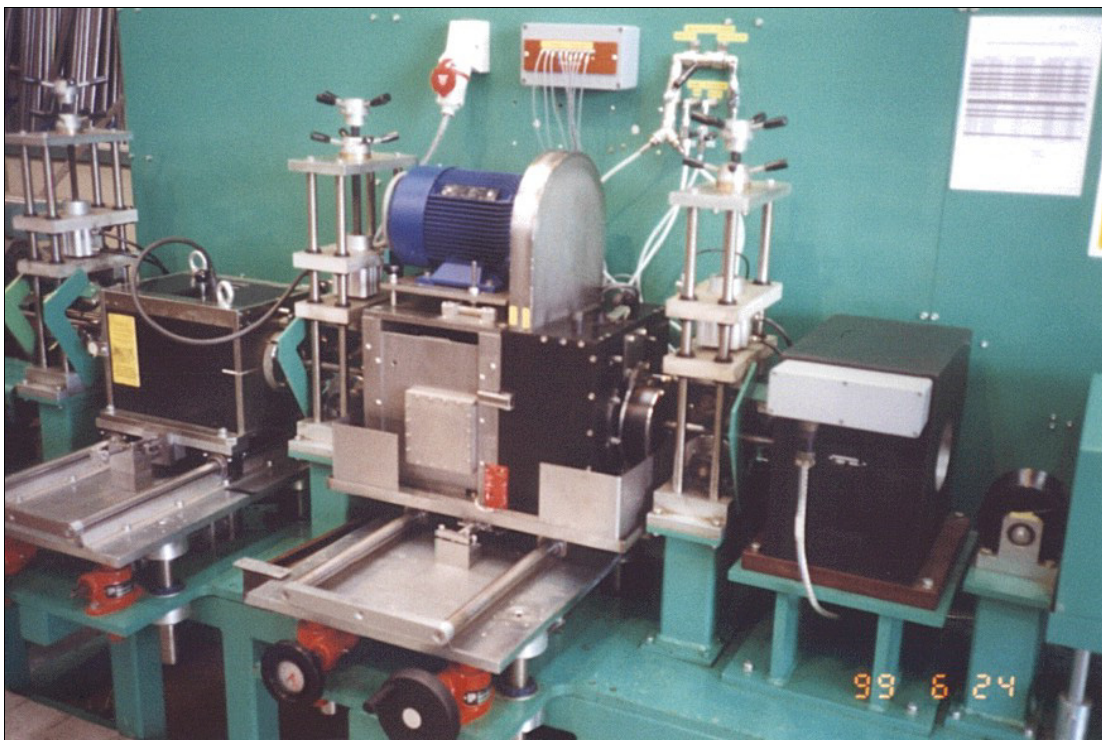


ROTATING ULTRASONIC PROBE SYSTEM FOR TUBE AND BAR INSPECTION



The purpose of this equipment is to provide both ultrasonic and eddy current inspection of tube and bar products. The ultrasonic inspection is achieved using a **Heliscan** rotating ultrasonic probe unit. The eddy current inspection can be either a rotating eddy current probe or an encircling coil. See the reverse of this brochure.

3 Pinch roll drive units.

Heliscan rotating ultrasonic probe unit.

Rotating eddy current probe or encircling coil.

**Elevating and sliding tables for eddy current and
ultrasonic test heads.**

**Mechanical handling can include, unscrambling,
Loading, conveyance, Flaw Marking and unloading
to separate Accept and Reject collectors.**



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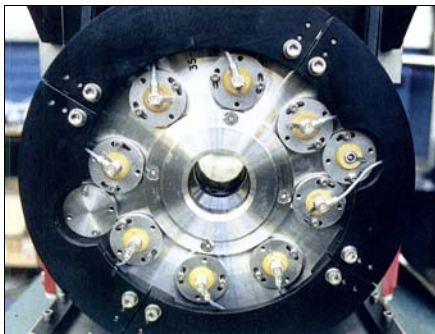
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Heliscan Rotating Ultrasonic Probe

The **Heliscan** rotating probe units incorporate a compact rotating, water filled annulus into which up to 9 ultrasonic probes can be fitted. Probes can be used for longitudinal, transverse and oblique shear wave inspection plus compression wave for thickness and lamination testing. The rotating annulus is fitted to one end of the main rotor which results in good access to the probes, testing close to the product ends and tolerant to product straightness. The unit is normally supplied with a variable speed drive for up to 2000 RPM maximum.

The complete size range of the unit is covered by three interchangeable annuli and, for each nominal product diameter, a set of four guides is required.

The ultrasonic probes are based on standard compression probes which are fitted into a main body. A range of beam profiles and frequencies are available.



The general specification for the **Heliscan** is:

Diameter Range	- 6mm to 100mm outside diameter
Rotation Speed	- Continuously variable from 500 to 2000 RPM
Number of Probes	- Maximum 9 located in rotating annulus
Probe Adjustments	- Angular adjustment from -2° to $+20^{\circ}$ nominal
	- Transverse probes are pre-set for material
	- Fully adjustable options are available

Number of Annuli	- Three: 6 to 35mm, 35 to 70mm and 70 to 100mm diameter
Location Guides	- For each nominal diameter - inlet guide, outlet guide plus two annular rings
Signal Transmissions	- Slip rings and brushes, using two rings per probe
Rotor Bearings	- Mechanical bearings
Water System	- Re-circulating water system with heating and filtering
Water Purging	- Inlet and outlet water removal facilities
Proximity Detectors	- On inlet side for end inhibit facility
Untested Ends	- Front end up to 600mm and the rear end 40mm, typically

Mechanical Handling Systems

The **Heliscan** is incorporated into a diabolo roll type linear conveyor system. These systems are modular in construction for varying product diameters, lengths and weights. Inlet and outlet conveyor rolls can be driven or idler roll units with the main pinch roll drive units located in the central area. Systems can also incorporate eddy current testing units, which can be either rotating eddy current probes or and encircling coil. Also diameter gauges and flaw position marking units may be provided.

Typical facilities include:

- Inlet roll down rack
- Stack catchment arms
- Unscrambler units
- Diabolo roll inlet track
- Diabolo roll outlet track
- Tension strap or fabricated collectors
- Central testing area with pinch roll drive units, locations for **Heliscan** rotating ultrasonic probe and other test units
- Integral re-circulating water system
- Electrical control desk with PLC unit for automatic and manual system operation