Field Review: FIT Close Up Lenses.

By Alex Mustard

Supermacro images are commonly defined as pictures shot at magnifications of greater than 1:1 (real life versus actual size on your sensor). Since most of the popular macro lenses will take us down to 1:1, we need an accessory to become super. There are many, many methods for achieving supermacro, indeed I have often joked that I want to write an instructional underwater photography book called “101 Ways To Supermacro”, with a century and one photos each taken with a different kit configurations.

In simple terms there are 5 types of accessories that we regularly use to transform our macro lenses to super-status underwater: teleconverters, extension tubes, internal dioptres (used inside housing), external dioptres (used outside housing) and reversed lenses. It is fair to say that each method has it’s positives and negatives. So when I want to go really small I have tended to combine two or more technologies, rather than rely on a single accessory to do all my super work for me. I have always felt that this approach will give me the magnification while minimising the drawbacks of any single accessory. Typically, I favour adding a teleconverter behind my SLR lens and dioptre to the front of it.

This article is a review of the newly released FIT dual element, achromatic dioptre lenses, sold in (out of the water) strengths of +5 and +8. External dioptres have always been popular underwater because they can be added and removed underwater. While many value this feature – it has never been that important for me because I believe that the best underwater images tend to be taken when dives are dedicated in the pursuit of a particular type of images. Swapping regularly between accessories can be a distraction. A single photographic goal allows us to optimise our gear and focus the mind on the shot.

With any dioptre there are typically three things we are interested in: magnification power, sharpness (centre to edge of frame) and optical aberrations (particularly in the corners). I believe that all of these are much better assessed on real world

(Left) The FIT +5 dioptre: achromatic, dual element and 67mm threaded. (Right) The achromatic, dual element FIT +8 dioptre, is smaller but comes with a step up ring to 67mm. There was not cut off from the filter with my 105mm lens when used singly or stacked with the +5.

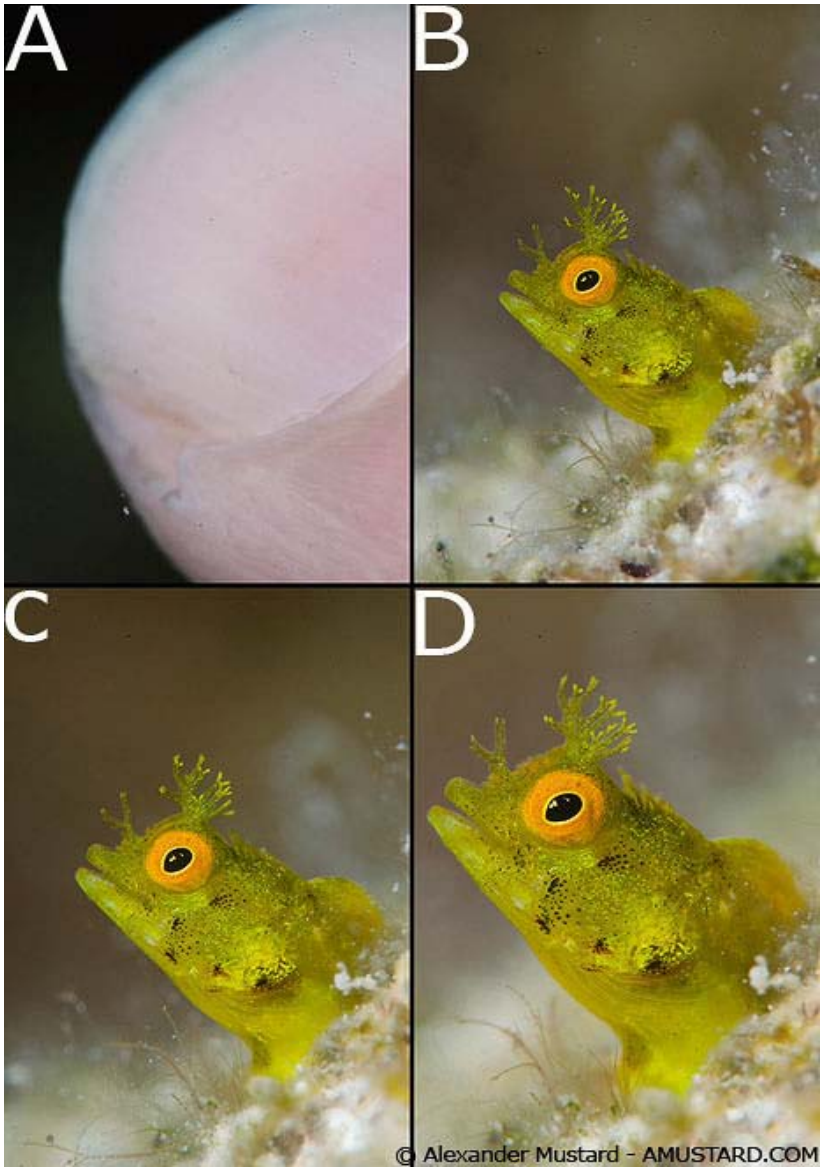
The dioptres provide a good route into supermacro (these rough head blennies are much smaller than people think). Nikon D7000 + 105mm VR + 1.4x Kenko Pro teleconverter + stacked FIT +5 and +8 dioptres. Nauticam housing, 2x Inon Z240 strobes on TTL. 1/320th @ f/29.

The sharpness is impressive, even away from the centre of the frame. This eye stalk of a Pederson cleaner shrimp was towards the edge of the frame, but detail is still recorded sharply. Nikon D7000 + 105mm VR + 1.4x Kenko Pro teleconverter + stacked FIT +5 and +8 dioptres. Nauticam housing, 2x Inon Z240 strobes on TTL. 1/320th @ f/29.

subjects underwater than on dry tests, especially because some external dioptres loose much of their power when immersed.

Before we get onto the findings, I should state that I performed these tests with the new Nikon D7000 in a Nauticam housing. I have reviewed a couple of Nauticam systems and on both occasions forgotten to praise their macro ports, which I think are amongst the best around. First, they are tapered, so that they are little wider than the lens at their business end. This is an important benefit, because lighting macro photographs at close working distances benefits from having the strobes tight in to the lens. Some macro ports are much wider than the lenses they house, which can impose a frustrating restriction on how close we can position our strobes. Second, Nauticam have thoughtfully ended their macro ports with a 67mm screw filter, ideal for adding accessory lenses, like the SubSea range, Inon lenses and the FIT dioptres. There are an increasing number of companies (such as Saga) now producing attachments that allow 67mm filters to be attached to other manufacturer's ports. I hope this becomes a more widely adopted standard on underwater housings.

The two FIT dioptres I tested are achromatic and dual element. These features typically improve edge sharpness and reduce chromatic aberrations. In both respects the FIT dioptres performed very well. They produced impressive sharpness wherever I focused in the frame and details towards the corners were



A comparison of magnification achievable, all images taken with Nikon D7000 + 105mm VR + 1.7x Nikon AFS teleconverter, all at minimum focus. A & B are at the same magnification. A shows part of my fingernail to provide a scale for the other shots. C is with the addition of the FIT +5 dioptre and D is with the addition of the stacked +5 and +8 dioptres.

Overall image quality is very pleasing, with detail recorded crisply and out of focus areas producing a smooth bokeh. Detail in corners shows no sign of fringing. Nikon D7000 + 105mm VR + 1.7x Nikon AFS teleconverter & +5 FIT dioptres. Nauticam housing, 2x Inon Z240 strobes on TTL. 1/250th @ f/22.

also pleasingly free from the colour fringing that some dioptres suffer badly from. This was true when they were used singly or stacked together. They also produce a relatively flat plane of focus, so that subjects which were parallel to the sensor were recorded in focus across the whole frame.

Dioptre strength is always a tricky one because not all quote the values or the values are rounded up and not all dioptres behave the same when immersed in water. Many dioptres have a curved front element that acts as a negative lens underwater, just as a dome port does. This negative lens effect will significantly reduce the positive magnification power of a dioptre underwater. This also means that if we mount the dioptre inside out housing we will get more power than if we use it outside. Therefore, it is always best to search out real images to judge the strength of a dioptre, rather than simply relying on the quoted power. For this reason, the images in this article were taken with the FIT dioptres mounted outside the housing, and all are shown uncropped so you can judge from the shots whether this is the level of magnification you require.

In my estimation the FIT dioptres only have about half their quoted strength when used outside the housing, rather than inside. This still offers considerable power for SLR supermacro, especially when used in conjunction with a lower powered (1.4-1.7x) teleconverter. Personally, I was happy with the level of magnification I was achieving with the 1.7x TC, 105mm and the two FIT dioptres stacked together. It would be very rare I would want more, because the depth of field would be so thin as to be almost unworkable with any interesting (moving) subject. Ultimately, supermacro is about shooting memorable images, not chasing ever more magnification. However, photographers looking for even more magnification should look consider a stronger dioptre like the SubSea +10.

In summary the FIT dioptres are well-made and easy to fit to ports or holders with 67mm threads. Their price (in the order of $150-200 USD) is comparable to most other options, (e.g. SubSea, Inon) and is considerably cheaper than the Macromate ($600 USD). Image quality is impressive, with excellent sharpness both in the centre of the frame and towards the edges. Chromatic aberration is also well controlled. They can be used singly, or stacked together. If used outside the housing, they should be considered medium strength dioptres, but if we choose to mount them inside the housing the same dioptre will give more magnification. Having two power options from the same dioptre (inside or outside the housing) is a useful feature for the travelling photographer.

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FIT Close Up lenses are available from
www.uwvisions.com