

THREE-COLUMN FILTRATION CENTRIFUGE WT TYPE



Application and Principle of Operation

Three-column Filtration Centrifuge is designed for separation of mixture of liquid and solid crystalline, granular or fibrous, and for dewatering of different materials with low content from the liquid phase. Centrifuges of this type are widely used for dewatering of fine suspensions in the chemical and pharmaceutical industries.

Solid particles subject to centrifugal force settle on the inner semi-permeable surface of the centrifuges drum, creating a so-called sludge, and the liquid (leachate) with remnants of solid fine particles passes through the filtration screen, and then is released into the area between the casing and the drum, from where it is discharged to the outside.

In the centrifuge of this type a content of sediments can be from 1 to 5 % of moisture, in the case of fine solid particles of the moisture content may be higher.

Centrifuge in the standard version is planned for use with the following media :

liquids, suspensions, emulsions which are not flammable, explosive, aggressive or poisonous. For cleaning of centrifuges drinking water or technological is used and other liquids which are not

flammable, explosive, aggressive or poisonous. Centrifuge is designed primarily for industrial installation and for cyclical operation .

The full working cycle consists of filling, filtration and discharge. This cycle is manually, or semi-automated controlled and ends with manual removing of the sediment from the drum . Duration of one cycle depends on the spin -separated mixture / its filtering ability /, and requirements for separated products / final moisture of sludge /.

Technical Description

Centrifuge filter is a machine, in which you separate the solid from the liquid matter on the partition filter. Centrifuge filter have perforated drum. The inner wall of the drum is coated with metal mesh and / or fabric forming the filter barrier. As a result of spinning centrifuges drum, centrifugal force is created, which moves the solid particles towards the wall of the drum. As a result, solid particles settle on the filter barrier, from where these are removed outside. Drum, housing, cover and elements having in direct contact with the centrifuged medium are made of stainless steel, while drive components and base plate are made of carbon steel protected with anti-corrosion coatings. The centrifuge is controlled from a control column. For safe reasons operation of the opening of the lid is secured with electrical blockade for the spinning system.

On request, a centrifuge is equipped with a explosion-proof motor (ATEX Zone II G2).

During normal operation, the noise level does not exceed 70 dB (A). In extreme start-up conditions the noise level can be higher.

As a filtration material the following main materials are used:

- cotton fabric, resistant to 9 % H₂SO₄ 5 % NaOH
- rayon fabric, resistant to 15 % - 25 % HCl,
- plastic fabric.

Technical data

Basic parameters	WT-600	WT-800	WT-1000
The internal diameters of the drums	600 mm	800 mm	1000 mm
The active height of drums	325 mm	420 mm	430 mm
Drum capacity	45 dm ³	90 dm ³	135 dm ³
Max . load weight for the drum	80 kg	180 kg	200 kg
Minimum drum rotation speed	100 min ⁻¹	100 min ⁻¹	100 min ⁻¹
Acceptable range of rotation speed	480-960 min ⁻¹	480-960 min ⁻¹	450-960 min ⁻¹
Motor power	5,5 kW	7,5 kW	18,5 kW
Revs	1445 min ⁻¹	1445 min ⁻¹	960 min ⁻¹
Power	50Hz / 400V	50Hz / 400V	50Hz – 400 / 690V
Degree of protection	IP55	IP55	IP55
Adjusting rotations - frequency converter	25 – 50 Hz	25 – 50 Hz	25 – 50 Hz
Centrifuge weight (excluding electrical)	610 kg	1100 kg	1475 kg

Dimensions

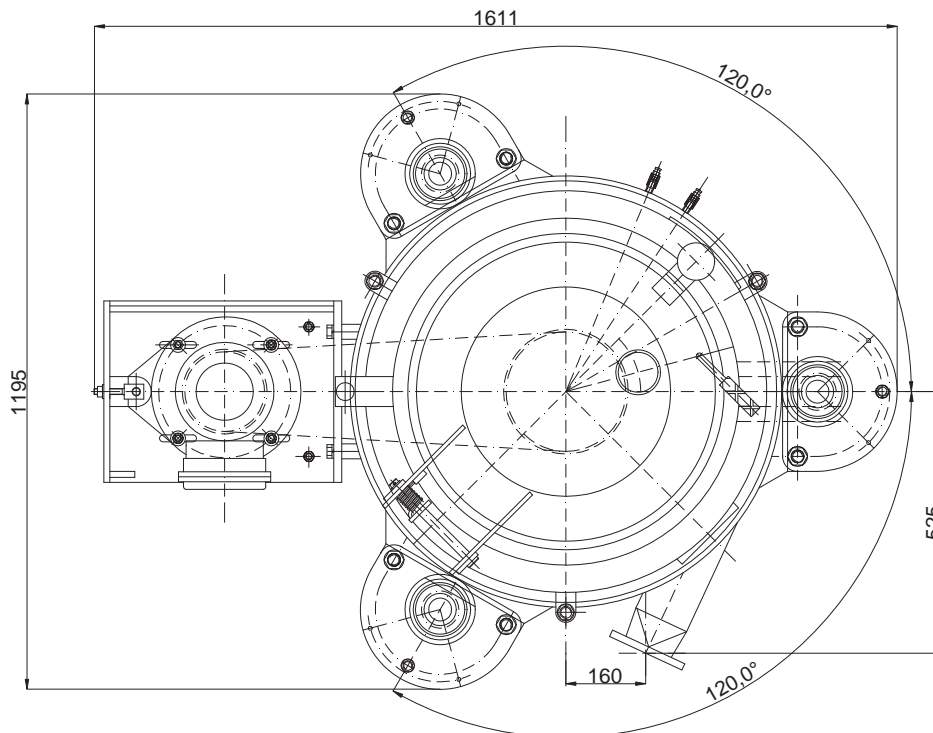


Figure 1: Three-column Filter Centrifuge with a vertical drum axis - WT -1000 type

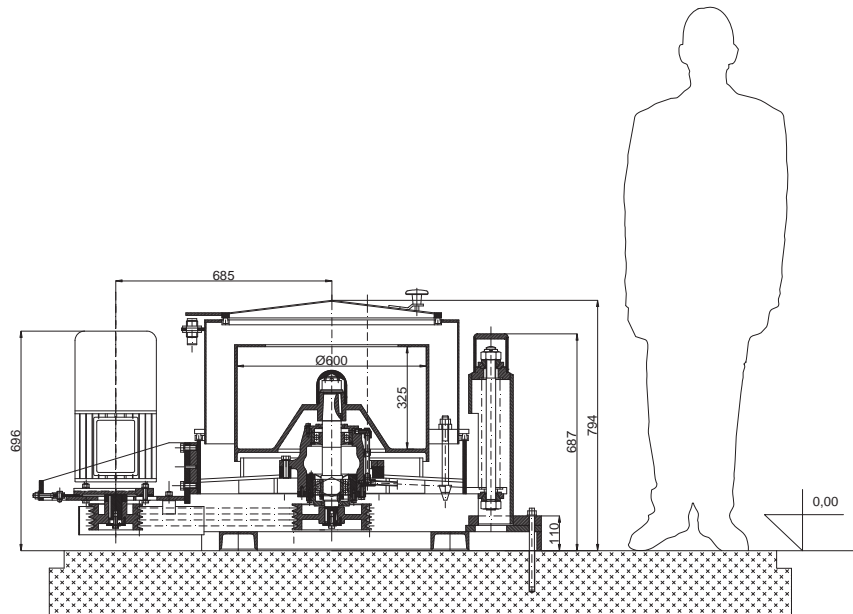
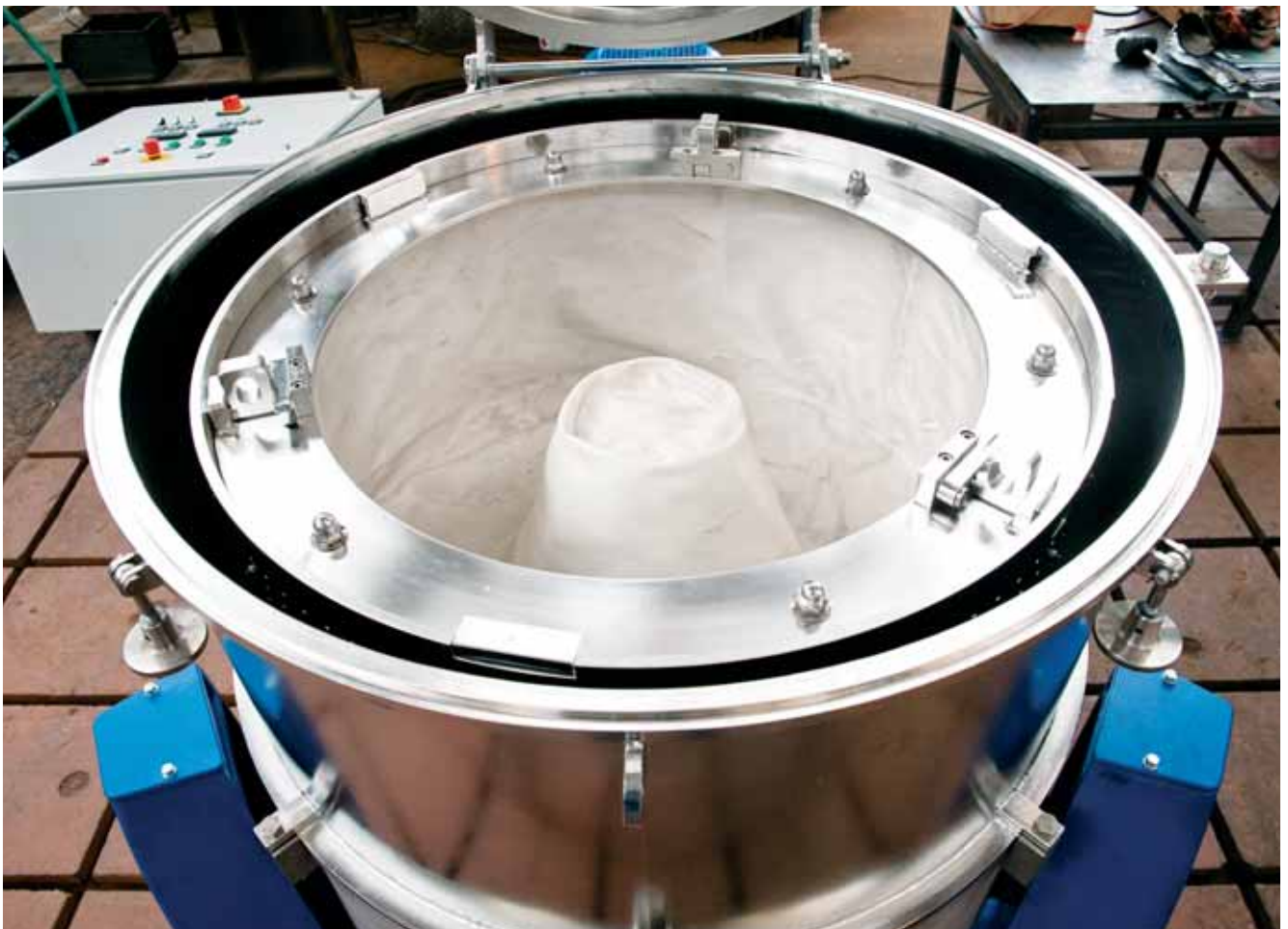


Figure 2: Three-column Filter Centrifuge with a vertical drum axis - WT -800 type



Drum of Filter Centrifuge – WT type