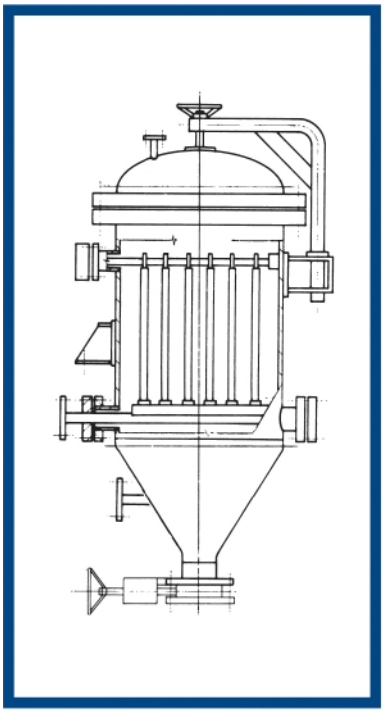
bea TECHNOLOGIES

UNYVER

PRESSURE LEAF FILTERS

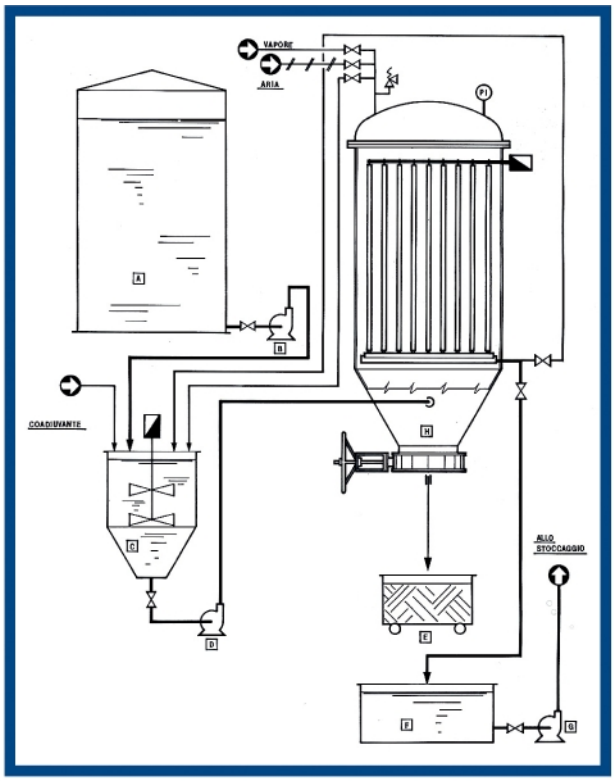
VERTICAL PRESSURE LEAF FILTER TYPE " F F V "



Vertical leaf filters are recommended for the filtration of liquids with medium or low content of solids and where the removal of solids has to be automatically operated. Filter leaves are vertically mounted and kept parallel due to spacers. The filtrate is collected by the manifold which supports the leaves.
The cake is discharged through a large drain nozzle. It is possible dry cake discharge by vibrator after cake squeezing with air, nitrogen or steam. Options:

- Quick opening closure bayonet type
- Slurry slide valve manual or motorized
- Jacket for circulation of steam, hot water or refrigerating fluid
- Electrical or pneumatic vibrator device to provide easier cake discharge
- Sprayer nozzles systems for wet cake discharge

The photo shows a vertical leaf filter designed for 40 bar operating pressure, utilized in the pre-coat filtration of MEA. Leaves blockage system is provided to allow cake discharge by vibrations.

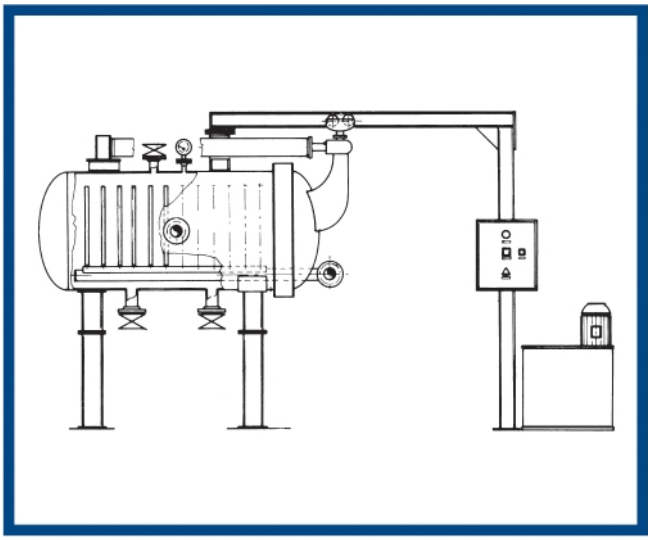


A TANK OF LIQUID TO BE FILTERED
B FEED PUMP
C PRECOAT TANK
D PRECOAT AND FEED PUMP
E TANK FOR EXHAUSTED CAKE
F TANK OF FILTERED LIQUID
G FEED PUMP FOR FILTERED LIQUID
H PRECOAT LEAF FILTER

Type	Filtering area m^2	Cake Volume (lt.) A with S = 25 mm	Filter Volume lt	Dimensions (mm)	
				Height	Floor Space
FFV - 40	2,8	42	176	1460	550 x 550
FFV - 55	4,4	110	245	2100	750 x 750
FFV - 65	8	200	425	2400	850 x 850
FFV - 80	11,5	287	630	2550	950 x 950
FFV - 95	17,5	437	890	2700	1150 x 1150
FFV - 110	24,4	610	1170	3000	1400 x 1400
FFV - 125	32	800	1550	3300	1650 x 1650
FFV -150	50	1250	2390	3770	1800 x 1800

A For standard configuration the pitch between leaves is 75 mm.

TYPE "FF0
HORIZONTAL PRESSURE LEAF FILTER



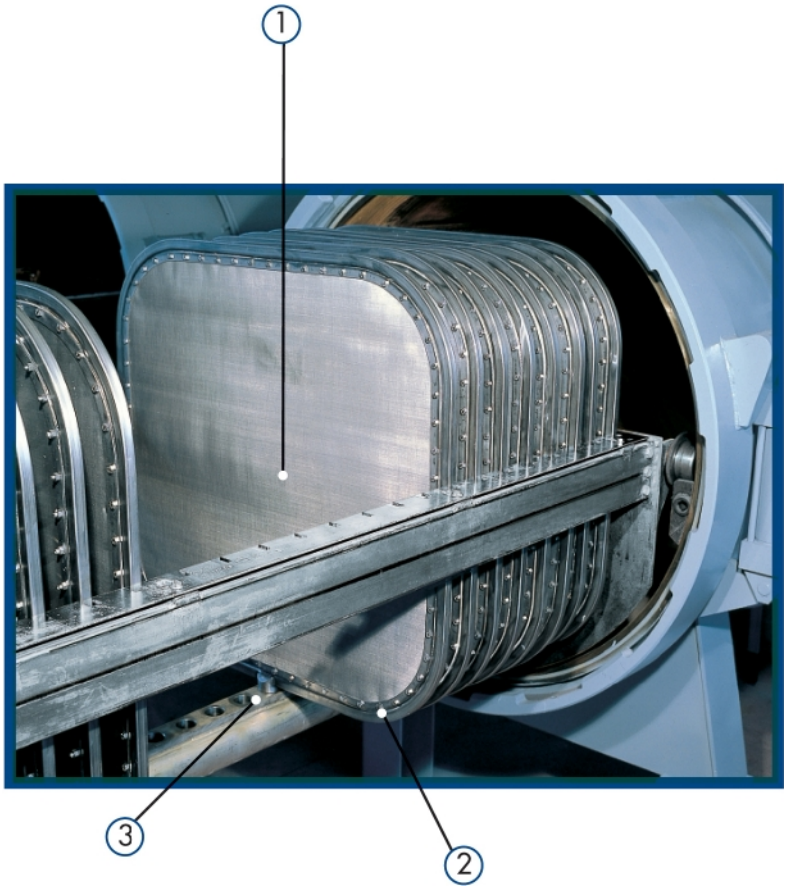
Horizontal arrangement is recommended for the filtration of liquids with relative high solid content.
The filter leaves are vertically mounted and kept parallel due to special spacers. The filtrate is collected by a manifold which supports the leaves.
Cake discharge can be done in wet condition with filter closed or in dry condition with filter opened after drying of cake by air, nitrogen or steam. The filters leaves are mounted vertically on an internal carriage, which allows easy removal for cleaning and maintenance, also thanks to support device for filter package extraction.
Options:

- Quick opening closure bayonet type
- Jacket for steam circulation, hot water or refrigerating fluid
- Hydraulic device for opening and closure operations
- Hydraulic device for filter package extraction
- Pneumatic or electric vibrator device, for easy cake removal
- Sprayer nozzles system for cake wet discharge

Type	Filtering area M^2	Leaves Pitch 75 mm		Leaves Pitch 100 mm		Dimensions mm	
		Cake volume S = 25 mm. lt.	Vessel volume lt.	Cake volume S = 40 mm. lt.	Vessel volume lt.	Height	Floor space
FF0 - 60 -9	2,8	70	260	112	310	1850	800 x 2150
FF0 - 60 - 16	5	125	400	200	500	1850	800 x 3200
FF0 - 90 - 10	7,5	187	650	300	800	2400	1100 x 3150
FF0 - 90 - 14	10,5	262	850	420	1050	2400	1100 x 3750
FF0 - 90 - 20	15	375	1100	600	1400	2400	1100 x 4700
FFO - 120 - 16	20,5	512	1650	820	2100	2550	1450 x 4000
FF0 - 120 - 20	26	650	2050	1040	2600	2550	1450 x 4600
FF0 - 120 - 24	31	775	2400	1240	3000	2550	1450 x 5200
FFO - 120 - 31	40	1000	3000	1600	3800	2550	1450 x 6250
FFO - 150 - 24	50,5	1262	3700	2020	4700	3100	1800 x 6900
FFO - 150 - 29	61	1525	4400	2440	5650	3100	1800 x 7650
FFO - 150 - 33	70	1750	4930	2880	6300	3100	1800 x 8250

Photo at the left shows an horizontal leaf filter; the extraction of leaves package as well as the opening of bayonet quick closure is hydraulically done.

THE FILTER ELEMENT



1 The filter leaf is manufactured with a drainage member which supports on both side the AISI 316 stainless steel mesh.

2 All these metallic layers are connected and sealed to a peripheliical tubolar frame which conveyes the filtered liquid to discharge nozzle.

3 For particular applications, filters leaves are covered with cloth made with natural or syntetic fibers. The filter leaves can be made with special materials (Titanium, PVC, Polypropylene, PVDF) when AISI 316 is not suitable. Individual outlet nozzle is equipped with O-Ring gasket available in different materials and selected according to filtered liquid.

APPLICATIONS

- Direct filtration of liquids with high solids content (not colloidal)
- Pre-Coat filtration of liquids with high fine solid content (colloidal or non colloidal nature) utilizing diatomaceous earth
- Polishing of liquids with low and high viscosity, Catalyst recovery

FEATURES

- Low operating cost.
- Automatic operation allows the filtration of hazardous and volatile liquids
- Short time for cake formation due to unique manufacture of leaves which guarantee high effective filtration area and no leakages between frame and meshes
- Automatic operation is providing opening, cake discharge and closing of the filter

ADVANTAGES OF UNYVER FILTER

- Better environmental conditions in the filtration of hazardous and volatile liquids thanks to fully automated operation
- All manual handling is eliminated
- High flow rate
- High filtration area compared to overall dimensions of filter

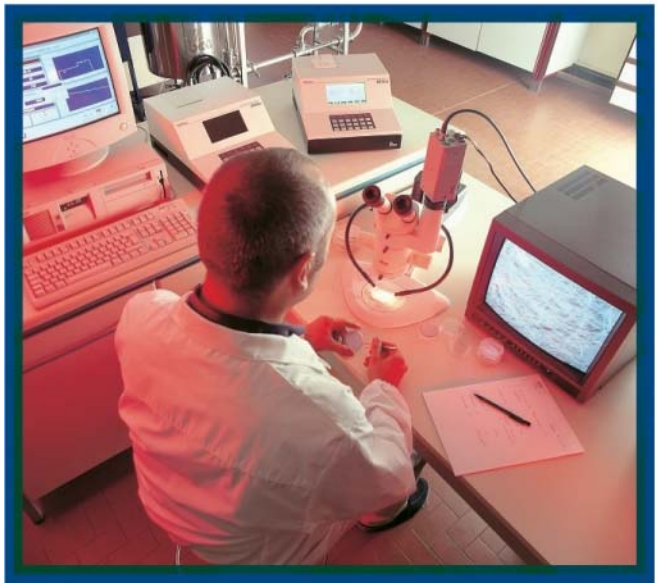
BEA STRENGTHENING THE SERVICE TO THE CUSTOMER

BEA Technologies is offering the support of filtration experts to assist the customers in studying problems and applications. BEA's experts are supported by SLB (Internal Laboratory Service) which is equipped of most recent and up-to-date instruments.

Each new application is carefully studied with an experimental Method according to this scheme:

- Filterability test and choice of eventual filter-aids type.
- Analysis of filtrate or recovered contaminant.
- Determination of filtration velocity parameters.

BEA can take pilot plants to the customer's sites, in order to run trial tests when laboratory tests are not sufficient to define completely the application.



WHERE UNYVER FILTERS ARE USED

UNYVER leaf filter is so versatile that it finds utilization in many industrial applications.
Naturally the manufacturing, the internal and external surface finishing as well as the accessories to be mounted on, are selected in order to meet all the requirements that the relevant type of industry asks for.
The housing, standard or designed according to several manufacturing codes, can be made with carbon steel, rubber lined, stainless steel 316L or special alloys.

CHEMICAL AND PETROCHEMICAL INDUSTRY

- Downstream the plants for depuration and decoulorisation of mineral oils
- Full stream or side stream filtration of MEA, DEA
- Downstream the plants for depuration of plastificizers, resins, melted sulphur
- Catalyst recovery
- Separation and eventual recovery of high volumes of solids

FOOD INDUSTRY

- Downstream the plants for decoulorisation and deodorization of edible oils and animal fats
- "Winterization" of seed oils and husk oils
- Filtration of syrups, honey, fruit juices, wines and beer

VARIES

- Recovery of hard metal fine dust from coolants
- Separation of meat flour
- Filtration of silicates

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Data contained in this bulletin are informative and subject to change without notice.
User is responsible for determining whether the product is fit for particular purpose and suitable for User's method of application.

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