

Induced Roll Magnetic Separator



Overview

The Reading Induced Roll Magnetic Separator (IRM) is one of a series of high intensity electromagnetic machines designed for the separation of granular materials having very weak magnetic susceptibility. The unit consists of a number of specially designed laminated rollers rotating between the poles of powerful electromagnets. Mineral Technologies specialise in custom designed IRM units to suit specific client requirements

Features

- Designed for continuous, heavy duty applications
- Optional low intensity drum for removal of particles with high magnetic susceptibility
- Laminated roller profiles selected to suit mineral feed particle size
- Magnet pole (nose iron) profiles selected to suit application
- Adjustable magnet poles (air gap) for intensity optimisation
- Coil rated for continuous use giving up to 2 Tesla adjustable to suit application
- Magnetic circuit design for minimal flux leakage
- Single feed point for 2 start separator
- Trash screen to protect against tramp oversize
- Single fibre separation roller wiping brush on each separation stage
- Adjustable splitter position with provision for a middlings fraction on the lower rollers
- Control panel incorporating magnetic field control, motor starter and interlocks



Design Data

Size Range:	>45micron to 3.0mm
Feed Temperature:	80°C Standard (with option upto 120°C on Custom order)
Moisture Content:	Dry, free-flowing

Applications

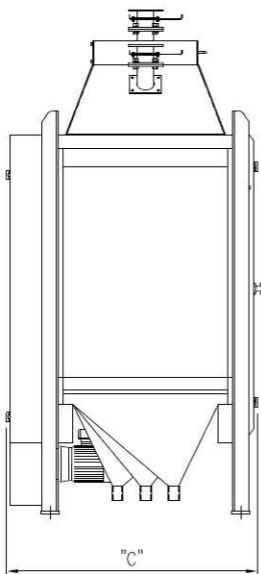
- Removal of any magnetic contaminants from non-magnetic products to meet grade targets
- Production of glass / silica sand and other industrial minerals
- Cleaning of zircon or rutile products
- Separation of high temperature feedstocks

Configurations Available

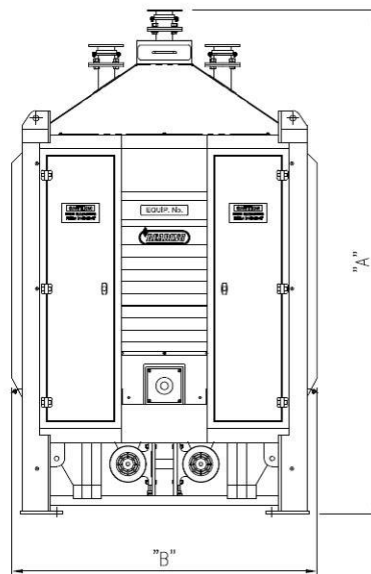
Configuration	Capacity (t/h)
2 x 2 x 760mm x 133 dia.	2-5
2 x 2 x 1000mm x 160 dia.	5-12

Equipment can be fitted with special features as required to suit specific applications:

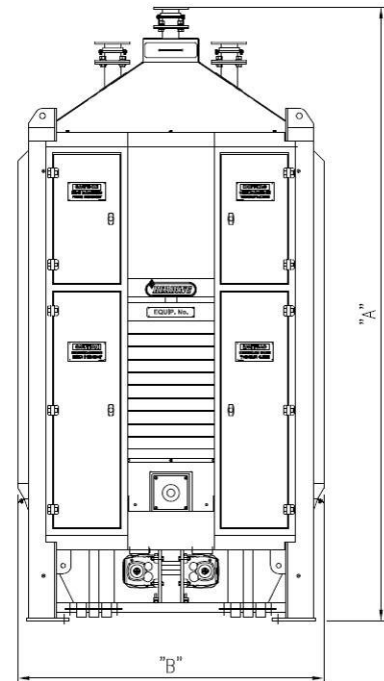
- Scalper drum magnets can be fitted to remove highly susceptible magnetic contaminants when required
- Option to retreat magnetics, middlings or non-magnetics on lower rollers
- New feed presented to all rolls for 4 x single pass separation
- Knifegates on feed and dust ports to allow isolation
- Optional VSD on feed roll to give remote control of feed rate
- Optional Drive Arrangements:
 - a) Belt and pulley driven - standard
 - b) Feed rollers only – direct drive with VSD control
 - c) Feed and separation rollers – direct drive with VSD control



SIDE VIEW
Typical 2x2



FRONT VIEW
Typical 2x2



FRONT VIEW
Typical 2x2+Scalper

General Specifications

		760mm x 133dia. Configuration		1000mm x 160dia. Configuration	
		2x2	2x2+Scalper	2x2	2x2+Scalper
Equipment No. Separator		RR9011	RR9001	RR9101	RR9111
Separator Nett Weight (kg)		4800	5300	6250	6500
Throughput Capacity (t/h)		2-5		5-12	
Dimension	"A" height (mm)	2700	2975	2880	3280
	"B" Width (mm)	1630		1630	
	"C" Depth (mm) Note 1	1370		1610	
Feed Connection		1 x 80NB Table D Flanges		1 x 80NB Table D Flanges	
Dust Extraction Connection		2 x 80NB Table D Flanges		2 x 80NB Table D Flanges	
Dust Extraction Requirement		750m ³ /hr		750m ³ /hr	
Power Consumption (kW)	a) Belt & Pulley Drive	5.6		6.3	
	B) Feed Roller Drive	6.1		6.8	
	C) Direct Drive	7.5		8.2	

Control Panel Equipment No.	RR9031-3 (Option A)	RR9031-1 (Option B1)	RR9031-2 (Option B2)	RR9031-4 (Option C)
Control Panel Description	Suitable for 2x2 and 2x2+Scalper Belt & Pulley Drive	Suitable for 2x2 Belt & Pulley Drive c/w 1 x VSD for Feed OR Separation	Suitable for 2x2 Belt & Pulley Drive c/w 2 x VSD for Feed and Separation	Suitable for 2x2 Direct Drive c/w 3 x VSD for 1 x Feed and 2 x Separation
Size (wide x depth x height) :	800 x 400 x1300	800 x 400 x1900	800 x 400 x1900	800 x 400 x1900
Weight (kg) :	160	230	230	230
Protection Rating :	IP.55			

General Note:

Mineral Technologies reserves the right to alter specifications without prior notice.
 For Certified Drawings suitable for Engineering Design purposes please refer to Mineral Technologies

■ Optional Drive Arrangements:

- d) Belt and pulley driven - standard
- e) Feed rollers only – direct drive with VSD control
- f) Feed and separation rollers – direct drive with VSD control

Note 1:

Depth based on Option A – Drive Arrangement

Pilot Induced Roll Magnetic Separator

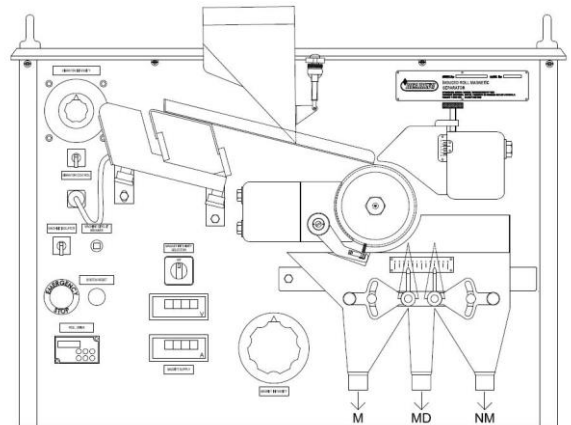


Overview

The “Reading” Pilot Induced Roll Magnetic Separator is specifically designed for the highly selective dry magnetic separation of samples of dry granular materials. As the machine represents a full-scale cross-section of a full-scale production model, direct performance comparisons and machine settings are possible.

Features

- The separation of weakly magnetic materials requiring a field strength up to 2 Tesla (dependent on magnet pole air gap setting)
- Adjustable nose iron (magnet pole air gap)
- Vibrating feeder for precise feed control, standard on all models
- Optional supplementary feed hopper for larger feed samples.
- Single fibre separation roller wiping brush
- Double adjustable product splitters with a “drain free” product chutes to minimise contamination risk of
- Integral controls incorporated on front panel of the separator
- Dual intensity switch giving (low and high range amp indication)



Design Data

Size Range:	>45micron to 3.0mm
Feed Temperature:	80°C Standard (with option upto 120°C on Custom order)
Moisture Content:	Dry, free-flowing

Applications

- Removal
- Grade control testing on plant processes.
- Separation for assaying purposes
- Assessment of plant equipment performance
- Research into new separation techniques and prior to plant flowsheet changes
- Analysis of prospecting samples
- Preparation of batches of material for further research and testing



Options Available

- 1x1x100x133dia. (Refer Figure previous page)
- 1x1x100x133dia. Semi-Lift Vibratory Feeder design for analytical separations and high purity magnetic fractions.
- 1x1x100x160dia.

General Specifications

Equipment Description		133dia. Standard	133dia. Semi-Lift	160dia. Standard
Equipment No.		RL9011	RL9021	RL9101
Separator Nett Weight (kg)		345	345	345
Throughput Capacity (t/h)		0.25 (nominal)	0.25 (nominal)	0.3 (nominal)
Dimension	"A" height (mm)	1770	1770	1770
	"B" Width (mm)	915	915	915
	"C" Depth (mm)	675	675	675
Power Requirements / Consumption		240V / 50hZ / 15 Amps / 1.5kW incl. Geared Motor and Magnet Coils		