Photography

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Nikonos V type connector has five connections

Choosing & Using
Underwater Flash Units

By Daniel Beecham

As any diver knows, at depth light is absorbed, and one by one the colours of the spectrum disappear.

Red is the first to go which disappears at around six metres, followed by orange, yellow…

Underwater photographers are constantly battling against the effect water has on colour and light, and use various methods to return good colours to their images.

In this issue we're going to look at underwater flash units, or 'strobes'. We'll also look at some of the problems that digital cameras have presented with underwater flash units, and what to look out for when you want to purchase your own flash system.

Electrical or Optical?

Most of the principles of flash photography are the same on DSLR's (Digital Single Lens Reflex) and compact cameras. There are however some differences in the way flash units are connected to, and communicate with the cameras.

To fire an external flash unit on a DSLR, an electronic connection runs from the camera *hot shoe*. through a cable in the housing, and then to a connector called a *sync socket*. From this socket, a *sync cable* connects the housing to the external flash unit.

Most digital compact cameras do not have a hot-shoe connector, and even if it does, it may not be accessible through the housing. Because of this, external flash units for compacts generally work as *slaves*; they are triggered by the built in flash on the camera-via a fibre optic cable, rather than an electronic sync cord. The cable mounts onto the housing in front of the built in flash. When the built in flash fires, light travels up the cable, hits a slave sensor on the flash unit, telling it when to start and stop firing.

When a built in flash is used on a compact, the camera will put out a series of pre-flashes before the main flash fires and the image is recorded. Because of this, when you want to fire an external flash unit, you must use one that has been designed to ignore the pre-flashes, and will wait to fire with the main flash. If you try to use an older strobe (one designed to be used with a film system) the external flash will fire early and so will not have time to recycle and fire on the main flash.

Early strobes which were designed for compact cameras used an 'auto' system to control the power output. With an auto system you set the desired aperture on the camera, and set the same aperture on a dial on the flashgun, this gives you the correct exposure.

Newer strobes such as the INON D2000 now provide a 'TTL' system. This has been achieved by building a slave sensor that actually copies everything that the built in flash does, including the pre flashes. These guns also feature exposure compensation controls so you can adjust the power output to achieve the desired result.

The more rugged S6 V type connector comes with six connections - and triple o-rings

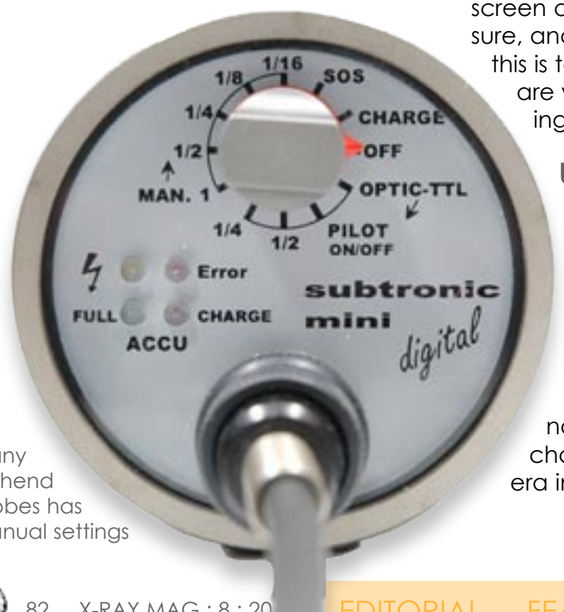
Let there be light

Let there be light

A Tetra housing with Ultra Light arms mounted showing how brands can often be combined - there ary many connectors, adaptors and clamps available. Productphoto from Light & Motion's website.

Other Compatibility Issues

Digital cameras have created a few problems with flash systems on DSLR cameras as well. Tradition film cameras used TTL systems to meter the amount of flash needed to expose the picture properly. DSLR's use different TTL systems, such as DTTL, iTTL, and ETTL. If you try and use a digital camera with a traditional TTL style strobe, the two will not communicate properly; they speak different languages.



FROM OCEAN OPTICS, LONDON, UK

Many highend strobes has manual settings

This has presented a problem for manufacturers of underwater strobes, it takes time to develop a flash unit that can properly communicate with a DSLR, and at the rate that new cameras are being released, the strobes are often out of date by the time they're available!

Many people continue to use older strobes that have been designed for film systems, and simply use the manual power settings to control the power out-put. The instant review on the LCD screen allows you to check the exposure, and adjust if necessary. If you feel this is too much like hard work, there are ways to get a TTL system working.

Using land flash

Some photographers use a normal land flash, and place it inside a custom built housing, this means that the flash is wired directly from the camera hot shoe to the flash, and so communicates properly.

Some small companies are now producing converters that change the signal from the camera into one that the flash unit can understand, the downside with these is that they often mean you have to retro-fit them to your housing, which can be risky.

Even though TTL is now available through various methods, many photographers still choose to work with manual flash, preferring the amount of control it offers the user. It is worth bearing in mind that you can always turn a TTL gun to manual; you can't turn a manual gun to TTL.

Strobe Positioning

The position that strobes are placed in is critical. Suspended particulate in the water can be illuminated as it reflects light back towards the camera. This is often referred to as 'back-scatter'. To avoid backscatter place your strobes in a position where they will light the subject only, and not the water in-between the subject and the lens.

It's important to remember that the strobes generally have very wide coverage, and as such they do not need to be pointed directly at your subject.

Flash Arms

Do not underestimate the importance of good flashgun arms; it is through them that you control your light source. Good arms will hold their position when you move them, without the need to loosen and tighten the clamps that hold the frames together. You don't want to be wasting your valuable time underwater adjusting arms, not spent taking underwater pictures.

Another option is a manual strobe controller, in this case for the Ikelite DS series strobes. The stobe must be set to TTL mode when used with the Manual Controller

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Let there be light

Considerations When Purchasing Underwater Strobes

Subtronic strobes have built in Ni-Cad batteries

1) Power and Coverage
Make sure the power of the strobe you're looking at will fulfil your requirements; an underwater guide number of around 22 will be sufficient for most peoples needs. Regarding the coverage of your strobes, look for a unit that covers around 100 degrees, or preferably more. This will ensure your strobe will cover most wide-angle lenses. Often strobes also come with diffusers, which will increase the coverage of your strobes, although they will reduce the power.

2) Recycle Time
This is the time it takes the strobe to recharge its power cells after firing on full power. Its important to check the recycle time on a strobe you're looking to purchase, if the strobe is very slow to recycle, you may find yourself missing pictures whilst you're waiting for your strobes to recycle

3) Power Source
Some underwater strobes are powered by normal AA batteries, whereas others have built in cells. Both power sources have their advantages and disadvantages.

When using AA cells you can travel with a couple of large packs of disposable batteries or with a few sets of rechargeable batteries and chargers. You should have enough to keep you going for your dive trip, but if you run out or your charger gets damaged you can source AA's almost anywhere, so you should be able to keep shooting.

One of the disadvantages is that you'll have more maintenance to do on your strobe, servicing o-rings on the battery compartment.

Some strobes such as 'Subtronic's' have built in Ni-Cad batteries, which can be charged through the sync socket. These batteries are generally very powerful and give the strobe a fast re-cycle time. They can also be more reliable as they have fewer o-rings because there is no battery compartment, and therefore fewer potential weak points. These batteries are generally not user replaceable, and must be carefully maintained. If the cells are allowed to drain completely, or are not recharged often enough, they may be irreparably damaged, and so you could find yourself on a dive trip with a strobe that will not hold its charge.

4) Size and Weight
This is an important consideration with purchasing any diving gear or underwater camera equipment. The size and weight of strobes can differ dramatically; also take into consideration the size of the unit along with with all the necessary accessories including flash arms, cables, chargers and/or batteries. Try not to get caught in the trap of having too much gear to comfortably transport your gear as hand luggage, if your system get too heavy or large it will have to be checked into the hold, and you risk paying excess luggage fines on your dive trips.

A full underwater camera system represents a significant investment for most people, and a flash system may represent a large portion of that investment. Be sure that the system you're getting into will fulfil your needs now, and in the future. Visit a reputable dealer who knows the equipment before you buy, and if possible get in the water with the equipment you're going to be using before you hand over your credit card!

About The photoevent calendar

In an effort to keep our readers informed and involved, each issue will feature upcoming competitions, film festivals and general event announcements. We hope we can help you stay up-to-date and further fuel your passion for underwater imagery. December is a big month for underwater photo and video competitions. There are 9 international competitions with deadlines in December. Some competitions are open to all photographers, while others are only open to amateurs. Remember, always make sure that you note the specific usage rights secured by the competition before submitting any images or videos.

Good luck!

DivePhotoGuide.com

Photoevent Calendar by Jason Heller

Welcome to another great new X Ray feature - our Dive Photo & Video Event Calendar, provided by DivePhotoGuide.com.

Dec. 1
British Society of Underwater Photographers Annual Open Portfolio Competition (UK)
► www.bsoup.org/Open_Portfolio/intro.php

Dec. 25
Moscow International Diving Festival "Golden Dolphin" (Russia)
► www.mosfest.ru

Dec. 31
Underwater Photography.com Annual Contest (USA - Online)
► www.underwaterphotography.com

2nd Annual Manta Network Photo Competition (USA)
► http://mantas.somebox.com/html/documents/Contest_Desc.pdf

Beneath The Sea 2006 Photo and Video Competition (USA)
► www.beneaththesea.org/v2005/contest.html

The North Carolina Aquariums Photo Competition (USA)
► www.ncaquariums.com/newsite/pressreleases/photocontest05.htm

2006 Scuba Diving Magazine Photo Contest (USA)
► www.scubadiving.com/photocontest

British Underwater Image Festival (UK)
► www.divemagazine.co.uk/news/article.asp?UAN=2108&v=1&sp=

International Photoshop Competition (USA)
► www.digitalcanvasawards.com