IRIS POWER
RIV 800
Robotic Inspection Vehicle and Camera System
Low Profile Robotic System for Stator Core Testing and Inspection

The magnetically supported Robotic Inspection Vehicle (RIV 800) has been developed to provide an automated scanning method for the ELCID stator core interlaminar insulation test equipment. The vehicle allows scanning of the stator bore of a generator or large motor, in order to test the integrity of the stator lamination insulation out more efficiently. The equipment can also be adapted to carry other lightweight attachments for stator inspection including the mini-camera or wedge tightness probe. A single control unit is used to provide power and control to the vehicle and camera module.

The RIV 800 is primarily designed for automated testing stator cores with ELCID with the rotor removed however, is also can be used to test machines by insertion into the air-gap with the rotor in place if the rotor retaining ring to stator gap is sufficiently large.

Features and Benefits of the RIV

- Reduce overall cost of maintenance by providing faster testing with only one operator
- Reduce human fatigue, stress and accessibility concerns
- Fits into the air gap for rotor-in-place testing
- Operates with ELCID, Stator Wedge Analyzer and Camera systems
- Magnetically self supporting on steel surface
- Guidance system detects the edges of the stator teeth to follow a straight line and measures distance using an encoder wheel.
- Curvature adjustment accommodates the tractor in stator cores of various sizes
- AUTO mode allows the RIV to stop at a pre-set distance and then move only in the opposite direction

Robotic Inspection Vehicle Specifications

- Overall Length: 350mm with Chattock Holders
- Overall Width: Adjustable from 18 to 30cm
- Maximum Payload: 2kg in vertical climb mode
- Slot Pitch: 65 mm to 210 mm
- Guidance: Automatic Using Magnetic Sensors
- Distance Measurement: 0 to 9.99m
- Controls: Speed, Direction, Auto Stop Distance
- Outputs: X Axis Pulses for ELCID
- Power Requirement: 85 - 264 V, 50/60 Hz
- Operating Temperature: 0° to +50°C (+32° to +122°F)
- Standards: EN61010-1, EN61326

Features and Benefits of the Camera System

- Visually inspect stator and rotor for defects and damage with rotor in place with a low profile of 30mm
- Focus on the stator core surface, stator air vents, or rotor surface
- Scans image while conducting wedge tightness or ELCID test
- Fits to the Robotic Inspection Vehicle for moving along stator slots
- Assists positioning for Rotor-in-Place wedge tightness testing
- Check for debris in the air-gap
- Image can be adjusted for angle and focus
- Built-in light source

Iris Power RIV Camera System

The Iris Power RIV Camera System provides a flexible system for Rotor-in-Place inspections of large generators. It is fitted to the Iris Power Robotic Inspection Vehicle which can be moved along the stator slots. The camera system includes an integral light. The camera and light are directed at a 45° mirror, which can be remotely rotated through 360° to allow scanning of the stator or rotor as well as looking forward along the air-gap. The camera can also be focused remotely. The system allows a visual inspection of the generator stator and rotor, including checking the air vents for debris, without removing the rotor. The video output is displayed on a 150 mm color TFT LCD integral monitor in the control unit. Composite video output is provided for feeding to a second monitor or video recorder.

Camera System Specifications

- Viewing Angle: 360° Continuous rotation
- Focusing: Remotely Operated Via Control Unit
- Operating Temperature: 0° to +50°C (+32° to +122°F)
- Illumination: Integral With Camera Assembly
- Lamps: Permanently Wired LED
- Standards: EN61010-1, EN61326