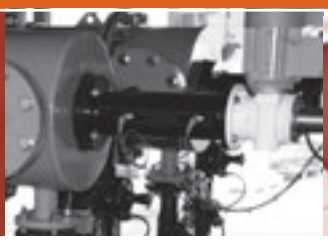
AUTOMATIC SELF CLEANING FILTER UNIT

Passion






for Filtration

TWIN FILTER®

TWINOMATIC

AUTOMATIC SELF CLEANING FILTER UNITS

Twin Filter has it's own range of Automatic Self Cleaning Filter units. Heavy duty filters, especially designed for high flow rates and continuous operation in many oilfield and industrial applications. Capable of flows up to 4400 m^3/h, with screens covering a filtration Range from 10 up to 3500 micron. The specific design of the Automatic Self Cleaning Filters guarantees a continuous flow rate, even during cleaning.
The self cleaning process is automatically triggered by:
- a signal from the pressure Differential Switch (PDS)
- a signal from the timer.
Manual override is always possible.

BENEFITS

- Uninterrupted flow and continuous filtration during cleaning
- Effective Cleaning of the total filteration area, even at minimum pressure
- Minimum flush, less than 1% of the total flow is used for cleaning
- Simple, reliable and robust, low maintenance and easy to operate
- High flow rates (up to 4400 m^3/hr/single unit)
- Very wide filtration range: 10 micron to 3500 micron
- Special design for oilfield operations
- Fully automatic operation (no operator required)
- Compact and Robust

APPLICATIONS

- Water injection
- Pipeline flushing
- Produced water
- Cooling water
- Sea water intake
- Pre-filtration RO
- Solids removal for protection of process equipment (high pressure pumps, heat exchangers, spray nozzles)
- Waste Water Treatment

WORKING PRINCIPLE TWINOMATIC

FILTERING PROCESS

For pre-filtration, the water flows through the coarse screen from outside-in. After that, the water flows through the stainless steel fine screen from inside out, creating minimum head loss. Different types of screens can be used for different filtration needs. The filtration cake accumulating on the screen surface causes the development of head loss across the screen. When this head loss reaches a pre-set value the cleaning mechanism is operated.

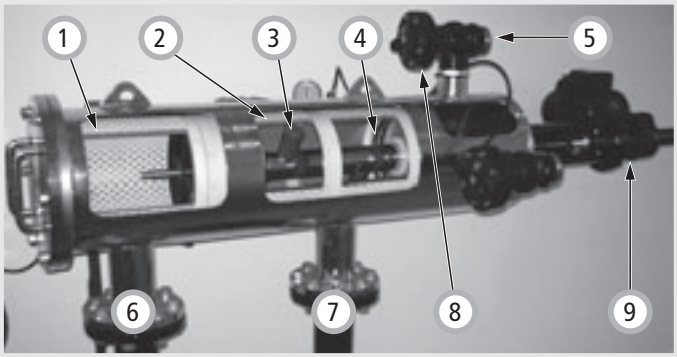
The scanner is driven by an electric or pneumatic motor. It scans the screen (without touching it) in a spiral motion and removes the filter cake by suction power created by the exhaust valve opening to the atmosphere. The hollow nozzles of the scanner collect the filter cake, which is then discharged through the exhaust valve. Cleaning takes appr. 30 seconds.

CONTROL SYSTEM

The TwinOmatic filter is equipped with a DP-switch that transmits an electric or pneumatic signal to the solenoid of the exhaust valve when the pressure differential across the screen reaches a pre-set value. The signal activates the electronic or pneumatic controller which initiates the flushing cycle. The solenoid operates the exhaust valve by means of a hydraulic command or compressed air.

IMAGE

1. Coarse screen
2. Fine screen
3. Suction nozzle
4. Suction scanner
5. Dump
6. Inlet
7. Outlet
8. Exhaust valve
9. Drive motor



SKID MOUNTED SYSTEM

Twin Filter manufactures complete automatic self-cleaning filter packages with all necessary piping, valves and controls for continuous operation. In addition to the standard range, we design and manufacture to client specification. We can offer you multiple units in series and parallel or complete packages. TWINOMATIC units can be combined with cartridge filters to achieve low filtration degrees > 0.5 micron. The skids are very compact and offer a wide flow up to 11000 m³/h and a filtration range from 0.5 - 3500 micron.

STANDARD FEATURES

- Flow rate - up to 11000 m³/h
- Connections - flanged, hammer unions
- Material - Carbon steel, epoxy coated
- Pressure - up to 10 bar
- Temperature - up to 95 °C (203 °F)

STANDARD TWINOMATIC





		TwinOmatic Horizontal	TwinOmatic Vertical	TwinOmatic Compact	TwinOmatic Mega	TwinOmatic Brush
Maximum flow rate	(m^3/h)	50 - 1100	50 - 1100	30 - 200	100 - 4400	80 - 1100
Filtration area	cm^2	3220 - 14310	3220 - 14310	1100 - 5780	6440 - 57240	2910 - 11145
Maximum operating pressure	bar	10 *	10 *	10 *	10 *	10 *
Recomended operating pressure	bar	2	2	2	2	2
Maximum operating temperature	°C	65	65	65	65	65
Connection in-and outlet	"	3 - 32	3 - 32	2 - 8	20" - 40"	4 - 16
Connection dump	"	2 - 3	2 - 3	1 - 2	3 (outlet) manifold	2
Flow for cleaning (m^3/h) @ 2 bar *****	m^3/hr	15	15	5 - 15	45	20
Drive		Electric **	Electric **	Electric **	Electric **	Electric **
Mounting, Horizontal or Vertical		Horizontal	Vertical	Vertical	Vertical ***	Horizontal ***
Control system		PLC or pneumatic				
Construction material vessels		Carbon steel, epoxy coated. *				
Construction material internals		PVC, stainless steel 316L. *				

* Others upon request ** Option for hydraulic or pneumatic drive *** Option for Horizontal **** Vertical or 45° is possible ***** Other flowrates upon request

STANDARD SCREENS

Micron	10	25	50	80	100	200	300	500

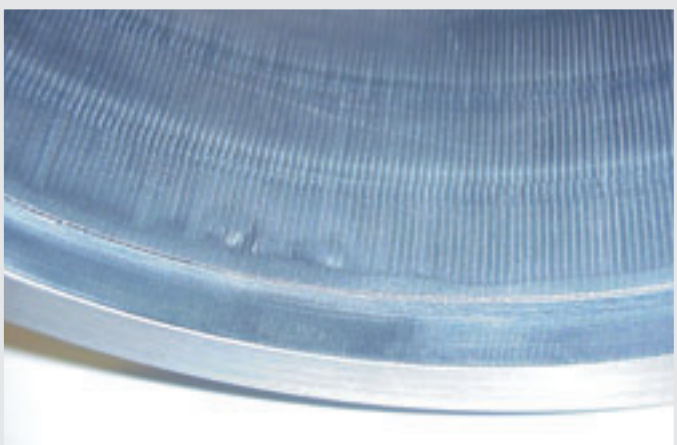
We supply screens in a weave and wedge wire execution

STANDARD DESIGN FEATURES

- Self cleaning features are: dP, timer, dP/timer, continious
- Flushing counter
- An Alarm or an alternative signal in malfunction mode (open a by-pass, shut-off the pump, operate an alarm signal control room, etc.)

OPTIONAL DESIGN FEATURES

Design code vessel	ASME VIII (u-stamp), DNV PD5500, Stoomwezen, AD 2000
Design code frame	DNV 2.7-1/ EN 12079
High pressure range	Up to 6000 Psi (412 bar)
High temperature range	Withstands temperatures up to 95 °C (203 °F)
Anti frost	Special control system for extreme climate conditions
Electric current	ATEX (zone I + II) 110V, 220V, 380 V, single phase, 24V and solar energy
Construction materials	CS Rubberlined, Stainless steel 304 of 316L and titanium, (Super)Duplex
Available controllers	PLC, electronic, pneumatic
Available drive unit	Electric, pneumatic and hydraulic

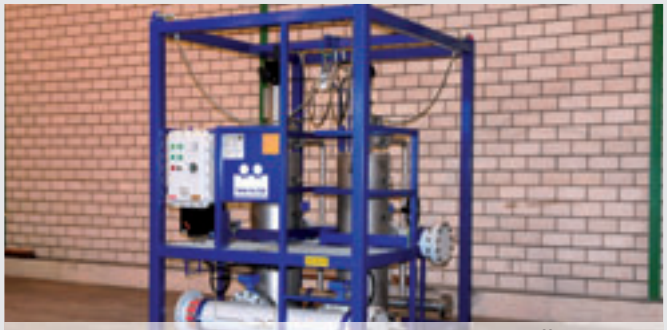


REFERENCES

Temporary Water Injection, Offshore Qatar, 120m³/hr, 50 micron, polish filtration 2 micron

Prefiltration of main water supply to the platform, offshore Middle East, 300 m³/h at 80 microns Housing 6MO

Seawater Intake 700m³/hr at 50 micron, housing carbon steel rubber lined, SM0254 internals Piping HDPE, Controls Eex-d



Seawater intake - water injection & cooling water, Denmark offshore, 1400 m³/hr, 40 micron. All wetted parts SS316

Produced water re-injection
Sumatra, 30 m³/hr, 25 micron

Pipeline flushing
Egypt, 1200 m³/hr, 50 micron

Water injection
Malaysia offshore, 280 m³/hr, 40 micron

Water injection
Pakistan, 280 m³/hr, 25- 10 micron

ABOUT THE OILFIELD DIVISION

Twin Filter Oilfield Division is part of Twin Filter BV, an independent, 100% Dutch company founded in 1985.

Our strength and reputation is built on customer service, reliability, experience, industry knowledge and after sales. Wherever in the world, you can count on our support 24 hours a day. We have worldwide stock. In addition to our standard scope of supply, we also hold a large rental fleet of equipment.

The Oilfield Division is known for it's problem solving.
They provide filtration solutions and services for:

- Completion / Gravel pack fluids
- Workover fluids
- Water injection (water flood operations)
- Oily water clean-up
- Waste water treatment
- Chemical injection
- Pipeline flushing
- Produced water treatment
- (Sea) water intake filtration
- High pressure applications
- RO pre-filtration
- Drink water systems
- RO filtration
- Bilge water treatment
- Gas filtration

WHY FILTRATION?

Costs of environmental protection are key issues for oilfield operations. Efficiency, reliability and maximum performance are of the utmost importance.

The main concern in oilfield filtration is to prevent reservoir damage. Many contaminants can plug off the reservoir / production zones during completion and water injection. Twin Filter will protect the reservoir from contaminants, including bacteria, scale, clay, rust, etc.

Current environmental laws are becoming more stringent and are aiming for zero discharge. Many waste treatment technologies will not meet the discharge levels of the future.

Twin Filter offers a solution for the removal of more than 99% of all hydrocarbons and emulsions from water streams.

We design and manufacture filtration solutions for the oilfield and petrochemical industries, on - and offshore. Our field experienced engineers are constantly improving and designing equipment to handle new filtration solutions.

TWIN FILTER®

AGENT, DISTRIBUTOR

Twin Filter B.V.
Zuiddijk 398
1505 HE Zaandam
The Netherlands
Tel. +31 (0)75 6555000
Fax. +31 (0)75 6555015

Internet:
www.twinfilter.com
Email:
info@twinfilter.com