

Tank-scan



Tank-scan principle

Until now, inspection for corrosion attacks on the underside of tank floors has been unreliable and expensive.

The Tank-scan system developed by FORCE Technology makes it possible to inspect tank floor plates from the inside of the tank. During the operation of Tank-scan, corroded areas are marked for later ultrasonic evaluation. At the same time, all inspected areas are clearly marked to ensure full coverage.

Features

- Variable speed and sensitivity
- Typical examination speed: 100 m² per hour
- Maximum plate thickness 14 mm
- Scanning width 400 mm
- Usual coating no hindrance
- Low voltage for safer operation
- Size permits access through 400 mm (16") man-hole
- Lightweight and portable scanner
- No couplant
- No cleaning after inspection.

Scanner design

The Tank-scan inspection system is based on the magnetic flux leakage principle. A strong permanent magnet is used to saturate the material, and the flux leakage is picked up by a unique sensor arrangement. The information from the sensor is processed immediately, and areas with corrosion are automatically marked by the Tank-scan equipment. They may subsequently be evaluated through ultrasonic inspection for exact measurement of remaining wall thickness.

For easy transportation, the Tank-scan system has a modular construction with each of the 3 magnet/sensor modules covering a scanning width of 150 mm. The modules are individually suspended in the frame of the Tank-scanner, thereby providing a degree of flexibility which enables an efficient inspection also of wavy tank floor plates.

To ensure easy operation and high speed, the Tank-scan system is motorized, powered by a safe low voltage motor.



Hand-scanner

To further enhance the versatility of the system, a manually operated hand-scanner has been developed. It uses one of the magnet/sensor modules of the Tank-scanner together with a separate box containing the signal processing electronics and a battery power supply. The hand-scanner is used for scanning of areas with limited access, e.g. under heating coils in tanks. Since it can be made ready for operation fairly quickly, it may also save time in situations where only a limited area is to be inspected.

Applications

The Tank-scan system is intended for inspection of tanks and similar structures in:

- Refineries
- Power plants
- Storage facilities
- District heating plants.



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