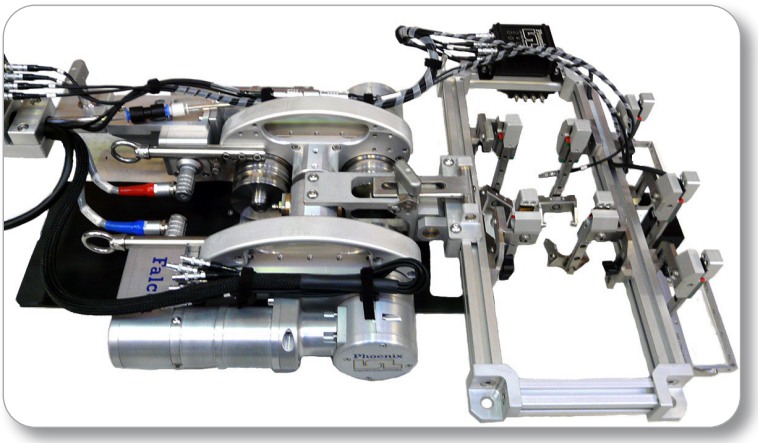
Phoenix Inspection Systems Limited

NOVA INSTRUMENTS

Innovators in NDT Technology

Falcon

Steerable Motorised Weld Inspection Scanner



Falcon with two Phased Array and Four TOFD Tool posts

The Falcon is a powerful, magnetically attached 4x4 wheel drive scanner designed for single-axis weld inspection with conventional UT (TOFD/pulse echo) and phased array (PAUT) or eddy current array (ECA) probes. The remote control feature allows operators to inspect hard-to-reach or hazardous areas, increasing safety and efficiency.

Benefits

- **Versatile** inspection capabilities supporting multiple NDT techniques
- **Quick** to deploy, reducing overall inspection time with minimal scanner set up
- **Comprehensive** coverage scanning 360° around the circumference of a pipe or vessel
- **Precision** movement control for accurate inspection
- **Safe and Efficient** operation using remote control feature
- **Robust** 4x4WD provides stability whilst easily traversing complex geometries and challenging surfaces such as weld caps
- **Secure** adhesion to inspection surface with full constant contact on curved/uneven surfaces

Applications

Typical applications for Falcon include:

Oil & Gas -
Weld inspection of large diameter pipes, tanks and vessels

PowerGen & Renewables -
Weld inspection of wind turbine monopiles

The Falcon comprises two mutually articulated magnetic wheeled modules, each powered by a high-torque DC servo motor. A chain-driven, four-wheel drive system allows the scanner to traverse surfaces, overcoming obstacles such as weld caps. An articulated joint between the modules provides two degrees of freedom, helping all four wheels maintain contact on curved surfaces, as the scanner is steered or rotated.

A closed-loop servo system provides velocity control of the two motors ensuring smooth operation of the Falcon. This feedback control ensures the output speed of the scanner remains constant, regardless of orientation or drive direction.

Operation of the Falcon through the remote control uses thumbwheel joysticks providing skid steer motion. The analogue thumbwheels allow for fine adjustments of each motors' speed for precise steering.

The Falcon parts have been designed to minimise setup times and the probe mounting frame, which connects to one of the drive modules, supports up to six ultrasonic transducers and a positional encoder.

Unless limited by physical obstruction or cabling, the Falcon is capable of a full 360° circumferential weld scan of a pipe or vessel and the umbilical cable length can be customised to your inspection requirement.

The Falcon is a precision automated inspection solution supporting productivity and accuracy while reducing risk and inspection time.

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Phoenix Inspection Systems Limited

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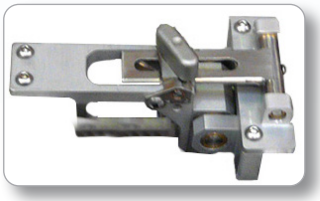
Falcon

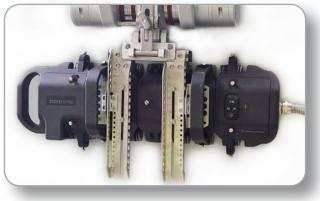
Features

- Four-wheel drive
- Holds up to six probes
- Probe holders with detachable arms for quick probe changes
- Spring-loaded tool posts
- TOFD Pre-Amplifier incorporated into frame
- Couplant distribution manifold fitted to transducer frame
- Scanner IP54 rated (splash proof)
- Spring loaded waterproof wheel encoder IP68 rated
- Encoder resolution 65.6 steps/mm
- Closed-loop servo system
- Remote control incorporates two dead man switches to prevent accidental operation
- Range: Minimum pipe size 1.5m up to Flat
- Speed: Maximum 35mm/s
- Minimum 5mm/s
- Total weight (incl transducer frame): 15kg
- Dimensions (LxW):
  - 415mm x 310mm (Scanner Body)
  - 920 x 430mm (Overall incl Scanner, Transducer Frame, Umbilical Clamp & Pre-Amp)
- Radial working clearance: 250mm
- Payload: 10kg
- Motor Power: 80 watt
- Motor Voltage: 24 Volt
- Operational Temperature Range: 0° to 50°C
- Operational Humidity Range: 0% - 100%RH

Accessories



Locking Bars (to restrain articulation for conversion to fixed axle 4WD scanner)



Bracket to hold Eddyfi SPYNE ECA probe

TOFD Probes & Wedges

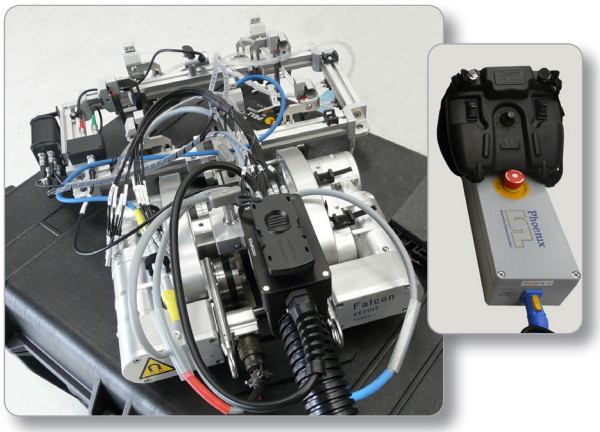
Phased Array Probes & Wedges

Couplant Delivery System

TOFD PreAmplifier

Kit

- Falcon Scanner Body
- Transducer Mounting Frame & Probe Holders
- Umbilical Cable
- Remote Control
- Power Supply Box
- Run-off Mat
- Rugged Carry Case



Order Information:

AE-FALCON

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