



Screw Type Sludge Dehydrator

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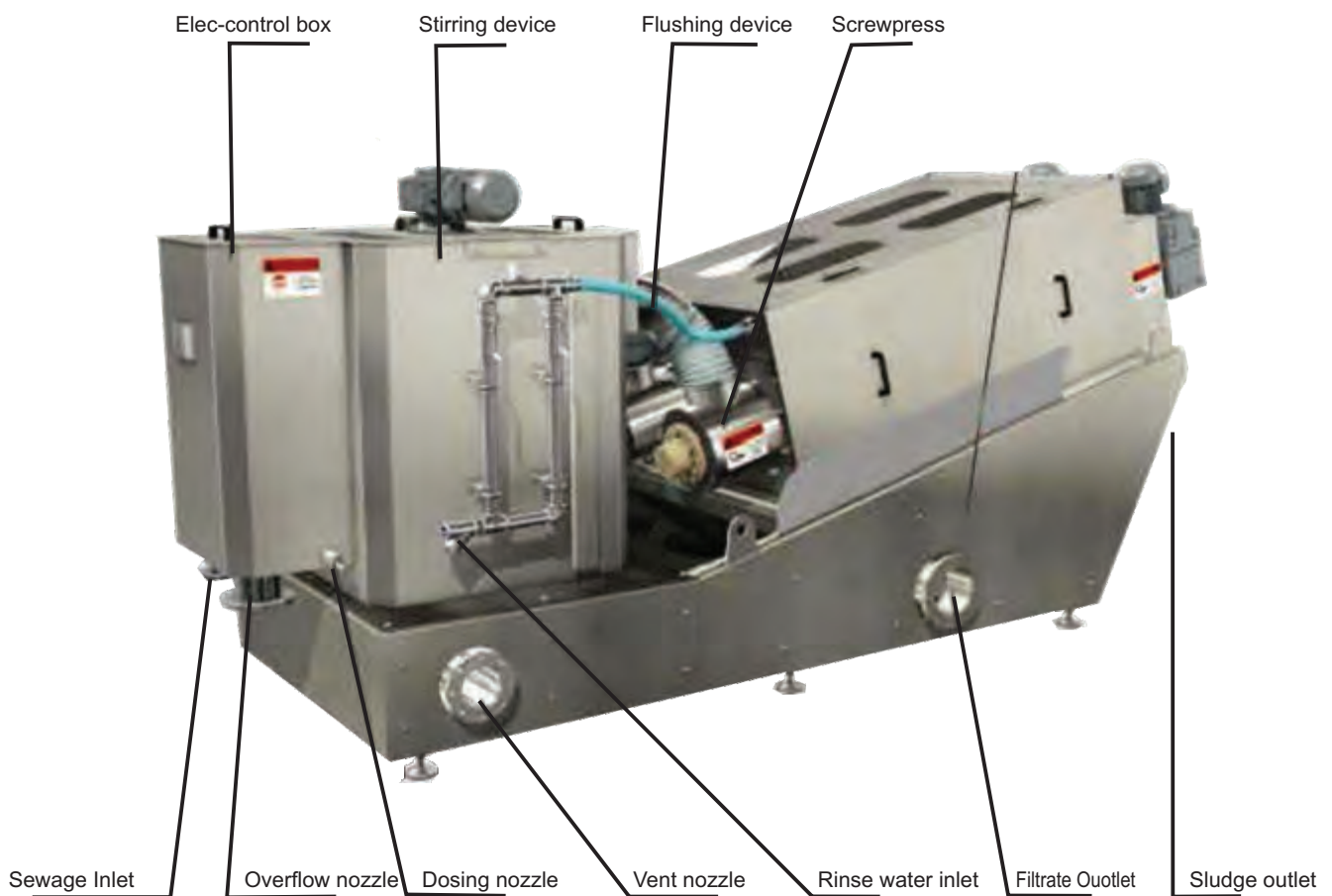
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Introduction

The Screw Sludge Dewatering Machine is a new sludge dehydrator with automation of various processes that save energy and has operation stability. It is integrated with auto-control cabinet, sludge thickening and dewatering collection tank. Highly efficient flocculation, continuous sludge concentration, continuous dewatering and filtration are done automatically in a single process .



Key Features

- ❖ Simple process, Low investment, Energy-efficient
- ❖ System can be programmed to make the operation more convenient and accurate
- ❖ Unique flocculating agent makes sludge dewatering easier
- ❖ Uniform and accurate dispensing, cost effective.

Application and advantages

Application: Municipal Sewage Petro-Refining, Leather Making, Printing and Dyeing Paper, Coalification Dressing, Biochemical Pharmacy, Steel Pickling and Chemical Sugar, Food Processing etc.

- Advantages:
1. Low operation cost: below 40% of belt press and 20% of centrifuge.
 2. Power-saving: less than 5% of centrifuge.
 3. Water-saving: less than 0.1 % of belt filter press.
 4. Compact: saving more than 60% of the investment for dehydration room
 5. Non-clogging: processes the fats & oils and fiber sludge perfectly.

Biochemical pharmacy

Leather making

Printing and dyeing Paper



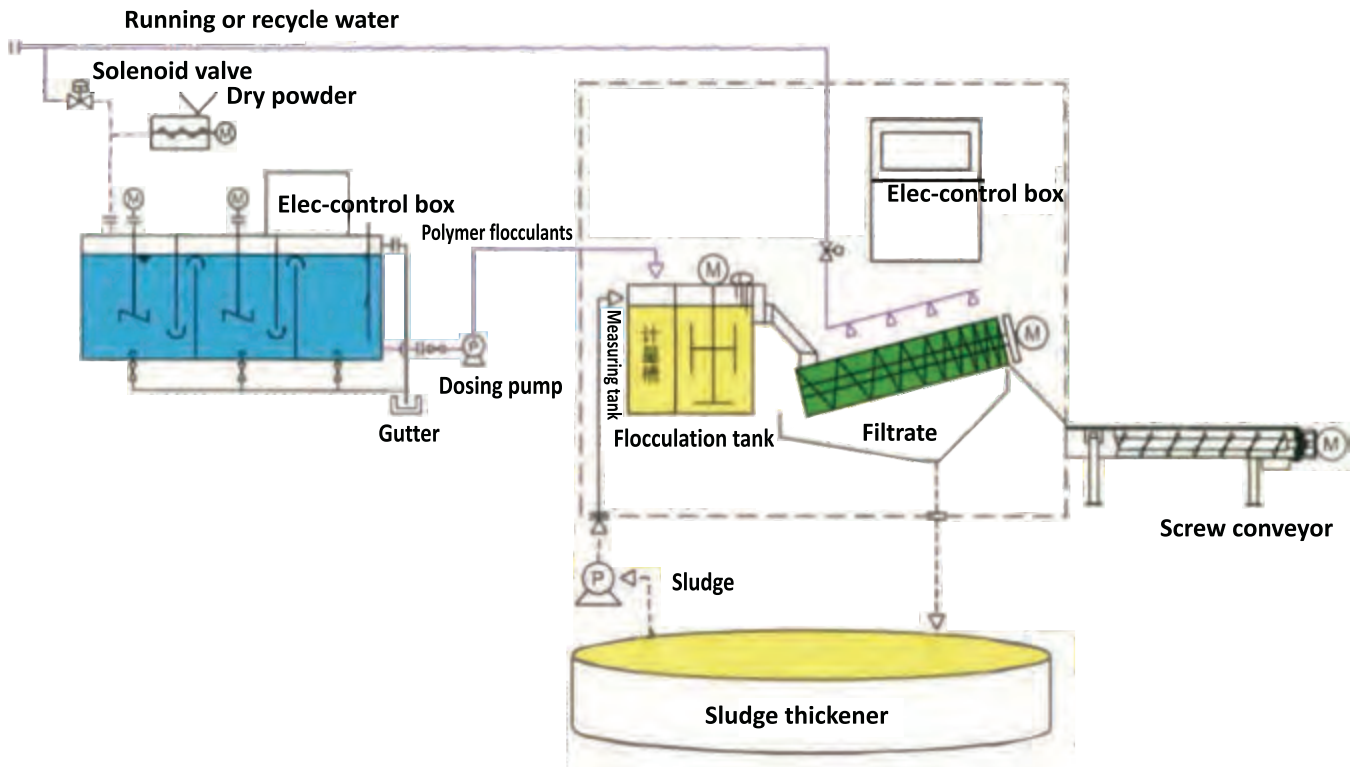
Municipal Sewage

Petro-refining

Sugar refining

Food Processing

Flow Chart



Sludge entering



Flocculating



Dewatering



Compressing



Rinsing



Sludge discharge

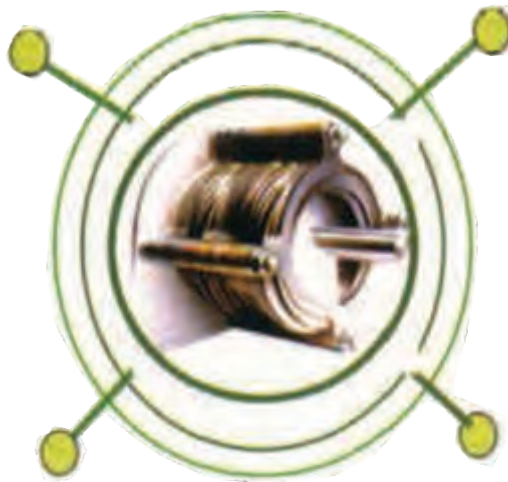
Working Principle

Force & water concurrent

The force and water work in the same direction to make the free water separated with the fastest speed

Thin-layer dewatering

Dewatering with thin layer makes the free water separated by a shorter distance



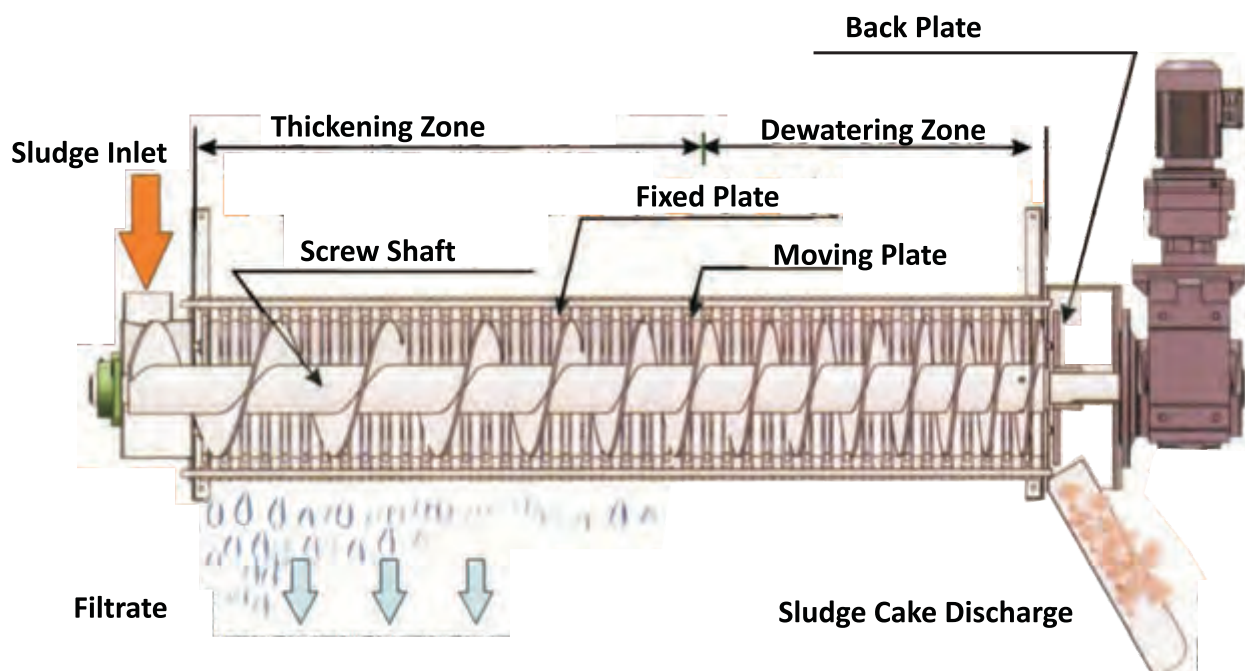
Moderate pressure

Maintain the lowest energy consumption and mechanical wear while ensuring effective sludge dewatering


Extension of the dewatering path


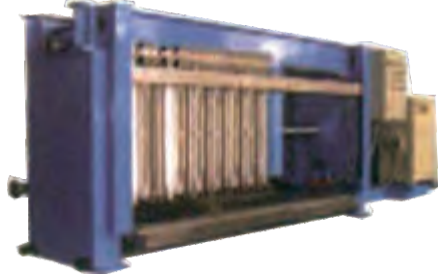
To allow enough time and continuous operation

When the machine starts running, the sludge is pushed into the filter cartridge from the feed inlet and then moves to the sludge cake outlet under the pushing of the helical axis blades. Because the gaps among the helical axis blades gets gradually narrower, the sludge is under heavy pressure and the water gradually comes out from it as a result of pressure between the fixed plates and the moving plates. At last, the sludge cakes are pushed by helical axis after being fully dewatered and then discharged from the outlet.



Screw Advantage Contrast

(Model)		(Volute dehydrator)	(Belt dehydrator)
Construction			
		(Screw press)	(Belt Filter Press)
Dewatering principle	Principle	The filter's main part is formed by a screw axis with fixed and moving plates overlapping. It dewater adequately by the gravity and the power from back pressure plate during the process of progradation. The filter comes out from the space between fixed and moving plates, the sludge cake discharge from the discharge outlet.	Belt filter press is used to dewater the thickened sludge in between two belts filtering the water. The sludge is pre-dewatered by the rotary drum. This machine has two functions: concentration and dewatering.
	Advantage	Low Operation Cost, Low Power Low Noise, Water Saving, 24 Hrs. Operation, Automation	Widely used
	Disadvantage		Easily blocked, incapable of continuos and auto operation.
Feature			
(sludge storage)		No Need	1
(power consumption)		Low	Medium
Cleaning water quantity		Low	Medium
Operating noise, vibration		Negligible	High
Maintenance management		Low	High
Sludge viscous requirements		Low	High
Flocculant		Required	Required
Mud cake moisture content		~80%	>80%
Sludge processing efficiency		>95 %	90-95 %
24 hour self service continuous running		Yes	No

(Model)		(Centrifugal dehydrator)	(Plate dehydrator)
Construction			
		(Centrifugal dewatering)	(Press dewatering)
Dewatering principle	Principle	It dehydrates the concentrated sludge by centrifugal force. It separates, refines and concentrates materials with different ingredients and gravity using centrifugal force.	A plate and frame filter press is the most fundamental design, and many now refer it as a "membrane filter plate". This type of filter press consists of many plates and frames assembled together.
	Advantage	Strong Processing capacity	Low price. Good at inorganic sludge dewatering.
	Disadvantage	Severe vibration, High noise. Difficult maintenance.	Easily blocked, need to use high - pressure pump. Not suitable for oily sludge dewatering, incapable of continuous and auto operation.
(sludge storage)		Need	Need
(power consumption)		High	High
Cleaning water quantity		Low	low
Operating noise, vibration		Low	High
Maintenance management		High	High
Sludge viscous requirements		Low	High
Flocculant		Required	Required
Mud cake moisture content		<80%	~ 80%
Sludge processing efficiency		85-95 %	90-95 %
24 hour self service continuous running		No	No