



# High Intensity Magnetic Separator Induced Roll "Lift Type" Laboratory Model, MLH (13) 111-5

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## LOCATIONS

### WEST COAST

718 N. Fries Avenue  
Wilmington, CA 90744

### EAST COAST

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## Description:

Model MLH (13) 111-5 is a bottom fed laboratory pilot plant dry high intensity electromagnetic separator capable of separating materials based on differences in magnetic susceptibility. This compact separator is designed as a high capacity alternative to isodynamic separators. It is used extensively for bench and pilot scale testing of granular materials and in actual

production situations when separating two or more paramagnetic (weakly magnetic) materials from each other is required. The 'lift type' principle is also favored in minerals research as a magnetic assay technique for obtaining nearly pure fractions of different paramagnetic minerals to facilitate their identification and determine their weight percentage.

The bottom fed lift type separator utilizes a vibratory feeder to transport materials horizontally through an adjustable magnetic field zone where the magnetic force acting on the particle is upwards. A specially constructed lift type magnetic roll rotates to isolate the magnetic fraction as the paramagnetic particles are raised above the bed of moving material against gravity. Virtually no entrapment of other materials is possible with this technique.

## FEED PARTICLE SIZE RANGE

Particle treatment size typically ranges from 1 mm (16 mesh) through 0.034 mm (400 mesh), depending upon the range of particle size, density and magnetic susceptibility. Treatment rates of 50 Kg/hour (110 pounds per hour) are standard for this separator based on material having a bulk density of 1600 grams per cubic meter (100 lb/cubic foot). Individual samples as small as 10 grams can also be separated.

## EXAMPLES OF APPLICATION

- Ilmenite from chromite
- Monazite and other rare earth minerals from staurolite, etc.
- Ilmenite from tantalite, columbite, struverite
- Fractionation of magnetic placer minerals
- Super alloy powders
- Ilmenite-leucoxene-rutile fractionation
- Stainless steel powders
- Natural diamonds from garnets
- Fractionation of synthetic diamonds
- Other materials having small or large differences in magnetic susceptibility

## SHIPPING SPECIFICATIONS

Net Weight: 410 lbs.

Gross Weight: 540 lbs.

Shipping Volume: 18 Ft<sup>3</sup>

Dimensions: 34 "(L) x 19" (W) x 21"(H)

### GENERAL SPECIFICATIONS

High quality separator of compact design with all components and controls arranged about an attractive epoxy finished console as illustrated.

A vibratory feed system is standard, and material is introduced from an adjustable gravity gate feed hopper (standard 62 In<sup>3</sup> capacity).

A DC motor drive permits continuously variable roll speeds from 5 to 300 RPM.

The separating lift roll is 127 mm (5 in.) in diameter by 50 mm (2 in.) wide and of grooved construction.

All components connecting material are of polished stainless steel including the two way free draining product hopper.

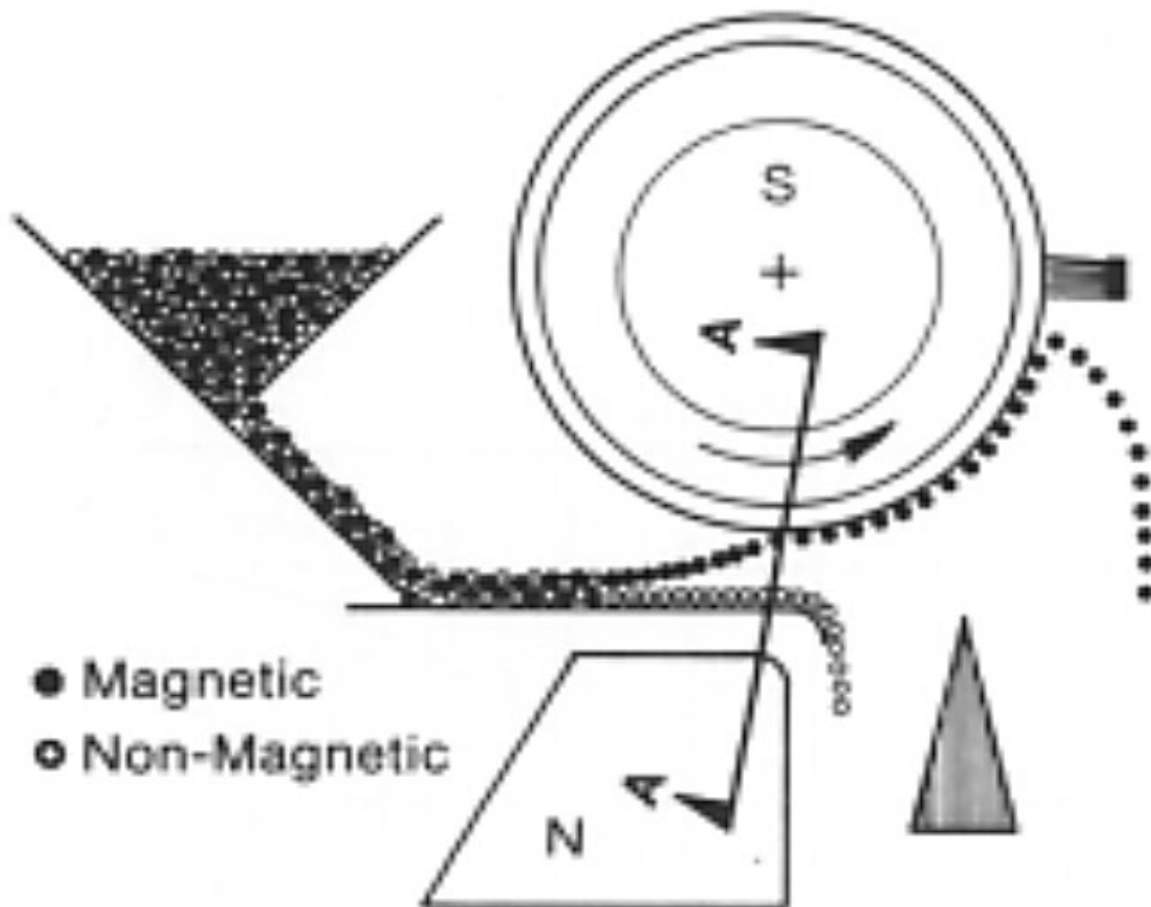
A digital ammeter is supplied as a standard feature to permit precise control of coil input current (0.01 ampere resolution) and corresponding magnetic field intensity.

Solid state DC rectification provides DC power to an air cooled magnet coil, and the magnetic field intensity of the lift magnet separator is illustrated in Figure 1 for varying gap settings.

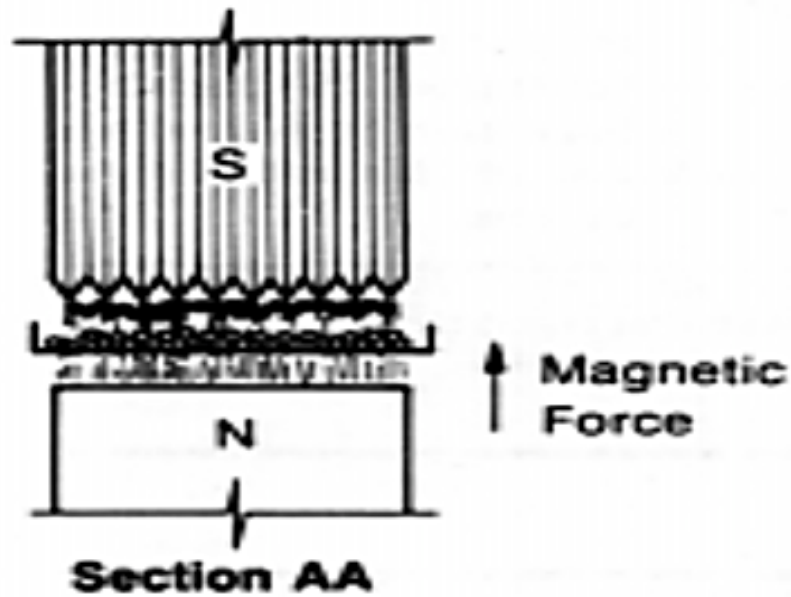
Both chrome plated nose and tail pole pieces are adjustable so that materials having a wide range of particle size and magnetic susceptibility can be treated.

Power Requirement is 115 VAC/1 Phase/7 Amps/50 or 60 Hz OR 230 VAC/1 Phase/4 Amps/50 or 60 Hz. Please specify voltage when ordering.

## How The Lift Type Magnetic Separator Works



Catalog Number	Description
060E-006	MLH(13) 111-5 115 V/1 Ph/50-60 Hz
060E-007	MLH(13) 111-5 230 V/1 Ph/50-60 Hz
060E-008	Optional Surge Hopper, 276 In3



**Cross Section Through Separator Showing How Magnetic Force Is Applied**

