

Phased Array Wheel Probe C-Scan Inspection without Immersion



Olympus introduces the RollerFORM™, a new phased array wheel probe designed to address the inspection of composites and other smooth-surfaced materials, such as those commonly used by the aerospace industry. An affordable and easy-to-implement replacement for full 2-D encoding systems, the RollerFORM also offers a viable alternative to immersion techniques.

The unique tire material of the RollerFORM has been specifically developed to guarantee high-quality, immersion-like ultrasonic testing. Minimal couplant and pressure is required for the RollerFORM to provide excellent coupling and a strong signal, even in difficult scanning positions.

Key Features

- Exceptional coupling, requiring minimal couplant.
- Acoustic impedance similar to water.
- 25 mm water delay line enables inspection of composites up to 50 mm thick.
- Up to 51.2 mm wide beam coverage.
- Can be used in accordance with existing aircraft manufacturer procedures.

Standard Inclusions

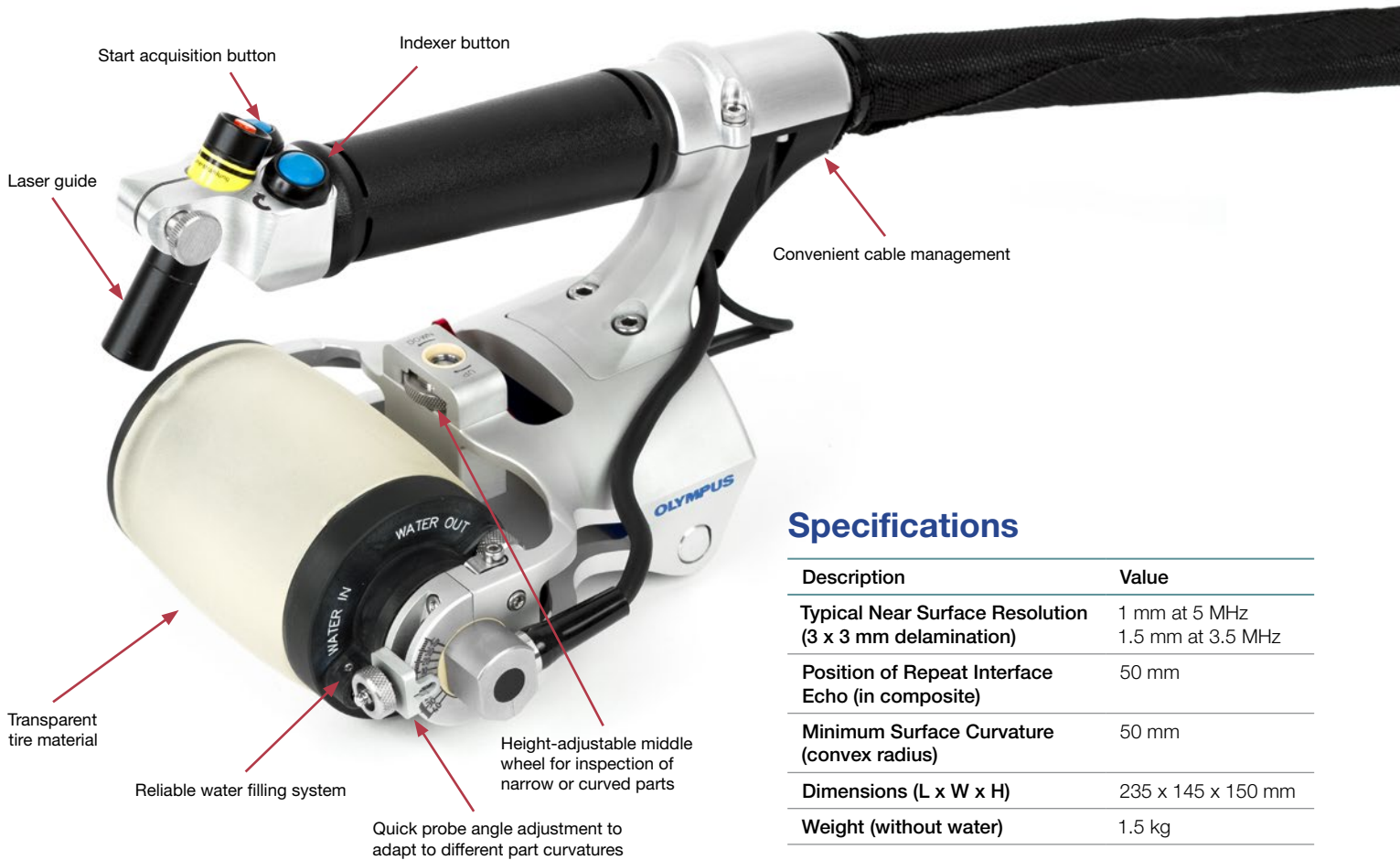
- Phased array probe with OmniScan connector.
- Waterproof encoder with OmniScan MX2 or SX compatible connector.
- Laser guide.
- Indexer and Start Acquisition buttons.
- Spare parts.
- Filling/spraying pump and tubing.



Just Roll It for Instant Results

The RollerFORM, combined with a phased array instrument such as an OmniScan® or the FOCUS™ LT, uses zero-degree ultrasonic beams for manufacturing and maintenance inspections. Common applications include delamination sizing and porosity quantification in composite core material, as well as wall-loss monitoring in aluminum panels. With its integrated indexing button, the ergonomically designed RollerFORM enables you to map the surface of an inspected material by acquiring multiple one-line C-scans and combining them in real time into a single image. The built-in laser guide facilitates straight and precise one-line scans.

In addition to providing exceptional coupling, the tire of the RollerFORM wheel is made of a unique material that closely matches the acoustic impedance of water. This design feature permits the efficient transmission of energy to the part without unwanted echoes, obtaining an optimum 1 mm near-surface resolution in composites when using the 5 MHz phased array probe model. The 3.5 MHz phased array probe model is better suited for certain thicker, more attenuating materials. Since the tire is transparent, you can easily identify the presence of air bubbles or contaminants within the water chamber.



Specifications

Description	Value
Typical Near Surface Resolution (3 x 3 mm delamination)	1 mm at 5 MHz 1.5 mm at 3.5 MHz
Position of Repeat Interface Echo (in composite)	50 mm
Minimum Surface Curvature (convex radius)	50 mm
Dimensions (L x W x H)	235 x 145 x 150 mm
Weight (without water)	1.5 kg

Ordering Information

Part Number	Item Number	Frequency (MHz)	Delay Line Height (mm)	Number of Elements	Pitch (mm)	Active Aperture (mm)	Elevation (mm)	Probe Casing Model	Cable Length (m)
RollerFORM-3.5L64	U8775334	3.5	25	64	0.8	51.2	6.4	WP1	2.5
RollerFORM-5L64	U8775335	5	25	64	0.8	51.2	6.4	WP1	2.5
RollerFORM-3.5L64-5M	U8778683	3.5	25	64	0.8	51.2	6.4	WP1	5
RollerFORM-5L64-5M	U8778684	5	25	64	0.8	51.2	6.4	WP1	5

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is certified to ISO 9001, ISO 14001, and OHSAS 18001.

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