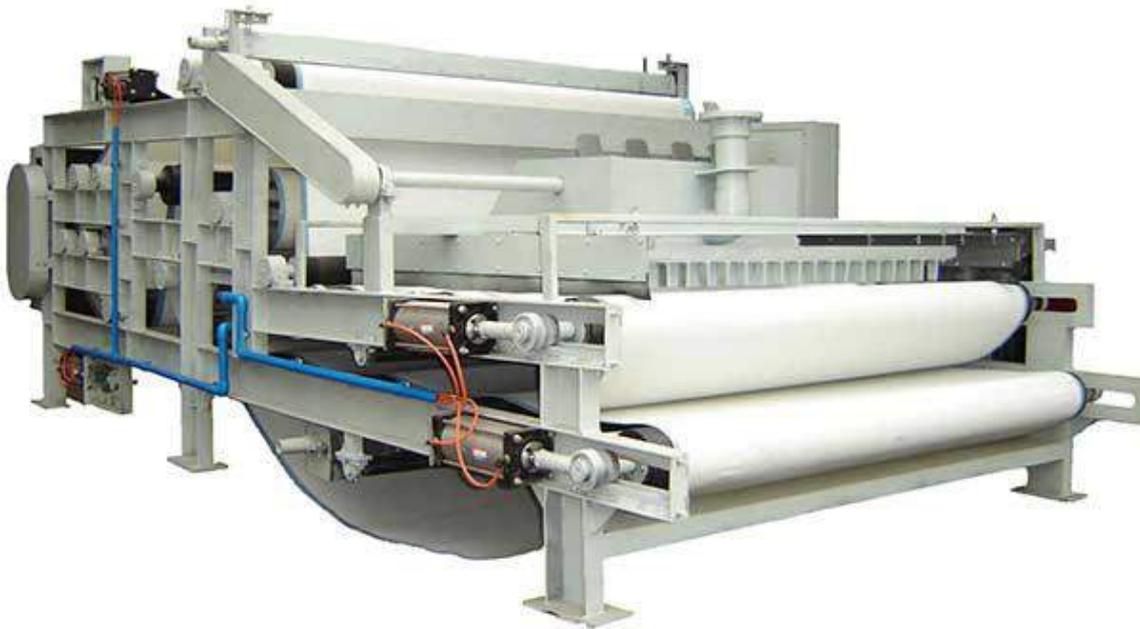


# Belt filter press working principle and operation

The [belt filter press](#) working principle and operation can be divided into four important stages: pretreatment, gravity dewatering, pre-pressure dewatering in the wedge zone and press dewatering.

It is an environmentally friendly filtration product with reliable performance, stable work, low water content of finished products, low start-up consumption, relatively simple management control and reasonable price. And belt sludge dewatering machine is less affected by the fluctuation of sludge load. At present, many sewage treatment plants mostly use belt filter.



## Belt filter press working principle

### 1. Thick dehydration: chemical pretreatment stage

The belt filter press has higher requirements for flocculation effect. This machine uses a unique dosing mixer to achieve rapid flocculation and the best flocculation effect.

### 2. Gravity dewatering: gravity concentration dehydration stage

The sludge is evenly fed into the filter belt through cloth bucket and runs forward with filter belt. The free water flows into water tank through the filter belt under the action of its own weight. The main function is to remove the free water in sludge, reduce the fluidity of sludge and prepared for further extrusion.

### 3. Low/medium pressure dewatering: wedge preloading dewatering stage

After gravity dewatering, it is still difficult to meet the sludge flowability requirements of the press dewatering section. After this stage of slight extrusion dewatering, the sludge is smoothly pressed and dewatered.

### 4. High pressure dewatering: the pressurization dewatering stage

The filter cake is repeatedly pressed and sheared around the press roll by the upper and lower filter belts, and a large amount of capillary water is removed to gradually reduce the moisture of filter cake.

Belt press machine is composed of two upper and lower tensioned filter belts, which is bent in an s shape from a series of regularly arranged roller cylinders, and is pressed against the sludge layer by the tension of filter belt itself to form the shear force to squeeze the capillary water in the sludge layer to obtain a mud cake with high solid content, thereby achieving sludge dewatering. The belt type filter press dewatering machine is widely used in the field of sludge dewatering because of its low moisture content and stability, low energy consumption, and simple management control.



## Belt filter press operation

1. Turned on the air compressor and ensure the Kia be controlled within the specified range.
2. Open the filter cloth cleaning water, and the amount of water should not be too small.
3. Turn on the vacuum pump and vacuum pump circulating water.
4. Turn on the filter, the speed should not be too fast at the beginning, wait for the vacuum adsorption filter cloth, then adjust the speed appropriately.
5. When there is vacuum, open the lowering valve (there is a little vacuum to open the lowering valve).
6. Observe the thickness of material at the lower end and adjust the belt speed. If the material is too thin, slow down the speed; if it is too thick, adjust the speed and try to make the thickness of the material not controlled at 2-3 cm.
7. When shutting down, first close the blanking valve, then wait for the filter to idle for 5 minutes. When the filter cloth is washed, turn off the filter, then stop the water and stop the gas.



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