

Innovative Solution!

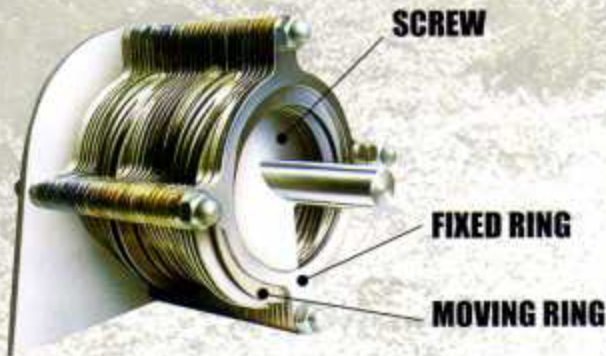
**VOLUTE DEHYDRATOR
ES-SERIES**



AMCON inc.

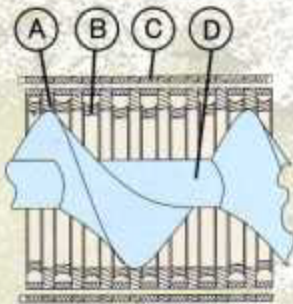
VOLUTE DEHYDRATOR

Amcon has opened a new door to sewage treatment technology that revolutionizes wastewater treatment.

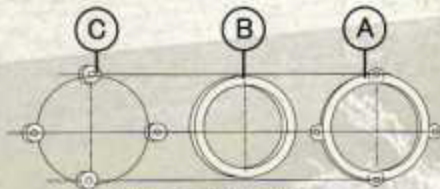
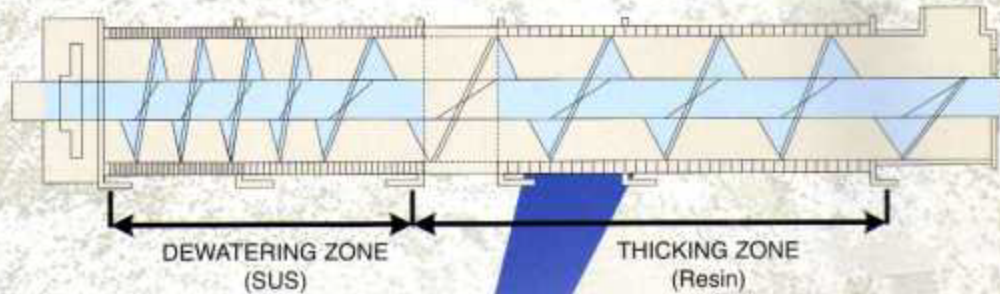


Design and Function

The dewatering drum consists of a screw rotating at a constant speed inside layers of fixed rings, moving rings and spacers. The screw pushes the edge of the smaller diameter moving rings so that they move continuously in the gaps as it rotates. This cleans the gaps and prevents clogging.

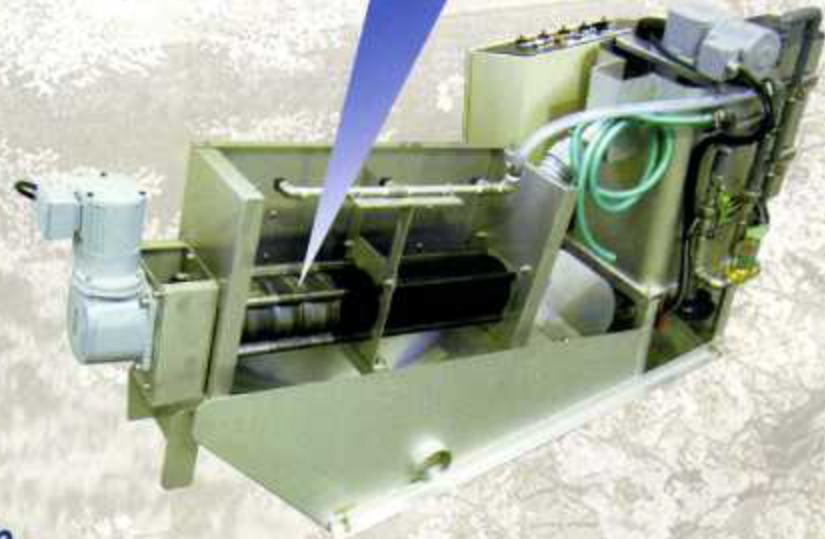


ENLARGED VIEW



PART DRAWING

- (A) FIXED RING
- (B) MOVING RING
- (C) SPACER
- (D) SCREW



Dewatering Principle

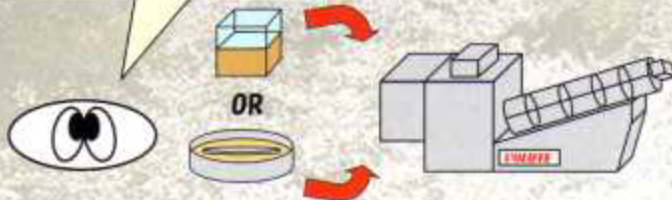
The filtrate water flows out between the gaps in rings. The gaps narrow towards the cake discharge outlet from 0.5mm in the thickening zone to 0.3mm in the dewatering zone and finally to 0.15mm. The screw pitch also narrows, causing the pressure in the dewatering drum to increase as the volume decreases. The end plate further increases the inner pressure to encourage dewatering before the final discharge of the cake.

Volute Expand the Possibility of Sludge Treatment

Characteristic

Low ~ High Concentration is OK.

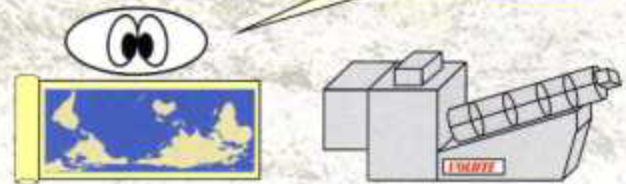
2,000mg/L ~ OK!



Volute can dehydrate from aeration tank's sludge to thickening tank's sludge. It take an active part at many treatment plant.

Large Scale Processing is OK.

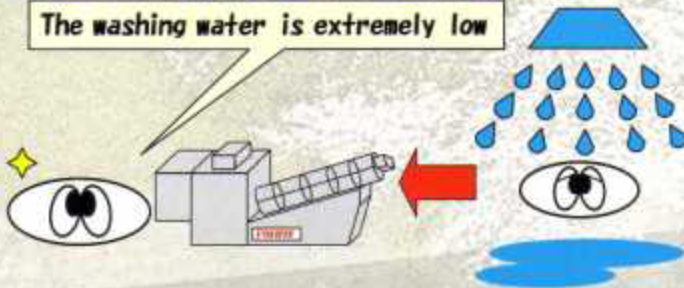
Please use to big project



Volute has large models in product line up. It can adjust to the large scale treatment plant.

No Blockage.

The washing water is extremely low



Volute does not need the washing water for blockage prevention. The washing water is only showering for leak sludge. It is very small amount.

Automatic Operation.

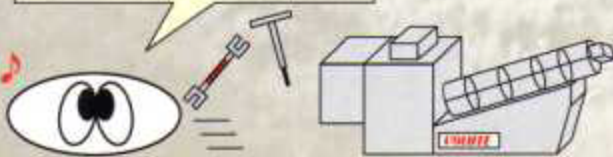
24H OK...



Volute can operate full automatic from feeding sludge to discharge the cake. The residing operation is unnecessary.

Maintenance is Easily.

Uninhabited Operate



The handwork is unnecessary for start up and stop. Maintenance item is few and skilled skill is not need.

Compact Design.

Best for replacement to existing facility

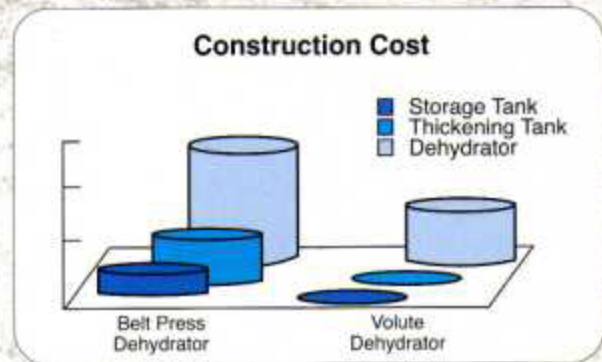
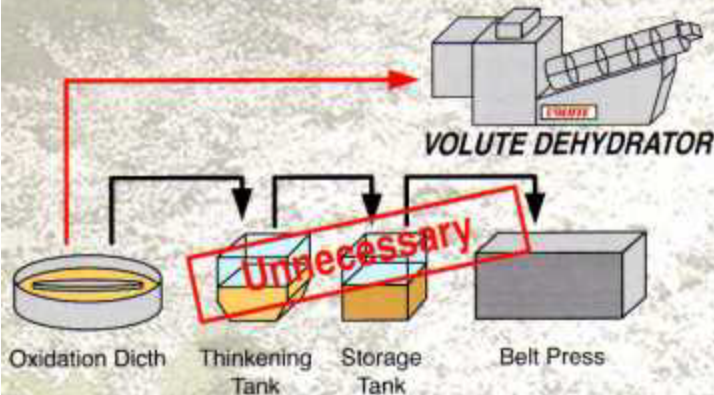


Volute is very compact design. Therefore, when the installation space is limited, it is the suitable.

Volute Specification For Sewage Market

Reduction of Construction Cost!!

- ① The VOLUTE DEHYDRATOR has built in thickening zone which eliminates the need for pre-thickening and storage equipment.
- ① The dewatering drum is delivered together with ancillary devices and is a very compact design which in turn makes the building that lodges the sludge treatment equipment compact. This saves space and reduces costs.



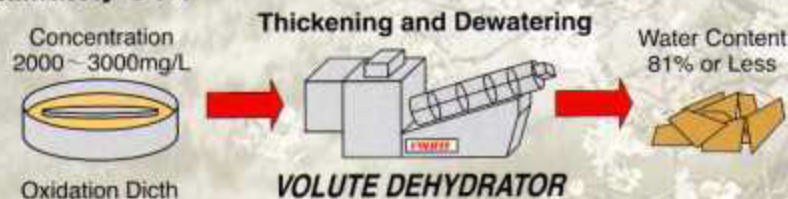
Reduction of Running Costs!!

- ① The VOLUTE DEHYDRATOR is designed to prevent clogging, eliminating the need for blockage preventing cleansing water.
- ① The VOLUTE DEHYDRATOR can be controlled using the control panel installed next to it. Power consumption of the VOLUTE DEHYDRATOR is low.



Highly Efficient Dewatering!!

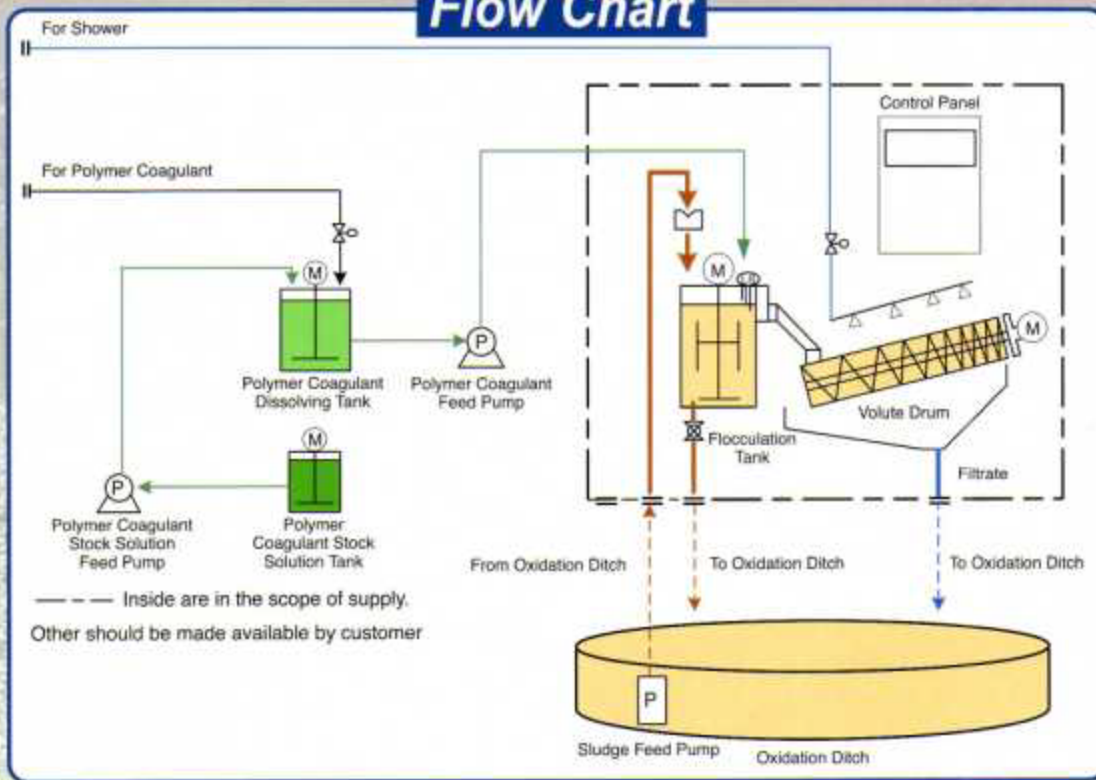
- ① This high-performance and high-efficiency dewatering device directly dewateres low-concentration sludge from the oxidation ditch and products a cake with a water content of approximately 81%



24 Hour Fully Automatic Unattended Operation!!

The built-in timer allows for automatic sludge feed, addition of chemicals, thickening, dewatering and cake discharge. The result is fully automatic unattended operation.

Flow Chart



Operational Flow of the Volute Dehydrator

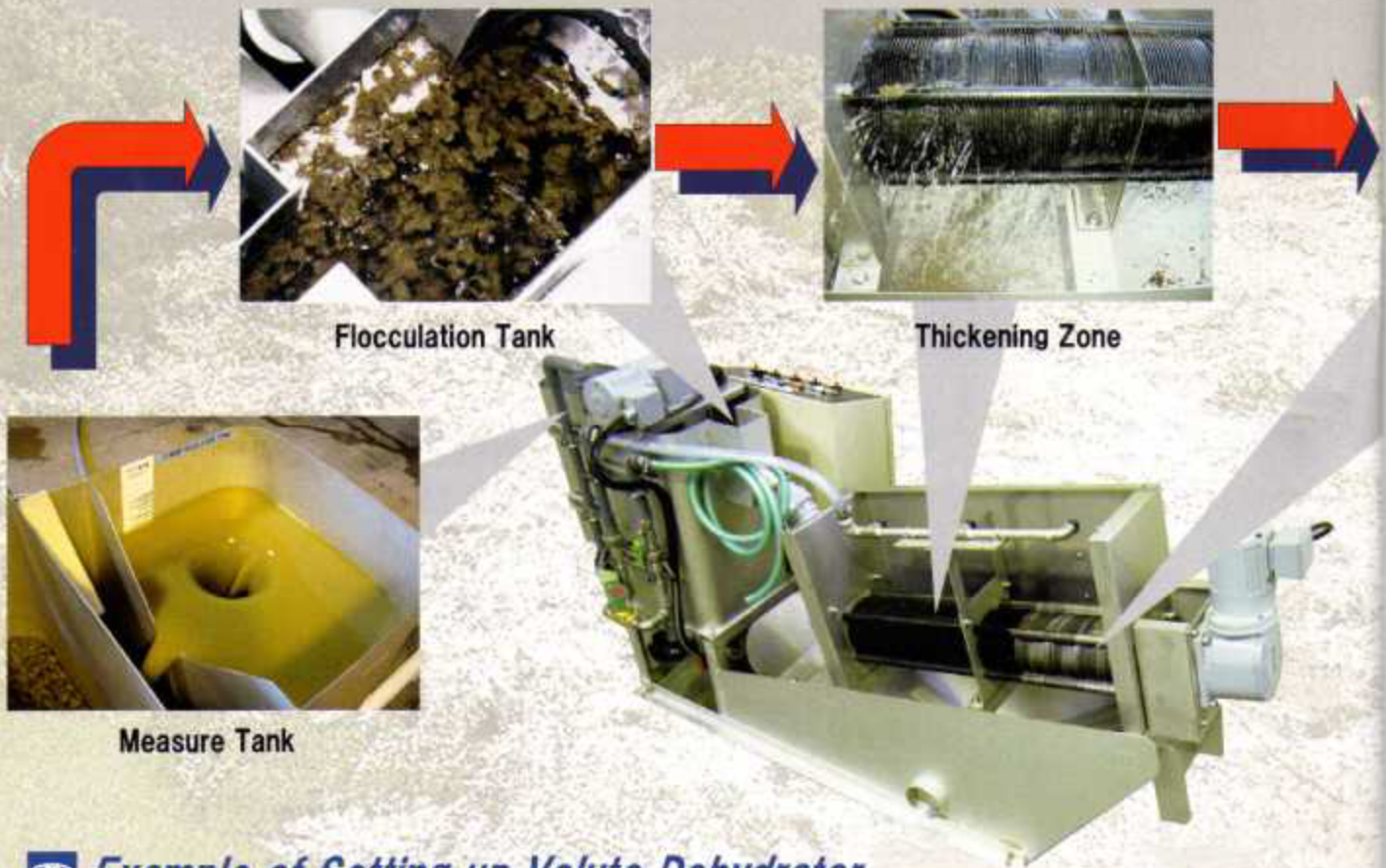
The sludge is automatically fed from the oxidation ditch using the timer in the VOLUTE DEHYDRATOR. The sludge is fed into the flocculation tank where the ferric and polymer are added. In the flocculation tank, the flocculated sludge overflows into the dewatering drums where it passed. After dewatering of the sludge, it is discharged as cake and the filtrate is returned to the oxidation ditch.

Comparison of Other Dehydrators



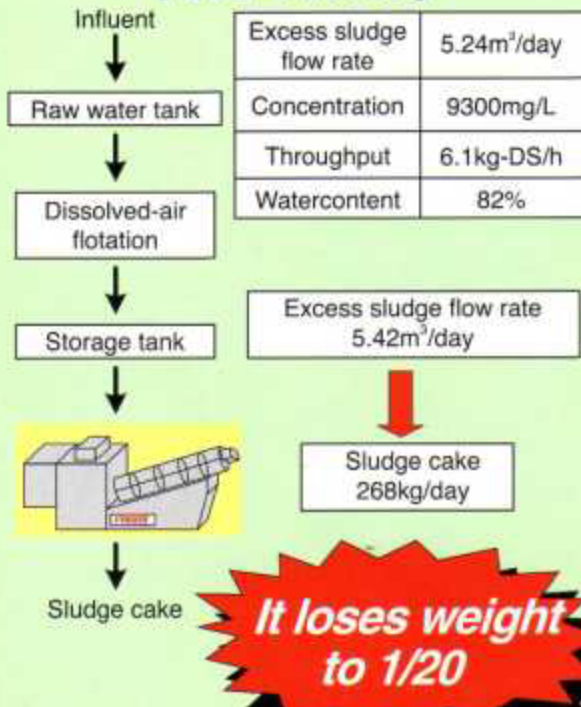
Capability/Feature	VOLUTE	BELT PRESS	CENTRIFUGE
Dewater at low concentration	Suitable	Unsuitable	Unsuitable
Thickening Tank	Not Necessary	Necessary	Necessary
Storage Tank	Not Necessary	Necessary	Necessary
Installation Space	Small	Large	Small
Electric Power Consumption	Low	High	High
Rinsing Water	Extremely Low	Very high	Low
Noise	Extremely Low	High	High
Vibration	Extremely Low	High	High
Maintenance	Easy	Difficult	Difficult
Maintenance Cost	Cheap	High	High
24 hour Operation	Possible	Not Possible	Not Possible

Volute Specification for Industrial Market

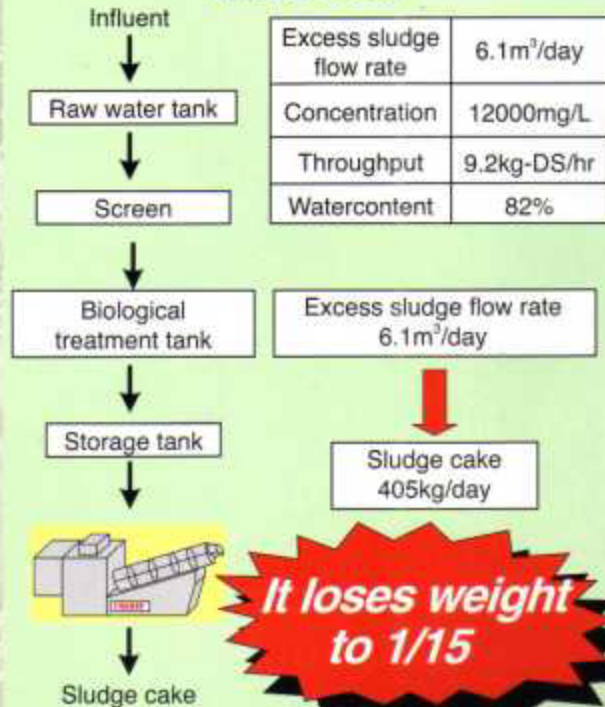


Example of Setting up Volute Dehydrator

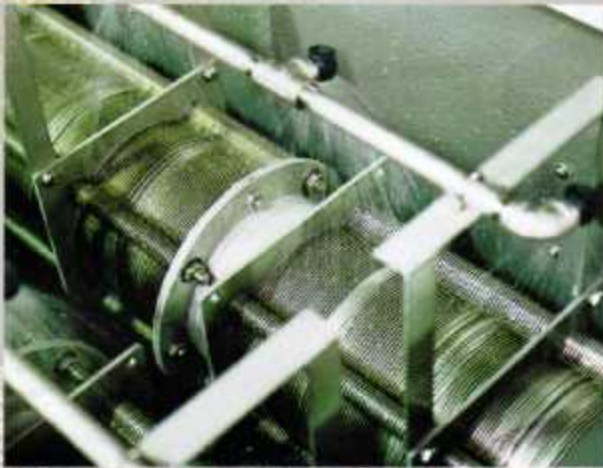
Food factory



Livestock



Installation Flow



Dehydrate Zone



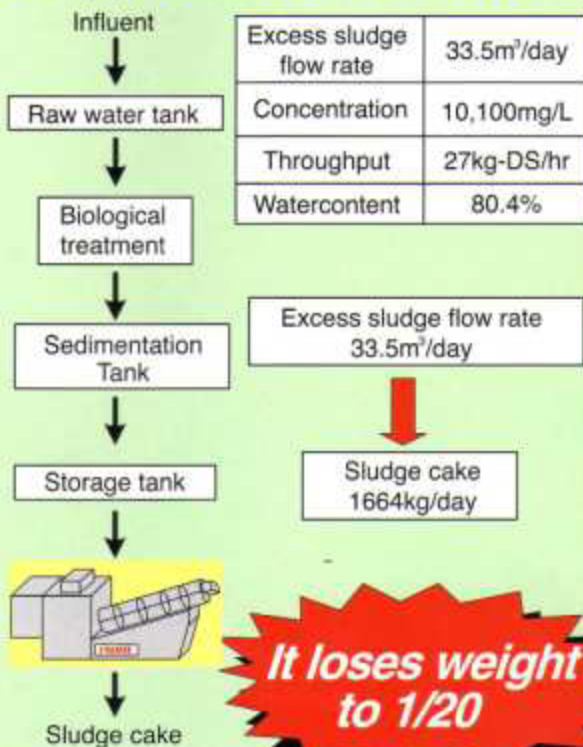
End plate



Sludge Cake

① The Volute Dehydrator developed by AMCON has achieved high performance and effective sludge dehydration in a variety of industries. This includes surplus sludge from biochemical treatments, oil bearing sludge from dissolved-air floatation thickening tanks and waste water from livestock plants.

Dairy products wastewater



Volute Test Unit

AMCON has a Volute Test Machine. If you are interested in our products, please feel free to inquire.

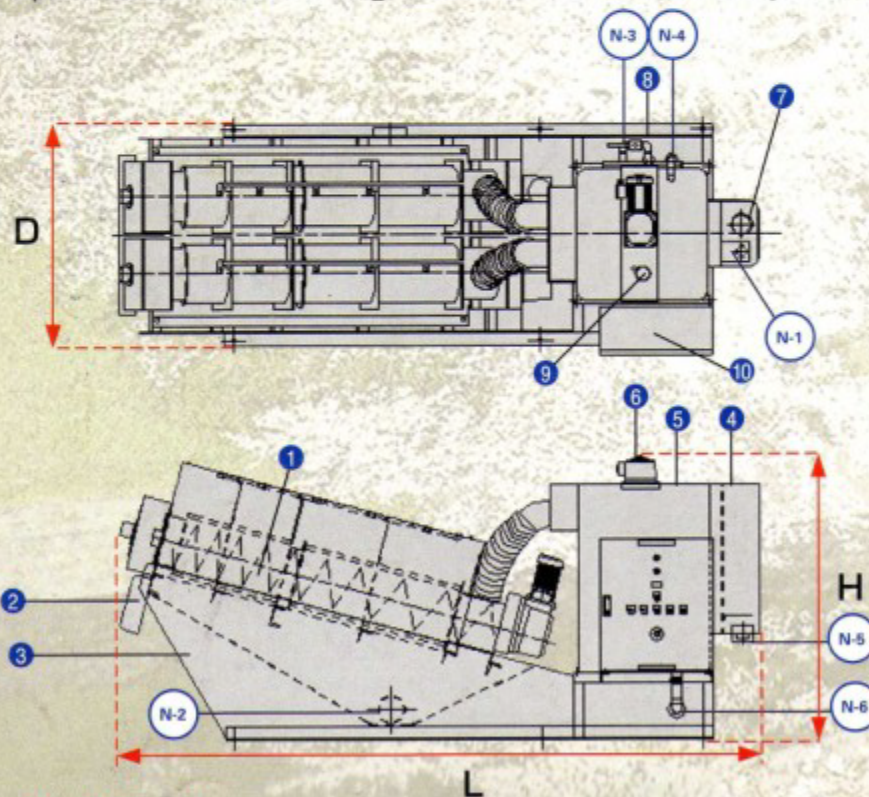


VOLUTE DEHYDRATOR Test Model ES- 101

Specifications

Type	Throughput kg-DS/hr		Screw specifications	Dimensions(mm)			Electrical power	Empty weight
	Excess activated sludge from OD 2000~4000mg/L	Flotation separation sludge 6000~35,000mg/L		L	D	H		
ES-101ST	~3	~5	Φ100×1	1765	756	1045	0.2kw	190kg
ES-131ST	~6	~10	Φ130×1	1919	756	1045	0.2kw	205kg
ES-132ST	~12	~20	Φ130×2	2019	910	1045	0.3kw	275kg
ES-202ST	~18	~30	Φ200×2	2500	935	1275	0.8kw	470kg
ES-301ST	~30	~45	Φ300×1	3205	985	1500	0.8kw	840kg
ES-302ST	~60	~90	Φ300×2	3405	1230	1500	1.2kw	1370kg
ES-303ST	~90	~135	Φ300×3	3555	1590	1520	1.95kw	1840kg

- Ⓜ Standard throughput is in case of 85% of water contents
- Ⓜ Above figures are just reference value. Throughput shall be changed in the kinds of sludge.
- Ⓜ Specifications shall be changed without notice. Please ask you for the latest technical data for your design.



1	Volute
2	Cake Shooter
3	Base
4	Measure Tank
5	Flocculation Tank
6	Flocculation Tank Agitator
7	Water Level Aduster
8	Sorenoid Valve
9	Water Level Switch
10	Control Panel

N-1	Sludge Inlet
N-2	Filtration Outlet
N-3	Water Inlet for Shower
N-4	Polymer Coagulant Inlet
N-5	Sludge Over Flow
N-6	Flocculation Tank Drain

Notification

We have two kinds of Models. One is Single flocculation Tank model with sludge controller which is ES-101ST Model. The other is two flocculation tanks model which is ES-101 Model. If you'd like to use one chemical, Volute Model will be ES-101ST. However, if you'd like to use two chemicals, Volute model will be ES-101. Please don't hesitate to contact us any time!