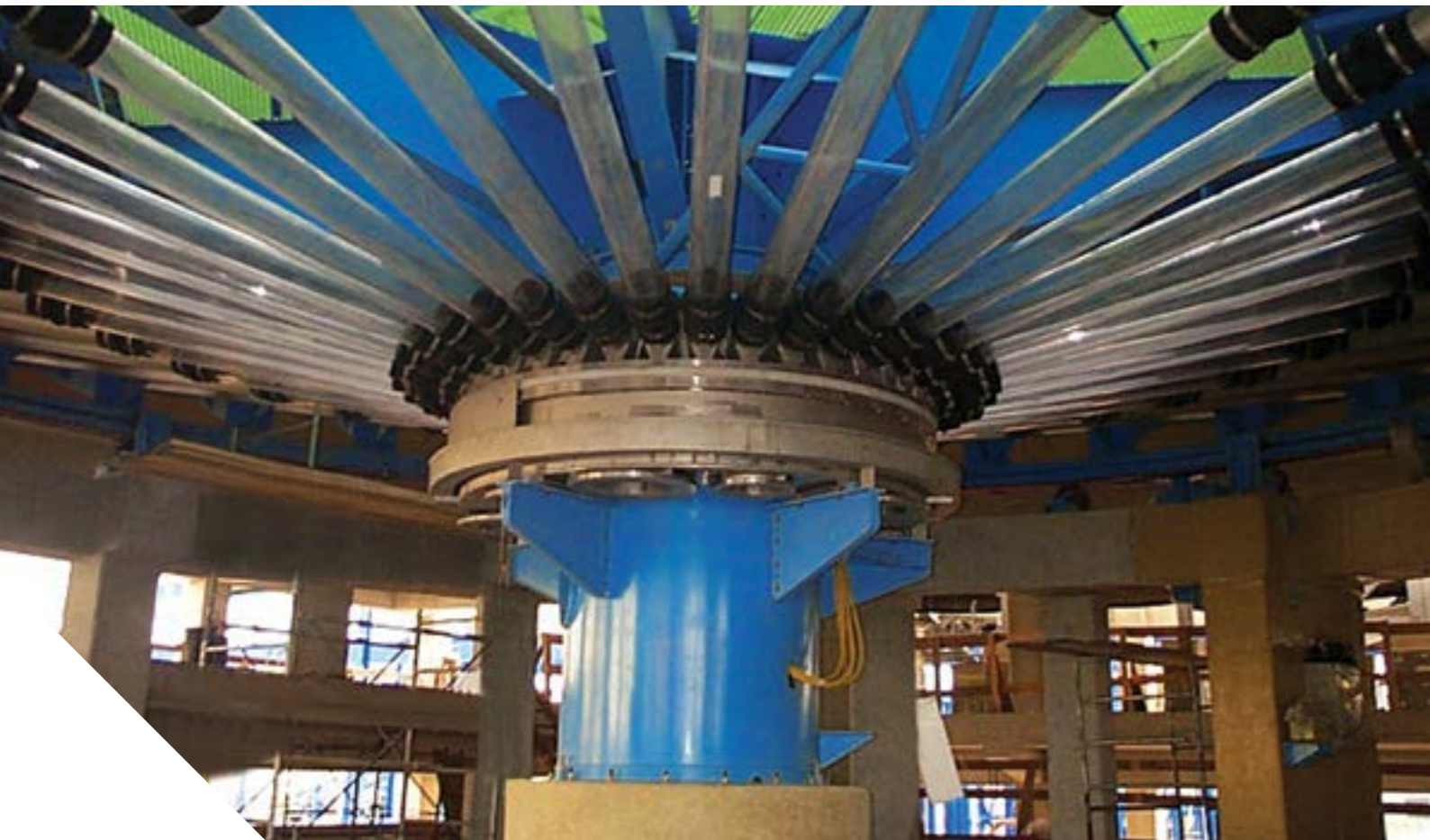


UCEGO[®]

Vacuum table filter



Originally created in the early 60's, the time-tested UCEGO[®] filter was designed to process phosphogypsum slurry for the industrial production of phosphoric acid.



The UCEGO[®] filter provides outstanding performance in dihydrate and hemihydrate filtration and other products.

UCEGO[®] facts

The UCEGO[®] filter is owned, perfected and marketed by TechnipFMC and exclusively manufactured by ANDRITZ. Used in phosphoric acid dihydrate and hemihydrate filtration, the UCEGO[®] filter also provides outstanding performance for a range of other products, particularly when large active filtration areas are required.

Today, the UCEGO[®] filter is used throughout the world, representing:

- ▶ More than 90 filters sold in 28 countries (the great majority of them part of new units),
- ▶ Over 20% of the world's phosphoric acid production.



UCEGO no. 12 A

Under assembly - general view



Filter valve

The upper part of the filter valve is easily raised for fast inspection or adjustment



Cloth and table washing

The cloths are cleaned under pressure by two spray banks fed by one or two central manifolds. Residual gypsum is removed and cloths and table are washed to prevent scaling.



Support and centering rollers

Filter frame is supported and centered by sets of rollers mounted on nodular cast iron supports

Description of the filter

The UCEGO® filter is a vacuum filter consisting mainly of a Proprietary extra-flat rotating table made of stainless steel and supported by a rigid structure. An independent endless rubber belt acts as the outer vertical edge of the table while the inner edge is an integral part of the table. The slurry is fed to the rotating table by a Proprietary slurry feedbox, which ensures perfect distribution.

A uniform cake is formed on the table and the filtered phosphoric acid is collected in the troughs under the surface of the table.

As the filtration is completed, the cake goes through two or three counter-current wash sections to optimize the recovery of phosphoric acid (P_2O_5).

The various filtrates are collected and drained separately in the central valve. The table troughs and cell pipes are designed to minimize the report time of the liquid to the central valve. The central valve is divided into several independent compartments to prevent the mixing of the various filtrates.

After the wash cycle completes, the gypsum is removed from the table with a horizontal extraction screw and discharged into a hopper. The hopper provides the capability of both dry and wet discharge, and the endless rubber belt separates from the table edge to allow the removal of most of the cake, leaving only a thin layer to be removed by pressurized water jets.

For dry discharge, the gypsum falls into the hopper, which feeds directly onto a conveyor belt. For wet discharge, the gypsum is repulped inside the hopper, which is directly piped to the suction side of a gypsum pump.

A spray bank equipped with rows of nozzles removes the residual layer of gypsum after the extraction and washes the table. At this point, the table is clean and ready for the next filtration cycle.

Retrofitting with a UCEGO® Filter

The UCEGO® filter is an ideal candidate for replacing tilting-pan filters when additional production is required from an existing plant. The high capacity per unit of the filtration area and the compactness of the UCEGO® provide optimum production capability within a given space. Depending on the size of the existing tilting-pan filter, the UCEGO® can provide up to 100 percent of additional filtration area on the same building platform without major civil work. The retrofitting requires only a short shutdown and the cost of installation is minimal.

Unique advantages of the UCEGO® filter

High filtrate recovery

- ▶ Uniform distribution of the slurry
- ▶ Even distribution of the wash liquors
- ▶ Efficient separation of the various filtrates
- ▶ Easily movable washboxes
- ▶ Efficient washing of the filter cloths

High product quality acid

- ▶ No acid dilution

Low investment cost

- ▶ High capacity per unit of filtration area
- ▶ Maximum filtration area requiring minimal floor space
- ▶ Low level installation, thus minimal building cost

Minimum operating cost

- ▶ Parts in contact with acid made of high quality, thick stainless steel
- ▶ Heavy-duty overall construction built to last 20-30 years
- ▶ Few moving parts, all designed for long life
- ▶ Fast and easy cloth replacement

Wet and dry discharge capability

- ▶ No loss of active filtration area with dry discharge
- ▶ Separate cloth washwater recovery and no additional water consumption
- ▶ Dry discharged cake fed directly onto conveyor from the hopper

High capacity and production rate

- ▶ High speed of rotation due to the mechanical simplicity and few moving parts
- ▶ Short report time of the filtrate to the central valve
- ▶ Short filtration cycle time
- ▶ A central valve with large section designed to prevent obstructions
- ▶ High vacuum due to a well-designed central valve and its air-tight self-lubricating sealing system
- ▶ Horizontal filtration surface at all temperatures due to a Proprietary “floating table” design



Cake extraction screw

The stainless steel screw is adjustable in height, and equipped with replaceable wear flights.



Table drive unit

The pinion drives the table at the frame that is equipped with long wearing pins, acting as gear teeth. The speed of the table is adjustable to meet production requirements.



Under assembly

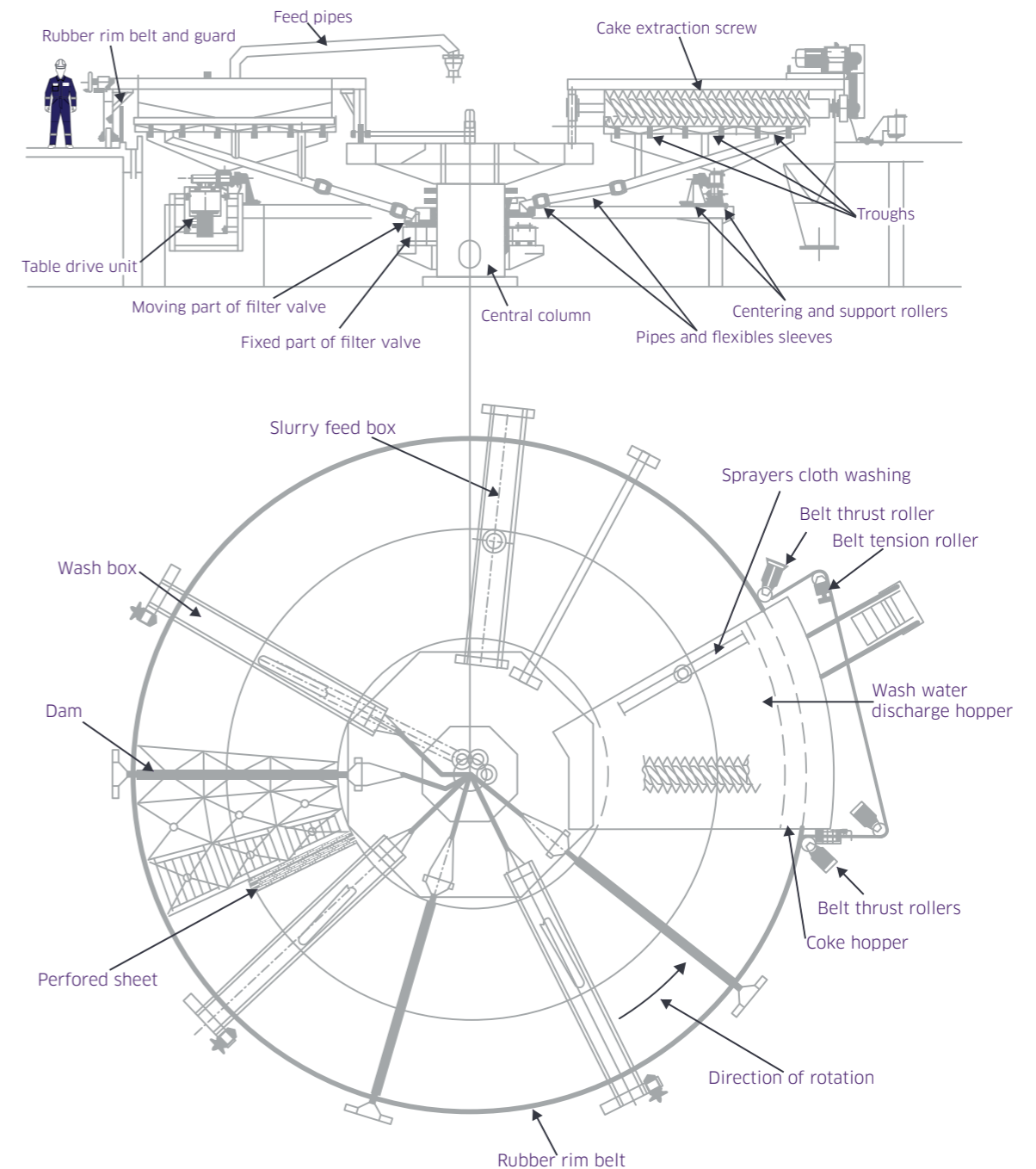
Top view of the table with distributors and extraction screw.

Standard UCEGO® Filter sizes

* Active filtration area is the same for both wet or dry discharge

Filter No.	Active filtration area in m ² *	O.D. of table in meters
1	9.0	4.20
2	15.0	5.30
3	23.7	6.40
4	35.2	7.65
5	41.4	8.25
6	53.3	9.95
7	65.1	10.80
8	88.1	12.30
9	112.1	14.20
10	135.7	15.40
11	157.6	17.10
11A	185.8	18.30
12	211.1	19.40
12A	236.3	21.0
13	263.9	21.30
14	320.0	23.10

The UCEGO® filter: section and top view



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