

# THE CANE MUD FILTRATION SYSTEM



Best in class **Vaccume Filter**  
by the Sugar People

Compact, safe and reliable proven design  
with several installations worldwide

Excellent washing characteristics

- Manufactured under strict ISO: 9001:2008 standards using high precision machines and stringent quality procedures
- Strong seams & leakage resistant design
- Wide Range of Filter Area - 20 -150 m<sup>2</sup>  
(per customer requirements)

**UTTAM SUCROTECH**  
INTERNATIONAL



**Uttam Group** has been a leading sugar machinery manufacturer since 1962. With satisfied customers all over the globe, the group is now one of the largest and most diversified sugar EPC organizations. The group has attained its reputation by owning 4 (four) state-of-the-art CNC machines equipped workshops which enables us to manufacture 100% of the sugar machinery and equipment inhouse. Our value for customers has made us the most preferable EPC contractor for sugar, power co-generation and alcohol plants.

### UTTAM ROTARY DRUM CANE MUD VACUUM FILTERS.

The filters are used to de-sweeten and dewater the mud that is separated from the juice in the clarifier. They have a high output, thorough cake wash with less water consumption and cake moisture. Operations are safe and reliable with easy maintenance and minimum downtime. Manufacturing includes high precision fabrication by a qualified team using tested material of best quality and delivered only after stringent shop tests.

Uttam filter stations are compact and designed for minimum power, water and bagacillo consumption. Plant layout is compact based on gravitational flow with adequate maintenance space and efficient Vacuum system.

#### BRIEF SPECIFICATIONS:

Drum piping designed with gradual curves and slopes for smooth flow

Central cake Wash Header for uniform distribution of wash water

Pressure connectors for high pressure flow in spray nozzles

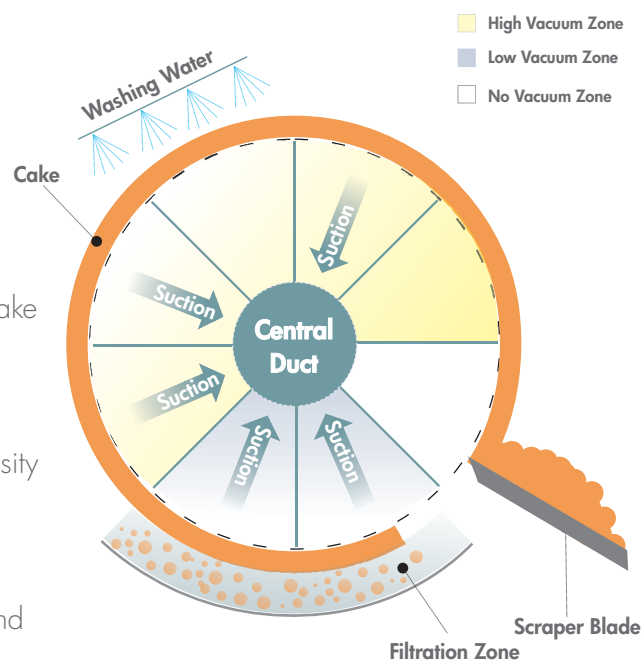
Wash Nozzles uniformly and closely located for proper coverage of cake

Drip Pipes provided with SS 304 baffles

Multi-Point Feed Connections through a Feed Box for uniform slurry density

Controlled cake thickness by variable drum speed

Agitator is in robust construction provides distribution of 'Feed' along and across the Filter Tank







## CONSTRUCTION:

The filter is composed of a hollow drum rotating about a horizontal axis and partially submerged in the mud feed bottom trough to be filtered. Filter capacity and operation is improved by feeding the muddy liquor at multiple points along the length of bottom trough. To avoid settling and stagnation of the mud in the bottom trough, an oscillating agitator (2–4 rpm) which breaks the liquid surface is installed, pivoted on the axis of the filter and driven by a separate motor. The filter drum is driven by a small electric motor with a suitable VFD to provide a drum speed of 10–30 rph.

Surface of drum is equally distributed in 24 nos. Each of these sections is connected individually to a vacuum system by a small metal pipe terminating in a distributing valve situated at one end of the drum and applying three different functions:

- **Low vacuum zone** (up to 8 to 12") for formation and build-up of cake
- **High vacuum zone** (up to 15 to 20") for washing and drying of cake
- **No vacuum zone** for separation of cake

The filter screens are copper, brass or stainless steel and perforated with ~625 holes/inch<sup>2</sup> having 0.5 mm in diameter. With due care, the screens suffer very little wear and may be used for several seasons without being replaced.

## SPECIAL FEATURES OF UTTAM FILTERS:

- Trough is provided with tilt arrangement to control the immersion, reduce dead time between the cake discharge and drum immersion for new cycle to start and to achieve better drying of cake Distribution of surface area for formation, build-up, washing, drying and discharge of cake with minimum retention time and efficient vacuum distribution
- Decking is open space for better drainage & heat-set for long life
- Provision for continuous dewaxing of screens and tube internals with steam while in operation
- Valve Body has triple withdrawal to reduce turbulence and adjustable vacuum distribution zones for optimum efficiency ensuring minimum wash water and dry cake
- Maintain wash water temperature 65°C to achieve an efficient exhaustion of the sucrose & less wax in the filtrates
- Maintain mud temperature and trough level to avoid wax blocking the gauge
- Scraper has three point adjustments ensuring most efficient Cake Scraping
- Adequate maintenance space to minimum downtime and operating costs

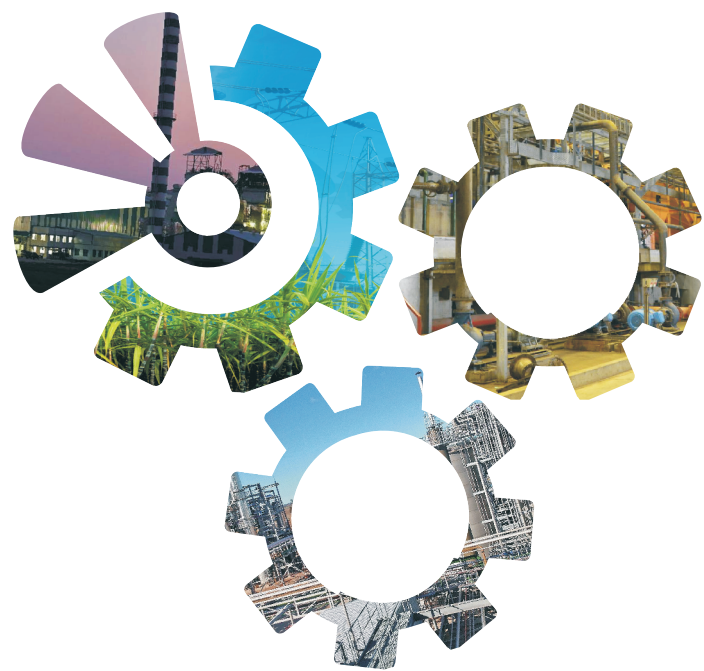


**Filter Sizes :** The size of the filters required depends on the amount of mud that is produced by the clarifier which is in turn proportional to the amount of cane crushed. Below is the list of the different standard Rotary Vacuum Filter sizes and other relevant details.

Nominal Size	Filtering Area		Overall Size (Meters)		
Diameter x Face (Feet)	Sq. Feet	Sq. Meter	Length	Width	Height
8 x 12	302	28	5.18	2.95	2.80
8 x 14	350	33	5.82	2.95	2.80
8 x 16	400	37	6.46	2.95	2.80
10 x 14	440	41	5.82	3.55	3.50
10 x 16	500	46	6.46	3.55	3.50
10 x 20	628	58	7.67	3.55	3.50
12 x 16	603	56	6.50	4.20	4.15
12 x 20	754	70	7.70	4.20	4.15
12 x 24	905	84	9.00	4.20	4.15
12 x 34	1282	119	10.50	4.20	4.15
14 x 24	1056	98	9.00	4.85	4.80
14 x 26	1144	106	9.70	4.85	4.80
14 x 28	1232	114	10.30	4.85	4.80
14 x 30	1319	123	10.90	4.85	4.80
14 x 32	1407	131	11.50	4.85	4.80
14 x 34	1495	139	12.10	4.85	4.80
14 x 36	1583	147	12.73	4.85	4.80

**BENEFITS OF UTTAM ROTARY FILTER**

- ⊕ High capacity
- ⊕ Low maintenance and power requirements
- ⊕ No individual drum sections
- ⊕ Efficient vacuum use
- ⊕ High speeds and minimal pressure drop
- ⊕ Low submergence
- ⊕ No “sloughing off” of cake at beginning of pre-coat cycle
- ⊕ Superior knife advance system and longer-lasting knife
- ⊕ Limited cake expansion and shrinkage
- ⊕ No cake cracking
- ⊕ Higher filtration rate per square foot of area
- ⊕ Thinner pre-coat cuts
- ⊕ Produces drier cake



**UTTAM SUCROTECH INTERNATIONAL PVT. LTD.**

An ISO 9001:2008 Certified co.

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