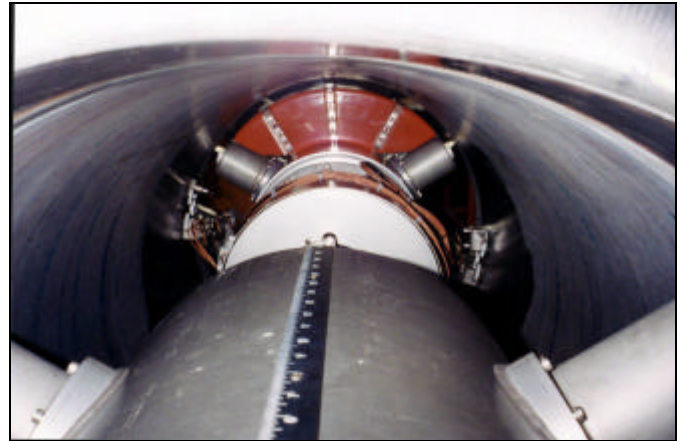


# Model 7050 Nautilus™ Underwater Scanner

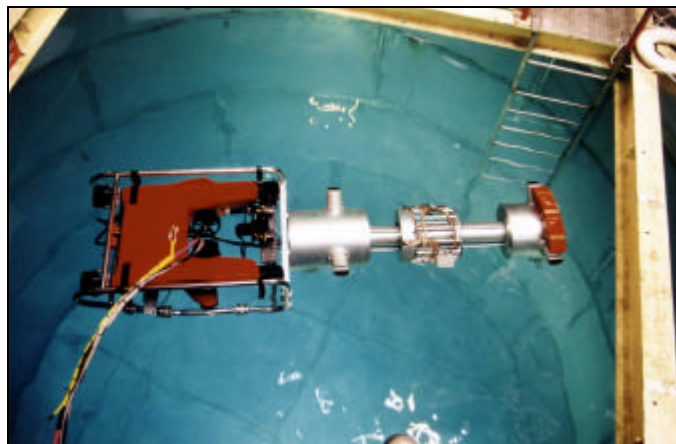
## Overview

The Nautilus underwater scanner is a combination of a remotely controlled submarine and an automated rotary style scanner to perform underwater inspections. It was first developed by Wesdyne NDE Products to perform ID inspections of nozzles in a nuclear power reactor pressure vessel. The inspections were based upon the use of an IntraSpect™ ultrasonic imaging system.

Operation of the Nautilus scanner is conducted in two steps. First the submarine portion of the Nautilus functions as an underwater taxi to transport the scanner into the ID of a given nozzle. The scanner then secures itself into place by actuating centering positioners. The scanner then performs a normal 2-axis (axial and rotary) scan on the ID surface to generate UT volumetric images with an IntraSpect imaging system.



The scanner portion of the Nautilus installed in a dry nozzle mockup as viewed from the submarine. The centering positioners are extended to lock the scanner in place as seen on each end of the red float. The scanner's end effectors are also extended to deliver the UT probes to the inspection surface (see at both sides of center section below the positioners).



The photo above shows the Nautilus scanner while floating in a mockup pool during factory acceptance testing. The remotely controlled submarine is the red portion on the left. The automated scanner is the silver portion shown in the center and extending to the right. Note that the end effectors and centering positioners are collapsed as shown in the left and middle of the automated scanner. This is the typical configuration of the Nautilus scanner during its maneuvering mode, both on the surface and underwater.

## Benefits

- Can be used to perform an ID inspection of a pressure vessel's nozzles without having to drain the vessel.
- Only requires a temporary use of a crane to place in the vessel. Once in the water, can transport and lock itself into the inspection location. Does not require a standing structure (or tracks) as its foundation which would otherwise obstruct other shutdown activities.
- Fully compatible with standard IntraSpect UNIX based system components to perform an ultrasonic and/or eddy current imaging inspection.
- Includes self centering compliance features such that docking the scanner into a nozzle is relatively quick and easy.

\* Separate data sheets are available which describe the AMDATA IntraSpect™ series of ultrasonic and eddy current imaging systems. Please contact us or your local Wesdyne NDE Products representative for a copy today.



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