



An external strobe allows us to zoom out, get further away and take pictures in less than ideal visibility.

The intensity of the flash from the external strobe must be adapted to the need of light. Some strobes do this automatically, some require manual settings and others offer both options. The external “slave” must be designed to work with digital cameras.

An external strobe that can be adjusted manually can increase the number of situations in which correctly exposed photos can be taken enormously. This would however require that the camera can be set manually and that the photographer has the knowledge needed to set the camera controls manually. You can learn more about this in the book “Digital & Traditional Underwater Photography” from Scuba Publications.

Those who invest in an *external strobe* with the option to set the force of the strobe manually do well to also choose a camera that offers the option of manual settings. The options to take pictures in manual setting of strobe and camera in a variety of situations are endless and you never know how far your photography skills are going to develop. Pay attention that the camera has a full range of F/stops and shutter speeds and you will have the right tools to expand your photography skills.



Photos with a blue background require some attention. If the blue in the picture dominates too much, the white balancing system of the camera will correct the color, because the camera “thinks” that this color is not natural. You can prevent this problem if you can set the *white balancing* manually.

Look at the options for “*white balancing*”. If only automatic white balancing (AWB) is available, you might not be able to achieve a nice blue color of the water in the background.

If you are planning to use a torch as external light source to take underwater pictures, then the white balancing is an important function. The light of a strobe has more or less the same color as the light from the sun, but with a torch this is normally not the case. The white balancing might allow you to compensate for this difference in color and allow you to take pictures that show the natural colors of the underwater world.

A torch will also help the auto focus from the camera. The auto focus of most cameras has problems to focus in low light conditions (this is the reason why some strobes are equipped with a torch). Especially when getting close to the subject, the auto focus might fail, leading to blurred pictures.

Taking pictures in low-light conditions might also cause problems for the camera – there might be simply not enough light available for a correct exposure of the image sensor. In that case you might want to change the sensitivity of the sensor – allowing it to register a picture with less light available. The sensitivity of the sensor is expressed in an ISO number. The higher the ISO number, the less light is needed for a correct exposure.

If the camera and housing allow you to change the *ISO number* you can take pictures in a darker environment.



Some pictures are simply beyond the reach of automatic functions of the camera. A picture in one plane (solid background at more or less the same distance, filling the entire picture) works with most cameras and in many cases with automatic settings (left). A picture in two planes requires some manipulations to assure that both planes are correctly exposed – the fish by the strobe and the blue water by the sun (middle). A picture in three planes (foreground, subject and blue background) requires manual settings and often multiple strobes (right).



You also need to make sure that you are working on a clean surface. A good way to do this is to use some paper tissue. The white background allows you to see a hair, sand and other risk factors immediately.

As a first step you should do a visual inspection. Many housings are made out of plastic, so there can be a crack or scratches. You should also take a look at all the buttons to verify that they move smoothly. When this is not

the case, it is likely that the o-ring sealing the knob is blocking the movement and that indicates that the o-ring will not seal anymore.

The next step is to remove the o-ring(s). To do this you can use some tissue. Exert light pressure on both sides of the o-ring and push the o-ring to the side. This will move the o-ring out of its position and allow you to grab it with your other hand and remove it from its location.

You can now clean all the surfaces that are in contact with the o-ring.



The o-ring itself needs to be cleaned to remove old grease and dirt. While doing that you should verify the condition of the o-ring. Look for scratches and check if the o-ring is of equal diameter for the entire length. If the o-ring was squeezed at a certain spot in the housing because of wrong placement, it will be flattened there and should not be used again. Make sure that the tissue that is used to clean the o-ring does not leave any residue or fibers on it.



There are some options that allow an external strobe to fire correctly with a digital camera. Some strobes can be set to ignore “pre-flashes” and some strobes can fire multiple flashes in a fraction of a second.

These two types of strobes are sometimes referred to as “digital strobes”.

Film cameras did not work with a pre-flash and slave strobes designed for such cameras can not handle a pre-flash. In some cases these strobes can still be used. Some digital cameras can be set for “slave”. In this setting they would not fire a pre-flash, but only flash the moment the picture is taken.



Not all “digital strobes” are automatic strobes. These non-automatic strobes always fire at the force set by the photographer, regardless of the light reflected from the subject. Since the strobe does not adapt the amount of light to the situation, you as the photographer need to decide on the correct strobe setting. The complete theory behind this concept is covered in the book “Digital &

Traditional Underwater Photography” (ISBN 2-915846-08-1).

If you do not want to get into the theory behind calculating a combination of distance, camera settings and strobe settings, you can use these non-automatic strobes by “trial-and-error” and expand your experience with the strobe setting throughout several dives.

In photography this “trial-and-error” procedure is called bracketing.



You simply take the same picture several times, but with different settings on the strobe. Chances are that you get the

best results by starting at the lowest setting on the strobe and then working your way up to stronger flashes.