

## MAGNETIC SEPARATOR (EE-1673)

### DESCRIPTION

Materials, that have different magnetic attractability, may be separated by passing them through a magnetic field. Most often, magnetic separation techniques are used to remove iron, steel or magnetic iron oxide from materials low in magnetic attractability. These devices operate in either a continuous or a cyclic manner. Continuous devices usually have a belt which moves over the lifting magnetic poles to carry the magnetize partials into a region of low or zero magnetic field, where they are released. The present set-up is of In-line lifting magnet type.

The set-up consists of two belts moving separately in opposite direction at slow speed. Feed through a hopper is conveyed over first belt and allowed to pass near the second belt, which is under magnetic field. The magnetic field is generated by permanent magnet kept in a box. Magnetically inert material drops off the belt in a normal manner. Magnetic material is held on the belt, however, and finally drops off the belt as it leaves the magnetic field. Both the belts are fitted on the pulleys and driven by an electric motor coupled with a reduction gearbox.

### EXPERIMENTATION

- To study the Principles and operation of a Magnetic Separator
- To determine the efficiency of Magnetic Separator.

### UTILITIES REQUIRED

- Raw Material for Feed
- Electric Supply : Single phase, 220 V AC, 1 kW.
- Floor Area 1.5 m x 1 m
- Weighing Balance.



### TECHNICAL DETAILS

- Belts : Width 150mm, Length 500mm
- Feed Hopper : Material Stainless Steel, Suitable capacity
- Drive : FHP motor with Reduction Gear Box.
- Magnets : Permanent Magnets kept in a Stainless Steel chamber.
- Collecting Bin : 2 Nos. One each for Magnetic and Non-Magnetic material

Control panel Comprises of:

Standard make On/Off switch, Mains Indicator etc

- Instruction Manual : An ENGLISH instruction manual will be provided along with the Apparatus
- The set-up is fitted with required guards and product collection tray
- The whole set-up is well designed and arranged in a good quality painted structure