FILTERAUTOMAT

EXTREMELY ROBUST AUTOMATIC FILTER

DANGO & DIENENTHAL

BETTER VALUES.

EN

FILTERAUTOMAT (DDF)

EXTREMELY ROBUST AUTOMATIC FILTER

The Filterautomat boasts an extremely robust design and excellent backwash performance. The rotating filter drum distributes any solids uniformly over the entire filter surface and filters them out effectively.

FILTER HOUSING MATERIAL	
Standard design	**Cast iron**
Seawater-resistant design	**Nickel resist**
Special design	**Steel/stainless steel**

Special designs possible for filter housings and technical specifications. Feel free to contact us! We are happy to advise you.

TECHNICAL DATA	
Flow rate	**Max. 10,500 m³/h**
Filter fineness	**≥ 25 µm**
Operating pressure	**0.8 to 63 bar**
Pressure loss with clean filter	**0.1 to 0.3 bar**
Flanges	**DN 50 to 1,000**
Temperature	**–10 to +110°C**
Automatic cleaning	**Yes**
Inline design	**Yes**

ADVANTAGES

- High cleaning speed (4–10 m/s)
- 100% cleaning of the entire filter area
- Low flushing water losses
- Robust design
- Shredding of coarse particles
- Fine filtration ≥ 25 µm possible
- Uniform feeding of the entire filter area
- Fitted with wedge-wire screens/wire mesh
- Easy to service via the inspection opening
- Inline design
- Completely wired and tested unit

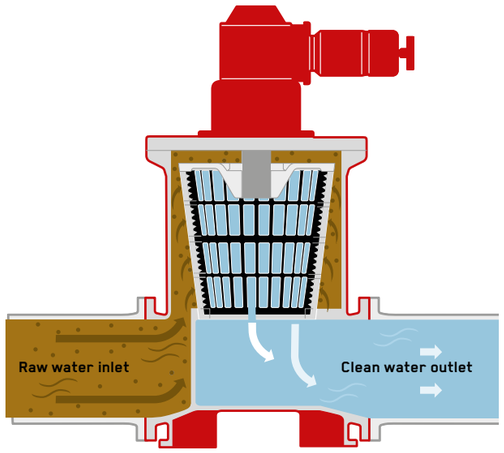
OUR FILTER SYSTEMS PROTECT

- Plate heat exchangers
- Spray nozzles
- Piping systems
- Mechanical seals
- Pumps
- Microfiltration systems
- The environment
- Final products

THE NEW DEFINITION OF PURITY FOR YOUR MEDIUM

- Cooling water
- River water
- Seawater & ballast water
- Sinter & scale water
- Process water
- Oils & emulsions
- Mussels & mussel larvae infested waters
- Drinking water
- Effluent water

FILTRATION

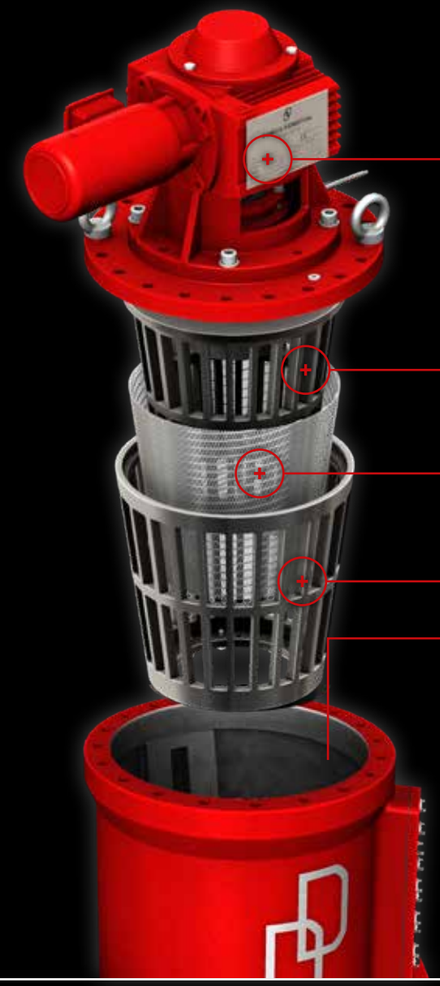


The raw water enters the filter via the inlet flange and is distributed in the outer ring of the housing. Then the raw water rises upwards in the filter housing and flows into the three-part filter drum.

In order to guarantee a uniform feed load for solids on the filter element, the filter drum rotates at about 5–7 rpm. The solids that are located in the raw water are retained in the segment-like openings on the outer part of the filter drum, which is located on the outside of the filter element.
The purified water exits the filter through the clean water outlet.

SHEARING EVEN THE LARGER PARTICLES (HERE THE EXAMPLE OF A BRANCH) IS POSSIBLE DUE TO THE SPECIAL DESIGN OF THE FILTER DRUM AND FILTER HOUSING.

FILTER STRUCTURE



UPPER PART OF FILTER WITH FILTER DRIVE

INNER SUPPORT BASKET

FILTER ELEMENT

OUTER SUPPORT BASKET

FILTER HOUSING

The filter housing contains two flushing channels situated opposite each other. To prevent raw water from entering the flushing channels during the backwash process, the flushing openings are sealed off all around with sealing surfaces. The filter housing is coated with a standard two-part epoxy resin.

FILTER DRUM

The filter drum is comprised of a sturdy inner and outer support basket. The filter element is located between these support baskets. The conical design allows the three individual parts to be fixed and screwed together with perfect dimensional accuracy. A high-quality powder coating is applied to the support baskets to provide them with special protection against corrosion.

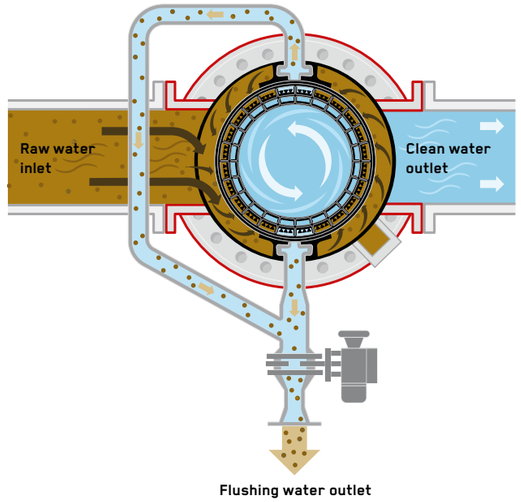
FILTER DRUM SEGMENTS

The segment-like openings of the outer part of the filter drum enable coarser particles to be retained and, if necessary, broken up between the outer part of the filter drum and the backwash channel. These retained particles are subsequently flushed out of the system during the backwash process.

FILTER HOUSING TOP VIEW

During assembly, the upper part of the filter is inserted into the filter housing, with the lower part of the filter drum being centered in the filter housing by a ring surface.

BACKWASH PROCESS



A differential pressure measurement is made between the raw water inlet and clean water outlet in order to determine the degree of contamination of the filter element. The backwash process is activated at a defined differential pressure. In addition, an adjustable time relay in the electrical control system enables the backwash process.

At the start of filter cleaning, the motor-driven backwash valve opens, generating atmospheric pressure in the backwash pipe and the flushing channels in the filter housing. Due to the excess pressure inside the filter drum on the clean water side, the solids retained on the outside of the filter element are now forcibly backwashed into the atmosphere against the direction of filtration. The rotation of the filter drum passing by the flushing channel guarantees 100% cleaning of the filter basket. The flushing process is complete after 15–20 seconds, after which the backwash valve is closed automatically.

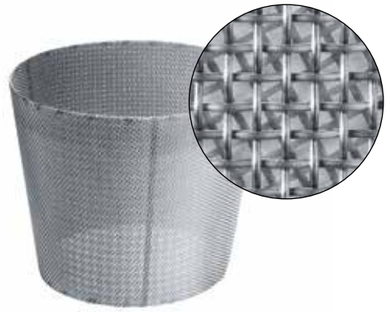
Filtration is not interrupted during backwashing.

FILTER ELEMENTS

The Filterautomat can be fitted with various filter elements:

THE WEDGE-WIRE SCREEN

- Based on welded stainless steel triangular rods
- Highly robust design
- Can be manufactured in various stainless steel grades
- Filter fineness ≥ 30 µm



THE WIRE MESH

- The filtration mesh is held in a sandwich construction by two supporting meshes
- Higher net filter area utilization
- Highly robust design
- Can be manufactured in various stainless steel grades
- Filter fineness ≥ 25 µm

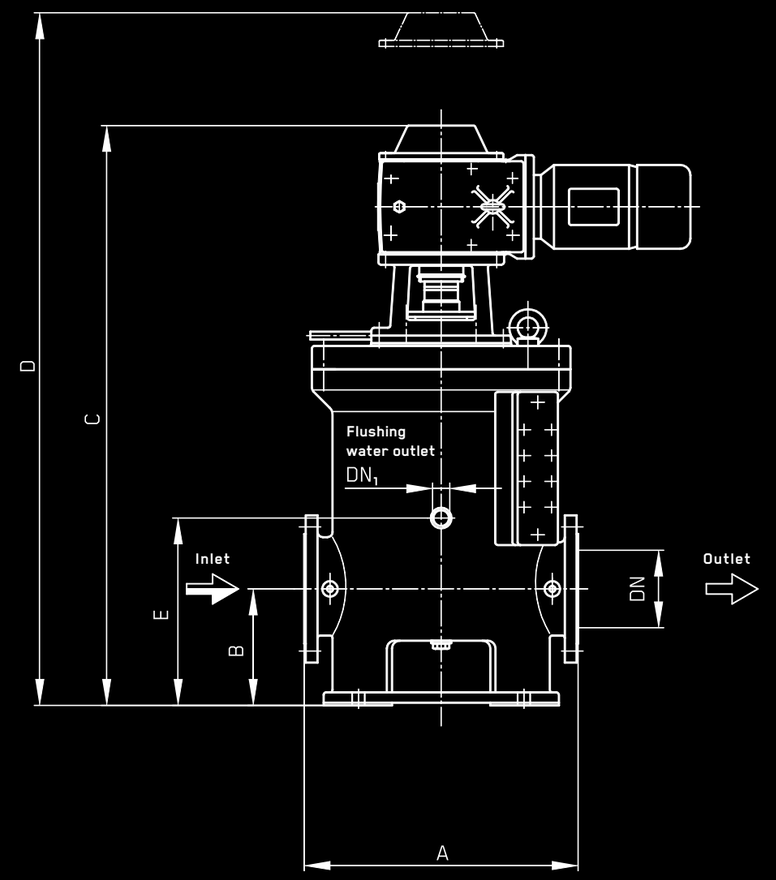
Both filter elements, the wedge-wire screen and the wire mesh, can be designed in different stainless steel grades.

FILTER SIZE

The filter size depends on the throughput capacity, the choice of filter element, the filter fineness, the acceptable pressure drop, and the degree of contamination of the raw water.

NOW IT'S UP TO YOU

To prepare an offer, we request that you complete the filter project questionnaire and send it to us by e-mail. You can find this at: **www.dds-filter.com/en/downloads/**



TYPE / DN	DIMENSIONS IN MM						WEIGHT IN KG
	A	B	C	D	E	DN_1	
50	320	125	791	1,020	192	32	160
80	400	150	879	1,150	241	50	250
100	470	180	978	1,300	275	50	320
150	530	225	1,121	1,470	362	50	450
200	600	225	1,221	1,670	381	50	500
250	660	240	1,306	1,800	416	80	660
300	800	280	1,560	2,320	475	80	1,250
400	915	318	1,805	2,750	600	100	1,800
500	1,145	490	2,040	3,000	775	100	2,768
600	1,320	425	2,610	4,160	939	100	3,600
700	2,200	650	4,151	5,650	1,320	200	11,500
800	2,200	650	4,151	5,650	1,320	200	11,500
900	2,200	650	4,151	5,650	1,320	200	11,500

FILTER COMPONENTS

DIFFERENTIAL PRESSURE MEASUREMENT

Comprising:

- Optical display of the operating pressure upstream of the filter
- Optical display of differential pressure
- Two freely adjustable switching contacts
- Start of filter flushing
- Alarm message

VENTURI NOZZLE WITH BACKWASH VALVE

The Venturi nozzle is designed to suit the customer's operating conditions to adjust the required flushing water quantity and to prevent pressure fluctuations in the pipe network. The backwash valve is equipped with an electric or pneumatic actuator as standard.

ELECTRICAL CONTROL SYSTEM

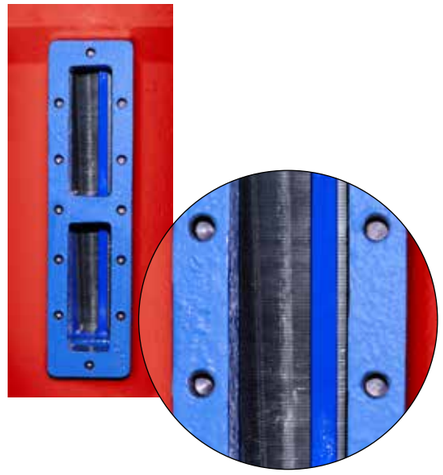
The backwash process is initiated depending on time and/or differential pressure, thereby enabling fully automatic filter operation.

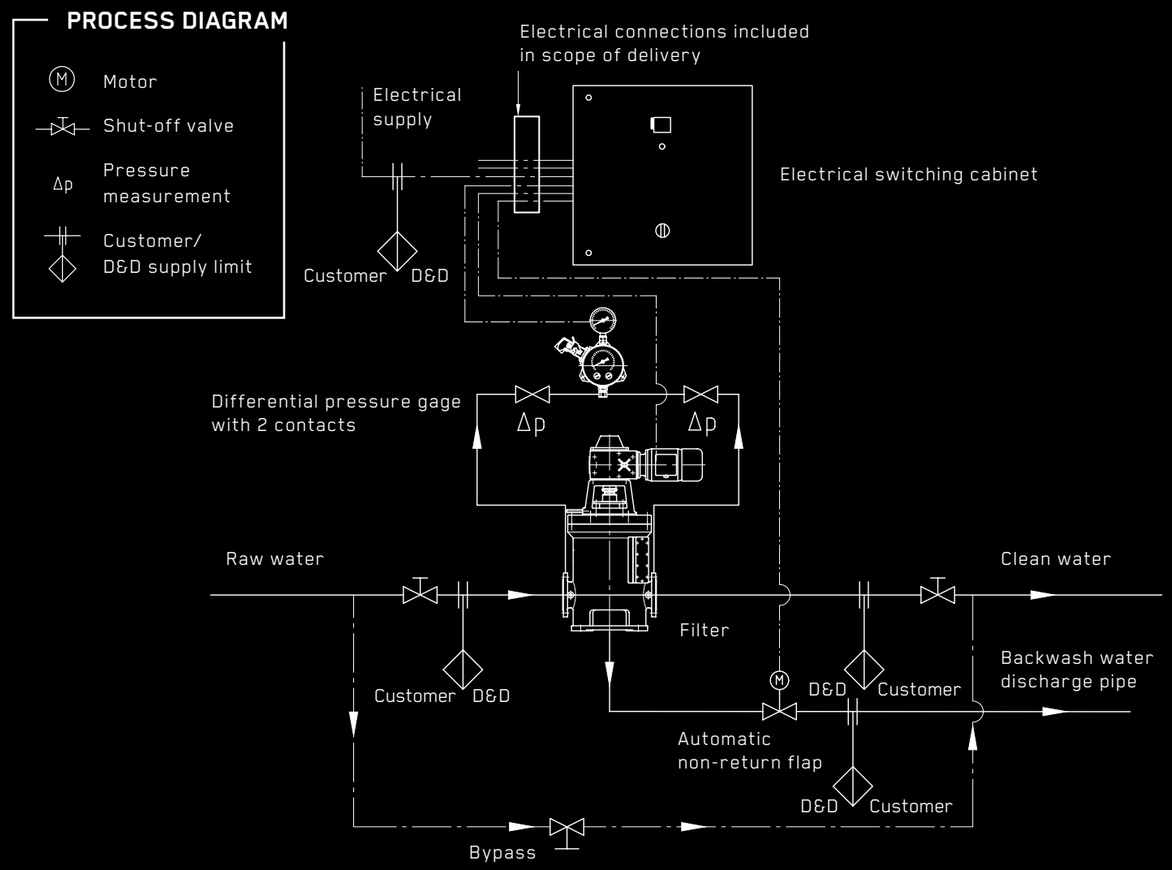
The standard control system includes the following signal exchange with the customer process control system (PCS):

- Collective fault
- Ready for operation
- Filter in flushing mode
- External triggering of filter backwash
- External release of filter backwash

INSPECTION OPENING

The filter housing design with inspection opening provided over the entire height of the filter drum affords a view of the inside of the filter. The slow-rotating filter drum enables the entire filter element to be inspected.





TECHNICAL INFORMATION

SCOPE OF DELIVERY

- 230 or 400 V voltage
- 110 to 690 V voltage *
- Pressure Equipment Directive (PED)
- American Society of Mechanical Engineers (ASME) standard *
- Explosion protection
- Differential pressure measurement
- Differential pressure as 4-20 mA signal *
- Automatic filter control system
- Backwash with own medium
- Backwash with suction pump *
- Electrical or pneumatic flushing valve
- Signal exchange with process control system (PCS)
- Cabling including plug
- Documentation
- Certificates *
- Function test at the manufacturer's factory

* Available at extra cost

SHAPE BETTER VALUES

CLOSER. BETTER. SIMPLER.

We make sure that you get the filter that is perfectly suited to your application. Our engineering office will design the filter to match your operating parameters. This allows us to adapt our product to your specific use.

EXPERIENCED PARTNER

All DANGO & DIENENTHAL filters are handled by our specially qualified and regularly trained staff. Both our mechanical production and assembly departments have extensive expertise.

CERTIFIED TESTING

Our certified quality management system enables seamless monitoring and control of all production steps. This ensures early detection and trouble-shooting, allowing us to offer you a high level of quality.

THE TEAM AT YOUR SIDE

If you require staff for training or maintenance at your company, don't hesitate to contact us. Our specially qualified employees will be happy to assist you.

IDEAL PRODUCTION CONDITIONS

We have been producing filters in our factory in Siegen, Germany, since 1941. Our continuously improved, state-of-the-art range of machinery and modern factory buildings provide an environment that is essential for manufacturing high-quality products.

WE ARE HERE TO ASSIST YOU

+49 271 401 4123
Monday–Friday:
8:00 a.m. – 4:00 p.m. (CET)
(except for holidays)

Or by e-mail: post@dds-filter.com
You can find us at the following address:
Hagener Str. 103
57072 Siegen, Germany