Amenity Convenience
AMCON®

SLUDGE TREATMENT EQUIPMENT

WINNER OF THE AQUALIA
AWARD FOR INNOVATION 2015

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WEX GLOBAL
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Water and Energy Exchange

Amenity Convenience
AMCON®

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Our job is to

"Provide amenity and convenience which are beyond expectation."

In 1991, AMCON brought Volute into the world where nobody had ever seen such a unique filter element. AMCON's previous experience as an operator of sludge dewatering equipment and wastewater treatment plants urged us to develop a user-friendly machine.

After 10 years, we completed the development of Volute technology, the filter elements with multiple layered Rings. Continuous efforts for development and improvement of the technology are being made to make the facilities more user-friendly and convenient.

Advantages of Volute

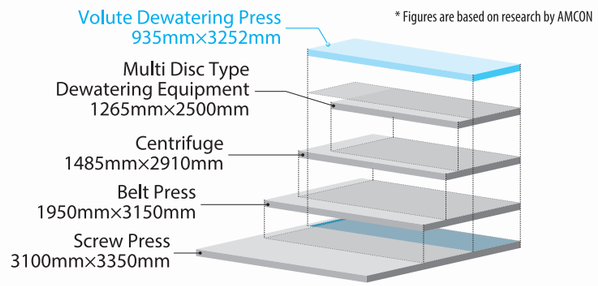
High Resistance to Oily Sludge

The self-cleaning mechanism enables Volute to be ideal to dewater oily sludge, which can easily cause clogging and is difficult to treat with other types of dewatering equipment.

Small Footprint

Volute can be installed in places where placement would not be possible with other technologies.
This makes Volute suitable to customers who are considering the replacement of thier existing dewater ing equipment.

Footprint comparison image



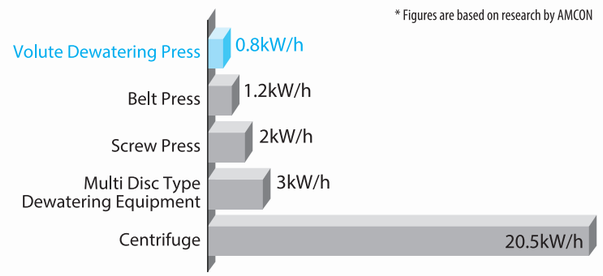
* Figures are based on research by AMCON

*The indicated dimensions above
The shown dimensions for the belt press and centrifuge are for the main bodies only.
For other dewatering equipment, the dimensions of attachments, such as control panels, flocculation tank, etc., are also included.

Power-saving

The screw which is the main component of Volute rotates very slowly at a rate of 2 to 4 rpm, so that it consumes very low power and is economical.

Comparison of power consumption among sludge dewatering equipment (throughput 30 kg-DS/h)



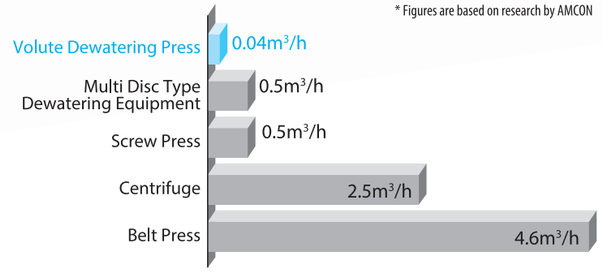
Applicable for Various Applications

Municipal water and wastewater treatment plants, Industrial waste treatment plants, Food/beverage production plants, Dairy farming, Meat processing plants, Chemicals manufacturing plants, Machinery manufacturing plants, Metal processing plants, Laundry wastewater, etc.

Easy operation/Easy maintenance

Full automatic 24-hour operation without an operator on-site is possible with automatic operation control using various sensors. Moreover, daily maintenance is minimized, requires no skilled labor.

Comparison of spray washing water consumption among dewatering equipment (throughput 30 kg-DS/h)



Water-saving

Volute prevents filter mesh from clogging with its unique self-cleaning mechanism, removing the need for huge amounts of water for clogging prevention.

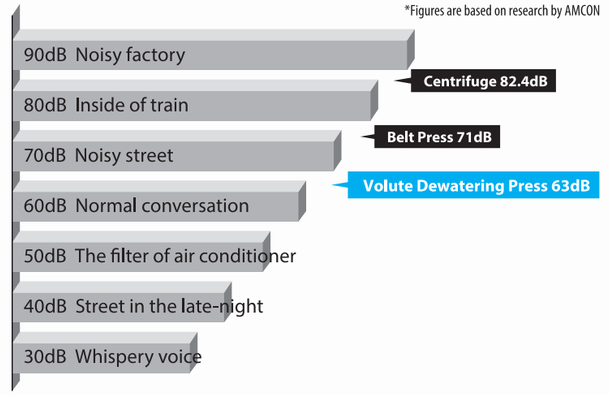
Low noise / Low vibration

Because Volute has no rotating body with high speed, there is no concern about noise and vibration.
A comfortable work environment can be secured.

Two-year Warranty and After Sales Service

All products are accompanied with a two-year warranty.
We focus on after-sales service that makes the operator on site feels comfortable to operate and maintain.

Comparison between noise of dewatering equipment and daily life noise

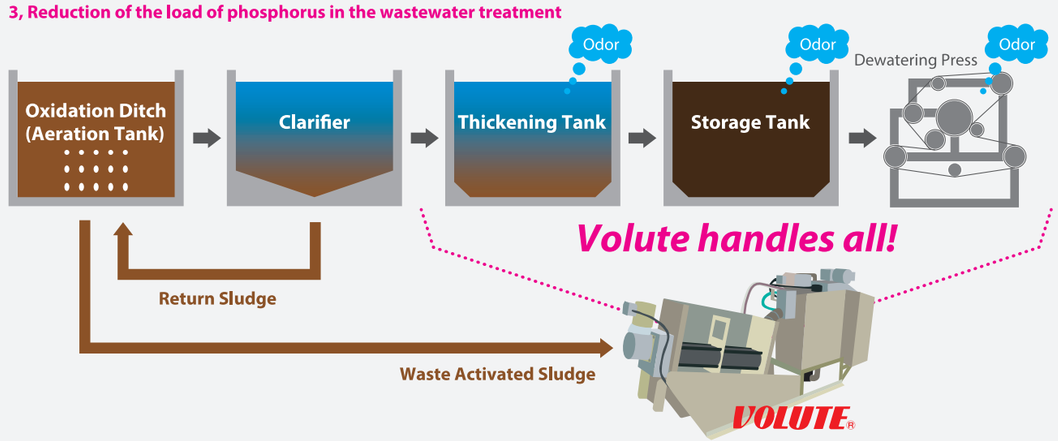


Revolution in sludge treatment Volute introduced - Direct dewatering from oxidation ditch* -

In past times, sludge was commonly thickened before dewatering, but the development of Volute Dewatering Press, consisting of a filtering drum with both thickening and dewatering zone, changed this notion.
Thanks to the unique structure, Volute Dewatering Press can handle low concentrated sludge at 0.2% directly without any pre-thickening stage and is used in a great number of small-scale sewage treatment plants in Japan for dewatering sludge directly from oxidation ditch.

Advantages of direct dewatering from oxidation ditch

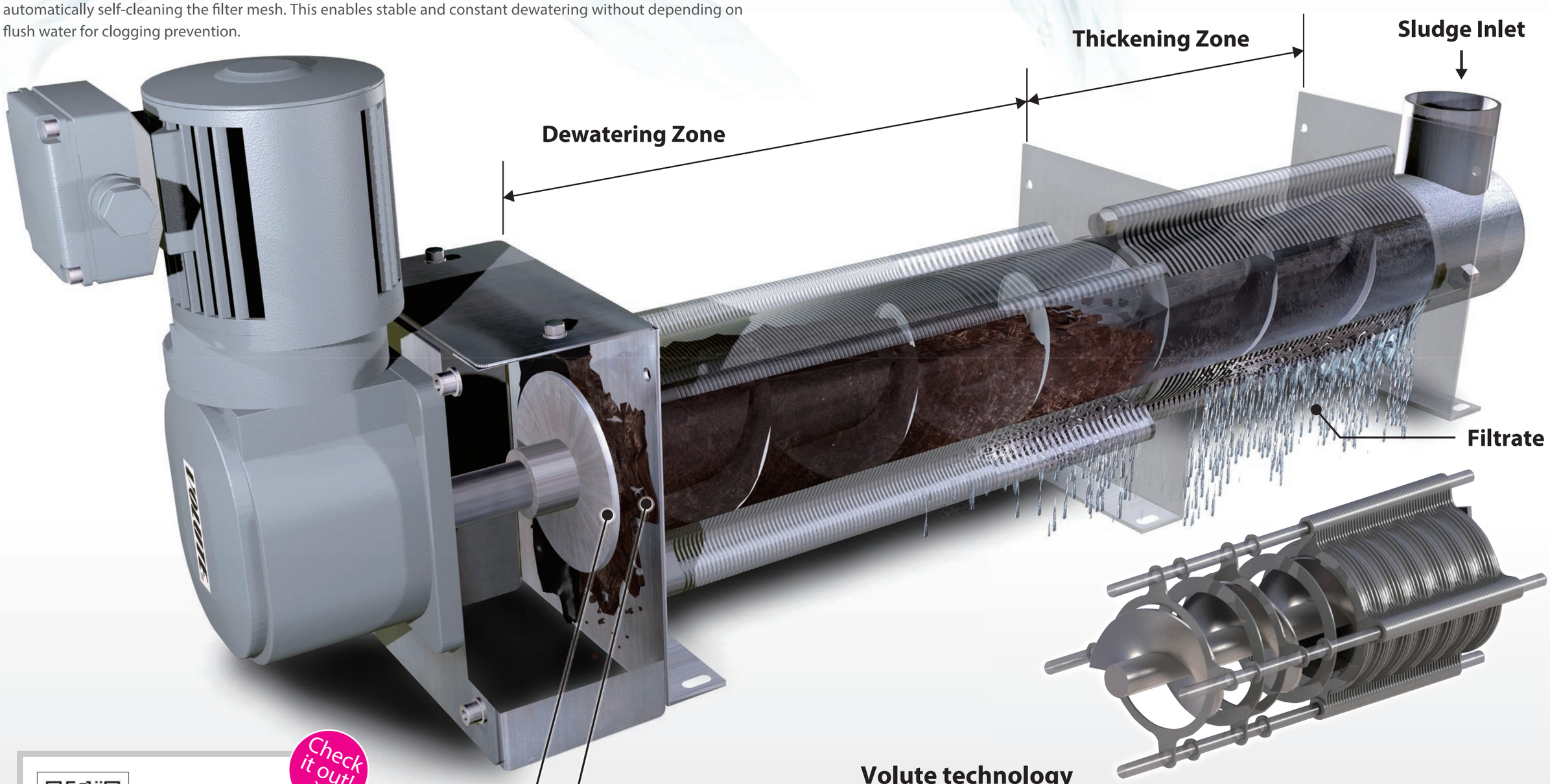
1, Reduction of investment costs for thickening and storage equipment and operation costs
2, Removing odor by dewatering fresh aerobic sludge
3, Reduction of the load of phosphorus in the wastewater treatment



*Demonstrated for the first time ever in the world as a result of the joint research of AMCON and Japan Sewage Works Agency in 1998.

Volute Dewatering Press Unlike Any Other

The performance of dewatering equipment is enhanced by removing clogging which could considerably block the discharge of the filtered liquid.
AMCON's dewatering press is equipped with unique Volute technology, which allows dewatering sludge while automatically self-cleaning the filter mesh. This enables stable and constant dewatering without depending on flush water for clogging prevention.



Check it out!

How was Volute invented?
For more information, please click the following link.
http://en-special.amcon.co.jp

Volute technology

Volute is structured with a filter element that consists of two types of Rings: a Fixed Ring and a Moving Ring; and a screw that thrusts the filter element and transfers and pressurizes the sludge. The gaps between the Rings and the screw pitch are designed to gradually get narrower towards the direction of sludge cake outlet and the inner pressure of the filter element increases due to the volume compression effect, which thickens and dewaters the sludge.

Process Flow

According to customer requirements, two types of main body configurations (with/without sludge conditioning tank) are available.

Model without sludge conditioning tank

3 Cylinder Unit

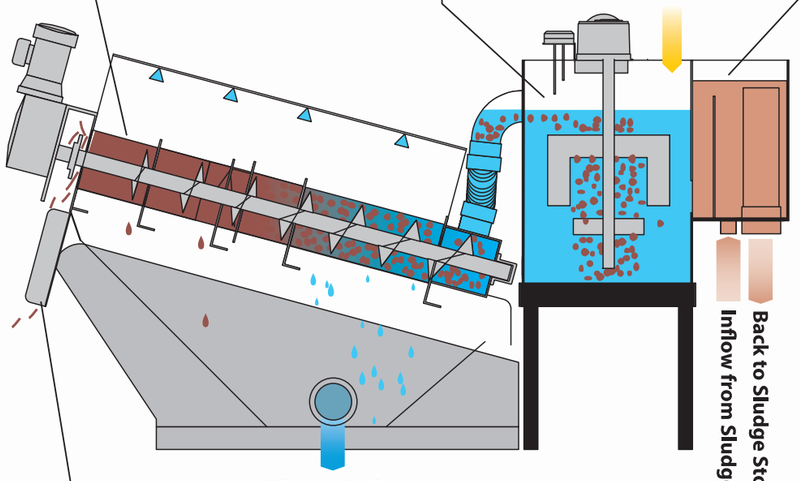
Sludge is instantly thickened at the thickening zone in the precedent stage, and dewatered at the dewatering zone in the subsequent stage under increasing inner pressure.
*Thickener contains no dewatering zone.

2 Flocculation Tank

Polymer and sludge are stirred and mixed, forming flocks suitable for Volute.

1 Flow Control Tank

Sludge feed is regulated with the overflow pipe, returning excess volume to the sludge storage tank.



4 Discharge Outlet for Dewatered Cake / Discharge Outlet for the Thickened Sludge

Further pressure is applied from the outlet side with the End Plate, discharging dewatered cake with 20±5% solids content.
With a thickener, thickened sludge is discharged.
*Thickener is not equipped with End Plate.

Check it out!

For process flow animation, please click the following link.
http://goo.gl/zRVK9e

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Model with sludge conditioning tank

4 Cylinder Unit

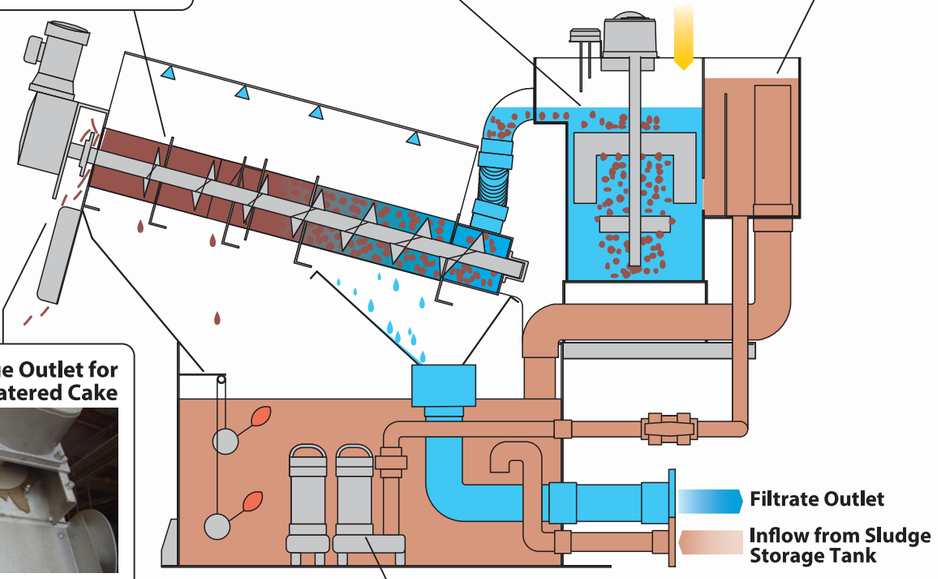
Sludge is instantly thickened at the thickening zone in the precedent stage, and dewatered at the dewatering zone in the subsequent stage under increasing inner pressure.

3 Flocculation Tank

Polymer and sludge are stirred and mixed, forming flocks suitable for Volute.

2 Flow Control Tank

Sludge feed is regulated with the overflow pipe, returning excess volume to the sludge conditioning tank.



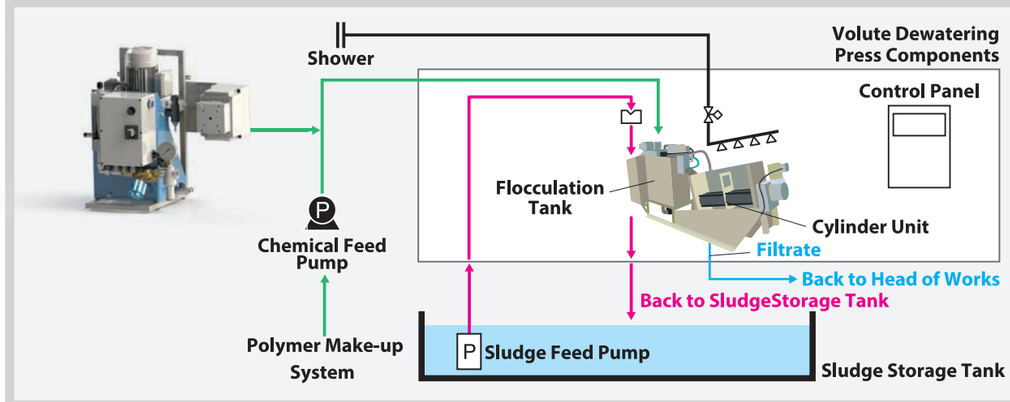
5 Discharge Outlet for the Dewatered Cake

Further pressure is applied from the outlet side with the End Plate, discharging dewatered cake with 20±5% solids content.

1 Sludge Conditioning Tank

A sludge conditioning tank temporarily stores sludge before it is dewatered. The model with a sludge conditioning tank realizes a high solid capture rate higher than 95%.

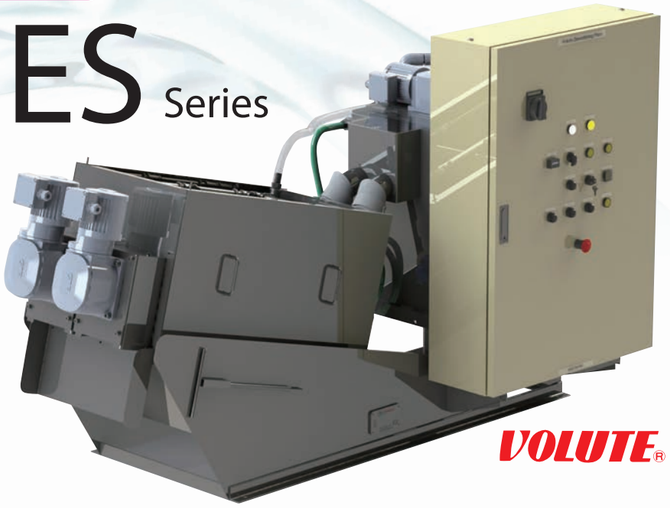
Flow Sheet



Model without sludge conditioning tank

Sludge Dewatering Press Volute ES Series

ES series comprises of models with basic functions at affordable price and are recommended for entry models. ES series lineup also includes models capable of handling large amount of sludge.

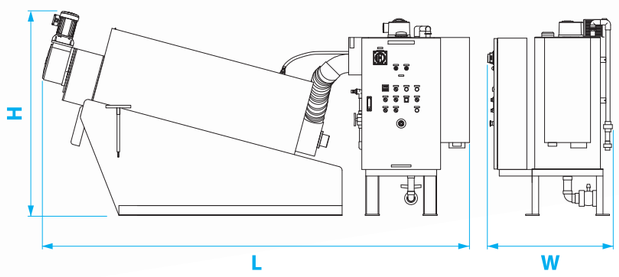


Specifications List

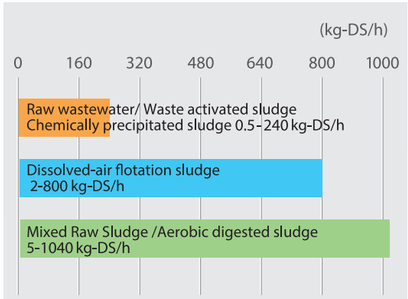
Model	Dimensions(mm)			Total Power Consumption(kW)	Weight(kg)	
	L	W	H		Empty	Operation
ES-051	1095	738	850	0.2	155	175
ES-101	1831	722	1180	0.2	240	330
ES-131	1974	722	1180	0.2	260	355
ES-132	2059	890	1180	0.3	340	485
ES-201	2548	879	1389	0.3	325	475
ES-202	2548	1410	1389	0.73	665	885
ES-301F	3292	970	1678	0.74	855	1145
ES-302F	3492	1250	1678	1.11	1310	1990
ES-303F	3641	1596	1678	1.86	1805	2775
ES-351	3859	1160	2247	1.87	1570	2170
ES-352	4159	1550	2247	3.75	2660	3610
ES-353	4424	2100	2247	6	3870	5370
ES-354	4944	3164	2260	8.2	5560	8160

*The above figures are for models with one chemical inlet. We also have models with two chemical inlets, so please contact us for details.

Layout Drawings



Throughput Range



VOLUTE®

Throughput

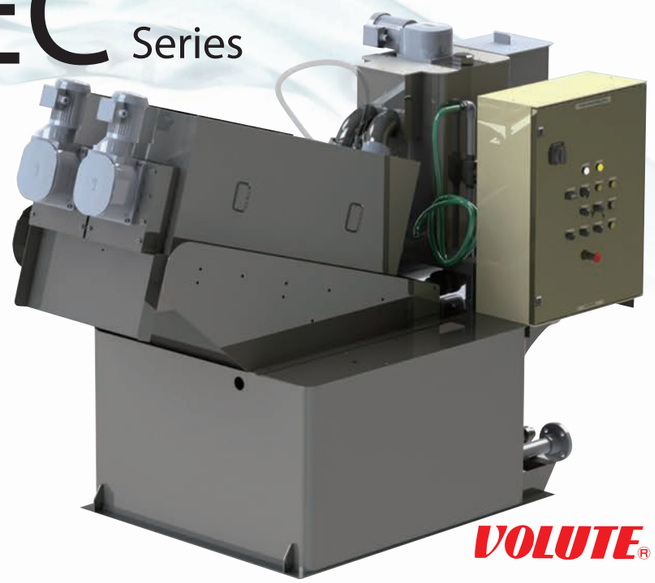
	Raw Wastewater /Waste Activated Sludge / Chemically Precipitated Sludge		Dissolved-air Flotation Sludge		Mixed Raw Sludge / Aerobic Digested Sludge (Sewage Sludge)
Sludge Concentration (TS)	0.2%	1.0%	2.0%	5.0%	3.0%
ES-051	～0.5kg-DS/h (～0.25m³/h)	～1kg-DS/h (～0.1m³/h)	～2kg-DS/h (～0.1m³/h)	～4kg-DS/h (～0.08m³/h)	～5kg-DS/h (～0.17m³/h)
ES-101	～2kg-DS/h (～1.0m³/h)	～3kg-DS/h (～0.3m³/h)	～5kg-DS/h (～0.25m³/h)	～10kg-DS/h (～0.2m³/h)	～13kg-DS/h (～0.43m³/h)
ES-131	～4kg-DS/h (～2.0m³/h)	～6kg-DS/h (～0.6m³/h)	～10kg-DS/h (～0.5m³/h)	～20kg-DS/h (～0.4m³/h)	～26kg-DS/h (～0.87m³/h)
ES-132	～8kg-DS/h (～4.0m³/h)	～12kg-DS/h (～1.2m³/h)	～20kg-DS/h (～1.0m³/h)	～40kg-DS/h (～0.8m³/h)	～52kg-DS/h (～1.73m³/h)
ES-201	～8kg-DS/h (～4.0m³/h)	～12kg-DS/h (～1.2m³/h)	～20kg-DS/h (～1.0m³/h)	～40kg-DS/h (～0.8m³/h)	～52kg-DS/h (～1.73m³/h)
ES-202	～16kg-DS/h (～8.0m³/h)	～24kg-DS/h (～2.4m³/h)	～40kg-DS/h (～2.0m³/h)	～80kg-DS/h (～1.6m³/h)	～104kg-DS/h (～3.47m³/h)
ES-301F	～20kg-DS/h (～10m³/h)	～30kg-DS/h (～3.0m³/h)	～50kg-DS/h (～2.5m³/h)	～100kg-DS/h (～2.0m³/h)	～130kg-DS/h (～4.33m³/h)
ES-302F	～40kg-DS/h (～20m³/h)	～60kg-DS/h (～6.0m³/h)	～100kg-DS/h (～5.0m³/h)	～200kg-DS/h (～4.0m³/h)	～260kg-DS/h (～8.67m³/h)
ES-303F	～60kg-DS/h (～30m³/h)	～90kg-DS/h (～9.0m³/h)	～150kg-DS/h (～7.5m³/h)	～300kg-DS/h (～6.0m³/h)	～390kg-DS/h (～13m³/h)
ES-351	～40kg-DS/h (～20m³/h)	～60kg-DS/h (～6.0m³/h)	～100kg-DS/h (～5.0m³/h)	～200kg-DS/h (～4.0m³/h)	～260kg-DS/h (～8.67m³/h)
ES-352	～80kg-DS/h (～40m³/h)	～120kg-DS/h (～12m³/h)	～200kg-DS/h (～10m³/h)	～400kg-DS/h (～8.0m³/h)	～520kg-DS/h (～17.3m³/h)
ES-353	～120kg-DS/h (～60m³/h)	～180kg-DS/h (～18m³/h)	～300kg-DS/h (～15m³/h)	～600kg-DS/h (～12m³/h)	～780kg-DS/h (～26m³/h)
ES-354	～160kg-DS/h (～80m³/h)	～240kg-DS/h (～24m³/h)	～400kg-DS/h (～20m³/h)	～800kg-DS/h (～16m³/h)	～1040kg-DS/h (～34.7m³/h)

* Throughput above is calculated as approximate and may vary depending on sludge condition. For model selection, please contact us.
* Throughput of each model is based on sludge cake with 20±5% solids content.
* There is no certain upper limitation on inlet sludge concentration, however, the target sludge must be flowable.
* Throughput of DAF Sludge is based on sludge containing much fat, oil, and grease such as meat processing applications etc.
* Throughput of Mixed Sludge (Primary Sludge and Waste Activated Sludge) and Aerobically Digested Sludge is based on sludge containing 30% fiber(75 micron mesh clearance) against Total Solids.

Model with sludge conditioning tank

Sludge Dewatering Press Volute EC Series

EC series standard model Volute dewatering presses consist of the basic configuration and a sludge conditioning tank.

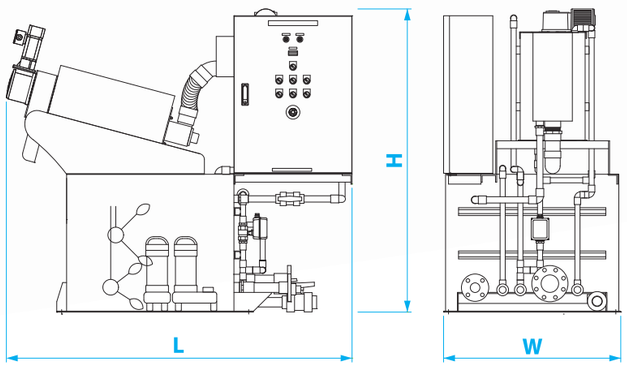


Specifications List

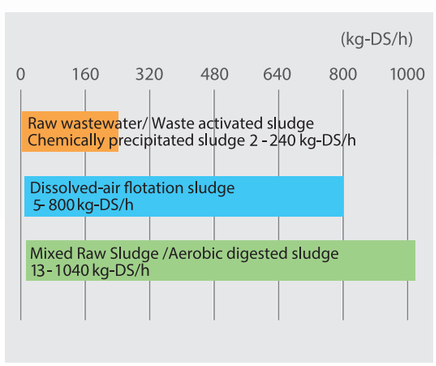
Model	Dimensions(mm)			Total Power Consumption(kW)	Weight(kg)	
	L	W	H		Empty	Operation
EC-101	1831	744	1439	0.7	310	700
EC-131	1934	744	1439	0.7	360	770
EC-201	2547	890	1765	0.8	455	1075
EC-202	2547	1183	1765	1.23	790	1560
EC-301F	3292	1115	2378	1.34	960	2070
EC-351	3859	1511	2247	2.47	1630	2450
EC-352	4159	2061	2247	4.5	2730	3910
EC-353	4424	2610	2247	7.1	3940	5710
EC-354	4944	3631	2247	9.3	5680	8740

*Total power consumption may vary depending on selection of submersible pump.
*Specifications are subject to change without notice. For updated technical information, please contact us.

Layout Drawings



Throughput Range



VOLUTE®

Throughput

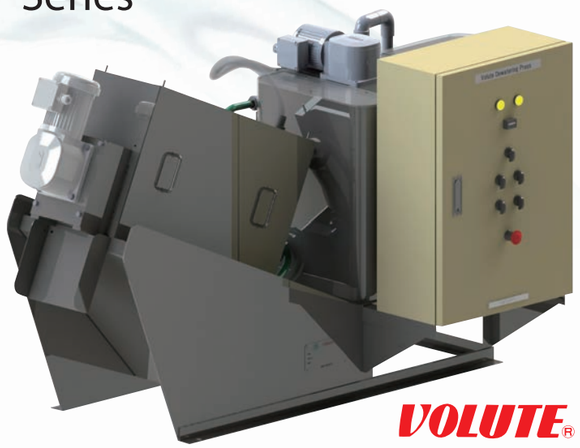
	Raw Wastewater /Waste Activated Sludge / Chemically Precipitated Sludge		Dissolved-air Flotation Sludge		Mixed Raw Sludge / Aerobic Digested Sludge (Sewage Sludge)
Sludge Concentration (TS)	0.2%	1.0%	2.0%	5.0%	3.0%
EC-101	~ 2kg-DS/h (~ 1.0m³/h)	~ 3kg-DS/h (~ 0.3m³/h)	~ 5kg-DS/h (~ 0.25m³/h)	~ 10kg-DS/h (~ 0.2m³/h)	~ 13kg-DS/h (~ 0.43m³/h)
EC-131	~ 4kg-DS/h (~ 2.0m³/h)	~ 6kg-DS/h (~ 0.6m³/h)	~ 10kg-DS/h (~ 0.5m³/h)	~ 20kg-DS/h (~ 0.4m³/h)	~ 26kg-DS/h (~ 0.87m³/h)
EC-201	~ 8kg-DS/h (~ 4.0m³/h)	~ 12kg-DS/h (~ 1.2m³/h)	~ 20kg-DS/h (~ 1.0m³/h)	~ 40kg-DS/h (~ 0.8m³/h)	~ 52kg-DS/h (~ 1.73m³/h)
EC-202	~ 16kg-DS/h (~ 8.0m³/h)	~ 24kg-DS/h (~ 2.4m³/h)	~ 40kg-DS/h (~ 2.0m³/h)	~ 80kg-DS/h (~ 1.6m³/h)	~ 104kg-DS/h (~ 3.47m³/h)
EC-301F	~ 20kg-DS/h (~ 10m³/h)	~ 30kg-DS/h (~ 3.0m³/h)	~ 50kg-DS/h (~ 2.5m³/h)	~ 100kg-DS/h (~ 2.0m³/h)	~ 130kg-DS/h (~ 4.33m³/h)
EC-351	~ 40kg-DS/h (~ 20m³/h)	~ 60kg-DS/h (~ 6.0m³/h)	~ 100kg-DS/h (~ 5.0m³/h)	~ 200kg-DS/h (~ 4.0m³/h)	~ 260kg-DS/h (~ 8.67m³/h)
EC-352	~ 80kg-DS/h (~ 40m³/h)	~ 120kg-DS/h (~ 12m³/h)	~ 200kg-DS/h (~ 10m³/h)	~ 400kg-DS/h (~ 8.0m³/h)	~ 520kg-DS/h (~ 17.3m³/h)
EC-353	~ 120kg-DS/h (~ 60m³/h)	~ 180kg-DS/h (~ 18m³/h)	~ 300kg-DS/h (~ 15m³/h)	~ 600kg-DS/h (~ 12m³/h)	~ 780kg-DS/h (~ 26m³/h)
EC-354	~ 160kg-DS/h (~ 80m³/h)	~ 240kg-DS/h (~ 24m³/h)	~ 400kg-DS/h (~ 20m³/h)	~ 800kg-DS/h (~ 16m³/h)	~ 1040kg-DS/h (~ 34.7m³/h)

* Throughput above is calculated as approximate and may vary depending on sludge condition. For model selection, please contact us.
* Throughput of each model is based on sludge cake with 20±5% solids content.
* There is no certain upper limitation on inlet sludge concentration, however, the target sludge must be flowable.
* Throughput of DAF Sludge is based on sludge containing much fat, oil, and grease such as meat processing applications etc.
* Throughput of Mixed Sludge (Primary Sludge and Waste Activated Sludge) and Aerobically Digested Sludge is based on sludge containing 30% fiber(75 micron mesh clearance) against Total Solids.

Sludge Thickener Volute VT Series

Thickener VT series thickens sludge with concentration of 1% or less to that with a concentration of 4 to 6%.

This mechanical thickening will constantly produce stable thickened sludge, which is difficult with gravity thickening.
It is possible to install as pre-thickener for your existing belt press or centrifuge to improve their dewatering performance.
Furthermore, even in some facilities where the dewatered cakes are not easily transported, the volume of sludge to be disposed of can be reduced by thickening and yet it is still easily transported (pumped) as it is still in liquid form.

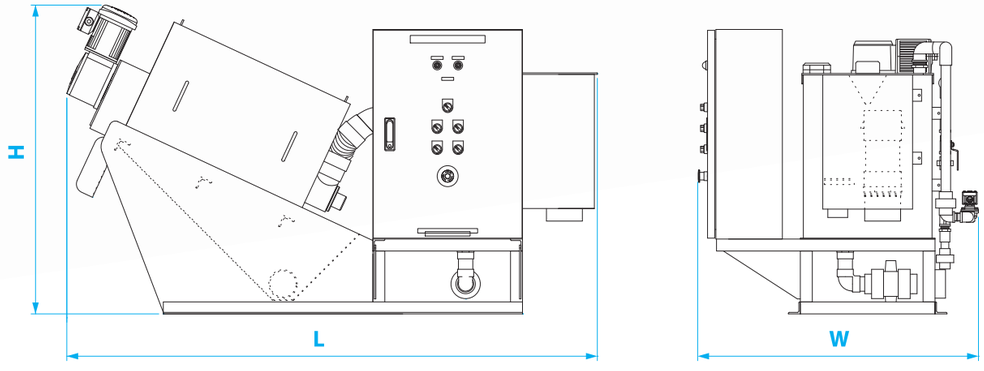


Specifications List

Model	Capacity(Inflow) (m^3/h)	Dimensions(mm)			Total Power Consumption(kW)	Weight(kg)	
		L	W	H		Empty	Operation
VT-101	~ 1	1771	906	1250	0.3	180	310
VT-131	~ 3	1771	906	1250	0.3	190	320
VT-201	~ 10	2451	900	1736	1.15	365	685
VT-301	~ 30	3477	1323	2025	1.5	845	1655
VT-302	~ 60	4777	1685	2025	3	1505	4205
VT-303	~ 90	4977	1930	2025	4.45	1955	5555

* Capacity is based on waste activated sludge from biological treatment with TS 0.4% and thickening up to 4% with polymer.
* Figures above are calculated as approximate and may vary depending on sludge condition. For model selection, please contact us.
* Specifications are subject to change without notice. For updated technical information, please contact us.

Layout Drawings



POLYMORE

Polymer Make-up System - emulsion POLYMORE

AMCON Europe s.r.o. now offer the Polymore range of poly mixing/ dosing units. Polymore fits perfectly with Volute in that it is compact, simple to operate, precise and delivers great results.

AMCON Europe are offering Polymore as part of a package with the award winning Volute, this allows us to offer our ever-growing number of customers a plug and play experience.

Description of POLYMORE

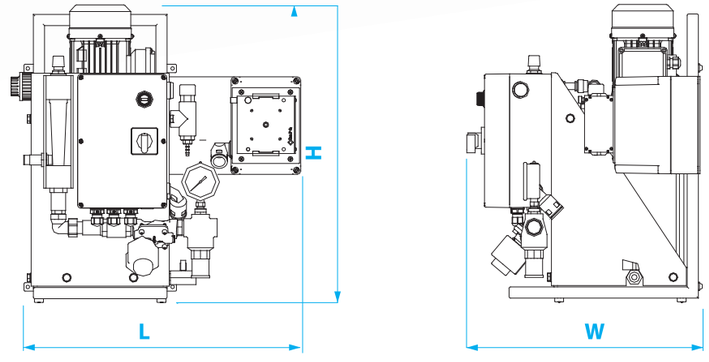
- Complete in-line unit for dosing of liquid polymers
- Peristaltic pump for the dosing of the concentrated polymer gives accurate dosing and minimal need for maintenance.
- 3-zone mixing chamber for optimized wetting and dissolving of the polymer. The design prevents from over-mixing which could damage the undeveloped polymer chain.
- Incoming water pressure distributes the polymer solution through the unit to the dosing point.
- The valve system of the unit makes it possible to vary the dose whilst it compensates for variations in the water pressure.

Specifications List

	Ranged Capacity 100% Active Polymer			Dimensions (mm)			Applicable AMCON Dewatering Press
				L	W	H	
micro 0,5	3g - 60g/h	0,006-0,6	30	500	425	540	ES,EC-101
mini 3-0,6	15g-300g/h	0,03-0,6	48-180	520	420	535	ES,EC-131
duo 40- 6,0	150g-3kg/h	0,3-6	210-2400	640	505	590	ES,EC-302
midi 300-54	1,35kg-27kg/h	2,7-54	1200-18000	800	630	1020	ES,EC-354

*This is a sample of the product range, ranging from smallest to largest details. For specific models please contact us.

Layout Drawings



References

DANONE

TSINGTAO BEER 青島啤酒

L'ORÉAL PARIS

Marinela

PEPSICO

Chevron

Cargill®

ROLLS ROYCE

PetroChina

BIMBO

Tetra Pak

DAIKIN

durex

SNOW 雪花 啤酒 BEER

Ford

SuKarne El Sabor del Norte

LUKOIL