

Active Alliance LLC

pipeline engineering

EXTERNAL DIAGNOSTICS OF PIPELINES AND TANKS



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ISO 9001: 2015
ISO 29001: 2010
ISO 37001: 2016
ISO 45001: 2018
ISO 14001: 2019

During the production and operational processes, the technical condition of any facility (equipment, tanks, pipelines, their individual structures and elements) requires regular assessment. Non-destructive testing makes it possible to carry out assessment activities without suspension, dismantling and sampling, which are quite expensive.

The use of non-destructive testing methods in the inspection of an object does not require forced downtime and makes it possible to detect and eliminate its fatigue and various defects at an early stage.

Therefore, the main goals of non-destructive testing are focused:

- to minimize accident risks and increase the level of operational safety of equipment at hazardous production facilities;
- to verify compliance of the controlled object with the requirements of applicable regulations and technical documentation;
- quantitative and qualitative assessment of the detected deviations and determination of their danger level;
- timely detection of various malfunctions.

After diagnostics, an electronic passport of welded joint quality is issued. A separate advantage of the proposed approach is the ability to document and store information for further access in the form of electronic passports for the object of control. Modern tools make it possible to save information about the time and GPS coordinates of the inspection, the name of the specialist, the result of the inspection, and any other data. Subsequently, the data can be sorted and searched by any of these features. This allows the customer to be sure that the inspection was carried out in the right place, at the right time and by the right specialist. It also makes it possible to collect and process statistical data on the inspection. Finally, when returning to this facility in the event of a scheduled repair or accident, all previously obtained data can be instantly retrieved from the database.

SCAN III

SCAN III - is a modern ultrasonic flaw detector that combines the capabilities of traditional ultrasonic inspection, phased array inspection (PE), diffraction time method (TOFD), as well as FMC (Full Matrix Capture Method)/TFM (Total Focus Method) technology. The functionality of the instrument allows to easily solve complex control tasks: simultaneous control with several groups of transducers, control and mapping of corrosion, control with the use of matrix transducers.

Area of application:

•diagnostics of welded seams of pipelines, material pipes and much more;

•corrosion-resistant alloys;
•corrosion monitoring;
•composite control.

Features of the flaw detector Scan III:

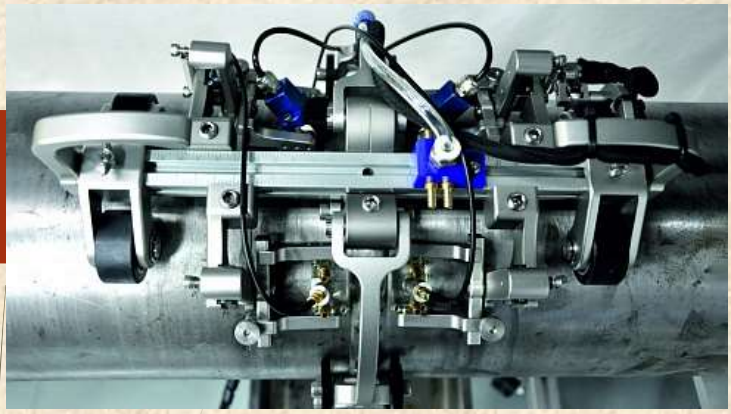
•application in manual, mechanized and automated control mode;
•clear visualization of defects and high resolution;
•working with two-axis scanners;
•fully activated flaw detector software;
•PC-based analysis software with automatic report generation;
•3D modeling of the control object and the scanning process with recording of all sweeps and control results in real time;
•working with CAD models;
•built-in SSD drive;
•bright, high-resolution IPS touchscreen display;
•industrial design, high degree of protection;
•optimized dimensions and weight of the device;
•hot-swappable battery;

AAU-19

Сканер **AAU-19** scanner is designed for mechanized ultrasonic inspection of annular and longitudinal welded joints in pipes with a diameter of 150 mm to a flat surface. The lightweight aluminum frame allows for the mounting of up to two transducers (FR or TOFD), and the ruler with markings on it allows for quick positioning of the transducer holders relative to the center of the weld. A distinctive feature of the scanner is the modified mounts that allow the transducers to be rotated 45 degrees relative to the scanning axis.

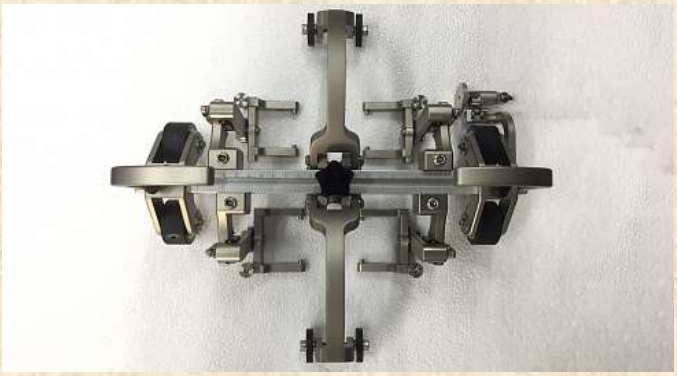
Scanning method	Linear
Control method	· Transducers on a phased array · TOFD · Simultaneous control of PA and TOFD
Objects of control	·Flat surfaces · Ring and longitudinal welds of pipes DN150 mm
Advantages	· Simultaneous operation on two paper converters · Equipped with magnetic wheels with built-in encoder · Spring-loaded fasteners with the possibility of rotation 45 degrees · Lightweight aluminum frame · The ability of the frame to bend to the center

AAU-14



The **AAU-14** scanner is designed to inspect ring welded joints of pipelines with a diameter of 200 mm or more. Thanks to its "chain" design, the **AAU-14** scanner is quickly and easily positioned on the inspection object, and a special locking mechanism securely fixes it on the pipe.

The "chain" design of the scanner ensures straightforward movement of the transducers along the scanning axis without the need for manual control. This approach is convenient when there is no full access to the entire circumference of the pipe. The central rail allows up to two pairs of transducers FR or TOFD - to be mounted on the scanner, thereby providing the ability to inspect both sides of the weld simultaneously.



Scanning method	Linear
Control method	· Transducers on a phased array · TOFD · Simultaneous control of PA and TOFD
Objects of control	· Ring seams for pipe diameters from 200 мм to Ø1220 mm · Optionally up to Ø1420 mm
Advantages	· Simultaneous operation of up to three paper converters · Quickly disassembled link design · Spring-loaded design of the transducer holders · Convenient clamp for quick positioning of the scanner · Ability to work on magnetic/non-magnetic surfaces

AAU-01

Scanner AAU-01 is a scanner for manual ultrasonic inspection of welded joints with recording of results for transducers on phased arrays. The compact size of the scanner allows for easy and convenient inspection, and specially designed mounts (a set of clamps and brackets) allow for a firm attachment to the phased array transducer regardless of the type of prism (inclined or straight). The spring-loaded design of the scanner ensures that the encoder wheel is pressed tightly against the surface, thereby allowing for gap-free scanning and more accurate measurements over the entire scanning distance.

Scanning method	Linear
Control method	PA - Phased array
Objects of control	· Longitudinal pipe joints from Ø50 mm · Ring pipe seams from Ø50 mm- · Flat butt joints
Advantages	· Compactness

Equipment:

- **Fixing bracket**
  Allows you to easily attach any prism to the scanner and lo it at an angle from 0° to 90° degrees.

- **Track sensor**
  Provides accurate information about the position of the transducer.

- **Compact size**
  Allows scanning in hard-to-reach areas.

AAU-30

Scanner AAU-30 – is an ideal solution for monitoring corrosion damage, base metal wall thinning caused by erosion and abrasion on flat surfaces and pipelines. A special immersion transducer on a phased array is used for monitoring. Due to its design, which eliminates the need to use classical prisms, and due to the advantages of immersion for inspection on uneven and rough surfaces, the **AAU-30 scanner** is perfectly suited for surfaces.

Scanning method	Linear
Objects of control	· Flat surfaces · Pipes from 127 mm in diameter · Vessels and pressure vessels
Control method	· Transducers on a phased array · Corrosion control
Advantages	· Magnetic or non-magnetic wheels · Brake for fixing the scanner · Convenient mounting of transducers · Built-in encoder

Equipment:

- **Control technology**
  Inspection on uneven and rough surfaces.

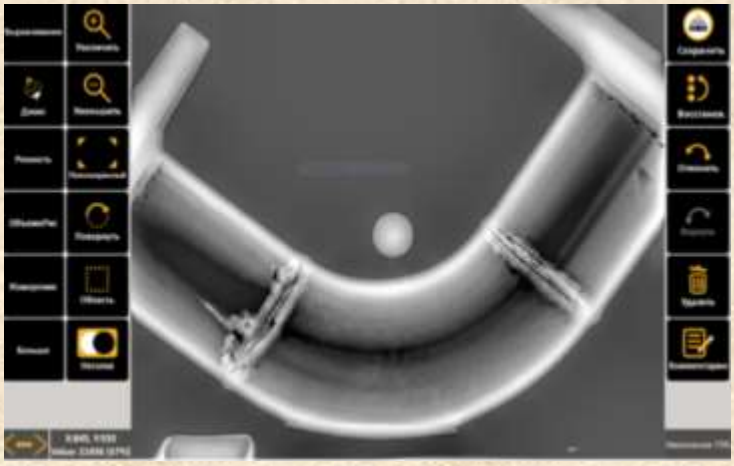
- **Built-in encoder (Encoder)**
  The built-in track sensor provides accurate information about the position of the transducers.

- **Magnetic wheels**
  Provide a secure attachment of the scanner to ferromagnetic surfaces.

- **Brake system**
  If necessary, locks the scanner and prevents it from moving.

SCAN 1

Digital radiography is a technique that uses DDA (Digital Flat Panel Detectors) instead of X-ray Film or CR (Computed Radiography) to produce instant images.



Main characteristics:

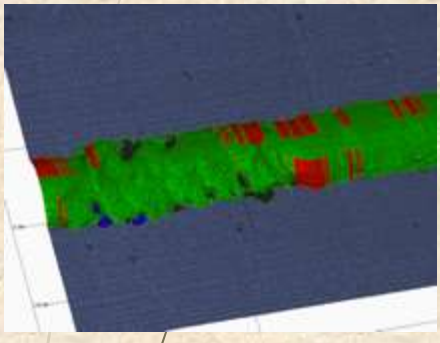
- the latest detectors (The thinnest, lightest, most durable)
- unprecedented image quality (Latest generation - 16 bit)
- extended battery life (More than 16 hours of battery life from the control unit).
- professional touch software
- the smallest occupied area
- integrated shielding for maximum service life
- performance at high doses
- detector thickness 0.6" (15.6 mm)
- permissible load on the detector: 150 kg
- can be used in extreme weather conditions

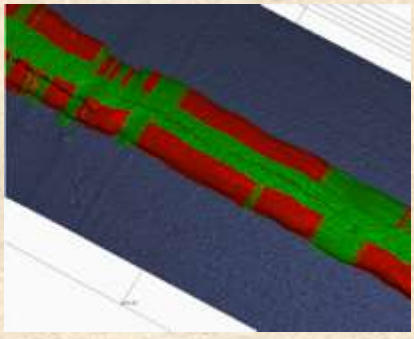
- user-friendly touch interface
- intuitive operation for capturing X-ray images, commenting, archiving, and sharing
- supports a variety of formats, such as TIF, DICONDE
- controls various hardware functions, such as switching from wired to wireless, activating various X-ray sources, and more
- automatic tool for wall thickness measurement.

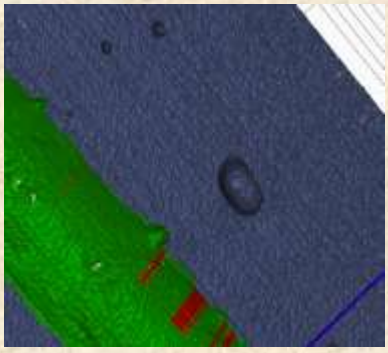
SCAN 2

This is the latest development for automated visual and dimensional control of the geometry of welds of various control objects: main pipelines, pressure vessels, tank constructions, etc.

After the inspection, the information collected by the device is automatically generated and transmitted immediately to the PC via Wi-Fi. A 3D model of the weld with all geometric parameters is displayed on the computer monitor. The software has the ability to build a 3D model of the pipe based on the control results. This allows to visualize the location of detected defects, simplify the analysis of the results, as well as simplify the work on further repair and preparation of reporting documentation.







SCAN 2 allows you to detect such defects in welds as: violation of geometry (weld width and height), undercuts on the left and right, smooth transition, pores, cracks, scales, skewness and edge displacement. Each defect found is highlighted by a certain color, this is done so that the expert looking at the 3D model, could immediately understand what defects are present in the welded joint.

After analyzing the results, the software automatically generates a report that contains data on who performed the inspection, the date of inspection, the name of the test object, the marking (number) of the welded joint, detected defects and their parameters.