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DESCRIPTION

This unit is designed to introduce the students in different aspect of solids behaviour, unit operations as size reduction, mixing, transport, discharge, weighing, etc.

The unit consists on a bench on which are mounted several experiment elements: ball mill, shaker and sieves, V-blender, ejector, cyclone, rotary cylinder, balance, etc.

Operations object of study and the elements used for it:

Size reduction: Ball mill with various sizes of balls.

Analysis of grain measure by sieve: vibratory sieve and other sieves.

Solids blending: V-Blender.

Solids conveyor: Pneumatic conveyor.

Solids separation: Cyclone. Solids storage: Rotary cylinder.

Solids unloading: Hoppers and collecting tray. Solids properties: Graduated test tube.

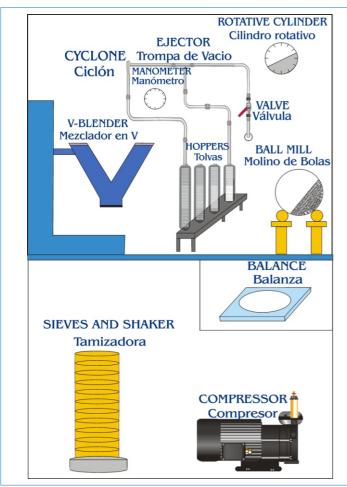
Solids weighing: Balance (scale).

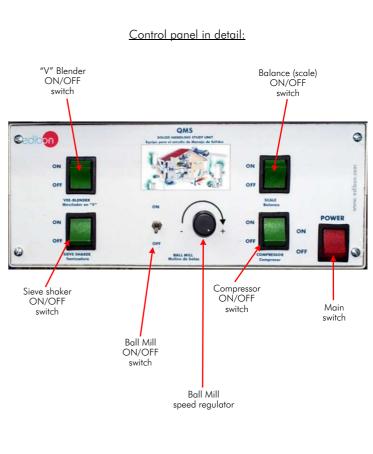












SPECIFICATIONS

Bench with anodized aluminum structure, metallic panels, and with wheels for mobility.

Main metallic elements in stainless steel.

Diagram in the front panel with similar distribution that the elements in the real unit.

Ball mill with variable speed and various sizes of balls. Total volume: 5 l. Capacity: 1.25 l.

Motor for the ball mill.

Vibratory shaker and a set of eight sieves with several hole mesh from 2 mm to 0.063 mm.

V-Blender, total volume: 1 l.

Motor for the V-Blender, range: 18 rpm, (timer: 60 min.).

Blowing and ejector.

Compressor.

Glass cyclone (inlet diameter: 10 mm.), and pneumatic conveyor.

Transparent horizontal angle of repose rotary cylinder with protractor.

Cylindrical hoppers (capacity: 100 cc.) with different size of exit orifices.

Collecting tray.

Balance.

Graduated test tube.

Control panel:

- V-Blender ON/OFF switch.
- Sieve shaker ON/OFF switch.
- Balance (scale) ON/OFF switch.
- Compressor ON/OFF switch.
- Ball Mill ON/OFF switch.
- Ball Mill speed regulator.
- Main switch.

Cables and accessories, for normal operation.

Manuals: This unit is supplied with the following manuals: Required Services, Assembly and Installation, Starting-up, Safety, Maintenance & Practices Manuals.

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EXERCISES AND PRACTICAL POSSIBILITIES

Some Practical Posibilities of the Unit:

- 1.-Sieving techniques.
- 2.-To determine the angle of repose.
- 3.-Study of size reduction.
- 4.-Classification study according to the size.
- 5.-To determine bulk solids parameters of density.
- 6.-To use the hopper to measure solids discharge rates and relate to initial load and hoper exit orifice size.
- 7.-Cyclone operation. Solids separation.
- 8.-Pneumatic conveying.

- 9.-To observe the comminution of granular solids processed through a ball mill.
- 10.- Study of solids mixing.
- 11.- Study of the solids properties.
- 12.- Solids weighing: Balance.
- 13.- Study of the apparent density.

Other possible practices:

- 14.- Mixer operation.
- 15.- Sieves operation.

REQUIRED SERVICES

-Electrical supply: single-phase, 220V./50Hz or 110V./60Hz.

RECOMMENDED ACCESSORIES

- -Suitable solids: sand, salts, sugar, colour chalks, etc.
- -Stop Clock.

DIMENSIONS & WEIGHTS

-Dimensions: $1020 \times 850 \times 1700$ mm. approx.

-Weight: 200 Kg. approx.

* Specifications subject to change without previous notice, due to the convenience of improvements of the product.



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