OLYMPUS®

Your Vision, Our Future

Manual Weld 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 inspections on small-diameter pipes. The COBRA holds up to two PA probes for inspections on 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 holds up to two phased array probes for 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 enhances detection of small defects in thin-wall pipes. Specially designed low-profile wedges fitting each pipe diameter covered by the scanner are also available for a complete 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.

The COBRA scanner on a 0.84 in. pipe with two A15 PA probes, Y-adaptor splitter, and an OmniScan MX2 16:64 displaying two PA groups.

Features

- Covers standard pipes from 0.84 in. to 4.5 in. OD (21 mm to 114 mm).
- 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.
- Easy installation and manipulation from one side of a row of pipes.
- Can be configured to perform one-sided inspections for pipe-to-component evaluations.
- The included mechanical setup templates eliminate the need for pipe samples when preparing the scanner for standard pipes.
- The design provides stable and constant pressure around the full circumference of the pipe.
- Urethane wheels provide smooth radial movement and limited axial drift.
- Encoder resolution of 32 steps/mm.
- Compact, lightweight, and portable.
- Wedges and probes can be changed quickly and easily.
- The distance between probes can be adjusted from 0 mm to 55 mm.
- The spring-loaded scanner can be used on ferromagnetic and nonferromagnetic pipes.
- Waterproof and rust free.

Probes

Part Number	Item Number	Freq. (MHz)	Number of Elements	Pitch (mm)	Elevation (mm)	Elevation Curvature Radius (mm)
2.25CCEV35-A15C-P-2.5-OM*	U8331117	2.5	16	0.5	10	35
3.5CCEV35-A15C-P-2.5-OM*	U8331149	3.5	16	0.5	10	35
5CCEV35-A15-P-2.5-OM	U8331163	5.0	16	0.5	10	35
7.5CCEV35-A15-P-2.5-OM	U8330826	7.5	16	0.5	10	35
10CCEV35-A15-P-2.5-OM	U8331014	10.0	32	0.3	7	35

These probes come standard with an OmniScan® connector and a 2.5 m (8.2 ft) cable.
* A15C casing are based on the same design as the A15 but are 2 mm taller, increasing height clearance.

Wedges

Specially designed SA15 low-profile wedges are available with the different axial outside diameters (AOD) as specified in the table below. These wedges have been optimized to position the A15 probe as close as possible to the weld in order to reduce the number of skips required, and as low as possible for maximum height clearance. This is accomplished with no acoustic compromises. These wedges are fitted with irrigation ports and holes for scanner mounting, and can be configured to generate 60º shear (N60S) or longitudinal (N60L) waves in steel. Wedges for TOFD inspection are also available (use 3 mm diameter element ST1 probes) with the following refracted angles in steel: 60L, 70L, and 80L.

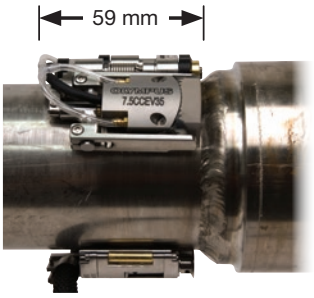
(Note that height clearance required for longitudinal wave inspection is 25 mm with SA15, and 35mm with ST1 and right angle cable connector.)

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, which improves the detection of small defects in thin-wall pipes.

Wedges for TOFD inspection are also available



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

OLYMPUS SCIENTIFIC SOLUTIONS AMERICAS CORP. is certified to ISO 9001, ISO 14001, and OHSAS 18001.

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Scanner_COBRA_EN_201507 • Printed in the USA • P/N: 920-206-EN Rev. E