



EDDY CURRENT SEPARATOR



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Operating Principle



An Eddy Current Separator basically consists of a short belt conveyor with its drive at the return end. Inside the delivery pulley a rotor fitted with magnets spins at high speed generating a high frequency alternating magnetic field. In a similar manner to electric motors the alternating magnetic field sets up an electric current in conducting metals within its influence, which in turn produces a magnetic field opposing that of the rotor. Conducting metals are therefore repelled by the rotor, and tend to jump away from it. In operation non metallics are discharged as from a normal conveyor, non ferrous metals because of the repulsive force take a higher trajectory passing over a splitter plate placed between the two flows.



The separating efficiency depends on the frequency of the alternating magnetic field, the strength of the magnets, the speed of the conveyor and the position of the splitter plate. All of these factors should be taken into account when selecting a machine for a particular application. In order to allow non ferrous metals to be repulsed by the rotor, material on the conveyor should ideally be in a monolayer, so throughput will depend on the density and particle size of the material, and the width and speed of the conveyor.



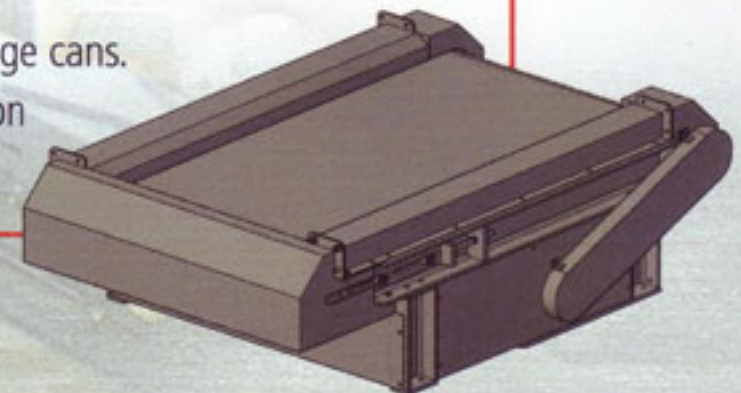
Technology from Master Magnets



Master Magnets ECS designs incorporate the latest generation neodymium-iron-boron rare earth magnetic elements to give the high field strengths necessary for efficient separation. Careful design of the rotor within the outer pulley shell ensures that the product is as close as possible to the magnets, as does the selection of high quality thin section conveyor belt.

Various combinations of rotor size and magnetic design are available depending on the application.

- The standard rotor functions well on such applications as municipal waste recycling.
- The 'Fines' rotor will treat small particle sizes where high rejecting forces are required.
- A special design rotor treats coarse, light material such as beverage cans. All are available in widths from 300mm to 1500mm depending on the throughput required.





Master Magnets can supply a complete solution to a non ferrous separation problem, from laboratory sample testing to design and installation of a complete separation plant. After careful consideration of the operational requirements, the plant will be designed to give a long and trouble

free life, and to produce separated materials to the customers specification. In house experience will be drawn on to ensure that hoppers, feeders, conveyors, magnetic separators, and all other parts of the plant are compatible, and together function efficiently.



Applications

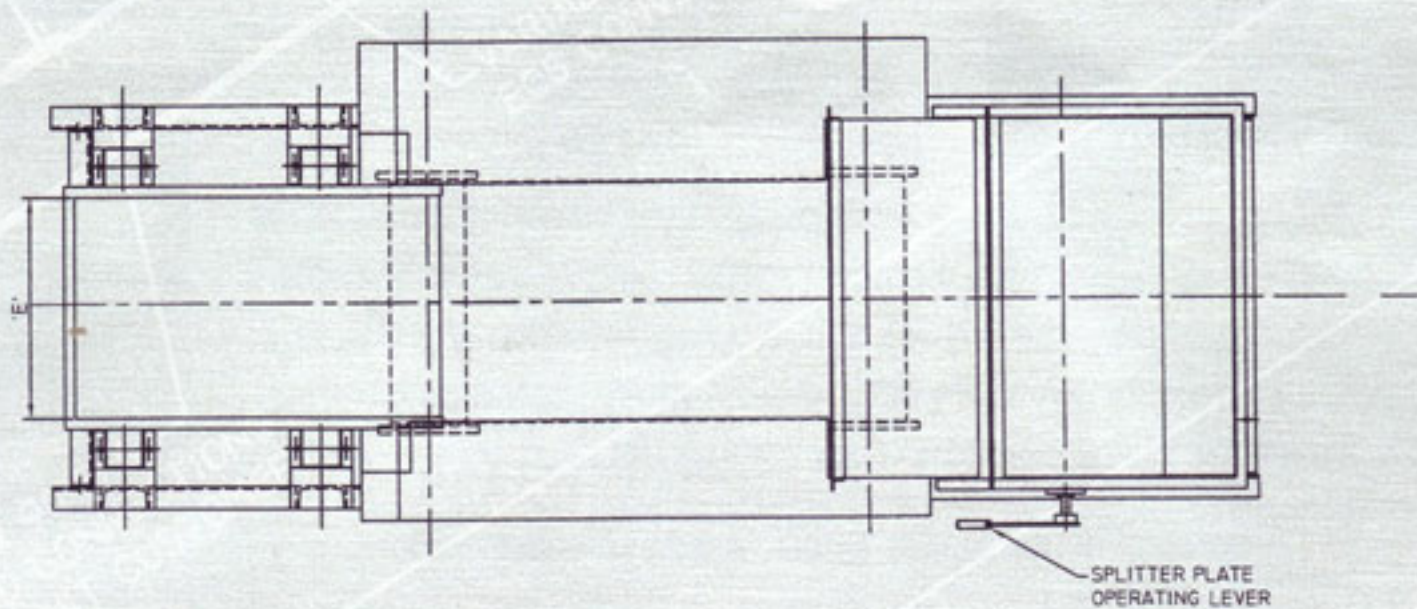
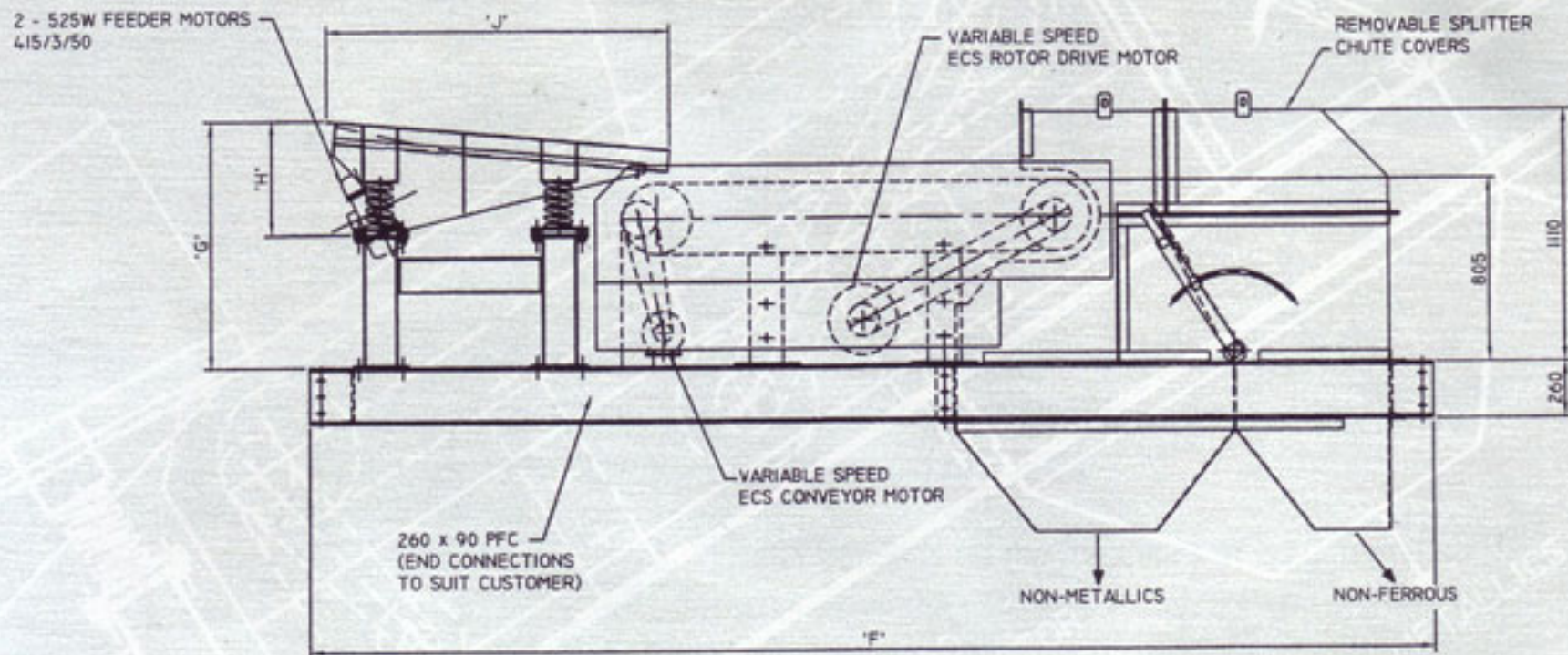
Eddy Current Separators are increasingly used wherever separation of non ferrous metals from a product stream can give a more valuable product, whether the end use is in recycling, reduction of waste, raw material production or any other process where separation is beneficial. Typical examples of applications are :-

- Separation of non ferrous metals in auto shredder residue
- Separation of non ferrous metals from solid waste incinerator ash
- Sorting of steel and aluminium beverage cans
- Removal of contamination from crushed glass cullet
- Extraction of contaminants from process lines
- Separation of non ferrous dross from foundry sand
- Non ferrous metal removal in WEE recycling plants
- Removal of aluminium components in UPVC window recycling

At the heart of many Material Recycling Facilities (MRF's) an Eddy Current Separator will remove non ferrous metals from domestic, commercial and industrial waste.



OUTLINE OF ECS RANGE OF SEPARATORS WITH FEEDER



	SEPARATOR REF.				
	ECS 50	ECS75	ECS 100	ECS 125	ECS 150
DIM A	300	550	800	1050	1300
DIM B	950	1200	1450	1700	1950
DIM C	665	790	915	1040	1165
DIM D	800	925	1050	1175	1300
DIM E	400	650	900	1150	1400
DIM F	4560	4835	5080	5580	6200
DIM G	1020	1045	1065	1110	1335
DIM H	315	447	450	470	690
DIM J	1000	1250	1500	2000	2500
ROTOR DRIVE	4.0KW	5.5KW	7.5KW	7.5KW	11.0KW

Master Magnets have over twenty five years experience providing innovative magnetic solutions to industries involved in recycling, demolition and reclamation, mining and quarrying, food processing, ceramics production and powders and minerals processing. The MasterMag range of systems are known for high performance and reliable operations including magnetic separators for metals reclamation, tramp metal protection and high intensity mineral separation.

Visit Our Website at www.mastermagnets.com for the entire range of Master Magnets Equipment.

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