innovation forward

OBVIO-Labs develops and industrialises innovative diving buoy reel

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OBVIO-Labs has developed an ergonomic reel offering a solution to the practical problems many divers struggle with, which makes it easier and safer for them to dive at greater depths. Once successfully developed, the company has taken steps to start industrialising the reel.

Over several years, the number of professional and amateur divers has escalated. The number of clubs and associations has virtually doubled, and countless sporting holiday offers now focus on a discovery of the seabed.

Yet, this activity requires specific training and knowledge of basic safety measures in order for it to be experienced in the safest possible way. One of these measures consists in controlled inflation and release of the decompression buoy.

Need for more safety and ease of use

The buoy, in the form of an inflatable sausage, is attached to a line held by the diver. If the line is longer than six or seven metres, it can conveniently be rolled onto a bobbin, this bobbin being mounted onto a reel held by the diver.
Towards the end of a sea diving expedition, before returning to the surface, the diver inflates and

releases the buoy, which ascends to the surface, then pulls and unrolls the bobbin line.

At the water surface, the buoy indicates the diver’s position and determines a forbidden zone for passing boats to avoid any accidents. The buoy also enables the diver recovery boat to follow the diver, should they drift due to wind or currents.

However, there is a serious problem: inflating and releasing this buoy is a delicate operation that can lead to accidents.

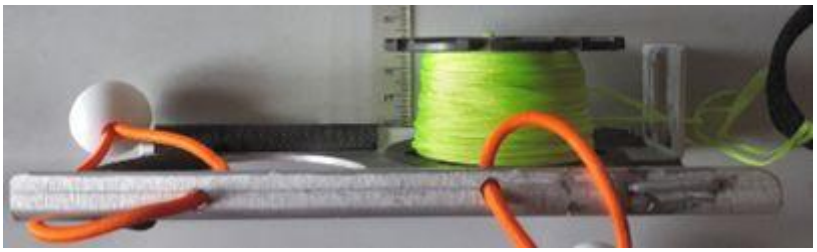
In order for the buoy to be perfectly visible at the surface, the diver must inflate it sufficiently … however, the inflated buoy pulls the diver upwards: so, in order not to ascend abruptly, they must release the buoy precisely at the right moment (neither insufficiently nor excessively inflated).

Furthermore, whilst inflating, the diver must hold both the buoy and the bobbin (reel) and inflate at the same time… this is a lot for just two hands: there is a risk of dropping the bobbin, or worse, of becoming entangled with the line, and in making a precipitous ascent, which is dangerous!

From design to industrialisation

To solve these problems and to enable more - even inexperienced - divers to deep-sea dive, OBVIO-Labs has invented an ergonomic reel: this innovative reel reduces the number of handling movements required to release the buoy, whilst considerably facilitating them, and lowers the risk of entangled wire. With artisanal resources, OBVIO-Labs successively created several prototypes, which were tested in diving settings to improve and validate their design. Sirris helped OBVIO-Labs

by selecting the right materials, the most efficient mechanisms in terms of performance and the most suitable ergonomics for comfortable use of the reel. Sirris designed all the reel parts in 3D, perfecting aesthetics to render the product as attractive as possible.



Prototype in folded sheet metal, produced by OBVIO-Labs and validated in a diving setting

intermediate prototype in vacuum-cast resin produced by Sirris, and revalidated at sea

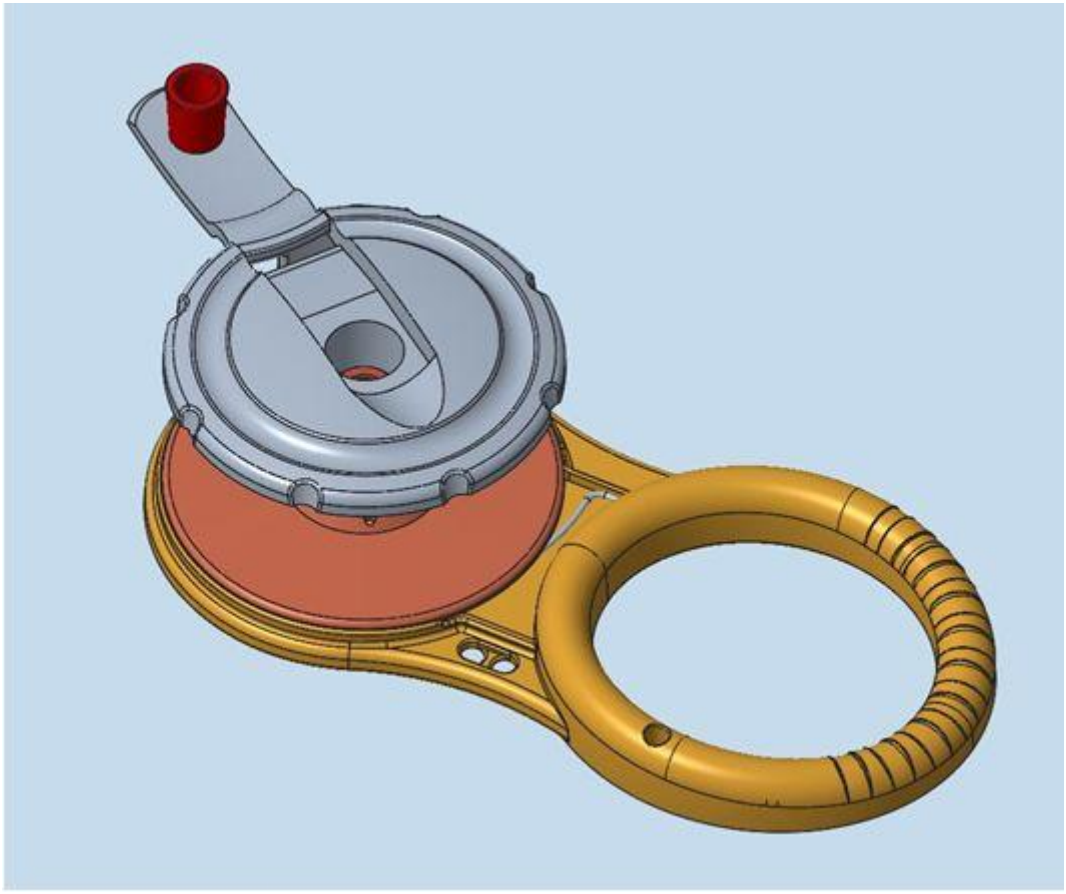


Illustration of the reel that will be produced by injection moulding

Shortly on the market under the brand name 'Niftidiver', this new ergonomic diving buoy reel will enable even more divers to head for the high seas, over a simpler and safer experience.

This case is one of twenty inspiring examples of how technological innovation can be put into practice in industry, included in our Annual Report 2022. Curious for more? Then be sure to read the other cases in our Annual Report, let them inspire you and discover what technological innovation can mean for you!

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