

function

SCITEQ X-ACT TwinEye uses advanced low energy X-ray scanning technology to measure critical dimensions of primarily cylindrical pipe samples online. The use of two X-ray arrays secures a fast and accurate dimensional single and multi layer measurement independent of the pipe position through the scanner.

highlights

high measurement accuracy

on line use

all dimensions measured

non-temperature dependant

unique design

automatic calibration

features

The measurement technique is non-destructive and completely temperature independent. SCITEQ X-ACT TwinEye has two basic measurement modes as standard:

- *Static scan mode* which gives 4-point dimensional measurements. The static scanning angle can be selected by operator.
- *Continuous scan mode* continuously rotates the x-ray system up to maximum +/-60 degrees which gives full circumference dimensional measurement.

Scanning frequency is 100 times/sec (TwinEye 110 scanning frequency is 100 times/sec).

Both modes give dimensional results of individual layers, outer and inner diameter, total mantle thickness as well as outer and inner ovality.



We wish to give our partners the tools to produce to the highest standard, while helping them to produce as cost-effectively as possible with Q.C. tools throughout the factory.

construction

X-ACT TwinEye is in legal terms to be considered an x-ray cabinet scanner. A cabinet means that the machine is totally encapsulated (metal shielding) and the two shields which can be opened (key locked) are each protected with three independent safety circuits - two in-series wired reed contacts disconnecting the x-ray and one door switch disconnecting the rotating axis should a shield be opened.

It also means that it normally can be installed and used without any special approvals, attention or education of operators other than the installation and operational training given by SCITEQ service technicians. The relevant local authorities should always be contacted as each country can have its own legal requirements. Radiation is only generated when the x-ray tubes are powered. Should a shield be opened x-ray is disconnected immediately and rotating parts are stopped.

The scanners uses two fan shaped beams emitted perpendicular to pipe axis from low-energy X-ray sources to measure the difference in material weight. This difference in material weight is directly related to the intensity of radiation received and detected by two sensor arrays mounted opposite the sources. The sensor array signals are then processed using sophisticated pipe specific algorithms compared against a known mathematical model of the pipe.

optional | equipment

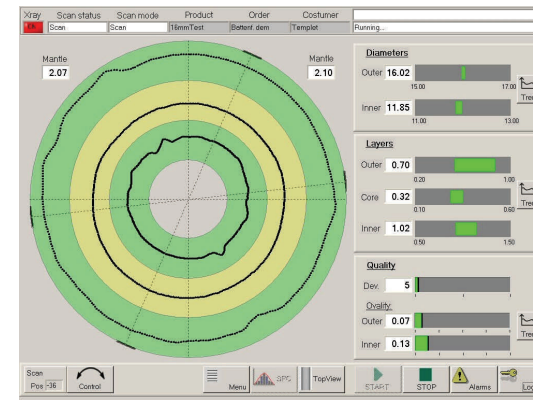
▲ | essential equipment

wheels

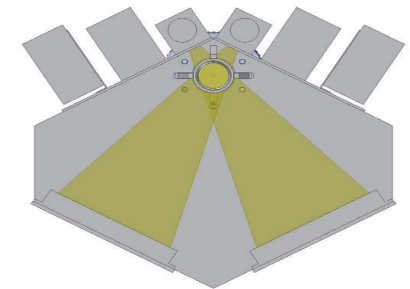
network connection

remote access

	X-ACT TwinEye 40	X-ACT TwinEye 63	X-ACT TwinEye 75	X-ACT TwinEye 110
pipe dimension range:	Ø10 to Ø40 mm	Ø16 to Ø63 mm	Ø25 to Ø75 mm	Ø40 to Ø110 mm
measuring frequency:		100 times per sec.		50 times per sec.
rotation speed: (full scan)		0-5 times/min.		
measurement accuracy: (static scan mode)		standard deviation better than 0,05		standard deviation better than 0,1 mm
measurement precision: (static scan mode)		standard deviation better than 0,02 mm		standard deviation better than 0,05 mm
dimensional measurements:		outer diameter inner diameter calculated ovality		
wall thickness measurements:		individual layers total wall thickness		
error detection:	out of tolerance dimensional errors: They are automatically detected and visually shown on the 15" operator panel (red bars) and can be stored in an alarm list. Error can trigger an potential free output signal.			
operator panel and data logging:	the operator panel is based on a 15" industrial LCD touch screen. Intuitive screen formats present data graphically and also numerically in an instantly identifiable and easy to read format to operators. Trend curves with zoom functions can also be shown. 3 different login levels named operator, technician and administrator is included so that the operation of the scanner is intuitive enabling additional functionality dependent on login. The operator interface uses recipes to allow operator to give in pipe nominal and limit input values for each dimension, and if these are exceeded an visual warning is given. Graphical view of the individual layers and their minimum and maximum tolerances is easy to read and updated after each full rotation (adjustable up to maximum +/-60 degrees). There is facility to connect to external data storage and printer, remote access software for on-line control / service and Ethernet interface.			
dimension:		745 x 1120 x 2150 mm (length x width x height)		745 x 1560 x 2200 mm (LxWxH)
height centre pipe (height adjustable machine feet):		1100±75 mm (other on request)		



100% measurement of the pipe circumference by rotating ±60 degrees



The pipe is exposed to two fan shaped beams emitted perpendicular to pipe axis from low-energy X-Ray sources

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optional | equipment ▲ essential equipment

wheels	network connection	remote access
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