From Diving to Piloting

The Impact of Observational ROVs on Commercial Marine Inspections

Humans have been using the ocean as a food supply for virtually all of history, and it is safe to assume the first divers emerged near the beginning of our existence. However, it did not take long to realize food was not all the ocean had to offer - as the many opportunities the ocean provided became clear, commercial diving became a profession.

There is evidence of commercial diving for pearls dating back more than 2,000 years BCE and evidence of Greek divers filling their ears with oil and diving for sponges as far back as 400 BCE. During this time, commercial diving was often reserved for the lower classes, as it was harsh and painful work. According to Aristotle, divers would even puncture their eardrums before diving so they would not be affected by the water pressure as they descended!

In modern times, commercial divers perform the invaluable jobs of maintenance, repair, recovery, and inspections, making sure that our bridges, pipes, ships, water towers, docks, and aquaculture farms are working well. While necessary for these applications, diving is expensive, time-consuming, and dangerous, making technological advancement inevitable in the industry.

It wasn't until the 1960's that a disruptive new technology took force, expanding the scope of underwater inspections: the working class Remotely Operated Underwater Vehicle (ROV). These ROVs are able to reach depths divers cannot and, equipped with lights, cameras, and manipulators, are able to complete tasks by themselves or alongside a diver. At the time, these ROVs were costly and difficult to obtain by individuals or small companies, making them virtually inaccessible to the vast number of companies who could make use of them.

Thanks to advances in technology from the consumer electronics and drone industries, small ROVs, like the *BlueROV2*, are now accessible to a wide range of businesses and users. Leveraging unique T200 Thrusters, open source software, and modular design, the *BlueROV2* is affordable yet customizable to suit the needs of many applications. Available accessories include sonars, underwater positioning systems, and manipulators.

The *BlueROV2* has been used in many situations where a human diver is not safe or cost-effective: on narrow pipe inspections, in dangerous arctic waters, and in toxic environments. ROVs don't always replace divers - there are many jobs where ROVs and divers work together in tandem! ROVs may be sent down in advance to evaluate visibility and conditions before sending down a diver. They may also work alongside divers in the water to maintain diver safety or allow the job manager to keep an eye on the inspection.

The technology is here and the possibilities are endless. Whether used independently or alongside a human, small ROVs are providing us with a new tool to get the job done faster, safer, and better than ever before.


BlueLink


Atmo Inspoections

Revision 01/2020


DeltaROV

Configurable with Prices Starting at **$2,990**

Blue Robotics

BlueROV2

The World's Most Affordable High-Performance ROV

Ocean research, exploration, and adventure are all made easily accessible by our flagship product, the *BlueROV2*. It provides the capabilities of a high-end commercial mini-ROV at the price of the most basic commercial ROVs, making the *BlueROV2* the world's most affordable inspection and research-class subsea vehicle.

The smooth, stable, and highly maneuverable ROV is comprised of six thrusters, a rugged frame, and quick-swappable batteries. Powerful but dimmable lights provide excellent illumination for the live HD video feed.

Like all Blue Robotics products, we created the *BlueROV2* with high-quality parts, meticulous design, and rugged reliability with proven success in the field.

Equipped with six powerful T200 thrusters and Basic ESCs, the *BlueROV2* has the best thrust-to-weight ratio in its class to perform demanding tasks.

It is ideal for operations in shallow to moderate waters, with a standard 100m depth rating and up to 300m tether lengths available.

The *BlueROV2* uses the open-source *ArduSub* software and PixHawk autopilot to provide autonomous capabilities rarely seen in mini-ROVs and hackability paralleled by none. Blue Robotics actively develops and updates its software to enhance the *BlueROV2*'s functionality.

Your vehicle will arrive almost-ready-to-dive, with pre-built sub-assemblies and instructional materials to make the experience as straightforward and enjoyable as possible. Additional items including the topside computer, gamepad controller and batteries are not included.

At Blue Robotics, we are committed to creating quality products that are accessible to any explorer.

Revision 02/20

Product Features

- Live Low-Latency 1080p HD Video
- Highly Maneuverable Vectored Thruster Configuration
- Stable and Optimized for Inspection and Research-Class Missions
- Easy to Use, Cross-Platform User Interface
- Highly Expandable with Three Free Cable Penetrators
- T200 Thrusters and Basic ESCs
- Standard 100m Depth Rating and up to 300m Tether Available
- Battery Powered with Quick-Swappable Batteries for Long Missions
- Open-Source ArduSub Control Software and Open-Source Hardware

BlueRobotics

2740 California Street // Torrance, CA 90503 // info@bluerobotics.com

bluerobotics.com