

TECHNOLOGY APPLICATIONS

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Fig. 1—Engineers examine the 18 pad sensors mounted on the centralizer arms of Schlumberger's EM Pipe Scanner tool before running in a gas well in Europe.

Through-Tubing High-Resolution Pipe Inspection—Schlumberger has introduced its EM Pipe Scanner (**Fig. 1**). This 360° electromagnetic corrosion-scanning device uses the eddy-current principle, enabling inspection of multiple tubular diameters during the same descent into the well. The slim mandrel uses 18 pad sensors that produce a quantitative scan of the interior surface and of the thickness of any pipe in which it is run. It also creates a qualitative evaluation of multiple casing strings. In time-lapse mode, the tool can provide corrosion-rate estimates, identify casing corrosion behind tubing, and determine inner-tubular radius

behind the scale. The device can inspect the metal thickness of tubulars ranging from 2⁷/₈- through 13³/₈-in. outside diameter (OD). It also allows azimuthal scanning of the corrosion for casings up to 9⁵/₈-in. OD. The tool uses a high-/low-frequency signal to pinpoint the nature and severity of any corrosion or damage and operates in any liquid or gas with the well shut in or flowing. Typically, it makes a high-speed reconnaissance run as it descends into the well. This run is used to identify places of interest where slow-speed diagnostic scans are made as the tool ascends.

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