

IRIS Inspection

Our firm offers advanced tube inspection services using the Internal Rotary Inspection System (IRIS), an ultrasonic technique that provides highly accurate wall thickness measurements.

How IRIS Works:

- **Couplant Requirement:** IRIS utilizes water as a couplant. Therefore, the tubes need to be flooded with water before testing.
- **Ultrasonic Pulse Generation:** A transducer generates an ultrasonic pulse parallel to the tube's axis. A rotating mirror, powered by a small turbine driven by the water pressure, directs the ultrasonic wave into the tube wall.
- **Wave Reflection:** The ultrasonic wave reflects off both the inner-diameter (ID) and outer-diameter (OD) walls of the tube. By knowing the ultrasonic velocity of the tube material, we calculate the wall thickness based on the time difference between the reflections from the ID and OD walls.
- **Helical Scan Path:** As the probe is pulled through the tube, the rotating mirror creates a helical scan path, ensuring comprehensive coverage.
- **Centering Devices:** Our IRIS kits include centering devices to maintain the mirror's position at the tube's center, preventing distorted scan images and ensuring accurate results.





Applications:

- Boilers
- Shell-and-tube heat exchangers
- Fin-fan heat exchanger tubes

Advantages of IRIS Testing:

- **Versatility:** Effective on all materials, regardless of properties.
- **Precision:** Delivers accurate wall thickness measurements, even near tube support structures such as tubesheets.
- **Complementary Testing:** Ideal as a backup to electromagnetic testing.

Choose our IRIS testing services for precise, reliable, and comprehensive tube inspections.



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