




Athena Industrial Services Inc.
Calgary, Alberta
Canada

Document No.:	AIS-08-0003	
Title:	ECHO-3D Crack Depth Measurement Compensation Procedure	
Author:	Bill Rowe	
Date:	03-Feb-16	Revision: 1.1

ECHO-3D Crack Depth Measurement Compensation Procedure



ASSET PROTECTION TECHNOLOGY

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Revisions

- Rev. 1.0 03-Feb-16 – Bill Rowe
- Original document release
- Rev. 1.1 19-May-16 – Bill Rowe
- Update format to Technical Document

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Purpose

This procedure is for selecting the correct compensation points when using ECHO-3D Depth Mode to conduct assessment of the crack depth.

Initial Crack Depth Assessment Compensation Procedure

This procedure is for selecting the correct compensation point when Depth Mode is being used to do an initial assessment of the crack depth. The setup for Mapping Channel-0 is shown below.

- 1. Mark the centre of the defect to be measured (indicated by the solid black line) as shown in Figure 1 below by the dashed line and add a reference mark located at a 20 mm [0.8"] offset. See Figure 2 below.

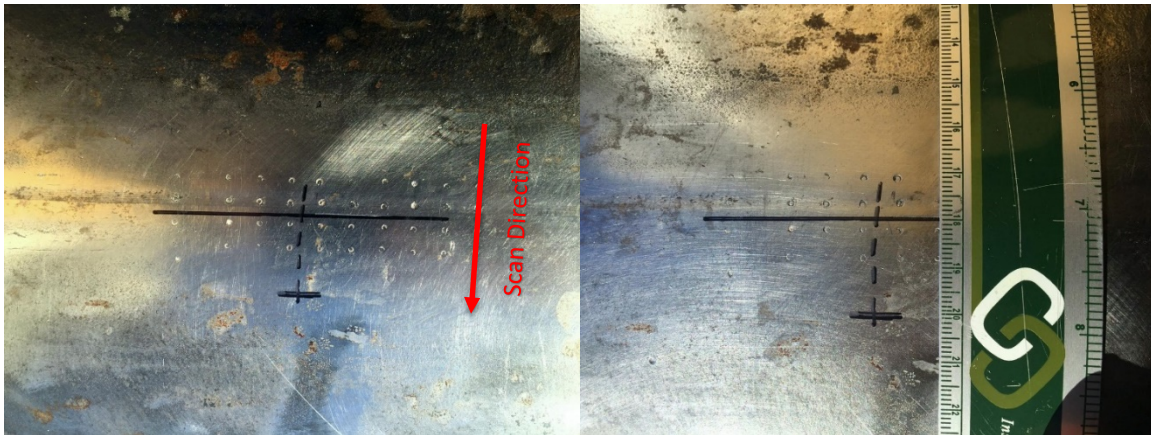



Figure 1 – Marking of defect centreline

Figure 2 – Defect parallel reference line

- 2. Mount the appropriate offset (blue) shoe to the sensor, position the sensor over the crack as shown in Figure 3 below, and Compensate.



Figure 3 – Correct position of the offset shoe for Ch-0

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- 3. Scan perpendicular across the crack (in the direction shown above in Figure 1) starting at one end of the crack and repeat scanning working your way along the crack to the other end, resulting in a measurement of the deepest point in the crack.

Crack Depth Profile Mapping Compensation Procedure

This procedure is for selecting the correct compensation point when Scan Mode is being used to do an assessment of the crack depth profile. The setup for Mapping Channel-4 is shown below.

- 1. Mark a reference line 20 mm [0.8"] from the start of the crack as shown in Figure 4 below.




Figure 4 – Shoe front edge reference mark position

- 2. Select the desired Zone then select Scan Mode from the main display.
- 3. Mount the appropriate offset (blue) shoe to the sensor, position the sensor over the end of the crack as shown in Figure 5, and Compensate.



Figure 5 – Offset shoe position for Scanning with Ch-4

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- 4. Map the crack using sufficient Runs to ensure the entire crack is mapped. Runs should start with the sensor clear of the crack start point and should end with the sensor clear of the crack end point.

Note: The above procedure utilizes Mapping Channel-4. If it is desirable to utilize Mapping Channel-12, mount the shoe rotated 180° from Figure 5 above.

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