944.91 includes #4086.61 Arm System and 1.5 hour Smart Charger with EV Manual Controller.

Substrobe DS-161 Package #3945.03 includes #4086.61 Arm System and 1.5 hour Smart Charger with EV Manual Controller.

Please Read If Using an EV-Controller

The EV-Controller used with Ikelite DS Substrobes has two user settings. One setting is for strobe selection, the other is for pre-flash "P" or non pre-flash "P̸". This camera uses pre-flash, (except in manual mode), thus the EV-Controller should be set to the pre-flash "P" position when used with this camera as a slave. If manual mode is desired, set the EV-controller to the non-pre-flash "P̸" position.



Ikelite EV-Controller

For additional information regarding recommended strobe packages and optional accessories, go to www.ikelite.com.

Optional Accessories

Back o-ring #0109

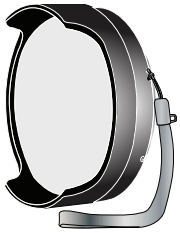
O-rings last for several years if properly maintained. (See maintenance section). Always carry a spare o-ring in case the original becomes damaged or lost.

Tray with Dual Release Handles #9523.32

Dual Tray and Release Handles are required to mount two external Substrobes.

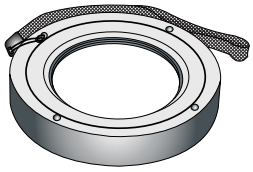
WD-4 Wide-Angle Conversion Dome #6430.4

The removeable WD-4 corrects light refraction underwater, restoring the camera's original 28mm angle of coverage. Approximately 3/4 of the camera's zoom range can be used with the dome in place. Slight vignetting may occur at camera's widest angle setting.



External Macro Adaptor #9306.82

Allows attachment of 67mm threaded macro lenses from Inon and Epoque. NOT for use with 67mm threaded wide-angle lenses.



NOTE: Other Accessory and Wide-Angle Conversion lenses cannot be used with this housing

Maintenance

The 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.

1. **Do Not** leave the camera and housing in direct sunlight for prolonged periods. Heat may damage the camera.
2. **Do Not** ship the camera in the housing.
3. 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.
4. Keep the back o-ring clean and lightly lubricated. To lubricate, remove the o-ring from the back. Put a small amount of Ikelite lubricant on your fingers. Pull the o-ring through your fingers to apply a light coating of lubricant. Only apply enough lubricant to make the o-ring feel slick. **Do Not stretch the o-ring**. This light coating of lubricant will help to keep the o-ring from drying out and will help to show a dark sealing line when the housing back is properly sealed.
5. Keep the area where the o-ring fits and the sealing surface of the housing clean.
6. Rinse the housing exterior thoroughly in fresh water after each saltwater use. 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 back o-ring, lightly lubricate, and place in a plastic bag. Place the plastic bag with o-ring, inside the housing for safe keeping.
7. If removing a housing push button, **Do Not** re-use the E-clip. Contact Ikelite for replacement E-clips (part #0319.12).

Lubricants

1. Ikelite provides silicone lubricant with the housing. We recommend you use only Ikelite lubricant on Ikelite products as some other brands may cause the o-ring to swell and not seal properly.
2. Use only enough lubricant to lightly cover control shafts and o-rings. Wipe off any excess lubricant with a clean cloth. Lubricant is not a sealant, it is used to reduce friction. Excessive lubricant can collect sand and dirt which may interfere with proper sealing.

CAUTION

Never use spray lubricants as the propellant ingredient can cause the plastic housing to crack.

Control Maintenance

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

1. Push button controls require no maintenance other than rinsing in freshwater after saltwater use. If a push button control becomes difficult to push or if it sticks when depressed, soak the housing in luke warm freshwater. After a few minutes, operate the push button. If this does not correct the problem, return the housing to Ikelite for maintenance.

2. Some of the controls have long shafts. These controls can be pulled out, exposing the shaft (see diagrams A and B on pages #16 & #17).
   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.

Control Maintenance Cont.

3. 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 maintenance. To remove the control (Diagram A), loosen the set screw in the knob (allen 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 it 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.

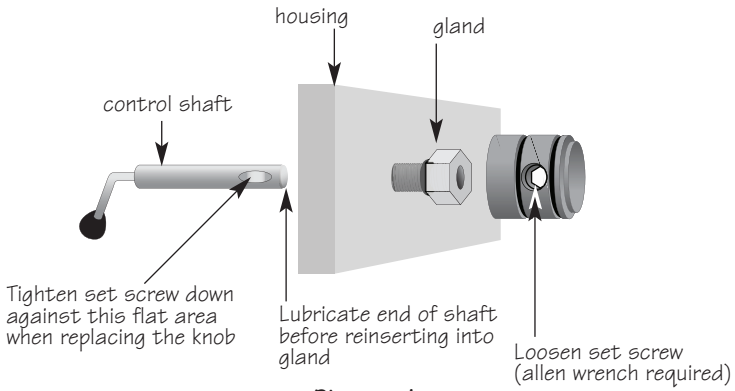


Diagram A

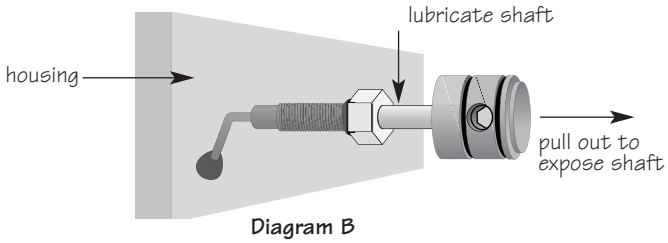


Diagram B

General Tips

1. Due to the power required to operate the camera, flash, and LCD screen, it is a good idea to start each dive with a fresh set of batteries.
2. Some cameras reset their flash to AUTO when the camera is turned on. If you prefer another setting be sure to select it.
3. As soon as you enter the water, take a moment and check the housing to see that it is properly sealed.
4. Next, check to see if there are any bubbles on the face of the lens port. If there are, take your finger and remove them. If there are bubbles on the lens port they can produce soft focus spots in your photographs.

NOTE: To shoot photographs closer than 2 feet (0.6m), you should use an external strobe such as the DS51 or DS161. You can position an external strobe so nothing blocks the light path between the strobe and the subject.

Photo Tips

1. 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, subjects beyond 6 feet (1.8m) will not have much color regardless of camera flash or strobe power.
2. The camera's built-in flash is very close to the camera lens. The flash can light up any suspended particles in the water and they can be recorded in your picture. This effect is called backscatter. To eliminate as much backscatter as possible, photograph close. 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.
3. 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 camera steady a second or two after pressing the shutter release button.
4. 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.
5. Underwater flash is used to restore the warmer colors filtered out by the water as well as to illuminate the subject. When photographing underwater, set the camera to use flash on every shot. If the camera's flash is set to AUTO and the sun is behind your subject, the camera may see enough light and not fire the flash. With the sun behind the subject, the subject is shaded (dark) and needs flash for a good exposure.

Photo Tips Cont.

6. 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.
7. Many photographers transfer their images to the computer where they can fine tune the appearance of the image. Many of the image manipulation programs make you think you can magically correct any image taken and make a good picture. One thing to remember when using an image manipulation program, is that if the image is overexposed, much of the color is missing. If the color is missing you cannot adjust it. If images are slightly underexposed, the color is there, but it is just dark and you can adjust it to some degree. Therefore if you error in exposure, it is better to have the image slightly underexposed rather than overexposed.

Ikelite Limited Warranty

All Ikelite products are warranted against any manufacturing defects for a period of one year from the original date of purchase. Defective products should be returned prepaid to Ikelite. Ikelite will, at its discretion, repair or replace such products, and will return to customer prepaid. All other claims of any nature are not covered. Housing is pressure tested and warranted to 200' (60m) maximum underwater depth. Except as mentioned above, no other warranty expressed or implied, applies to this Ikelite product.

Returning Products for Service

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 e-mail correspondence, and/or instructions on what you want us to do. Always include name, shipping address, e-mail address, and phone number inside of the package.
You may also want to insure the package. No reimbursements for return freight will be issued. Send Postage Pre-Paid to:

Ikelite Underwater Systems
ATTN: Repair Dept.
50 West 33 Street
Indianapolis, IN 46208 USA

Returning Products for Service (outside the United States)

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.

How to contact Ikelite if necessary

E-mail: ikelite@ikelite.com
Phone 317.923.4523
Fax 317.924.7988

Ikelite Underwater Systems
50 West 33rd Street
Indianapolis, IN 46208 USA

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