



# DANGO & DIENENTHAL

Filtertechnik GmbH



## JET Filter S

# The JET Filter S



## The New Definition of Purity for Your Medium

-  Cooling Water
-  River Water
-  Sea Water
-  Sinter and Scale Separation
-  Emulsions
-  Process Water
-  Mussel / Mussel Larvae Separation

## Our Filter Systems Protect

-  Plate Heat Exchangers
-  Spray Nozzles
-  Piping Systems
-  Mechanical Seals
-  Pumps
-  Micro Filtration

flow rate	1 m³/h to 25 m³/h
filter fineness	≥ 50 µm, ≤ 5 mm
operating pressure	1.5 to 40 bar
pressure loss with clean filter	0.1 to 0.3 bar
threaded connection	R 2"
temperature	- 25 to + 200 °C
automatic / manual backwash	✓

## Scope of Delivery



Fig. 1

voltage 230 V	•
Pressure Equipment Directive (PED)	•
ASME	Δ
differential pressure gauging	•
differential pressure as 4-20 mA-signal	Δ
automatic filter control	•
self-medium backwash	•
backwash with suction pump	Δ
electric backwash valve	•
signal exchange with PLC	•
electrical cabling incl. connectors	•
documentation	•
certificates	• Δ
functional test at manufacturer's works	•
<i>included in the scope of delivery</i>	•
<i>available at extra charge</i>	Δ

	<b>standard design</b>	<b>sea water resistant design</b>
<b>filter housing</b>	<b>stainless steel, plastic</b>	<b>stainless steel, plastic</b>
<b>filter element</b>	<b>stainless steel</b>	<b>stainless steel</b>

## Mode of Operation

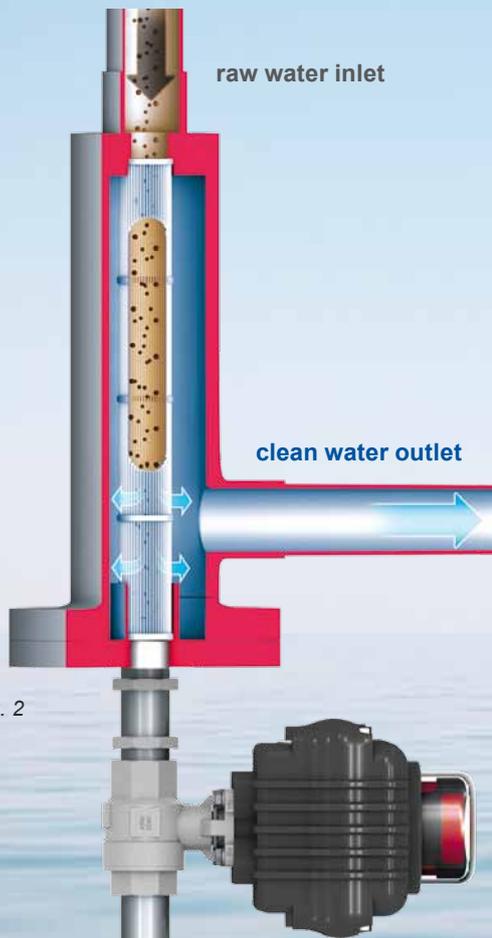


Fig. 2



Fig. 3

### Filtration Process

The raw water enters through the inlet opening into the filter element arranged behind it. Due to the cross-section reductions, the axial flow velocity into the filter element proportionally increases to 5 - 7 m/s.

A dirt collector is arranged at the end of the filter element.

The filtration of the raw water is carried out according to Bernoulli's law, in the last third of the filter element. Thereby the raw water flows through the filter element from the inside to the outside. The clean water leaves the JET Filter S through the lateral clean water outlet.

Due to the axial flow velocity of 5 - 7 m/s in the filter element, dirt particles are guided into the dirt collector. The filter backwashing is initiated by the differential pressure (pressure difference between the raw and clean water sides). In addition, an adjustable time lag relay in the electrical control enables the filter backwash process.

### Backwash Process

At the start of the filter cleaning, the motor-driven backwash valve opens. A small portion of the raw water now flows through the backwash port. Thereby the dirt particles present in the dirt collector are flushed out of the filter.

With the backwashing, the axial flow velocity in the filter element increases up to 10 m/s. This high axial velocity also cleans the filter element. Further, a low pressure is created in the filter element, which ensures backwashing from the outside to the inside with clean water.

After 10 - 20 seconds, the backwash process is terminated and the backwash valve is automatically closed. The filtration is not interrupted during the backwash process.

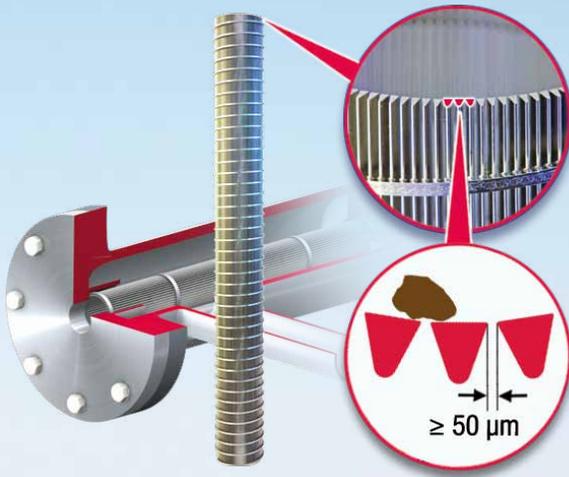


Fig. 4

## Filter Element

Stainless steel slotted sieve cylinder with axial slots for optimal filter element cleaning.



Fig. 5

## Electric Control

The backwash process is initiated according to time and/or differential pressure and thereby enables a fully automatic filter operation. The standard control system contains the following signal exchange with the customer's process control system (PLC):

- collective fault
- external release of the backwash process



Fig. 6



Fig. 7

## Venturi Nozzle and Backwash Valve

The venturi nozzle is designed for customer's operating conditions, in order to adjust the required volume of flushing water and to prevent pressure fluctuations in the pipeline system. The backwash valve is fitted with an electric actuator as standard.

## Differential Pressure Gauging

Consisting of:

- optical display of the differential pressure
- two preset switching contacts
- start filter backwash
- alarm signal



## Application Example



Fig. 8 JET Filter S

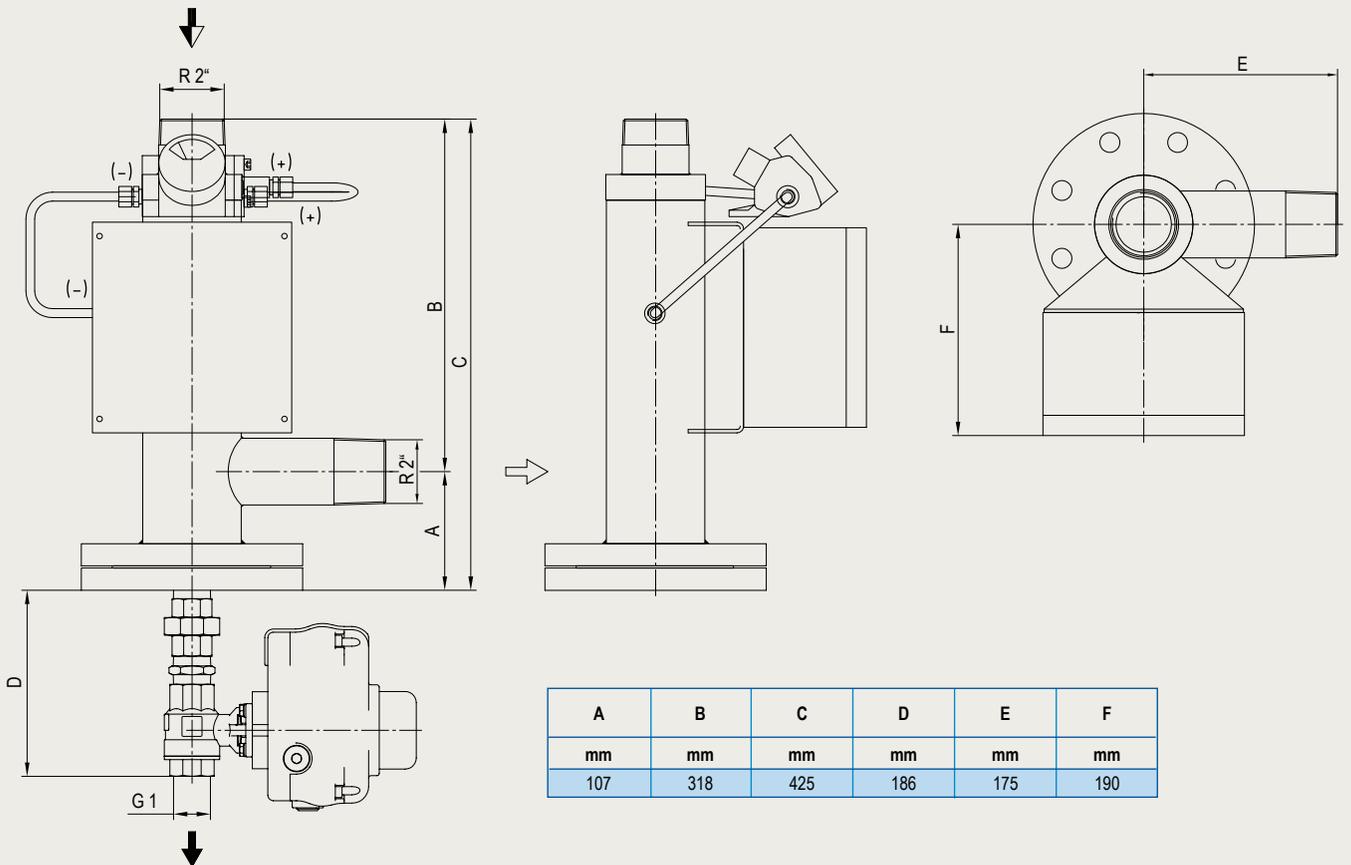


Fig. 9 Dimensions

## Process Chart

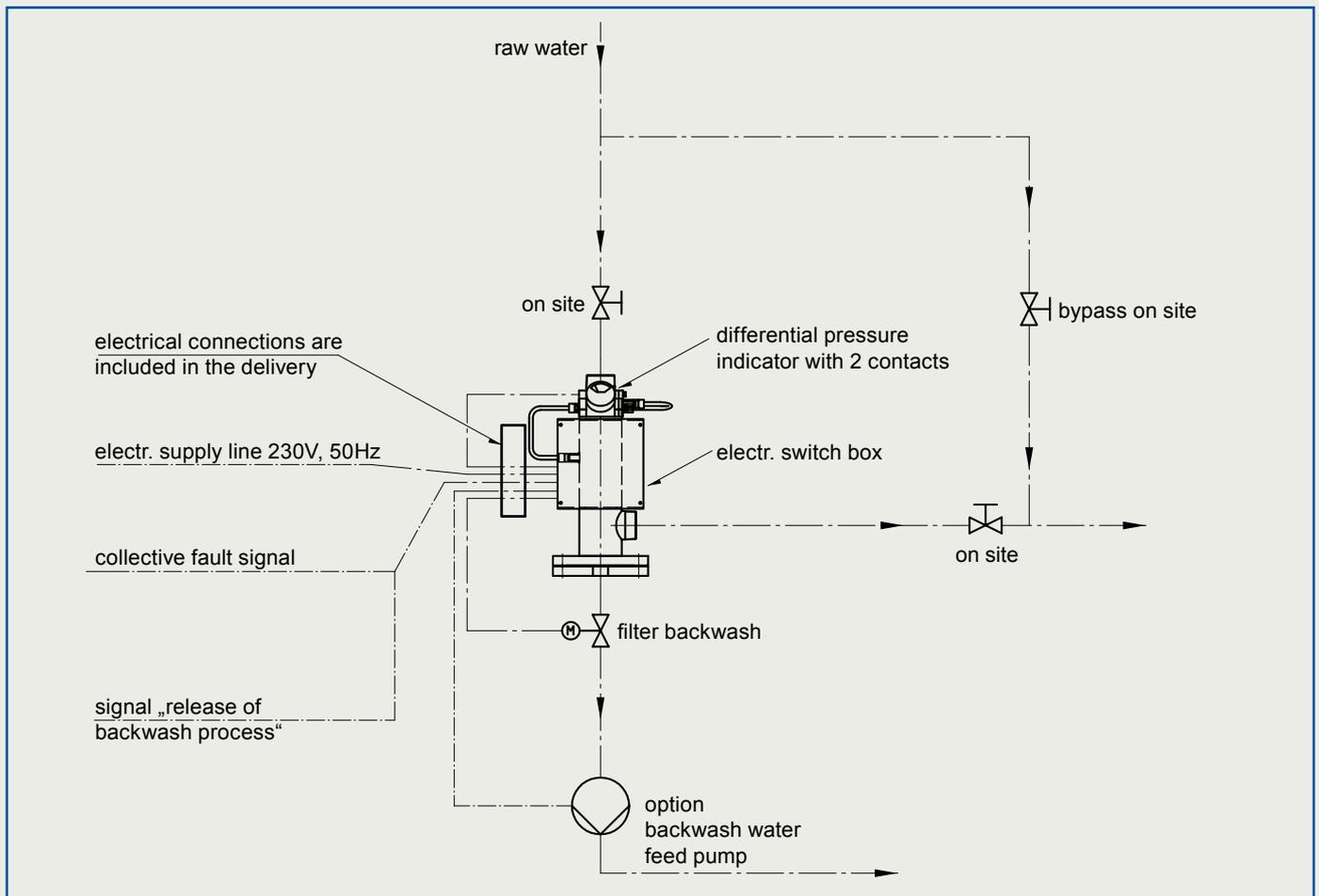


Fig. 10

## Advantages

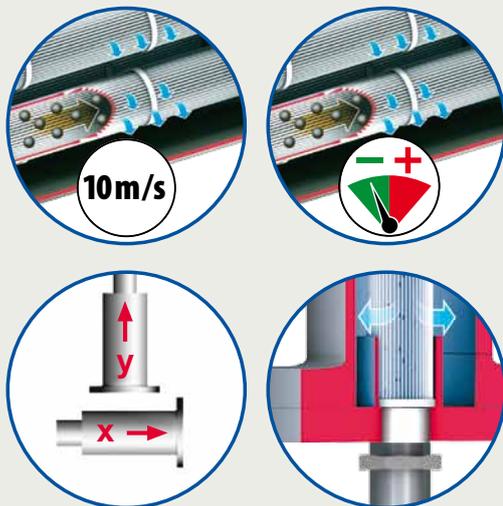


Fig. 11

- high backwash speed (up to 10 m/s)
- any installation position (horizontal/vertical)
- easy installation
- low wear (no moving parts in the filter)
- low backwash water loss
- no differential pressure increase during the filtering process
- wide range of materials
- fully wired, tested unit
- constructive special solutions for specific customer requirements



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