

Owner's Manual

Bluefin

VX2000



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Congratulations on your purchase of the revolutionary Bluefin VX2000 Video Housing.

Please inspect the packaging of your product to verify that there was no damage during shipping.

If you are not familiar with your camcorder's features, please take time to become familiar with the camcorder before you proceed in this manual. This manual assumes you have a working knowledge of your camcorder and will only cover operational procedures relative to the underwater housing.

The term "Push" when referenced in this manual means to press and release in one motion. If a function requires a button to be continually held, the manual will read, "press and hold".

Periodically refer to the website for instruction revisions.

Caution - Caution - Caution

We hope you have a wonderful underwater experience with Light & Motion equipment. To increase your enjoyment and the life span of your new gear please take an extra minute to review common errors which will result in equipment damage or destruction.

- Check the operation of all your equipment several weeks prior to your trip. If maintenance or repair is necessary, then time is available for both shipping and repair scheduling.
- Never transport or ship the housing with the camcorder inside. This may damage your camcorder.
- Never leave your housing in the rinse bucket, it may be damaged by other equipment.
- When removing the camcorder from the housing after a dive, do so in a dry controlled environment away from other SCUBA related equipment. This prevents water from other equipment or water from another diver accidentally entering the housing.
- If a product is flooded, immediately rinse it with fresh water. Most non-electrical parts will be salvageable if not corroded by salt water

Look for these symbols to help identify special information.



Hot Tip



Important

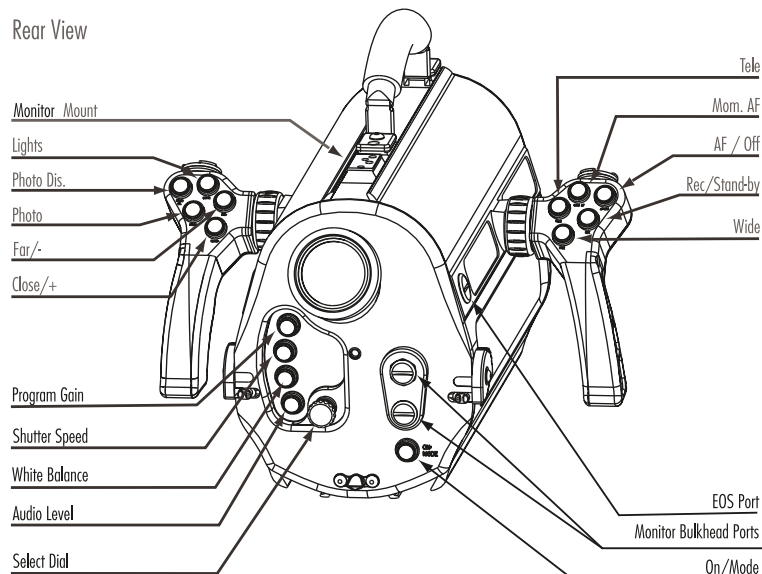
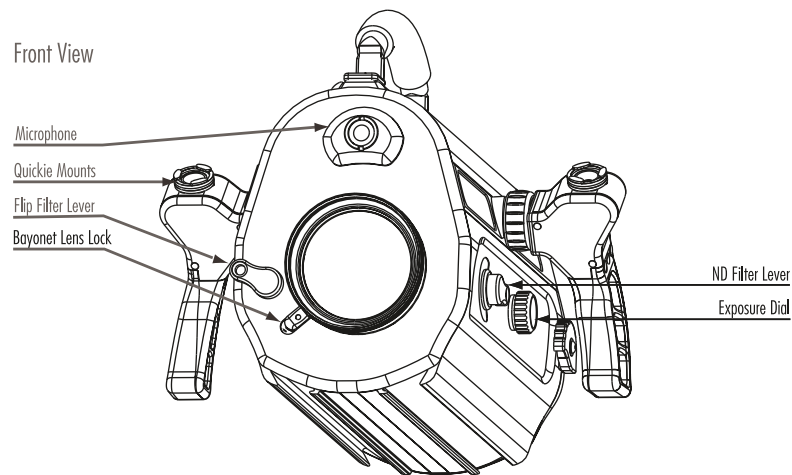


Caution

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Getting Started - Housing Identification

Illustrated below are the locations of Bluefin VX2000's features. Take time to familiarize yourself with the housing.



Quick Start Guide

✘ Every Light & Motion housing is pressure tested prior to shipping. However, unseen damage may have occurred during shipping. It is strongly recommended to test dive with only the housing prior to installing the camcorder.

- 1) Attach a fully charged Sony NP-750 battery to the camcorder. Install a Mini DV tape and a Memory Stick. Remove eyecup from camcorder.
- 2) Remove rear plate by sliding both LATCH LOCKS in and hold, then rotate REAR LATCHES down and forward.
- 3) Push the CAMERA TRAY forward to relieve the tension from the CAMERA TRAY.
- 4) Press the release button down and release the CAMERA TRAY and allow it to slide backward out of the housing.
- 5) Place the camcorder on the CAMERA TRAY and secure with the MOUNTING SCREW.
- 6) Attach the small black cable to the LANC jack, the large shielded cable to the yellow VIDEO OUT jack, and the multicolored cable into the hot shoe mount.
- 7) Align the front of the CAMERA TRAY with the base of the housing.
- 8) Connect the microphone cable into the MIC jack.
- 9) Pull exposure dial away from housing before sliding the tray forward.
✘ Slide the CAMERA TRAY forward until CAMERA TRAY RELEASE LATCH engages.
- 10) Position the camera eyepiece prior to installing rear plate so that it aligns with rear eyepiece.
- 11) Rotate the camcorder selector switch to the MEMORY position.
- 12) Replace Rear Plate by aligning guide pins into the CAMERA TRAY. Push the Rear Plate forward into the housing. Rotate REAR LATCHES can engage the LOCKING PINS. Rotate the REAR LATCHES simultaneously and evenly so the Rear Plate draws in evenly. Rotate latches until latches engage.

Quick Start Operations Guide.

- CAM - Using the Smart Grip's labeled buttons as a guide, you can access common camcorder functions.
- MEM - Press the ON/MODE button once to switch to from Camera to Memory mode. Press the PHOTO button on the left grip to record a still image to the camcorder's Memory Stick.
- VTR - Press the ON/MODE button twice from camera mode to enter VTR mode. Press the smart grip buttons until the camcorder performs the VTR operation you desire. (see page 11, fig 11 & fig 12)

Bluefin VX2000 Operation - Camera Preparation

- 1) Install a fully charged NP-750 battery into your camcorder.
- 2) Install a Sony MiniDV tape and a Memory Stick into your camcorder.
- 3) Remove viewfinder from camcorder as indicated on page 157 in the Sony manual.

Mounting the Camera

- 1) Remove the rear plate by sliding both latch locks in and hold, then simultaneously rotate both rear latches down and forward.
- 2) Push camera tray forward to relieve tension from the camera tray
- 3) Press the release button down and release camera tray and allow it to slide backward out of the housing.
- 4) Place camcorder on the cameratray and secure with the mounting screw
- 5) Attach the small black cable to the LANC jack, the large shielded cable into the yellow Video out jack, and the multi-colored cable into the hot-shoe mount (VX2000 only).
- 6) Align the front of the camera tray with the base of the housing.
- 7) Connect the microphone cable into the microphone jack of the housing.
- 8) Pull exposure dial outward.
- 9) Slide camera tray forward until the camera tray release latch engages.
- 10) Release exposure dial.
- 11) Position camera eyepiece prior to installing rear plate so that it aligns with rear eyepiece.
- 12) Rotate the camcorder selector switch to the memory position.
- 13) Replace the rear plate by aligning the guide pins into the camera tray. Push the rear plate forward into the housing. Rotate the rear latches simultaneously and evenly so the rear plate draws-in evenly. Rotate latches until locking latches engage.



(Fig. 1)



(Fig. 2)



(Fig. 3)



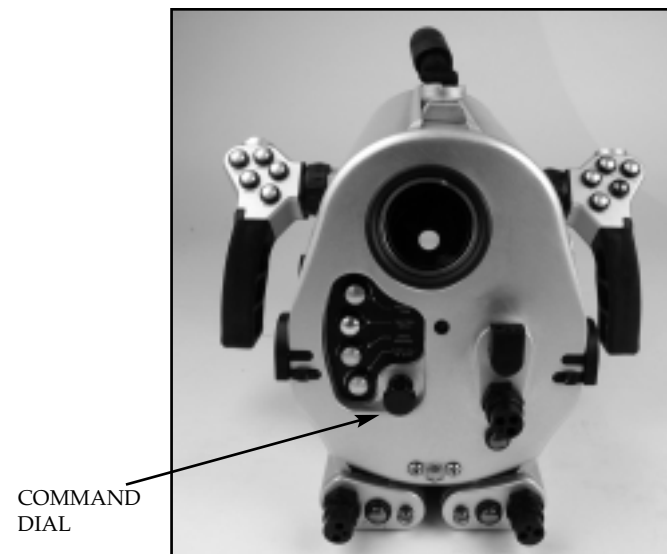
(Fig. 4)

Operation

The Bluefin VX2000 is designed to access most camcorder features using a combination of infrared commands from the Smart Grips as well as mechanical interfaces on the housing.

Rear Plate

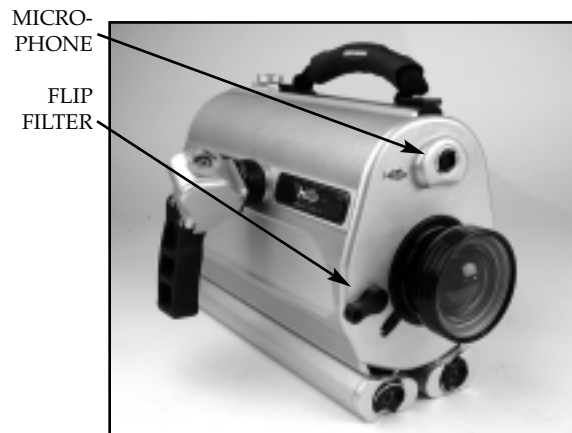
- | | |
|--------------------------------|---|
| ON/MODE - | Turns camcorder on from off state. When camcorder is in powered state, loops between Camera - Memory and VTR modes. |
| Program/Gain - | Activates camcorders manual Program (VX2000) or Gain (PD150) |
| Shutter Speed - | Activates camcorders manual Shutter Speed. |
| White Balance - | Activates camcorders manual White Balance. |
| Audio Lev. / AE Shift - | Activates camcorders manual Audio Level (VX2000) or AE Shift (PD150) |



(Fig. 5)

Front Plate

- Flip Filter** - Rotate lever to engage or disengage color correction filter.
Microphone - Microphone records sound to a depth of 80 ft.



(Fig. 6)

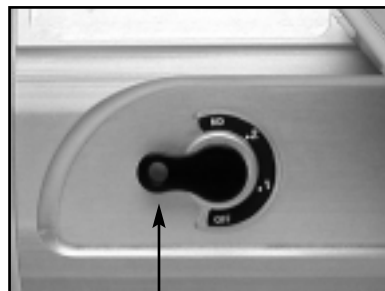
Housing Control

- Exposure Dial** - Activates camcorders manual Exposure.
ND LEVER - Controls camcorders ND filter position.



(Fig. 7)

Exposure Dial



(Fig. 8)

Neutral Density Filter

Using the Bluefin VX2000 in Camcorder mode

Camcorder POWER switch should be set to MEMORY setting when installed into the housing. When the rear plate is secured to the housing, the camcorder will switch to CAM mode.

Left Smart Grip (ref. fig. 9)

- LIGHTS** - After initial power up from battery pod, cycles lights through output cycles. Press and hold for three seconds to turn lights off.
- PHOTO** - Will record a video capture to Mini DV tape. Still images captured in this manner will always have a resolution of 640x480. Higher resolution images may be captured using the Memory Stick.
- PHOTO DIS.** - Press to display thumbnails of images stored on Memory Stick. Most recent image will be displayed first. Cycle through stored images by pressing the FAR/- and NEAR/+.
- FAR/-** (dual function)
A) FAR: switches camcorder to manual focus and moves focus point further from camcorder.
B) - : displays previous image stored on Memory Stick. PHOTO DIS must be pressed first.
- NEAR/+** (dual function)
A.) NEAR: switches camcorder to manual focus and moves focus point closer to camcorder.
B) + : displays next image stored on Memory Stick. PHOTO DIS must be pressed first.



Using the FAR/- and NEAR/+ to cycle through images on Memory Stick will place the camcorder in manual focus and will refocus the camcorder as you scroll through the images. When you switch back to CAM mode press AF/OFF to return to auto focus.



If REC is pressed while displaying thumbnails, the displayed thumbnail will be recorded as part of the composition of the video.



(Fig. 9)



(Fig. 10)

Right Smart Grip (ref. fig. 10)

- TELE** - Zooms camera to telephoto. Double tap zoom button to double zoom speed.
- WIDE** - Zooms camera to wide-angle. Double tap zoom button to double zoom speed.
- MOM. AF** - Press and hold this button to put the camcorder into "momentary AF". Camcorder remains in AF as long as the button is pressed. Once released, the camcorder switches to manual focus. This is useful in stopping the camcorder from "seeking" when filming in a low contrast environment. To return the camcorder to AF, press the AF/OFF button.
- REC** - Toggles between record and stand-by modes.
- AF/OFF** (dual function)
- AF:** Returns camcorder to auto focus from manual focus.
 - OFF:** Turns camcorder off. Press and hold for three seconds then release.

Using the Bluefin VX2000 in Memory Stick mode

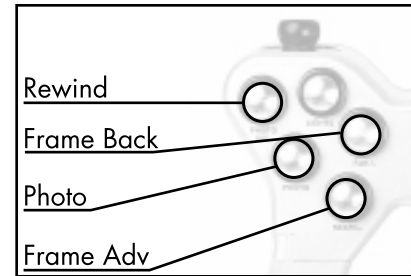
Push the POWER BUTTON on the rear plate to enter MEM mode.

Left Grip (ref. fig. 9)

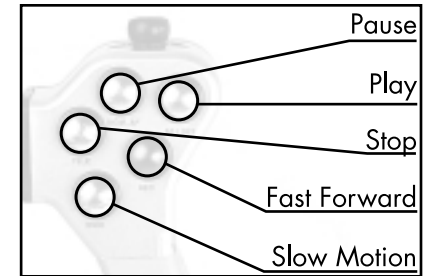
- PHOTO** - Captures still image to Memory Stick
- PHOTO DIS** - Displays images stored on Memory Stick Use -/+ to cycle through stored images.
- FAR/-** Displays previous image stored on Memory Stick. PHOTO DIS must be pressed first. Focus command requires Monitor Back.
- NEAR/+** Displays next image stored on Memory Stick. PHOTO DIS must be pressed first.
- LIGHTS** - Turn lights on/off

Right Grip (ref. fig. 10)

- TELE** - Zooms camera to telephoto. Double tap zoom button to double zoom speed.
- WIDE** - Zooms camera to wide-angle. Double tap zoom button to double zoom speed.
- MOM. AF** - Pressing and holding this button puts the camcorder into "Momentary AF". Camcorder remains in AF as long as the button is pressed. Once released, the camcorder switches to manual focus. This is useful in stopping the camcorder from "seeking" when filming in a low contrast environment. To return the camcorder to AF, press the AF/OFF button.
- AF/OFF** - **AF:** Press once to return camcorder to auto focus from manual focus.
OFF: Turns camcorder off. Press and hold for three seconds then release.
- REC** - is not used in MEM mode



(Fig. 11)



(Fig. 12)

Using the Bluefin VX2000 in VTR mode

Left Grip (ref. fig. 11)

- FAR/-** - Frame Back while paused and reverse direction during playback
- NEAR/+** - Frame Advance while paused
- PHOTO DIS.** - Rewind during Stop and high speed reverse during Playback
- LIGHTS** - Not used
- PHOTO** - Captures still image to Memory Stick

Right Grip (ref. fig. 12)

- TELE** - Stop
- WIDE** - Slow Motion
- MOM. AF** - Pause
- AF/OFF** - Play
- REC** - Fast Forward during Stop and high speed advance during Playback

Rear Plate LED signals

The Monitor Back features a LED light located just above the monitor. The LED's function is to display camcorder mode and be a visual alarm for moisture detected inside the housing. The LED signals are:

- Solid Green** - Camcorder is in CAM mode and a Mini DV tape is loaded.
- Solid Red** - Camcorder is in PHOTO mode or recording in CAM mode.



When a Mini DV tape is not installed, LED will be red in CAM mode.

- Flashing Green/Red** - Moisture has been detected inside the housing. Immediately remove it from the underwater environment..

Front Optic Installation / Removal

To Install Optic

1. Perform o-ring inspection.
2. Align optic to housing details.
3. Press optic evenly into housing.
4. Rotate clockwise until LOCKING PIN engages.

To Remove Optic

1. Slide LOCKING PIN outward away from optic.
2. Rotate optic counter clockwise.
3. Pull away from housing.

Pre-Dive Checklist

- 1) Make sure you have a Mini DV tape and Memory Stick in the camcorder.
- 2) Make sure you have a completely charged battery in the camera.
- 3) Verify operation of all housing controls.
- 4) Check that the front bayonet port is securely engaged and that the latch pin is in the locked position. Clean lens if necessary.
- 5) Check that the rear plate o-rings are seated correctly and that the rear latches are in the closed and locked position.

First Time Use

All Light and Motion housings are pressure tested prior to shipping. However, there could be unseen damage due to shipping. A test dive without the camcorder in the housing is highly recommended.

After the initial dive with just the housing, make the following checks.

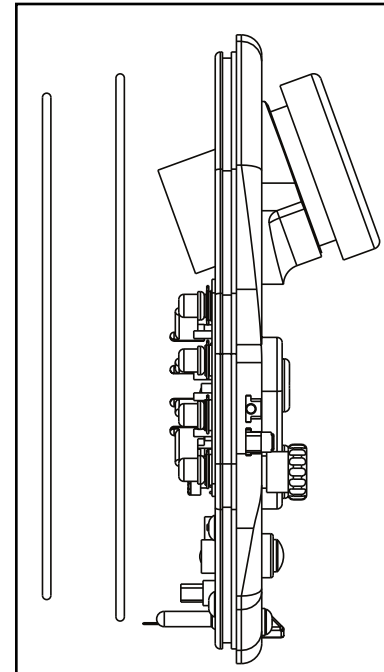
1. Dry off housing exterior.
2. Remove the Rear Plate / Monitor Back and visually inspect for moisture.
3. Reach inside the housing and trace a finger around all view ports and mating surfaces.
4. If any water is detected, contact the housing reseller or Light & Motion Service Center.

After Diving Care

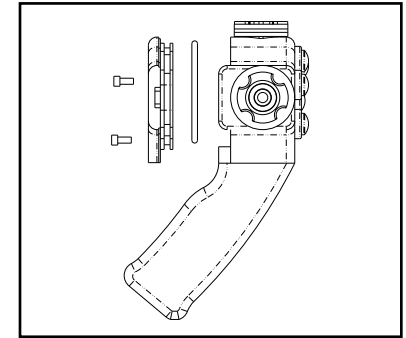
1. Immediately submerge the housing in fresh water. While in fresh water, work all the switches and press all the buttons, to work salt water out of the housing buttons.
2. Remove housing from rinse tank. After you have geared down, simply towel dry.

Housing Storage

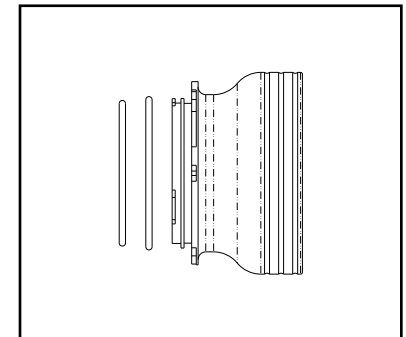
Store housing and Travel Case in a dry location. 24 hours after a dive, leave the Rear Plate off the housing to allow for air circulation. Similarly, leave Travel Case Lid about two inches open. Allow any residual water to evaporate from the Travel Case prior to storing the housing.



Double O-ring seal Rear Plate



O-ring seal Smart Grip



Double O-ring seal Front Optic

O-ring Care & Maintenance

O-rings are the critical component that keeps water out of the housing. Routinely inspect O-rings and replace at least once a year. If your o-rings need replacement, contact the Light & Motion Service department for an o-ring replacement kit.

Follow these steps for proper O-ring function.

- 1) The sealing system used on the rear plate and monitor back incorporates two O-rings. This is the most critical area of the housing for maintenance and should be inspected before every dive.
- 2) Make sure the rear plate O-rings and the mating surface on the inside of the main housing are clean from grit, hair, lint and anything that could potentially breach the O-ring seal.

- 3) After frequent diving or if O-rings appear dirty, remove O-rings and clean the grooves. To remove O-rings, use finger pressure or the rounded edge of a plastic card to lift the O-ring out of the groove. The Rear Plate and Monitor Back feature cutouts in the bottom corners to assist in O-ring removal.

⚠ Never use a metal object to remove an o-ring. It may cause damage to the O-ring and mating surface.

- 4) To check O-rings for damage, place the o-ring between the index finger and thumb. Then pull the O-ring through your fingers, feeling for any debris or wear.
- 5) If O-rings are dirty, it is best to replace them. Washing dirty o-rings with soap and water is not recommended. Soap breaks down the lubricants and will compromise the integrity of the seal.
- 6) Properly greased O-rings will help maintain sealing integrity and minimize O-ring degradation. Use enough grease to lubricate the O-ring thoroughly, but not so much that it will attract additional debris.
- 7) Clean the groove with a lint free swab or the folded edge of a paper towel.
- 8) All of the front optic ports for the housing also utilize two O-ring seals. Also check these seals every time the optic is removed.

O-ring Replacement Kit (part # 802-0163)kit includes:

Two O-rings each for the Rear Plate and for front optic
 Smart Grip O-ring and Battery Kit (part # 802-0117)
 O-ring and battery set for one Smart Grip.

⚠ O-rings used for the Rear Plate, Monitor Back and all optics are different sizes. Be sure to replace the appropriate O-ring in its respective groove.

Focus Techniques

The camcorder's auto focus works well for most video and Memory Stick capture conditions. However, the properties of water can prevent the camcorder from accurately judging distance. To overcome this, Light & Motion has integrated manual focus ability into most housing configurations.

⚠ Look for camcorder icons to appear in the view finder or Monitor Back. This will identify when the camcorder is operating in auto or manual mode. Refer to camcorder manual for icon interpretation.

Using Manual Focus

The Bluefin VX2000 FAR/-, NEAR/+ and MOM.AF buttons will switch the camcorder from auto to manual focus.

One technique is to toggle the FAR and NEAR buttons until the subject is in focus. Because this method is slow, we recommend the following technique.

- 1) While in auto focus, point the camera toward a solid object equidistant to the actual subject you are trying to shoot (ie fin or boat bottom). This allows the camcorder to achieve an actual focus.
- 2) Press and release the MOM. AF button to lock the focus distance.
- 3) Re-orient the camcorder toward the actual subject.
- 4) Use the FAR and NEAR buttons to fine tune the focus.
- 5) Press REC / PHOTO when subject is in focus.

Replacing Handle Batteries

The battery life of your Smart Grip Handles will vary depending on usage and technique. But eventually the handle batteries will exhaust.

Replacing the handle batteries is an easy procedure. However, pay special attention to the wear of the O-ring and to the orientation of the batteries.

- 1) Using a hex key, remove the two hex screws on the back of the handle (ref. fig. 13).
- 2) Remove the Handle Cap from the handle assembly (ref. fig. 13)
- 3) Remove old batteries from handle board.
- 4) Install new 1/3 N batteries into the handle board (Refer. fig. 14)

⚠ **The +/- position of the batteries is critical. If batteries are installed backwards, they will damage the handle board.**

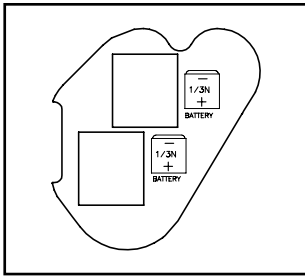
- 5) Service Handle Cap O-ring or replace with a new O-ring.



(Fig. 13)



(Fig. 14)



(Fig. 15)




(Fig. 16)

- 6) Press the Handle Cap into the handle assembly so O-ring seals evenly.
- 7) Replace both hex screws in Handle Cap and tighten using hex key.

Smart Grip O-ring and Battery Kit (part # 802-0117) (ref. fig. 16)
Kit contains one O-ring and battery set for one Smart Grip.

Reversing Smart Grip left and right functionality

Smart Grips can be programmed to swap left and right button functions. This is useful if a Smart Grip battery becomes exhausted during a dive. You then can swap Smart Grip functions to maintain primary housing operation.

 This is a total button function swap, not a button by button nor a custom configuration.

- 1) Press either FAR/- and NEAR/+ or TELE and WIDE simultaneously and hold for three seconds.
Button functions are now swapped. New button configuration will mirror old configuration, i.e. REC and PHOTO, AF/OFF and PHOTO DIS.

This is a handle-by-handle procedure. Performing this function on one handle will not switch both.

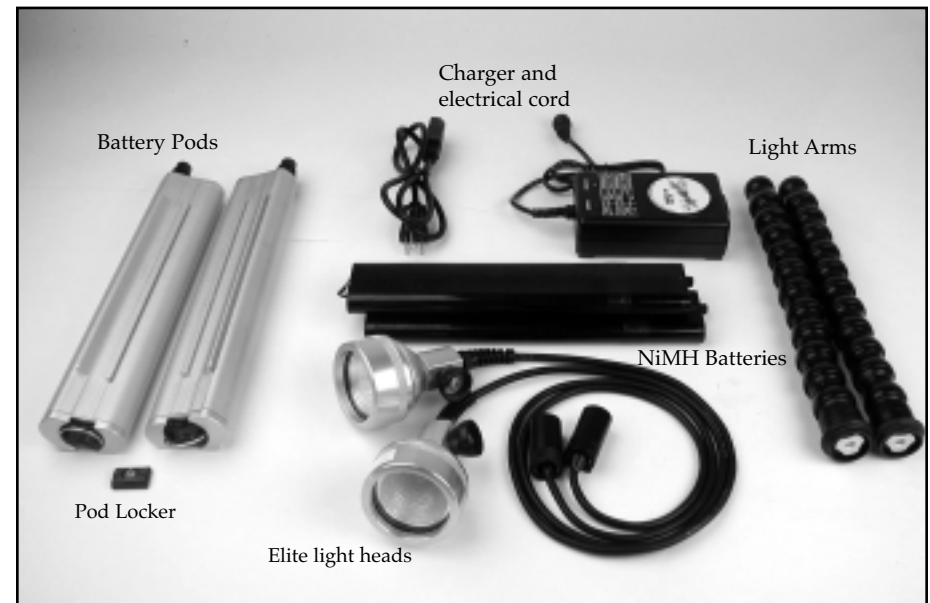
Revert to original button configuration

- 1) Perform the same swap procedure. Press either FAR/- and NEAR/+ or TELE and WIDE simultaneously and hold for three seconds.

Eventually the batteries in the Smart Grips will totally exhaust. Contact Light & Motion to order a replacement battery and O-ring kit (part #802-0117). Or remove the Smart Grip handle cover and Replace the two batteries located inside. Batteries are CR 1/3 N and can usually be purchased from any store that stocks camera and watch batteries.

Bluefin VX2000 Lights - Getting Started

Pictured below are the components of both the SunRay -X Pro and the SunRay -X Elite lighting systems. Take a moment to familiarize yourself with each part for later identification and use.

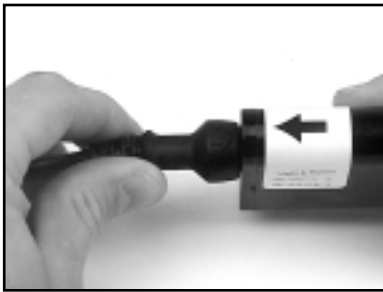


Charging Batteries

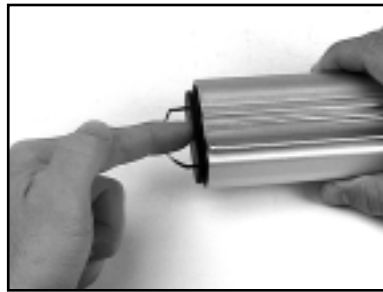
☒ Due to shipping, batteries charge states will vary. It is recommended that you charge your batteries when they are received.

- 1) The charger can accept an electrical range of 100 - 240v and 50 - 60hz.
- 2) The charger has two LED lights, one green and one yellow. Green LED illuminates when charger is receiving power. Yellow LED is illuminated when charging and blinking when charge is complete.
- 3) To attach charger to battery, align arrow on charger connector with arrow on battery label and push together until connectors seat. (ref. fig. 17)

☒ Charge time for the 10.8v fast charger is approximately 2.5 hours.



(Fig. 17)



(Fig. 18)

Installing Batteries

- 1) Slide the battery back into the pod with the contact end inserted first so that the connector will align with the socket inside the pod. (ref. fig. 18)
- 2) Servicing the o-rings (See o-ring maintenance).
- 3) Replace the front cap onto the pod.

☒ Make sure the battery is rotated completely out of the way so that when replaced onto the pod, it does not contact the sealing surface.

☒ Insure that the removal strap attached to the battery does not interfere with the seal when the end cap is attached to the pod

- 4) Turn the knob on the end cap clockwise 1/8 turn until it stops. The endcap will now be locked into place. The endcaps are specific to the left and right pods.

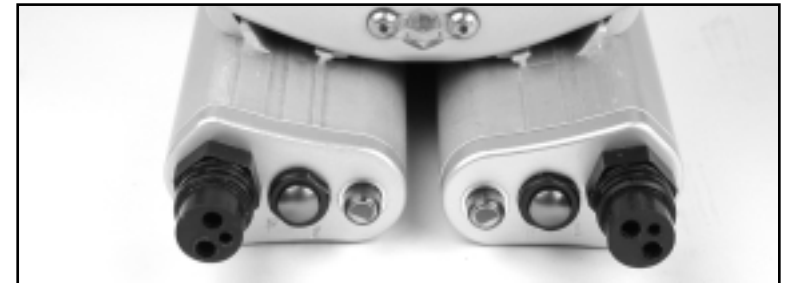
Removing Batteries

- 1) Rotate latch at the front of the pod counter-clockwise 1/8 turn or until it stops.
- 2) Pull the front cap off the pod.
- 3) Pull the battery from the pod using removal strap (ref. fig. 17 & 18).

Mounting Battery Pods

☒ Battery Pods can be mounted prior to installing batteries into pods.

- 1) Remove the rear plate or monitor back of the housing.
- 2) If using weight bracket, remove it from the housing using 1/8" hex wrench.
- 3) Slide the battery pods into housing channels (ref. fig. 19).
- 4) Insert Pod Locker between the pods and tighten using 1/8" allen wrench (ref. fig. 20). Do not over tighten.



(Fig. 19 - Battery alignment)

Installing and Using QuickConnects

You may need to install QuickConnects to the housing, light, or light arm or all three. If your housing and light system already has QuickConnects attached or has universal mounts, skip ahead to the appropriate section for light system assembly



(Fig. 20)



(Fig. 21)

Mounting Light Head QuickConnect

- 1) Remove the attached arm mount using a 1/8 allen wrench.
- 2) Align QuickConnect details with slots on light head.
- 3) Tighten Socket Cap Screw to secure mount to light head.

Mounting QuickConnect Base

- 1) Remove arm base using 5/32 allen wrench.
- 2) Attach QuickConnect and tighten Socket Cap Screw.

Attaching Light Arm to Light and Housing

- 1) Align arm mounts into slots on light or housing base.
- 2) Push slightly and rotate clockwise. Arm should click into place.

Removing Light Arm from Light Head and Housing (ref. fig. 22)

- 1) Pull lock ring away from light or housing and rotate counter-clockwise.



(Fig. 22)



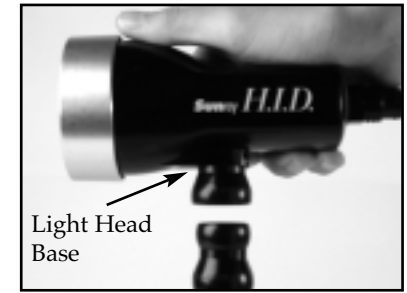
(Fig. 23)



(Fig.24)



(Fig. 25)



(Fig. 26)



(Fig.27)

Assembly with Universal Mounts

Mounting Arm to Light Heads

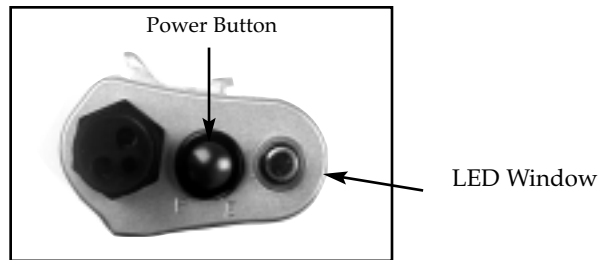
Align top of arm with arm light head base and press **FIRMLY** together. Arm should snap into position. (ref. fig. 25).

Removing Arm from Light Heads

To remove light head from arm, "break" the arm at the upper most joint. Applying pressure on the Light Arm and not the Light Head (ref. fig. 9). Do not apply pressure to the Light Head Base (ref. fig. 26). Doing so may cause the Base to break from the Light Head damaging the light.

Connecting Battery to Light Head

- 1) Plug in the cable connectors on pod.
- 2) Tighten the locking sleeves by rotating clockwise until tight.
- 1) Plug in the cable connectors on the Light Head
- 2) Tighten the locking sleeves by rotating clockwise until tight.



(Fig. 28)

Light Operation

Before you turn on the Pro lights, verify that the mode selector (flat position of black ring around red power button) is set to the P setting.

Before you turn on the Elite lights, verify that the mode selector (flat position of black ring around red power button) is set to the E setting.

Operation with SunRay-X Pro Lighting System

Pro lights can be operated either by the Pod Power Button or from the Smart Grip controls.

Operation from Smart Grips

- 1) Activate initial power up by pressing the Pod Power Button. (Refer Fig 28). After initial power up lights may be controlled using LIGHT button on the Smart Grip controls.
- 2) Turn off lights by pressing the LIGHT button.

Operation from Battery Pods

- 1) Turn on light by pressing the Power Button on the rear cap (Refer Fig 28).
- 2) Turn off light by pressing the Power Button on the rear cap.

Operation with SunRay-X Elite Lighting System

Elite lights can be operated either by the Pod Power Button or from the Smart Grip controls.

Operation from Smart Grips

- 1) Activate initial power up by pressing the Pod Power Button. (Refer Fig 28).
- 2) Use the LIGHTS button to cycle through power settings.
- 3) Turn off lights by pressing and holding the LIGHT button for three seconds.

Operation from Battery Pods

- 1) Turn on light by pressing the Power Button on the rear cap (Refer Fig 28).
- 2) Press the red button again to change the light output level.
- 3) Turn off light by holding the red button down for three seconds.

Post Dive Cleaning

- 1) After each dive, you should dunk the lights and pods in fresh water.
- 2) Press the red button to flush out any water.
- 3) After you are geared down and completely dried off, simply towel dry the lights in a safe dry place.



Do not leave your lights in the rinse bucket with other equipment. Underwater gear has been known to be damaged by jostling against other products.

Storage

After diving remove your batteries and charge them. Leaving your batteries discharged will significantly reduce the life of the battery. Store as you would any other valuable piece of electronic equipment.

Other Maintenance

- Apply a light film of o-ring grease to cables and connectors to prevent premature degradation.
- We highly recommend a factory annual service to maintain proper operation of your SunRay Lights.
- If a battery pod is flooded, immediately remove the battery, and rinse the pod with fresh water. Most non-electrical parts will be salvageable if not corroded by salt water.

Monitor Instructions - Getting Started

Illustrated below are the components of the Bluefin External Monitor and the Remote Monitor. Take time to identify and become familiar with each part.

Compact Monitor Components



External Monitor



Right Angle Bulkhead
for Bluefin Compact Monitor



Clamp Assembly



Lens Shade



Monitor Cable

Remote Monitor Components



Remote Monitor



Straight out Bulkhead
for Remote Monitor



Clamp Assembly



Lens Shade



Remote Monitor Cable

Bluefin Bulkhead Installation

- 1) Remove the Rear Plate.
- 2) Locate the power switch on the circuit board on the inside of the Rear Plate. Switch the appropriate switch (upper or lower) to ON. This activates power to the bulkhead. (ref. fig. 29)
- 3) Using a flat head screwdriver or coin, remove the Port Plug (ref. fig. 30)
- 4) On the inside of the Rear Plate, remove the four button head cap screws



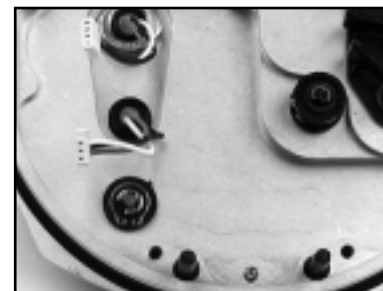
(Fig. 29)



(Fig. 30)



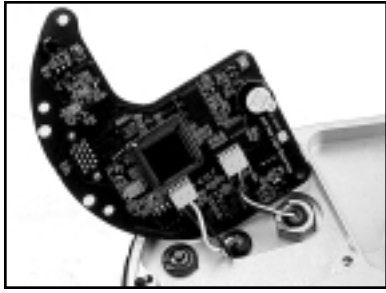
(Fig.31)



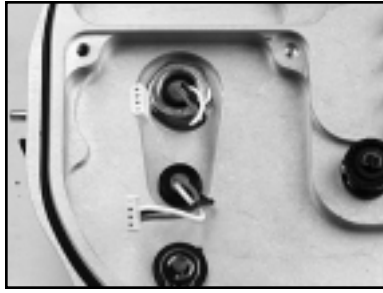
(Fig. 32)



(Fig. 33)



(Fig. 34)



(Fig. 35)

using a 3/32 hex wrench and remove circuit board. (ref. fig. 31)

- 5) Feed Bulk Head cable through Bulk Head port. (ref. fig. 32)
- 6) Perform o-ring inspection on Bulk Head o-ring.
- 7) Insert Bulk Head into Rear Plate until it is firmly seated and o-ring is not visible.
- 8) Tightening bulk head:
 - A. **Straight out bulk head** is tightened by turning the bulk head itself with a 3/4" wrench.
 - B. **Right angle bulk head** is tightened by attaching the nut provided on the inside of the Rear Plate or Monitor Back and tighten using a 3/4" wrench.
- 9) Attach Bulk Head Cable into the Video Out jack on the Rear Plate circuit board. (ref. fig. 34)
- 10) Replace circuit board and secure it to the Rear Plate using the four button head cap screws.



Infrared leads must guide through their sockets in the circuit board. Use extra caution to not bend or break these leads. (ref. fig. 35)

Bluefin Compact Monitor ID and Operation

The External Monitor consists of three components

- External Monitor - provides a 2.5" image of camera view
- Clamp assembly - mounts monitor to back of housing
- Cable - provides video signal from housing to External Monitor

- 1) Install monitor by first attaching clamp assembly to back of monitor.
- 2) Then attach monitor/clamp assembly to quick connect post by pressing down and rotating until black sleeve locks into position.
- 3) Adjust monitor by rotating clamp assembly (clockwise to tighten, counter clockwise to loosen).

Monitor Cable

Cable plugs are identical at each end.

Attach by aligning the pins and pressing into the bulkhead until the black rubber seats.



Use a small amount of silicone grease on connector before installation to aid against corrosion.

Monitor Operation

Power On/Off

The monitor will power on and off with the camcorder as the power is being supplied from the camcorder battery. For optimal burn time, we suggest using the Sony NP750 battery pack on your camcorder.

Monitor Screen

In order to see the camera display information in the monitor screen, you will need to set the camera to V-Out/LCD on the menu screen. Go to menu, scroll to ETC, highlight display and set to V-Out/LCD (Refer fig 16). Refer to your Sony instruction manual. If done correctly, the external monitor will now display all camcorder view finder information.



(Fig. 68)

Remote Monitor ID and Operation

The Remote Monitor operates most common housing functions from a remote location.

If the housing has a Port Plug or a Right Angle Bulk Head, follow the instructions "Bulkhead Installation" to install the Straight Out Bulkhead

Operation with Remote Monitor.

- 1) Once bulkhead is installed, activate switch on the inside.
- 2) Connect monitor cable to Bulkhead prior to entering the water.
- 3) Connect monitor cable to Remote Monitor prior to entering the water.
- 4) Station the Bluefin housing in the area you are going to film.
- 5) Gently let out the slack in the cable as you move the the viewing location.
- 6) Operation of Controls:

Left Side (ref. fig. 38)

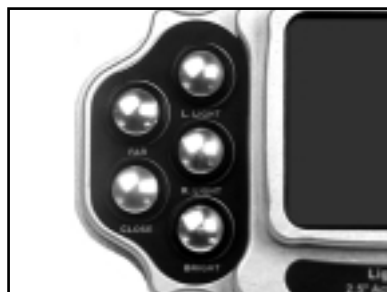
L. LIGHT - Activates left video light.

R. LIGHT - Activates right video light.

BRIGHT - Adjust brightness of monitor.

FAR - Moves focus point further from camcorder.

CLOSE - Moves focus point closer to camcorder.



(Fig. 38)



(Fig. 39)

Right Side (ref. fig. 39)

AF/OFF - **AF:** Press once to return camcorder to auto focus from manual focus.

OFF: Turns camcorder off. Press and hold for three seconds then release.

REC - Toggles between record and stand-by modes.

MOM. AF - Pressing and holding this button puts the camcorder into "Momentary AF". Camcorder remains in AF as long as the button is pressed. Once released, the camcorder switches to manual focus. This is useful in stopping the camcorder from "seeking" when filming in a low contrast environment. To return the camcorder to AF, press the AF/OFF button.

TELE - Zooms camera to telephoto.

WIDE - Zooms camera to wide angle.

Power On/Off with Remote Monitor

- On - When camcorder is in a powered down state, press any button on the Remote Monitor EXCEPT BRIGHT to return camcorder to powered up state and activate the Remote Monitor LED screen.
- Off - Press and hold AF / OFF button for three seconds.

Charging the Remote Monitor

- 1) Remove the Charging Port Plug. (ref. fig. 40)
- 2) Plug charger into a 110v.
 - ⚡ This charger is only rated at this voltage. If you do not have access to a 110v outlet, a converter must be used.
- 3) Plug charging connector from charger into charging port on Remote Monitor.
- 4) Charge for 8-14 hours, then remove charging cord.
- 5) Check o-ring on Charging Port Plug.
- 6) Replace Charging Port Plug using coin or large flat head screwdriver.
 - ⚡ Failure to re-install Charging Port Plug WILL flood the Remote Monitor.



(Fig. 40)


Diving Without a Monitor Attached

- ⚡ If you do not use the monitor you **MUST** de-activate power to the bulkhead before entering the water.


To de-activate Bluefin bulkhead:


- 1) Remove the Rear Plate
- 2) Locate the on/off switch on the inside of the Rear Plate.
- 3) Switch appropriate bulkhead to off position.

Returning Products for Care

 We highly recommend a factory annual service to maintain proper operation of your Bluefin Housing.

- 1) Before returning your Light & Motion product for care, please call or email our service department for a RMA number.
- 2) Ship your product pre-paid freight with the return number printed on the outside of the box. It is recommended that you keep your shipper's tracking number until the product is returned to you.

 Warning: Do not ship your camera inside the housing. Shipping companies may drop your system from up to three feet which may damage your camera.

 Light & Motion offers a two year extended, fault free warranty. Contact our Service Department for further information.

Contact Light & Motion

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Service Department:

831-645-1572 • Fax 831-375-2517

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