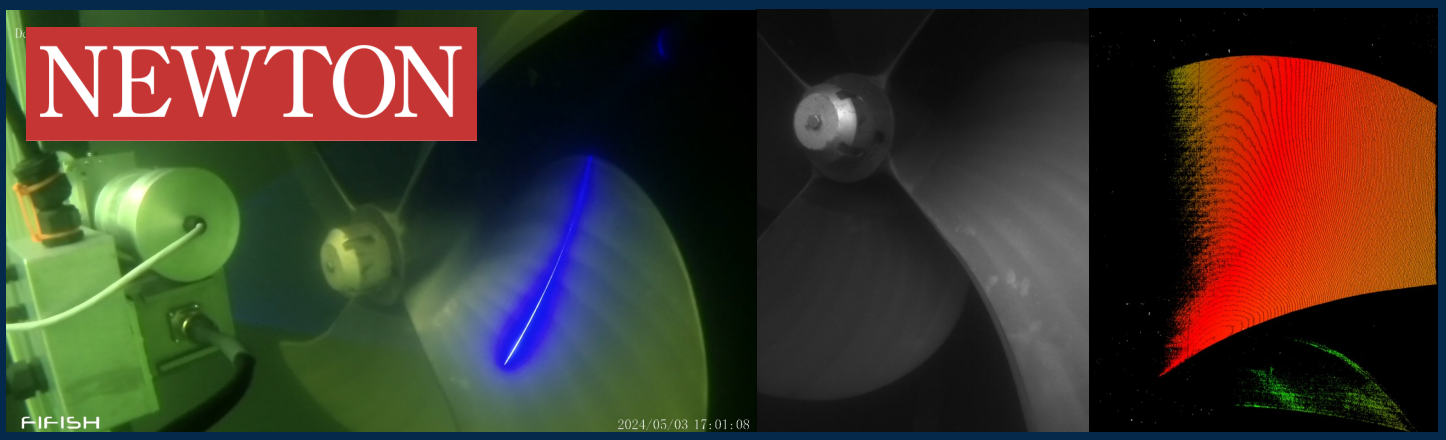


Underwater Laser Scanning Propeller Inspection

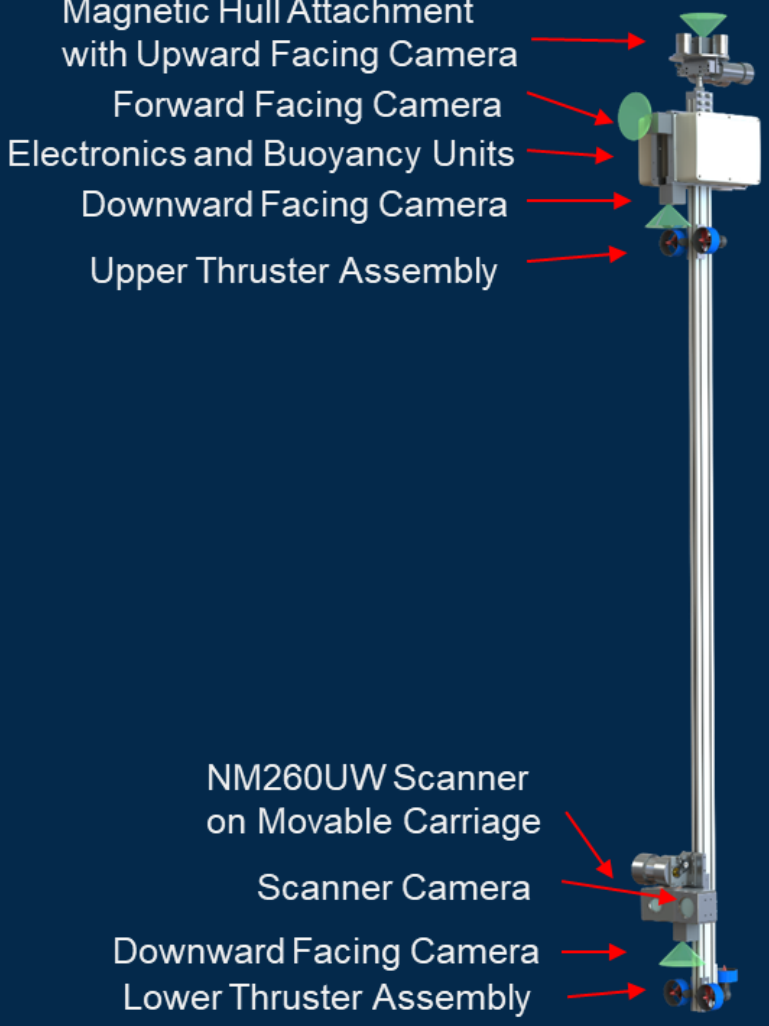
Newton Labs (www.newtonlabs.com), the inventor and the worlds largest supplier of underwater laser scanning equipment has expanded its service into propeller scanning on the ship underwater with the MP1000 ROV. This system provides:

- No propeller removal or effect on the ships propulsion system;
- Complete optical non-contact measurement and development of the CAD model, 3D point cloud, and report for analysis of defects.
- Defects as small as under 0.5 mm can be found and recorded.
- No divers involved at any stage of the inspection.

Newton has been supplying underwater laser scanners for more than 15 years; heavily used in subsea, nuclear and marine installations. The expansion of underwater scanning to propellers on ships is a natural extension of precise laser scanning and produces an extremely accurate CAD model (in the 0.05mm resolution range) and full drawings of the current state of the propeller.

The scanning will be done dockside and does not utilize any divers or any contact with the propeller; strictly optical scanning. The service is performed with a specially designed ROV that allows the scanner to characterize the entire propeller including the tips and hub. The scanning requires approximately one day and can be done during loading and unloading without interfering with any ship process. The Newton MP1000 ROV allows for the scanning of propellers from 0.9 to 6 meters in size.

www.newtonlabs.com ***sales@newtonlabs.com*** ***+1-425-251-9600***



The Newton MP1000, specially designed for propeller measurement, is shown to the left, The upper section magnetically clamps to the hull. The M260UW underwater scanner rides up and down the MP1000 to allow scanning of the entire propeller.

The MP1000 allows for the scanning of propellers from 0.9 meter to 6 Meters. The M260UW scanner has a resolution of 0.07 or better thus allowing for all propeller defects to be measured and represented in the CAD model, drawings and reports.

Periodic laser scans of propellers provides the data to maintain propeller efficiency by detecting flaws such as pitting, cracks, dings, and dents that can cause air bubbles and cavitation in the blades of the propeller. This increase in turbulence flow degrades fuel economy and vibration from blade