

**Passion for Filtration**



**HORIZONTAL PLATE FILTERS**

# OVERVIEW

Twin Filter offers the range of Horizontal Plate Filters. Horizontal Plate Filters are high-quality systems, that can be used in many and continuous filtration processes. The system consists of a vertical tank, containing multiple horizontally positioned filter plates. The fluid to be filtered passes the filter medium that's inbetween the plates. The collected solids stick to the filter medium as a filter cake and the polished liquid flows through the filter plates to the filtrate outlet.

## PROVEN TECHNOLOGY

The Horizontal Plate Filters are based on a technology that has proven itself throughout the years, within a wide range of applications. In addition to quality, reliability and financial benefits Twin Filters' major added value is in the manufacturing of custom-built products. We can develop a Horizontal Plate Filter for any filtration process, which will meet all your specifications and requirements.

## SECURITY

Thanks to the horizontally positioned filter plates the filter cake is evenly distributed over the filter medium. Therefore the cake is unaffected in case of interruption of the filtration process or pressure fluctuations. Upon completion of the filtration process the filter cake can be subjected to processes such as washing, extraction or drying.

## BENEFITS

- Maximum product recovery
- Cake stability
- Completely enclosed construction
- Quick cartridge exchange
- Suitable for sanitary operations

## APPLICATIONS

- Pharmacy
- Food processing
- Varnish, lacquer and resin
- Fine chemicals
- Electro plating
- Beverages
- Cosmetics

## EASY MAINTENANCE

Horizontal Plate Filters are easy to maintain. Neither of these systems contain any moving parts and the filter cartridges can be quickly and easily removed and replaced with a spare cartridge.

## FLEXIBILITY IN APPLICATION AND OPERATION

Due to the various plate depths, we can supply several variations regarding filtration surface and cake volume. Furthermore, all horizontal plate filters can be fitted with a wide range of filter media, from paper and textiles to stainless steel meshes. This feature makes the filters suitable for a large range of applications in the chemical, food- and pharmaceutical industries.

## MATERIAL OF CONSTRUCTION

Standard material for vessel and all wetted parts is stainless steel 316L. Other materials and internal lining on request. Filter elements are primarily manufactured in stainless steel. Alternatively polypropylene hasteloy and other advanced materials can be requested for filter elements.



# RANGE HORIZONTAL PLATE FILTERS

## HORIZONTAL PLATE FILTER SCAVENGER

Horizontal filters that utilise the unique Scavenger plate combine reliability with another major advantage: optimum product recovery. When using these plate filters, the suspension is fed into the filter tank from the side. At the end of the filtration process, the remaining liquid is filtered through the Scavenger plate in the base of the tank. This means that a minimal volume of unfiltered liquid is left behind in the filter tank.



## HORIZONTAL PLATE REVERSE FLOW

An advantage of the Reverse Flow Filter is that the filter cake can be washed by reversing the flow over the filter. Another advantage is that a Reverse Flow Filter will show no dead volume and therefore no product loss reported.

## OPTIONAL DESIGN FEATURES

### Hydraulic compression

When filter sheets are used it is advised to use hydraulic compression in order to prevent by pass.

# RANGE HORIZONTAL PLATE FILTERS

## HORIZONTAL PLATE FILTER "WASH OFF"

Wash-Off Horizontal Plate Filters are designed for applications allowing the use of synthetic cloth or wire mesh filter media. The advantage to this filter is that the cartridge can be cleaned without disassembling. Cartridges are cleaned by removing them from the tank, pivoting them on a frame leaving the plates in a vertical orientation, permitting cake removal by vibration, tapping or washing off.

Wash off filters can be fully automated and the filter cake can be removed in closed position. For a slurry cake discharge a sluice system will be implemented. For a dry cake discharge we make use of a vibration system in combination with a screw conveyor.

## HORIZONTAL PLATE FILTER DUAL DISC

The Dual Disc offers twice as much filtration area compared with standard horizontal plate filters. The large filtration area is suitable for high flow rates, with low concentration of solids and high efficiencies. The dual disc version is available in Scavenger as well as Reverse Flow.

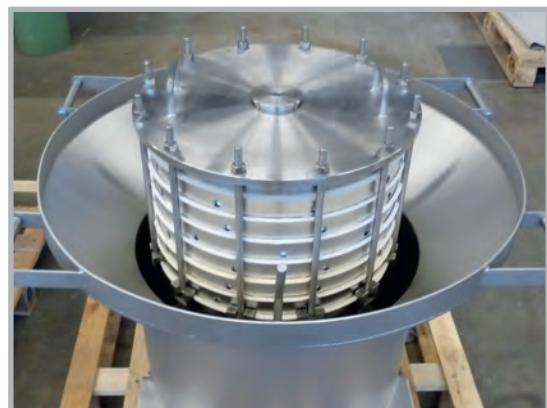


## STANDARD DESIGN FEATURES

Filter cartridge diameter	33", 18"
Standard filter plate materials	Stainless steel 316, optional: carbon steel, exotic metals and polypropylene.
Standard filter housing material	Stainless steel 316, optional: carbon steel, and many exotic metals.
Types of filter media available	All types of filter papers, woven wire, membranes and cloth.
Fittings	Standard flanged connections according EN1092 or ASME.
Design code	According EN13445, alternative ASME VIII div 1.
Approval	According to AD2000 or ASME. Alternative is "U" stamp and optional certification for: JIL, GOST, SQLO, inspection by Lloyds, TÜV, SVDB and others.
Standard design pressure	6 bar
Standard working temperature	120 °C
Differential pressure elements	max. 3.5 bar

## OPTIONAL DESIGN FEATURES

Heating possibilities	Conventional heating jackets, half pipe or the Therm-Plate system.
Coatings and linings	Hastelloy, nickel, rubber linings, HALAR or PFA coating, PVDF or PTFE linings.
Quick closures	Hydraulic operated lifted bajonet cover closure and lifting device.
Skid build	We offer complete prefabricated skids, with pumps, piping, valves, pre-coat tanks, instrumentation, automation and other required options.
Drip bowl	For stable positioning of cartridge and clean working area during cleaning other cartridge.



# FILTER MEDIA

## FILTER SHEET

Twin Filter offers a wide range of filter sheets. The filter sheets are made of polyethylene fibers (chemically pure), cellulose or filter aids like perlite or diatomaceous earth. Filter sheets provide a depth- and surface filtration. An additional filtration effect is obtained by a difference in potential called Zeta potential. The effect of this Zeta potential depends on physical conditions of the process (pH-value, temperature).

Positive Zeta potential elements provide an important advantage: Very fine negatively charged organisms and particles (below their micron rating) can be removed by electrostatic attraction.

Filter sheets are available for micron ratings from 50  $\mu\text{m}$  down to 0,15  $\mu\text{m}$  and comply with food regulations dictated by the FDA and European council (72/2002/EC). These filter sheets can be circular as well as rectangular.



## FILTER PAPER

The range of filter papers, offered by Twin Filter, can be used in numerous applications and are known to act in coarse filtration processes as well as in polishing filtration processes. We provide filter paper in standard and non-standard dimensions. Pre-coating is normally required to obtain the preferred quality of the filtrate. Contact Twin Filter to help you decide what quality would suit your requirements.



# ABOUT US

As of the 1<sup>st</sup> of November 2012, Twin Filter has become part of Parker Hannifin Corporation. Parker Hannifin has a strong strategic focus on the oil & gas industry and through the addition of Twin Filter becomes a global leader. However, Parker Hannifin is also of great value for expanding the Twin Filter process and food & beverage markets.

Both Parker and Twin Filter offer a wide range of filtration products for many industries including filters and filter vessels, compressed air dryers, hydraulic filters, fuel handling products and nitrogen generators. In addition to filtration, Parker offers many other products for the oil & gas industry such as instrumentation and hoses connectors.

Parker Hannifin operates globally through a network of over 50 customer service centres and sales offices and has a strong presence in all regions. This guarantees immediate service to our customers all over the world.

We assure that all Twin Filter customers will continue receiving our high quality standards of service and solutions.

As a customer you can count on professional support from our filtration specialists within the Process Division, offering effective, efficient and durable solutions.

## APPLICATIONS

Twin Filter provides filtration and services for:

- Liquid sulphur
- Sulphuric acid
- Food & beverage
- Vegetable oils
- Waste water treatment
- Petrochemical Industry
- Pharmaceutical Industry
- Activated carbon
- Titan oxide
- Caustic / brine
- Catalyst recovery
- Mining



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