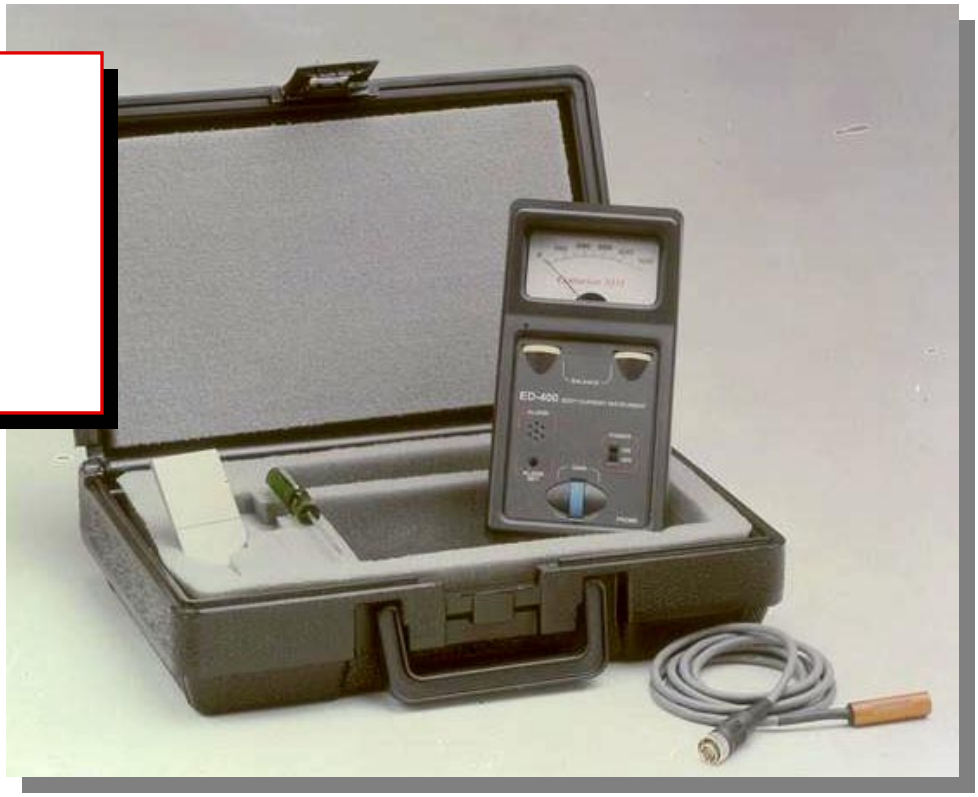
ED-400

Hand Held
Flaw Detector



Special Features

The ***Centurion NDT*** Model ED-400 is a portable, solid state eddy current instrument which detects cracks and other surface defects in magnetic and non-magnetic metals. It is compact, lightweight and simple to set up and operate. It provides excellent signal to noise ratio on virtually all metals.

- Excellent sensitivity for magnetic material crack detection-provides full scale deflection for 0.008" milled slot.
- Extremely high signal/noise ratio. Virtually ignores background magnetic permeability variations.
- Excellent lift off compensation eliminates erroneous signals due to surface scale and coatings.
- Static or dynamic testing-a wide dynamic range.
- Extremely good stability.
- Adjustable threshold circuit and audio indicator.
- Operates on two "AA" Alkaline batteries.
- State-of-art circuitry--compact, rugged construction.
- Simple to set up and operate.
- Wide selection of interchangeable probes.
- Includes standard reference block for checking equipment performance.
- High quality components ensure minimum maintenance.

Applications

The ED-400 eddy current unit is an electronic test device which will locate surface and near surface discontinuities in magnetic materials. Non-magnetic materials may also be tested. In magnetic steel products and materials, defects as small as 0.005" deep may be detected with ease, if they are open and normal to the surface. The ED-400 is widely used in maintenance, receiving inspection, process control, final inspection and research. Its compactness makes the ED-400 valuable for testing in

foundries, heat treat shops, manufacturing plants, steel mills, automotive plants...and wherever accurate data must quickly be obtained, so as to establish product reliability.

Operation

The ED-400 is a portable, compact, self-contained electronic instrument which offers high sensitivity and simplicity of operation. A differential probe forms two legs of the bridge circuit, which is contained within the instrument. The ED-400 is housed in a high impact resistant ABS enclosure. The unit and standard accessories are packed in a protective carrying case. The standard accessories include a steel test block, screwdriver (to adjust the threshold) and standard flaw detection probe. Other special probes are available upon request.

This hand held instrument includes a rugged and easily read meter, as well as the following controls and components:

Gain: Determines sensitivity level and, therefore, meter deflection for a given defect.

Balance Controls: Used in conjunction with each other, these null (zero) the meter on good material.

Power Switch: Provides power to the instrument.

Alarm: Sounds when meter deflection triggers threshold circuit; also operates internal relay.

Alarm Set: Adjusts threshold firing point as a function of meter deflection.

Probe Connector: 4-pin screw on to attach test probe.

Description

The ED-400 utilizes the eddy current principle, wherein induced currents in the test part are affected by changes in homogeneity and uniformity. Variations in material conductivity, permeability and thickness are ignored due to special design features which are incorporated into the system. Discontinuities, such as cracks, laps or seams, will disrupt the eddy current pattern induced in the material, causing localized magnetic changes. These unbalance the instrument and create meter needle deflections.

Initially, the balance controls are adjusted with the probe in air, so as to provide a minimum deflection on the meter. As the probe is scanned across the test object, discontinuities will be indicated as deflections in this meter. The Gain Control is adjusted to give the desired amount of deflection for the defects to be located.

The Audio Alarm Set may be adjusted to fire the threshold Audio Indicator for a given meter deflection.

Not only is the ED-400 virtually insensitive to the background magnetic permeability changes which have plagued previous test devices, but this new instrument offers excellent lift off compensation. Thus, no adjustments are required when searching for defects through rust, oxide, scale, paint and other coatings. In addition, slightly rocking the probe during testing does not seriously affect the meter reading.

The ED-400 can operate continuously on batteries for 400-500 hours. A sensitivity standard is provided to periodically check the instrument performance.

Specifications

Case Dimensions: 3.5" x 7.1" x 1/9" high

Weight: .8lb with probe attached

Frequency: 100 kHz (kilocycles/second)

Power Requirements: Two "AA" alkaline cells

Readout: 2.5"wide. Scale numbered from 0 to 500 in 50 divisions.

Environmental capability: Temperature range--0° to 120°F at 85% RH.
