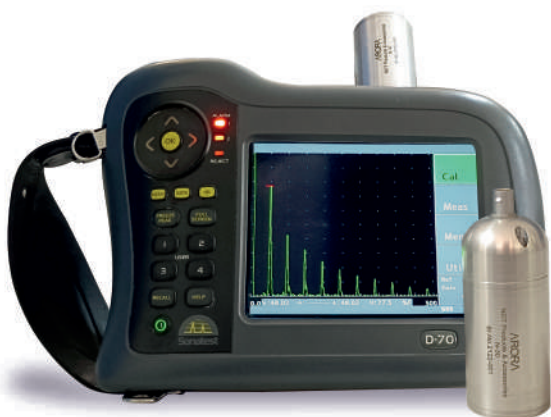


ARORA

NDT Products & Accessories



Operation Manual
N-30 Calibration Block

Introduction

This manual contains necessary information to acquaint the operator of the N-30 calibration block with its capabilities & operation. The purpose of this manual is to provide the operator with a functional knowledge of the operation.

General Description

The N-30 is an integrally attached calibration block to verify vertical, horizontal and amplitude control linearity. It is an aluminum block of 48 mm long and 38.5 mm diameter (Solid cylindrical shape) attached to a 24 mm diameter 2 MHz longitudinal transducer. This procedure describes routine calibration of ultrasonic flaw detectors using conventional pulse echo method. Only pulse-echo A-scan type instruments based on piezo-electric principle of generating and receiving sound waves have been covered.

This procedure shall not be used for calibration of ultrasonic flaw detectors with sound generation and reception based on other principles like synthetic aperture focusing, EMAT, Phased array, TOFD etc.

Calibration Procedure

- Horizontal Linearity - Place the transducer block assembly to the UT instrument socket. Keep the distance range to 500 mm. The reject control shall be in the "off" position for all examinations unless it can be demonstrated that it does not affect the linearity of the examination. Adjust probe delay to mark the first echo from 50 mm of aluminum (48 mm). measure the successive echoes at 50 mm intervals. There shall not a deviation of the readings more than 5 % of the measured range
- Vertical Linearity - Place the transducer block assembly to the UT instrument socket. Keep the distance range to 250 mm, choose any two echo who make almost 2:1 ratio. Increase the gain in 2 dB steps from 20% FSH of the highest echo to 80% FSH of the highest. The increase of the lowest echo shall be in the same proportion so that the ratio between the two is within $\pm 5\%$ of 2:1.
- Amplitude Control Linearity - Place the transducer block assembly to the UT instrument socket. Keep the distance range to 250 mm. Choose any echo from the back wall. Increase the gain in 6 dB steps from 20 % FSH of the highest echo to 80 % FSH of the highest. Similarly, decrease the instrument gain by 6dB steps from 80 % to 20 % FSH. The resulting values shall be within the range as given the following table.

Sr. No.	Indication Set at % of full screen	dB Control Change	Indication limit at % of full screen
1	80	00	-
2	40	-6 dB	-32 % to 48 %
3	20	-12 dB	16 % to 24 %
4	40	+6 dB	32 % to 48 %
5	80	+12 dB	64 % to 96 %

Safe use of the N-30

- Familiarize yourself with the N-30 calibration block operation. If necessary, contact support@arorandt.com for instruction.
- Ensure it is physically undamaged.
- Ensure the connector should be undamaged.
- Do not attempt to remove cap from block.

Cleaning and Storage

- Clean the block by dry lint free cloth
- Place the block in dry, clean, and ambient temperature environment

Thank you for your business!

WE trust, we have catered as per your expectations...



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