

Nauticam vacuum check and leak detection system

by Phil Rudin

DEMA, (The Dive Equipment & Marketing Association) show was held once again during November in Orlando, Florida USA. Every November dive equipment manufactures from around the globe meet for the United States largest diving event. Included in the show is a large image resource center dedicated to the art of underwater photography and videography. This years show much like past shows debuted many new and interesting products for underwater photographers & videographers including the new Nauticam Vacuum Check and Leak Detection System.

Most camera housing floods occur as a result of total pilot error and are therefore very much preventable when you are using proper techniques while assembling housing components. These floods can occur with both experienced and novice photographers especially if you are in a rush, experiencing jet lag, in unfavorable lighting, not well rested, have had a few to many mojitos or any combination of these and other contributing factors.

The Nauticam vacuum check and leak detection system is a simple and comprehensive system that confirms the watertight integrity of your Nauticam housing before entering the water. Vacuum systems are not new to the underwater photography world but have just recently begun to gain some traction among the mainstream. In the past most underwater photographers have relied on a sound maintenance program and a proper insurance policy to cover loss as a result of flooding. No vacuum system can replace proper maintenance and I myself have lost far more equipment to theft around the world than to floods so I would not suggest it replaces a need for insurance.

What the vacuum system will do is provide additional peace of mind by confirming that you have in fact properly assembled your equipment prior to entering the water thus avoiding lost dive time as a result of minor equipment malfunctions.

The Nauticam vacuum check system has three basic parts, the electronic monitoring circuitry with warning lights, the one way vacuum



valve and a simple light weight pump. The electronic monitoring circuitry looks very much like the leak detection circuitry which has come in all of the past Nauticam housings. The new vacuum system uses the same type of warning light and audible alarm found in all current Nauticam housings. The noticeable difference is the new on and off switch now located inside the housing.

The sophisticated new circuitry is very compact and integrated into the leak detection and warning light system. The advanced circuitry includes temperature compensation capability which will prevent false positive alarms as a result of temperature



changes within the housing which may be caused by heat from running cameras. The on/off switch is used to disable the system while not in use and conserve battery power provided



by the 3 volt CR2450 battery. This is a common battery that is easily located in most areas of the world. The electronic monitoring circuitry is built into the rear half of the Nauticam housing and connected to the LED warning light on the outside rear of the housing. When the housing is open or at an ambient pressure and the on/off switch is in the on position the LED will slowly blink with a blue light.

When a vacuum is achieved the LED will change to a solid green which indicates the system is sealed and ready to dive. If you have not properly assembled the housing system for any reason the vacuum will be lost and the LED will start to flash yellow. This is the first indication that a problem exists and that the housing should not go into the water until the problem has been resolved. This is the point at which any pilot error can be resolved by simply reassembling the system while looking for the source of the leak. This loss of vacuum should occur in plenty of time to avoid a flood and you should always check for the solid green light prior to entering the water. If you have entered the water and a loss of vacuum begins to occur it will be



detected and a change from green to flashing yellow LED may give you the needed time to get out of the water.

If water intrusion into the housing is detected the LED will flash in red and the audible alarm will start to sound. This is the last line of defense against a total flood and may still allow time to exit the water and salvage your equipment from loss. Most leaks through the small captured O-rings like the ones in the control buttons and dials are slow drips not the more catastrophic type of leak associated with main door and dome port O-rings.

Nauticam has a large selection of one way vacuum valves to meet most any need and these are all user installable. A spanner tool is included with every valve so no extra tools are required for installation. These valves are designed to support various housing configurations. The vacuum release is integrated into each valve so there is no need to install a pump or pressure gauge to release the vacuum and no tool is required to open the housing after the vacuum has been released. A simple knurled nut is all that needs to be turned to release the vacuum. Turn clockwise to seal and counter



clockwise to release.

The release nut sits under a threaded cap to protect it from damage and to provide a redundant seal for the vacuum valve. The valves are not only made in a variety of thread sizes but some are also have integrated electronic bulkheads so that you have both the vacuum valve and electronic bulkhead in one unit for hard wiring strobes, video monitors, remote triggers and more using the same installation opening in the housing. These valves are used for housings with single accessory holes or for multiple bulkhead installations.

The selected valve includes the small and light weight vacuum pump which has a rubber top that is pushed over the knurled nut and then pumped to create the vacuum. No gauge, tubes or other attachments are required making this a very simple and easy system to use. Just a few pumps and the



LED turns from the slow flashing blue to solid green indicated the housing is sealed and ready to use. A dual activation valve which accepts the low pressure BCD inflator hose quick disconnect is also available. This uses tank pressure to create a venturi effect to pull the vacuum. Be aware that not all BCD inflator hoses are the same size so check the size compatibility before ordering this valve.

Beginning with the release of the new Nauticam NA-70D housing for the Canon 70D and the new Nauticam NA-EM1 for the Olympus EM-1, all new DSLR and mirror less interchangeable lens camera housings will ship with the electronic monitoring circuitry installed as standard equipment. The vacuum valves are sold as optional equipment allowing the user to customize the accessory configuration as needed.

The vacuum valves start at \$220.00 USD and include the pump and installation tool.

Now with just a glance at the housing LED you can be assured that watertight integrity is being maintained. Like the cell phone I think that the Nauticam vacuum check system will be something we felt we could live without until you actually have one and see how much more secure you fell diving with it.

Retrofits for many existing Nauticam housings are available at your local authorized Nauticam dealer.

Phil Rudin

www.uwpmag.com

THE IMAGE IS EVERYTHING



ADAM HANLON

WETPIXEL
WWW.WETPIXEL.COM