



la l'Ant

Research

Vessel

ROV

Woods Hole Oceanographic

Institute - ROV Jason

AAON

Tether

What is a ROV?

Remotely Operated Vehicles (ROVs) are unmanned, underwater robots that are used to explore, investigate, and work in the ocean without being in it. They are driven by a pilot above the water, often from a large ship or research vessel. The tether connects the ROVs to the pilot's controls above.

Pilot

ROVs come in many shapes and sizes and can be fitted with a variety of custom tools which makes them useful for many different applications.

Exploring the Deep

Some organizations, like the National Oceanic and Atmospheric Administration (NOAA) and the Monterey Bay Aquarium Research Institute (MBARI), have ROVs that are designed to investigate the deepest parts of the ocean.

They are often equipped with high definition cameras and collection devices to gather samples. These ROVs have helped map and sample previously uncharted waters, discover new species, and more.



ROVs at the Dauphin Island Sea Lab

Scientists at the Dauphin Island Sea Lab use ROVs to study the marine ecosystems that make up the northern Gulf of Mexico.

Scientists in the fisheries research lab use ROVs to study how Alabama's artificial reef system affects fish populations. Their ROV is fitted with special lasers that allow them to estimate fish size underwater.





ROV Ventana MBARI

ROVs at Work

Micro and Mini Classes

- Compact size smaller than a basketball and lighter than a watermelon
- Shallow dive depth, less than 300 m
- Used by hobbyists and in industry to explore or inspect small or difficult to reach places

Observation Class



- Small size less than Im long Limited dive depth, less than 1000 m
- Fitted with lights, cameras, sonar, sensors or
 - probes to capture images and collect data. May
 - have a small arm to retrieve lightweight samples.

Light Work Class

- Addium Size smaller than a refrigerator
- And the second s
- Can lift small payloads less than 100 kg
- Solution Equipped with special equipment like water jets,
 - mechanical arms, cutting tools for light work tasks

Heavy Working Class

- Large size the size of a large SUV Deep dive depth, up to 4000 m Imply High powered hydraulic systems for heavy lifting up to 1000 kg Outfitted for 1-2 manipulator arms, drilling attachments, and
 - other specialized equipment for tough ocean jobs

Trenchers and Cable Layers

Extra-large frame – the size of a dump truck Deep dive depth, up to 5000 m Orives on the seafloor using heavy duty skids Sitted with specialized machinery to dig trenches and lay down large pipes and cables

