

FANTASEA
Line

FD-50

Fantasea Line FD-50 Waterproof Housing
for the Nikon D-50

OPERATOR'S MANUAL



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● Introduction

Welcome to the exciting world of underwater digital SLR photography. Your purchase of the FD-50 housing for the Nikon D-50 digital camera will set you apart from other photographers. With this system, you will enjoy the best chance of capturing the widest variety of superior underwater images. The FD-50 offers you the opportunity to use the exact Nikon lenses for the best circumstances, including a choice of macro, wide angle, fisheye, and zoom lenses. You will find the housing to be easy and instinctive to use and handle and will have countless dives in which to experiment with the D-50's advanced imaging capabilities. Fantasea Line Photo is pleased to offer our help with any of your photographic needs.

The purpose of this manual is to provide you with the basic introduction to your FD-50, which should get you comfortable with the housing and allow you to get started taking great underwater images right away. We strongly urge you to thoroughly read the Nikon D-50 instruction manual as well, to familiarize yourself with the most common controls and settings that you will use for your underwater photography. The FD-50 housing will permit access to most of the important controls on the camera. To take full advantage of these features, it is best to have a good command of what each option can do for you, so you will know when you should use each specific control.

● Included with housing:

- The FD-50 housing consists of a front and back shell that latch together to form the housing body.
- A screw-in standard flat port is included. This port will accommodate the 18-70mm lens (without a manual zoom control). Other optional ports are available for different lenses (5 inch super wide angle Dome Port, 60 mm macro/close up port and 105 mm super macro port).
- Two housing handles are attached to the camera body and the base plate. These handles are made with the standard Fantasea strobe arm mounting shoe on the top of each one for attaching a Fantasea (or other company) Flex arm or Ball and Joint arm for the accessory flash and/or underwater light.
- Base plate for mounting other tray and arm systems.
- Optical viewfinder eyepiece built into the back cover of the housing to assist the photographer in viewing and focusing.
- A five-pin TTL flash sync port to connect with the D-50's hot shoe.
- Removable camera mounting tray that slides into position with the D-50 attached, positioning the camera in the exact location for perfect control alignment.

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- Spare gasket
- Adjustment tool
- Wrist lanyard
- Warranty and other documents
- Instruction Manual

Camera model

The FD-50 is dedicated exclusively to the Nikon D-50 camera. The size and shape of the camera, plus the location of controls for alignment with housing controls requires this precision design. Together, the D-50 camera and FD-50 housing offer the best combination of advanced digital photography at an affordable price. No other camera may be used in the FD-50 housing.

A Variety of Uses:

The Fantasea FD-50 housing is more than just an underwater camera system. It protects the D-50 against damage from such environmental conditions as rain, snow, dust, sand, and dirt. It is perfect protection for active outdoor sports, where these elements would normally not allow an advanced camera like the D-50 to be used without danger of damage. The lightweight, compact housing and handles make it easy to hold and use while sailing, fishing, kayaking, backpacking, or just for fun at the beach or around the pool. It will also provide a valuable tool for many commercial, industrial, and medical applications, because it is impervious to most liquids, and sprays.

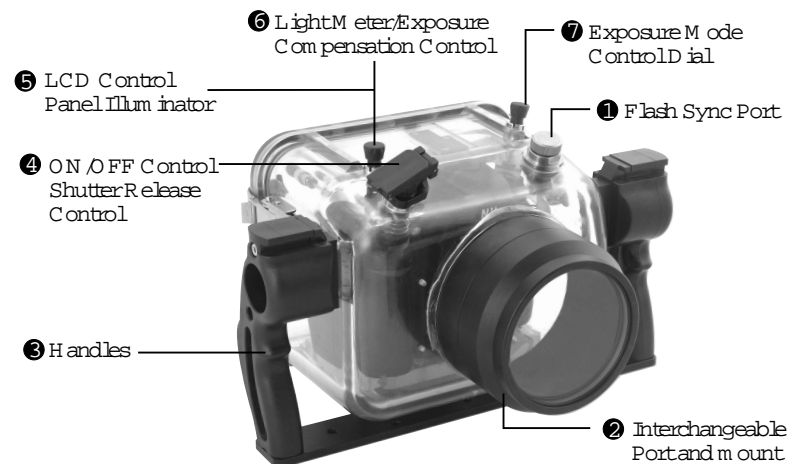
Specifications:

- The FD-50 is an injection molded polycarbonate housing.
- The main seal between front and back halves is a compression gasket.
- The ports are sealed when mounted by a radial O-ring.
- Controls use stainless steel shafts and springs
- Controls are sealed by double O-rings.
- Control knobs and buttons are made of molded polycarbonate
- Latches are stainless steel
- Handles are made of molded polycarbonate
- Flash sync port is a standard five-pin Nikonos type TTL connector.
- The Fantasea FD-50 has a maximum working depth rating of 200' (60m)

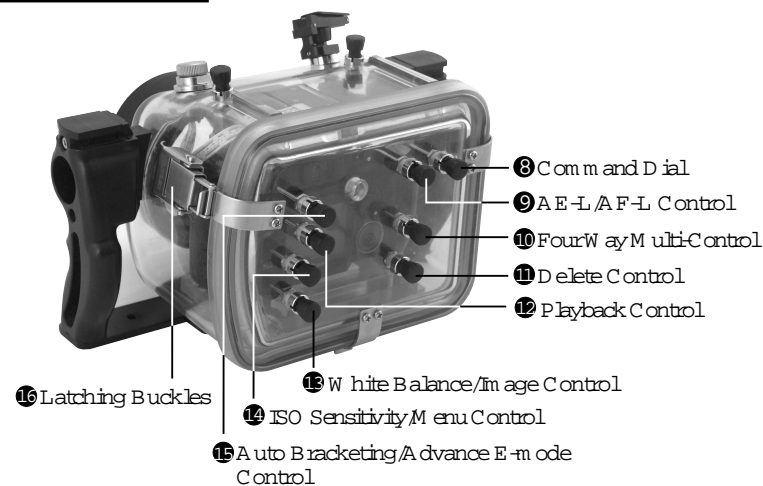
Housing Orientation

See pages 5-7 for control details

Front, Top & Left Side:



Back & Right Side:



Control Details:

The following is a partial list of the most common uses of housing and camera controls. For the full list of camera functions and settings accessed by each control, you should consult your D-50 camera instruction manual.

Please note that some of the FD-50 housing controls are designed to operate more than one camera control. And the command dial and sub-command dial will perform multiple functions when operated in conjunction with other camera/housing controls.

1. Flash Sync Port:

- Connect any standard five-pin Nikon type sync cord to this bulkhead connector.
- Align the index dots to correctly position cord to seat in flash port.
- Push down on cord to seat the O-ring seal, and make connection with the five pins.
- Tighten collar on sync cord to insure cord does not come loose or apart while underwater or during use.

2. Interchangeable Port Mount:

- Allows the use of different ports to match different interchangeable lenses for creative imaging control. Carefully check that both O-rings mounted on the port thread areas are properly seated, clean and lubricated prior to installing the lens port.

3. Handles:

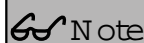
- Ergonomically located for easy gripping and access to controls. Strobe arms can be mounted on the base shoe on top of each handle.

4. ON/OFF /Shutter Release Control:

- Rotate knob under shutter release lever to turn main power on or off.
- Half depress to activate light meter and auto focus lock (AF-S mode)
- Full depress to take picture.

5. LCD Control Panel Illuminator:

- Push housing control button to illuminate main control panel backlight.



Note Explanation 5 and 6 refer to the same button with multiple controls.

6. Light Meter/Exposure Compensation Control: Dual Control

- Rotate housing control over camera Light Meter control.

- Press button and rotate command dial to choose Matrix Metering, Center Weighted Metering, or Spot Metering.
- Rotate housing control over camera exposure compensation control.
- Press button and rotate command dial to choose amount of compensation.

7. Exposure Mode Control Dial:

- Push down and rotate housing control to change camera's main exposure modes. Choose Manual, Aperture Priority, Shutter Priority, Program, or any of several Scene Modes.

8. Command Dial:

- Rotating dial independently changes Shutter Speeds in M or S exposure mode.
- Rotating dial independently while in P mode shifts the program exposure into flexible program, and changes the combination of shutter speeds and apertures.
- Rotating while pushing other control buttons affects:
 - Flash Mode
 - Light Meters
 - Exposure Compensation
 - Auto Bracketing Set or Cancel
 - Advance Mode
 - ISO Sensitivity setting
 - White Balance Mode
 - Image Size

9. AE-L/AF-L Control:

- Press and Hold the AE-L/AF-L button to lock exposure and focus prior to recomposing a scene. The original exposure value and focus distance will remain set after re-composition.

10. Four-Way Multi-Control:

- Press Up and Down buttons to scroll through Menu options.
- Press Left and Right buttons to make menu settings and confirm settings.
- Use Left and Right buttons in Playback mode to scroll through images recorded on memory card.

11. Delete Control:

- Press Playback button to turn on LCD Monitor and show last image recorded on card.
- Use the Four-Way Multi-Control to scroll through images on card until you find the one you want to consider for deletion.
- Press Delete Button once to activate delete function.

- Press Delete Button a second time to confirm your decision to delete the image shown in the LCD Monitor.
- Press the Playback button again, or depress the shutter release button halfway to turn off the LCD Monitor and return to Shooting Mode.

12. Playback Control:

- Press housing Playback button to activate LCD monitor in Playback mode.
- View any image on memory card by scrolling with the left and right arrows on the FourWay Multi-Control.
- Press housing Playback button once more, or depress shutter release halfway to turn LCD monitor off.

13. White Balance/Image Control:

- Rotate housing control over camera White Balance control.
- Press button and rotate Command Dial to choose Auto White Balance Mode or specific Modes for the situation.
- Press button and rotate Sub-Command Dial to choose a White Balance Compensation value to deviate from the camera's normal value setting in each White Balance Mode.
- Rotate housing control over camera Quality control.
- Press button and rotate Command Dial to choose Image Quality. Choose from Raw, Fine, Normal, Basic, or Raw & Basic options.
- Press button and rotate Sub-Command Dial to choose Image Size. Choose Large, Medium, or Small Image size.

14. ISO Sensitivity Menu Control:

- Rotate housing control over camera ISO Sensitivity control.
- Press button and rotate command dial to choose from ISO sensitivity settings between 200 and 1600.
- Rotate housing control over camera Menu control.
- Use FourWay Multi-Control to navigate through menus and make setting choices.

15. Auto Bracketing/Advance Control:

- Rotate housing control over camera Auto Bracketing control.
- Press button and rotate Sub-command dial to choose between two or three frame exposure bracketing, and amount of change between each exposure.
- Rotate housing control over camera Motor Drive Advance control.
- Press button and rotate command dial to choose between single frame or continuous advance shooting modes, and self-timer settings.

16. Latching Buckles:

- Provides positive closure to the housing and activates the gasket seal. See below for directions on how to close.



Preparation of Housing

Making common or required camera settings.

Prior to inserting camera in housing, it is recommended that Menu option settings be made according to the preferences of the user. Most of these choices are ones that will remain unchanged from most of the time while diving, and therefore it will be more convenient and less time consuming to make the settings prior to diving.

Mount Housing Port:

- Clean & Lubricate Port O-ring [for Port O-ring only]
 - In order to properly maintain the Port O-ring you must periodically remove port O-ring from channel using only your fingers.
 - Push and lift the O-ring from its channel.
 - Do NOT use any sharp instruments, such as knives or dental picks, to remove O-ring. You may accidentally cut the O-ring causing a potential leakage.
 - Inspect the O-ring visually and by feel for any cuts, nicks, flat spots, stretching, or any debris, such as sand, dirt, lint, hair, or other matter that could compromise the integrity of the seal.
 - Clean O-ring by soaking in fresh water until all debris is removed.
 - Dry O-ring with a soft clean cloth. Be careful it does not leave any lint on the O-ring.
 - Lubricate the O-ring with the supplied silicone grease. Do not over grease the O-ring. It only requires enough grease to allow it to slip into place and make a seal. It should be slippery and shiny but without any abundance or build-up of grease. A teardrop amount is usually sufficient for proper lubrication.
 - Inspect the O-ring channel for any debris or foreign matter that could damage the O-ring or cause it to lose its seal.
 - Clean the O-ring channel using a damp cloth or Q-tip. Be careful not to leave any lint behind.
 - Replace the O-ring in the channel by lifting it over the end of the port until it sits in its channel. Be sure the O-ring is not twisted or deformed and out of position in any way.
 - Mount the port on the housing body by aligning the threads on the end of the port with the mount on the housing and screwing clockwise until it is FULLY screwed in place.

 Note 1:	The FD-50 lens port uses 2 radial O-rings for a watertight seal. This is a different type of seal than used to seal the two main halves of the housing itself. That seal is a compression gasket. Radial O-rings are affected by friction when closing the seal, as it rubs against a housing wall. Compression gaskets are not affected by friction as there is no movement or rubbing against any wall. It is a direct face-to-face seal. Therefore a radial O-ring, such as the O-ring on the port, requires lubrication. The main housing gasket, a compression seal, does not require any lubrication. It only requires cleaning.
 Note 2:	Lubrication of an O-ring does not improve the seal. It only reduces the amount of friction on the O-ring when it is being moved into sealing position. The amount of lubrication required on the port O-ring is only enough to allow it to slip into place without friction, so it does not twist or become dislodged. More grease is not better, and could in some cases have a negative affect if it is applied in large amounts to form a build-up that could trap any debris or foreign matter.

Open Housing:

- Release all three latches at same time, and lift off back half to open housing.

Inspect and clean gasket:

- Use a clean wet cloth. Use only water to clean the gasket's sealing surface.
- Do not remove the gasket unless there is evidence that there is a need to clean the underside surface, or the channel it sits in.
- If the gasket does need to be removed for cleaning or replacement, pull up on the gasket tab to lift it out of its channel.
- When replacing or changing gasket, begin by aligning the gasket tab with its cutout slot in the housing channel. Work the gasket down and into the channel around the full circumference of the opening. Be sure it is completely seated in the channel for a proper seal.
- Do not use any lubrication on this gasket. This is a compression seal gasket, which is not affected by friction and does not require lubrication for proper closure of the housing.

Insert D-50 camera and lens in housing:

- Mount camera and lens on the removable tray, using the tripod screw. Slide the tray and camera into the housing tray slot. Make sure it is completely inserted.
- Slide the flash sync cord into the D-50's hot shoe.
- Align the housing controls with the corresponding buttons on the camera.

Take caution to insure the flat sync cord does not get caught in the housing seal, by storing the slack alongside the left side of the camera.

- Place housing back over front and align the complete mating surface of the housing and the gasket, forming a proper seal.
- Position all three latches over latch hooks in ready position.
- Close all three latches at one time. If it is not possible to close all three latches at the same time, close the bottom latch first, maintaining pressure on the other side. Then close the two side latches simultaneously.
- Inspect the gasket seal for proper closure. A complete seal can be visually confirmed by looking for the black line made by the gasket around the complete circumference of the housing.

Take a Test Dive:

- Make the first dive without camera in housing. This will give you a chance to inspect the housing seal for proper closure. In this case, any mistakes will not result in the loss of the camera.
- Operate all controls under pressure in the water and inspect for a tight seal.
- Before all dives, immerse the housing in the camera rinse tank, and press all buttons, to visually inspect for any leakage.
- While descending on every dive carefully observe the housing. If you see any bubbles rising from it or water entering surface immediately while holding the lens port in a downward position. Once on dry land carefully open the housing, take out the camera and dry it off if any water is on it and check to see if there is any damage. Please inspect the housing, rinse it in fresh water, dry it out and then take a dive without the camera in the housing to check for leaks or other malfunctions.

Recommended Initial Camera Settings:

- Set D-50 on M (Manual) Exposure Mode
 - This is to keep the built-in flash from trying to pop up in low ambient light.
 - The Auto Exposure Modes are not always appropriate for underwater photography.
- Set camera to AF focus mode
- Use menu option to set camera for Focus Priority Release mode.
- Set camera to Single Advance Mode
- Choose Matrix light meter. This will provide the most sophisticated light meter for evaluating complicated and fast changing ambient light conditions.
 - The Matrix meter in the D-50 is a 1,005 sensor RGB light meter, insuring the most accurate evaluation of the ambient light.
- Set ISO to desired sensitivity setting. Use ISO 200 for the least amount of noise (digital grain), when possible.
- Set personal preferences by using camera menus.

Using External Strobes:

Compatible Strobes include any that can use the standard Nikon five pin TTL sync. But these strobes will have to be used in the Manual Flash Exposure mode.

- Nikon Speed lights, such as the SB-600 and SB-800 can be used with the FD-50 in the TTL Auto Flash Exposure mode.
- Connect the strobe sync cord to housing's bulk head sync port. Align the index dots on the cord and the bulk head connector. Push the cord completely into the bulk head connector to seat the O-ring. Tighten the collar to secure the cord in place.
- The O-ring on the end of the sync cord should be inspected, cleaned and lubricated in the same way the port O-ring was treated.
- Using different arms and tray systems can be accommodated by attaching to the shoes on the top of the FD-50's handles, or by attaching to the base tray tripod mount. An adapter may be needed to physically mount the arms to the housing handles.

Care & Maintenance

Before a dive:

- Protect FD-50 from sun and heat. This will reduce the possibility of fogging due to condensation of the warm, moist air inside the housing when immersed in the colder water. It also reduces the possibility of sun damage to the polycarbonate. An insulated camera bag is a good means of protection from overheating.
- Protect FD-50 from accidental impact damage. Secure the housing and camera in a safe location on the boat or in any vehicle, so it does not bounce around or bump into other cameras and housings. The insulated bag mentioned above should be padded for this reason. Do not leave the camera and housing in a camera rinse tank or bucket on the boat in route to the dive site. Rough conditions can cause impact damage and photo gear can often get tangled if too many systems are together in the tank.
- Inspection of all user serviceable gaskets and O-rings should be a routine pre-dive check. Required maintenance for the main gasket involves cleaning only (if there is no damage requiring replacement). O-rings may require lubrication. Use the silicone grease supplied with the housing. Use only enough grease to lightly cover the O-ring to reduce friction as it is put into its place and the seal is made. Over-lubrication should be avoided and can result in debris accumulating on the O-ring, and compromise the seal.
- It is highly recommended that the housing be immersed in the rinse tank or in shallow water before every dive and all its controls operated to visually confirm that it is watertight before descending to depth.

After a dive:

- Rinse the housing with a strong stream of fresh water. Let it soak for about 20 minutes to allow the water to dissolve any salt residues under the controls or in tight spaces.
- Operate all the controls while the housing is soaking to help dislodge any salt residue that may be caught under or around the controls.
- Dip the housing vigorously several times to agitate the final remains of salt from the narrow areas or around the controls.
- Detach sync cords, arms & brackets for overnight storage. This will greatly reduce the possibility of electrolysis and corrosion that can build up between similar metals on the housing.
- Dry with a clean towel or allow drying naturally in a cool, shady place.

Traveling:

- Use protective hard case when traveling to protect the camera and housing from impact damage.
- If possible, do not check camera and housing case on airlines. Use a hard case that can fit under the seat or in the overhead compartment of aircraft, and hand carry.

Annual Maintenance and Storage:

- The housing's main gasket and port O-ring should be replaced every year or more often if used frequently. The frequency of replacement depends on the user's inspection of these seals and their condition at the time. If in doubt, it is always better to change them in order to not take the chance of flooding the housing.
- The seals on each of the controls should be replaced every couple of years or more often if needed. The best indicator of the need for replacement is if the controls become harder to operate due to a build up of salt or corrosion.
- Store housing in a cool, dry location when not traveling. It is recommended that the housing be stored with the two halves together, but not with the latching buckles closed. This will take the constant compression off the main gasket. It is also recommended that the housing is not stored with the port mounted.

Basic Shooting Techniques:

Practice handling the FD-50 on land.

- Getting familiar with the location and movement of all the controls and how the changes in settings can affect your image is an important part of the process. It is better to learn the basics of the camera's operation on land, rather than when first underwater. It is faster to operate the camera out of the housing and you will not have the limited time frame as you would if you were underwater.

- **Focusing and Shutter release control:**
 - Get used to operating this control on the camera in both half depress, and full depress movements. You will frequently depress the shutter release only half way to activate the exposure meter and auto focus to preview the shooting conditions and make setting changes. Once you get the feel for operating the camera control directly, you can then try it in the FD-50, using the housing's controls in the same manner.
- **Use the view finder eyepiece:**
 - Compose and view exposure information display. It is very important that you become familiar with the information display in the viewfinder so you can make proper exposure settings and know what other settings have been made. You will use this often and it is good to become familiar with it before attempting to read it underwater. Also practice composing and focusing the camera by eye, before using it underwater to get the feel for this operation as well.
- **Changing Exposure Settings:**
 - Using the camera in its Manual (M) Exposure Mode gives you the ability to change either shutter speeds or apertures to control the exposure the way you want. Get used to making these changes while your eye is in the viewfinder and you are referencing the LCD display for guiding you in the exposure process. The command dial is set to change shutter speeds, and the sub-command dial is set to change apertures. Practice operating each of these controls so they become instinctive in operation.
- **Familiarize yourself with the movements required:**
 - Utilizing each housing control to properly and efficiently change camera settings. Some controls only require a straight pushing movement, while others may require pushing and rotating simultaneously to operate.
- **Using the camera's light meter to determine ambient light:**
 - There are three light meters in the D-50; Matrix, Center Weighted, and Spot. Read the D-50 instruction manual for complete descriptions on each of these meters and when to use each. No matter which one you choose, they all help guide you to the proper shutter speed and aperture combination for proper ambient light exposure. Where you aim the meter is also important. In underwater photography, it is important to remember to aim the meter at the background water or "sky" to get the proper exposure information. It is often necessary to gather this information, make your exposure settings, and then re-compose the scene before shooting.

- Sometimes it is good to operate the AE-L button:
 - When locking in the exposure value of the background before recomposing and taking the photo.
- The ISO Sensitivity setting on the camera:
 - This is the same as the film speed that photographers set on film cameras, with one small difference: There is no film. This setting is the equivalent of the film speed you would normally set. The higher the ISO sensitivity number, the more light is captured and the brighter the image. Higher ISO sensitivity numbers have more "Noise", a term that is the digital equivalent of grain in higher speed films. Try starting out with a lower ISO sensitivity such as ISO 200 if the lighting conditions permit.
- Get close to you subject when shooting underwater
 - This will improve the effectiveness of your strobe in restoring lost color. It will also expand the sharpness of the image by reducing the amount of backscatter between the lens and the subject.
- Begin by choosing subjects
 - Those that are easy to approach and will not scare off readily when you approach. Choose subjects that will result in a large image size. This will make a more dramatic image.
- Change F/Stops and shutter speeds to "bracket" your exposures
 - This will give you a range of image exposures, from which you can choose the one that you like the best. It improves the probability of getting a good shot.
- Use flash all the time
 - This will restore the vivid colors lost through selective light absorption. Get to know the full manual power rating of your strobe, by shooting at a constant distance from an average reflective subject, and take several shots at different F/stops.
- Focus lock on your subject
 - Practice depressing the shutter release half way, and hold the focus until you are ready to record the image. If you are shooting a moving subject, it may be helpful to focus lock on a nearby part of the coral reef and wait for the subject to enter into your plane of focus.
- Take lots of shots of any subject or scene
 - It is important to vary each shot by changing exposure settings or composition. This will give you a good sample of shots from which to select the best one.

Camera Lenses and Ports

The Fantasea FD-50 has an interchangeable port system that will accommodate a wide variety of SLR lenses for use underwater. These ports include:

Standard Flat Port:

This port will accommodate the 18-55 mm zoom lens in its wide angle 18mm position. This lens is very popular and is the most common lens first purchased by D-50 owners. It does not include a manual zoom control. It is meant for use in only one position. A very popular port for the workhorse 60mm micro Nikkor lens. This lens and port is the ideal combination for capturing the widest variety of *fish identification portrait shots* in a life-size reproduction.

60mm Macro Port:

105mm Macro Port:

The micro Nikkor is the best tool for capturing the tiny and shy marine subjects. When it is not possible to closely approach your subject, the lens will still offer life-size image reproduction, but with a longer working distance.

5" Dome for Nikon 16 mm or Sigma 15mm:

For distortion free use with wide-angle lenses, having a focal length of 20mm or more. Some Zoom lenses can be used with this port, but may require a diopter to allow it to focus accurately.

Fantasea FD-50

The FD 50 includes a one-year limited warranty for defective parts which the manufacturer will replace.

See separate insert page regarding the unique FD -50 anti flooding program by DEPP and the FD -50 Accessory Products page.

Flood Insurance

Every Fantasea housing includes a one-year flood insurance policy.

Supplied by the Divers Equipment Protection Program (DEPP), this insurance policy acts as additional protection to the warranty and is good for one year. If your Fantasea DSLR housing experiences water leakage in this period of time you will be compensated for the loss of the camera body only. Only a small shipping charge will apply. All insurance policies are automatically activated at the time of purchase.

All owners must complete the on-line product registration form, by going to www.fantasea.com and go to the Customer Support area on the left side and click the banner titled Warranty and Flood insurance, click on the link at the top of the page labeled "Housing Product Registration, you will be taken to this page <http://www.fantasea.com/registration.asp> where you can complete the form and register your housing purchase. Failure to register the product within 30 days of purchase will result in a shorter period of insurance coverage for your housing and may in the end cancel the flood insurance coverage all together. Also, you must keep the original sales receipt of your purchase, which must be submitted in the event of a claim: include it in the box and send it along with a photo copy of the bill of sale to Fantasea Products. To make a claim go to the same page and click the banner link: For DEPP anti flood insurance claims please click here : <http://www.fantasea.com/Claims.asp>

Fantasea Authorized Service & Repairs

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