

Title: Calibration of CB87 Ultrasonic Calibration Block

1 Scope

Work Instruction for the calibration of the CB87 ultrasonic calibration block. To be used in the absence of a manufacturers calibration instruction.

2 Preparation

The calibration shall be carried out using the minimum of Category 'A' Master instruments.

Equipment required:

- 200mm vernier calliper
- Vernier protractor
- 1.5mm go/no-go plug gauge
- 0 – 25mm Depth micrometer
- 0 – 50mm micrometer (optional)

All equipment shall have the appropriate certificate of calibration traceable through United Kingdom Accreditation Service and shall be rechecked at intervals of no more than 1 year.

3 Method

3.1 Check that the identification number is clearly visible.

3.2 Check all holes are free from contaminates and corrosion.

3.3 Check there is no surface corrosion. However, it is not expected to have highly polished surfaces, but a clean metal surface free from contaminates and corrosion pitting. Where corrosion exists and it is not possible to remove with a **brass** wire brush, the block shall be repaired. The calibration block shall be stored in a lightly oil impregnated rag to minimise surface corrosion.

3.4 Check for surface damage to the calibration blocks, paying particular attention to areas where "corner reflectors" are used to set sensitivity and where the transducer makes contact with the block. Indentations/bruises greater than 2mm in diameter shall be rejected and repaired.

3.5 Check the length of the block 155mm dimension, the maximum deviation shall be $\pm 0.1\text{mm}$.

3.6 Check the width of the block 50mm dimension, the maximum deviation shall be $\pm 0.1\text{mm}$.

3.7 Check the depth of the block 20mm dimension, the maximum deviation shall be $\pm 0.1\text{mm}$.

3.8 Check the distance between the radius end to the slot, 50mm dimension. The maximum deviation shall be $\pm 0.1\text{mm}$.

3.9 Check the radius along the circumference, 50mm dimension. The maximum deviation shall be $\pm 0.1\text{mm}$.

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- 3.10 Check hole I for diameter and depth 1.5mm diameter, 10mm deep. The maximum deviation shall be $\pm 0.1\text{mm}$.
- 3.11 Check hole II for diameter and depth; 1.5mm diameter, 5mm deep. The maximum deviation shall be $\pm 0.1\text{mm}$.
- 3.12 Check hole III for diameter and depth; 1.5mm diameter, 15mm deep. The maximum deviation shall be $\pm 0.1\text{mm}$.
- 3.13 Check 40° engraved angle, the maximum deviation shall be $\pm 1^\circ$.
- 3.14 Check 45° engraved angle, the maximum deviation shall be $\pm 1^\circ$.
- 3.15 Check 60° engraved angle, the maximum deviation shall be $\pm 1^\circ$.
- 3.16 Check 70° engraved angle, the maximum deviation shall be $\pm 1^\circ$.
- 3.17 Results shall be recorded on the calibration form (see Appendix A) and retained for audit purposes.

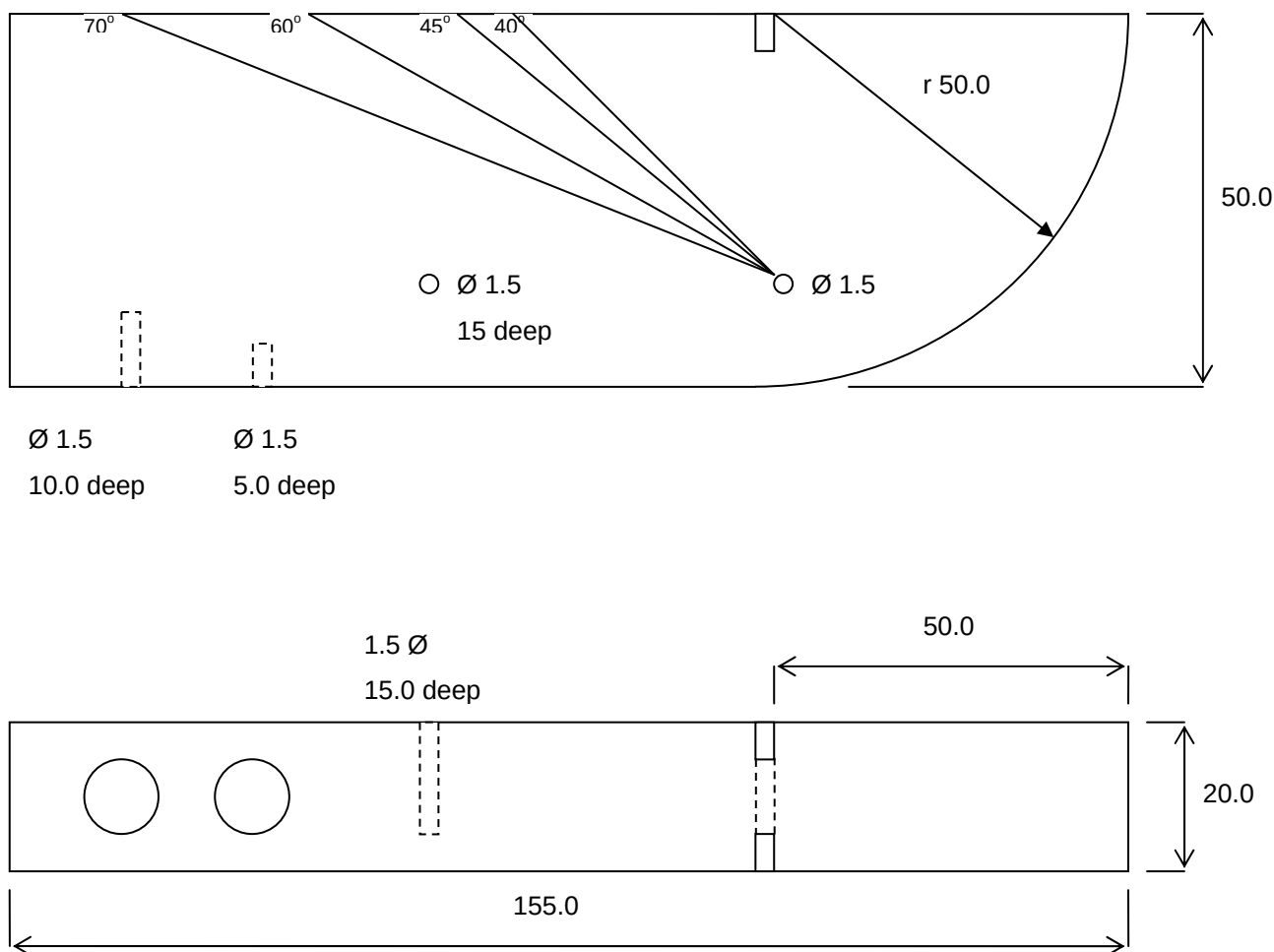


Figure 1 Critical dimensions of CB87 (not to scale dimensions in mm)