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Eddy Current and Ultrasonic System to Inspect Pipes in Production

Ultrasonic System T-18 VT

The T-18 ultrasonic system is designed for complete inspection of the pipe body for defects such as metal discontinuities, inhomogeneities, metal delamination and ultrasonic measurement of the pipe wall thickness. The system consists of 4 immersion baths installed in series one after the other.

Two immersion baths, No. 1 and No. 2, are designed for continuous immersion ultrasonic inspection of the pipe body for delamination and thickness measurement. Bath No. 1 control schemes are implemented that allow 100% control of the pipe body for longitudinally oriented defects such as cracks.







Immersion baths and control schemes implemented in them





Baths No. 3 and No. 4 are designed for ultrasonic testing of the pipe body for transverse defects.



Main Technical Characteristics

Detects defects that, in terms of their reflectivity, are not worse than artificial reflectors - longitudinal and transverse grooves (notches) on the outer and inner surfaces of the pipe, of the following dimensions:

- the groove depth is from 3% to 5% of the pipe wall thickness, but not less than 0.3 mm;
- the groove width does not exceed two depths, but not more than 1 mm;
- groove length no more than 25 mm or 50 mm.

Detects delamination simulated by a flat-bottomed reflector with dimensions:

- diameter of flat-bottomed reflector 6.4 mm;
- drilling depth 25-90% of the nominal value of the pipe wall thickness, but not less than 2 mm.
- inspection capacity up to 30 pipes per hour;
- the length of uncontrolled pipe ends is not more than 300 mm.

Eddy Current System T-18 VT

The T-18 VT System consists of two scanners with overhead eddy current transducers and provides:

- Identification of minimum defects with a depth of 5% of the wall thickness and a length of 50 and 25 mm, oriented longitudinally and transversely relative to the pipe axis;

- The size of the dead zones at the ends of the pipes is not more than 200 mm;



- Compliance with the international standard API Spec 5CT when releasing products at the level of technical requirements PSL 3;

- Confident identification of defects that have arisen during production: sunsets, captivity, longitudinal and transverse cracks.

Features

- Tracking results online;
- Viewing the results for a separate channel, as well as the formation of a two-dimensional image with the application of defective pipe sections;
- Formation of protocols of 6 types;
- Increasing the resource of eddy current transducers due to the presence of a constant air gap between the pipe body and the sensors;
- Wear resistance of parts due to the use of replaceable victorious linings.

Program interface of the "Control" window