

# Leak Sentinel™ V6

Pre-dive and dive leak detection system for underwater camera housings



## USER MANUAL

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Thank you for choosing **Leak Sentinel V6**, the premier pre-dive vacuum leak detection system for underwater camera housings.

**Please read this manual carefully before installing and using the Leak Sentinel V6**

## **1. Safety precautions**

Never dive or immerse the housing in any water without the protective cap. The rubber valve is not watertight and serves only to hold the vacuum during the evacuating process. Diving or immersing the housing without the protective cap will result in flood and/or damage to your housing, camera and Leak Sentinel. Replace the protective cap immediately after achieving pre-dive testing vacuum.

Follow the standard pre-dive testing procedure immediately after installation to confirm there is no leak. All units are tested thoroughly prior to shipping. In case your test shows there is a leak, re-check the seal between the Leak Sentinel and the housing. It is the sole responsibility of the user to ensure the tightness between the Leak Sentinel and the housing. Vivid Housings will not be held responsible for any damage that may result from the faulty installation and/or use of the product. If a problem persists, please do not use the product and contact the manufacturer.

When screwing or unscrewing the protective cap and/or pump cap, always hold the valve body with the opposite hand to ensure the housing body does not turn, loosening it from the camera housing. A loose Leak Sentinel housing can cause a camera housing to leak.

It is not advisable to dive without a negative vacuum on the camera housing with the Leak Sentinel installed. While diving with a negative vacuum on the housing should not result in any damage, it is advised to always test the water-tightness of the housing and Leak Sentinel prior to diving. After all, peace of mind, knowing the camera housing is secure, is the reason for installing the Leak Sentinel in the first place. One should plan the dive so there is time for pre-dive testing by performing the pre-dive procedures listed below in Section 4. It may also be noted that many leaks occur in the rinse tank; this is because the o-rings seal better under pressure and there is very little water pressure in a rinse tank.

The vacuum causes additional pressure on the o-rings which will help prevent rinse tank floods.

Always perform any test procedures in a dry place. The rubber valve that is pressed to switch the Leak Sentinel on and off, as well as release the vacuum is not watertight. Any water inside the unit could damage the circuit. Activate the unit and create a vacuum before boarding small boats.

## **2. Warranty**

Vivid Housings will repair or replace at it's option any product that proves to be defective in construction or materials within one year from the date of purchase.

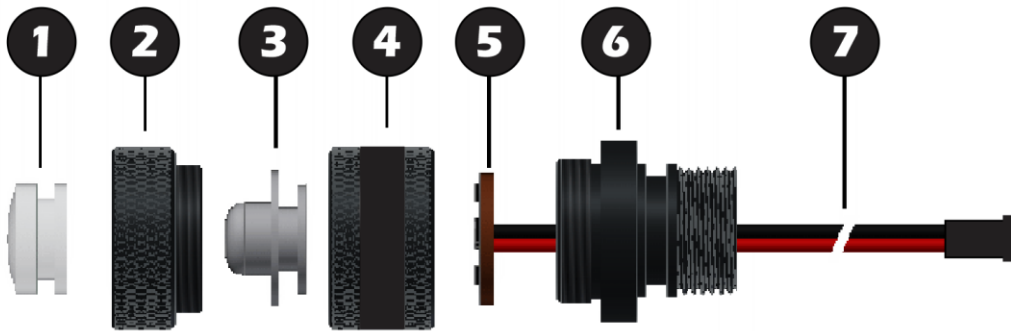
Vivid Housing is not liable for damage to the equipment caused by leakage of water into the housing, nor for loss of data or income that may result from such leakage, or any accident during which Leak Sentinel was in use.

This warranty is void in case of negligent handling of the Leak Sentinel including, but not limited to, physical damage, immersion of the unprotected electronic circuit in water, modifications by other than the manufacturer, and improper care.

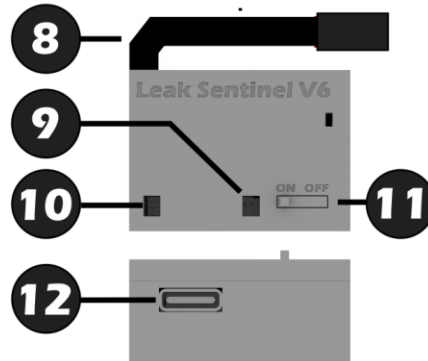
There is no express or implied warranty, except as stated above.

The buyer understands and agrees that, because of the nature of this product, he/she uses Leak Sentinel at his/her own risk and agrees to hold Vivid Housing harmless, except as stated above.

## Identification of parts



1. Transparent acrylic window
2. Protective cap
3. Transparent silicone button/valve
4. Valve body
5. Switchboard
6. Adapter
7. Power cable (female connector)



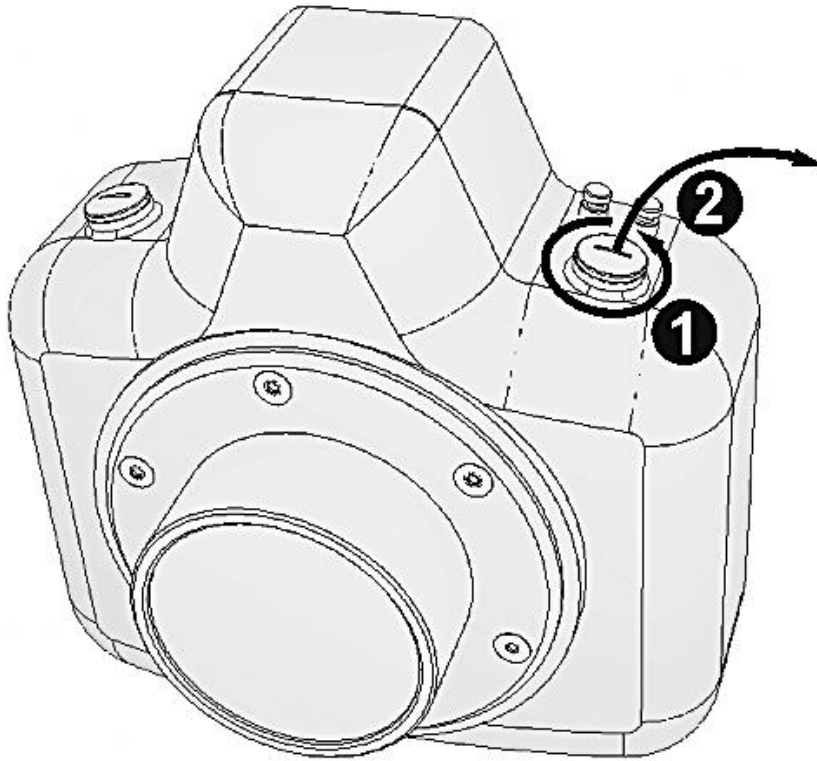
8. Power cable (male connector)
9. Control hole #2 (not used)
10. Control hole #1
11. Main ON/OFF switch
12. USB-C connector

### 3. Installation

Before installation and operation of your Leak Sentinel, please familiarize yourself with the parts by referencing the figure above!

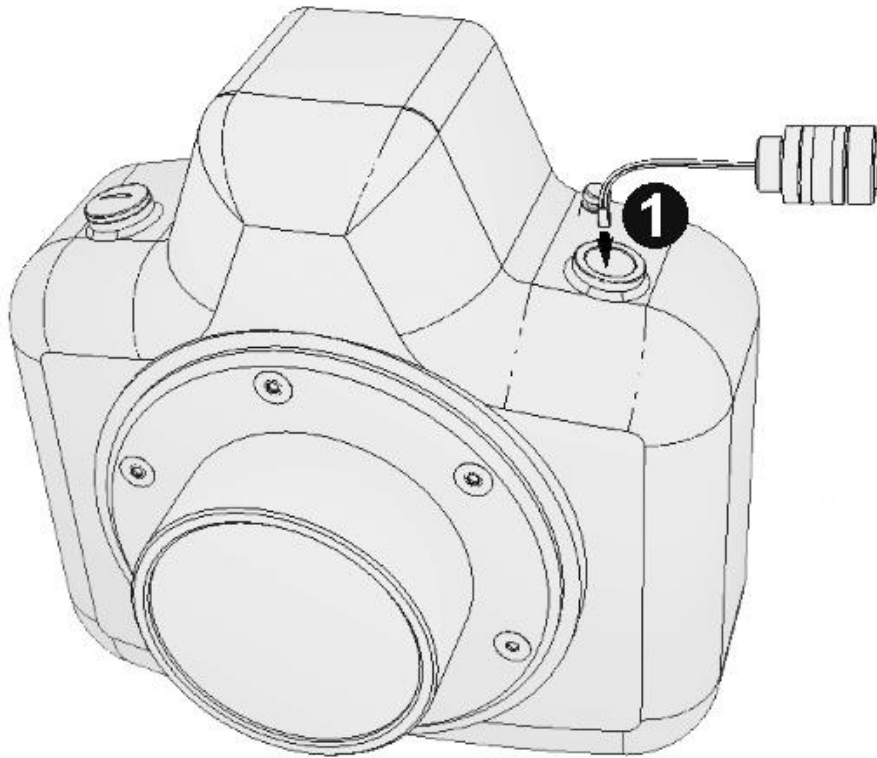
**Do not disassemble the valve body and the adapter – there are no user serviceable parts inside the valve body, and opening the compartment may result in the damage to the circuit.** The installation procedure depends on the type of adapter and camera housing. In general, the steps are as follows:

**a.**



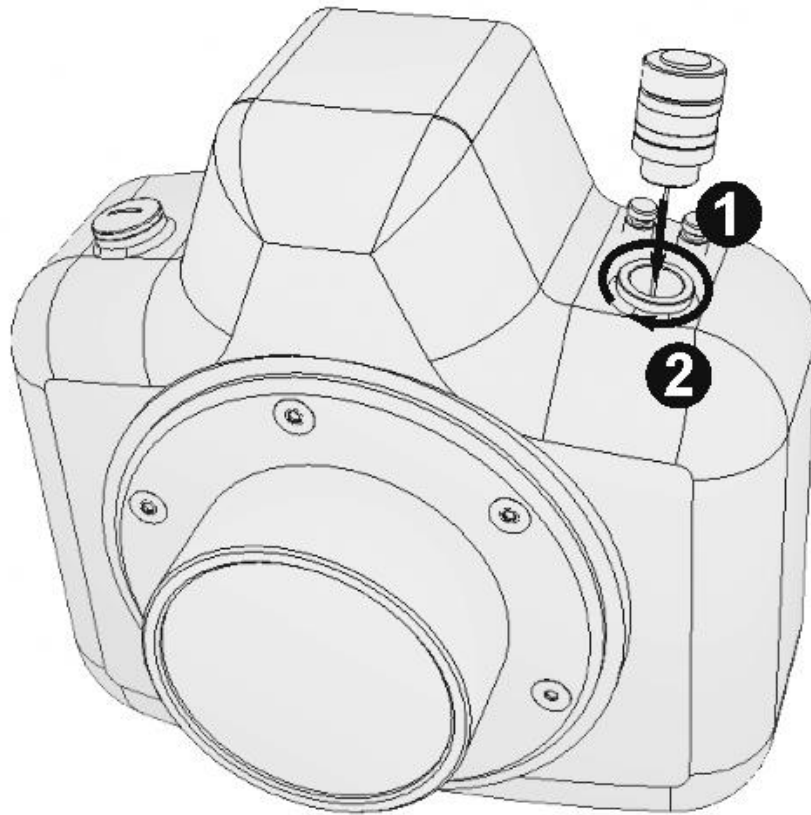
**a.** Depending on your housing type, remove the lid from the accessory port (Nauticam, Aquatica, Isotta, Hugyfot, Seacam, Nexus, Subal etc.), the bulkhead cap (Sea&Sea), the control gland (Ikelite) or the bulkhead itself (Sea&Sea etc.).

**b.**



**b.** Disconnect the power cables (if not already disconnected), and push the cable attached to the device through the accessory port from the outside. If the hole is too small for the whole connector, remove the plastic collar and push the pins through one by one, then replace the collar. Be sure to match the white markings.

**C.**

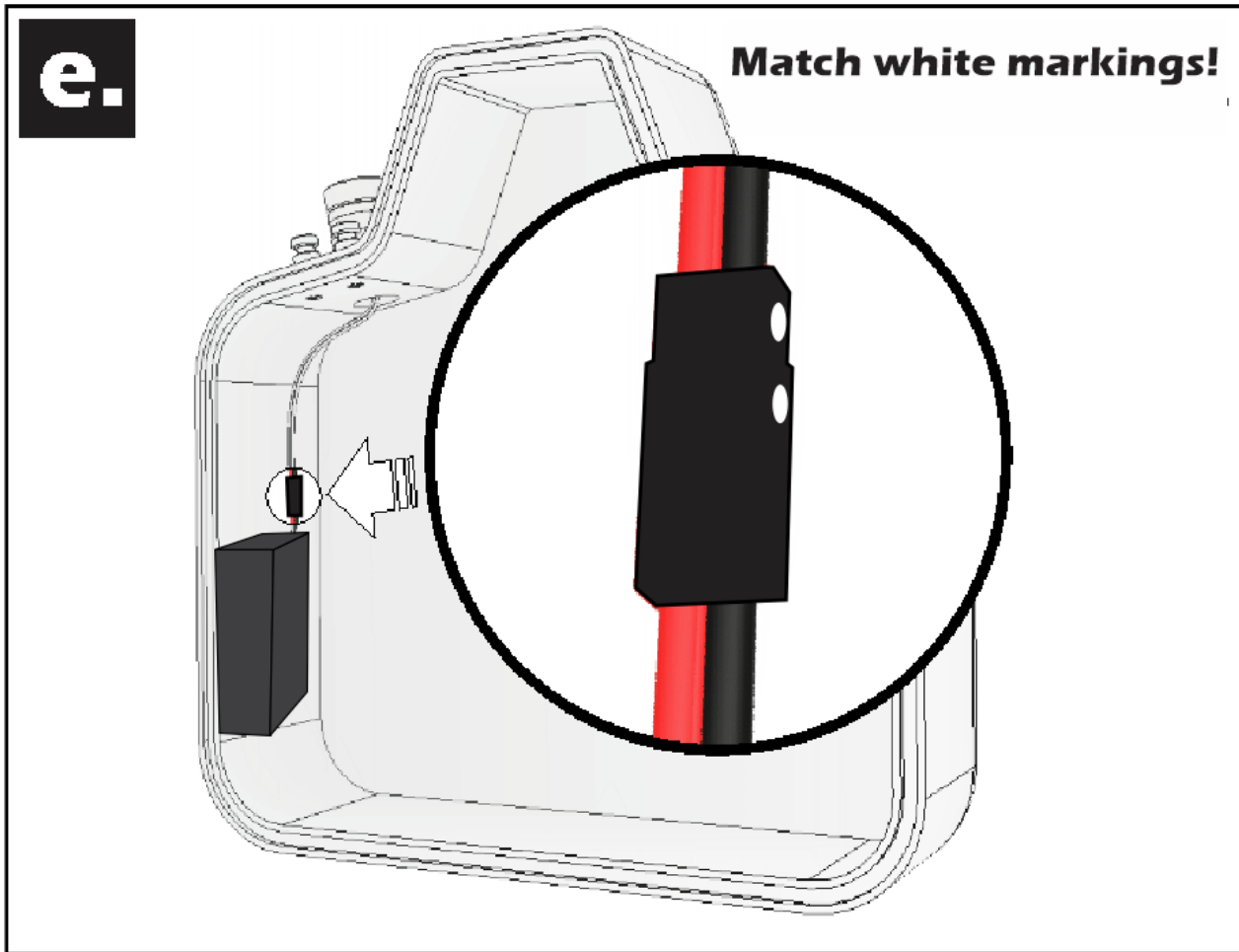


c. In case of installing into a threaded port, screw the adapter into the accessory port and tighten snugly by hand, using more force than you would to screw the protective cap, but not so much as to break anything. In case of non – threaded ports, consult your housing's manual for details about installing and removing port attachments. Also see the Appendix 1 at the end of this manual.



**d.** Find a convenient spot inside your housing and attach the enclosure with supplied self-adhesive Velcro pads. If possible, choose a spot on the same side as the accessory port so that the cables don't get in the way of camera and/or other equipment. Also try to avoid installing the holder directly at the bottom of the housing if not absolutely necessary, to keep the battery dry in case of spillage etc. If there is no other option, adding an absorbent [soldering cleaning pad](#) between the enclosure and the housing bottom might help keeping the battery dry. If the cables are too long, you can arrange and secure them with tape or shrink wrap tubing.





**e.** Connect the cables so that the white markings match. Reversing the polarity will cause device malfunction!

#### 4. Pre-Dive Procedures and Operation

1. Remove the protective cap by unscrewing the cap in a counter-clockwise motion, being sure to hold the Leak Sentinel body to avoid loosening the Leak Sentinel from the camera housing.
2. Switch the main switch to the ON position (left). The red LED on the switchboard will start flashing.
3. Press the translucent button on the rubber valve in a downward motion, until the switch clicks, and hold for 1 sec+ to switch the circuit OFF or ON.
4. The red LED will keep blinking steadily, indicating the circuit is active. At this time, ambient pressure is measured and memorized by the unit.
5. Detach the tubing from the pump cap. Screw the pump cap into the valve body. Attach the tubing back to the pump cap.
6. Start pumping by pulling in and out on the pump handle, or by simply pressing the pump's ON button in case you are using the Leak Sentinel electric pump. The LED should start alternating with a red and green LED light. The red and green alternating LED is indicating that a pressure change is detected and the circuit is active.
7. After the number of strokes needed to achieve the proper vacuum, which depends on the housing volume, the green LED will perform one long blink, then keep blinking steadily. Stop pumping after two consecutive green blinks after the long green blink.
8. Detach the tubing from the pump cap and remove the pump cap.
9. Replace and tighten the protective cap. Be sure the protective cap o-ring is lubricated with a small amount of o-ring grease.  
Now, observe the LED. If the green LED still blinks after 15-20 minutes then no leakage is present and the housing is ready for immersion in water. If the green LED stops blinking and the alternating red-green or red LED starts blinking, there is a leak, so it is not safe for any type of immersion in water. If there is a leak, then a procedure for locating and eliminating the cause of the leak should be followed. Be sure and test the camera housing again with the Leak Sentinel after any repairs are made to the camera housing and/or its o-rings.

10. During the dive, be sure to occasionally observe the LED. If the green LED stops blinking and an alternate red/green or red LED starts blinking, this indicates the rise of internal housing pressure and a possible leak. If there is a possible leak, it is advisable to immediately ascend to minimize the risk of flooding. **Be sure to follow all dive safety procedures when ascending!** It is advisable to point the housing port downwards to cause any water in the housing to flow into the port and away from the camera and housing electronics.

## 5. Post Dive Procedures

1. After every dive, rinse and dry the valve body along with the camera housing. There is no need to remove the Leak Sentinel from the camera housing to rinse the housing and/or Leak Sentinel. To remove the Leak Sentinel from the housing during rinsing procedures could cause the housing to flood.
2. After thoroughly drying the housing, remove the protective cap.
3. Switch the circuit off, pressing the rubber valve button.
4. Gently move the rubber button sideways to equalize the pressure. You will hear the air hissing into the housing as the pressure within the camera housing equalizes with the outside air pressure. When the air pressure starts to equalize with outside pressure the red LED will start blinking. Be careful not to pull the bottom rubber disc from the other side of the lid; if this happens, remove the upper lid and pull the lower disc through the hole, then reinstall the upper cover.
5. Replace the protective cap, being sure the o-ring is greased and clean of debris.
6. Switch the main switch OFF

## 6. Recharging the battery

Attach the USB-C connector and charger to the connector on the enclosure. Switch the main switch ON. Check the internal LED through the control hole#1. If it's flashing green, the battery is charged, if it flashes red, charge until green. Switch the main switch OFF.

<b>FUNCTION</b>	<b>USER ACTION/DESCRIPTION</b>	<b>LED INDICATION</b>
Start/Power on	Switch the main switch ON	Steady red flashing
Low battery	Switching the circuit ON	Red flashing internal LED
Pressure change	Pumping/Leak alarm	Switchboard LED Alternate red/green flashing /red flashing
Vacuum hold	Monitoring	Steady green flashing
Reset	Switgch main switch off and back ON	Steady red flashing

## Appendix 1 – Installation instructions for non – threaded ports

### Sea&Sea

Remove the circlip fastener from your bulkhead/lid, remove the bulkhead lid, and push the Leak Sentinel adapter through the port, matching the flat cutout. Replace the circlip fastener.

## **Aquatica**

**Type 1:** Unscrew the jam nut and washer from the bottom of your bulkhead/lid, remove the bulkhead lid, and push the Leak sentinel adapter through the port. Replace the jam nut and washer.

**Type 2:** Remove the retaining o-ring from the bottom of your bulkhead/lid, remove the bulkhead lid, and push the Leak Sentinel adapter through the port. Replace the jam nut and washer.

## **Ikelite**

**Replacing the 3/8"-24 UNF control gland:** Use the small allen wrench to remove the knob from the control shaft, pull the control shaft out from the inside, and unscrew the control gland from the housing's wall. Follow the installation instructions for threaded ports.

**For installation in the 1/2"-20 UNF accessory port:** Follow the installation instructions for threaded ports.