

Regulator Cetrisa Metal Separators

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SEPARATION OF NON-IRON METALS BY EDDY CURRENTS (R-SPM)

INTRODUCTION

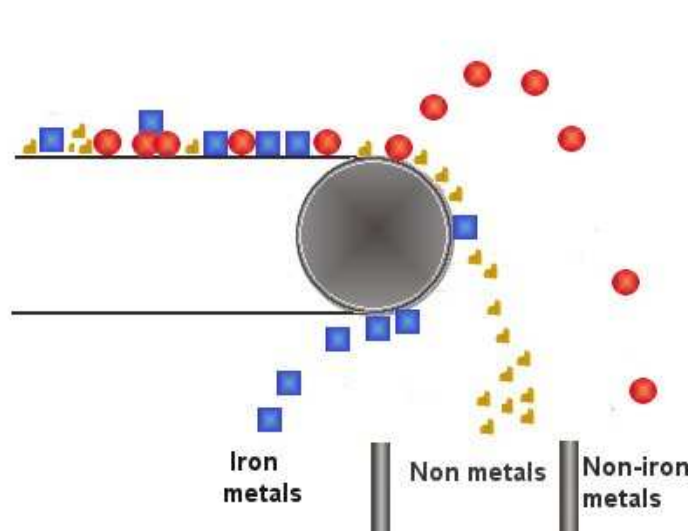
Aware of the serious environmental problem, **REGULATOR-CETRISA** has developed a complete line of **Equipment for Separating and Recycling NON-Iron Metals by Eddy Currents (R-SPM)**. All this is aimed at recuperating non-iron metals in order to significantly reduce the final disposal of products. Both iron and non-iron metals make up one of the groups of materials to be more present in waste reduction, since they involve a high recovery. Aluminium should be considered the most important non-iron metal as it is highly present in our daily lives (cans, boxes, coffee makers, automobiles, etc.) and can be reprocessed innumerable times.

PHYSICAL PRINCIPLE

The physical principle of the Eddy currents is based on an alternative magnetic field, meaning, in a magnetic field where the North and South Poles alternate.

Let's imagine a simple magnet. The lines of force that generate the magnetic field close from one magnetic pole to the other (N-S). If we place an iron metal within the lines of force, these will provoke their attraction towards the magnet. On the contrary, if we place a non-iron metal within the lines of force, these will not produce any effect on the non-iron metal.

However, if the non-iron metal is subject to an alternative magnetic field, internal currents will be created that are called Eddy Currents. These Eddy Currents generate a magnetic field that opposes the magnetic field generated by the magnet. This strong opposition of magnetic fields provokes repulsion between them and therefore the non-iron metal will be literally thrown off its natural path, being separated from the rest of the materials.



In the attached figure of the R-SPM equipment, the behaviour that the different materials will have can be observed:

NON-Iron Metals: They go through an effect of repulsion and jump a certain distance ahead of the Foucault Drum.

Iron metals: They are attracted and trapped by the Foucault Drum and are separated by its lower part and behind the drum's shaft.

Non-metals: They are not influenced and follow the natural parabolic falling path.

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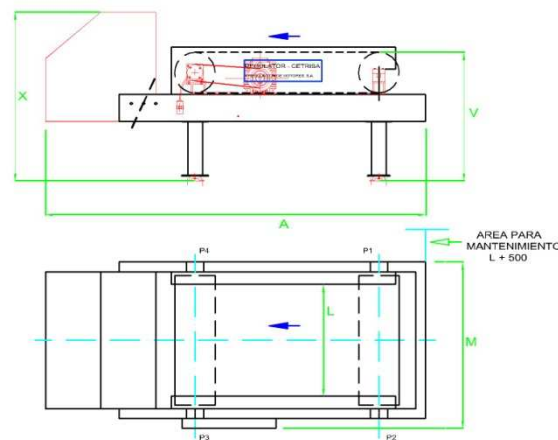
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OPERATION

The **Separator of NON-Iron Metals by Eddy Current (R-SPM)** has a conveyor belt that can handle large volumes of processed material. A robust metallic structure is the support for two rollers: the pulling roller, a belt drive that moves the conveyor belt at speed appropriate to the material being processed, and the head roller, or Inductor Drum, responsible for generating the Eddy Currents. To obtain a high alternation of magnetic poles, the drum rotates at a high speed. **REGULATOR-CETRISA** has equipment with admissible rotation speeds higher than 3,000 r.p.m.

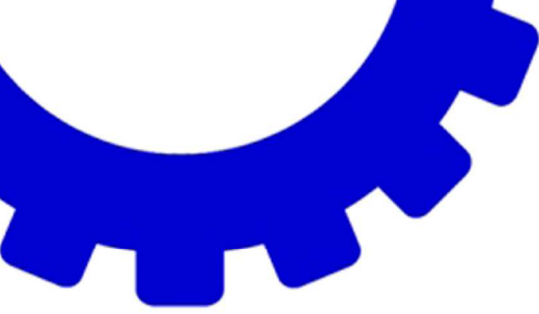
The Inductor Drum is made up of two drums, where the interior drum is the generator of the Eddy Currents, and the exterior drum which rotates at the transmission speed of the conveyor belt. The exterior drum is made of material that is completely transparent to the magnetic and induction fields, in order to avoid the screen and dispersion effects. This way, the loss of IR2 is reduced to zero.

REGULATOR-CETRISA offers equipment with very different configurations (**R-SPM, R-SPM/AD, R-SPM/AF, R-SPM/AM...**) and effective working widths up to 2,000 mm, adapted to the materials that should be processed. For this reason that there is working equipment in many different sectors, such as: Urban Waste Plants, WEEE, ELV, wood, glass, plastic, etc.



EQUIPMENT	A	L	M	V	X
R-SPM0600	3100	600	1050	1000	1350
R-SPM0750	3100	750	1200	1000	1350
R-SPM0900	3100	900	1350	1000	1350
R-SPM1050	3600	1050	1500	1000	1350
R-SPM1200	3600	1200	1650	1000	1350
R-SPM1350	3600	1350	1800	1000	1350
R-SPM1500	3600	1500	1950	1000	1350

Basic outline and measurements of the equipment R-SPM



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CUSTOMIZED DESIGN

The parameters corresponding to the material's aggregate grading, its circulation velocity, the effective working width, the Inductor Drum, its rotation speed, etc., are parameters that are interrelated. Through the optimum adjustment of these, we will obtain the best result and the best separation. The equipment will also adjust to the client's needs: legs, motor side, colour, etc.

REGULATOR-CETRISA uses all of its experience to determine the ideal equipment for every application. Besides its own experience from innumerable applications, the technical department evaluates all the necessary parameters, such as: flow, density, humidity, aggregate grading, etc.

REGULATOR-CETRISA offers the possibility of testing materials in its own facilities, where the client can verify the effective separation of the metals. This way, we can ensure satisfactory results.

REGULATOR-CETRISA, thanks to its continued investment in R&D, offers the best technology for integrating equipment and systems into its processes and Complete Turnkey Installations.

For further information:

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