

# Low intensity magnetic separators program



Outstanding  
separation  
selectivity





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*Wet low intensity magnetic separator before shipment to an North American iron ore operation.*

Low intensity magnetic separators, LIMS, are designed to recover magnetic material from non-magnetic matter. The separators are of modular design with several frames and process tank designs using a common magnetic drum for ease of selection of the best machine for each individual application.

The magnetic system is using permanent magnetic material to achieve the highest magnetic attraction force with maximum efficiency.

Four different styles of process tanks for wet processing and two significantly different styles of frames for dry processing are available.



*Dry magnetic separator, belt type ready for shipment to an Eastern European iron ore operation.*

### High capacity

While the capacity of LIMS is very much dependant on the material to be processed, the LIMS have proven to have outstandingly high capacity thus fewer machines are required. The separators are available in several sizes and designs to suit each individual application.

### Outstanding separation selectivity

The unique magnetic assembly design promotes excellent selectivity between magnetic and non-magnetic material and the need for fewer machines. Since fewer machines are in service, less maintenance is required and lower capital and operating costs are achieved.

### Ease of operation

The Metso LIMS are designed to allow normal variations in feed conditions without the need of any adjustment. Parameter adjustments, sometimes required at time of commissioning, are made easy by the design of the machines.

### Low maintenance costs

The LIMS are protected against wear by rubber linings of the tanks and rubber or steel covering of the drums. Bearings are designed for extremely long duty and the lubrication can easily be automated.

The availability of the Metso LIMS has proven to be excellent from many years in service

### Models

All low intensity separators are designed around the revolving magnetic drum with an internally stationary magnetic array. The Low intensity magnetic separators are available in several types for vast number of duties and could be seen as split into two categories, i.e. dry separation and wet separation.

The dry models are intended predominantly for material 2 to 200 millimeters in dry or nearly dry state like crushed iron ore.

The wet versions are designed for material of a few micrometer size to less than around 6 - 8 millimeters suspended in water.

For both separator types a number of magnetic systems are available for highest possible efficiency of each application.

### Dry processing

For dry material, around 20 mm and coarser the belt drum type of separator, BSS or BSA, is preferred. For dry material finer than 20 mm the dust house enclosed drum separator, model DS, is recommended.

### Wet processing

Finer material is in almost all applications preferred to be processed in a water. Also for the wet processing there are a number of models to choose from to suit the various requirements.

The concurrent, CC, and counter-rotation, CR, models are mostly selected for processing of ore at the feed end of the concentration circuit.

For production of the final concentrate the counter-current, CTC, model is the most efficient and mostly used model for producing high grade products.

For recovery of e.g. magnetite and ferrosilicon in dense media separation processes a special model, DM and CR, are designed to provide highest possible recovery of the media.

For all wet processing separators the magnet system is selected to achieve best performance in each individual case.

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