

ED-510XL PORTABLE EDDY CURRENT INSTRUMENT

EQUIPMENT SPECIFICATION ES-108

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1.0 Description

- 1.1 The Model ED-510XL is a portable, compact, self-contained, electronic instrument which offers high sensitivity, versatility and simplicity of operation. A continuously variable frequency control tunes an oscillator which drives a bridge circuit, one leg of which contains the test probe or coil.
- 1.2 The instrument will locate surface and near-surface discontinuities in non-magnetic materials and surface defects in magnetic materials where permeability is relatively constant throughout the test area. The ED-510XL will sort both 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. Also, it will measure coating thickness and relative conductivity.

2.0 Mechanical and Construction

- 2.1 Dimensions: Hand Held Unit - 3.5" (8.9 cm) x 7.1" (18 cm) x 1.9" (4.8 cm) high
Carrying Case - 12" (30.5 cm) x 8" (20.3 cm) x 3.5" (8.9 cm)
- 2.2 Weight: Overall (unit with carrying case) - 2.2 lb (1 kg)
Hand Held Unit with Probe - 0.8 lb (1.8 kg)
- 2.3 Meter: 2.5" (6.4 cm) wide; Scale numbered from 0 to 500 in 50 divisions.
- 2.4 The instrument is housed in a light-weight, impact resistant case. The carrying case is designed to protect the unit and accessories during shipping and when not in use. The foam cut-outs are for the unit, probe, test block and operating manual.

3.0 Electrical and Performance

- 3.1 The frequency range is variable from 140 KHz to 200 KHz.
- 3.2 The instrument is powered by a single 9 volt alkaline battery.

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3.3 Probes are interchangeable with any of the absolute probes designed for the ED-520 and ED-530. This includes surface probes, pencil probes, bolthole probes and many custom probes designed with the same general coil.

3.4 The instrument is of solid state design and utilizes integrated circuits. There are no user serviceable parts or components inside. All service work should be performed by a qualified electronic technician.

4.0 Operation

4.1 The “LIFT-OFF” control is a single-turn potentiometer. It provides a continuously variable frequency range of 140 KHz to 200 KHz to select the proper operating frequency for lift-off compensation.

4.2 The “BALANCE” control is a single-turn potentiometer. The control adapts the probe used to the bridge circuit and is used to position the meter pointer on the scale.

4.3 The “SENSITIVITY” control is a single-turn potentiometer used to set the sensitivity level of the instrument. Maximum sensitivity is obtained with this control set fully up.

4.4 The “POWER” switch provides power to the instrument. Access to the battery is on the back of the instrument.

4.5 The “PROBE” is a BNC type connector to connect the probe to the instrument.

5.0 Order Reference

5.1 Model ED-510XL Hand Held Eddy Current Instrument, **P/N 220025**, in a plastic carrying case, including: aluminum sensitivity standard, general purpose probe, probe cable and 9-volt battery (installed).

5.2 Standard Accessories

5.2.1 Sensitivity Standard, 2024-T4 Aluminum, 0.008”, 0.020”, 0.040” deep slots, **P/N 207066**

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5.2.2 General Purpose Probe, **P/N 222296S**

5.2.3 Probe Cable, Microdot to BNC, **P/N 210816**

5.3 Addendum Accessories

5.3.1 General Purpose Miniprobe, 1-1/8" long x 5/16" diameter, **P/N 207067**

5.3.2 General Purpose Probe, 4" long x 3/8" diameter, **P/N 62743**

5.3.3 General Purpose Probe, 5" long x 1/4" diameter, **P/N 200634**

5.3.4 Various General Purpose Pencil Probes (Consult Probe Catalog)

5.3.5 Various Bolt Holes Probes (Consult Probe Catalog)

5.3.6 Various Hemispherical Probes (Consult Probe Catalog)

6.0 References

6.1 Instruction Manual

6.2 Price Page EC-40