

Application Report

BRANCH : Forging Industry and user's of forged components

TEST TASK : Defect detection in forged workpieces

SOLUTION : Ultrasonic testing technique

Our customer for this application is a manufacturer of large, open die forged parts used in turbine shafts, generator shafts, work rolls of steel plants etc.

For inspection of these large diameter forges, a very accurate control over the Pulse Repetition frequency is necessary to eliminate the ghost echoes or wrap round effect which arise in its ultrasonic evaluation. The former, conventional analogue technique is still the best bet for such an application task and while others have resigned from this technology, we still promote and successfully solve demanding applications with our range of analogue ultrasonic flaw detectors !



ECHOGRAPH 1055B



ECHOGRAPH 1016B

The flaw detectors **Model ECHOGRAPH 1055B** and **ECHOGRAPH 1016B** from our principal company **M/s KARL DEUTSCH GmbH, Germany** is optimally matched to the requirements of testing large forges and other work pieces.

The key characteristics of these flaw detectors are the following :

Large Screen

Stepless setting of Pulse Repetition Rate by means of a potentiometer control

Matched Frequency Response in accordance with the test standards of the forging industry

Optimized Echo Shape which helps in easier recognition and evaluations of indications on the screen.

Multiple step range switch for quick adjustment of testing ranges

NiMH Battery operation for upto 10 hrs

Precise attenuation controls

Simple front panel control arrangements

Sturdy design



It has been our experience in testing forgings that an increased noise level or phantom echoes can occur with pulse repetition frequencies > 20 Hz. When testing large forgings, only test instruments allowing variations of pulse repetition frequencies to a large extent down to values < 20 Hz should therefore be used.

Suitable Equipment:

- Ultrasonic Flaw Detectors Model ECHOGRAPH 1055B and 1016B
 - Ultrasonic Probes S12W2, S12W4, S24W2, S24W4, WK 45 PB2, WK 60 PB2, WK 70 PB2, WK 45 PB4, WK 60 PB4, WK 70 PB4, WG 45 PB2, WG 60 PB2, WG 70 PB2, SE 10/10 PB2C, SE 10/6 PB4C and others
 - and other required testing accessories like probe cables, calibration blocks, couplants etc
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