

e.Rota : HIGH SPEED TUBE DIMENSIONAL MEASUREMENT

Socomate International

Worldwide excellence in UT electronics

The process, according to the patent, aims at the dimensional characterization of tube at very high speed with extremely simple mechanics, **avoiding all mechanical rotation** either of tube or transducers.

e.Rota offers **100% full dimensional** measurement of tube: thickness, external and internal diameters, eccentricity and ovality.



The patented software, supply real time data acquisition and processing which allows its utilization on production line where rotary heads are usually installed.

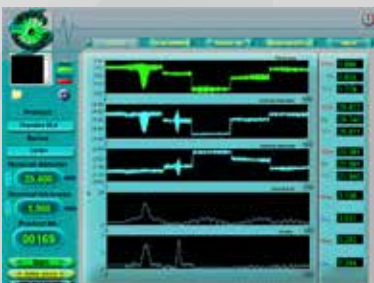
As an alternative to rotary heads, this solution provides a high increase of measurement data, and **reduces what are expensive** such as mechanical purchasing price, maintenance costs and the setting times.

This system is usable for tubes in such industries: Nuclear, Aircraft, Oil & gas, Automotive, Umbilical...

Take the benefit of several references in big groups, such as Vallourec, Salzgitter Mannesmann, Ovako...

Advantages:

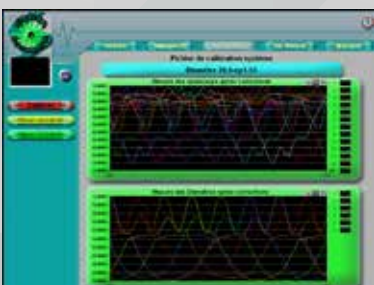
- High increase of data acquisition
- Affordable purchasing price
- All types of tube with a regular & clean surface
- e.Rota solution can be easily adapted for use on existing linear testing benches currently using rotary heads, encircling EC probes, Phased Array multielement probes, etc...



Dimensional measurements results from e.Rota. Stripchart type representation



USPC7100 standard software interface for ultrasonic settings



e.Rota offset calibration



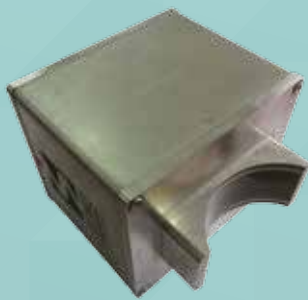
Multi A-Scan display

This e.Rota solution offers the possibility to be upgraded with our FAAST Phased Array system to **get a 2 in 1 solution**, dimensional measurement and flaw detection.

Meaning that it is possible to have the e.Rota alone, the FAAST alone, or both together according to the need.

Both solutions are integrated into a simple immersion tank.

The FAAST Phased Array is used to detect longitudinal and transversal flaws in 2 plans with only 1 set of probes which is composed of 4 Bi-linear multielement ring probes.



Bi-linear ring probe
32x144 Elements

One more particularity of this bi-linear probe is to embed electronics: pulser, multiplexer and pre-amplifier.

The goal of this embedded electronics is :
To reduce the quantity of wires
To avoid impedance issues



Example for umbilical tube inspection from a reference:

Tube diameter range: 15 – 50 mm

Tube thickness: 1.0 to 4.0 mm

Longitudinal and Transversal, inner and outer, flaw notches detection.

Minimum flaw depth: 5% Wall Thickness

Linear Tube Speed: Up to 12meters/mn

4x Bi-Linear ring probes 32x144 elements
– 7.5 MHz

Easy maintenance



Alternative to rotary head by using e.Rota
combined with FAAST Phased Array