

Eddy Current Sorter ECS-5000



The Eddy Current Sorter (ECS-5000) is an advanced metal sorting unit that is capable of separating non-ferrous metals such as aluminium, copper, brass, alloy from dry recyclables. In all industries mix-up of metals in the form of raw, semi-finished or finished products may occur in transit, storage or at different stages at manufacturing processes and is segregated by chemical, Spectro analysis or metallurgical tests. When proper coils are selected, Eddy Current Sorter is used for segregation of ferrous and non-ferrous metals without even a scratch on job or when bulk materials having external similarity are mixed up. Eddy Current Sorter can segregate metals of all forms and conditions when proper coils are selected. This instrument is widely used for segregation of mixed-up of metals in the form of bars, pipes, tubes, rods, bolts, nuts, gears, machined components, forged parts, and various types of metal components in automobile industries, heat treatment shop, fastener industries, forging unit, metal processing unit, fertilizer, refinery, and petrochemical projects & also final inspection in quality control department.

Eddy Current Sorter is sturdy, light weight and portable test unit with an adjustable handle. Powered from single phase, 220V AC, 50 Hz source. The unit offers sine wave display. A nine (9) position rotary band switch (frequency from 10 Hz to 5000 Hz), two threshold level controls to set upper and lower limits of acceptance, a phase control to adjust the 10° to 170° phase of the sine wave. Three level indicators (Red for upper rejection, Green for acceptance and Blue for lower rejection) to indicate three different groups according to limits of acceptance set, buzzer is provided at rejection mode to alert the operator.

Working Principle

The working principle of the eddy current separator is that the eddy current magnetic field and the internal magnetic field of the eddy current separation magnetic roller are in opposite directions. Due to the repulsive force of the magnetic field, the non-ferrous metal leaps forward along its transportation direction to achieve separation from other substances and achieve the purpose of sorting.

When a metallic object is placed within or adjacent to a coil energized by alternating current, eddy currents are generated in it due to electromagnetic induction. If two metal objects having identical dimensions differ in metallurgical conditions, magnitude and phase of eddy currents generated in them will also differ. Eddy current sorter compares this difference electronically & it is projected on TFT Display. Another logical circuit also compares this difference and shows an indication on LEDs. Thus, the test objects can be sorted out.

Technical Specification:

- **Input Supply** : Single Phase, 230V AC, 50 Hz, 5Amps AC
- **Power Consumption** : 40 Watts (approx.)
- **Dimension (L X W X H)** : 350 mm x 370mm x 177 mm
- **TFT Screen Size** : 3.5 inch
- **Test Frequency** : 10 Hz to 5000 Hz in nine steps
- **Phase Control** : To adjust Sine Wave at 10° to 170°
- **Threshold I & II** : To control upper limit & lower limit respectively.
- **Bridge Volt** : To control amplification of Bridge Circuit.
- **Coil Balance** : To balance the Coil impedance.
- **Bridge Balance** : To regulating Bridge Voltage.
- **Gain Control** : Low to High gain amplification for test sensitivity.

Kit Contains:

- Eddy Current Sorter ECS-5000
- 1 Pair of Coils
- Operation Manual
- Certificate of Conformance