OLYMPUS®

Your Vision, Our Future

INDUSTRIAL SCANNERS

Scanners and Accessories

- Manual Scanners
- Motorized Scanners
- Accessories

920-145C_EN

The Company

The Olympus Corporation is an international company operating in industrial, medical, and consumer markets, and specializing in optics, electronics, and precision engineering. Olympus instruments contribute to the quality of various products and add to the safety of infrastructure and facilities.

Olympus is a world-leading manufacturer of innovative nondestructive testing and measurement instruments that are used in industrial and research applications ranging from aerospace, power generation, petrochemical, civil infrastructure, automotive and consumer products. Leading-edge testing technologies include ultrasound, ultrasound phased array, eddy current, eddy current array, microscopy, optical metrology, and X-ray fluorescence. Olympus products include flaw detectors, thickness gages, industrial NDT systems and scanners, videoscopes, borescopes, high-speed video cameras, microscopes, probes, and various accessories.

Olympus NDT is based in Waltham, Massachusetts, USA, and has sales and service centers in all principal industrial locations worldwide.

Visit **www.olympus-ims.com** *for applications and sales assistance.*

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Scanners are usually not supplied with probes and wedges. For phased array probes and wedges, refer to the *Phased Array Probe and Wedges* catalog; for UT probes and wedges, refer to the *Ultrasonic Transducers* catalog.

Scanners and Accessories

An important aspect influencing inspection quality is the capacity to precisely position probes according to the surface being inspected. Depending on the application, various constraints can occur that can make probe positioning difficult. Olympus offers a wide range of industrial scanners and accessories to assist inspectors in their work while providing optimal data acquisition. Some of the applications covered by our scanner product line are: weld inspection, corrosion mapping, and aerospace. Supported technologies include: phased array, conventional ultrasonic, TOFD, eddy current and eddy current array. Scanner configurations can be of various types: one or two encoded axes, in addition to manual or motorized motion.

Scanner Technical Matrix

	One-Axis Scanner		X-Y Scanner
Inspection Technology	**Manual**	**Motorized**	**Manual**
Conventional ultrasonics	HSMT-Compact™ HSMT-Flex™ HSMT-X03™ CHAIN Scanner-X HST-X04™	WeldROVER™	CHAIN™ Scanner-XY GLIDER™ WING™ Scanner
TOFD	HST-X04 HSMT-Compact HSMT-Flex HSMT-X03 CHAIN Scanner-X	WeldROVER	CHAIN Scanner-XY
Phased array	Mini-Wheel™ HS10-X01™ HydroFORM™ COBRA™ HSMT-Compact HSMT-Flex HSMT-X03 CHAIN Scanner-X	WeldROVER	Mini-Wheel + Indexer-Clicker HS10-X01+ Indexer-Clicker CHAIN Scanner-XY HydroFORM + CHAIN Scanner-XY GLIDER WING Scanner
Phased array and TOFD	HSMT-Compact HSMT-Flex HSMT-X03 CHAIN Scanner-X	WeldROVER	CHAIN Scanner-XY

Scanner Application Matrix

Scanner Model	Weld	Corrosion	Aerospace
Mini-Wheel	✓	✓	✓
HS10-X01	✓	✓	✓
HydroFORM		✓	
HST-X04	✓		
COBRA	✓		
HSMT-Compact	✓		
HSMT-Flex	✓		
HSMT-X03	✓		
WeldROVER	✓		
CHAIN Scanner	✓	✓	
GLIDER		✓	✓
WING Scanner		✓	✓

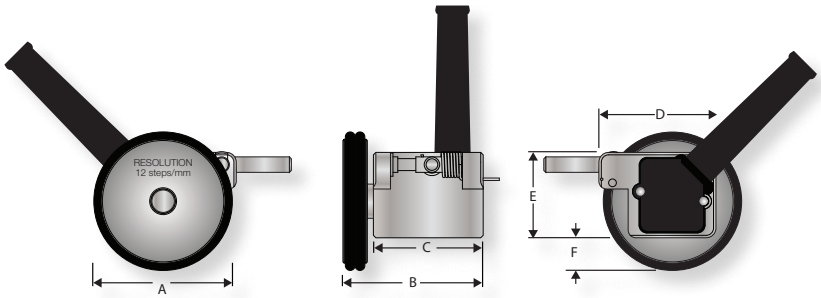
Manual One-Axis Scanner

Mini-Wheel – Small Footprint Encoder

The Mini-Wheel™ encoder is used for the positioning and dimensioning of defects in the scan axis, and can synchronize data acquisition with probe movement.

The Mini-Wheel encoder is waterproof and compatible with the HST-X04 scanner, in addition to standard Olympus PA wedges, on which it can be mounted using the included bracket kit. This miniature encoder is made entirely of stainless steel, and features sealed bearings for long-lasting smooth operation. The custom electronic circuit was designed to prevent noise induction in UT signals.

SPECIFICATIONS



A = 27 mm (1.06 in.)	D = 24.2 mm (0.95 in.)
B = 28.7 mm (1.12 in.)	E = 17.5 mm (0.69 in.)
C = 22.5 mm (0.89 in.)	F = 6 mm (0.23 in.)

ORDERING INFORMATION

Part Number	Item Number	Cable Length (m)	Connector
ENC1-2.5-DE	U8780197	2.5	DE-15
ENC1-5-DE	U8780198	5.0	DE-15
ENC1-2.5-BX	U8780196	2.5	Bendix
ENC1-5-BX	U8840039	5.0	Bendix

FEATURES

- Waterproof (IP68).
- Stainless steel construction, resistant to harsh environments.
- Minimal noise induction.
- Small dimensions.
- Encoder resolution is engraved on the wheel (12 steps/mm).
- Removable encoder wheel.
- Double O-ring tire for better adherence.
- Sealed bearing for long-lasting smooth wheel rotation.
- Strain relief for cable protection.
- Spring-loaded pin for adaptable encoder attachment.
- Two M3 threaded holes on top of the casing for rigid attachment.
- DE version is compatible with the OmniScan® instrument.
- BX version is compatible with the TomoScan FOCUS LT™ instrument.

STANDARD INCLUSIONS

- One encoder with standard rubber wheel.
- One mounting bracket kit.
- One hexagonal key screwdriver for bracket attachment.
- A carrying case.

OPTIONS

Magnetic Wheel

For maximum adherence of the wheel on ferro-magnetic surfaces, a magnetic wheel is available.

P/N: ENC1-A-MagWheel [U8902964]

Mounting Bracket Kit

An extra mounting bracket kit to mount the Mini-Wheel encoder on the wedge.

P/N: ENC1-BRACK [U8775120]

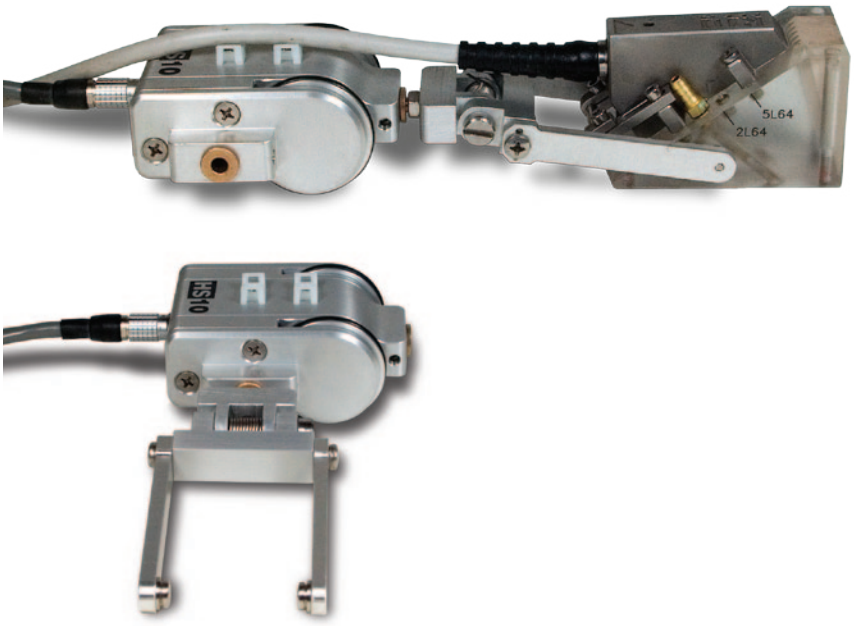
Indexer Clicker

The Clicker sends the indexing signal required for two-axis inspections with only one encoder. The kit also includes a 3-to-1 splitter cable (with DE-15 connectors) to connect the encoder, Clicker, and a digital input source (DIN) to the OmniScan.

P/N: OPTX674 [U8775015]

Manual One-Axis Scanner

HS10-X01 – PA General-Purpose "Mouse Scanner"



The HS10-X01 is a mouse-type scanner designed for encoding phased array scans in laboratory or production environments.

This scanner offers an efficient one-hand encoded manual-scan solution. The encoder wheels are specially designed to resist slippage on wet surfaces.

The yoke of the HS10-X01 is easy to set up on an IHC-type wedge using standard attachment holes. The spring-loaded system is optimized to offer the lowest clearance possible. The yoke is also attached to the scanner using a quick-connect system, which keeps the probe either parallel or at a 90° skew, depending on the weld.

SPECIFICATIONS

Probe-Holder Position	Length in Scan Axis (mm)	Width (mm)	Height (mm)	Weight (kg)
Front	178	66	41	0.3
Side	80	165	41	0.3

FEATURES

- Encoded linear scan (one axis) for phased array.
- Two rubber wheels that remain in contact with the surface for maximum adherence.
- An easily clipped and spring-loaded yoke that can be positioned with a 90º skew.
- Encoder resolution: 5 steps/mm.
- Durable aluminum casing.
- Compatible with the OmniScan, the TomoScan FOCUS LT™ (with optional adaptor), and other instruments using the appropriate encoder cable (not included).

STANDARD INCLUSIONS

- OmniScan-compatible 2.5 m encoder cable.
- One PA 40 mm × 55 mm yoke.
- A carrying case.

Note: probes and wedges are not included with the scanner.

OPTIONS

TomoScan FOCUS LT Encoder Cable Adaptor

P/N: C1-DE15F-BXM-0.30M [U8767107]

Optional Yoke

PA 55 mm × 55 mm yoke for SA4, and SA5 type wedges

P/N: AEIX0505 [U8779085]

Indexer Clicker

The Clicker sends the indexing signal needed for two-axis inspections with only one encoder. The kit also includes a 3-to-1 splitter cable (with DE-15 connectors) to connect the encoder, Clicker, and a digital input source (DIN) to the OmniScan.

P/N: OPTX674 [U8775015]

Encoder cable

One OmniScan-compatible 5 m encoder cable

P/N: EWUX1341-001 [U8779090]

Manual One-Axis Scanner

HydroFORM – Corrosion Mapping

The HydroFORM™ scanner is designed to offer the best inspection solution for detecting wall-thickness reductions due to corrosion, abrasion and erosion. In addition, the HydroFORM detects mid-wall damage such as hydrogen-induced blistering or manufacturing-induced laminations, and easily differentiates these anomalies from loss of wall thickness.

Using phased array ultrasound technology, the HydroFORM offers high resolution and fast coverage. The HydroFORM has a 60 mm wide effective beam, and can scan at a speed up to 100 mm/s.

In the current marketplace, motorized scanners combined with small conventional UT probes need to reach ever-higher raster speeds in order to be productive.
As a consequence of high-speed raster scanning, mechanical failures and poor ultrasonic data quality can occur. In addition, high raster scan speed creates a potentially unsafe environment for operators.

Increased production rates combined with the affordability of the equipment and its compatibility with the existing OmniScan PA acquisition unit makes the HydroFORM a cost-effective choice.

HydroFORM uses an ingenious local immersion concept providing excellent surface conformance and optimized coupling conditions for easy synchronization on the front-wall echo for OD and ID corrosion monitoring. Wedges are not used with the HydroFORM.

Phased array technology also offers the ability to detect and characterize various anomalies using ultrasonic compression wave and angle beam inspection techniques.

The HydroFORM can be used:

Manually: with the supplied application-specific Mini-Wheel encoder.

Semi-automatically: used in conjunction with the field-proven CHAIN Scanner.

Together, the OmniScan, HydroFORM and the CHAIN Scanner create a completely portable, battery-operated phased array corrosion mapping system.

FEATURES

- The first commercially-available, semi-automated phased array product for corrosion mapping applications.
  - Covers a 60 mm (2.36 in.) wide strip at a speed up to 100 mm/s (4 in./s), with a 1 mm x 1 mm resolution.
  - Reduced probe raster movement increases safety for operators, and improves mechanical reliability.
- The scanner concept creates a local immersion technique that enables conformance to rough and uneven surfaces.
  - Easy synchronization on front wall for OD and ID corrosion monitoring.
  - Wedge reflection is eliminated
  - Coupling is optimized
  - Low water requirements
- The patent-pending quick radius adjustment allows for the inspection of different curvatures. No wedges are needed.
  - Convex surface: 4 in. OD, up to flat.
  - Concave surface: 10 in. ID, up to flat.
- The HydroFORM can be attached to automated or semi-automated scanners, and used independently as a manual scanner.
- Cost-effective.
- Minimal tools required for normal operation.

STANDARD INCLUSIONS

The HydroFORM manual corrosion mapping scanner kit includes:

P/N: HYDROFORM-K-MANUAL [U8775182]

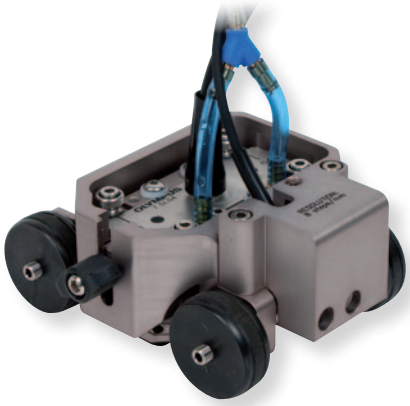
- One probe holder with a water delay line
- One carriage with four magnetic wheels
- One phased array probe (7.5L64-I4-P-7.5-OM)
- 100 foam gaskets
- One application-specific Mini-Wheel encoder
- One 7.5 m encoder cable extension
- Irrigation tubing and accessories

CONFIGURATION

The HydroFORM corrosion mapping solution is based on multifunction equipment and software tools that you may already be using to perform weld inspection:

- OmniScan PA flaw detector
- CHAIN Scanner
- TomoView software

Reduce the idle time of these instruments, increase your ROI, and broaden your service portfolio. The HydroFORM scanner is the perfect complement to your existing Olympus equipment. In addition to weld inspection, it can be used to perform corrosion mapping with a minimal investment in equipment and training.



A patent-pending quick radius adjustment enables inspection of different curvatures without the need for wedges. The HydroFORM also has an integrated encoder, which is required for manual inspections.

ORDERING INFORMATION

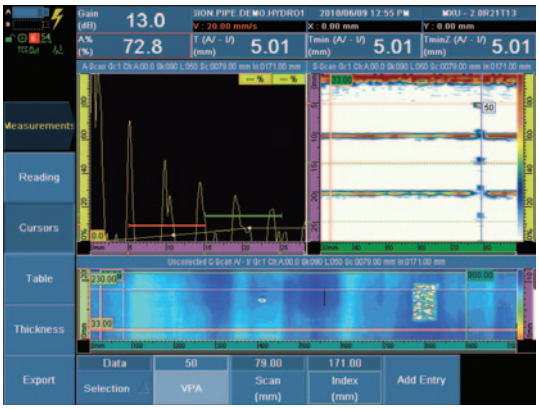
Part Number	Item Number	Description	HYDROFORM-K-ADPCHAIN (U8750058)
HYDROFORM-K-MANUAL	U8775182	HydroFORM scanner kit for manual one-axis encoded inspection.	✔
HYDROFORM-A-ADPCHAIN	U8775183	Accessory kit for adapting the HydroFORM to the CHAIN Scanner.	✔
CHAINScan-XY38	U8750041	CHAIN Scanner with two encoded axes for pipe ODs of up to 38 in.	
CFU03	U8780008	Electric water pump and tubing (120 V and 220 V).	
WTR-SPRAYER-8L	U8775001	8 L manual water pump with irrigation tubes and fittings. **Note: for optimal results, use of the CFU03 is recommended.**	
HydroFORM-SP-FOAM	U8775184	100 foam gasket spare part kit.	

PHASED ARRAY PROBE

Part Number	Item Number	Frequency (MHz)	Number of Elements	Pitch (mm)	Elevation (mm)	Cable Length (m)	Connector Type
7.5L64-I4-P-7.5-OM	U8330955	7.5	64	1.0	7	7.5	OmniScan

SPECIFICATIONS

Scan speed: 100 mm per second
Effective beam width: 60 mm
Acquisition resolution: 1 mm x 1 mm
Encoder resolution: 8 steps/mm
Coverage (index direction) with CHAIN Scanner: 300 mm
Vertical clearance: 100 mm



OmniScan MXU software displaying a C-scan view of corrosion.

Manual One-Axis Scanner

COBRA – Weld Inspection of Small-Diameter Pipes

The COBRA™ manual scanner, combined with the OmniScan® PA flaw detector, is used to perform circumferential weld inspection on small-diameter pipes. The COBRA can hold two PA probes to inspect pipes with outside diameters ranging from 0.84 in. to 4.5 in.

With its very slim design, this manual scanner inspects pipes in limited access areas where minimal clearance is required. Adjacent obstructions such as piping, supports, and structures can be as close as 12 mm (0.5 in.). This spring-loaded scanner is designed to clasp carbon steel and stainless steel pipes of various diameters using multiple link. This unique feature enables the scanner to be installed and operated from one side of a row of pipes. The COBRA scanner is characterized by its smooth-rolling encoded movement, which enables precise data acquisition. The scanner can hold two phased array probes for a complete inspection of the weld in one pass. For pipe-to-component inspections, the scanner can be configured quickly to perform one-sided inspections using a single probe.

This Olympus solution uses low-profile phased array probes with optimized elevation focusing, which improves the detection of small defects in thin-wall pipes. Specially designed low-profile wedges that fit each pipe diameter covered by the scanner are also offered to complete the solution. The COBRA scanner ensures stable, constant, and strong pressure, thus providing good UT signals and precise encoding around the full circumference of the pipe. This complete solution package is small and lightweight for easy transport. The scanner is also waterproof, rust-free, and CE compliant.

FEATURES

- Can be installed and operated from one side of a row of pipes. This feature is invaluable for heater tube inspections.
- Covers standard pipes from 0.84 in. to 4.5 in. (21 mm to 114 mm) OD.
- Operates within 12 mm (0.5 in.) clearance (on all standard pipes), permitting inspections in limited access areas.
- Holds up to two phased array probes for complete weld coverage in one pass.
- Can be configured to make one-sided inspections for pipe-to-component evaluations.
- Design provides stable and constant pressure around the full circumference of the pipe.
- Urethane wheels provide smooth radial movement and limited axial drift.
- An encoder resolution of 32 steps/mm.
- Compact, lightweight, and portable.
- Wedges and probes can be quickly and easily changed.
- The distance between the probes can be adjusted from 0 mm to 55 mm.
- Spring-loaded scanner can be used on ferromagnetic and non-ferromagnetic pipes.
- Waterproof, rust-free, and CE compliant.

The COBRA scanner on a 0.84 in. pipe with two PA probes and an OmniScan MX 16:128 displaying two PA groups with sectorial scans, A-scans, and C-scans.

CONFIGURATION

The typical configuration for the application uses: the COBRA™ scanner, two A15 low-profile phased array probes with SA15 wedges, the Y probe adaptor, and the OmniScan PA flaw detector.

ORDERING INFORMATION

			Scanner Package
Part Number	**Item Number**	**Description**	**PN: COBRA-K-4.5 [U8750055]**
COBRA	U8750053	One small pipe scanner kit with an encoder to cover 0.84 in. to 4.5 in. standard OD pipes; packaged in a hard carrying case.	✔
COBRA-A-SA15	U8721205	Two flat wedges, plus 10 pairs of curved wedges to cover OD pipes from 0.84 in. to 4.5 in.	✔
7.5CCEV35-A15-P-2.5-OM	U8779090	One low-profile phased array probe (16 elements).	✔ (x2)
10CCEV35-A15-P-2.5-OM	U8331014	One low-profile phased array probe (32 elements).	
COBRA-SP-BASIC	U8775166	Basic spare parts kit.	
COBRA-SP-FULL	U8775188	Same as the Basic spare parts kit, plus links and the encoder assembly.	
OMNI-A-ADP05	U8767016	Y adaptor (splitter) with OmniScan connectors to support two phased array probes.	
WTR-SPRAYER-4L	U8775153	One 4 L manual water pump with irrigation tubes and fittings.	
WTR-SPRAYER-8L	U8775001	One 8 L manual water pump with irrigation tubes and fittings.	

PHASED ARRAY PROBE

Part Number	Item Number	Freq. (MHz)	Number of Elements	Pitch (mm)	Elevation (mm)	Corresponding Wedge	Cable Length (m)	Connector Type	Elevation Curvature Radius (mm)
7.5CCEV35-A15-P-2.5-OM	U8330826	7.5	16	0.5	10	SA15	2.5	OmniScan	35
10CCEV35-A15-P-2.5-OM	U8331014	10	32	0.3	7	SA15	2.5	OmniScan	35

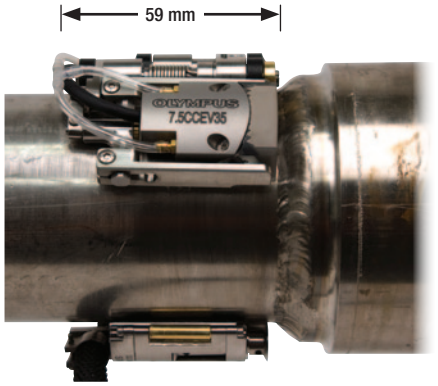
PHASED ARRAY WEDGES

The wedge part number for this application is **SA15-N60S-IH-AODXXXX.** This part number comprises the A15 probe type, standard probe mount, 60-degree refracted angle, shear wave, irrigation, and scanner mounting holes. The outside diameter curvature (**XXXX**) is defined by referring to the different values for standard pipes outside the diameters listed in the table below (AOD).

STANDARD WEDGE AOD VALUES AND PIPE OD

AOD (in.)	Minimum OD (in.)	Maximum OD (in.)
0.84	0.800	0.840
1.05	0.840	1.050
1.315	1.050	1.315
1.66	1.315	1.660
1.9	1.660	1.900
2.375	1.900	2.375
2.875	2.375	2.875
3.5	2.875	3.500
4	3.500	4.000
4.5	4.000	4.500

The solution uses low-profile phased array probes with optimized elevation focusing for improved detection of small defects in thin-wall pipes.



The COBRA scanner can also be configured for pipe-to-component weld inspections.

Manual One-Axis Scanner

HST-X04 – TOFD Weld Inspection

The HST-X04™ time-of-flight diffraction (TOFD) manual scanner offers an efficient, low-cost, and versatile weld inspection solution. This manually deployed single-axis scanner is designed to be used on plates, pipes, and curved surfaces, such as those found on pressure vessels, storage tanks, and structural components. The HST-X04 operates either on flat surfaces, or on pipes as small as 50 mm (2 in.) OD.

OPTIONS

Preamplifier

5682 preamplifier. Refer to the accessories section on page 22.

TomoScan FOCUS LT Encoder Cable Adaptor

P/N: C1-DE15F-BXM-0.30M [U8767107]

SPECIFICATIONS

Frame Bar Length (mm)	Length in Scan Axis (mm)	Width (mm)	Height (mm)
150	60	190	50
250	60	290	50

ORDERING INFORMATIONS

Part Number	Item Number	Description
HST-X04	U8750007	Standard kit (see standard inclusions).
HST-X04-SCN	U8779098	Scanner and Mini-Wheel encoder only (no probes, wedges, or cables).
HST-X04-PA	U8775137	Scanner holds 40 mm wide phased array wedges, and a Mini-Wheel encoder.

FEATURES

- Encoded linear scan (one axis) for TOFD or pulse-echo inspections with appropriate yoke.
- A waterproof, spring-loaded encoder with a rubber wheel for maximum adherence on inspected surfaces.
- The encoder has a resolution of 12 steps/mm, and can be positioned parallel to the weld, or at a 90º skew.
- Compact, light, and versatile.
- Cost-effective.
- Durable construction.
- Fits a full range of probes and wedges, including the CentraScan™ composite product line (wedges must be 31.75 mm wide).
- Probe-center separation (PCS), which is fully adjustable from 17 mm to 180 mm.
- A low-profile frame for use in restricted areas.
- Quick, tool-free release of wedges and probe holders.
- Compatible with the OmniScan, the TomoScan FOCUS LT™ (with an optional adaptor), and other instruments using the appropriate encoder cable (not included).

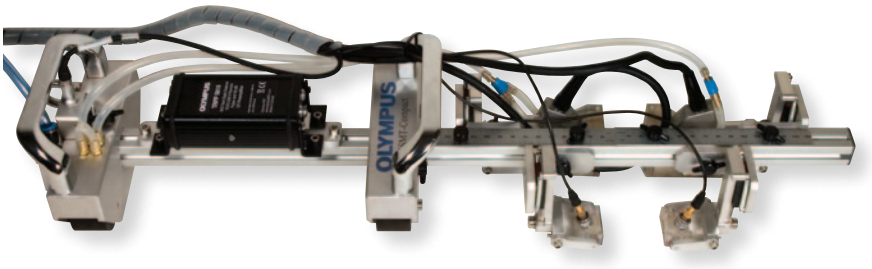
STANDARD INCLUSIONS

- Scanner with a 150 mm frame, and a supplementary 250 mm frame for wider probe center separation.
- Two 10 MHz (3 mm element diameter) CentraScan™ composite TOFD probes, plus two 5 MHz (6 mm element diameter) CentraScan™ composite TOFD probes.
- Three pairs of ST1 wedges with carbide wear pins and irrigation holes for 45º, 60º, and 70º inspection.
- Two 2.5 m LEMO 00 to Microdot transducer cables.
- 2 LEMO 00 to BNC adaptors.
- A spring-loaded, friction-driven, and waterproof Mini-Wheel™ encoder for X-axis or Y-axis data encoding (see page 5 for details).
- Brackets for flexible encoder positioning.
- A carrying case.

Manual One-Axis Scanner

HSMT-Compact – Weld Inspection

The HSMT-Compact™ is a manual one-axis encoded scanner designed for maintenance weld inspection. It is particularly small, light, and versatile, and can be used with up to four probes on plates, and for circumferential scans on pipes as small as 4.5 in. (114.3 mm) OD. The scanner width can be adjusted, and the frame can be extended outside the limit of the wheels to provide a configuration that is suitable for hard-to-reach places, such as pipe-to-component welds.



This configuration is suitable for hard-to-reach places such as pipe-to-component welds.

OPTIONS

Divisible Cable Conduit

Refer to the accessories section on page 24.

Manual Couplant-Feed Units

Refer to the accessories section on page 21.

Remote Pulser/Preamplifier

Refer to the accessories section on page 22.

TomoScan FOCUS LT Encoder Cable Adaptor

P/N: C1-DE15F-BXM-0.30M [U8767107]

Extra Probe Holder Kit

Set of two short, spring-loaded arms (SLA) mounted on 90º brackets.

P/N: OPTX0739 [U8779086]

Yokes

Refer to the accessories section on page 27.

Replacement Encoder

P/N: ACIX895 [U8775097]

Spare Parts Kit

P/N: OPTX689 [U8775021]

FEATURES

- A circumferential scan using up to four probes (UT or PA) on 4.5 in. (114.3 mm) OD pipes, or greater.
- Four plastic-covered magnetic wheels hold the unit against a ferromagnetic inspection surface.
- A light aluminum frame with customizable width.
- The frame design enables probes to be positioned outside the wheels.
- Independently positioned and spring-loaded probe holders.
- A waterproof, spring-loaded encoder with a 12 steps/mm resolution.
- Removable handles for lower profile.
- Attachment devices for umbilical cables.
- An integrated water manifold that simplifies couplant distribution.
- Metric/US Customary unit rulers on the scanner for easy probe separation measurement.

STANDARD INCLUSIONS

- Scanner frame with handles, and:
  - 250 mm (10 in.) frame bar
  - 450 mm (18 in.) frame bar
  - 650 mm (26 in.) frame bar
- Four plastic-covered magnetic wheels.
- An OmniScan-compatible, waterproof, spring-loaded wheel encoder with a 5 m cable.
- Four 90° probe holder brackets.
- Four spring-loaded arms (SLA).
- Four TOFD–P/E 31.75 mm yokes.
- Two PA 40 mm × 55 mm yokes.
- Irrigation tubing and accessories.
- A carrying case.

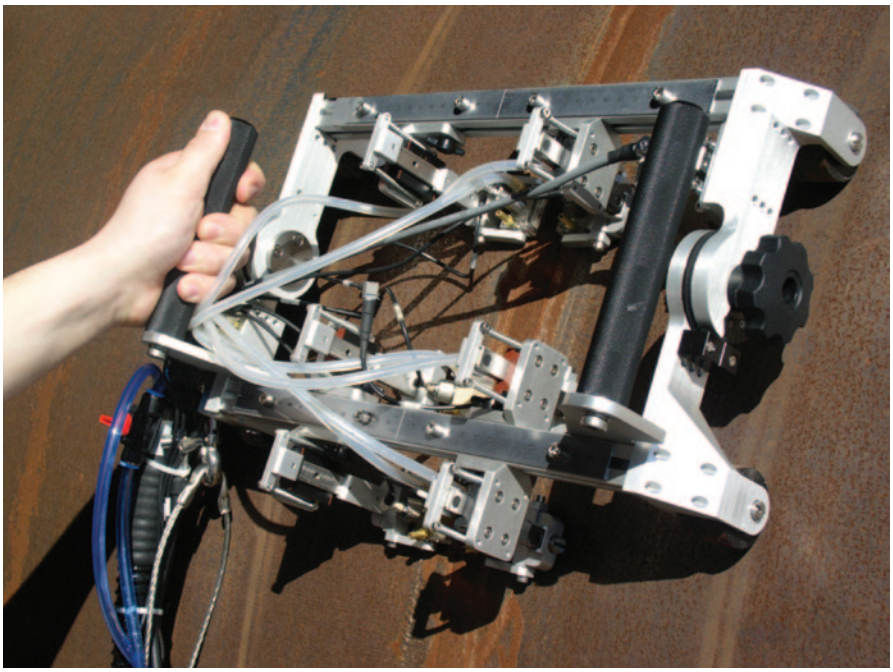
Note: the umbilical cable, probes, and wedges are not included with the scanner.

SPECIFICATIONS

Length in Scan Axis (mm)	Width (mm)	Height (mm)	Weight (kg)
152	94 + bar length	102	3.2

Manual One-Axis Scanner

HSMT-Flex – Weld Inspection



The HSMT-Flex™ is intended for one-axis encoded inspection of circumference welds on pipes of 4.5 in. (114.3 mm) OD, and greater. The scanner comes equipped with four probe holders, but can be mounted with a total of eight probes with optional probe holders. Mounted probes can be either phased array or conventional UT to provide the most efficient inspection results.

The major characteristic of the scanner is its ability to bend in the center. This feature enables the scanner to fit on smaller pipes, and also brings the force of the spring-loaded arm in the radial direction of the pipes for better stability of the wedge and optimum data acquisition. Optional pivoting probe holders can also be installed on the outside of the scanner.

The HSMT-Flex also has one slidable side frame. This feature enables probes to be mounted on the outside of the scanner, providing a configuration that is suitable for hard-to-reach places such as pipe-to-component welds.

OPTIONS

Umbilical
Refer to the accessories section on page 24.

Remote Pulser/Preamplifier
Refer to the accessories section on page 22.

Couplant-Feed Units
Refer to the accessories section on page 21.

Laser Guide Kit
Battery-operated laser guiding device for easier weld tracking.

P/N: HSMT-A-Laser [U8779087]

Yokes
Refer to the accessories section on page 27.

TomoScan FOCUS LT Encoder Cable Adaptor
P/N: C1-DE15F-BXM-0.30M [U8767107]

Replacement encoder
P/N: ADIX1255 [U8775096]

Probe Holder Kits
Set of two spring-loaded arms (SLA) mounted on 90º brackets to accommodate more than four probes.

Standard: for pipes larger than 12 in. OD.

P/N: OPTX666 [U8775011]

Pivoting: for pipes smaller than 12 in. OD.

P/N: OPTX0717 [U8775095]

Spare Parts Kits
For PV-100 applications

P/N: OPTX686 [U8775020]

For PV-200 applications

P/N: OPTX690 [U8775022]

FEATURES

- A folding frame to optimize probe contact on pipes for circumferential weld inspection.
- Four plastic-covered magnetic wheels which hold the unit against a ferromagnetic inspection surface.
- Compact and versatile. The provided frame bars offer size customization.
- Can support up to four conventional UT or phased array probes on pipes.
- Can support up to eight conventional UT or phased array probes on pipes bigger than 12 in. OD using the optional standard probe holder kit, and on pipes ranging from 4.5 in. to 12 in. OD using the optional pivoting probe holder kit.
- Light aluminum frame.
- Independently positioned, spring-loaded probe holders.
- One waterproof, spring-loaded encoder with a 12 steps/mm resolution.
- Removable handles for a lower profile.
- An eyelet for umbilical attachment.
- An integrated water manifold which simplifies couplant distribution.
- Metric/US Customary unit rulers on the scanner frame for easy probe separation measurement.

STANDARD INCLUSIONS

- Scanner frame with handles, and:
  - Two 340 mm (13.5 in.) frame bars
  - Two 500 mm (20 in.) frame bars
- Four plastic-covered magnetic wheels.
- One OmniScan-compatible, waterproof, spring-loaded wheel encoder with 5 m cable.
- Four 90º probe holder brackets.
- Four spring-loaded arms (SLA).
- Four TOFD–P/E 31.75 mm yokes.
- Two PA 40 mm × 55 mm yokes.
- Irrigation tubing and accessories.

Note: the umbilical cable, probes, and wedges are not included with the scanner.

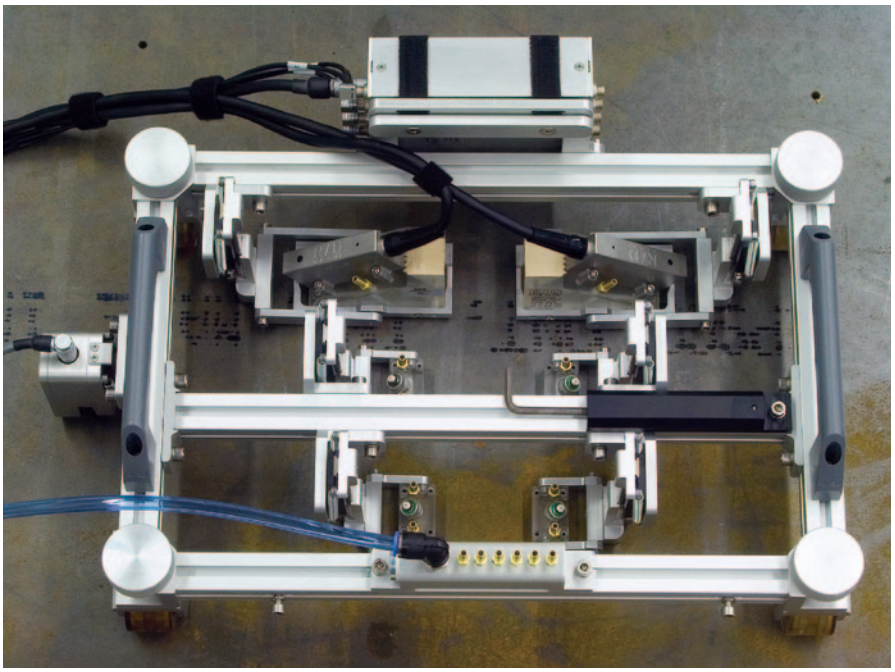
SPECIFICATIONS

Length in Scan Axis (mm)	Width (mm)	Height (mm)	Weight (kg)
263	466	147	4.4

The hinged design of the HSMT-Flex scanner makes it possible to inspect pipes as small as 4.5 in. OD.

Manual One-Axis Scanner

HSMT-X03 – Weld Inspection



The HSMT-X03™ is the construction weld scanner offering the greatest probe-holding capacity. In fact, the scanner can hold up to 10 probes[1] for either phased array or conventional UT in order to obtain optimal coverage of the entire weld volume.

Its solid construction guarantees the stability needed for precise data acquisition. The frame width can also be reconfigured to fit restricted spaces using the shorter frame bars supplied.

OPTIONS

Umbilical

Refer to the accessories section on page 24.

Remote Pulser/Preamplifier

Refer to the accessories section on page 22.

Couplant-Feed Units

Refer to the accessories section on page 21.

Laser Guide Kit

Battery-operated, laser guiding device for easier weld tracking.

P/N: HSMT-A-Laser [U8779087]

Yokes

Refer to the accessories section on page 27.

TomoScan FOCUS LT Encoder Cable Adaptor

P/N: C1-DE15F-BXM-0.30M [U8767107]

Replacement Encoder

P/N: ADIX1255 [U8775096]

Frame Extensions

A pair of side-mounted frame bars providing greater probe separation for the inspection of thicker welds.

P/N: OPTX684 [U8775019]

Standard Probe Holder Kit

A set of two spring-loaded arms (SLA) mounted on 90º brackets.

P/N: OPTX666 [U8775011]

Spare Parts Kits

For PV-100 applications.

P/N: OPTX686 [U8775020]

For PV-200 applications.

P/N: OPTX690 [U8775022]

FEATURES

- Can support up to 10 phased array or conventional UT probes[1] on pipes of 38 in. (965 mm) OD, and greater.
- The provided frame bars offer size customization.
- Four plastic-covered magnetic wheels that rotate 90º to enable scans in both directions, and hold the unit against a ferromagnetic inspection surface.
- A light, aluminum frame.
- Independently positioned and spring-loaded probe holders.
- A waterproof, spring-loaded encoder with a 12 steps/mm resolution.
- An eyelet for umbilical attachment.
- Metric/US Customary unit rulers on the scanner frame for easy probe-separation measurement.

STANDARD INCLUSIONS

- Scanner frame with handles, and:
  - Three 300 mm (12 in.) frame bars
  - Two 200 mm (8 in.) frame bars
- Three additional 200 mm (8 in.) frame bars and two additional 125 mm (5 in.) frame bars, allowing smaller footprint configuration, or inspection on pipes with a smaller diameter.
- Four plastic-covered magnetic wheels.
- Four soft rubber wheels.
- One OmniScan-compatible, waterproof, spring-loaded wheel encoder with a 5 m cable.
- Six 90º probe holder brackets.
- Six spring-loaded arms (SLA).
- Six TOFD–P/E 31.75 mm yokes.
- Two PA 40 mm × 55 mm yokes.
- Water manifold.
- Irrigation tubing and accessories.

Note: the umbilical cable, probes, and wedges are not included with the scanner.

SPECIFICATIONS

Length in Scan Axis (mm)	Width (mm)	Height (mm)	Weight (kg)
279	413	131	3.2

1 Standard inclusions allow for the use of six probes. Optional parts must be purchased in order to use 10 probes.

Manual One or Two-Axis Scanner

CHAIN Scanner - Pipe Inspection

The CHAIN™ Scanner is the optimum manual pipe-inspection solution for a pipe range with outside diameters from 1.75 in. to 38 in. (45 mm to 965 mm), and the possibility of two encoded axes. The scanner, which is held by chain links instead of magnetic wheels, is capable of inspecting ferromagnetic or non-ferromagnetic surfaces. The chain links also help ensure a straight displacement of the scanner by eliminating steering problems. It is also very useful when the area around the pipe is not entirely accessible, as the scanner can be rotated by pulling on the chain links.

MAIN APPLICATIONS

- Circumferential-pipe weld inspections with phased array, TOFD, or conventional UT.
- Corrosion mapping in conjunction with HydroFORM phased array solution (using XY; 2 encoder models).

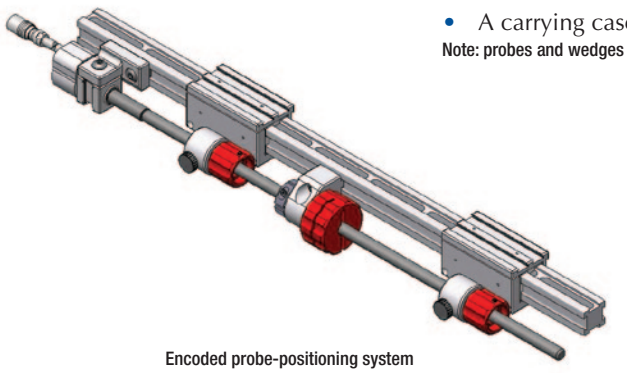
FEATURES

- Standard configuration using one or two probes, and optional configuration using four probes for TOFD, phased array, or pulse-echo inspections.
- A pipe range with outside diameters from 1.75 in. to 38 in. (45 mm to 965 mm).
- An encoded manual scan on one or two axes (depending on the model).
- Ergonomic handle to protect encoder connectors and provide cable management.
- Independent chain links which are mounted on bearing wheels coated with urethane for smooth rolling.
- An easy clamping device for quick scanner positioning.
- Spring-loaded probe holders that ensure good probe contact in any scanner position or orientation.
- The majority of adjustments can be made without the use of tools.
- Compatible with the OmniScan®, the TomoScan FOCUS LT™ (with an optional adaptor), and other instruments using the appropriate encoder cable.

STANDARD INCLUSIONS

- Main module with a scan-axis encoder.
- Chain links for 5 in., 16 in., or 38 in. pipe ODs (depending on the model), with a quick-release adjustable buckle.
- One 5 m encoder cable for OmniScan.
- One 450 mm (17.7 in.) probe-holder bar.
- Two spring-loaded probe holders with two adjustable PA yokes.
- Two adjustable TOFD–P/E yokes.
- Probe-positioning system with lead screw adjustment.
- One 5 m divisible cable conduit (19 mm ID).
- Irrigation tubes and fittings.
- A CHAIN Scanner custom tool.
- A carrying case.

Note: probes and wedges are not included with the scanner.



Encoded probe-positioning system with lead screw adjustment.

SPECIFICATIONS

Length in Scan Axis (mm)	Width (mm)	Height (mm)	Weight (kg)
114	75	84	1

Note: the specifications above apply to the main module.

Encoder resolution:
Circumferential (X) axis: 19.2 steps/mm.
Longitudinal (Y) axis: 226.8 steps/mm.

OPTIONS

TomoScan FOCUS LT Encoder Cable Adaptor

P/N: C1-DE15F-BXM-0.30M [U8767107]

Remote Pulser/Preamplifier

Refer to the accessories section on page 22.

Couplant-Feed Units

Refer to the accessories section on page 21.

Arm Stabilizer

CHAIN Scanner arm stabilizer kit. Includes a magnetic wheel block and the holder.

P/N: ChainScan-A-Stabilizer [U8775210]

Chain Links

Extra CHAIN Scanner short link. Required on pipe ODs less than 9.6 in.

P/N: ChainScan-A-SLink [U8775127]

Extra CHAIN Scanner long link. To be used on pipe ODs greater than 9.6 in.

P/N: ChainScan-A-LgLink [U8750042]

Spare Parts Kit

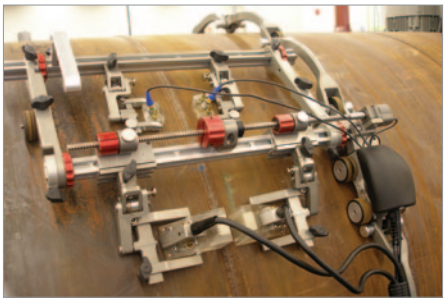
Basic spare part kit for the CHAIN Scanner which includes: lead screw and lever for buckle, wedge pivot buttons, dovetail nuts, tool, plastic wheel, and screws.

P/N: ChainScan-SP-Basic [U8779370]

Two Additional Probe Packages

Needed to perform inspections with four probes on the CHAIN Scanner.

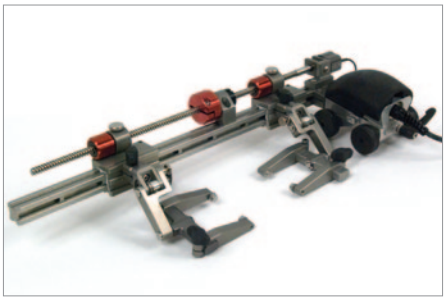
P/N: ChainScan-A-4Probe [U8775128]



Mouse Package

Needed to use the CHAIN Scanner as a mouse scanner with magnetic wheels holding the system instead of chain links.

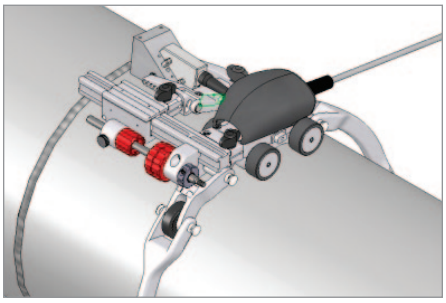
P/N: ChainScan-A-Mouse [U8750037]



Short Bar Package

A 20 cm probe-holder bar and lead screw kit for restricted space applications.

P/N: ChainScan-A-SBar [U8775129]



ORDERING INFORMATION

Part Number	Item Number	Description
ChainScan-X5	U8750036	CHAIN™ Scanner for 45 mm to 125 mm (1.75 in. to 5 in.) OD pipes with one encoded axis.
ChainScan-XY5	U8750044	CHAIN Scanner for 45 mm to 125 mm (1.75 in. to 5 in.) OD pipes with two encoded axes.
ChainScan-X16	U8750045	CHAIN Scanner for 45 mm to 400 mm (1.75 in. to 16 in.) OD pipes with one encoded axis.
ChainScan-XY16	U8750046	CHAIN Scanner for 45 mm to 400 mm (1.75 in. to 16 in.) OD pipes with two encoded axes.
ChainScan-X38	U8750040	CHAIN Scanner for 45 mm to 965 mm (1.75 in. to 38 in.) OD pipes with one encoded axis.
ChainScan-XY38	U8750041	CHAIN Scanner for 45 mm to 965 mm (1.75 in. to 38 in.) OD pipes with two encoded axes.

Motorized One-Axis Scanner

WeldROVER – Weld Inspection

The WeldROVER™ is a perfect addition to the Olympus family of scanners for those customers who require a more stable inspection than that provided by manual scanners, and within a more economical package than that of the high-production zone-discrimination systems typically used in offshore pipeline construction.

The WeldROVER is a simple, industrial-strength, one-axis encoded scanner that provides the customer with a fully mechanized automated data acquisition. It is designed to perform fast and efficient phased array inspections on ferromagnetic piping, or vessel girth welds and long seams with minimum training and setup time. The scanner can be configured with up to six probes for phased array, TOFD, and conventional UT inspection.

The WeldROVER is incredibly easy to use. It is operated by a simple two-button remote control with variable speeds. The scanner interfaces with the OmniScan® or TomoScan FOCUS LT[1] instruments directly without the need for complex software, motion controller electronics, or configuration. The laser guide indicator helps the operator manually adjust the scanner direction using the steering lever. This allows precision data to be acquired without the need for guide bands, complex tracking systems, or motorized steering capability. It is a perfect fit for companies offering fully mechanized, automated phased array (AUT) inspection services, and requires less than one hour of training for those customers who have completed the basic OmniScan course.

1 Interface with TomoScan FOCUS LT™ can be achieved using the optional encoder cable adaptor.

FEATURES

- Can support up to six probes for TOFD, phased array, or pulse-echo inspections.
- Constant scanning speed control for smooth data acquisition at any speed.
- Compact motion controller offering 10 different scan speeds from 5 mm/s to 50 mm/s.
- Simple two-button remote control for jog or constant encoded motion in either the backwards or forward direction.
- Performs data acquisition using the OmniScan or TomoScan FOCUS LT[1] instrumentation with less than five minutes configuration time.
- The four industrial-strength magnetic wheels are driven for use on ferromagnetic surfaces.
- Integrated water manifold for simple and efficient couplant delivery.
- Emergency-stop button located on the scanner.
- A laser guide indicator to help the operator follow the weld centerline, or any other inspection reference.
- Room to integrate a remote pulser/preamplifier for improved TOFD–P/E inspections.
- Divisible cable conduit umbilical offers cable protection and configuration flexibility. Minimal time needed for probe reconfiguration.
- Waterproof (IP65).

CONFIGURATIONS

A typical configuration for compliance with ASME codes is two PA probes, and one or two pairs of TOFD probes.

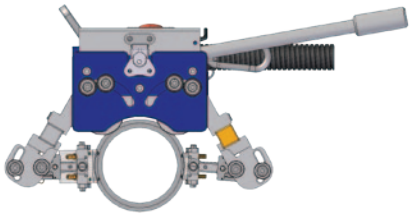
Circumferential scan

- Supports two probes at the back and two probes at the front of the scanner on pipes from 4 in. OD, and greater.
- Supports up to four probes at the front of the scanner on pipes from 12 in. OD, and greater.
- Supports up to six probes at the front of the scanner on pipes from 16 in. OD, and greater.

Longitudinal scan

- Supports up to six probes at the front of the scanner on pipes from 30 in. OD, and greater.

Note that on smaller pipes, the probe separation distance will be limited.



Supports two probes at the back and two probes at the front of the scanner on pipes from 4 in. OD, and greater.

STANDARD INCLUSIONS

- One motorized scanner with rotating probe-holder arms at the front and back of the scanner.
- Two frame bars for one probe-holder fixation of 200 mm (8 in.), and another of 377 mm (14.8 in.).
- Remote control with a 5 m cable.
- MCDC-01: one-axis DC motion controller.
- Power supply.
- Encoder cables linking the MCDC-01 to the OmniScan®.
- Six spring-loaded arms (SLA), pivoting probe holders, and all the brackets needed for the different configurations.
- Four TOFD–P/E 31.75 mm yokes.
- Two PA 40 mm × 55 mm yokes.
- Two PA 40 mm × 65 mm yokes for PWZ1 and A14 probes.
- 2 PA 40 mm × 46 mm yokes.
- Laser guide and holder.
- Two steering levers.
- One 5 m divisible conduit for cable protection and attachment to the scanner.
- Irrigation tubing and fittings.
- Scanner and accessory carrying case.

Note: All cables for scanner operation are 5 m.
Probes and wedges are not included with the scanner.

OPTIONS

Couplant-Feed Units

Refer to the accessories section on page 21.

Remote Pulser/Preamplifier

Refer to the accessories section on page 22.

Extra Spring-Loaded Probe Holder

P/N: WELDROVER-A-SLA [U8775125]

Extra Laser Guide

P/N: WELDROVER-A-LASER [U8775124]

Instrument case

Modular instrument and accessory hard carrying case. The modules can be used to transform the scanner case into a workstation.

P/N: WELDROVER-A-ICASE [U8775123]

TomoScan FOCUS LT Encoder Cable Adaptor

P/N: C1-DE15F-BXM-0.30M [U8767107]

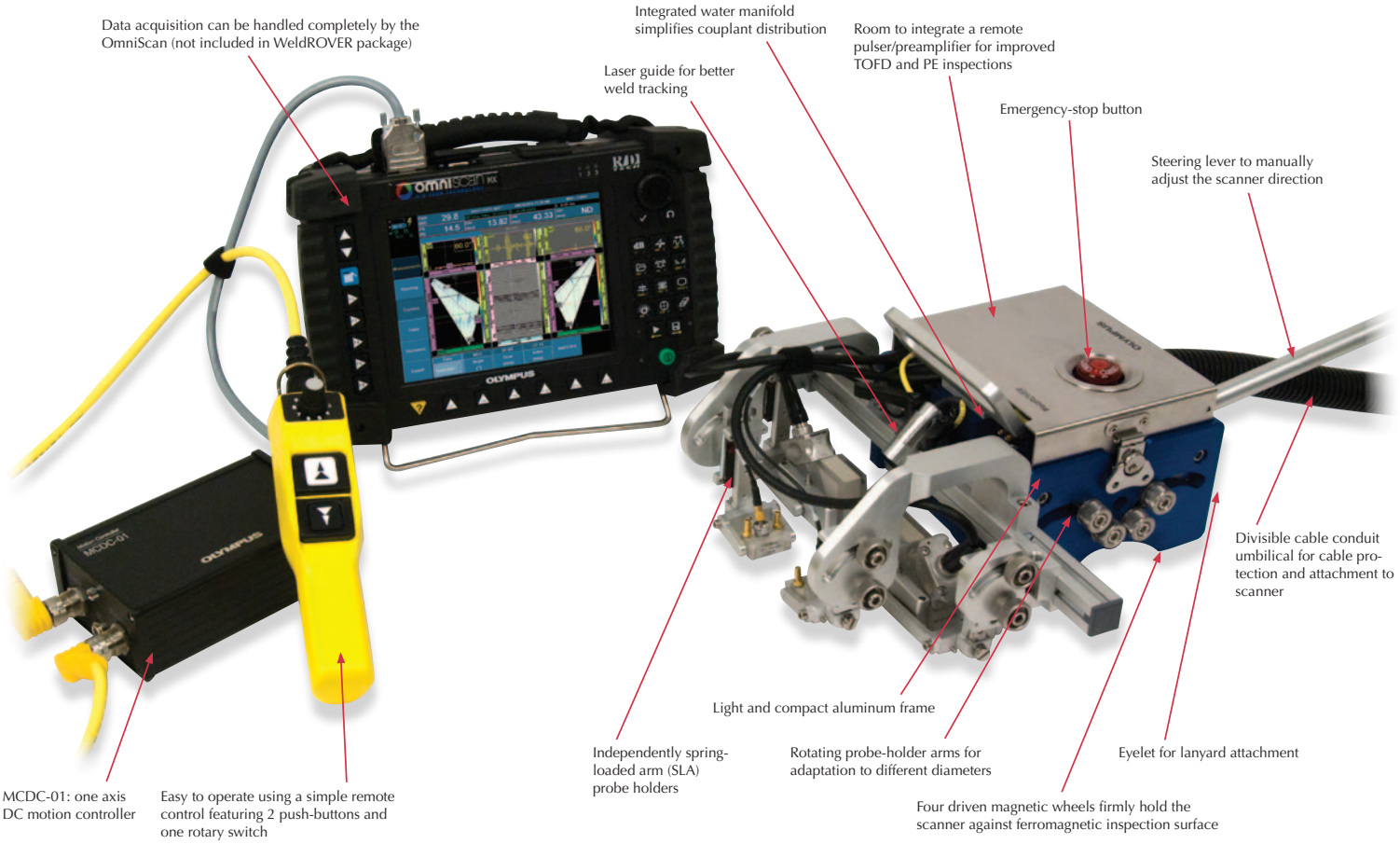
Yokes

Refer to the accessories section on page 27.

Spare Parts Kit

Basic spare part kit for the WeldROVER Scanner.

P/N: WeldROVER-A-SPKit [U8775122]



SPECIFICATIONS

Scanner speed: 5 mm to 50 mm per second
Encoder resolution: 2100 steps/mm (typical)
Power consumption: 90 W
Maximum input current: 4 A
Voltage: 24 VDC
Power supply input voltage: 100 VAC to 240 VAC; autoswitching

Component	Length (mm)	Width (mm)	Height (mm)	Weight (kg)
Scanner with long bar and six probes	430	380	175	12.0
Scanner with small bars and four probes	380	200	175	11.0
MCDC-01 motion controller	175	110	60	1.5
Power supply	200	85	50	1.0
Remote control	230	50	90	0.8

Manual Two-Axis Scanner

GLIDER – Composites Inspection

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The GLIDER™ X-Y scanner is a two-axis encoding scanner for manual inspection of slightly curved or flat composite surfaces.

The scanner is well-suited to raster scanning with the following technologies:

- Conventional ultrasonics (UT)
- Phased array ultrasonics (PA)
- Eddy current (EC)
- Eddy current array (ECA)

Commonly inspected materials include composites and aluminum using suction-cup pods, and carbon steel using optional magnetic pods.

APPLICATIONS

- Inspection of composites.
- Inspection of airplane fuselages for delamination and cracking.
- Inspection of ferromagnetic plates for corrosion.
- Inspection of friction stir welds (FSW) on aluminum.

DESIGN CHARACTERISTICS

The X axis is attached to two mounting pods. Depending on the material to be inspected, either of the following models can be used:

- Suction-cup mounting pod (included).
- Magnetic mounting pod (optional).

There are two encoder modules (one on each axis) to report the probe position. The displacement of these modules can be in 3.27 mm steps, free running, or locked.

The scanner comes in three formats (18 in., 24 in., and 36 in.), depending on the scan coverage needed:

- GLIDER 18×18
- GLIDER 24×24
- GLIDER 36×36

FEATURES

- Well-suited to phased array UT, conventional UT, and eddy current inspection techniques using one probe.
- Compatible with the OmniScan®, the TomoScan FOCUS LT™ (with optional adaptor), and other instruments using the appropriate encoder cable.
- Two axes with waterproof encoders for position-encoded X-Y scans.
- Axis positioning with minimal backlash.
- Both modules are mounted on bearings for precise and smooth displacement.
- Two pivot-equipped mounting pods enable surface following.
- Locking devices enable each axis to be locked.
- Module displacement can be in increments of 3.27 mm, or in free-running mode.
- The probe holder is mounted on a bearing-arm system that can be spring loaded if needed.
- An aluminum frame is used for lightweight and rust-free components.
- The Y axis can be easily shortened for smaller surface radius inspection, or removed for easier transport.

STANDARD INCLUSIONS

- Two tracks for desired stroke (18 in., 24 in., or 36 in., depending on the model).
- Two displacement-encoding modules.
- Two suction-cup mounting pods.
- Two OmniScan-compatible encoders with a 5 m cable.
- One PA 40 mm × 55 mm yoke.
- One TOFD–P/E 31.75 mm yoke.
- 90° probe holder mounting bracket.
- 180° probe holder mounting bracket.
- 45°, 90°, 180° adjustable probe holder mounting bracket.
- Probe holder bearing arm with spring.
- Irrigation tubing and fitting.
- A carrying case.

Note: the umbilical cable, probes, and wedges are not included with the scanner.

SPECIFICATIONS

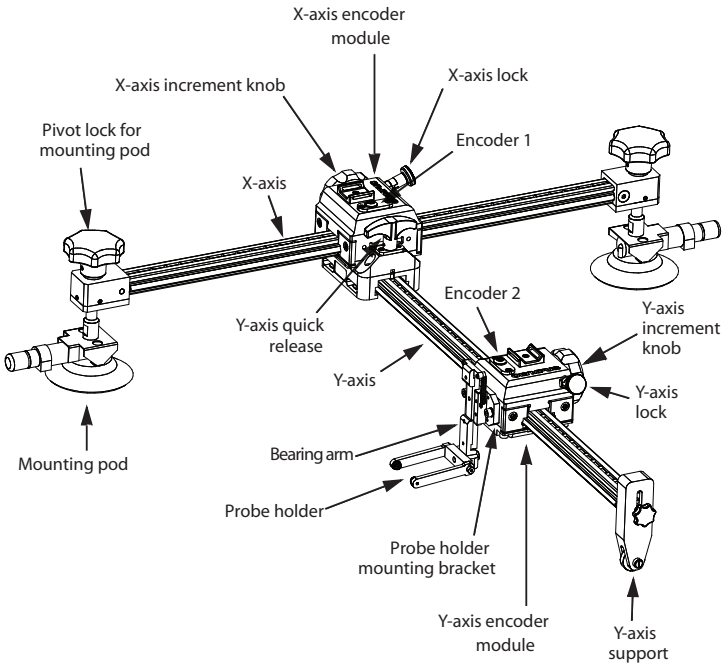
Weight: 5 kg to 8 kg, depending on the configuration

Suction-cup pod holding force: 7 kg per cup

Magnetic-pod holding force: 81 kg per base

Encoder resolution: 13 steps/mm (±0.15 step/mm), 330 steps/in. (±0.006 step/in.)

Minimum curvature for partial scans: 50 cm (20 in.) OD



OPTIONS

Magnetic accessories package

Magnetic mounting pods and Y-axis support enable use on ferromagnetic surfaces.

P/N: GLIDER-A-01 [U8775058]

Interchangeable mounting pods (magnetic pods are optional).

Tracks

457 mm, 610 mm, or 914 mm (18 in., 24 in., or 36 in.) tracks are available as options.

	Part Number [Item Number]	
Stroke mm (in.)	**X Axis**	**Y Axis**
457 (18)	GLIDER-A-X18 [U8775059]	GLIDER-A-Y18 [U8775062]
610 (24)	GLIDER-A-X24 [U8775060]	GLIDER-A-Y24 [U8775063]
914 (36)	GLIDER-A-X36 [U8775061]	GLIDER-A-Y36 [U8775064]

Encoder cables

Y-Axis Stroke mm (in.)	Part Number	Item Number
457 (18)	GLIDER-18X18-C-5M	U8800464
610 (24)	GLIDER-24X24-C-5M	U8800465
914 (36)	GLIDER-36X36-C-5M	U8800466

Note: if the scanner is modified with a longer Y-axis track than the original one, the encoder cable must also be changed in order to benefit from the maximum stoke.

TomoScan FOCUS LT Encoder Cable Adaptor

P/N: C1-DE15F-BXM-0.30M [U8767107]

Yokes

Refer to the accessories section on page 27.

Couplant-Feed Units

Refer to the accessories section on page 21.

ORDERING INFORMATION

Part Number	Item Number	Description	Length (X) (mm)	Width (Y) (mm)	Height (mm)
GLIDER-18X18	U8750001	GLIDER scanner with X-Y 457 mm × 457 mm stroke (18 in. × 18 in.)	700	690	152
GLIDER-24X24	U8750002	GLIDER scanner with X-Y 610 mm × 610 mm stroke (24 in. × 24 in.)	900	845	152
GLIDER-36X36	U8750003	GLIDER scanner with X-Y 914 mm × 914 mm stroke (36 in. × 36 in.)	1200	1150	152

Manual Two-Axis Scanner

WING Scanner – Composite Inspection of Curved Surfaces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The WING™ Scanner is a two-axis scanner for manual ultrasonic inspections. One scanning axis is flexible and conforms to the contour of the part being inspected. Vacuum cups make the WING Scanner well-suited for non-ferromagnetic surface inspections.

Typical applications include the inspection of friction stir welding (FSW), and the inspection to detect delamination, cracks, and corrosion on plates and airplane fuselage.

SPECIFICATIONS AND ORDERING INFORMATION

Specifications / Part Number [Item Number]	Wing-Scanner-V1 [U8750016]	Wing-Scanner-V2 [U8750030]	Wing-Scanner-H1 [U8750031]
X-axis stroke (mm)	940	1940	940
Y-axis stroke (mm)	510	510	510
Vacuum generation*	Venturi with air supply	Venturi with air supply	Manually activated levers
Minimum external radius (mm)	360	380	450
Minimum internal radius (mm)	770	770	770
Holding force (kg/cup)	30	30	11
Number of cups	10	19	8
Total weight (kg)	6.3	8.8	7.0
Overall scanner length (X axis) (mm)	1395	2395	1120
Overall scanner length (Y axis) (mm)	790	790	790
Total height (mm)	157	157	165

* For "V" models, compressed-air characteristics must correspond to the following specifications:
Required pressure: 490 kPa to 690 kPa (71 psi to 100 psi).
Flow rate: 566 nl/min (20 SCFM) minimum.

FEATURES

- Two encoded axes for X-Y scans.
- Axis positioning with minimal backlash.
- Vacuum cups mounted on the flexible axis ease installation on both concave and convex non-ferromagnetic surfaces.
- Scanner can be used vertically or upside down using Venturi vacuum cups (WING Scanner "V" models only).
  NOTE: the scanner must always be secured with a lanyard when used on vertical or upside down surfaces.
- Suitable for phased array and conventional UT inspection techniques using one probe.
- Can operate with an OmniScan® or TomoScan FOCUS LT™ acquisition unit.
- Also available in a manually activated vacuum-cup version that eliminates the need for air supply (WING Scanner H1 model).

Flexible X axis

- Very flexible contour-following track.
- The encoder module follows the flexible track (resolution: 20.5 steps/mm).
- A locking lever on the encoder module.
- An integrated loop on one end to secure the scanner from accidental falls.

Rigid Y axis

- A 16 mm diameter hard-anodized aluminum shaft with a stainless steel toothed rack.
- The shaft is mounted on a pivot, allowing constant contact between the probe and the part.
- The shaft does not move under its own weight when the indexing dial is engaged.
- A fully adjustable and tool-free probe-alignment device.
- Indexing increments: 0.5 mm and 1 mm.
- An axis-locking thumb screw.

STANDARD INCLUSIONS

- Two integrated encoders for X and Y axes.
- One 5 m encoder cable compatible with the TomoScan FOCUS LT™ and OmniScan® using the supplied adaptor.
- Adjustable probe holder.
- One PA 40 mm × 55 mm yoke.
- One TOFD–P/E 31.75 mm yoke.
- Irrigation tubing and fitting.
- A transport case.

Note: the umbilical cable, probes, and wedges are not included with the scanner.

OPTIONS

Couplant-Feed Units

Refer to the accessories section on page 21.

Couplant-Feed Units

CFU05 CFU03

CFU03 and CFU05 – Electric Couplant-Feed Units

The CFU03 and CFU05 are portable electric-pump units used to supply couplant to wedges during ultrasonic inspections. Both units are equipped with a diaphragm pump equipped with a bypass to ensure a constant flow and avoid any pump priming issues. The pump units are also equipped with a valve to control the outlet flow. The CFU05 features water-suction capabilities to reduce water loss when used with certain water delay line wedges.

CFU03 FEATURES

- A diaphragm pump with a flow of 3.78 l/min (1 GPM) at 60 psi.
- An internal bypass which ensures that the pump is always primed.
- Operates on 100 VAC and 240 VAC.
- Start/Stop button.
- An outlet flow control valve.
- A pump inlet tube equipped with a filter and check valve to ensure that the tube is always filled.
- Inlet and outlet quick-connect fittings.
- A rugged plastic case.
- CE certified.

CFU05 FEATURES

The CFU05 has the same features as the CFU03, plus:

- Water suction generated by a Venturi system using an external compressed-air supply.

STANDARD INCLUSIONS

- 3.3 m (10 ft), 9.5 mm (3/8 in.) ID tube for pump inlet with filter and check valve.
- 3.3 m (10 ft), 9.5 mm (3/8 in.) ID tube for vacuum outlet (CFU05 only).
- 3.3 m (10 ft), 5 mm (3/16 in.) ID tube and Y adaptor for pump outlet.
- 3.3 m (10 ft), 5 mm (3/16 in.) ID tube and Y adaptor for vacuum inlet (CFU05 only).
- Power supply, 100 VAC to 240 VAC input to 24 VDC output.

WTR-SPRAYER-8L

Manual Couplant-Feed Units

The manual-pump unit offers an affordable and efficient way to supply couplant to wedges during automated inspections.

FEATURES

- Reservoir capacity of 4 L or 8 L
- Flow valve
- Supplied tubes: 8 mm OD and 5 mm ID
- Sling for easy transport

ORDERING INFORMATION

Part Number	Item Number	Description
CFU03	U8780008	Electric couplant-feed unit.
CFU05	U8780009	Electric couplant-feed unit with suction capability.
WTR-SPRAYER-4L	U8775153	4 L manual water pump with irrigation tubes and fittings.
WTR-SPRAYER-8L	U8775001	8 L manual water pump with irrigation tubes and fittings.

Pulsers and Preamplifiers

TRPP 5810 – Pulser/Preamplifier for TOFD Inspection

The TRPP 5810™ unit is a high-performance remote pulser/preamplifier dedicated to TOFD inspections and compatible with the Olympus scanner line, in addition to the PV-100 and PV-200 weld-inspection systems.

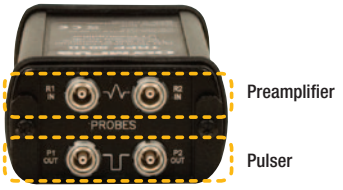
This remote pulser/preamplifier provides an optimum signal-to-noise ratio for TOFD inspections by combining a 40 dB preamplifier with a remote high-voltage (200 V) pulse repeater in a single, small enclosure. The TRPP 5810 supports two UT channels, which enables simultaneous inspection with one or two pairs of TOFD probes. The TRPP 5810 can be used as a pulser and/or preamplifier.

TRPP 5810 as a Pulser

- Provides an additional pulse gain to generate a stronger signal, as needed in order to reveal difficult-to-detect flaws.

TRPP 5810 as a Preamplifier

- Provides the additional gain or broadband signal-to-noise enhancement necessary for optimum signal acquisition on thick sections of material exhibiting high ultrasonic attenuation.
- Allows long cables to be driven from remotely located sensors.



ORDERING INFORMATION

Part Number	Item Number	Package Contents
TRPP-5810	U8120042	Pulser/Preamplifier, one 5 m power supply cable (120 VAC to 240 VAC input to 12 VDC output), and one 5 m power supply cable linking to an OmniScan®, all packaged in a carrying case.
TRPP-5810-KIT01	U8120043	**Same as P/N TRPP-5810, plus**: Four 0.6 m UT probe cables (LEMO 00 to Microdot), and brackets to attach the TRPP 5810 to HSMT-type scanner. (P/N: HSMT-A-BRK5810 [U8779088])
TRPP-5810-INST	U8775114	**Same as P/N TRPP-5810-KIT01, plus**: Four 5 m UT cables (LEMO 00 to LEMO 00) linking the TRPP 5810 to the instrument.
TRPP-5810-UMB	U8775113	**Same as P/N TRPP-5810-KIT01, plus**: Four 0.6 m UT cables (LEMO 00 to LEMO 00) linking the TRPP 5810 to the umbilical.

FEATURES

- Dimensions (W × H × L): 57 mm × 32 mm × 90 mm.
- Weight: 300 g.
- UT connectors: 8 × LEMO 00 female.
- Water/moisture resistance: NEMA 4-IP66. Rustproof.
- Powered by an external 12 VDC source, or from the instrument.
- Power connector: Compatible with standard Olympus umbilical cables (male Fisher 103 type).
- A red power-on LED indicator.
- Operating temperature range: –10 °C to 60 °C.

SPECIFICATIONS

Pulser

- A remote, high-voltage (200 V) pulse repeater.
- PRF of up to 10 kHz at 100 ns per channel, and up to 20 kHz at 50 ns for a single channel.
- Pulser-side outputs which protect against misuse and improper connection from the instrument outputs.

Preamplifier (Receiver)

- 40 dB preamplifier.
- Accommodates probe frequency ranges from 1 MHz to 15 MHz.
- Preamplifier side inputs and outputs are protected against misuse and improper connection from the instrument outputs.

OPTIONS

Power Cable (from TomoScan FOCUS LT)

One 5 m power supply cable linking to the TomoScan FOCUS LT™.

P/N: TRPP-5810-A-01 [U8800488]

Power Cable (from OmniScan)

10 m power supply cable linking to the OmniScan®.

P/N: TRPP-A-PWRC-OM-10M [U8775118]

Transformer and Cable

Transformer (120 VAC to 240 VAC input to 12 VDC output) with a 10 m power supply cable.

P/N: TRPP-A-PWRC-AC-10M [U8779168]

5682 – Preamplifier for TOFD Inspection

The 5682 ultrasonic preamplifier provides low-noise amplification of ultrasonic signals (for one probe) ranging from 500 kHz to 25 MHz. The preamplifier, which is housed in a rugged splashproof enclosure, is very small and lightweight, making it ideally suited to remote applications. The preamplifier can be powered with either a single 9 V battery (included) for up to 50 hours of continuous operation, or an optional 9 V to 13 V DC supply. When battery operated, a multicolored LED provides battery feedback status. This preamplifier is ideal for TOFD inspections.

SPECIFICATIONS

- 30 dB gain
- 50 hours of battery life (continuous discharge)
- A continuous power-level indicator
- 67 dB signal-to-noise ratio
- Weight: 180 g with battery

5682-KIT01

ORDERING INFORMATION

Part Number	Item Number	Package Contents
5682	U8120006	5682 preamplifier and 9 V battery.
5682-KIT01	U8120038	5682 preamplifier, one 2.5 m UT probe cable (LEMO 00 to LEMO 00), one 2.5 m power supply cable linking to the OmniScan®, and a belt case.
5682-KIT02	U8779091	5682 preamplifier, one 5 m UT probe cable (LEMO 00 to LEMO 00), one 0.6 m UT probe cable (LEMO 00 to Microdot), one 5 m power supply cable linking to the OmniScan®, a belt case, a bracket to attach the 5682 to HSMT-type scanners. (P/N: HSMT-A-BRK5682 [U8779089])
5682-A-PWRC-OM-5M	U8775119	One 5 m power supply cable linking to the OmniScan.
5682-A-PWRC-UMB-0.15M	U8779092	Power cable adaptor linking the 5682 preamplifier to the umbilical cable.

PR-06-04 – Pulser/Preamplifier for Pulse-Echo Inspection

The PR-06-04 is a four-channel pulser/preamplifier for pulse-echo. Each channel can drive a conventional UT probe for a higher gain pulse and boost the return signal, thereby improving detection and signal-to-noise ratio.

The PR-06-04 can also be used as a pulser or a receiver only.

SPECIFICATIONS

Pulser

- –45 V to –220 V input level (min-max)
- –160 V to –190 V output amplitude (pulser at 100 ns)
- 4 ns to 10 ns rise time and fall time

Receiver

- 40 dB gain
- 8 dBm to 12 dBm input level (max.)
- 8 dBm to 12 dBm output level operation
- 550 kHz to 30 MHz bandwidth at –3 dB

ORDERING INFORMATION

Part Number	Item Number	Package Contents
PR-06-04	U8750028	PR-06-04 pulser/preamplifier.
OPTX667	U8775012	PR-06-04 pulser/preamplifier, four 0.6 m UT probe cables (LEMO 00 to 90° Microdot), and a bracket to attach the unit to an HSMT-type scanner. (P/N: HSMT-A-BRKEX [U8779090])

Note: These packages have been created to be used with an umbilical cable with an integrated power cable. If no such umbilical is used, an optional power cable must be ordered. Due to power requirements, the PR-06-04 cannot be connected to the OmniScan power output.

OPTIONS

Transformer and Cable

Transformer (120 VAC to 240 VAC input to 12 VDC output) with a 5 m power supply cable. **P/N**: TRPP-5810-A-03 [U8800490]

Transformer (120 VAC to 240 VAC input to 12 VDC output) with a 10 m power supply cable. **P/N**: TRPP-A-PWRC-AC-10M [U8779168]

Cables and Adaptors

Umbilical Cables

Umbilical cables are used to make all the connections between the scanner and the acquisition unit. They can be of two types:

- Closed umbilical
- Divisible conduit

Closed umbilical

The closed-type umbilical offers the best rugged protection. It covers the cable with a resistant, waterproof, and dust proof conduit. It is also always fitted with a safety hook on both ends, and comes in different models according to the applications and scanners with which it is intended to be used. The configuration of the cables is fixed, and cannot be changed afterwards.

Note: The encoder cable for UMB1 interfaces to the OmniScan instrument. For the TomoScan FOCUS LT™ interface, the optional adaptor must be ordered (P/N: C1-DE15F-BXM-0.30M [U8767107]).

ORDERING INFORMATION FOR UMBILICAL CABLES

UMB-UTPA0202-10-RO

Umbilical cable type | UT and PA cables | Cable length | Power cables

Umbilical cable type
UMB1 = Umbilical for HSMT scanners.

UT and PA cable*
UT = RG174 coaxial cables for conventional UT probes.
PA0000 = 128-element PA probe extension.
PA0202 = 124-element PA probe extension with 4 LEMO 00 at pin 63–64 and 127–128.
IBT*x* = Interbox with two PA probe OmniScan connectors, TRPP 5810™, and *x* (0, 4, or 8) extra UT channels.
IB*x* = Interbox with two PA probe OmniScan connectors, and *x* (0, 4, or 8) UT channels.

Cable length in meter*
5 = 5 m
10 = 10 m

Power cable
R = Remote pulser/receiver or Interbox power cable with transformer (120 V to 240 V).
RO = Remote pulser/receiver or Interbox power cable linking to OmniScan® or AC-using adaptor.

* can be customized, common values shown.

Under certain circumstances, the use of longer phased array cables can lead to signal degradation due to attenuation and/or crosstalk.

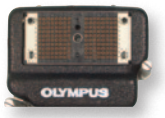
Divisible conduit

The divisible type is composed of two split shells that completely protect the cables. Even though it is not as rugged as the closed-type umbilical, it offers other advantages. Because the cables can be changed inside at any time, there is no need for connection boxes, which are often needed for PA probes on the scanners. The probes must have the proper cable length to reach the acquisition unit.

ORDERING INFORMATION

Part Number	Item Number	Description
60BA5028	U8779093	One 0.3 m divisible cable conduit with a 16 mm ID. Well-suited to 2 × PA, irrigation tube, and the encoder cable.
60BA0109	U8779094	One 0.3 m divisible cable conduit with a 19.2 mm ID. Well-suited to 2 × PA, 2 × conventional UT, irrigation tube, and the encoder cable. Standard equipment of HydroFORM™ scanner.
60BA0131	U8775093	One 0.3 m divisible cable conduit with a 24.2 mm ID. Well-suited to 2 × PA, 4 × conventional UT, irrigation tube, encoder, and preamplifier power supply cables.
OPTX0719	U8779095	One 5 m divisible cable conduit with 24.2 mm ID. Well-suited to 2 × PA, 4 × conventional UT, irrigation tube, encoder, and preamplifier power supply cables. Standard equipment of WeldROVER™ scanner.

Adaptors and Extension Cables

Part Number	Item Number		Description
Adaptors			
OMNI-A-ADP03*	U8767014		Adaptor for Hypertronics PA probe to instrument with an OmniScan® connector.
OMNI-A-ADP05*	U8767016		Y adaptor with OmniScan connectors to support two PA probes with a maximum of 64 elements each. Connector layout: one female output and two male inputs.
OMNI-A-ADP11*	U8767019		Adaptor for up to eight conventional UT probes with LEMO 00 connectors to an instrument with an OmniScan connector. Enables the use of conventional UT probes with a PA instrument.
OMNI-A-ADP12	U8767020		Adaptor for up to 16 conventional UT probes with LEMO 00 connectors to an instrument with an OmniScan connector. Supplied with a 1 m cable. Enables the use of conventional UT probes with a PA instrument.

* These adaptors cannot be connected directly to the OmniScan MX2. To make the connection, a PA extension cable is needed (E128P type, shown on table below).

Phased Array Extension cables (Common models)			
E128P0-0202-OM	U8800635		An extension cable with an OmniScan connector at both ends. If equipped with four conventional UT probe LEMO 00 connectors, 124 elements out of 128 are available for phased array use. Enables the simultaneous use of conventional UT and PA probes with a PA instrument. **Option** A bracket for mounting the OmniScan PA extension on HSMT scanners. **P/N**: HSMT-A-BRKEX [U8779090]
E128P5-0004-OM	U8800441		
E128P5-0202-OM	U8800442		
E128P10-0004-OM	U8800431		
E128P10-0202-OM	U8800432		

Combining extension cables with adaptors offers numerous connection possibilities.

ORDERING INFORMATION FOR PA EXTENSION CABLES

E128P10-0202-OM

Number of elements
Cable type
Cable length
Instrument connector
Probe connector

Number of elements in extension
128 = 128 elements

Cable type
P = Flexible PVC cable
M = Metal armor outer cover

Cable length*
0 = 0.5 m
5 = 5 m
10 = 10 m

Connector on the probe side*
0000 = OmniScan connector and 0 LEMO
0004 = OmniScan connector and 4 LEMO at pins 125–128
0202 = OmniScan connector and 4 LEMO at pins 63–64 and 127–128
HY = Hypertronics connector

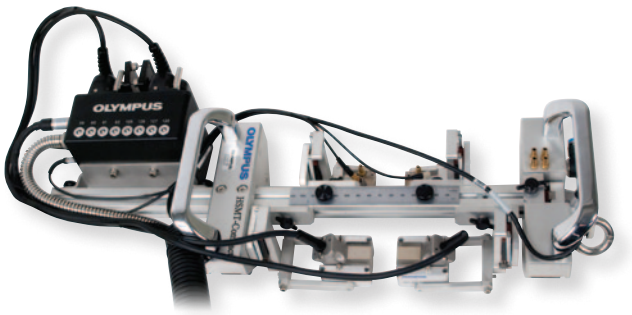
Connector on the instrument side*
OM = OmniScan Connector
HY = Hypertronics connector

* can be customized, common values shown.

Under certain circumstances, the use of longer phased array cables can lead to signal degradation due to attenuation and/or crosstalk.

Interbox

The Interbox is an ergonomic solution for a common problem associated with scanner accessories and connection buildup. This compact hub can connect two phased array probes, two amplified TOFD channels, in addition to eight conventional UT channels to be driven by a phased array acquisition unit. The Interbox can integrate a PA splitter, a TRPP 5810 TOFD pulser/preamplifier, and up to eight extra conventional UT connections, depending on the configuration.



ORDERING INFORMATION

EIB-T-8-M-5-OM

Extension type
TRPP 5810
UT connector
Instrument connector
Cable length
Cable type

Extension type
IB = Interbox of 128 elements (can connect two PA probes of maximum 64 elements each)
IB64 = Interbox of 64 elements (can connect two PA probes of maximum 32 elements each)

TRPP 5810™
T = TRPP 5810 included
NT = TRPP 5810 not included

UT connector
Number of conventional UT connections (LEMO 00)
0 = Zero connectors
4 = Four connectors
8 = Eight connectors

Cable type
P = Flexible PVC cable
M = Metal armor outer cover

Cable length*
5 = 5 m
10 = 10 m
20 = 20 m

Instrument connector*
OM = OmniScan® connector
HY = Hypertronics connector

* can be customized, common values shown.

Under certain circumstances, the use of longer phased array cables can lead to signal degradation due to attenuation and/or crosstalk.

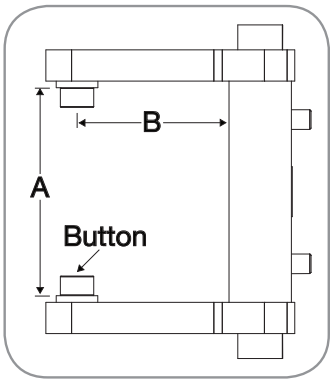
Yokes

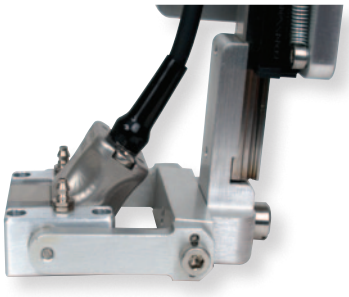
Yokes are used to attach the wedges to the spring-loaded arms (SLA) used on most scanners. Depending on the wedge model used, the yoke model changes. The yokes below are compatible with HSMT scanners, WeldROVER™, WING™ Scanner, and GLIDER™.

ORDERING INFORMATION

Part Number	Item Number	Wedge compliance	Button OD (mm)	A (mm)	B (mm)
Standard Yokes					
ADIX689[1]	U8775048	ST1, ST2, SPE1, SPE2 and SPE3	5	31.75	23.5
ADIX655[2]	U8775047	SA1, SA2, SA10, SA11, SA12, SPWZ3	8	40	55
Other Yokes					
ADIX612	U8775046	SA10 and SA11	8	40	38
ADIX1354	U8775187	SPWZ1 and SA14 (in reverse position)	8	40	46
ADIX1082	U8780194	SPWZ1 and SA14	8	40	65
ADIX853	U8775055	SA1-L (lateral)	8	45	60
ADIX846	U8779096	SA3	8	50	55
ADIX893	U8775084	SA4 and SA5	8	55	55
ADIX908	U8779097	Water wedge	8	50	65
ADIX870	U8775056	Creeping wave probe holder (ADIX1129) [U8775080]	5	40	23
ADIX1325	U8775132	SNW1	8	31.75	55
ADIX1482	U8775165	SNW2	8	31.75	23.5
ADIX1481	U8775164	SNW3	8	31.75	65

1 Standard yoke for TOFD–P/E probe mounting.
2 Standard yoke for phased array probe mounting.



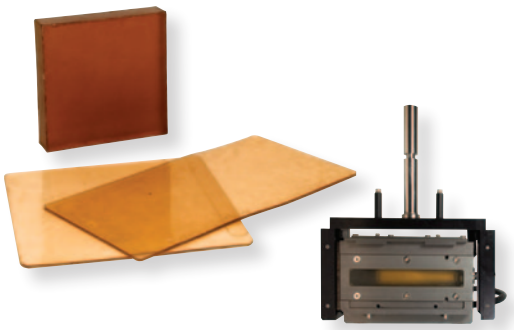


Aqualene Elastomer Couplant

Aqualene™ is an elastomer designed specifically for ultrasonic inspection applications. Acoustic impedance of the material is nearly the same as water, and its attenuation coefficient is lower than many documented elastomers and plastics. Applications for nondestructive testing include:

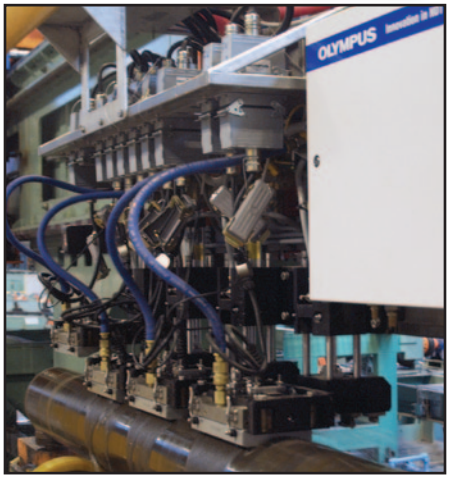
- Flexible couplant pads with minimal water addition
- Low-velocity delay lines
- Water-box membrane

Aqualene elastomer couplant reduces the drawbacks of wet coupling when used on porous or refractory surfaces. It allows a minimal amount of couplant to be used while protecting the probe when in direct contact with the part. Furthermore, Aqualene can serve as a thermic insulator. Aqualene couplant products are available in many sizes and thicknesses.



ORDERING INFORMATION

Part Number	Item Number	Description	Size (L x W x H) mm (in.)
29HD0002	U8770300	Plate	146 × 146 × 2 (5.75 × 5.75 × 0.08)
29HD0004	U8770301	Plate	152 × 152 × 6.4 (6 × 6 × 0.25)
29HD0005	U8770302	Plate	102 × 102 × 25.4 (4 × 4 × 1)
29HD0009	U8770299	Plate	102 × 203 × 2.3 (4 × 8 × 0.09)
29HD0010	U8770303	Plate	200 × 100 × 0.5 (7.9 × 3.9 × 0.02)
29HD0011	U8770304	Plate	127 × 127 × 25.4 (5 × 5 × 1)



One of the Aqualene's many uses: phased array probe cluster used in an Olympus industrial pipe inspection system.

How to Order

For pricing or additional information, contact your local sales representative.

To quickly locate your local sales representative, go to **www.olympus-ims.com.**

Training

Olympus has developed its unique Training Academy, which is a partnership with major training companies, in an effort to offer comprehensive courses in phased array technology and applications. Courses range from a two-day “Introduction to Phased Array” program to an in-depth, two-week “Level II Phased Array” course. In both cases, students experience practical training utilizing the portable OmniScan® phased array unit. Courses lead to either recognized certification or certificates of attendance.

Courses are currently being offered at the training facilities of participating companies, and at customer-determined locations worldwide. Customized courses can also be arranged. Check the latest course schedule in the "Support" section at **www.olympus-ims.com**.

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OLYMPUS NDT INC. is ISO 9001 and 14001 certified.

OLYMPUS

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