

INDUCTION MACHINES FOR ELECTRODYNAMIC SEPARATION OF NON-FERROUS METALS

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The development of environmental protection technology and creation of equipment for its realization are among the actual modern problems. Preliminary extraction of metallic particles from solid wastes is one of the obligatory conditions in the various technological processes of recycling solid wastes of manufacture and consumption. Electrodynamic separation is based on the force interaction of a magnetic field with eddy currents induced in conducting particles by a time changing field. This force literally ejects the conducting particle from the product stream. It is the most effective for the recovery of non-ferrous metals. For example excellent separation results in a wide range of application:

- Separation of non magnetic metals from mixed solid waste stream;
- All metals induction sorting;
- Recovery of materials from scrap wires and cables or electronic scrap;
- Separation of conductive metals particles according to size;
- Recovery of non-ferrous conductive metals from foundry mould sands;
- Separation copper and brass from plastic materials, etc.

The modes of electrodynamic separation may be divided into the following groups depending on the character of reasons stipulating induction of eddy currents in conducting particles:

- Transition of particles in spatial non-uniform magnetic field;
- Influence of a pulsing magnetic field of high frequency upon the conducting particles;
- Influence of a travelling magnetic field created by three-phase winding of linear induction motor or by rotating permanent magnets or electromagnets.