



# TALRUT™: Tank Annular Ring Long Range Ultrasonic Testing

## Introduction

MISTRAS Services Division, a member of MISTRAS Group, Inc., is a technology driven inspection solution company offering above ground storage tank maintenance and inspection programs. In response to the industry need to ensure the integrity of the annular ring and chime welds of Above Ground Storage Tanks, we have developed a proprietary inspection technique called TALRUT™, an in service inspection.

## Current Condition

Severe damage over a large area in the annular ring area of a storage tank can lead to major structural failure with rapid loss of contents. During operation, water seeps underneath the annular ring or chime area and may corrode the floor and annular ring. This condition often goes unnoticed during visual inspection.

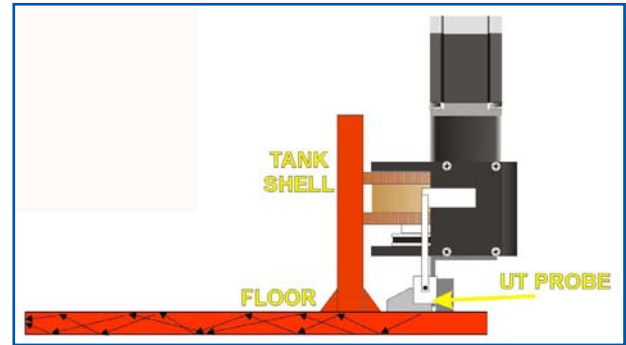
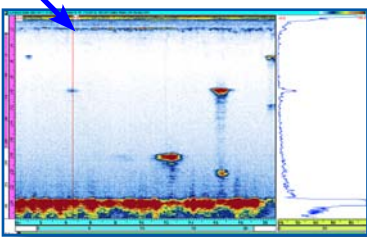
## Application Solutions

TALRUT™ developed within the MISTRAS Group Inc., uses an automated scanner and proprietary software and procedures to specifically identify this problem. The ultrasonic scanning system is operated from the outside of the tank and uses an ultrasonic angle beam reflected through the sketch plate or annular ring of the tank to yield semi-quantitative results up to 10 inches into the tank itself.

The results are displayed graphically with the extent of damage shown in distance around the circumference and distance in from the chime location. Test results are compared to a calibrated test plate containing known defects at 4, 8 and 16 inches from the ultrasonic probe.

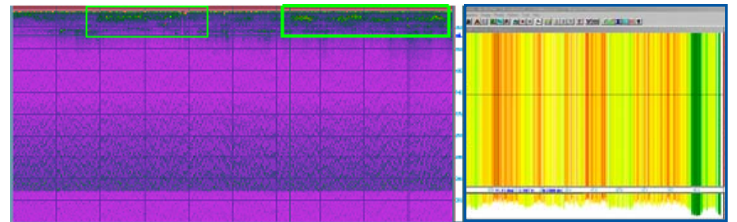
Optimum sensitivity is achieved in detecting rapid change in section; the method is insensitive to very slow change

### Tank Shell



in section as sound must reflect from the discontinuities. Nevertheless, the method can provide a relative guide to the general condition of the annular ring or plate extension. A method statement is issued prior to the inspection which describes the test, its limitations and requirements in detail.

Shown below are field results of a complete 5.0' scan length, with severe corrosion detected directly under the annular ring area. These images depict both methods of detection.



MISTRAS Services Division is a team of skilled researchers, engineers, technicians and manufacturing personnel dedicated to the development of practical and cost saving solutions to your challenging inspection needs.

For assistance or additional information, please contact our headquarters at 609-716-4150 or via email at [sales.services@mistrasgroup.com](mailto:sales.services@mistrasgroup.com).

**Corporate Hqts:** Princeton Junction, NJ • (609) 716-4150 • Fax (609) 716-4145  
Email: [sales.services@mistrasgroup.com](mailto:sales.services@mistrasgroup.com) • Website: [www.mistrasgroup.com](http://www.mistrasgroup.com)

### Regional Hqts:

Northeast - Philadelphia (610) 497-0400 • Southeast - Monroe (704) 291-2360 • Gulf Coast - Houston (713) 473-6111  
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