Bond Scanner

The fastest, easiest, most accurate solution for the inspection of adhesively bonded joints

Innovation starts here.
In modern car designs, bond lines can total hundreds of meters or yards. As adhesives continue to grow in importance in the automotive and other industries, manufacturers and operators recognize that adhesive applications aren’t always reliable and require specific inspection.

How Bond Scanner Works

The device is simply clamped onto two body panels joined by a bond seam and enables one-handed scanning. Ultrasound is reflected at interfaces between materials of different acoustical impedances, with the magnitude of reflection determined by these differences in the adjoining parts. In this way, the reflection at the back side of the Bond Scanner’s top plate will vary, depending on whether adhesive is present. The difference in the reflected ultrasound is then positionally recorded and evaluated, and the quality of the bond line can be assessed over its complete length.

Fast Results & Accurate Analysis

Wherever any adhesive is missing on the back side of the top plate being scanned, the ultrasound is reflected almost completely. These high-amplitude areas are shown in red, while areas in which less sound is reflected are shown in green. Because the adhesive is applied in such an amount that it forms a predetermined bond seam, the width of this bond seam is also of interest. Additionally, isolated red areas can be identified in the C-scan, representing meander-shaped areas that lack adhesive.

Bond Scanner Portfolio

**Flex Bond Scanner**

This innovative scanner allows for easy inspection of complex geometries that are increasingly found in modern car designs. The convexly pre-bent array design of the LA-10, 32-element flex scanner can be adapted to both concave and convex curvatures, with a bending radius of approximately 80 mm or 3.14” and the ability to inspect the A-side edge bond lines up to 32 mm or 1.25” wide.

**Adjustable Bond Scanner**

This flexibility examines many different bond seam geometries with just one probe. It can be adapted to inspect adhesive bonds with widths varying from 8 to 20 mm or 0.315” to 0.787” of the A and B side-edges. Note: Flat coupling surfaces are necessary to ensure proper coupling of the probe to the near-edge surface under inspection.

**Advanced Bond Scanner**

When even higher resolution is required, the Advanced Bond Scanner is the perfect solution. With 64 elements and 0.5 mm / 20 mil pitch, it provides the detail that any next-level quality standard might require.

**Pair Bond Scanner with Krautkrämer Mentor UT**

For consistency across the inspection process, Bond Scanners are ideally paired with the Krautkrämer Mentor UT flaw detector. The user-defined workflows walk the inspector through every step of instrument setup – from probe selection and calibration to reporting. With the Mentor PC Live software, the instrument is connected to a PC through Wi-Fi or ethernet which is especially helpful when the operator is at a different location.

Mentor PC Live performs the instrument’s functions from the PC, with the bonus that setup and data files are saved directly on the PC. Bond Scanner is also available separately.

Knowing if your parts are adequately bonded increases productivity and ensures that product safety and quality standards are met every time.
Waygate Technologies offers special probes on request for different types of the bond seam inspection.

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<th>Adjustable Bond Scanner</th>
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<td>Mentor UT Base Kit</td>
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All packages include the Krautkrämer Mentor UT instrument with Bond Scanner probe for the inspection of contoured parts. All related accessories such as a calibration block and spare foil are also included, for a successful inspection straight out of the box.

**Accessories**

- **MUX-Module: Mentor-UT-MUX-T**
  Compatible with up to 128 el. Arrays with Tyco connector. Also includes extra hot swappable battery, HDMI, and ethernet ports.

- **Mentor-UT-ADP32-T**
  Compatible with 32 element arrays with standard Tyco connector.

- **Presentation Module: 118M1844**
  Allows connection of an external monitor via HDMI. In addition it provides encoder-, ethernet- & USB-connection.

The **Splitter Box** allows to connect multiple Bond Scanner probes to the Mentor UT. This flexible solution allows the operation with different probes at the same time without disconnection and connection of probes during the inspection.

The Splitter Box consists of a "Base Box" that is connected do the Mentor UT device.

To connect the two Bond Scanner probes LA-10 32 Flex and LA-10 32 B-20, two 32 Element Channel Boxes are attached to the Base Box (MUX-Module required).

Part numbers:
- UA600638 Base Box
- UA600496 32 Channels Box
- UA600497 64 Channels Box

For more detailed information, please visit our website or contact us.

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