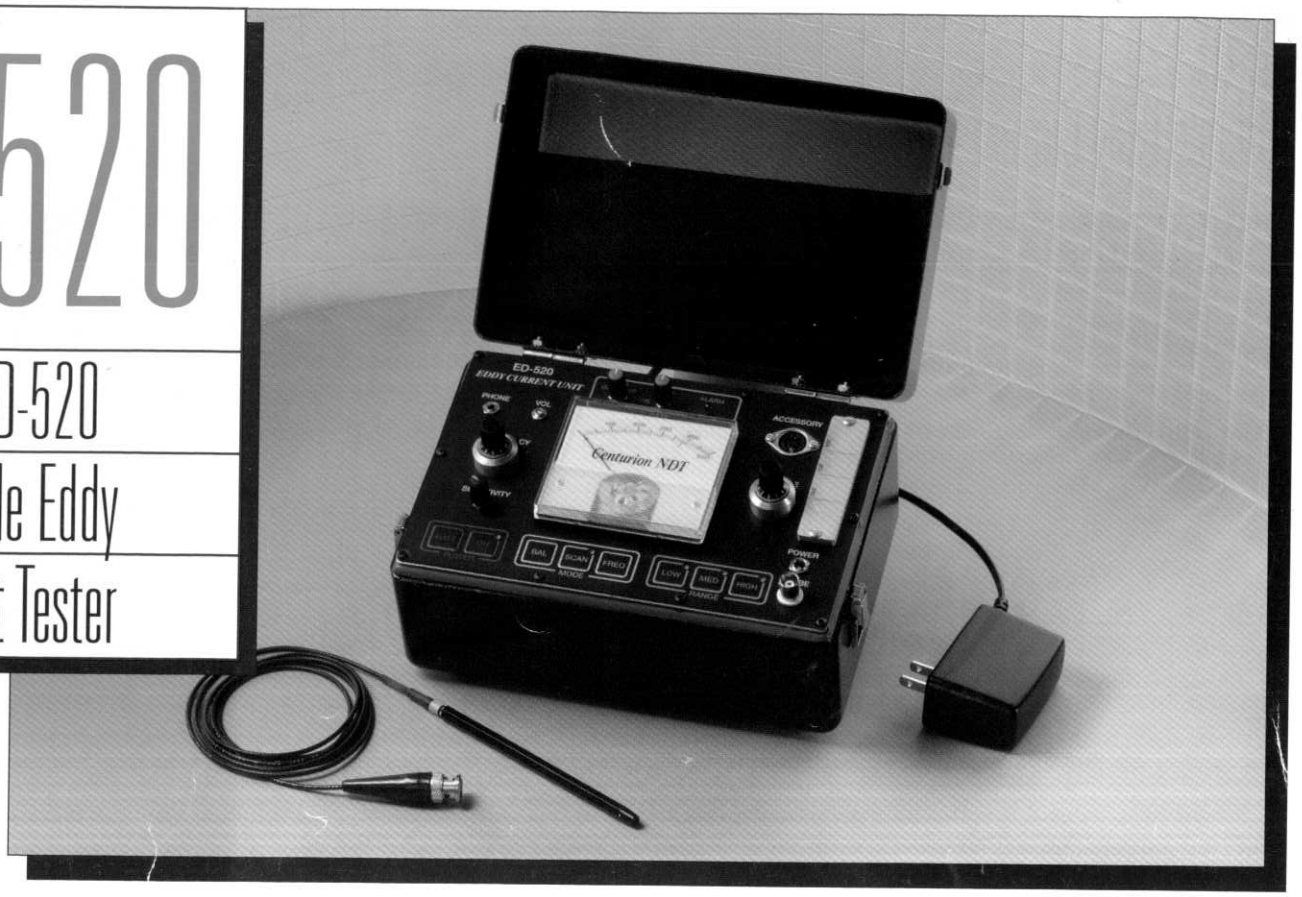
ED-520

The ED-520 Portable Eddy Current Tester



Special Features

- Proven reliable circuit design. Microprocessor-based.
- Rugged, compact, dust-free, weather-resistant aluminum housing and convenient carrying case goes anywhere, is simple to use.
- Fingertip lock-on, lift-off, and balance controls.
- Rechargeable built-in batteries, 115 VAC or 230 VAC, 50/60 Hz
- Continuous battery operation; 8–10 hours on a single charge.
- Recharges overnight or while operating on line current.
- Extremely versatile, yet simple operation.
- Continuous variable frequency range from 55 KHz to 220 KHz.
- Fast meter response.
- Wide temperature and humidity capabilities for continuous operation.
- Wide selection of test probes and coils—interchangeable with existing equipment.
- Includes front panel mounted standard test block for checking equipment performance.
- High quality components ensure minimum maintenance.
- Weighs only 5.5 lbs. (2.48 KG).
- Built-in threshold circuit includes an indicating lamp and an audible alarm.

Applications

The model ED-520 eddy current instrument is an electronic test device that will locate surface and near-surface discontinuities in non-magnetic materials. It also finds surface defects in magnetic materials, where permeability is relatively constant throughout the test area. In addition, the ED-520 will sort classes of materials according to such properties as hardness, alloy type, carbon content, heat treat condition, tensile strength, and grain structure (where these relate to changes in the magnetic and electrical characteristics of the test part).

With proper standards, electrical conductivity may be evaluated. This often relates to the tensile strength of many aluminum and magnesium alloys. The instrument can also be used to measure the thickness of thin, non-magnetic sheets, as well as conductive and nonconductive coatings (when used with suitable standards).

The ED-520 is widely used in military and commercial aircraft testing as well as process control, receiving inspection, research, and maintenance. Its compactness, ease of operation, and consistent precision make the ED-520 valuable for testing in foundries, heat treat shops, and manufacturing plants—wherever accurate data must be obtained quickly to establish fatigue or product reliability. The ED-520 features battery operation for extended field use. It is easily recharged from the AC line, using the supplied AC charger.

Centurion NDT

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Description

The ED-520 is a portable, compact, self-contained electronic instrument that offers high sensitivity, versatility, and simplicity of operation. A continuously variable frequency control turns on an oscillator that drives a bridge circuit, one leg of which contains the test probe or coil. Housed in a rugged aluminum case.

The front panel complement includes an easily read meter and the following controls and components:

Frequency:	Provides continuously variable frequency over entire range.
Balance:	Controls position of meter pointer.
Range Switches:	Selects sensitivity—low, medium, or high.
Sensitivity:	A fine sensitivity control.
Gate Switch:	Selects mode of operation gate circuit.
Gate Position:	Adjusts meter position, where gate circuit operates.
Gate Alarm:	Indicates gate circuit operation.
Probe:	Standard receptacle accepts all probe cables with BNC plugs.
Accessory Output:	Connects an external recorder. Also has relay output from the gate circuit.
Power Switches:	Lighted on-off switch and battery test switch.
Phone:	Earphone connector.
Volume:	Determines earphone volume.
Test block:	Displays reference slots of .008", .020", and .040" depth. Used to periodically check the instrument's performance.
Power Connector:	Accepts the voltage from the AC changer.
Mode:	Push-button controls include **BAL** (Automatic balance feature), **SCAN** (Automatic lift-off compensation), **FREQ** (Operating frequency).

An aluminum case includes a removable cover and positive action latches. An accessory storage pocket is also included. The case and push-button controls allow the ED-520 to be operated while hung on small hooks, under cramped conditions.

A built-in gate circuit provides automatic monitoring of signals from the ED-520. Accessory devices may be connected to the analog output receptacle.

Operation

The push-button controlled ED-520 instrument utilizes the eddy current principle, whereby induced currents are affected by changes in test part characteristics and homogeneity. Variations in material conductivity, permeability, or physical characteristics cause impedance changes in the test probe or coil attached to the bridge circuit. Such an impedance change causes the bridge to become unbalanced, as indicated by a change in the front panel meter.

Initially, the probe (or coil) is tuned to the specific geometry, conductivity, and permeability of the test system, through adjustment of the lift-off/frequency control. This adjustment for lift-off is especially important in reducing irrelevant meter readings due to surface coatings, roughness, oxides, scale and rocking or wobbling of the probe during testing.

With a full charge, the ED-520 can operate on batteries continuously for at least 8 hours. Recharging takes 10–14 hours.

Specifications

Case dimensions:	6" x 9" x 5" (15.2 cm x 22.9 cm x 12.7 cm) Cover included.
Weight:	5.5 lbs. (2.48 kg)
Power:	Rechargeable Ni-Cad battery. Line operation can be specified to operate 115 or 230VAC
Frequency Range:	Variable from 55 KHz to 220 KHz
Readout:	Rectangular meter, 3.5" wide. Scale numbered from 0–500 in 50 divisions
Environment:	0 degrees to 120 degrees F at 85% RH

Federal Stock Number: 6635-00-167-9826

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