



- For continuous separation by filtration.
- Cylindrical / Cylinroconical baskets
- Counter-current washing
- Hydraulic pushing mechanism
- Solid discharge by collection channel and down guide
- Separation of Mother Liquor & wash by compartmented casing
- Basket diameters up to 900 mm.

Pusher Centrifuge

Pusher centrifuges utilize continuous filtration for the separation of suspended, fast draining crystalline, granular or fibrous solids from the liquid phase. The solids can be washed as they are transported through the basket.



Application

Pusher centrifuges are used in all fields for the separation of slurries with solids which filtered easily. The average particle size of the solids must be at least 0.1mm.

Typical Products

Chemicals : Glauber's salt, boric acid, ascorbic acid, adipic acid, sodium chloride, iron sulphate, copper sulphate, sodium bichromate.

Fertilisers : Ammonium sulphate, Potash, Urea, Calcium nitrate, Potassium Sulphate.

Plastic/Explosive :

PVC, Polystyrene, Polyethylene, Polypropylene, Linters, Nitrocellulose.

Food stuff/ Animal feeds :

Extraction residues, Meat pulp.
Benefication : Rock Phosphate, Gypsum, Ores, Coal.

Mode of Operation

Feeding

Slurries are fed via a feed pipe-non flowable products are conveyed by a screw - into the feed distributor which rotates at basket speed. Here the feed is accelerated and evenly distributed over the screen.

Filtration and Transport

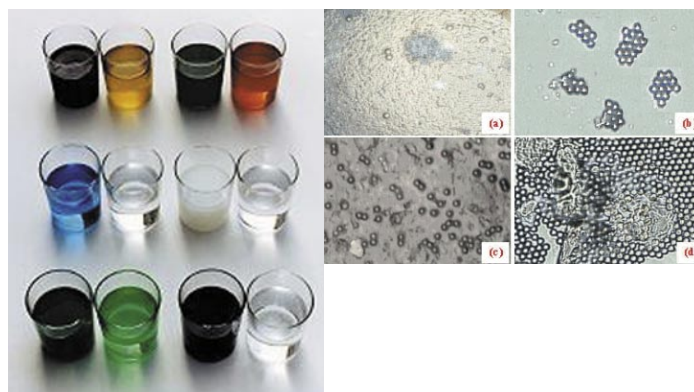
The majority of the liquid is drained at the feed zone of the slot screen and is discharged into the filtrate housing, while the solids form a cake which is moved axially into the solids discharged housing by the oscillating pusher plate. During this axial movement, the solids are dewatered to low final moisture. In single stage basket an oscillating pusher plate rotating at basket speed moves the cake over the screen, a combination of an oscillating inner basket and a stationary pusher plate is used for the cake movement in two stage baskets.

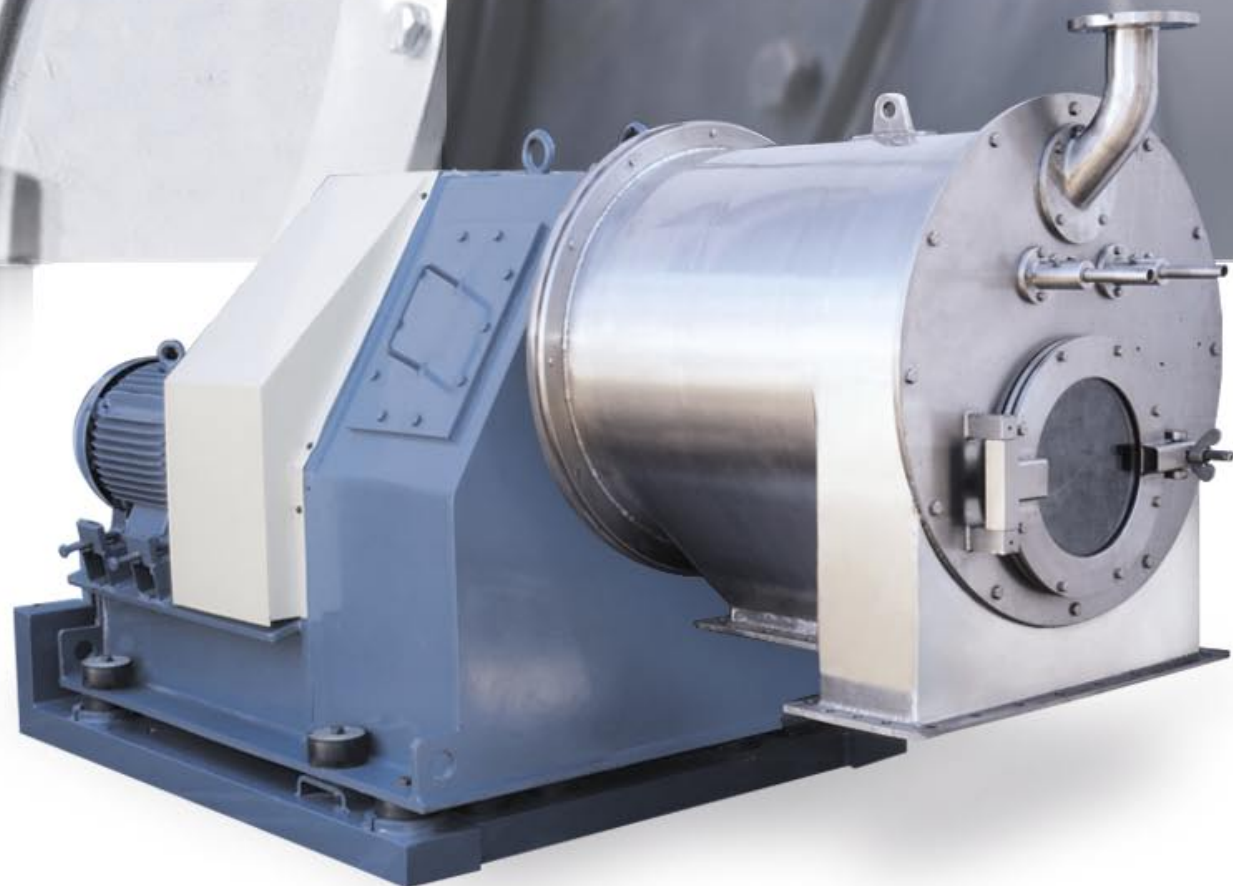
Filtrate Removal

As a result of ventilation from the rotating baskets the filtrate usually is mixed with air. For this reason it is recommended venting at the filtrate outlet flange.

The filtrate housing can be subdivided by partitions for the separation of main filtrate and wash filtrate. An efficient separation can be expected, even for counter-current wash systems, specifically with single stage units.

The filtrate outlet can be directed downwards, or to the right or left of the centerline, with the appropriate change in the direction of basket rotation.





Cake Washing

The Solids layer on the screen can be washed with nozzles or wash baskets.

Discharge of Solids

The cake is discharged from the basket into the solids collecting housing or into a volute race. The solids are discharged tangentially from the volute race at peripheral speed. Thus a volute race discharge can be used as a single point discharge to convey the solids directly to the dryer.

Design Concepts

Complete separation of mechanical unit from the process area.

Long and short baskets.

Single and two stage baskets.

Individual drives for rotor and hydraulic system.

Easy accessibility for maintenance.

Low energy consumption.

Quick and easy installation.

Design Features

Mechanical unit:

Sturdy welded construction of the bearing housing with inbuilt oil pan and motor support.

Vertically installed oil pump which can be removed without drainage of the oil.

Hydraulic pusher control.

Process area

Solids collecting housing and volute race discharge.

Identical housing for single and two-stage baskets.

Feed pipe or feed screw.

Various devices for the distribution of wash liquor.

“Wear protection package” available for abrasive products.

Oil pressure joints for simple assembly and disassembly of the baskets and pusher plate.

Basket

The internal basket is available in several alloys. The basket shell is perforated with large filtration holes / slots. Single, two-stage and multistage baskets in the long or short versions are available for optimum solution of the separation requirements.

Slot Screens

The basket is fitted with a slot screen. The wedge bar profile and the slot width are chosen according to process requirements i.e. depending on particle size distribution and slurry concentration. The slot width is usually between 0.1 and 0.5 mm.

Type/Model	Basket Design	Basket Nominal ø (mm)	LXWXH (mm)	Approx. Wt. Kgs.
TME - 252	2 stage	250	1500 X 1100 X 950	1200
TME - 352	2 stage	350	1500 X 1100 X 950	1400
TME- 402 400	2 stage Single stage	400	2160 X 1100 X 1150	1600
TME - 502 500 500 C	2 stage Single stage Cylindro Conical	500 575	2450 X 1200 X 1200	1900
TME - 602 600 600 C	2 stage 2 stage Cylindro Conical	600 675	2550 X 1250 X 1250	2100
TME - 702 700 700 C	2 stage Single stage Cylindro Conical 2 stage	710 800	3050 X 1550 X 1770	4500
TME - 802 803 800 800 C	2 stage 3 stage Single stage Cylindro Conical	810	3050 X 1650 X 1750	5200
TME - 902 903 904 900 C	2 stage 3 stage 4 stage Cylindro Conical	910	3600 X 1800 X 1950	7150

Hydraulics and Pusher Action

The pusher plate (or inner basket for two stage units) is operated hydraulically. The hydraulic pump vertically installed in the oil pan, supplies the required quantities of oil at upto 60 bar pressure. The reversing mechanism is integrated within the pusher piston, which operated hydraulically. To & fro movement is controlled by precise mechanical system. Stroke adjustment is available as standard feature.



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