

Rotary Drum Filter



GL&V/Dorr-Oliver 8 x 10 ft. Drum Filter with Belt Discharge

Features

The GL&V/Dorr-Oliver drum

Manufactured to exacting tolerances to give you maximum efficiency during cake formation, washing drying, and cake discharge. The piping arrangement assures a smooth even flow of liquid and air. This results in maximum vacuum at the working surface of the drum, which in turn produces higher filtering rates. The filtrate piping design is tailored to meet the specific needs. The drum is fitted with standardized drainage grids of polypropylene or heavy 5-mesh wire screen depending on the application. Precise machining of internal fly rims, drum heads, openings and flanges for the trunnions assures concentricity.

Non-lubricated torsion bearing

A unique feature of the GL&V/Dorr-Oliver agitator is the rubber torsion bearing. Because it does not require lubrication, it prevents possible contamination of the slurry with lubricant, a common problem. Torsion bearings last much longer and require less attention.

Our specially designed agitator is exceptionally strong. Its boxed construction virtually eliminates twisting and flexing, thus lengthening the useful life of the equipment. The long swing gives plenty of rake overlap to prevent cake build-up on the tank bottom. Our method of torsion bearing pin mounting permits the agitator to remain in line with the filter drum at all times, thereby eliminating the danger of drive and agitator damage during installation, maintenance, or replacement work.

Three-point suspension valve

The heart of our filter is the automatic filter valve. Our exclusive valve has many features which can be translated into higher production and lower maintenance cost to the owner.

- Three point external support eliminates troublesome center pin.
- Streamlined contour for high filtering rates and low wear.
- One inch thick wear plate, which can be resurfaced several times, instead of the "throw-away" type.
- Single or double outlets to fit specific needs.

GL&V/Dorr-Oliver drum filter technical data

LENGTH ft.	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	
A	710"	910"	1110"	1310"	1510"	1710"	1910"	2110"	2310"	2510"	2710"	307"	327"	347"	367"	387"	407"	
B	Drain on drum. ϕ												611"	75"	711"	85"	811"	
V	Valve can be located on either or both ends. See dia. table for projection.																	

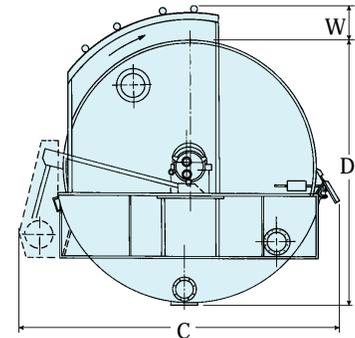
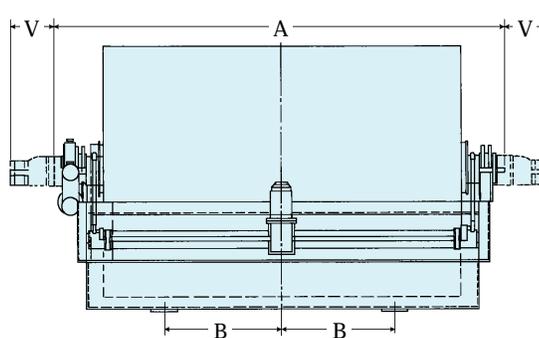
DIA. ft.	6	8	10	12	13	13'-6"
C	8'4"	10'4"	12'4"	14'4"	17'0"	17'6"
D	6'10"	8'10"	10'10"	12'10"	14'0"	14'6"

DIA. ft.	6	8	10	12	13	13'-6"
V	1'5"	1'7"	1'7"	1'7"	2'1"	2'1"
W	Add approx. 12" all dia.					

DIA. ft.	TOTAL FILTER AREA — SQ. FT																
	Length In Feet																
	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
6	75	113	151	188	226												
8			200	250	300	350	400										
10				310	372	434	496	558	620								
12					456	532	603	684	760	836	912						
13									817	899	980	1061	1143	1225	1306	1388	
13'-6"									848	933	1018	1103	1188	1272	1357	1442	1527

DIA. ft.	APPROXIMATE OPERATING WEIGHT - LBS.																
	Length In Feet																
	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
6	7400	8900	10300	11700	13100												
8			2080	2200	24100	26250	2820										
10				24100	2950	3500	40250	4570	51000								
12					3700	4030	4370	4700	5030	5360	5700						
13									68000	72500	77000	82000	84300	88500	92900	98200	
13'-6"									78400	83300	88300	92600	97800	103400	108200	113400	118500

* Assume contents at 62.4 lbs./cu.ft. and 35% drum submergence



Worm/Gear filter drive

Our filter drive consists of an enclosed variable speed reducer and a ruggedly constructed worm and worm gear. This is a big maintenance saver compared to the chain drive found on many filters. There are no chains to tighten or replace.

Other drives available:

- Shaft mounted drive
- Right angle drive

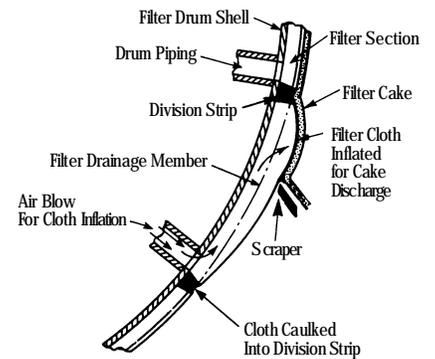
Accessories and auxiliaries

A complete line of accessories and auxiliaries are readily available from GL&V/Dorr-Oliver for use with the vacuum rotary drum filter such as:

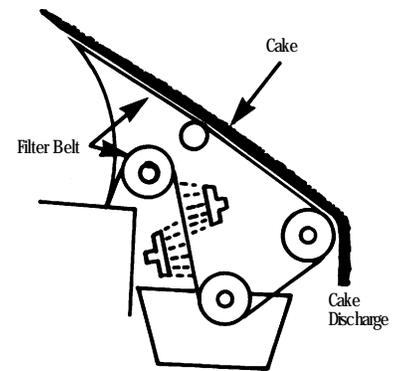
- Wash Arrangements
- Hoods
- Repulpers
- Receivers, Moisture Traps and Condensers
- Pumps

Choices of Cake Discharge

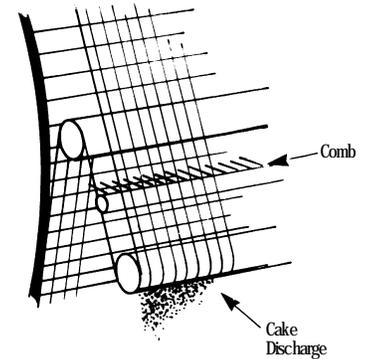
The Scraper discharge is the simplest and most versatile method of discharging the cake. The scraper system is counter-weighted to provide a free-floating contact with the cloth. It pivots at both ends and is easily adjusted accurately for the desired clearance. Just prior to cake discharge, a short burst of compressed air is applied which billows the cloth so it deflects around the scraper, releasing the cake and helping to remove the solids from the cloth pores.



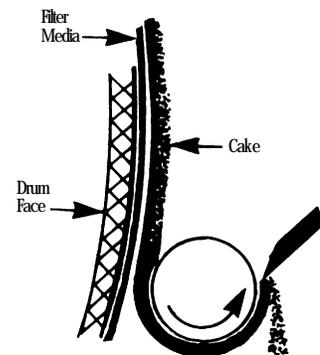
The Belt discharge is especially useful when the cake is sticky, tends to blind or contains fine suspended solids. With this method the cloth is continuously washed from both sides to eliminate blinding. The filter cloth is taken off the drum surface and passes over a cake breaker roll to remove the cake. The key to productive belt filter performance is the belt itself. Our belt is manufactured to the highest quality standards. Furthermore, the special patented GL&V/Dorr-Oliver edge-guide system provides gentle cloth adherence over a wide gripping area rather than point contact, which causes the cloth to tear.



The String discharge is used efficiently for gelatinous slurries or fibrous cakes which form mats. A series of parallel strings run on top of the filter cloth. In the cake discharge zone, the strings leave the drum carrying filter cake with it. The strings then pass around a system of rolls, discharging the cake before returning to the drum. A “comb” between the rolls removes any cake not released at the discharge roll and ensures uniform spacing of the strings.



The Roll discharge is used for very finely divided solids, such as pigments or other thin, sticky cakes. These types of cakes were once dewatered by batch filter presses. Now the roll discharge enables them to be handled continuously. A roller with the axis parallel with the drum serves as discharge medium. The surface speed of the discharge roll is synchronized with the drum. The sticky cake transfers from filter drum to the roll and then is scraped off the roll. A small heel forms on the roll which makes the cake pick-up easier.



Other GL&V/Dorr-Oliver Filters and Applications

Disc filter

For applications such as iron ore, Taconite, mineral concentration & tailings, pastefill, and coal. Provides maximum filtration area in a minimum of floor space. Higher filtrate rates achieved due to increased hydraulic and pneumatic capacities.

Horizontal table filter

For heavy and/or fast draining materials especially where efficient washing is required. Continuous horizontal rotating table with up to 680 sq. ft. of filter area.

Horizontal Belt filter

For slow and moderate draining slurries where efficient washing, high capacity and minimum dilution of liquor are required.

Dorrco filter

Used for dewatering and washing of sand/slime mixtures containing a segregated fraction. No feed slurry suspension problem.

Kelly filter

Vertical or horizontal leaf pressure filter for filtering aluminate liquor and red mud in alumina plants.

Oliver Campbell filter

Drum filter specially adapted for sugar cane mud filtration.

Sweetland filter

Vertical leaf pressure filter used in sugar refining.

Dewaxing filter

These are specialized filters for recovery of oil and wax in petrochemical plants.

Precoat filter

The precoat filter is a specialized machine designed for dewatering very low concentrations of suspended solids or for producing a sparkling filtrate. The filter media is formed from diatomaceous earth or perlite or other form of free draining materials. The GL&V/Dorr-Oliver precoat filter is particularly productive because of the low maintenance, automatic advancing knife.

Pressbelt filter

This filter combines vacuum filtration with cake compression to deliver a much drier cake than can be obtained with conventional vacuum drum filter. It is particularly suited for filtration of pigment slurries, thixotropic and fibrous slurries and those with a tendency to crack during filtration, or containing elastic or porous substances.

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Bulletin VDF-2
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