



## PRODUCT BULLETIN

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# Wet High Intensity Magnetic Separator Model CF-5

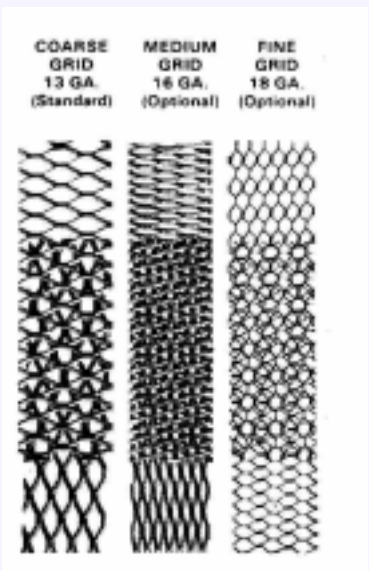
The CF-5 Magnetic Separator is completely controllable. All variables are independently adjustable for maximum flexibility of operation. These variables include magnetic field strength, feed density, feed rate, annular ring speed, product splitter and rinse spray.

This Separator has three main components:

**ELECTRO COIL** - - - generates high magnetic field.

**ANNULAR RING** - - - contains flux-converging elements made from expanded metal sheet. The three variable elements (shown above) have sharp edges to which the feed material is exposed. Each edge becomes highly induced during operation and provides the necessary high-intensity, high-gradient field to separate or attract weakly magnetic particles. When stacked, the element plates form vertically running grooves which assure clean discharge of non-magnetics. Plugging from oversized material is eliminated by lateral openings which permit large particles to be pushed out of the way.

**DISCHARGE TRAY** — collects separated materials below the annular ring. Splitters in the tray are positioned to produce magnetic, middling and non-magnetic fractions.



### UNIT SPECIFICATIONS

Voltage — 11 5V DC  
Cold Amperage — 9,565 amps  
Cold Wattage — 1100  
Variable Ring Speed  
Variable Field Control  
Net Weight — 2685 lb (1218 kg)  
Shipping Weight — 2875 lb (1 300 kg)  
O.A. Dimensions — 38" wide x 48" deep x 64" high (965x 1232x 1676 mm)

### CONTROL SPECIFICATIONS

Voltage Input — 11 5V AC  
O.A. Dimensions — 1 6" wide x 1 2" high x 7" deep (406 x 305 x 179 mm)

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## OPERATION

The CF-S Separator is designed primarily for use as a laboratory unit but it is of such size and portability that it can also function suitably as a Pilot Plant machine. As a laboratory device, it can be utilized to predict the operation and performance of larger models. Data generated by this continuous unit can be directly applied for scale-up to units capable of handling 120 tph (109 mtph) of dry feed.

Samples can easily be analyzed by an investigator to determine the advantages and the disadvantages of varying factors such as magnetic intensity, flux converging elements, feed rate, percentage of feed solids and other variables.

Slurried feed containing magnetics and non-magnetics is introduced into the moving ring containing the magnetic matrix. The magnetized element attracts and holds the ferromagnetic particles while allowing non-magnetic fractions to pass through the magnetic zone, carried along by the drag force of the slurry water.

As the revolving element holding trapped magnetics moves out of the magnetic field, the separated magnetic materials are released.

The element passes through a washing station, where the magnetics are flushed into a compartmented discharge tray. Adjustable dividers keep the magnetic and the non-magnetic fractions separate.

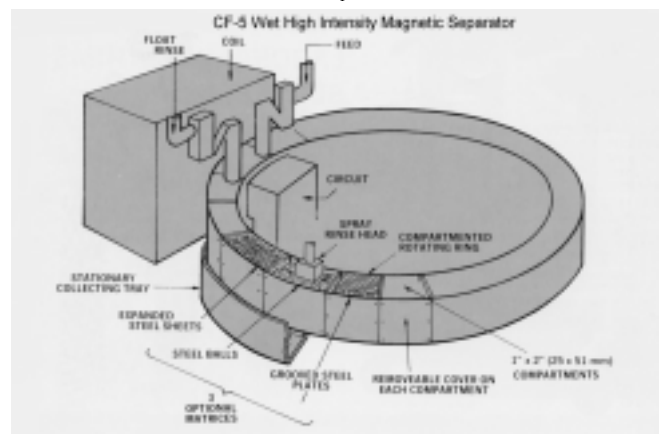
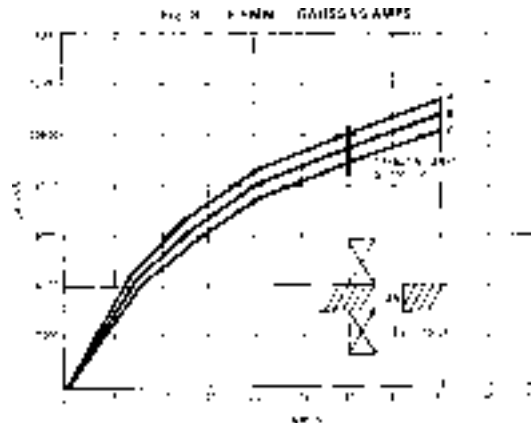
## SPECIFICATIONS

The unit is shipped completely assembled. Control is in a Nema 4 cabinet, mounted on the unit, and incorporates a silicon diode rectifier, ac switch, voltmeter, ammeter and variable autotransformer to adjust current from zero to 11 5V dc.

Capacity varies with types of feed and separation requirements, but ranges from 500 to 1500 lb/hr (225 to 675 kg/hr) on most materials.

The machine is run at the factory to insure proper alignment of all drive and supporting components.

Variable speed dc motor and all bearings are lubricated at the factory.



General Dimensions CF-5 High Intensity Wet Magnetic Separator

