

Deepshots lens gears

by Phil Rudin

Deepshots is a small manufacturing company located in London, UK which is operated by Jussi Hokkanen. Deepshots “missing bits store” designs and distributes gears and other photography equipment for underwater cameras and housings worldwide. Several of the gears designed by Deepshots and 3D printed in their facility are for M4/3 lenses used with Nauticam housings and ports.

Additive manufacturing, more commonly known as 3D printing is the creation of a three dimensional object like a lens gear by adding layer upon layer of raw material until the design is complete. 3D modeling software is used to create a virtual design for a gear and then it is stored in a computer-aided design file. After the design is complete computer software slices the design into hundreds of horizontal layers which then guide the 3D printer to assemble layer upon layer of plastics, epoxy or other materials until the gear is complete. These 3D printers have become quite reasonably priced and are now affordable for home use.

Currently Deepshots Missing Bits Store sells zoom gears for the

Olympus 9-18 mm, 12-50 mm, 14-42 mm EZ and a 60 mm macro manual focus gear. These gears are made in a verity of colors and range in price from £40.00 to £60.00 (around \$68.00 to \$100.00US) plus shipping.

The most frequently discussed Olympus lens in social media and forums like WetPixel.com has been the Olympus 12-50 mm zoom lens for use in Nauticam’s twelve different M4/3 housings. The Olympus 12-50 mm F/3.5-6.3 ED M.Zuiko EZ micro M4/3 lens was announced in December of 2011 for release with the Olympus E-M5 camera as the standard “kit” lens. The lens has become widely discussed in underwater photography circles and U/W photography forums because of its wide zoom range and macro ability.

The Olympus 12-50 zoom has been the prime “kit” lens sold with the Olympus OMD E-M5 camera world wide but the lens also works for any of the M4/3 camera bodies back to the E-PL1. This lens is compact, lightweight, has a 4.2 X zoom which covers a wide range from 24 to 84 degrees and includes 43 mm macro feature. The lens has a minimum focus distance of 20 cm (7.87”) and



locks at 43 mm in the macro mode by holding the macro button down while moving the zoom ring forward. Once locked at 43 mm the lens focuses in a range from around 20 to 50 cm (7.87-19.68”). At maximum magnification I get an area of coverage of around 36x27 mm close to the 35 mm 1:1 “life size” of 36X24mm. The M4/3 format v. the 3/2 format of 35 mm accounts for the added 3 mm height of the image.

The Olympus 60 mm macro and Panasonic 45 mm macro lenses offer true 1:1 magnification, in M4/3 the actual 17.3x13mm image size on the

M4/3 sensor. The 43 mm macro mode of the 12-50 zoom is 1:2 or twice life size in 35 mm terms. This is the only kit lens I am aware of that has a zoom range as wide as 84 degrees and as long as 24 degrees with a macro function of such high magnification. The 50 mm end of the lens is 24 degree with maximum magnification of around 90 x 67.5 mm or around 2.5 times larger than the 43 mm macro when it is engaged. The lens has the MCS (movie and still) mechanism for smooth and quite power zooming during movie clips. The lens also has great build quality with Olympus dust

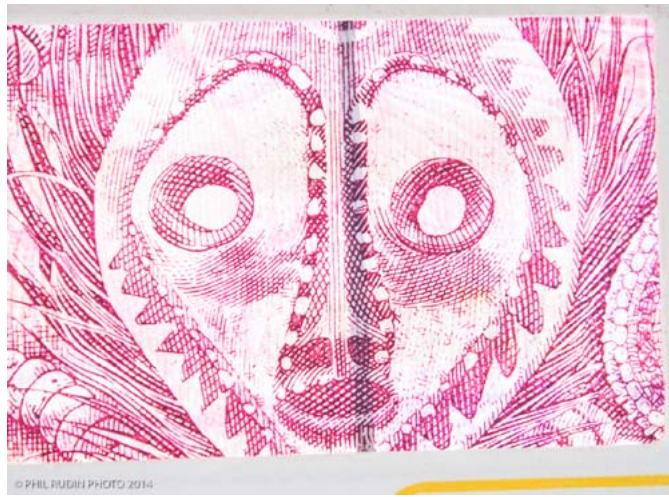


Olympus 12-50 zoom at 50mm, closest focus.

and splash proof construction which is excellent in harsh condition.

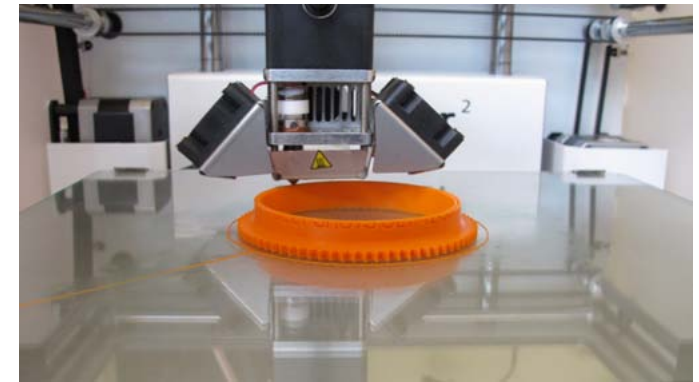
Nauticam has several excellent ports which will work with the 12-50 mm lens plus a port and gear designed specifically to work with the power zoom and macro lock. This port/gear combination includes a very complex and masterfully designed gear which switches the macro button on while moving the zoom ring forward to lock into the 43 mm macro mode. The port requires an external control wheel for this function adding to the total port cost.

When introduced at \$800.00 US (£560.00) for this Nauticam port and gear a bit of sticker shock erupted over the total cost. The Deepshots 12-50 zoom gear was designed to address the cost issue for those who can live without the use of the 43 mm macro function of this lens. Deepshots 12-50 zoom gear allows you to zoom manually or in auto zoom depending on the placement of the gear on the lens. The gear simply slips over the lens



Olympus 12-50 zoom locked in macro mode at 43mm, closest focus

from the rear and is held in place by bits on O-ring material on the inside and six tiny allen screws on the outside which screw onto the focus ring to hold the gear in place. These screws are very small and should not be tightened very much so as to prevent damage to the zoom ring. Deepshots supplies the small wrench and a set of installation instructions with the gear. Deepshots also offers to replace the gear if it wears out from use. I found that the gear worked smoothly in my Nauticam NA-EM1 housing both in manual zoom and power zoom. If you are looking for a budget solution to use your Olympus 12-50 zoom in a Nauticam housing you can contact Jussi at deepshots.co.uk for further information. The Deepshots webpage also has informative reviews on compact and mirrorless equipment along with a glimpse at other interesting underwater photographic equipment coming soon from Deepshots. Requests for custom gears and other 3D printed equipment are welcomed.



“Printing” in progress



Porcelain Crab with eggs, Olympus E-M5, Olympus 12-50 mm zoom Nauticam NA-EM5 housing and port, at 43 mm macro, ISO-200, F/13, 1/250th

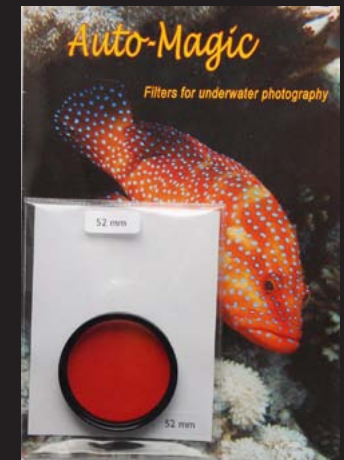
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