Mariscope Introduces Innovative Solutions in Underwater Cleaning and Measurement using ROVs

Mariscope Meerestechnik is a Germany-based company that has been a pioneer in the development of underwater robotic solutions for more than 25 years, and is specialized in underwater systems integration customized to customer's needs. Mariscope has now added the Commander MK III Off-shore to its range of products – a new ROV with very special features.

This vehicle was designed, developed and manufactured to carry out special offshore tasks, and later adapted to other activities such as biofouling control-related tasks in aquaculture.

The world, in the context of a global pandemic like the one that exists today, needs systems and work procedures that take into account the operational aspects and restrictions that such a situation imposes. One such need is to reduce or limit close interpersonal contact or complex logistics, while still maintaining the ability to perform the required work.

Underwater Multitasking

Ecosystem resilience and the environmental recovery capacity in many areas makes it necessary to improve not just the efficiency of the operations, but also the results obtained, in order to reduce the impact of the resumption of human activity on these ecosystems. The use of innovative technology that generates more efficient work systems, reducing operation times or ensuring the use of tools with a lower environmental impact, contributes to this objective.

This is possible using [Mariscope](#)'s renowned Commander MK III, an ROV that provides a robust and complete multitasking platform. According to Mariscope, the combination of features, price, performance and operational efficiency is unique among vehicles of this type.

Mariscope Commander Off-Shore ROV.

Real-time Visualization of the Results

Equipped with the same six vectorized thrusters as the original model, this ROV can move faster than five knots while maintaining manoeuvrability. Its electric thrusters, which do not require coolants, are maintenance-free with continuous work capacity (24/7).

One of the aspects that characterizes this ROV is that it allows non-destructive measurements and cleaning work to be carried out in the same operation using the same operating platform. Its size and design also allow for simple deployment and recovery, reducing the logistical requirements for these tasks.

The Commander Off-Shore is equipped at one end with UTM (Ultrasonic Thickness Measurement) and UCP (Underwater Corrosion Probe) probes, which allow thickness and cathodic protection measurements in submerged structures with real-time visualization of the results.

Multinozzle Head

At the other end, it has a cavitation cleaning unit with a new multinozzle head (MNH). Cavitation cleaning is highly efficient, both in the cleaning process and in delaying the refouling process on the cleaned surfaces. Using innovative technology such as an MNH further improves the efficiency of the cleaning process.

All the accessories are mounted on external tilting frames that are controlled from the surface by the operator, allowing work not only in the horizontal, but in any, direction (even upwards). The possibility to work in such a wide range of directions allows for the cleaning of offshore and port structures, even boat hulls.

Reduced Operating Times

This ROV has a completely symmetrical design, with the same front and back full HD cameras, lighting and tilting mechanisms. This allows cleaning and measurement processes to be carried out and controlled with real-time high definition imagery.

The use of this kind of technology can help to reduce operating times and simplify logistics, since instead of requiring a complex diving operation, a trained operator can perform these tasks from a control post.

There are also economic and environmental benefits, such as reduced fuel consumption on boats due to the removal of fouling of the hulls.

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