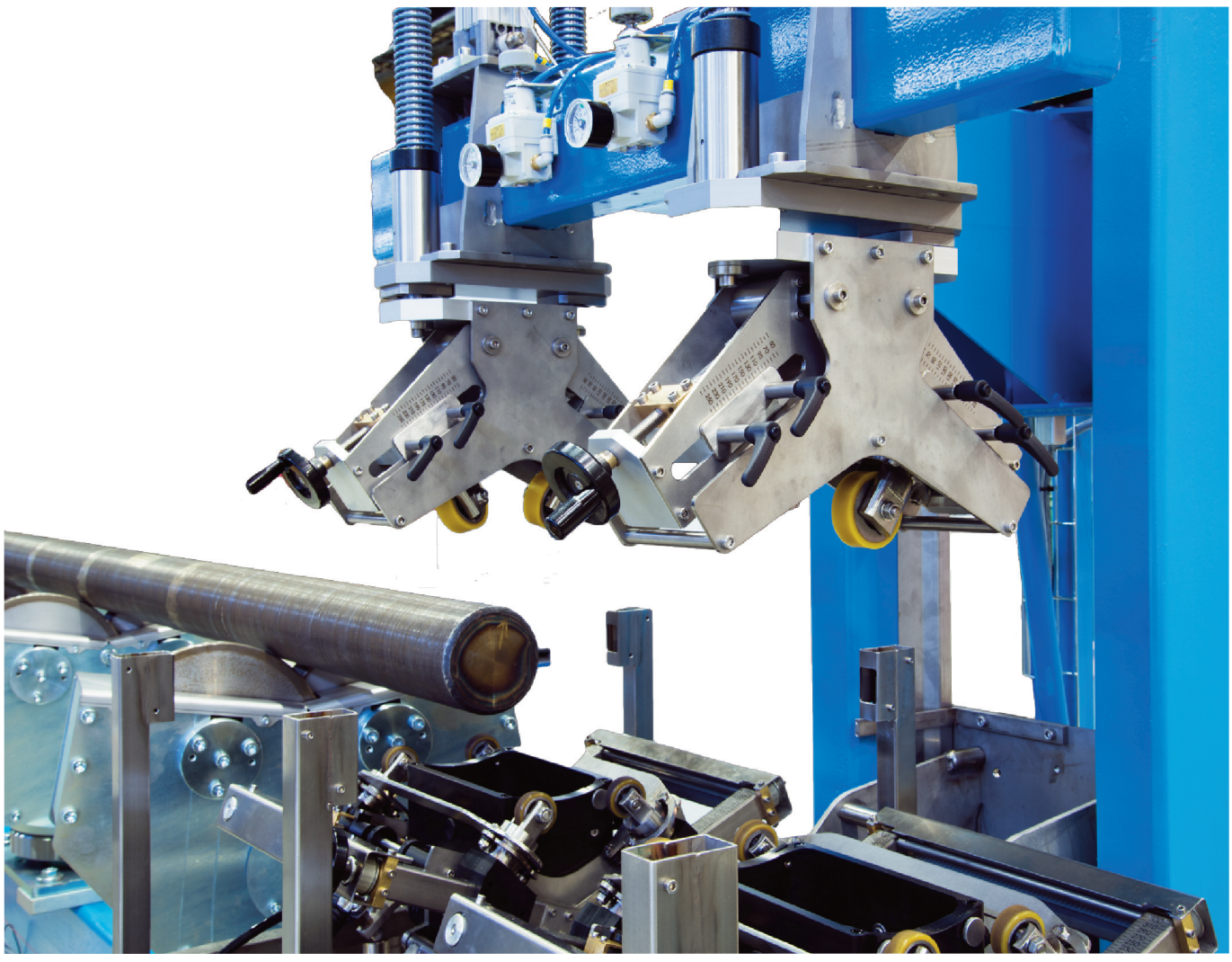
MAC®
Magnetic Analysis Corp.

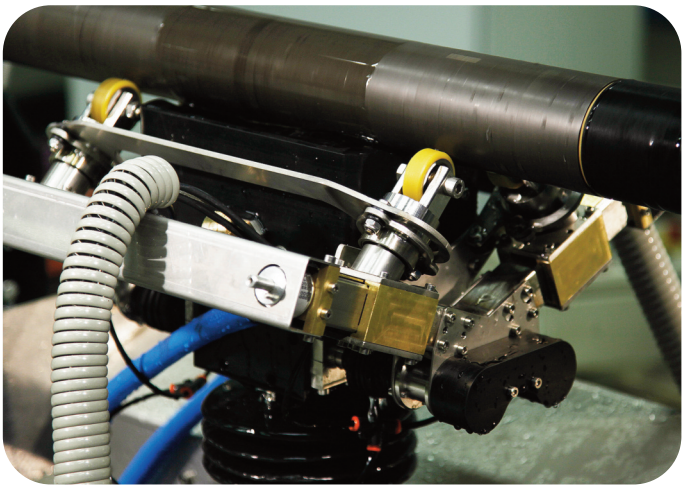
Echomac® Full Body Tester

Ultrasonic Testing of Spinning Tube



Ultrasonic Spin-the-Tube Inspection System with APC Pitch Control Technology

At the heart of MAC's full body tube test system is the unique APC transducer carrier and the precision design "Spin-The-Tube" conveyor. With the use of a simple dial-in pitch controller, the operator can set a precise angle of helical pitch for the conveyor's rotation of the tube. The conveyor spins the tube longitudinally past the ultrasonic transducers at the correct pitch, and the APC follower rolls automatically adapt to this angle. This allows the APC carrier, with its simple immersion water tray, to handle ovate and unstraight tube and reliably maintain constant coupling and water path durihg the test. The result is a highly accurate, reliable ultrasonic inspection system.



APC Transducer Carrier

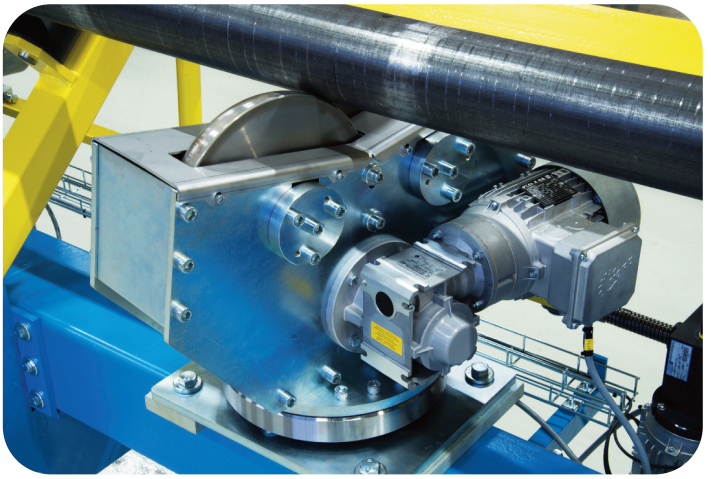
System Applications

- Tests a broad range of tube sizes from 50mm to 355mm (2" - 14") diameter.
- Detect longitudinal and transverse defects, wall thickness and lamination to the 5% and 10% level.
- Test materials with ovality, and ones that are not as straight as is usually required by other test systems.
- Can be seamlessly installed into an existing production line, whether new or an upgrade of an older unit.

Echomac ® Full Body Ultrasonic Test System for Spinning Tube. Echomac instrument controls are at left, powered roller head is at right, and APC carriers are shown in the middle as the tube approaches.

System Features:

- Handle tube size changes with just one knob to adjust the roll separation, using the convenient diameter scale.
- No need to adjust transducers for different tube diameters.
- Ensures sound entry point and incident angles remain constant for any tube size.
- Test head lifts into position before the first transducer is reached, drops out of position after the end passes the last transducer. Ensures the head is securely positioned after first follower roll approaches, preventing possible damage.
- Can be configured for 5 direction capability - Forward, Reverse, Clockwise, Counter Clockwise,and Wall Thickness/Lamination.
- Uses multiple UT element arrays and/or discrete elements, depending on test specifications (flexible transducer layout).
- Use with familiar interface of the Echomac® FD Ultrasonic electronics, providing critical operational software
- Includes premiun grade precision conveyor system, designed from the perspective of NDT for spinning tube applications. Ensures efficient handling and containment.



Powered roller heads automatically adapt to and maintain the angle of the helical pitch produced by the tube's rotational speed and forward motion, thus insuring there are no untested areas within the Scan Plan.