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Stator Core Fault Detection

Robotic Inspection Vehicle

The **Robotic Inspection Vehicle** is a low profile (30 mm/1¼") magnetically supported robotic vehicle that can carry the sensing head of the EL CID stator core fault test equipment along the stator core of an electric generator or large electric motor. The mechanical scanning and fixed speed provides easier testing and more consistent results than an EL CID core fault test done by hand. Leading OEM's and power utilities have successfully used the **RIV** on large generators for EL CID stator core fault testing and to carry other lightweight transducers such as mini-cameras and wedge tightness probes.

Robotic Inspection Vehicle (RIV) *Features*

- Width adjustment via two lockable sliding bars
- Magnetically self supporting on steel surface
- Guidance system detects the edges of the stator teeth to follow a straight line
- Side plates give additional guidance when wedges are recessed or when wedges and coils are removed
- Curvature adjustment accommodates the tractor in stator cores of various sizes
- Distance measurement via encoder wheel
- Chattock sense coil is clamped into spring loaded shoes so that the ends of the coil press lightly against the core
- Connecting cable to control unit carries power for the motors, signals from the guidance sensors, and information from the distance encoders
- Operating voltage may be set at either 115 or 230 volts at 50/60 Hz
- Speed selections are SLOW, MEDIUM, and FAST, corresponding to 2, 4, or 6 metres per minute
- In MANUAL mode, motion is initiated by forward (or reverse) push buttons, and stopped by the STOP button
- AUTO mode allows the RIV to stop at a pre-set distance and then move only in the opposite direction

The magnetically-supported low profile inspection vehicle was developed primarily to provide automatic scanning of the sensing head of EL CID test equipment throughout the stator core of an electric generator or large electric motor in order to test the integrity of the stator lamination insulation. The equipment can be adapted to carry other lightweight transducers for stator inspection such as mini-cameras, TVA probes and slot wedge tightness probes. ADWEL has previously adapted the RIV for Electricite de France for use with their mini-camera system for rotor-in-place inspections.

Specifications

Tractor Speeds	nominally 2,4, or 6m/min
Maximum Pay Load	2 Kg in vertical climb mode
Minimum Slot Pitch	65mm single slot mode
Maximum Slot Pitch	Define by spacer bars
Guidance	Automatic
Distance Measurement	Optical Encoder
Overall Length	350mm with chattock holders

Overall Width	Adjustable from 180mm
Height	30mm (excluding payload)
System Weight	10.5 Kg (23 lbs)

Specifications subject to change without notice

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