

drilled holes for three bulkheads. I have two have electronic bulkheads for the sync cords, leaving a spare one for retrofitting the likes of a HD Monitor. It was simply a matter of unscrewing the blanking plug and then screwing in the AirLock bulkhead. Once this is screwed into place you then attach the valve system, which is basically a mini-version of the valve on the Low Pressure Inflator of your BCD. Installing the bulkhead and valve only took a couple of minutes and is easy enough for anyone to do. If you are a little nervous about fitting this yourself, you can put your mind at rest by having a quick look at the instructional video posted on the Backscatter website <http://www.backscatter.com/sku/bs-alm.lasso>. Different bulkheads are supplied to fit the variety of housing brands available, including Subal, Nauticam, Aquatica, Seacam and Sea & Sea. It is therefore essential that you get the correct bulkhead for your housing brand at the time of purchase.

Once the bulkhead and valve are installed, assemble your housing as normal. To check the integrity of the seal, you need to pump out some of the air from the housing, creating a negative pressure inside. This is achieved using the two-piece pump system, consisting of the gauge that is attached to the valve connector and then a separate pump, which is basically a pump used to vacuum seal a wine bottle. The two connect with a simple rubber friction seal.

Backscatter recommends reducing the pressure down to between -5 and -10 in.Hg (inches of Mercury). I had previously heard people mention that a manual pump was a bit slow, but I didn't find this a problem at all. I checked it numerous times and found that it takes somewhere between 14 and 16 pump actions to reduce the pressure to



3 stages of vacuum

-5 in.Hg and 35-40 pump-actions to bring it down to -10 in.Hg. I found that a steady, deliberate pump action worked more effectively than pumping overly quickly. Overall around the 20-40 seconds of pumping, so no big deal.

Once you have decreased the pressure to the desired negative in.Hg you should make a mental note of the pressure showing on the gauge, disconnect the pump and then wait for 10 minutes. Any longer could potentially cause a false-positive reading due to temperature changes, which can affect the air pressure. In this regard you should not depressurise the housing and then move to warmer or colder environment, as this could cause a pressure change. When 10 minutes have elapsed it's time to check the pressure again, so reattach the gauge and pump. If there hasn't been any change, then you're good to go. If the pressure has dropped, then this indicates a potential point of leak, so you'll need to bring the negative pressure inside the housing back up to zero and open up the housing to check the o-rings.



AirLock valve cap closed and ready to dive

Doing this is simply a matter of connecting the gauge to the valve, but not connecting the pump section. This releases the air from inside the housing, enabling you to open it up. Without releasing the negative pressure, you will not be able to open your housing or remove the port; the negative pressure sucks it all tightly together. This is an additional advantage if your housing does not have a port locking mechanism, like my ND7000, which uses Type 3 Ports. The port is held firmly in place, requiring quite a bit of force to turn it, which means you cannot accidentally unscrew the port. As an added bonus, this means there is no way your dome port can rotate, which can cause the dome shade to creep into view at the corners of the frame when using a fisheye lens.

When I started writing this review I felt it pertinent to the test the effectiveness of the AirLock by devising some experiments that replicate real life situations. I started off with the hair test, being the most commonly encountered 'o-ring enemy'. Especially true in my case due my girlfriends long



Under a vacuum the housing latches can be opened and the back won't fall off.

hair that seems to moult in similar quantities to an Afghan hound in a heat wave. I could have easily found a suitable hair on the floor, but felt using a 'fresh' hair would be best, so borrowed one from her head amidst shouts of protest. To be fair and to take into account hair width variables, I also plucked one from my chest for a thicker specimen.

I then proceeded to place a hair across the o-ring and sealed the housing, pumped out the pressure to -5 in.Hg and then rechecked the pressure after 5 and 10 minutes. I then repeated this with the same hair pumping it down to -10 in.Hg. Both

tests were then repeated with the thicker hair and again with some grit/sand that I found down the back of the sofa, which I smeared onto the o-ring with the help of a blob of silicon grease.

The results showed that the AirLock does what it's meant to do. The thinner hair caused a drop in pressure of 0.5 in.Hg after 5 minutes and remained the same at 10 minutes. This was the same at both starting pressures. The thicker hair caused an even more dramatic drop in pressure, of -1.5 after 5 minutes and -3.0 after 10 minutes when starting at -5 in.Hg with similar figures when started at

-10 in.Hg. So for both thickness of hair, at either starting pressure, you are given a clear indication that air is being let back into the housing, meaning that water could also make it's way in if you took it diving. The sand/grit combo didn't cause any drop in pressure, which I would guess is due to it being too small pieces to break the seal from one side of the o-ring to the other, like the hair does.

The AirLock system costs \$399, which personally I don't think is too higher price to pay for some additional peace of mind. It is easy to install and simple to use. Just don't forget to take both the pump and

gauge with you on the boat, in case you need to open up the housing! It is possible to unscrew the bulkhead to reduce the pressure in an emergency, but its not recommended practice. The AirLock can be easily removed, so when you upgrade your housing it can be refitted to the new one in minutes, ready to pump away for worry-free dives. And since installing the AirLock on my housing, I haven't had to crop out the dome shade from the corners of the frame!

Alex Tyrell
www.dive4photos.com



Underwater Photography
Dive4photos.com



UV DIVE KOH TAO
SAME ISLAND
DIFFERENT PLANET



Crystal Blue
resort

DIGITAL UNDERWATER PHOTOGRAPHY WORKSHOP

CRYSTAL BLUE DIVE RESORT - ANILAO - PHILIPPINES

26th FEBRUARY - 7th MARCH 2014

HOSTED BY ALEX TYRRELL & MIKE BARTICK











6 & 9-night dive package option (Including Nitrox)

full-board deluxe accommodation & dedicated camera room

3-daily boat dives - 4:1 diver/guide ratio on private boat

Daily photography & natural history presentations

fluo-diving & photo equipment available for participants use





For further information email: alex@dive4photos.com or visit www.dive4photos.com & www.divecbr.com



SPECIAL OFFER!

Patima PL-33
Photo/Video Light.
1300 Lumens!
Wide beam



www.amphibico.com

Rouge



Aquatica HD Wave



Seacam D4 Silver



Subal D800



Aquatica 5DMK3



Sea&Sea MDX-X10/X20



Klearport



Watershot iPhone 4 & 5



Patima S110



Recsea RX-100 II



Patima G15



Inon Z-240



Seacam Seaflash 150



Watershot iPhone 5 Pro



ScubaCoolHoods!!!!



Ikolite DS-161



Sea&Sea YS-250Pro



Sea&Sea YS-01



Fantasea Remora



Inon S-2000



Watershot Galaxy S3/S4



Seahorn Snoot for
ALL strobe models!



Scuba Symphony- Your Ultimate One-Stop
Diving and Underwater Imaging Solution!
S103A Centrepont Bandar Utama
47800 Petaling Jaya, Selangor, Malaysia
Tel: +603-77107197 Fax: +603-77251197
Email: scubasympphony@gmail.com
Online Shop: www.scubasympphony.com

