

price difference to be considered as well, but when you add up the cost of the extra adaptors and add a couple of gears the difference narrows and for me it was worth the extra to stay in my comfort zone and avoid what would have been a compromise for me.

They say that familiarity breeds contempt, but this statement positively could not have come from a Subal owner. Since the F100 and F5 housings the design and positioning of the main controls has remained a constant so that whenever you handle a new Subal housing it immediately feels familiar. There are of course extra function buttons and some new positions for existing ones as a result of camera body design, but maintaining the familiarity and excellent ergonomics of the major controls means that you can start shooting immediately in the primary modes leaving you more time to ponder on which of the D7100's many improved functions will suit or enhance your shooting style.

The housing has a deep front section that accommodates most of the camera and is very compact but taller than the ND20 to accommodate the pop up flash and optical connector sockets. Loading the camera and tray is easy, you just need to remember to turn on the camera and align the on/off switch and retract the Auto/Man focus switch (note the setting on the camera to engage this once installed) and then you are ready to go. The camera tray seats on two sprung pips and is retained by a small sprung hook on the left hand side, so there is a positive lock as you fully seat the camera tray. The back plate also closes positively with the now familiar Subal quarter turn latches which will not connect if the large diameter O ring is displaced. There is a leak detector fitted as standard with an audible and visible alarm and you can also install a vacuum system if desired dependant on how you

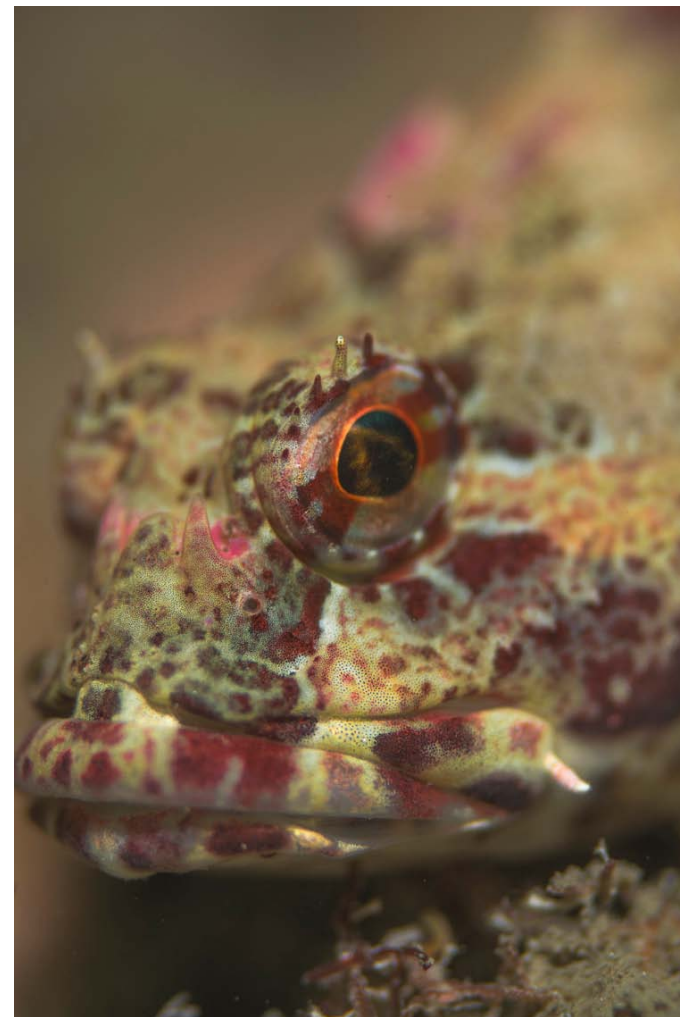


Subal D7100 dressed for wide angle action with an Inon Z240 flash guns and fibre optic sync cords. I have been pleasantly surprised at the performance of the sTTL in wide angle so far.

choose to use the additional penetrations on the housing.

The base of the housing has four rubber capped feet and a number of M6 tappings for a tripod or additional brackets. I always use two of these to attach a rubber coated flat aluminium plate to improve stability and also protect the bottom of the housing from bumps and scrapes when beach diving.

Ergonomics – the major controls on the right and left hand side of the housing and are easily accessed if your hands are not too small or too large. I normally reverse my main command dials on the camera so that I have the aperture on the back plate dial under my thumb and the shutter speed under my second or ring finger at the front. This of course is all down to personal preference,



We use wide apertures in macro to soften and diffuse the background, so called bokeh images. Until now that has meant adjusting the flash power until I had the correct exposure, but in this case I simply focussed on the eye of the scorpion fish, opened the aperture to f5.6 and let the camera and flash guns do the work. Nikon D7100, Subal D7100, 105mm micro, Inon Z240 flash guns, ISO 100 f5.6 1/200.



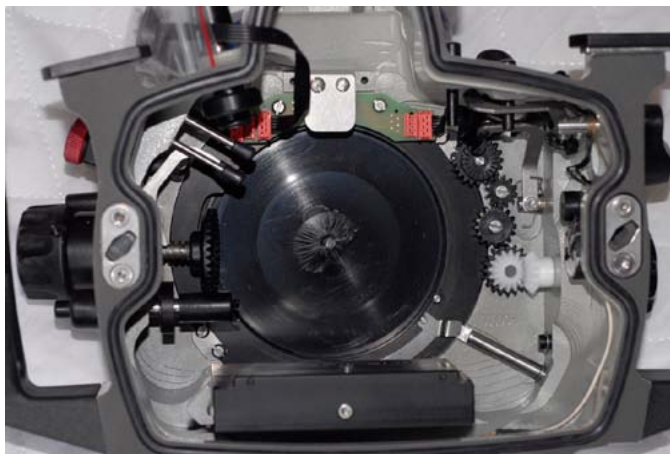
Subal D7100 back plate - elegant simplicity in the design and function of the controls.

but there are a number of changes you can make to the main controls and pre-sets on the camera.

All the push button controls have a good feel to them and operate the camera positively. There are controls for practically everything, and you will soon develop a routine for changing settings and reviewing which suits your shooting style etc. The buttons for the multi control pad are on a slightly raised contour angled towards the right hand side which makes a surprising difference when operating them with your thumb whilst gripping the handle. There are additional controls for the video and live view functions, but only time will tell how much I use these.

I had hoped that the housing would provide a control for the function button as Subal had done for the D4 housing. This can be assigned to a number of different options, but only for land use for now!

One feature to be aware of is that the diameter of the zoom and/or manual focus gears has increased for this latest generation of housings.



Subal D7100 front half of the housing - simple design with the minimum of linkages and gearing.

This also applies to the type 4 port bayonet and is to accommodate the increased girth of later generation lenses now popular with underwater photographers. So, if like me you have a selection of the older ports, you must remember to specify the type 3 bayonet and also purchase the larger diameter zoom gears for your lenses. The housing also includes the addition of a port locking system operated by a neat quarter turn lever below the shutter release and front command dial control which extends or retracts a pin in the bayonet groove. However, this will only work with the latest generation of ports but I should add that all my type 3 ports (both Subal and bespoke engineered) are a very tight fit and there is no danger of a port accidentally rotating.

Viewfinder – The housing comes with the standard Galileo optic which works well but does of course reduce the size of the image you are seeing. There are two versions of magnifying viewfinder to choose from, the 180 degree and 45 degree, which are an expensive addition but worth every penny in



A wider reefscape with fish eye lens and a splash of colour provided by jewel anemones still produces very good results in sTTL with very good foreground exposures. Nikon D7100, Subal D7100, 10-17mm FE zoom. Inon Z240 flash guns, ISO 400, f9 1/60.

my opinion. If like me you are upgrading and have one of these viewfinders from a previous housing then it is a straight swap and takes only a couple of minutes.

Mine is the 180 degree and in fitting it I discovered that the rubber eye cup was beginning to split away from the screw mount, but it has seen quite a few dives. You can buy a genuine Subal replacement or as I did use a 37mm retractable rubber lens hood which is close enough to the original and significantly cheaper!

There is also the option of the new prism viewfinder which offers a life size view of the LCD screen at a 45 degree angle. This option replaces the whole of the perspex panel on the back plate of the housing and is best suited to video shooting using the live view mode on the camera. This is quite a specialised piece of kit and would not appeal to me for everyday shooting, but if you plan to make movies rather than the occasional piece of video then this may be a good choice for you.

Flash synchronisation – this housing accommodates the pop up flash of the D7100 and comes equipped with twin fibre optic connector sockets which are compatible with Sea and Sea end plugs. So if you are using suitable strobes you will be able to have full sTTL or you can fire your strobes in manual mode setting the camera flash to low power to speed recycling and save camera battery power. There is also a separate release and close function for the pop up flash on the

top of the housing, which means you can quickly turn your flashes off from the housing for silhouettes etc. by simply closing the pop up flash. You may also select the option to have additional Nikonos V (or S6) sockets added as I did so that you can also use older strobes that do not have fibre optic sensors. If you take this option you must remember to either remove the hot shoe and lead when using the fibre optic system, or secure it out of the way in the housing so as not to foul the pop up flash.

Having TTL flash again has been a bit of a revelation. If you are a mature underwater photographer like me then you may well recall the first introduction of TTL for film cameras and the first Nikonos V flash guns. By the time we had TTL compatible flash guns for housed film SLR's the exposures had become pretty reliable and you could leave most of the work to the camera and flash. Since the arrival of DSLR's most of us have been shooting with manual flash power adjustment, which is not so much of a chore with instant review, but it has been very pleasant to shoot macro again in sTTL and I have been very pleasantly surprised with the accuracy of the exposures. I am using Inon Z240's in sTTL pre-flash mode and have found the exposures to be largely perfect throughout a range of apertures from f4 to f32 with a 60mm



Jewel anemones have lots of fine detail, deep colours and highlights in the tips which the sTTL has exposed perfectly. Nikon D7100, Subal D7100, 105mm micro, Inon Z240 flash guns, ISO 400 f29 1/200.

and 105mm micro lens. However, I did find that when working very close to the subject with a +10 wet lens that the flash was unable to quench fast enough and over exposed a little. So in this case just dialling in some flash compensation on the camera (-0.7 mostly) provided the correct exposure.

I have had limited opportunity to try the TTL with a wide angle lens in the British winter, but the couple of dives I have managed have surprised me a little. If you used TTL with ultra wide and fish eye lenses on film you

will no doubt recall that results were less than reliable due to the centre weighted metering. I had expected the same with the D7100 but have been surprised to find that the results have been almost as reliable as the macro images. I have yet to challenge the system with a wide dynamic range of sunbursts in clear tropical waters but so far the sTTL system has coped very well with wide reefscapes, divers shots, close balanced light compositions and wide macro compositions. Perhaps my older cable

synced flash guns are destined to gather dust in a cupboard?

The default maximum sync speed for the D7100 is 1/250s but you can also use a higher sync of up to 1/320s via the menu system. It seems that to achieve this faster speed the camera flash will fire at a shorter duration so should work well in macro at close range to create dark backgrounds with higher ISO's. I will have to experiment with my Inon flash guns to see if this works in practice.

Buoyancy – this will be dependant on your lens and port selection but the housing is advertised as slightly negative in the water. Using my standard port, flash and buoyancy configurations I found the system to be slightly lighter in water than the ND20 which I assume is due to the lighter camera body and the extra volume and air space to accommodate the pop up flash. Long ports, extensions and heavy flash guns will make the rig negatively buoyant and the same applies with some of the big glass fish eye domes – if you are using heavy strobes and accessories then you may want to add some buoyancy to trim the rig. Try the UCLS or Inon buoyancy arms, Styx foam, cork mats or fishing net floats.

D7100 Performance – This is not intended as a D7100 review, however camera itself is everything I expected it to be and I am now pleased that I

resisted the temptation to upgrade to the D800, which is a fantastic camera, but a much more expensive package when you also factor in the cost of new FX lenses and additional computing power and storage required for those larger files.

Focusing – One of the most noticeable improvements over the D300 is the speed and accuracy of auto focus, even with the older macro lenses, and the impressive low light performance. On my first test dives I deliberately focussed without lights and found that for subjects I could barely see through the viewfinder the camera could still cope and produced perfect focus. There are many subjects that don't like the glare of a focus light so this will make a big difference to my photography. There are a number of focus mode options to be experimented with ranging from single point to dynamic area and 3D tracking with further additional options in each mode. Some are better suited to underwater photography than others but you need to experiment for work out what is best for you.

Images – I shoot mostly in RAW format for the flexibility it offers in post processing. You can also shoot in JPEG or combine JPEG with a raw file and save them separately to the two SD cards which can be very handy if you need to use images quickly.



A classic stand off composition of a diver using sTTL produces very good skin tones and exposure of both the seabed and the white flash gun diffusers. Nikon D7100, Subal D7100, 10-17mm FE zoom. Inon Z240 flash guns, ISO 400, f9 1/40.

The camera itself has a large number of new and improved functions which will take time to learn and apply if they are suited to underwater photography. I did not buy the camera for the video and live view function, and who knows I may try this one day, but many photographers will love this combined ability.

Living by the coast I was eager and able to get in to the water soon after collecting my new housing. This was a day or so after the well advertised typhoon storm had passed

over the UK, so I expected poor visibility and low light conditions. In that respect I got exactly what I expected, but I was also very pleased with both the performance of the housing and the camera which handled the low light conditions with no effort. I was able to follow up with a couple of dives after more stable weather conditions and use a wide angle lens and begin to see the real potential of this combination.

So in summary, whilst I will continue to familiarise myself with



I also tried a couple of wide macro compositions at the 17mm end of my fish eye zoom with an adult whelk. The white mantle, pale gravel seabed and dark purple shell proved no challenge to the sTTL which produced perfect exposures. Nikon D7100, Subal D7100, 10-17mm FE zoom. Inon Z240 flash guns, ISO 400, f10 1/20.

the new partnership of housing and camera, the Subal D7100 is all I expected in terms of design, function and quality. A new housing is a big investment for most people and so you should think long and hard and make as many physical comparisons as possible between the various options. This is best done by visiting one of the

major trade shows and being prepared to wait for all the options from the different manufacturers to become available. As they say, patience is a virtue and in my case I think it has been worthwhile.

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Saga Achromatic Close Up lenses

by Phil Rudin

Saga Diving Technology (Sagadive.com) is located in Barcelona Spain where they manufacture and sell underwater photography products. The products manufactured by SAGA Diving Technology are well crafted and often highly specialized pieces of photography equipment.

This year SAGA offers three new Achromatic close-up lenses to go along with SAGA's highly respected line of flip adapters which I reviewed for UWPMAG.com in Issue#68. These achromatic wet close-up lenses come in +5 +10 and +15 diopter versions. All three lenses are made with an 40 microns hard anodized aluminum hard body with two flat BK7 anti-scratch and anti-glare glass lenses.

The +15 lens has 3 groups of 2 element lenses, the +10 has 2 groups of 2 element lenses and the +5 has one lens group of 2 element lenses. All three close-up lenses have the M-67 threads at the base of the lens for wet mounting and a final diameter of 61 mm at the business end of the lens. The +15 is 50 mm in length, the +10 is 38.3 mm and the +5 is 26.5 mm in length. These lenses

are compact compared to many wet lenses of the same power. The 61 mm diameter allows strobes and focusing lights to do a bit better job in tight spaces.

The SAGA lenses weight in at 300gr, 230gr. and 160gr. These close-up lenses are achromatic which means they have been designed to limit the effects of chromatic and spherical aberration when in use.

Wet close-up lenses are quite popular with macro photographers for obtaining images with magnification beyond the 1:1 magnification produced by most of the modern macro lenses sold these days.

To understand how wet close-up lenses will work with your macro photography equipment you must first have a starting point of reference for the equipment you are shooting with. Not all image sensors or film sizes are the same and as a result the size of the images captured with a macro lens set

Nudibranch, Olympus EM-5, Olympus 60mm macro at 1:1, Nauticam NA-EM-5 housing, ISO-200, 1/250th, F/9, SAGA +15 Closeup lens.

