

Phased Array Corrosion Mapping Solution



- High Data-Point Density Acquisition
- Fast Measurement of Wall Thickness
- Quick Radius Adjustment
- Precise Detection of Volumetric Damage
- High Resolution of Depth Measurement

Corrosion Mapping Solution

By bringing a semiautomated phased array solution into the corrosion inspection market, Olympus has not only introduced a new technology, but also a new world of possibilities. Say goodbye to unsafe and unreliable motorized rastering of small UT probes; phased array probes cover a larger surface, and can be manually traveled at a safe speed. This solution enables inspectors to be more productive and collect higher resolution data.

The HydroFORM™ and RexoFORM™ are designed to offer the best inspection solution for the detection of wall-thickness reductions due to corrosion, abrasion, and erosion. Our solution also detects mid-wall damage such as hydrogen-induced blistering or manufacturing-induced laminations, and easily differentiate these anomalies from loss of wall thickness.

The unique quick adjustment device offered by both scanners allows the wedge/probe assembly to be positioned to any curvature greater than 4 in. OD (101 mm).

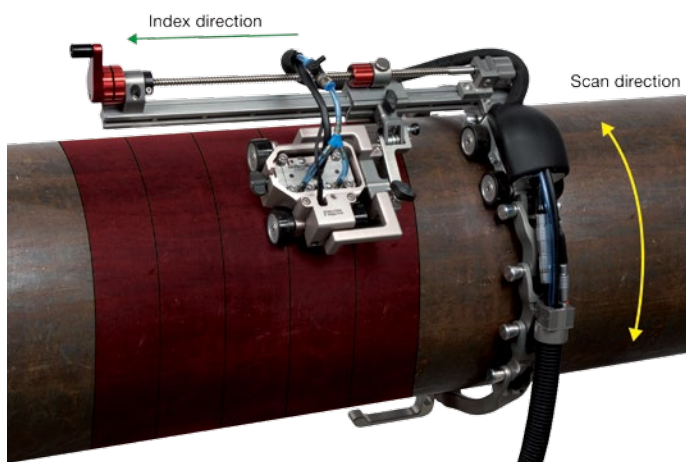
HydroFORM

High-performance corrosion mapping for rough and uneven surfaces

- Easy gate synchronization with the front wall for backwall corrosion monitoring and remaining wall thickness measurement.
- Wedge reflection is eliminated.
- Coupling is optimized.
- Provides excellent near-surface resolution.

HydroFORM utilizes an ingenious water-column concept that eliminates the need for a wedge, thus providing the benefits of a phased array immersion-tank inspection. This concept, which uses a low-flow water supply and consumable gaskets, offers excellent surface conformance and optimized coupling conditions, even on rough surfaces.

By exploiting gate synchronization with the interface echo available in the OmniScan® software, the HydroFORM provides optimum near-surface resolution, precision measurements, and an enormous improvement in flaw characterization over conventional UT.



XY mapping principle on pipes with the HydroFORM and CHAIN scanner.

RexoFORM

Quick and easy corrosion mapping for smooth surfaces and limited access areas

- Smaller, lighter, and perfect for limited access areas (rope access).
- Excellent surface coverage.
- Operates without the need for a continuous water supply.
- Affordable complement to the HydroFORM.

The RexoFORM is a new innovative wedge for phased array 0° and angle beam inspection with the Rexolite delay line. With its unique design, the RexoFORM can be used on pipes of different diameters with no need for multiple curved wedges. The RexoFORM is also compatible with the A12 and A14 standard probes, making it an affordable solution.

The RexoFORM is the perfect complement to the HydroFORM. In fact, it is simple, small, and easy to use, even when a continuous water supply is not available, and/or in limited access areas. The RexoFORM is also compatible with Olympus scanners such as the Mini-Wheel, the VersaMOUSE, the CHAIN Scanner, and the GLIDER scanner, to name a few.

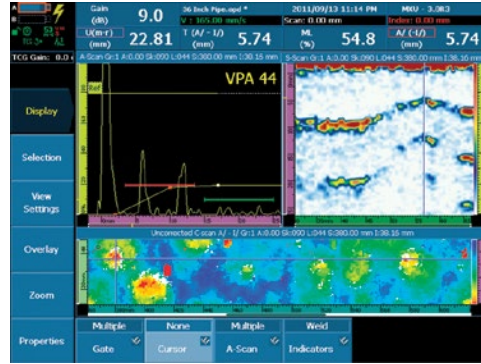


Example of beam possibilities with the RexoFORM and A14 probe.

OmniScan MXU Acquisition Software

The OmniScan software has a full range of tools and displays for corrosion mapping applications:

- Wizards for easy and fast setup and calibration.
- Minimum thickness monitoring during inspection.
- Full high-resolution A-scan storage.
- Thickness and position values for individual data points, a selected zone, or an entire scan.
- A-scan synchronization on the interface echo.
- Amplitude and position C-scan capability for two gates.
- Onboard report generation and printing capability directly from the instrument.
- 300 Mb file-saving capacity.

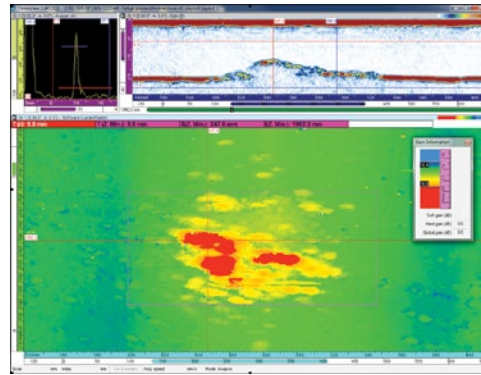


OmniScan MXU software displaying A-scan, S-scan, and C-scan views of corrosion.

TomoView™ Analysis Software

Computer-based data analysis software with a full range of corrosion evaluation features:

- A-scan and thickness readings export to third-party software.
- Off-line A-scan resynchronization.
- File and data merge.
- Advanced reporting capability.



TomoView software displaying A-scan, S-scan, and C-scan views of corrosion.

Corrosion Inspection Configurations

Manual Encoded



The RexoFORM and Mini-Wheel encoder for limited access areas

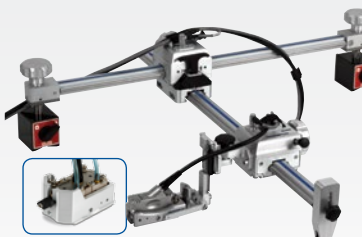


The RexoFORM and VersaMOUSE for one-line encoded scans, or 2-D mapping using the integrated indexing button.



The HydroFORM with its integrated Mini-Wheel encoder for one-line encoded scans, or 2-D mapping with the optional indexer-clicker.

Semiautomatic



The RexoFORM, or the HydroFORM with the Lite Holder, mounted on a GLIDER for XY mapping of large, smooth vessels and flat surfaces.



The RexoFORM and CHAIN Scanner for XY mapping of smooth pipes.



The HydroFORM and CHAIN Scanner for XY mapping of pipes.

Specification Comparison

	HydroFORM	RexoFORM
Phased array probe	I4	A12, A14
Maximum one-line scan coverage (width)	60 mm	38 mm (A12), 60 mm (A14)
Delay line medium	Water	Rexolite
Delay line height	14 mm or 24 mm	20 mm
Position of interface echo at 0° (in steel)	125 mm (with 24 mm delay line)	50 mm
Typical near-surface resolution (1/8 in. FBH)	1.5 mm	2 mm
Depth resolution	0.1 mm	0.1 mm
OD inspection range	4 in. and greater	4 in. and greater
ID inspection range	10 in. and greater	N/A
Contact device with surface	Wheels	Carbides
Footprint	110 mm x 130 mm	40 mm x 95 mm
Scan direction	Circumferential	Circumferential
Scan speed at 1 mm x 1 mm resolution	100 mm/s	100 mm/s
Scanner compatibility	CHAIN Scanner	CHAIN Scanner, GLIDER, and VersaMOUSE

Ordering Information

Part Number	Item Number	Description	HYDROFORM-K-ADP-CHAIN (U8750058)
HYDROFORM			
HYDROFORM-K-MANUAL	U8775182	The HydroFORM corrosion mapping scanner kit, including a probe holder with a water delay line, a carriage with 4 magnetic wheels, one phased array probe (7.5L64-I4-P-7.5-OM), 100 foam gaskets, and one application-specific Mini-Wheel encoder.	✓
HYDROFORM-A-ADPCHAIN	U8775183	Accessory kit for adapting the HydroFORM to the CHAIN Scanner.	✓
HYDROFORM-SCN	U8750059	Same content as the HYDROFORM-K-MANUAL, without the phased array probe.	
CHAINSCAN-XY38	U8750041	CHAIN Scanner with two encoded axes for pipe OD up to 38 in.	
HYDROFORM-A-LITEHOLDER	U8840177	HydroFORM lite holder to mount the HydroFORM on GLIDER scanner using optional ADIX893 (U8775084) yoke.	
CFU03	U8780008	Electric water pump and tubing; operates on 120 V and 220 V.	
HYDROFORM-SP-FOAM	U8775184	100 foam-gasket spare part kit.	
REXOFORM			
REXOFORM	U8775241	The RexoFORM corrosion mapping probe holder with Rexolite delay line for use with A12 or A14 probes.	
ENC1-5-DE	U8780198	Mini-Wheel encoder, with 5 m OmniScan compatible cable.	
WTR-SPRAYER-8L	U8775001	8 L manual water pump with irrigation tubes and fittings.	
REXOFORM-SP-WEDGE	U8775242	Spare Rexolite delay line and gasket for RexoFORM.	

Phased Array Probes

Part Number	Item Number	Frequency (MHz)	Number of Elements	Pitch (mm)	Elevation (mm)	Cable Length (m)	Connector Type
2.25L64-I4-P-7.5-OM	U8331125	2.25	64	1.0	7.0	7.5	OmniScan
5L64-I4-P-7.5-OM	U8331210	5	64	1.0	7.0	7.5	OmniScan
7.5L64-I4-P-7.5-OM	U8330955	7.5	64	1.0	7.0	7.5	OmniScan
5L64-A12-P-5-OM	U8330549	5	64	0.6	10	5.0	OmniScan
5L60-A14-P-5-OM	U8330786	5	60	1.0	10	5.0	OmniScan

For other frequencies or cable types, see the *Phased Array Probes and Wedges* catalog.

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