

Installation and operating instructions

JUDO PROFIMAT-PLUS $\frac{3}{4}$ " - 2" JUDO PROFIMAT DN 65 - 100

Automatic backwash protective filter

Valid for: EU countries and Switzerland

Language: English

Attention:

Carefully read through the installation and operating instructions and safety information before installing and putting the unit into service.

These must always be issued to the owner/user.

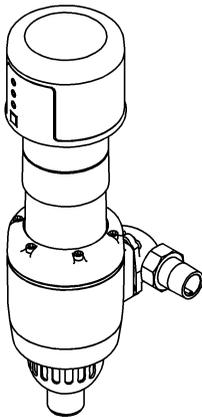


Fig.: JPF⁺-A $\frac{3}{4}$ " - 1 $\frac{1}{4}$ "

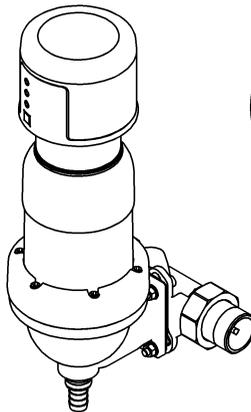


Fig.: JPF⁺-A 1 $\frac{1}{2}$ " - 2"

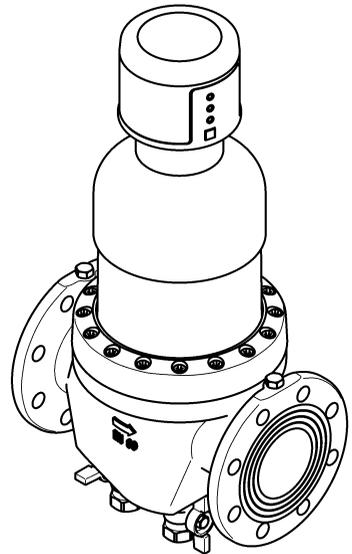


Fig.: JPF-A DN 65 - 100



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Dear Customer,

we would like to thank you for your confidence in us, which you have shown by purchasing this device. The product you have purchased is a filter developed using state of the art technology.

This filter is suitable for use in cold drinking water up to a maximum ambient temperature of 30 °C (86 °F).

It removes coarse and fine-grained particles larger or equal in size to the filter screen (strainer) mesh from the filter through screen filtration.

Particles smaller than the screen mesh size used, turbidities (i.e. substances that make the water turbid) and substances dissolved in the water cannot be filtered out of the water.

Each unit is thoroughly checked before delivery. Nevertheless, should difficulties occur, please contact the responsible customer service (see back page).

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EC Conformity Declaration

Document no. 160/09.09

Manufacturer: JUDO Wasseraufbereitung GmbH

Address: Hohreuschstr. 39 - 41
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**Product Description: JUDO PROFIMAT-PLUS ¾" - 2"
JUDO PROFIMAT DN65 - DN100
Automatic Backwash-Protective Filter**

- EC-Directive: Electromagnetic Compatibility (EMC) 2004/108/EC
- Engineering Standards: Electromagnetic Compatibility, Generic Standards for Radiated Interference and Interference Immunity EN 61000-6-2
EN 61000-6-3

The observance of all points of the EMC requirements (EC conformity) for the use of the device in household / commercial areas and industrial areas is hereby confirmed.

- Harmonized Standard: Safety of power transformers, power supply units and similar EN 61558-1

Issuer: JUDO Wasseraufbereitung GmbH

Place and Date: Winnenden, September 10th 2009

Legally binding
signature:


.....
JUDO Wasseraufbereitung GmbH

This declaration certifies that the product is in accordance with all the stated directives; it is however not an assurance of its characteristics.

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1. About this instruction manual



(see chapter “Safety information and dangers due to non-compliance”)

The instruction manual must permanently be available at the place where the filter is used.

This instruction manual is intended to make it easier to familiarize yourself with the filter and its possible intended uses.

The instruction manual contains important information in order to safely, properly and economically run the filter.

It contains fundamental information, which must be observed during installation, operation and maintenance. Observance of this information helps to avoid dangers, reduce repair costs and increase the reliability and service life of the filter.

The instruction manual must be read and used by each person entrusted with carrying out work on the filter, for example:

- **Installation**
- **Operation**
- **Maintenance**
(servicing, inspection, repair)

Installation and maintenance may only be carried out by personnel authorized by the manufacturer, who are capable of fulfilling the instructions given in the installation and operating instructions and the country-specific regulations.

Apart from the instruction manual and the legally binding accident prevention provisions applicable in the country and place of use, the recognized technical regulations for safe and proper work must also be observed.

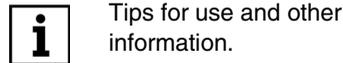
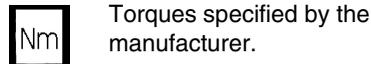
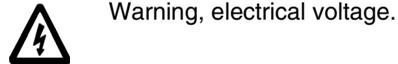
Therefore, this instruction manual must always be read by the fitter and responsible

skilled personnel/owner or operator before installation, putting into service and maintenance.

Not only the general safety notes given in the chapter “Intended use” are to be observed, but also the special safety notes in the other main chapters.

1.1 Symbols used

The safety notes contained in this instruction manual are labelled with the following symbols:



Notes directly attached to the automatic backwash protective filter, e.g.

- Direction of flow (see fig. 1)
- Rating plate
- Cleaning information

must always be observed and kept in a fully legible condition.

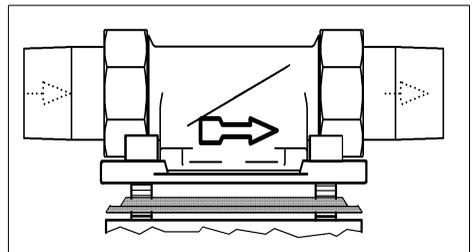


Fig. 1: Built-in rotary flange

1.2 Safety information and dangers due to non-compliance

In detail, failure to observe the general danger symbols can result, for example, in the following risks:

- Failure of important functions of the automatic backwash protective filter.
- Danger to persons due to electrical and mechanical effects.
- Danger to persons and the environment due to leaks.

Refrain from any unsafe working methods.

Failure to comply with this instruction manual and the safety information can not only result in dangers for people but can also harm the environment and the unit.

1.3 Units used

In derogation of the International System of Units SI (Système International d'Unités), the following units are used:

Units	Conversion
°F	$^{\circ}\text{F} = 9/5 \text{ }^{\circ}\text{C} + 32$
bar	$1 \text{ bar} = 10^5 \text{ Pa} = 0,1 \text{ N/mm}^2$
3/4"	DN 20
1"	DN 25
1 1/4"	DN 32
1 1/2"	DN 40
2"	DN 50

2. Intended use

The installation and operation of the automatic backwash protective filter is subject to the following existing national regulations.

In addition to the operating instructions and the obliging regulations concerning accident prevention that exist in the country of operation and the location of use, the established technical regulations concerning safe and professional work, should also be observed.

The water which is to be treated should fulfil the requirements stipulated by European drinking water directives!

It is absolutely essential that the manufacturer / supplier will be consulted prior to any operation of the device using water of a different quality, respectively with water that contains additives.

This automatic backwash protective filter is suitable for use in cold drinking water up to a maximum ambient temperature of 30 °C (86 °F).

The automatic backwash protective filter has been developed and manufactured using state of the art technology and the established safety regulations in Germany.

The automatic backwash protective filter may only be operated in accordance with the manufacturer's specifications. Any other operation or operation beyond the specified use, is not in accordance with the manufacturer's specifications.

Additional dangers may result in the event of the device not being operated in accordance with the manufacturer's specifications and non-observance of the danger symbols or safety instructions. The manufacturer / supplier cannot be made liable for any damages caused by these additional dangers. The operator is responsible for these risks.

The use of the device in accordance with the customer's specifications includes the observance of the operating instructions.

The manufacturer/supplier should be consulted prior to any operation of the automatic backwash protective filter other than in the operational areas stated in these operating instructions.

The automatic backwash protective filter may only be operated in a technically faultless condition, in accordance with the manufacturer's specifications and the stated safety and danger relevant instructions and under observance of the operating instructions!

Any functional defects are to be removed immediately!

2.1 Water pressure

The water pressure should be between 1.5 bar and 10 bar.

The water pressure must not drop below 1.5 bar as otherwise the backwashing can be impaired! If the filter is not backwashed regularly a pressure loss can result and this can impair the filter function.



ATTENTION

(see chapter “Safety information and dangers due to non-compliance”)

In the event of **water pressure above 10 bar**, the pressure reduction valve should be fitted **in front** of the automatic backwash protective filter (see fig. 2). If the operating pressure is above 10 bar, this may result in defects during operation.

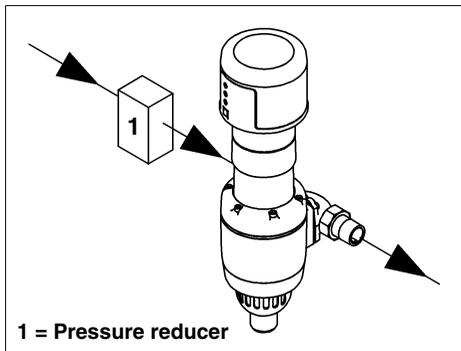


Fig. 2: Pressure reducer upstream of the unit



The installation of a pressure reduction valve is recommended for **water pressures between 5 bar and 10 bar**.

2.2 Notes on special dangers

2.2.1 Electrical equipment / installations



There must not be any electrical cables and devices underneath or in the immediate vicinity of the filter!

Electrical devices/equipment that are not splash-water proof and are situated in the direct vicinity of the filter may be damaged by water leaking from the filter caused as a result of the device not being operated in accordance with the manufacturer's specifications. In addition this may also result in short circuits if these electrical devices/equipment being connected to the electrical power supply. In the event of such cases persons are at risk and may sustain electrical shocks. Therefore any electrical devices/equipment situated in the direct vicinity should be splash-water proof, respectively comply with the statutory requirements for wet areas (IP44).

2.2.2 Potential-free input



Only isolated switching contacts may be connected to the potential-free input.

No external voltage may be impressed on the potential-free input! Applicable safety requirements and electrical regulations must be observed without exception!

2.2.3 Potential-free output



Only extra-low voltage may be used for the remote transmission of the fault message by means of the isolated output!

Switched voltage.....maximum 24 V

Current..... maximum 1 A

(see chapter “Potential-free message”)

3. Product information

3.1 Intended purpose

This filter is suitable for use in cold drinking water up to a water temperature of maximum 30 °C (86 °F).



(see chapter “Safety information and dangers due to non-compliance”)

Please refer to the chapter on “Intended use” for use restrictions.

This filter removes coarse and fine-grained particles from the water which are larger than or equal in size to the mesh size of the filter.



Particles smaller than the supplied mesh size and impurities causing turbidity cannot be filtered out of the water.

3.2 Test marks

DIN-DVGW mark



Fig. 3: Test mark

The units conform to the technical regulations for drinking water installations in accordance with DIN EN 806 ff. and the national annex DIN 1988 ff. and DIN EN 1717. They are tested by the DVGW (Deutsche Vereinigung des Gas- und Wasserfaches e.V. – technical-scientific association for the gas and water industries) in accordance with the requirements of DIN EN 13443-1 for mechanical filters for the use in drinking water and are entitled to bear the DIN-DVGW mark.

3.3 Materials used

The materials used are resistant to the physical, chemical, and corrosive loads to be expected in the drinking water and fulfil the requirements specified in DIN EN 13443-1 and DIN 19628 (“Mechanical filters in drinking water installations”). All materials are hygienically and physiologically safe. Plastics fulfil the KTW guideline of the German Federal Environmental Agency as well as the DVGW working sheet W 270. Metallic materials fulfil the requirements of DIN 50930-6 (Impact on the drinking water quality).

4. Installation

4.1 General



(see chapter “Safety information and dangers due to non-compliance”)

The unit may only be installed by skilled personnel.

The chapter on “Intended use” must always be observed!

The pipes must be able to safely support the filter.

Otherwise mechanical damage or fractures/bursts can occur in the pipes. This can result in major water damage. People close to the filter are exposed to a health risk due to the large quantities of water released. Therefore, if necessary, the pipes must be additionally fixed or supported.

For convenient operation and maintenance it is absolutely necessary to ensure the given spacings. A space of at least 100 mm above and 200 mm below the filter should be maintained. These distances are necessary to be able to properly carry out the backwashing (see chapter “Backwashing water discharge options”).

4.1.1 Transport / storage

The automatic backwash protective filter shall be protected towards heavy impacts.

4.1.2 Requirements for the place of installation

The room where the unit is installed must be dry and frost free!

Unauthorised persons must not have access to the filter!



(see chapter “Safety information and dangers due to non-compliance”)

- The ambient temperature must not exceed 30 °C (86 °F)! At higher temperatures or direct sun radiation the material can be damaged and the filter hood can even break.
- In order to be able to safely discharge the wastewater in operation and in case of any defects that occur in the system, precise compliance with the details given in the “Installation” chapter is necessary! If the wastewater (backwashing) cannot be safely and completely discharged, the house and installations can be damaged by water.
- A shut-off valve must be installed upstream of the filter! This enables the water supply to the filter to be interrupted during installation, servicing/maintenance, repairs and in case of malfunctions. Floods and serious water damage to house installations can therefore be avoided.
- The unit can be installed in all standard drinking water pipes.
- It is not permitted to install the automatic backwash protective filter **upstream of** the water meter!
- A shock-proof plug above the filter with constant electricity supply within a distance of max. 1.5 m is required for the mains adapter of the automatic filter.

4.1.3 Installation position



ATTENTION

(see chapter "Safety information and dangers due to non-compliance")

Always install the filter in a vertical position ($\pm 5^\circ$)! Failure to observe this can cause uncontrolled backwashing water to escape and can result in water damage.

4.1.4 Mounting the built-in rotary flanges (JPF⁺-A ¾" - 2")

Install using the supplied built-in rotary flange. The built-in rotary flange is used as a connecting element between the pipe and the filter.

It is suitable for both horizontal and vertical pipes.

The built-in rotary flange must be installed in the direction of flow. This is marked by a cast-in arrow (see fig. 5).

Failure to comply with this means the filter cannot work.



ATTENTION

(see chapter "Safety information and dangers due to non-compliance")

The flange surface of the built-in rotary flange must be in a horizontal position! The built-in rotary flange must be fitted so that mechanical stresses cannot occur! Otherwise mechanical damage can result in the built-in rotary flange. Otherwise mechanical damage can result, the pipe may burst or the built-in rotary flange can break. This can result in major water damage.

In this case, people close to the filter are exposed to a health risk due to the large quantities of water.

Therefore, during installation, ensure that no large forces act on the pipe, built-in rotary flange and filter.

4.1.5 Installing the automatic backwash protective filter

JPF⁺-A ¾" - 2"

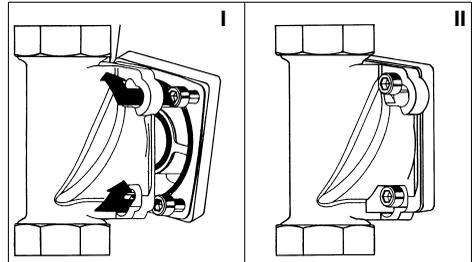


Fig. 4: Built-in rotary flange with bayonet fixture

The built-in rotary flange for the filter is supplied with bayonet drill holes. The necessary seals and screws for this filter have already been mounted.

Do not unscrew the screws!

- Insert the four flange screws in the bayonet drill holes on the built-in rotary flange (see fig. 4 I).
- Turn the filter in a clockwise direction as far as it will go (see fig. 4 II).
- Tighten the four flange screws.



Select the torque (approx. 4 Nm for the sizes ¾", 1", 1¼" and approx. 10 Nm for the sizes 1½", 2") so that the gasket closes and the filter is not damaged or strained!

**ATTENTION**

(see chapter "Safety information and dangers due to non-compliance")

The section of the profiled flange gasket must point towards the built-in rotary flange. Failure to observe this can lead to leaks and water escaping. This can in turn cause water damage to the house and its installations (see fig. 5).

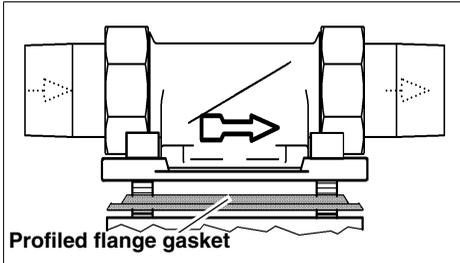


Fig. 5: Built-in rotary flange

JPF-A DN 65 - 100

Installation of filters of the nominal size 65 to 100 should be accomplished perpendicularly only if there is no possibility for horizontal installation. During operation in a perpendicular conduit, the coarse particles deposited in the sludge collector cannot be as optimally rinsed as while operating horizontally.

The filters of nominal sizes 65 to 100 have a flange connection according to DIN EN 1092-1.

4.2 Discharging backwash water**ATTENTION**

(see chapter "Safety information and dangers due to non-compliance")

For the backwashing water a wastewater connection (for example a floor drainage) in accordance with DIN 1986 must be in place.

The dimensioning depends on conditions on site (e.g. wastewater pipe gradient, number of pipe bends, length of the wastewater pipe, etc.). The dimensioning must at least allow all the wastewater to be discharged at the same time.



Ensure that the wastewater connection functions before plugging the power supply unit into the socket.

If it is not possible to provide a wastewater connection directly beneath the automatic backwash protective filter, the flushing water can be fed several metres to the next wastewater connection, either through a hose or a pipe to be fitted to the flushing water valve. This pipe must have the same dimension as the flushing water valve.

In all options, a free discharge must be ensured in accordance with DIN EN 1717.

4.2.1 Instructions for safe use

To ensure a long life cycle of the filter and sieve insert it is necessary that the backwashing stream at pressures higher than 2 bar is throttled by means of a flush-cock. Thus the screen cloth is prevented from being damaged by too effected cleaning-up streams. At the same time the flushing water consumption is reduced and possible flow noises are avoided.

4.2.2 Backwashing water discharge options

JPF⁺-A 3/4" - 1 1/4"

JPF⁺-A 1 1/2" - 2"

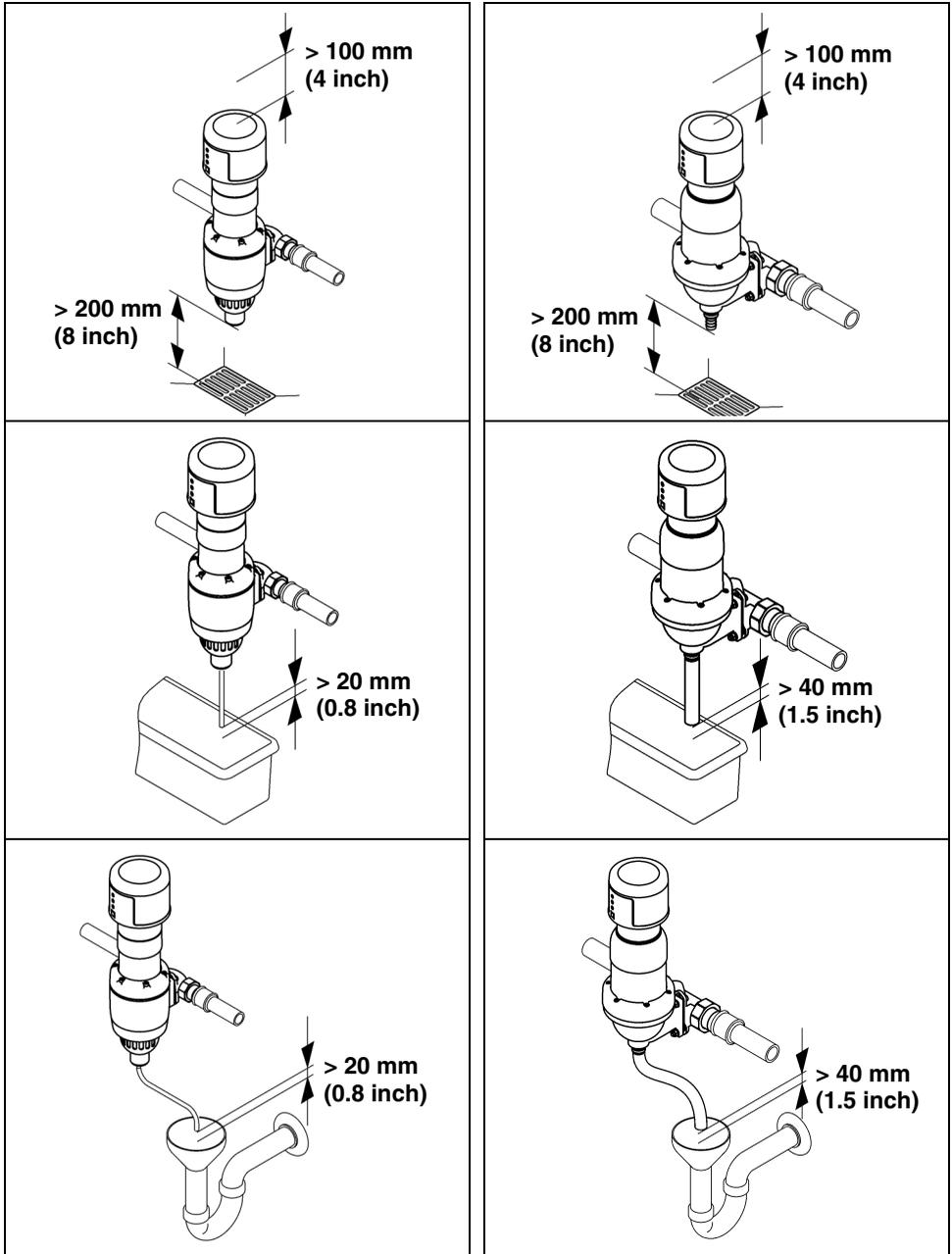


Fig. 6: Backwashing water discharge options

JPF-A 2½" - 4"

JPF-A 2½" - 4"

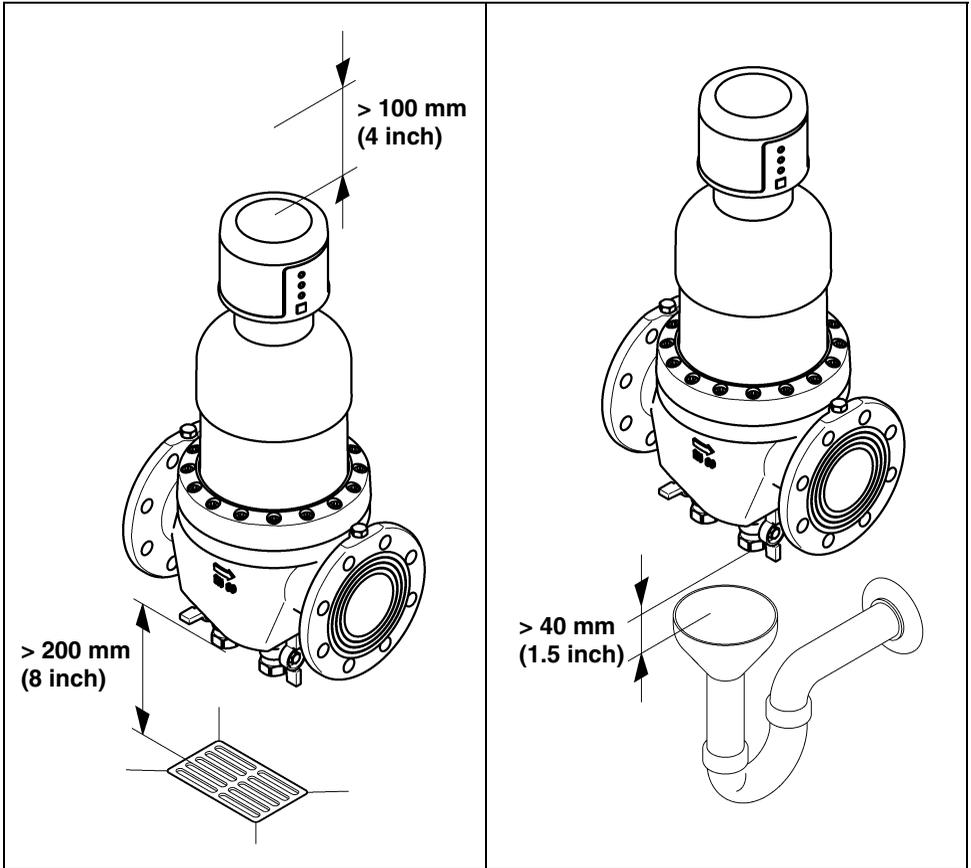


Fig. 7: Backwashing water discharge options

When screwing in a pipe to drain the backwash water, make certain not to twist the flushing valves. They are locked with gasket glue.

5. Operation



ATTENTION

(see chapter “Safety information and dangers due to non-compliance”)

Imperatively observe the chapter “Intended use”!

5.1 Commissioning

Before starting up (initial putting into service or startup after maintenance work), **fill** the filter with water and **vent** it!

- To this end, after installation the filter is filled with water by opening the upstream shut-off valve.

The filter is now under mains pressure.

- The enclosed air must then be immediately removed from the filter in order to avoid damage to the installation caused by water hammers. The filter is vented by means of backwashing (see chapter “Backwashing”).

After backwashing and venting the filter is ready for use.

5.2 Control lamps, manual pushbuttons

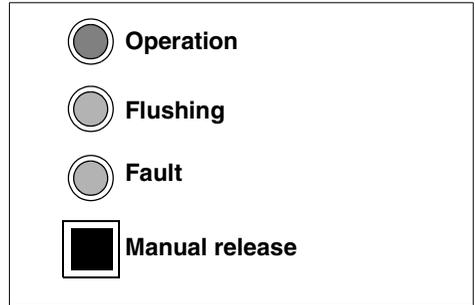


Fig. 8: Control lamps, manual pushbuttons

Operation

Permanent green light: the automatic backwash protective filter is ready for use.

Green light flashing: The filter is in rinsing position while plugging in the power supply. The LED “Operation” is blinking till the flush valve is closed.

Flushing

Permanent yellow light: Backwashing is taking place.

Yellow light flashing: Call for backwashing when semi-automatic is set.

Fault



Red flashing light: The automatic backwash protective filter is not ready for use (see chapter “Fault”).

Manual release

Push the manual pushbutton.

Triggers backwashing.

Indication of maintenance

All three control lamps flash at the same time (see chapter “Warranty and services”).

5.3 Differential pressure control

Mode of operation:

The impurities filtered off and caught on the filter cloth cause an increased differential pressure between the inlet and the outlet of the filter at an adequate flow rate. The differential pressure switch registers the differential pressure prevailing on the filter. If the differential pressure reaches the set value, the backwashing procedure will be automatically initiated.

The differential pressure switch is directly flanged to the filter via intermediate flange.

Setting the differential pressure:

The selector shaft of the differential pressure switch is set at the adjusting screw. The value can be adjusted with a screwdriver between 0.06 and 0.6 bar, see scale. The factory setting is 0.2 bar (recommended setting value 0.2 - 0.4 bar). The differential pressure at the filter depends on the water flow rate and the degree of soiling.

If the value is set too high, dirt may accumulate with low flow rate. During times of higher water removal the differential pressure will increase to an extent that damages at the screen may occur.

If the value is set too low, backwashing will be carried out more often than necessary, which leads to increased wear and backwashing water consumption.

Caution!

Scale unit in bar (1 bar = 14.5 psi / 100 kPa)

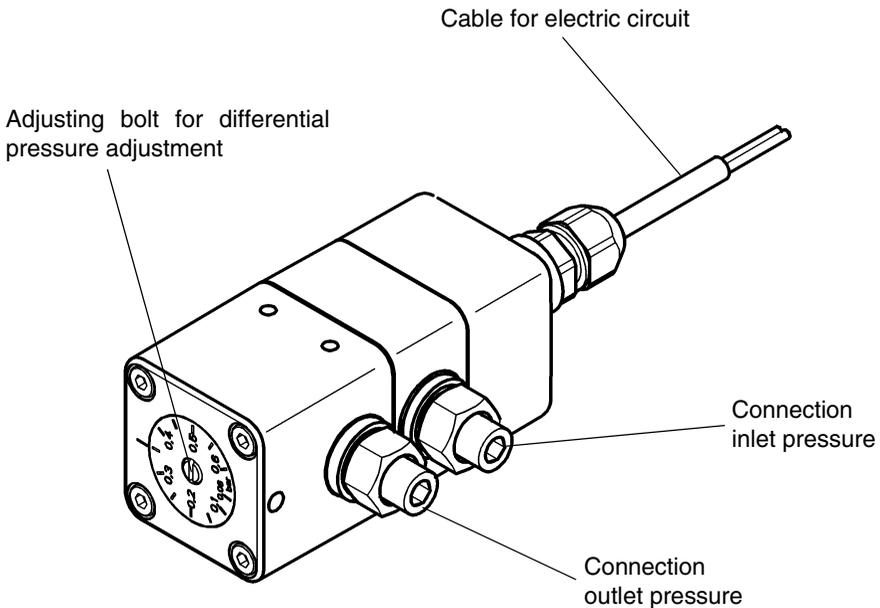


Fig. 9: Differential pressure switch

5.4 Setting the backwashing interval



ATTENTION

(see chapter “Safety information and dangers due to non-compliance”)



Pull off the power supply out of the socket!

- Loosen the four screws of the cover hood and remove cover hood.
- Set backwashing interval via contacts 2 to 6 of DIP-switches S1, see tab. 1.

4 hours	8 hours	24 hours	1 week	1 month

Tab. 1: DIP switch S1
(factory setting: 1 week)

- For the setting only one contact may be changed to the left.

Selecting the backwashing intervals

Mesh size mm (inch)	Application cases	Backwashing intervals ¹⁾
0.03 (0.001)	Doctor's offices, laboratories, photo labs	24 hours
0.10 (0.004)	Domestic water installations in the private and commercial field	1 week, 1 month
0.10 (0.004) and 0.32 (0.01)	Domestic water installations Well water	24 hours, 1 week
0.32 (0.01) and 0.50 (0.02)	Industrial sector Air condition systems	24 hours, 1 week

1) Depending on the dirt accumulation

- The circuit reacts with a continuous signal to wrong settings (see chapter “Fault”).
- Remount the cover hood and tighten it by means of the four screws.



Ensure that the wastewater connection functions before plugging the power supply unit into the socket.

- The automatic backwash protective filter is once more ready for operation after the backwashing performance.



Manual start of backwashing performance:

Push manual button. The backwash interval is set back.

5.5 Functional description

The automatic backwash protective filter removes all coarse- and fine-grained impurities. These impurities may cause pitting corrosion as aeration elements in cold water pipes and warm water supply systems, leading to malfunction of fittings, control units and sensitive devices.

In the automatic backwash protective filter, the water flows outside-inside through a cylindrical screen insert. Impurities can be seen through the filter hood. If the filter is contaminated, it will be cleaned without interruption of operation.

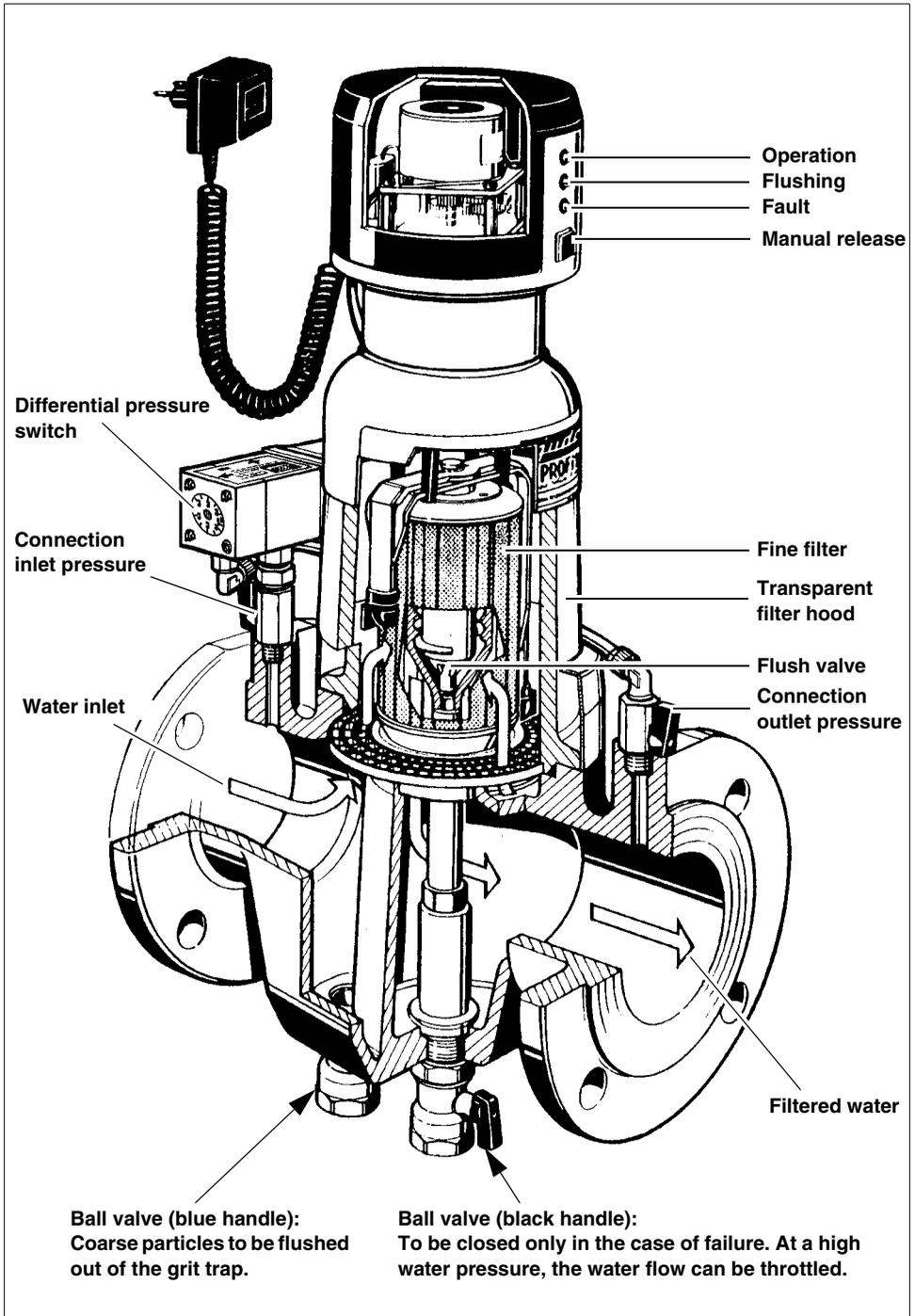


Fig. 10: Functional description (e. g. JPF-ATP DN 65)

5.6 Backwashing

The filter must be backwashed (= cleaned) at the specified cycles in order to remove the filtered dirt from the fine filter screen.

 All filter sizes are backwashed with treated water. The treated water supply within the domestic installation is maintained throughout the backwashing performance. During the backwashing any wastewater can't get into the pure water side.

The cleaning-off is effected by means of the ***point-rotation method***:

Helical rotation of suction trunks around the sieve cloth of the fine filter. These progress upwards with each turn till the entire sieve cloth will have been sucked off once.

At the same time, the flushing valve at the bottom of the filter opens and the backwash water can exit. During this time, pure water streams inside-outside passing through the sieve surface into the suction trunks, carrying away the adhering particles.

After reaching the upper limit-stop, the flushing valve is closed again and the sieve cloth of the fine filter is sucked off a second time by the suction trunks. Repeat this performance till reaching the lower limit-stop. During this step, the suction trunks do not only clean the sieve cloth of the fine filter but also the transparent filter hood by means of a rubber lip on its exterior (see fig. 10).

 **The degree of pollution as well as the cleaning off operation can be watched from outside.**

5.6.1 Backwashing interval

Unauthorized persons must not operate the filter! Persons who operate the filter must observe the operating instructions. Failure to observe these instructions can result in damage to property and personal injuries.



(see chapter "Safety information and dangers due to non-compliance")

The smaller the mesh size of the screen insert the more frequently backwashing has to be carried out!

Experience shows that increased dirt is deposited during the initial running period. If so, the unit has to be flushed more often than usual.

Failure to flush in good time can cause damage to the screen. Larger quantities of filtered particles can deform the screen and as an extreme incident cause the tearing of the sieve. As a result a filter function is not any longer ensured. In addition, larger quantities of dirt can cause mechanical impairment concerning the backwashing function.

5.7 Modifications / changes / spare parts



ATTENTION

(see chapter “Safety information and dangers due to non-compliance”)

Only original spare parts are to be used!

Arbitrary modifications and changes are prohibited for safety reasons! They can impair the function of the filter, lead to leaks and as an extreme incident they can lead to the bursting of the filter.

The imprinted test marks are only valid if original spare parts are used.

Only the original power supply from JUDO may be used!

5.8 Potential-free message

Filters identified “p-free” and filters with potential-free signalling relays can transfer in a potential-free mode the following messages (see fig. 11 and fig. 15):

- Fault message
- Message of backwashing



The power supply unit has to be unplugged from the socket for accomplishment of electric installation and for setting the DIP-switch!

The chapter “Notes on special dangers” and the chapter “Installation” have to be imperatively observed!

The maximum switching current and switching voltage have to be imperatively observed! (see chapter “Notes on special dangers”).

In fig. 11 “Relay contact assignment” the contacts of the potential-free relay are marked in their currentless state.

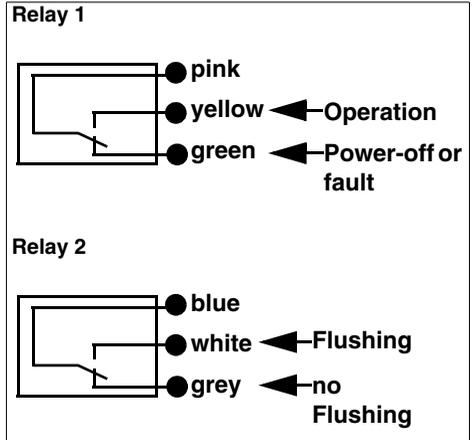


Fig. 11: Relay contact assignment

The relay can be connected as a make contact or as a breaker.

If the power supply unit of the filter is plugged in the relay 1 changes its switched condition!

If a fault message occurs the relay switches to “Power-off or fault”-state.

At the start of a backwash, relay 2 will switch to state “Flushing”.

After a backwash, relay 2 switches to the state “no Flushing”.

5.9 Potential-free input

Filters with potential-free signalling relay have an additional input (potential-free input) and an additional DIP-switch S2 (see chapter “Connecting diagram for filter control with potential-free relays”). This input can be used for the filter control (see tab. 2).



The power supply has to be unplugged from the socket for accomplishment of the electrical installation and for the DIP-switch setting!

The chapter “Notes on special dangers” and chapter “Installation” have imperatively to be observed!

Function	DIP-switch S2	Specification
External flush start up		Starting of the flushing operation: By closing a switch contact (brown and red core) connected to the potential-free input.
External flush stop		If the switch contact at the potential-free input (brown and red core) is closed the filter cannot effect a flushing. If the backwashing interval time has expired the flushing is carried out as soon as the switch contact of the potential-free input is opened.
Semi-automatic		Relay 2 closes after the backwashing interval having expired or after pressure exceed occurring at the differential pressure sensor and thus displays the call to backwash. Simultaneously the yellow LED blinks: “Flushing”. The flushing can only be started by means of the manual button or a switch contact connected to the potential-free input.
		Not allowed. Continuous sound signal till the switch is adjusted.

Tab. 2: Potential-free input

5.10 Integration of the filter in the building control systems

The filter can be integrated in a building control system (e.g. EIB, LCN or LON) via the potential-free signalling relay and the external input of the filter control (“pot.-free” version only).

The potential-free signalling relays are connected, for example, to a binary bus coupling unit.

Thus fault messages or the filter flushing signal can be forwarded to the building control system.

In addition, the external input of the filter control can be used concerning the remote control (flush start-up, flush-blocking).

5.11 Servicing / Repair

Before carrying out any work on the filter, that is beyond pure operation induced control, the filter has to be depressurized! Failure to observe this can lead to an uncontrolled escape of water and therefore lead to water damages in the building. Strictly comply with the instructions given in the “Installation” and “Maintenance” chapters.

5.12 Stoppages



(see chapter “Safety information and dangers due to non-compliance”)

If a filter has to be removed from the flange or unscrewed, the chapter “Intended use” has imperatively to be observed!

- Protect the flange surfaces from damage! Damaged flange surfaces cannot close tight any longer. As a result, escaping water can damage the building and installations.
- Ensure that no dirt can get into the filter! Upon re-commissioning this dirt can get into contact with the drinking water and be discharged into the drinking water. The health of people consuming polluted water is at risk.
- Store the filter in frost-free conditions! The water contained in the hollows of the filter can freeze due to frost and thus the filter can be mechanically damaged to a degree that it will become loose at operating pressure or that it can burst. Leaking water can cause major material-damages to the building. In addition, people near the filter can be injured by blistering filter parts.
- When recommissioning the filter, same course of action as applied to the new filter.

6. Fault

Deletion of the error message:

The opening of the units and the replacement of the water pressure charged parts may only be effected by authorized personal in order to ensure the unit security and its tightness.



Pull of the power supply out of the socket. Replug it again after approximately 5 seconds!

The occurrence of a failure is indicated by the red control lamp.

Fault help:

Fault	Cause	Removal
Continous signal tone.	The DIP-switch was wrongly adjusted.	Set DIP-switches to the correct position! (see chapter "Setting the backwashing interval" and "Potential-free input")
Red indicator lamp "Fault" blinks, signaller beeps.	Electrical or mechanical defect.	<ul style="list-style-type: none"> – Delete the error message! – Start backwashing again by hand release! If the fault occurs again: <ul style="list-style-type: none"> – Pull of the power supply out of the socket – Inform the plumber or nearest customer service centre! – If water escapes close ball valves!
All three LEDs blink.	Services to be needed.	See chapter "Warranty and services".
Backwash water continues running.	Flush valve not fully closed.	<ul style="list-style-type: none"> – Start backwashing again by hand release!
	Dirt in the flush valve.	
Decrease in water flow rate.	Sieve is clogged.	
Leaks in the filter hood.		<ul style="list-style-type: none"> – Pull of the power supply out of the socket! – Close ball valves! – Inform the plumber or nearest customer service centre! – If water escapes close ball valves!
Filter hood becomes turbid.	Filter hood was exposed to higher temperatures or solvents.	
Hairline cracks in the filter hood.		

7. Maintenance



(see chapter “Safety information and dangers due to non-compliance”)

The chapter “Intended use” has to be obligatorily observed!

7.1 Cleaning



(see chapter “Safety information and dangers due to non-compliance”)

Use only clear, drinking water concerning the cleaning of the housing and the transparent filter hood.

Domestic all-purpose cleaners and glass cleaners can contain up to 25 % solvents or alcohol (spiritus).

These substances can chemically attack the plastic parts, which can lead to brittleness right up to [brittle] fractures.

These kinds of cleaners must therefore not be used.

8. Warranty and services

In order to comply with the legal warranty claim, it is necessary that backwashing takes place according to the existing operating conditions (see chapter 5.4 and chapter 5.6.1).

DIN EN 13443-1 specifies that backwashing must take place at least every six months. However, JUDO recommends to carry out backwashing every two months!

In order to achieve an operation success also after the putting into service and over many years, regular inspection and routine servicing of the unit are indispensable. In the domestic engineering field it is regulated in accordance with the DIN standards [DIN EN 806-5].

The filter signals the required maintenance within a yearly cycle by the blinking of three LEDs: “Operation”, “Flushing” and “Maintenance”. The filter continues to remain ready for service. After the maintenance has been completed the maintenance signal is reset by interrupting the mains voltage.

A servicing agreement is the best way to ensure a good operating function beyond the warranty period.

Wherever possible, the regular servicing work and supply with consumables and wearing materials, etc. should be carried out by the specialist trade or the factory's customer service department.

9. Data sheet

9.1 Type

Automatic backwash protective filter

JUDO PROFIMAT-PLUS ¾" - 2"

JUDO PROFIMAT DN 65 - 100

Abbreviated name:

JPF⁺-A ¾" - 2"

JPF-A DN 65 - 100

9.2 Models

Model	Time control	Differential pressure control with differential pressure switch	Order no.	Pipe connection
JPF ⁺ -AT ¾"	•		8020104	¾ inch
JPF ⁺ -AT 1"	•		8020105	1 inch
JPF ⁺ -AT 1¼"	•		8020106	1¼ inch
JPF ⁺ -AT 1½"	•		8307012	1½ inch
JPF ⁺ -AT 2"	•		8307013	2 inch
JPF-AT DN 65	•		8307014	DN 65
JPF-AT DN 80	•		8020033	DN 80
JPF-AT DN 100	•		8020034	DN 100
JPF ⁺ -ATP ¾"	•	•	8020107	¾ inch
JPF ⁺ -ATP 1"	•	•	8020108	1 inch
JPF ⁺ -ATP 1¼"	•	•	8020109	1¼ inch
JPF ⁺ -ATP 1½"	•	•	8020069	1½ inch
JPF ⁺ -ATP 2"	•	•	8020073	2 inch
JPF-ATP DN 65	•	•	8020038	DN 65
JPF-ATP DN 80	•	•	8020039	DN 80
JPF-ATP DN 100	•	•	8020040	DN 100

9.3 Special designs

- Non-silver coated special mesh sizes

The filters come factory equipped with a silver-plated stainless-steel sieve with a mesh size of 0.1 mm.

If desired, non-silver coated mesh sizes of 0.03 mm, 0.32 mm and 0.5 mm are available for technical and industrial use.



Non-silver coated stainless-steel sieves are not a health risk, but here also you must make sure that the filter is backwashed latest every two months as described in the chapter “Backwashing interval”.

Filters with special mesh sizes are not included in the inspection according to DIN EN 13443-1 and DIN 19628 and for this reason are not allowed to bear the DVGW mark.



ATTENTION



(see chapter “Safety information and dangers due to non-compliance”)

Filters with mesh sizes larger than 0.1 mm only filter correspondingly large particles from the water. But backwashing must also be carried out here latest after two months to prevent germ formation.

A mesh size smaller than 0.1 mm causes smaller particles to also be filtered out of the water. That means that the filter can become contaminated faster. The backwash intervals should be shortened in such cases. Carry out backwashing latest when the filter is visibly soiled or the water pressure drops.

9.4 Technical data

The following applies for all the models of the device:

- Nominal flow rate after backwashing at a pressure loss of 0.2 (0.5) bar as given in the corresponding table
- Maximum ambient temperature and water temperature: 30 °C (86 °F)
- The water to be filtered must conform to the European Drinking Water Directive!
- Threaded connection to DIN EN 10226-1
- Flange connection to DIN EN 1092-1

Power requirements

Current supply	230 V AC / 50 Hz
Rated input during backwash	max. 15 W

Nominal pressure

Model	Operating pressure	Nominal pressure
JPF ⁺ -A ¾" - 2" JPF-A DN 65	1.5 - 10 bar	PN 16
JPF-A DN 80 - 100	1.5 - 10 bar	PN 10

The nominal pressure denotes the pressure class, according to which the filter must fulfill the requirements of the standards DIN EN 13443-1 and DIN 19628. The maximum operating pressure is lower, in order to ensure the optimum function of the filter.

Weight

Model	Type AT	Type ATP
JPF ⁺ -A ¾"	4.2 kg	5.7 kg
JPF ⁺ -A 1"	4.4 kg	5.0 kg
JPF ⁺ -A 1¼"	4.9 kg	5.6 kg
JPF ⁺ -A 1½"	10.2 kg	11.5 kg
JPF ⁺ -A 2"	11.5 kg	11.5 kg
JPF-A DN 65	16.5 kg	17.5 kg
JPF-A DN 80	30.0 kg	30.5 kg
JPF-A DN 100	33.5 kg	33.5 kg

Nominal flow rate

Model	Nominal flow rate [m ³ /h] after backwashing at a pressure loss of 0.2 (0.5) bar with clean sieve insert ¹⁾
JPF ⁺ -A ¾"	4.1 (6.7)
JPF ⁺ -A 1"	4.7 (7.6)
JPF ⁺ -A 1¼"	5.3 (8.5)
JPF ⁺ -A 1½"	13 (18)
JPF ⁺ -A 2"	16 (22)
JPF-A DN 65	25 (28)
JPF-A DN 80	50 (65)
JPF-A DN 100	60 (78)

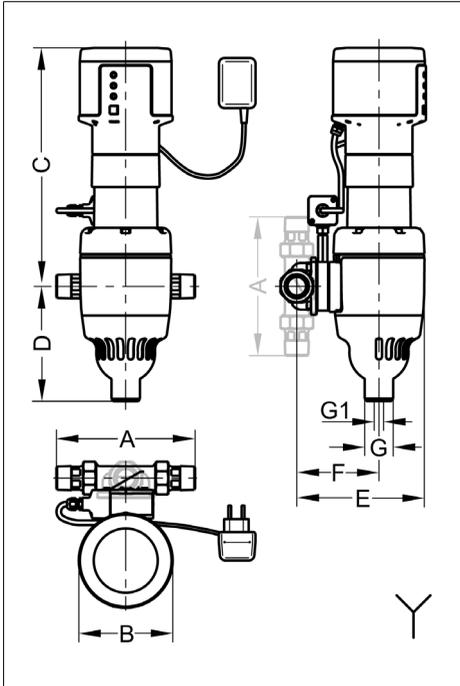
1) Data concerning the water flow rate are valid for drinking water. The maximum water flow rate for more polluted water is lower, depending on the mesh size. If so, a larger dimension has to be chosen.

Back-flush volume stream

Model	Back-flush volume stream [l/s]	Back-flush time [minutes]
JPF ⁺ -A ¾" - 1¼"	0.2 - 0.4	approx. 2
JPF ⁺ -A 1½" - 2"	0.3 - 0.8	approx. 2
JPF-A DN 65	0.3 - 0.8	approx. 2
JPF-A DN 80, DN 100	0.5 - 1.5	approx. 2

The backwashing volumetric flow given applies to 2 - 3 bar mains pressure and for a completely opened flushing water valve.

9.5 Installation dimensions JPF⁺-A ¾" - 2"

Fig. 12: Installation dimensions JPF⁺-A ¾" - 2"

9.6 Installation dimensions JPF-A DN 65 - 100

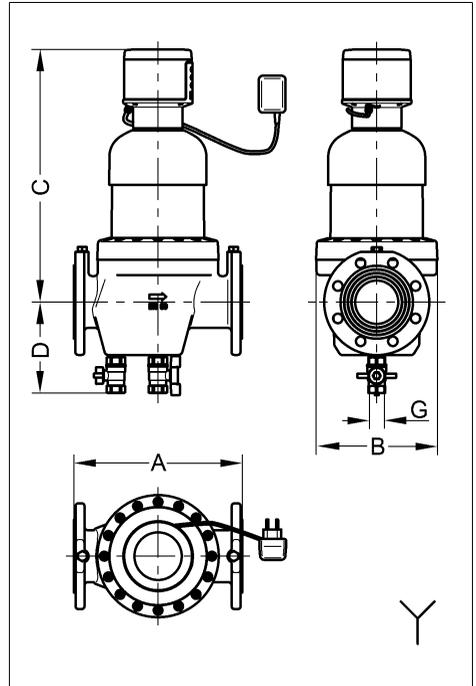


Fig. 13: Installation dimensions JPF-A DN 65-100

- A = installation length
- B = unit width
- C = height above pipe centre
- D = height below pipe centre
- E = installation depth to pipe centre
- F = waste water connection centre to pipe centre
- G = connection dimension waste water
- G1 = connection dimension waste water (alternative)

Y sewer junction required

Model	A	B	C	D	E	F	G	G1
JPF ⁺ -AT ¾"	180/7.1	133/5.2	335/13.2	165/6.5	164/6.5	100/3.9	40/1.6	14/0.5
JPF ⁺ -AT 1"	195/7.7	133/5.2	335/13.2	165/6.5	164/6.5	100/3.9	40/1.6	14/0.5
JPF ⁺ -AT 1¼"	230/9.1	133/5.2	335/13.2	165/6.5	164/6.5	105/4.1	40/1.6	14/0.5
JPF ⁺ -AT 1½"	252/9.9	158/6.2	402/15.8	84/3.3	207/8.1	128/5.0	20/0.8	-
JPF ⁺ -AT 2"	280/11.0	158/6.2	402/15.8	84/3.3	215/8.5	135/5.3	20/0.8	-
JPF-AT DN 65	240/9.4	185/7.3	409/16.1	163/6.4	-	-	¾"	-
JPF-AT DN 80	320/12.6	231/9.1	478/18.8	172/6.8	-	-	¾"	-
JPF-AT DN 100	320/12.6	231/9.1	487/19.2	182/7.2	-	-	¾"	-
JPF ⁺ -ATP ¾"	180/7.1	133/5.2	335/13.2	165/6.5	181/7.1	117/4.6	40/1.6	14/0.5
JPF ⁺ -ATP 1"	195/7.7	133/5.2	335/13.2	165/6.5	181/7.1	117/4.6	40/1.6	14/0.5
JPF ⁺ -ATP 1¼"	230/9.1	133/5.2	335/13.2	165/6.5	181/7.1	117/4.6	40/1.6	14/0.5
JPF ⁺ -ATP 1½"	252/9.9	158/6.2	402/15.8	84/3.3	227/8.9	148/5.8	20/0.8	-
JPF ⁺ -ATP 2"	280/11.0	158/6.2	402/15.8	84/3.3	235/9.3	156/6.1	20/0.8	-
JPF-ATP DN 65	240/9.4	185/7.3	409/16.1	163/6.4	-	-	¾"	-
JPF-ATP DN 80	320/12.6	231/9.1	478/18.8	172/6.8	-	-	¾"	-
JPF-ATP DN 100	320/12.6	231/9.1	487/19.2	182/7.2	-	-	¾"	-

All dimensions in mm/inch

9.7 Connecting diagram for filter control

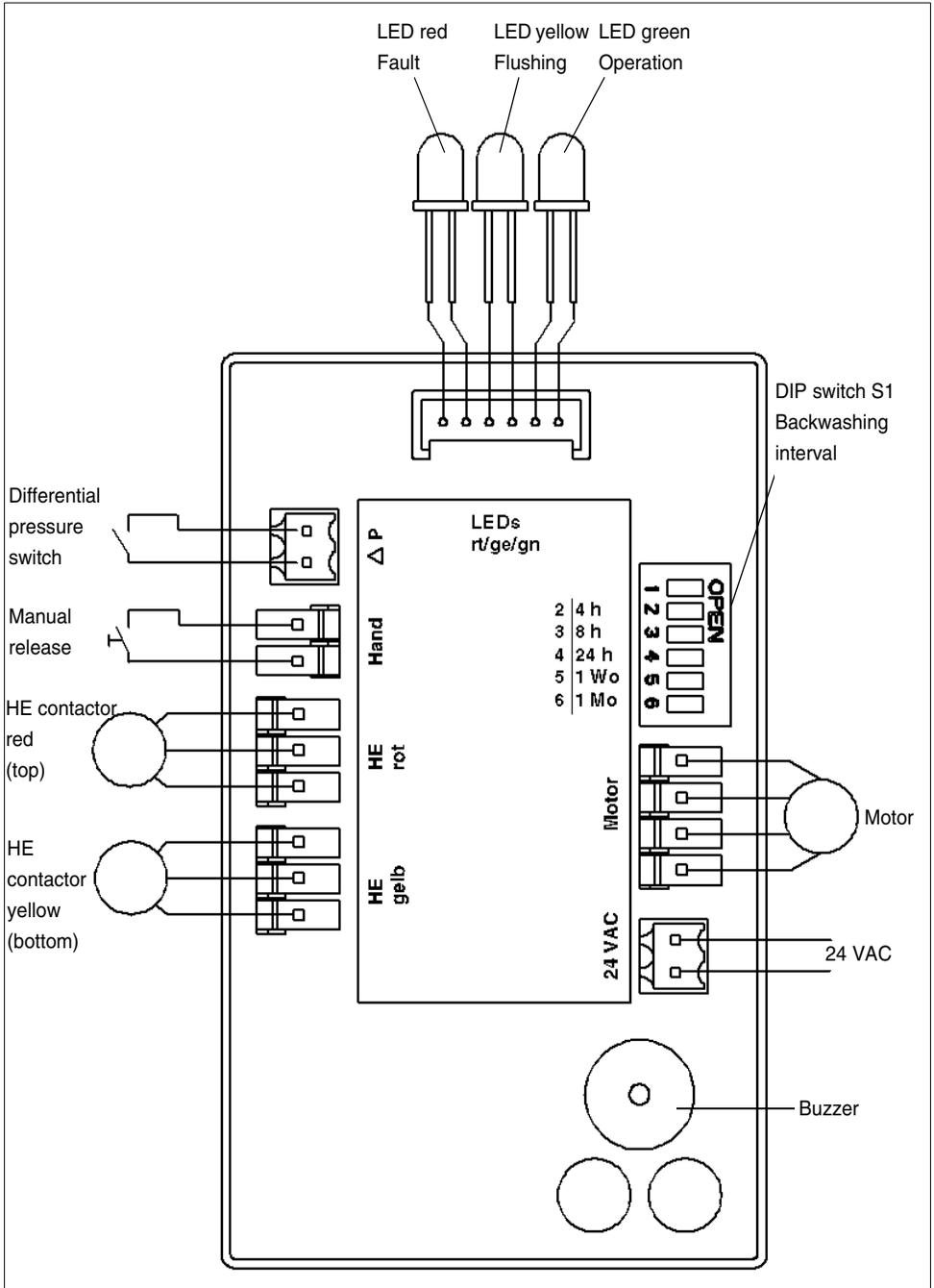


Fig. 14: Connecting diagram for filter control

9.8 Connecting diagram for filter control with potential-free relays

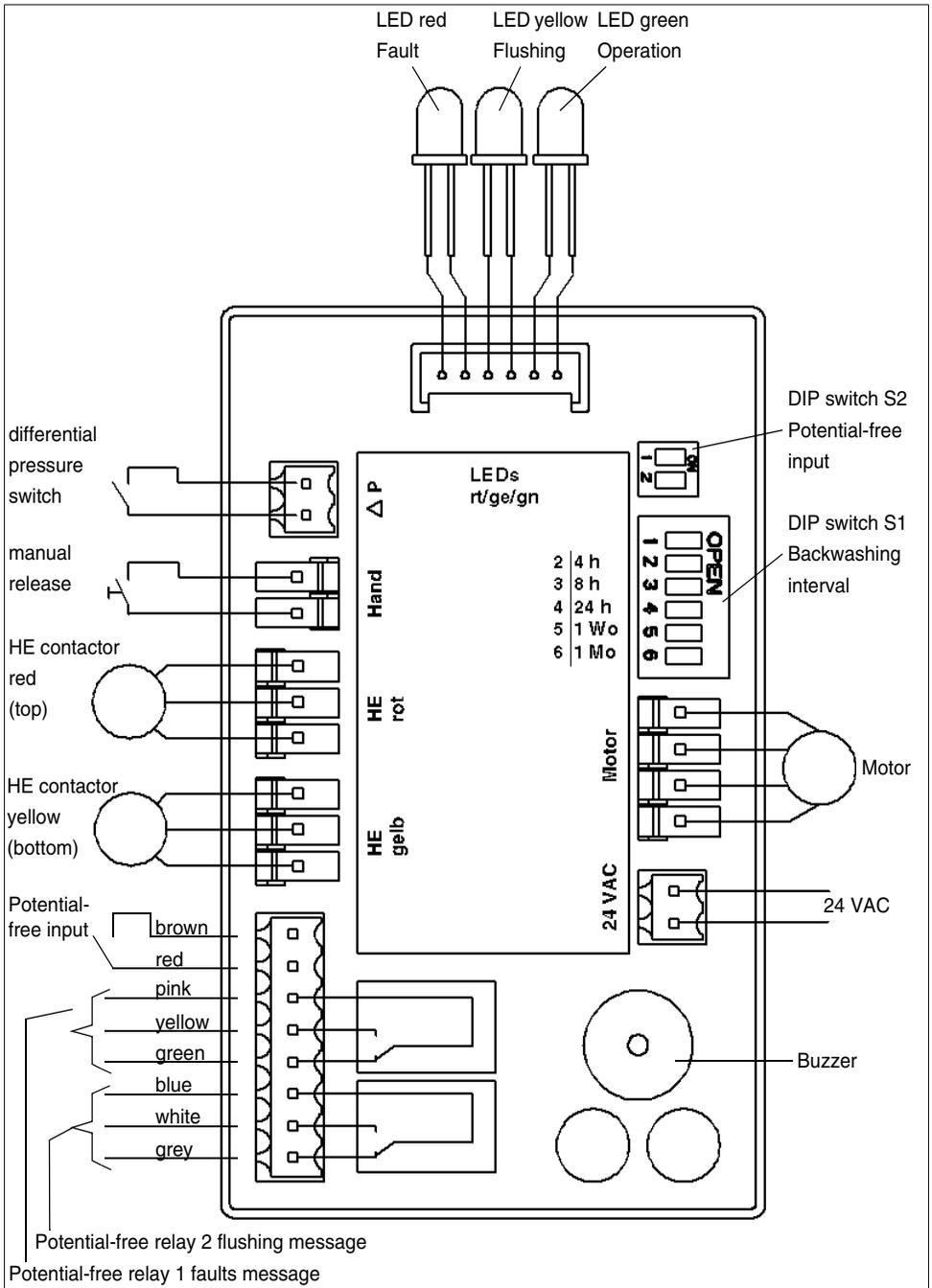


Fig. 15: Connecting diagram for filter control with potential-free relays

9.9 Extent of supply

- Pre-installed automatic backwash protective filter
- Installation and operating instructions

JPF⁺-A ¾" - 1¼":

- Built-in rotary flange JQE ¾", 1" or 1¼" with bayonet and screw connection

JPF⁺-A 1½" - 2":

- Built-in rotary flange JQE 1½" or 2" with bayonet fixture and screw connection

9.10 Accessories

- Electric circuit for potential-free fault message (order no. 2020710)
- Cable set for potential-free input/output (order no. 2020774)

JPF⁺-A ¾" - 1¼":

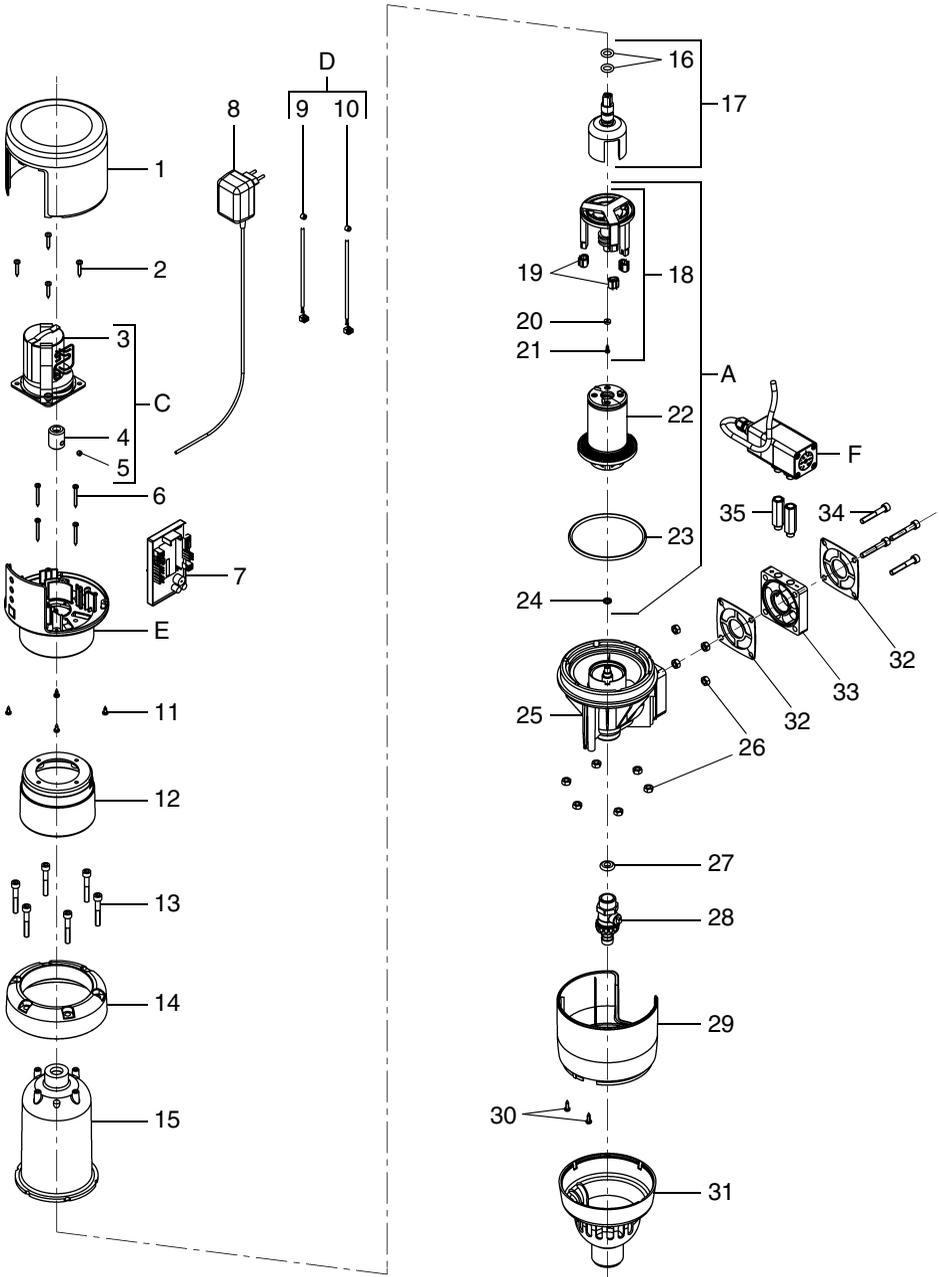
- JUDO JQR expansion QUICKSET (order no. 8250041). For the series connection of two devices, e.g. filter and water treatment system.
- JUDO safety block JSB (order no. 8735260). For subsequent filter retrofitting to house water stations. Contains a pressure reducer, non-return valve, inlet and outlet pressure manometer.

JPF⁺-A 1½" - 2":

- JUDO safety block JSB (order no. 8105001). For subsequent filter retrofitting to house water stations. Contains a pressure reducer, non-return valve, inlet and outlet pressure manometer.

10. Spare parts

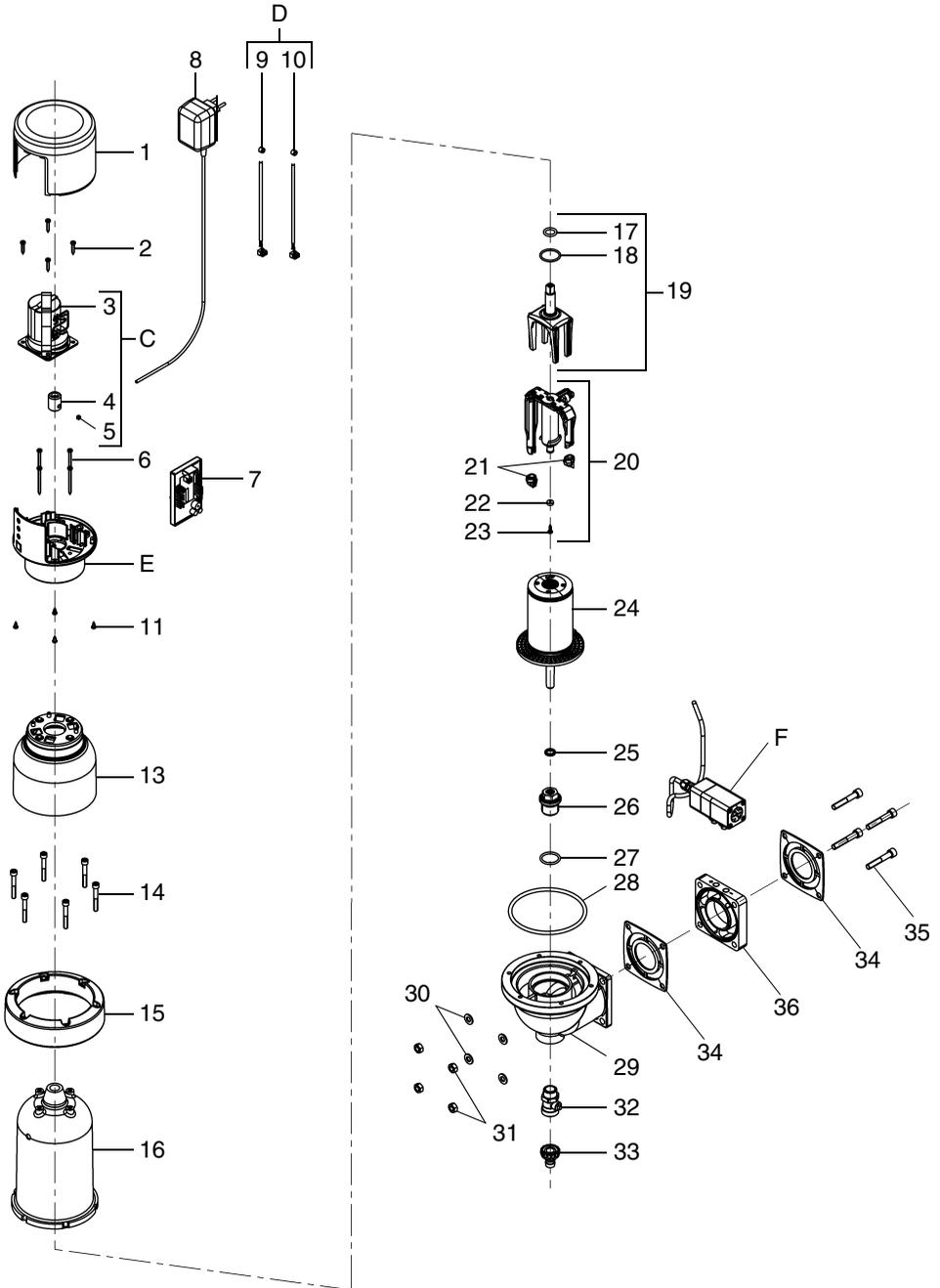
10.1 JPF+-A 3/4" - 1 1/4"



List of spare parts JPF⁺-A ¾" - 1¼"

Item	Designation (Recommended average replacement interval for wearing parts [*)	Piece(s)	Order no.	VE ¹⁾ / Piece
A	Wearing parts set „Screen 0.1 mm, suction pipe and gaskets“ (consisting of pos. 18, 22, 23, 24) ***	1	2020722	166
-	Wearing parts set „Gaskets“ (consisting of pos. 16, 19, 20, 21, 23, 24, 32) ****	1	2010335	42
C	Spare parts set „Motor“ (consisting of pos. 3, 4, 5)	1	2020970	268
D	Spare parts set „HE contactor“ (consisting of pos. 9, 10)	1	2020974	83
E	Spare parts set „Motor housing“ AT	1	2020978	157
E	Spare parts set „Motor housing“ ATP	1	2020976	194
F	Spare parts set „Differential pressure switch“ ATP / ATP pot.free	1	2020972	466
1	Cover of housing	1	1607204	27
2	Sheet-metal screw 3.9x22	4	1650191	1
3	Synchronous motor	1		
4	Motor flange	1		
5	Threaded pin M6x5	1		
6	Sheet-metal screw 3.9x45	4	1607213	1
7	Electric circuit	1	2020792	247
7	Electric circuit pot.free	1	2020788	347
7a	Cable set pot.free input/output	1	2020774	65
8	Plug power supply unit	1	1510164	104
9	HE contactor red	1		
10	HE contactor yellow	1		
11	Sheet-metal screw 3.5x9.5	4	1650130	1
12	Top of housing JPF ⁺ -A ¾"	1	2010389	41
12	Top of housing JPF ⁺ -A 1"	1	2010390	41
12	Top of housing JPF ⁺ -A 1¼"	1	2010391	41
13	Cylinder screw M6x40	6	1650123	3
14	Flange ring	1	2010382	115
15	Filter hood	1	2020122	180
16	O-ring 10x3	2		
17	Driver, complete	1	2010146	53

10.2 JPF⁺-A 1½" - 2"



List of spare parts JPF⁺-A 1½" - 2"

Item	Designation (Recommended average replacement interval for wearing parts [*])	Piece(s)	Order no.	VE ¹⁾ / Piece
-	Wearing parts set „Screen 0.1 mm, suction pipe and gaskets“ (consisting of pos. 17, 18, 20, 24, 25, 28)	*** 1	2020724	280
-	Wearing parts set „Gaskets“ (consisting of pos. 17, 18, 21, 22, 23, 25, 28, 34)	**** 1	2010337	55
C	Spare parts set „Motor“ (consisting of pos. 3, 4, 5)	1	2020970	268
D	Spare parts set „HE contactor“ (consisting of pos. 9, 10)	1	2020974	83
E	Spare parts set „Motor housing“ AT	1	2020990	125
E	Spare parts set „Motor housing“ ATP	1	2020992	150
F	Spare parts set „Differential pressure switch“ ATP / ATP pot.free	1	2020972	466
1	Cover of housing	1	1607204	27
2	Sheet-metal screw 3.9x22	4	1650191	1
3	Synchronous motor	1		
4	Motor flange	1		
5	Threaded pin M6x5	1		
6	Sheet-metal screw C 3.9x45	4	1607213	1
7	Electric circuit	1	2020792	247
7	Electric circuit pot.free	1	2020788	347
7a	Cable set pot.free input/output	1	2020774	65
8	Plug power supply unit	1	1510164	104
9	HE contactor red	1		
10	HE contactor yellow	1		
11	Sheet-metal screw 3.5x9.5	4	1650130	1
13	Top of housing 1½" - 2"	1	2607507	38
13	Top of housing 1½" - 2" SMW ²⁾	1	2020021	38
14	Cylinder screw M6x45	6	1607417	2
15	Flange ring	1	2020102	120
16	Filter hood	1	2020811	415
17	O-ring 15x3,2	1		
18	O-ring 28x2,5	1		
19	Driver, complete	1	2021277	29
20	Suction pipe, complete	1		

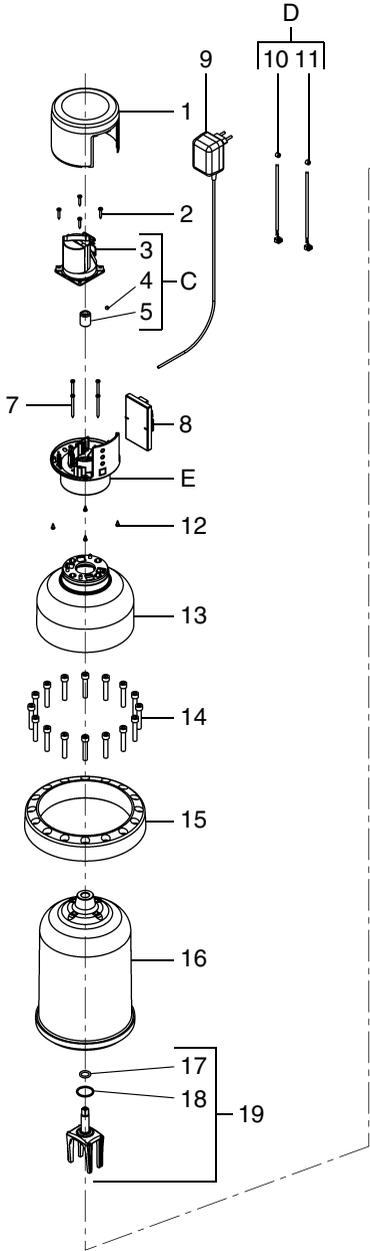
List of spare parts JPF⁺-A 1½" - 2"

Item	Designation (Recommended average replacement interval for wearing parts [*)	Piece(s)	Order no.	VE ¹⁾ / Piece
21	Nozzle	2		
22	Suction pipe gasket	1		
23	Sheet-metal screw 3.5x13	1		
24	Screen MW ³⁾ 0.1 mm silver plated	1		
25	O-ring 12x3	1		
26	Connecting pipe	1	2021288	21
27	O-ring 26x3	1	1607111	8
28	O-ring 113,67x5,33	1		
29	Filter bottom	1	2607102	386
30	Disk A 8.4	4	1607125	1
31	Hexagonal nut M8	4	1607117	2
32	Ball valve	1	1607242	24
33	Hose coupling	1	1607157	8
34	Profile flange seal AT / AT pot.free	1		
34	Profile flange seal ATP / ATP pot.free	2		
35	Cylinder screw M8x30 AT / AT pot.free	4	1607116	2
35	Cylinder screw M8x50 ATP / ATP pot.free	4	1650122	3
36	Intermediate flange ATP / ATP pot.free	1	2020059	320

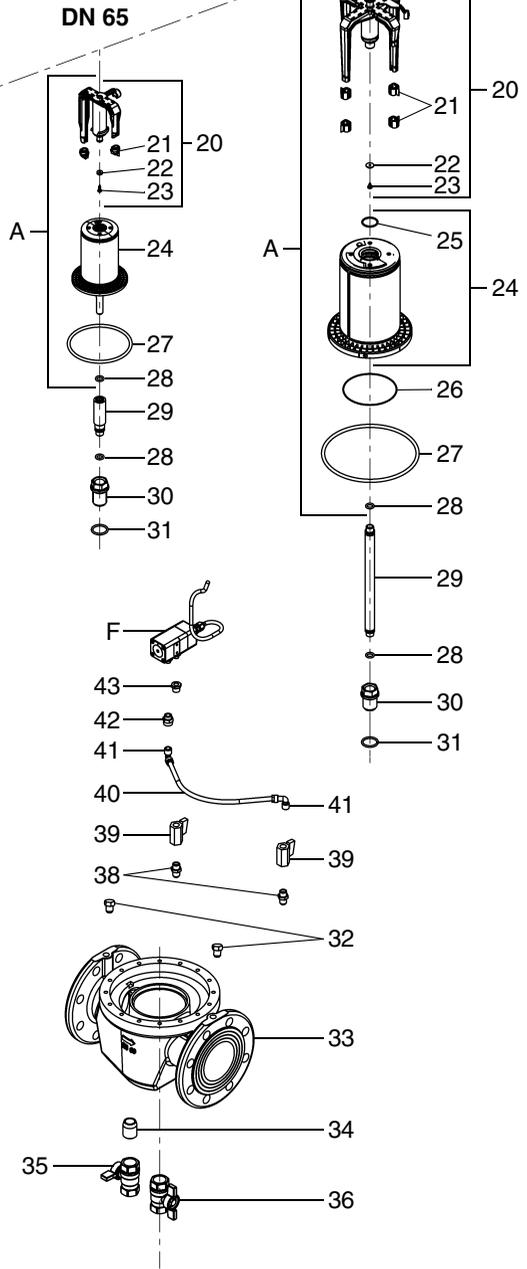
- 1) VE = Unit of billing (Items without VE are only available in a set.)
- 2) SMW = Special mesh size
- 3) MW = Mesh size

Replacement interval: *** = 3 years, **** = 4 years

10.3 JPF-A DN 65 - 100



DN 80 - 100



List of spare parts JPF-A DN 65 - 100

Item	Designation (Recommended average replacement interval for wearing parts [*])	Piece(s)	Order no.	VE ¹⁾ / Piece
A	Wearing parts set „Screen 0.1 mm, suction pipe and gaskets“ DN 65 (consisting of pos. 17, 18, 20, 24, 27, 28)	*** 1	2020724	280
A	Wearing parts set „Screen 0.1 mm, suction pipe and gaskets“ DN 80 - 100 (consisting of pos. 17, 18, 20, 24, 26, 27, 28)	*** 1	2020726	590
-	Wearing parts set „Gaskets“ DN 65 (consisting of pos. 17, 18, 27, 28)	**** 1	2010337	55
-	Wearing parts set „Gaskets“ DN 80 - 100 (consisting of pos. 17, 18, 21, 22, 23, 25, 26, 27, 28)	**** 1	2010339	76
C	Spare parts set „Motor“ (consisting of pos. 3, 4, 5)	1	2020970	268
D	Spare parts set „HE contactor“ DN 65 (consisting of pos. 9, 10)	1	2020974	83
D	Spare parts set „HE contactor“ DN 80 - 100 (consisting of pos. 9, 10)	1	2020988	83
E	Spare parts set „Motor housing“ AT	1	2020990	128
E	Spare parts set „Motor housing“ ATP	1	2020992	150
F	Spare parts set „Differential pressure switch“ ATP / ATP pot.free	1	2020972	466
1	Cover of housing	1	1607204	27
2	Sheet-metal screw 3.9x22	4	1650191	1
3	Synchronous motor	1		
4	Threaded pin M6x5	1		
5	Motor flange	1		
7	Sheet-metal screw C 3.9x45	4	1607213	1
8	Electric circuit	1	2020792	247
8	Electric circuit pot.free	1	2020788	347
8a	Cable set pot.free input/output	1	2020774	65
9	Plug power supply unit	1	1510164	104
10	HE contactor red DN 65	1		
10	HE contactor red DN 80 - 100	1		

List of spare parts JPF-A DN 65 - 100

Item	Designation (Recommended average replacement interval for wearing parts [*])	Piece(s)	Order no.	VE ¹⁾ / Piece
11	HE contactor yellow DN 65	1		
11	HE contactor yellow DN 80 - 100	1		
12	Sheet-metal screw 3.5x9.5	4	1650130	1
13	Top of housing DN 65	1	2020023	38
13	Top of housing DN 80	1	2020032	48
13	Top of housing DN 100	1	2020032	48
13	Top of housing DN 65 SMW ²⁾	1	2020022	38
13	Top of housing DN 80 SMW ²⁾	1	2020033	48
13	Top of housing DN 100 SMW ²⁾	1	2020033	48
14	Cylinder screw M6x45 DN 65	6	1607417	2
14	Cylinder screw M8x45 DN 80 - 100	16	1650208	2
15	Flange ring DN 65	1	2020102	120
15	Flange ring DN 80 - 100	1	2010181	180
16	Filter hood DN 65	1	2020025	415
16	Filter hood DN 80 - 100	1	2020038	590
17	O-ring 15x3,2	1		
18	O-ring 28x2,5	1		
19	Driver, complete	1	2021277	29
20	Suction pipe, complete DN 65	1		
20	Suction pipe, complete DN 80 - 100	1		
21	Nozzle DN 65	2		
21	Nozzle DN 80 - 100	4		
22	Suction pipe gasket DN 65	1		
22	Suction pipe gasket DN 80 - 100	1		
23	Sheet-metal screw 3.5x13 DN 65	1		
23	Sheet-metal screw 4.2x9.5 DN 80 - 100	1		
24	Screen MW ³⁾ 0.10 DN 65 silver plated	1		
24	Screen MW 0.10 DN 80 - 100 silver plated	1		
25	O-ring 29,87x1,78	1		

List of spare parts JPF-A DN 65 - 100

Item	Designation (Recommended average replacement interval for wearing parts [*])	Piece(s)	Order no.	VE ¹⁾ / Piece
26	O-ring 100x1,5 DN 80 - 100	1		
27	O-ring 113,67x5,33 DN 65	1		
27	O-ring 178x6 DN 80 - 100	1		
28	O-ring 12x3 DN 65	1		
28	O-ring 12x3 DN 80 - 100	2		
29	Water-jet pipe DN 65	1	2010520	
29	Water-jet pipe DN 80	1	2010039	19
29	Water-jet pipe DN 100	1	2010044	21
30	Connecting pipe DN 65 - 100	1	2010521	
31	O-ring 26x3	1	1607111	8
32	Plug ¼" AT / AT pot.free	2	2290001	12
33	Filter bottom DN 65 AT / AT pot.free	1	2020048	790
33	Filter bottom DN 80 AT / AT pot.free	1	2020053	830
33	Filter bottom DN 100 AT / AT pot.free	1	2020056	870
34	Nipple	1	2010012	19
35	Ball valve (blue handle)	1	1610613	32
36	Ball valve (black handle)	1	1610004	32
38	Double nipple ATP / ATP pot.free	2	1450103	24
39	Ball valve ¼" ATP / ATP pot.free	2	1610308	17
40	Differential pressure hose DN 65 ATP / ATP pot.free	1	2020050	9
40	Differential pressure hose DN 80 - 100 ATP / ATP pot.free	1	2020062	9
41	Threaded pipe angle ATP / ATP pot.free	2	1440059	9
42	Reducing sleeve ⅞" - ¼" ATP / ATP pot.free	2	1450248	10
43	Reducing piece	1	1450247	4

1) VE = Unit of billing (Items without VE are only available in a set.)

2) SMW = Special mesh size

3) MW = Mesh size

Replacement interval: *** = 3 years, **** = 4 years

11. Customer service



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Installed by:

<p>JUDO HEIFI-KOM PLUS Combination of the heating backwashing filter and heating feed station for fulfilment of DIN EN 1717.</p>	<p>JUDO ECO-SAFE The leakage protection to be combined with the backwash protective filters of the filter range EC.</p>	<p>JUDO BIOSTAT-COMBIMAT The anti-lime protection and hygiene unit to be used in domestic water installations. Stops lime - without replacing the cartridge - and fights germs.</p>
<p>JUDO JULIA Metering pump for JUL mineral solution against corrosion (brown water) and lime deposits.</p>	<p>JUDO PROMI Domestic water unit Backwashing protective filter with JUDO PROFI-PLUS technology, pressure reducer and backflow preventer.</p>	<p>JUDO i-soft TGA 2 The world's first automatic, intelligent water softener.</p>

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