

## **HORIZONTAL VACUUM BELT FILTER** **ARGVF 1000/3000**

\* The Gravity Belt Thickener are used to reduce the water content of the sludge hence reduce the sludge volume and cost of hauling.

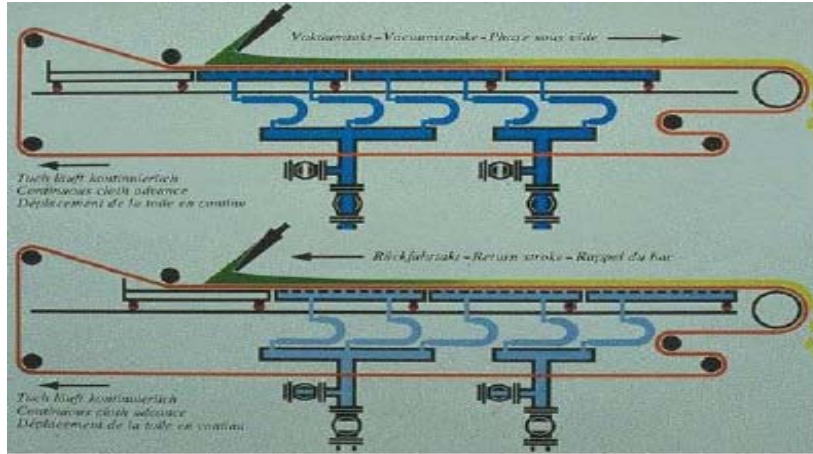


### **APPLICATION AND ADVANTAGES**

- \* High Tonnage, Heavy Industries.
- \* Bulk Chemicals.
- \* Primary Market of Mining and Metallurgy.
- \* 90 % Reduction in Sludge Volume with Low Consumption of Operating Agents.
- \* Cost Effective Performance.
- \* Applicable to Many Different Sludge Dewatering Systems.
- \* Suitable for Small to Large Capacities of Sludge.
- \* Easy Operation – Low Maintenance

## OPERATION PROCEDURE

Sludge is spread over the Horizontal Vacuum Belt Filter uniformly by the help of Sludge Spreader. While sludge is moving on the polyester belt water is taken to water tray from the bottom by the vacuum pumps. Ten adjustable plows located on the belt agitate the sludge to obtain more effective dewatering. At the end of the truck sludge is scraped by plastic doctor blades which is pushed on to the belt by a spring system.



## RECIPROCATING TRAY TYPE HORIZONTAL BELT FILTER

Filter has a continuously moving filter cloth, which is carried in a through shaped vacuum tray. The cloth is supported by a plastic or metal grid, which has a large open area. The vacuum in the tray, which is mounted on low friction wheels, to move forward at the same speed as the cloth, which is driven by a variable speed drive. The tray moves with the cloth except for a very short period when it is quickly retracted back to the starting position. At the end of the vacuum "stroke", the vacuum is isolated. The underside of the tray below the cloth is vented releasing the frictional grid between cloth and tray, and the tray is retracted (return stroke) by means of a pneumatic cylinder. The vacuum is then re-applied so the tray starts to move forward with the cloth again. The tray moves a relatively short distance, 2 – 4 feet, and is then pulled back. The cloth runs continuously, with continuous slurry feed, cake washing and discharge. Flexible hoses connect the tray to the stationary vacuum manifold mounted on the side of the filter. As the tray is always moving with the cloth at the same speed, there is no need for any lubrication, which eliminates the need for a seal, and there is no need for a seal, and there is no frictional wear of the cloth.



## **PARTS OF THE HORIZONTAL VACUUM BELT FILTER**

### **\* Mixer**

Cylindrical shaped self standing mixer tank is made out of stainless steel and equipped with motorized mixing impeller.

The speed of mixer can be arranged by electronically controlled speed variator.

Operating agent can be injected at the inlet of the mixing tank and while sludge is moving upward in the tank a complete mixing is maintained.

### **\* Supporting Frame**

Frame is made out of heavy sections to prevent the vibration and any deflections.

As standard frame is made out of carbon steel and hot deep galvanized, as requested frame can be manufactured as stainless steel.

### **\* Sludge Spreader**

Sludge coming out from the mixing tank is spread evenly on to the belt via spreader. The vanes in the spreader can be arranged easily as to have the best spreading on the belt.

### **\* Plows**

Ten rows of triangle shaped plows agitates the sludge while it moves on the belt. Plows can easily be replaced vertically to have a better agitation.

### **\* Plastic Support**

Belt moves on the plastic grid structure so that under any sludge load the deflection of the belt is prevented.

### **\* Belt Traction System**

Belt movement is controlled via pneumatic sensors and any side movement of the belt is settled by the pneumatic cylinders.

### **\* Polyester Belt**

Belt is manufactured from Polyester filaments and is a product of well-known European manufacturer. All physical and chemical properties of the belt can be given as requested.

## \* **Belt Tensioning System**

When the Thickener will be operated the pneumatic tensioning system automatically operates and evenly tensions the belt.

When the Thickener stops, pneumatic cylinders retract and belt is let free. That protects the working life of the belt.

## \* **Sludge Scraping System**

Sludge at the end of the track is scraped by plastic doctor blades which is pushed on to the belt by a spring system.

## \* **Belt Washing System**

Belt when it is cleaned from the sludge is washed from the back side with non clogging water sprayer system.

## \* **Water Tray**

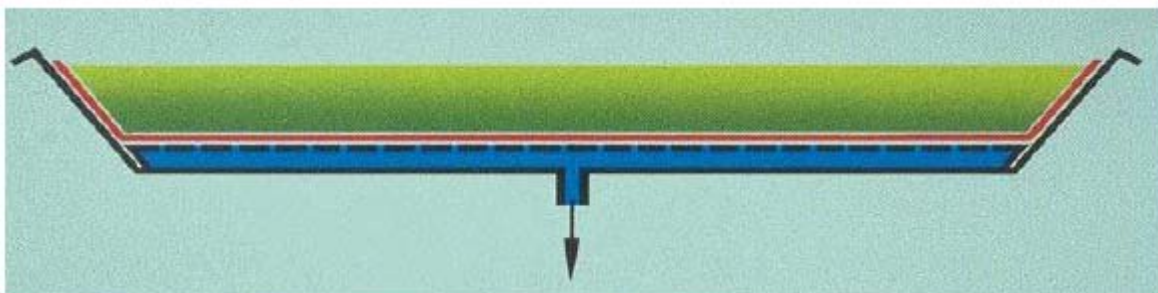
Wash water is collected in the stainless steel trays and can be used for cleaning by optional booster pumps.

## \* **Pneumatics**

Belt tracking and tensioning is effected by means of pneumatics as soon as the machine is stopped the tensioning pistons releases the belt and unnecessary tensioning of the belt is presented.

## \* **Control Panel**

Electrical control of side switches, mixer and belt drive are all collected in one weatherproof control cabinet. Emergency stop of the belt drive can be reached from both sides of the thickener via a rope.



### TECHNICAL SPECIFICATIONS AND DIMENSIONS

MODEL	UNIT	ARGBT 1000	ARGBT 1500	ARGBT 2000	ARGBT 2500	ARGBT 3000
SLUDGE CONCENTRATION	%	%0,8	%0,8	%0,8	%0,8	%0,8
FLOW	m <sup>3</sup> /h	40	63	85	106	120
BELT WIDTH	mm	1000	1500	2000	2500	3000
BELT SPEED	m/min	2-10	2-10	2-10	2-10	2-10
WIDTH	mm	1360	1860	2360	2860	3360
LENGHT	mm	6215	6215	6215	6215	6215
HEIGHT	mm	2000	2000	2000	2000	2000
WASH WATER CONSUMPTION	m <sup>3</sup> /h	4-5	5-6	7-8	9-10	11-12
WASH WATER HEAD	bar	5	5	5	5	5
AIR CONSUMPTION	L/min	15	20	25	30	35
DRIVE MOTOR POWER	kW	0,55	0,76	0,76	1,1	1,5
MIXER DIAMETER	mm	600	800	800	1000	1200
MIXER HEIGHT	mm	2000	2000	2000	2000	2000
MIXER DRIVE MOTOR POWER	kW	0,55	0,76	0,76	1,1	1,5

