

DEFENDERTM

OPERATION AND MAINTENANCE MANUAL

D180 SERIES

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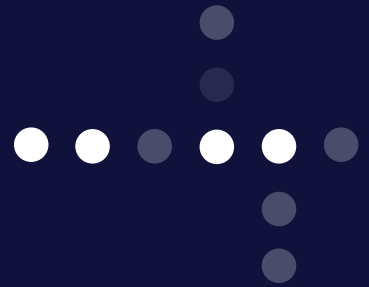
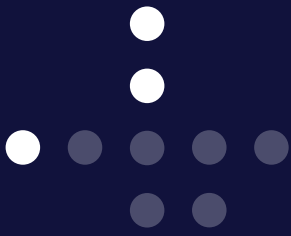
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FILTRATION

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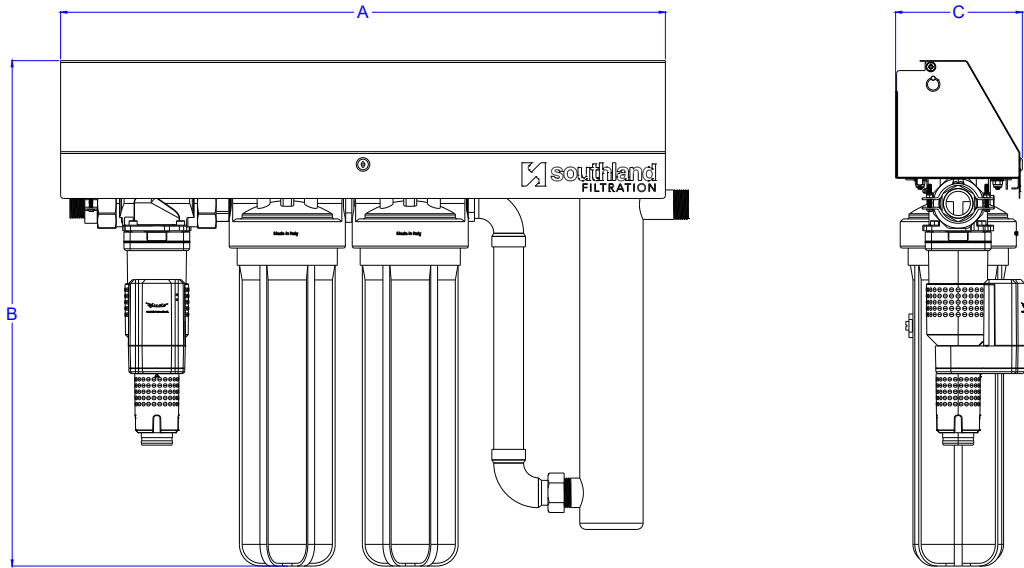
section one: **Datasheet**

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D180 Series

PLANS/DRAWINGS



SPECIFICATIONS

PRODUCT CODE

D00500503

FLOW RATES

Max flow rate 180L/m (10.8m³/h)

OPERATING PRESSURES

Max pressure 830 kPa

CONNECTIONS

Inlet/Outlet 1½" BSP (40mm)

POWER

Power supply 2 x 10 Amp GPO

TEMPERATURE

Max temperature 45°C

INSTALLED DIMENSIONS (MM)

Width (A)	Height (B)	Depth (C)	Lid open (D)
974	814	205	1059

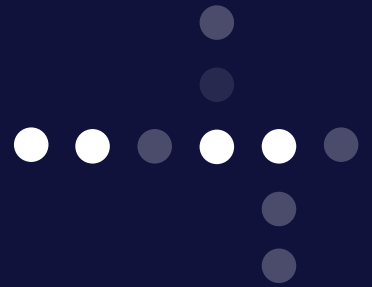
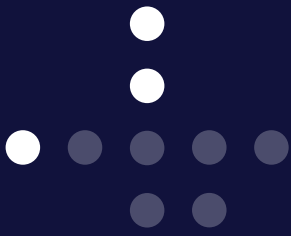
REPLACEMENT ELEMENTS

Sediment Cartridge	1um, 5um, 20um, 50um (Refer to pricelist)
Carbon Cartridge	10um (Refer to pricelist)
Quartz Thimble O-Ring	N/A
UV Thimble O-Ring	OR28-SK
UV Lamp	LL085-S4
UV Thimble	QD060028

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section two: **JUDO Manual**

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Installation and operating instructions JUDO SPEEDYMAT- LongLife

Backwash Protective Filter $\frac{3}{4}$ " – 2"

Valid for: Australia and New Zealand

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.

**Prolongated guarantee
period if a maintenance
contract has been concluded!**

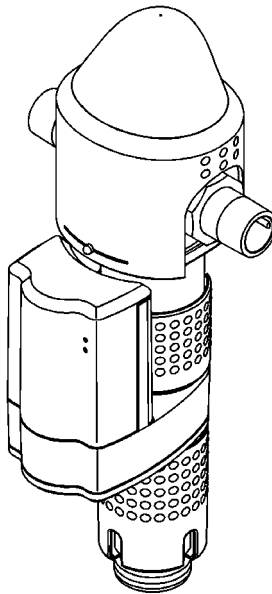


Fig.: JSY-LF-A $\frac{3}{4}$ " – $1\frac{1}{4}$ "

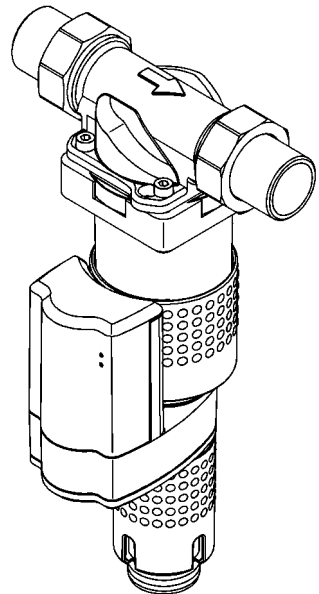


Fig.: JSY-LF-A $1\frac{1}{2}$ " – 2"



Southland Filtration

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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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1. About this instruction manual**ATTENTION**

(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.

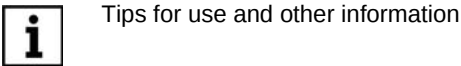
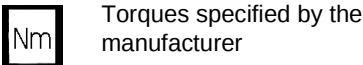
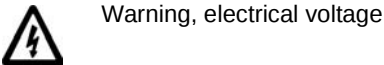
Apart from the instruction manual and the legally binding accident prevention provisions applicable in the country and place of use, the recognized technical regulations for safe and proper work must also be observed.

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 filter, e.g.

- direction of flow (see fig. 1)
- rating plate
- cleaning information

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

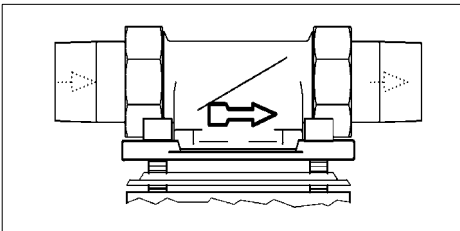


Fig. 1: Built-in rotary flange

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 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 = System International), the following units are used:

Units	Conversion
°F	°F = 9/5 °C + 32
psi	1 bar = 15 psi
gpm	1 m ³ /h = 4.4 gpm
gal	1 m ³ = 264 gal
¾"	DN 20
1"	DN 25
1½"	DN 40
2"	DN50

2. Intended use

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

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

The 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 filter other than in the operational areas stated in these operating instructions.

The 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 (21.8 psi) and 10 bar (145 psi).

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 (145 psi)**, the pressure reduction valve should be fitted **in front** of the filter (see fig. 2). If the operating pressure is above 10 bar (145 psi), this may result in defects during operation.

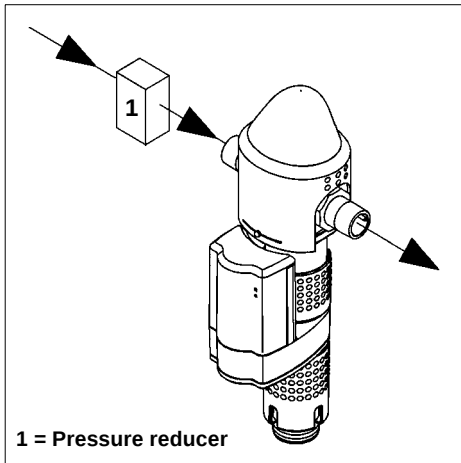


Fig. 2: Pressure reducer upstream of the unit



The installation of a pressure reduction valve is recommended for **water pressures between 5 bar (72.5 psi) and 10 bar (145 psi)**.

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 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 Isolated outpost



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 "Connecting an isolated fault 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).



ATTENTION

(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



Fig. 3: Test marks

The units conform to the technical regulations for drinking water installations in accordance with German standards. They are tested by the DVGW (Deutsche Vereinigung des Gas- und Wasserfaches e.V.), the German technical-scientific association for the gas and water industries, in accordance with the requirements of the standards DIN EN 13443-1 and DIN 19632-100 (pressure stage PN 16) for mechanical filters for 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 fulfill the requirements specified in the standards DIN EN 13443-1 and DIN 19632-100 ("Mechanical filters in drinking water installations"). All materials are hygienically and physiologically safe. Plastics fulfill the official guidelines of the German Federal Environmental Agency and the DVGW work sheet W270. Metallic materials fulfill the requirements of the DIN 50930-6 standard (Impact on the drinking water quality).

4. Installation

4.1 General



ATTENTION

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

The unit may only be installed by skilled personnel.

The chapter "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 (see chapter "Discharging the backwashing water").

A space of at least 200 mm (7.9 inch) should be maintained above and below the filter. These distances are necessary to be able to properly carry out the backwashing (see chapter "Backwashing").

4.1.1 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!



ATTENTION

(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 filter **upstream of** the water meter!
- A socket outlet with earthing contact, for the automatic filter's power supply unit, is required above the filter with a continuous power supply at a maximum distance of 1.5 m (59.1 inch).

4.1.2 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.

4.1.3 Mounting the built-in rotary flange

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.

The built-in rotary flange must be installed in the direction of flow. This is marked by a cast in arrow (see fig. 4).

Failure to comply with this means that backwashing is impossible. By and by this leads to an increasing pressure loss.

filter(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, 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.

4.1.4 Installing the filter



Select the torque (approx. 4 Nm) so that the gasket closes and the filter is not damaged or strained!

The filter is connected using the supplied built-in rotary flange. It consists of the built-in rotary flange and a profiled flange seal.

Undo the union nuts of the built-in rotary flange and fit to the pipe with the sleeve.

Note the installed dimensions!

Position the filter with pre-fitted built-in rotary flange between the sleeves, insert the flat seals and screw using the union nut.

The cast in arrow of the built-in rotary flange must match the direction of flow of the water.



ATTENTION

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

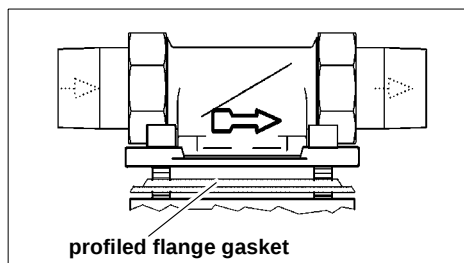


Fig. 4: Built-in rotary flange

The section of the profiled flange gasket must point towards the built-in rotary flange (see fig. 4). Failure to observe this can lead to leaks and water escaping. This can in turn cause water damage to the house and its installations.

4.2 Discharging the backwashing 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 filter, the flushing water can be fed several meters 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 EN 1717.

4.2.1 Backwashing water discharge options

JSY-LF-A $\frac{3}{4}$ " – $1\frac{1}{4}$ "

JSY-LF-A $1\frac{1}{2}$ " – 2"

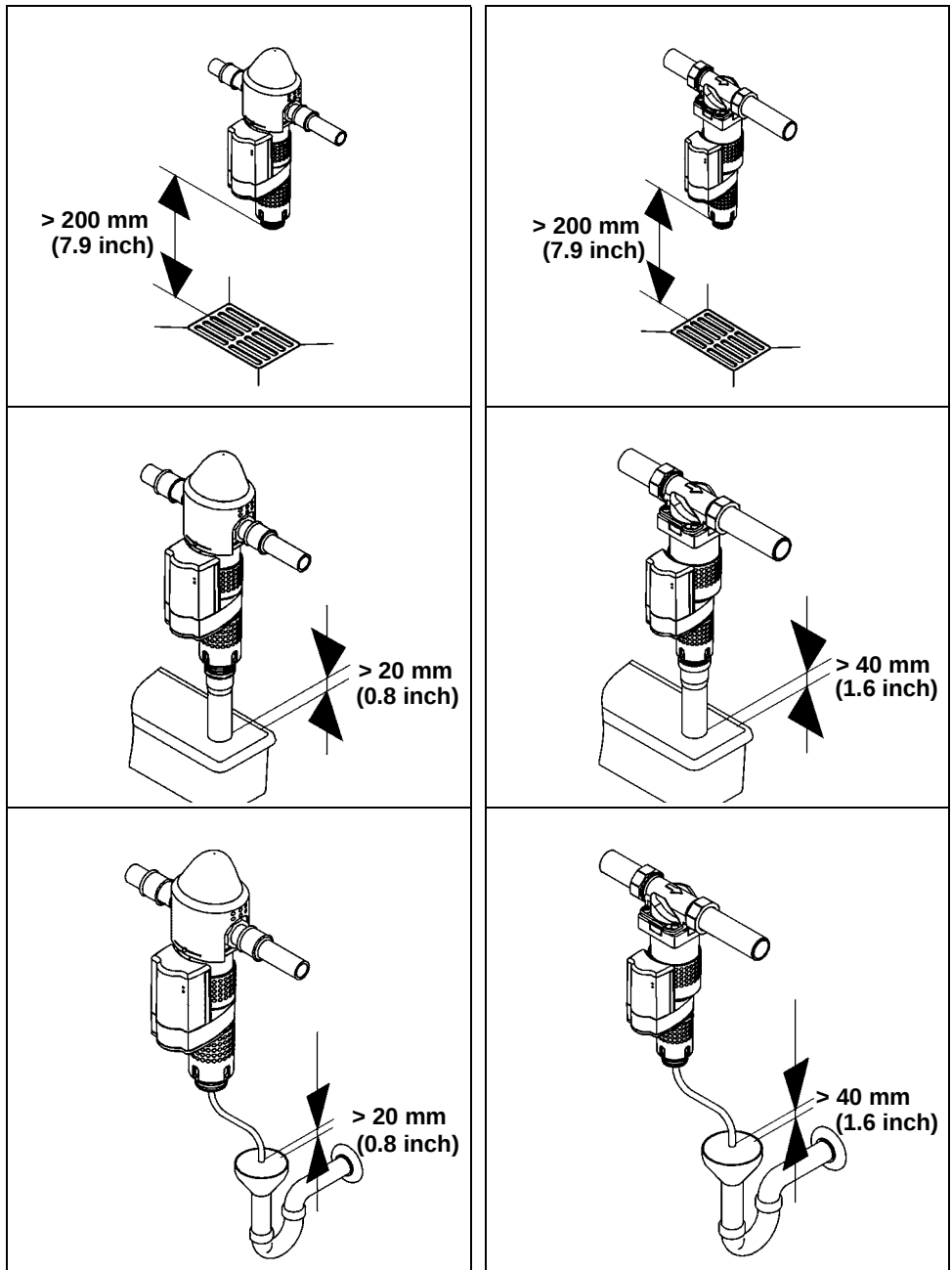


Fig. 5: Backwashing water discharge options

5. Operation



ATTENTION

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

Always 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**!

- To this end, after installation the filter is filled with water by opening the upstream shut-off valve.
- The filter is now at the same pressure as the water system.
- The enclosed air must then be immediately removed from the filter in order to avoid damage to the installation caused by pressure surges. The filter is vented by means of backwashing (see chapter "Discharging the backwashing water").
- After backwashing and venting the filter is ready for use.
- Check the default time control values set in the factory and adjust if necessary.

5.2 Indicator lights

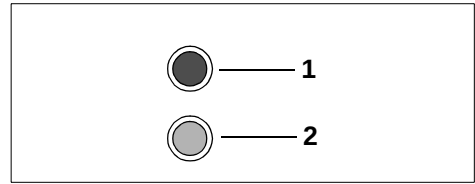


Fig. 6: Indicator lights

1	Operation - green indicator light Filter is ready for use.
2	Fault - red indicator light A fault exists (see chapter "Faults").

5.3 Set time controls

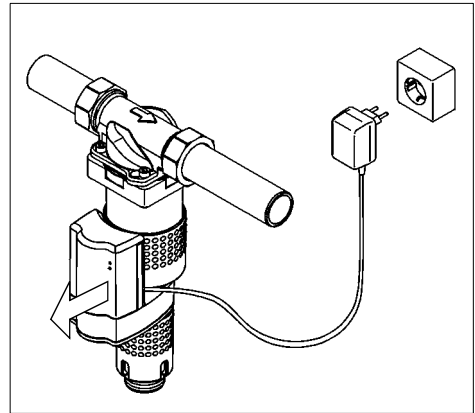


Fig. 7: Mains power interruption
(example: JSY-LF-A 2")



Disconnect the power supply unit from the socket!

- Remove the automatic controls cover by pressing on the side and pulling.

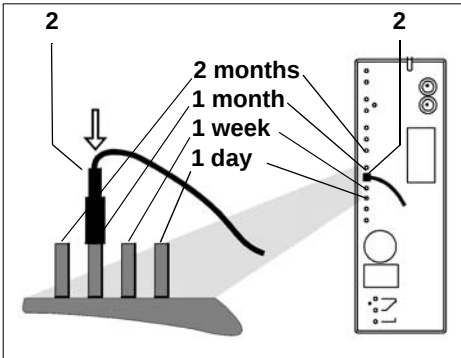


Fig. 8: Set time controls

- Select the required time interval for the time-controlled automatic backwashing process at the control electronics of the automatic controls- Select the required time interval by reconnecting the short cable strand (2). A cleaning interval of 1 month is preset in the factory. The selectable time intervals are written on the side of the control electronics. To change the time interval, pull off the cable lug (2) and push it onto the pin of the new time interval selected.

Selectable time intervals

2 months

1 month

1 week

1 day

- Replace the hood of the automatic controls, it audibly clicks into position.

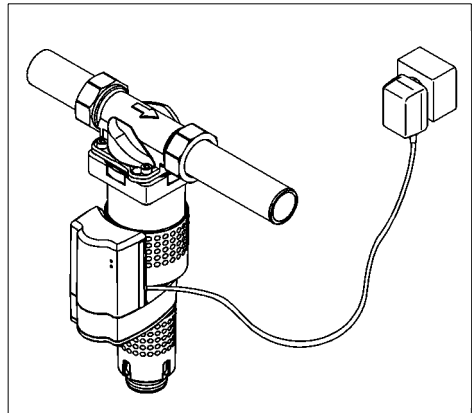


Fig. 9: Mains power interruption (example: JSY-LF-A 2")



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



ATTENTION



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

Backwashing starts immediately!

After the backwashing process the filter is ready for use again.

Selecting the backwashing intervals

Application cases	Backwashing intervals ¹⁾
Doctor's practices, laboratories, photo labs	1 day, 1 week
filter installations in private and commercial buildings	1 month, 2 month
Well water	1 day, 1 week
Industrial sector air conditioning systems	1 day, 1 week

1) Depending on the amount of dirt arising

5.4 Functional description

Water flows through the built-in rotary flange (1) into the filter. A coarse filter (JSY-LF-A 1½" – 2") prevents large dirt particles from getting into the fine filter. These large dirt particles cannot be removed by the backwashing equipment. The water flows through the fine filter from the outside inwards. The filtered dirt is retained by the fine filter screen. The adhering dirt is visible through the transparent filter cover (3). The filtered water then leaves the filter via the built-in rotary flange (1).

The automatic controls (2) automatically start the backwashing. The handwheel (4) therefore then only has a free discharge function.

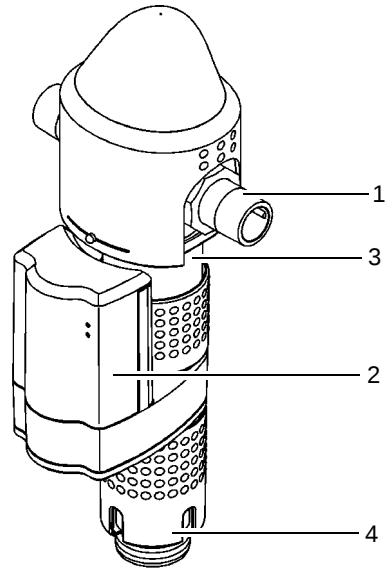
The cleaning process is started:

- by plugging the power supply unit into the plug
- automatically through the control electronics depending on the cleaning interval selected (days, weeks, months).
- manually by briefly disconnecting the mains supply (remove the plug and then pug it back into the socket).

JSY-LF-A ¾" - 1¼":

The filter contains a silver-plated suction pipe unit located at the sieve insert of the protective filter for an optimum prophylactic germ protection. If the prophylactic germ protection shall remain durably, the suction pipe unit has to be replaced after one year by trained personal. The function of the filter, however, is unlimited.

JSY-LF-A ¾" – 1¼"



JSY-LF-A1½" – 2"

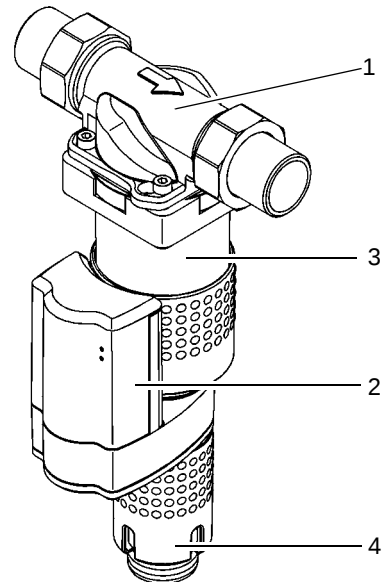


Fig. 10: Functional description

- 1 built-in rotary flange
- 2 automatic controls
- 3 filter bell
- 4 hand wheel for free discharge

5.5 Backwashing

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

During the backwashing process three suction pipes rotate around the screen.

At the same time a patented ceramic flushing valve on the underside of the filter opens so that the backwashing water can flow out. The treated water flows from the inside outwards through the screen into the suction pipe, taking the adhering particles with it.

The fine filter screen is cleaned. At the same time the inside of the transparent filter cover is cleaned together with the wiper lips of the suction pipe.



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.

After approx 40 seconds the ceramic flushing valve closes again and the backwashing process is completed.

This backwashing process can be repeated if necessary.



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

If the mains power supply fails during the backwashing process the backwashing is still completed due to the fitted battery.

5.5.1 Backwashing interval



ATTENTION



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

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.

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.

Set a temporary shorter time interval!

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.

5.6 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.

Changing the battery:

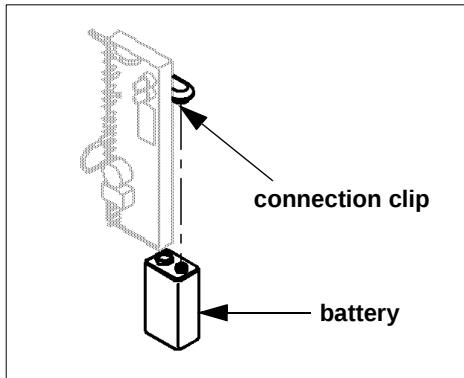


Fig. 11: Changing the battery



Only use 9V alkali block batteries; see battery labelling.

A patented switching technique prevents the battery from discharging while the filter's flushing valve is closed. As a result the battery has a service life lasting several years. A required battery change is indicated by simultaneous flashing of the red and green LEDs.

- Disconnect the power supply unit from the plug.
- Remove the automatic controls by pressing on the side and pulling off.
- Release the battery from the connection clip of the connection lead behind the electric circuit.
- Replace the battery and insert in the connection clip.
- Insert the power supply unit into the plug.

The electric circuit immediately performs a battery test. If successful, cleaning is started automatically.

Used batteries are to be returned to a distributor or to one of the returning facilities, established to this purpose by the public recycling entities.

5.6.1 Connecting an isolated fault message

The isolated output of the electric circuit can be used for remote transfer of the filter fault messages. Not the maximum switching current and switching voltage (see chapter "Isolated outpost").

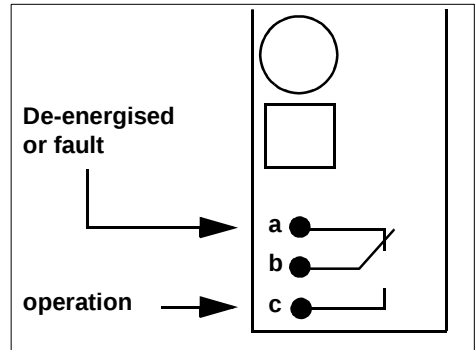


Fig. 12: Relay contact assignment

Connect relay as:	Contacts
Make contacts	a and b
Break contacts	b and c

In this figure (fig. 12) the contacts of the isolated relay are labelled in their de-energised condition.

The relay can be connected as a break contact or as a make contact. If the filter power supply unit is plugged in the relay changes its switched condition. If a fault message occurs the relay switches to the de-energised condition shown in fig. 12.

5.6.2 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.

5.7 Stoppages



ATTENTION



(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 re-commissioning the filter, same course of action as applied to the new filter.

6. Faults

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.

Help with faults:

Fault	Cause	Remedy
Leaks in the filter!	Filter cover has been exposed to high temperatures or solvents.	Inform the fitter or nearest customer service centre. (The filter cover must be replaced immediately.)
Filter cover becomes turbid!		
Hairline cracks on the filter hood!		
Backwashing water continues running!	Ceramic flushing valve not fully closed.	Carry out backwashing. – Remove mains plug from the socket. – Wait until all indicator lights have gone out. – Push mains plug back into the socket. Fault reoccurs: Inform the fitter or nearest customer service centre.
	Dirt in the ceramic flushing valve.	
Water flow rate falls!	Screen is blocked.	
Red indicator light is lit!	Fault in the automatic controls.	
Red indicator light is lit and acoustic signal sounding! Backwashing water is possibly escaping!	Ceramic flushing valve is not fully closed. Possibly dirt in the ceramic flushing valve.	
Simultaneous flashing of the red and green indicator lights! (No backwashing triggered!)	Battery is dead, is missing or wrong type of battery.	Disconnect the mains plug, insert new 9V alkali batteries, re-connect the mains plug.

7. Maintenance



ATTENTION

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

Always observe the chapter "Intended use"!

7.1 Cleaning



ATTENTION

(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 (spirits).

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, according to DIN 1988, Part 8, it is necessary that the "... backwashing takes place at least every 2 months, after operating conditions exist ...".

Regular servicing is indispensable in order to continue to achieve a successful treatment for many years after the unit is put into service. In the building services sector this is covered by DIN 1988, Part 8.

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.



Fig. 13: Service label

The service label fixed to the device should be marked by the plumber after the mounting of the device and indicates the date of the service that will take place next.

9. Data sheet

9.1 Type

JUDO SPEEDYMAT-LongLife

Backwash protective filter

Abbreviated name: JSY-LF-A

- Maximum ambient temperature and water temperature: 30 °C (86 °F).
- Electrical connection: 240 V / 50 Hz
- Max. power consumption: 5 W
- **The water to be filtered must conform to the European drinking water directive!**
- Threaded connection to DIN EN 10226-1.

9.2 Models

Model	Order no.
JSY-LF-A ¾"	8070665
JSY-LF-A 1"	8070666
JSY-LF-A 1¼"	8070667
JSY-LF-A 1½"	8070668
JSY-LF-A 2"	8070669

Nominal pressure

Model	Operating pressure	Nominal pressure
JSY-LF-A ¾" – 2"	1.5 - 10 bar (21.8 - 145 psi)	PN 16

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 19632-100. The maximum operating pressure is lower, in order to ensure the optimum function of the filter.

9.3 Technical specifications

The following applies for all the models of the device:

- The filters are supplied with a stainless steel screen with a mesh size of 0.1 mm as a standard.
- Nominal flow rate after backwashing at a pressure loss of 0.2 (0.5) bar [2.9 (7.3) psi] as given in the table below.

Model	Weight	Nominal flow rate [m³/h] after backwashing at a pressure loss of 0.2 (0.5) bar [2.9 (7.3) psi]	Back-flush volume stream
JSY-LF-A ¾"	2.5 kg	3.3 (5.3) m³/h	0.3 l/s
JSY-LF-A 1"	2.6 kg	3.5 (5.6) m³/h	0.3 l/s
JSY-LF-A 1¼"	3.0 kg	3.8 (6.1) m³/h	0.3 l/s
JSY-LF-A 1½"	5.9 kg	9.5 (14.5) m³/h	0.3 l/s
JSY-LF-A 2"	6.4 kg	10.1 (16.6) m³/h	0.3 l/s

The backwashing volumetric flow given applies to 2 - 3 bar (29 - 43.5 psi) mains pressure and for a completely opened flushing water valve.

The backwashing process takes 40 seconds.

9.4 Installation dimensions JSY-LF-A $\frac{3}{4}$ " - $1\frac{1}{4}$ "

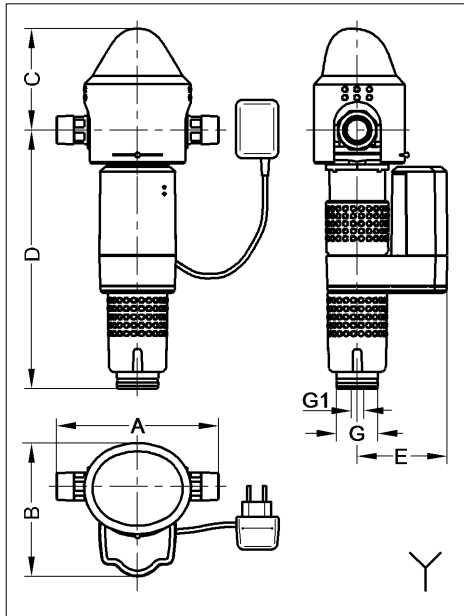


Fig. 14: Installation dimensions
JSY-LF-A $\frac{3}{4}$ " - $1\frac{1}{4}$ "

9.5 Installation dimensions JSY-LF-A $1\frac{1}{2}$ " - 2"

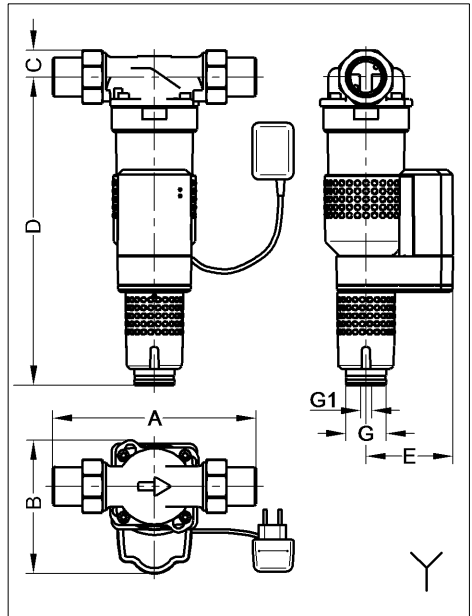


Fig. 15: Installation dimensions
JSY-LF-A $1\frac{1}{2}$ " - 2"

Model	A	B	C	D	E	G	G1
JSY-LF-A $\frac{3}{4}$ "	180 (7.1)	160 (6.3)	122 (4.8)	310 (12.2)	108 (4.3)	50 (2)	13 (0.5)
JSY-LF-A 1"	195 (7.7)	160 (6.3)	122 (4.8)	310 (12.2)	108 (4.3)	50 (2)	13 (0.5)
JSY-LF-A $1\frac{1}{4}$ "	230 (9.1)	160 (6.3)	117 (4.6)	315 (12.4)	108 (4.3)	50 (2)	13 (0.5)
JSY-LF-A $1\frac{1}{2}$ "	252 (9.9)	165 (6.5)	33 (1.3)	382 (15)	108 (4.3)	50 (2)	13 (0.5)
JSY-LF-A 2"	280 (11)	165 (6.5)	40 (1.6)	390 (15.4)	108 (4.3)	50 (2)	13 (0.5)
	drain connection required						

All dimensions in mm (inch) (see fig.14 and 15)

A = fitting length

B = unit width

C = height above pipe centre

D = height below pipe centre

E = depth to pipe centre

G = connection dimension waste water

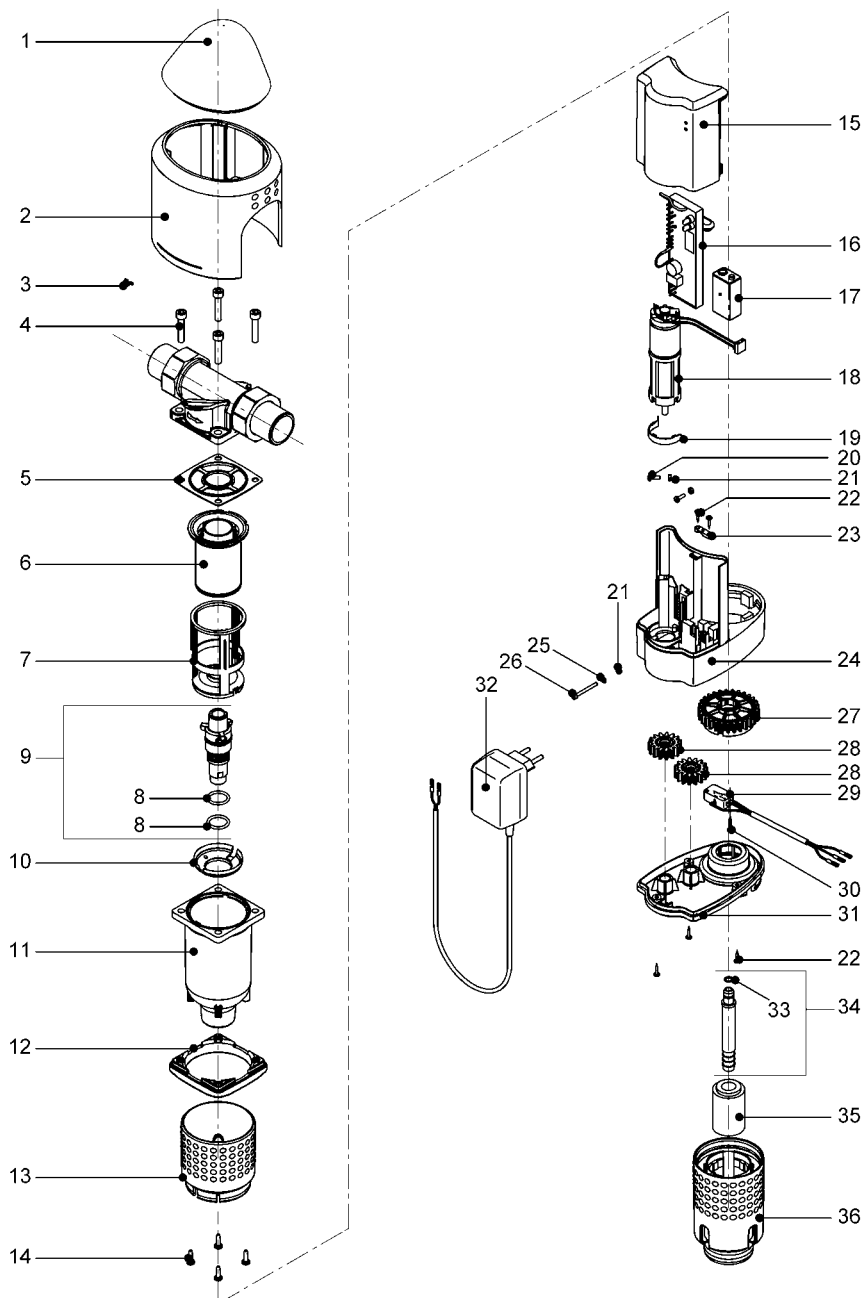
G1 = connection dimension waste water
(alternative)

9.6 Scope of supply

- Pre-installed backwash protective filter
- Installation and operating instructions
- Built-in rotary flange JQE $\frac{3}{4}$ ", 1" or $1\frac{1}{4}$ " with bayonet fixture and screw connection (JSY-LF-A $\frac{3}{4}$ " – $1\frac{1}{4}$ ")
- Built-in rotary flange JQE $1\frac{1}{2}$ " or 2" with bayonet fixture and screw connection (JSY-LF-A $1\frac{1}{2}$ " – 2")

10. Spare parts

10.1 JSY-LF-A $\frac{3}{4}$ " – $1\frac{1}{4}$ "



List of Spare Parts JSY-LF-A ¾" – 1¼"

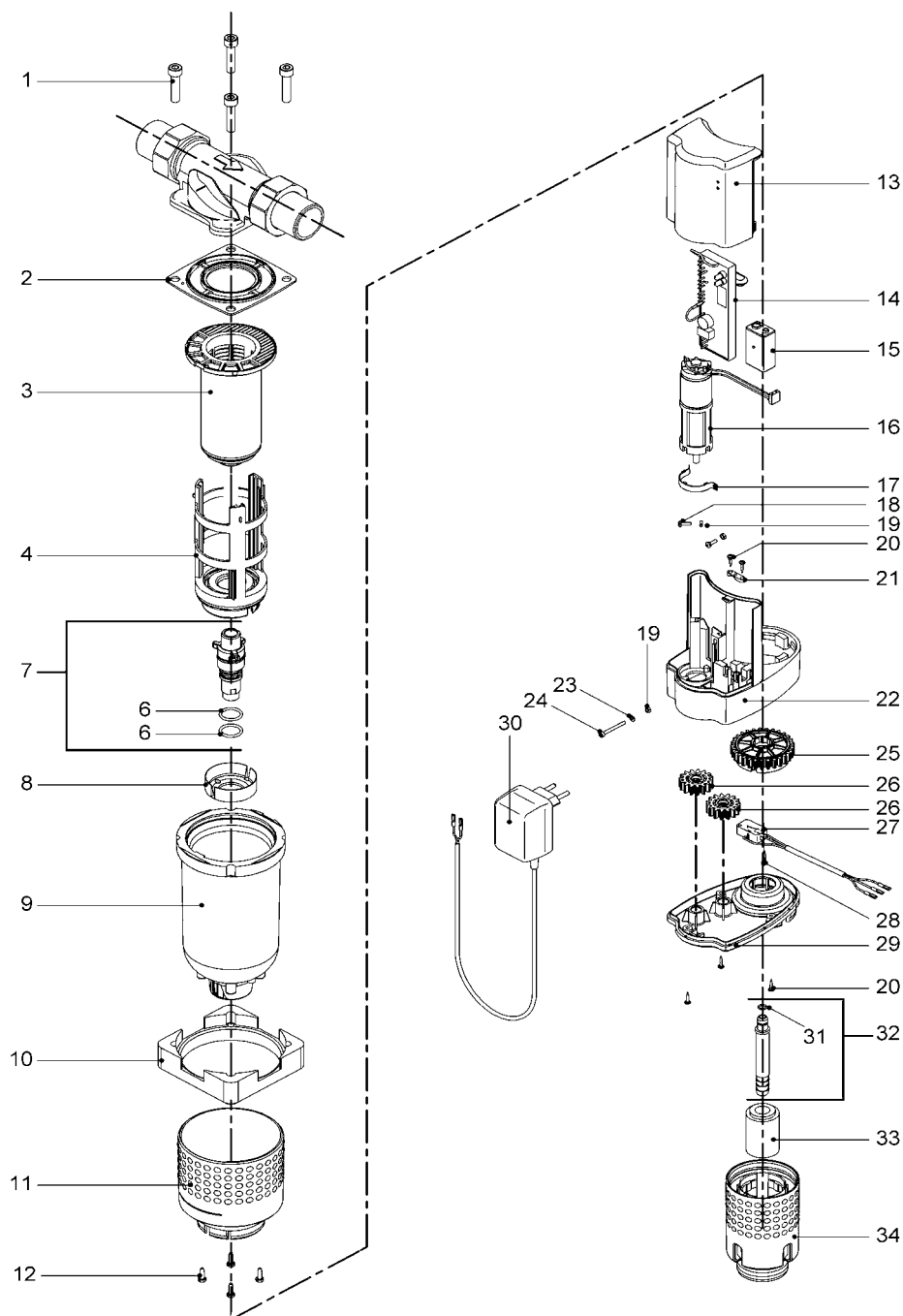
Item	Designation (Recommended average replacement interval for wearing parts [*])	Piece(s)	Order No.	VE ¹⁾ /Piece
1	Cover	1	1120424	2
2	Cover of flange JSY-LF-A ¾"	1	2070362	51
2	Cover of flange JSY-LF-A 1"	1	2070363	51
2	Cover of flange JSY-LF-A 1¼"	1	2070364	51
3	Display button	1	1120424	2
4	Cylinder screw M6x30	4	1650209	2
5	Profile flange seal **	1	1200218	5
6	Strainer ****	1	2070302	70
7	Suction pipe silver-plated *	1	2070349	38
8	O-ring 18 x 2.5 ****	2	1200291	2
9	Pre-fitted flushing valve ****	1	2170179	75
10	Suction pipe base	1	1120533	7
11	Filter bell	1	1120536	135
12	Flange	1	1420013	20
13	Cover filter bell	1	1120541	31
14	Lens metal screw 3.9 x 13	4	1650289	1
15	Motor cover	1	2170224	22
16	Switch	1	2170193	353
17	Alkaline battery 9V **	1	1500261	18
18	Engine	1	2170209	260
19	Latch fastener	1	1400098	4
20	Cylinder screw M3 x 10	1	1650144	1
21	Hexagon nut M3	3	1609169	1
22	Lens metal screw 2.9 x 13	1	1609172	1
23	Strain relieving bracket	1	1609114	2
24	Automatic housing	1	1120554	29
25	Disc A 3.2	1	1607243	1
26	Cylinder screw M3 x 30	1	1609166	1
27	Flushing valve toothed wheel	1	1120498	12
28	Motor pinion	2	1120496	6
29	Cam switch	1	2170202	16
30	Lens metal screw 2.9 x 16	1	1650173	1
31	Gearing cover	1	1120551	14
32	Power supply	1	2070442	82
33	O-ring 6.07 x 1.3	1	1200137	2
34	Pre-fitted hose connector	1	2170222	16
35	Union nut	1	1440151	14
36	Hand wheel	1	1120461	36

1) VE = Unit of Billing

Replacement interval: * = 1 year, ** = 2 years, **** = 4 years

Extended warranty period if a maintenance agreement is concluded!

10.2 JSY-LF-A 1½" - 2"



List of Spare Parts JSY-LF-A 1½" – 2"

Item	Designation (Recommended average replacement interval for wearing parts [*)	Piece(s)	Order No.	VE ¹⁾ /Piece
1	Cylinder screw M8x35	4	1650107	2
2	Profile flange seal **	1	1200230	9
3	Strainer ****	1	2070304	168
4	Pre-fitted suction pipe ****	1	2170178	78
6	O-ring 18 x 2.5 ****	2	1200291	2
7	Pre-fitted flushing valve ****	1	2170179	75
8	Suction pipe base	1	1120464	6
9	Filter bell	1	1120459	212
10	Flange	1	1430099	41
11	Cover filter bell JSY-LF-A 1½"	1	2170236	39
11	Cover filter bell JSY-LF-A 2"	1	2170238	39
12	Lens metal screw 3.9 x 13	4	1650289	1
13	Motor cover	1	2170224	22
14	Switch	1	2170193	353
15	Alkaline battery 9V **	1	1500261	18
16	Engine	1	2170209	260
17	Latch fastener	1	1400098	4
18	Cylinder screw M3 x 10	1	1650144	1
19	Hexagon nut M3	3	1609169	1
20	Lens metal screw 2.9 x 13	1	1609172	1
21	Strain relieving bracket	1	1609114	2
22	Automatic housing	1	1120554	29
23	Disc A 3.2	1	1607243	1
24	Cylinder screw M3 x 30	1	1609166	1
25	Flushing valve toothed wheel	1	1120498	12
26	Motor pinion	2	1120496	6
27	Cam switch	1	2170202	16
28	Lens metal screw 2.9 x 16	1	1650173	1
29	Gearing cover	1	1120551	14
30	Power supply	1	2070442	82
31	O-ring 6.07 x 1.3	1	1200137	2
32	Pre-fitted hose connector	1	2170222	16
33	Union nut	1	1440151	14
34	Hand wheel	1	1120461	36

1) VE = Unit of Billing

Replacement interval: ** = 2 years, **** = 4 years

Extended warranty period if a maintenance agreement is concluded!

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11. Customer service



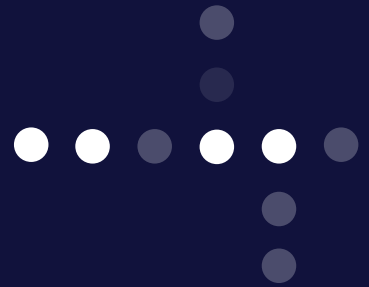
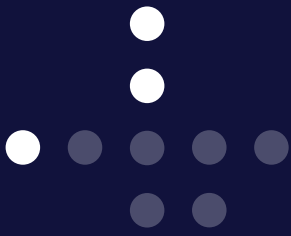
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filtration@southlandind.com.au

Installed by:

JUDO QUICKSOFT-DUO Softener system for noticeably soft water around the clock. Environmentally friendly protection against limescale blockage and damage. Reduces detergent and cleaning agent consumption.	JUDO JULIA Metering pump for JUL mineral solution against corrosion (brown water) and lime deposits.	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.
JUDO HEIFI-TOP Heating and rinse filter for the removal of sludge and gas deposits. Ideal in combination with JUDO HEIFI-FÜL.	JUDO ZEWA water stop Central water safety fitting. Stops water flow in the event of water pipe bursts and detects leaks.	JUDO HEIFI-FÜL Automatic heating after supply station for compliance with DIN EN 1717, ideal in combination with JUDO HEIFI-TOP

All illustrations, dimensions and information for the different models are those valid on the date of printing. All rights are reserved for modifications as a result of technical progress or further developments. Claims with regard to models or products are excluded.



section three:
SKAN UV
Manual

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FILTRATION

Maintenance Manual for SKAN UV Systems

**Defender Filter/UV Series Water Disinfection Units
Covering Models D0600 & D0750**



ABN 11 632 349 832

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02 9098 1667

Victoria

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Drive, Ravenhall, 3023.
03 9009 5213

Queensland

Unit 6, 13-25 Dunhill
Crescent, Morningside, 4170.
07 3624 9900

Tasmania

Level 1, 100 Sunderland
Street, Derwent Park, 7009.
03 6272 1477

General Safety Instructions

- Use the UV system only for the intended purpose as described in this guide.
- Correctly install your SKAN SV series UV disinfection system as per instructions in this guide. Do not use a SKAN UV disinfection system with damaged electrical cable/plug/switch.
- Make sure that the SKAN UV system is unplugged when it is not being used, before installation, or removing any parts, and before cleaning the unit.
- Depressurize and drain the SKAN UV system before maintenance.
- Do not operate the UV lamp outside of the UV disinfection reactor as UV radiation can cause serious damage to eyes and skin.

Installation and Planning

The UV system used in the Defender Filter/UV systems comes pre-fitted to the covered wall mount bracket.

Please check the following conditions will be met before installation.

- Maximum operating pressure must not exceed 10 bar (1000 kPa). Maximum ambient temperature should not exceed 40°C.
- Maximum water temperature should not exceed 65°C for units with amalgam lamps (seek advice from your supplier).
- The UV reactor should be installed so that it remains full of water at all times while the UV lamp is operating.
- If there are going to be extended periods with no flow, then there should be over-temperature mitigation installed to prevent overheating. There is provision for this device on the UV chamber. (seek advice from your supplier).
- Ensure there is sufficient space available to remove the UV lamp and quartz thimble during servicing.
- If there is a risk of water hammer then precautions need to be taken to prevent water hammer from damaging the quartz thimble, such as installing a water hammer arrestor.

Stainless Steel Reactor:

- The reactor vessel or chamber comes pre-mounted to the covered wall bracket. The reactor has been installed vertically with the outlet at the top. This orientation will ensure there will be no entrapped air in the chamber while there is flow.
- If there is a risk of water hammer, then precautions need to be taken to prevent water hammer from damaging the quartz thimble.
- The weight of the chamber when filled with water must be taken into consideration when mounting the unit.
- The stainless steel chamber and any metal pipework must be properly earthed to ensure safe operation and eliminate the risk of electrolysis and corrosion. There is an

earth stud with locking nut provided on the stainless steel chamber to attach the earth wire from the ballast cable to.

Power Supply Box:

- The power supply box is pre-mounted inside the wall bracket and under the cover, so it is protected from the weather and direct sunlight.
- The standard lamp lead length is 2m.
- The weight of the chamber when filled with water must be taken into consideration when mounting the unit.
- The stainless steel chamber and any metal pipe-work must be properly earthed to ensure safe operation and eliminate the risk of electrolysis and corrosion.

Reactor Assembly

Quartz Thimble Installation:

Care should be taken when handling the quartz thimble. It breaks in the same way glass does and will have dangerous sharp edges if broken. It must be cleaned with methylated spirits to remove any finger marks or grease before installation.

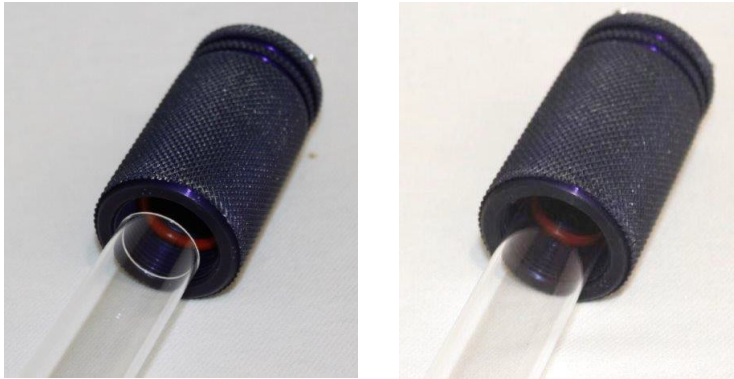
- Unscrew the sealing nut from the end of the chamber and remove the O ring as well.



- Lubricate and place the O ring in the O ring seat inside the sealing nut.



- Insert the open end of the quartz thimble into the sealing nut, sliding the quartz past the O ring so the quartz rests against its stop inside the sealing nut.



- With the quartz still inserted into the sealing nut, take the quartz thimble, and insert the domed end into the chamber through the sealing nipple.



- Push the quartz all the way into the chamber with the sealing nut and the quartz will centre itself in the spring at the end of the chamber.
- Push the quartz into the chamber until the thread of the sealing nut engages with the nipple on the chamber and then screw the sealing nut in place. You will feel it when the sealing nut starts to compress the O ring seal. Approximately $\frac{1}{2}$ a turn after the sealing nut starts to compress the O ring seal should be sufficient. Firm hand tightness is all that is required.



- The chamber should now be pressure tested under operating pressure to ensure there are no leaks.
- The UV lamp can now be installed in the reactor.

UV Lamp Installation:

Care should be taken when handling the UV lamp. It breaks in the same way glass does and will have dangerous sharp edges if broken. The UV lamp also contains mercury which will need to be collected and disposed of in accordance with regulatory requirements.

- Remove the UV lamp from its protective wrapping and wipe it down with methylated spirits to remove any grease or fingermarks, and dry with a clean cloth or tissue.
- Only handle the clean lamp with clean cloth gloves or tissues to prevent any markings on the lamp.
- Insert the UV lamp into the quartz thimble in the reactor through the sealing nut, with the lamp pins exposed at the open end of the chamber.



- Keeping a firm hold of the lamp, push the connector onto the lamp so there is no gap between the connector and the lamp.



- Push the lamp all the way into the chamber as far as it will go, and then secure the end cap in place with the three screws provided.

The UV unit is now ready for operation. You may plug the unit into a power point and switch it on.



Power Supply Box Operating Instructions

General Safety Instructions

ELECTRIC SHOCK!

Attention: Dangerous electric voltage is present inside the power supply box and chamber. The ballast is not user serviceable and should be returned to supplier for any repairs. These instructions must be followed closely to prevent serious personal injuries.

- Do not use a unit with a damaged electrical lead or plug, a unit with any faulty functions, or a unit which has been dropped or has been damaged in some way.
- Do not operate the UV lamp outside of the UV disinfection reactor.
- The power supply box is not designed for remote mounting.
- The PSL1B-080-DDCV and PSL1B-180-DDCV power supply boxes should be mounted indoors so they are not exposed to rain or sunlight.

SKAN UV Systems UV lamps are designed for permanent operation for optimal performance and longevity. Frequent switching on and off reduces the life of the UV lamp.

Ballast Controller Operation

1. NORMAL OPERATION: -

When the PSL1B-080-DDCV and PSL1B-180-DDCV power supplies are properly installed, connected to a UV lamp, switched on and operating normally, the red digital screen will initially display '365' indicating 365 days of rated lamp life remaining. The green LED will also

be illuminated indicating the UV lamp is operating. The red digital display will decrease each day until the screen reaches '0' and the end of lamp life alarm is activated.

2. DISPLAY OPTIONS: -

There is single button operation for viewing options and re-setting the unit. Under normal operating conditions the screen can display lamp life left in days (365 → 0 days) or ballast operating time in days (0 → 9999 days). The default display is the remaining lamp life in days (365 → 0 days). To view ballast operating time, press the button for less than 2 seconds. The LED display will show ballast operating time (0 → 9999 days) for 10 seconds then return to displaying the remaining lamp life (365 → 0 days). Pressing the button while the ballast operating time is displayed will return the display immediately to the remaining lamp life before reaching the end of 10 seconds.

3. LAMP FAILURE: -

If the UV lamp fails the buzzer will sound on and off at 1 second intervals, the red LED will be illuminated, and the remaining lamp life will stop counting down these features will remain until the lamp is replaced and the ballast re-set. The ballast operating days will continue to count up while there is power to the ballast.

4. END OF LAMP LIFE ALARM: -

When lamp life reaches 0 the display will show "A3", the red LED will flash, and the buzzer will sound on for 1 second and off for 5 seconds.

5. DEFERRING END OF LAMP LIFE ALARM: -

The end of lamp life alarm can be deferred four times for a period of 7 days, to allow time to replace the old lamp with a new lamp. To defer the alarm, press the and hold the button for 5 seconds until the screen displays "dELy" then release the button and the lamp life will be re-set to 7 days and there will be no audible alarm, but the Red Light will be flashing and the "A3" will be displayed. The ballast will count down from 7 to 0 days and the alarm buzzer will start again. This deferring of the end of lamp life alarm can be done 4 times. After the fourth time the buzzer cannot be stopped until the lamp is replaced and the lamp life re-set.

6. LAMP LIFE RE-SETTING: -

When a new lamp is installed in the UV unit the ballast should be re-set to indicate 365 days lamp life remaining. To do this the button should be pressed and held for 10 seconds, when the display will show "rSEt". Keep pressing for 2 seconds after the LED digits go to 365 and the buzzer sounds once, then release the "S" button and the ballast will be re-set and operating normally.

7. BALLAST FAILURE: -

If there is power to the ballast but there is no digital display and neither of the LEDs are illuminated, then the ballast has failed and needs to be replaced.

Servicing

Servicing should be carried out by a qualified and competent service technician.

The UV unit must be switched off electrically isolated as well as being hydraulically isolated and depressurized before servicing.

Servicing the UV Lamp:

- Ensure the unit has been switched off and isolated.
- The UV lamp may be very hot so allow 10 minutes for the lamp to cool down.
Remove the three screws holding the end cap in place.
- Carefully remove the end cap by pulling on the lamp lead. The lamp will be attached to the lamp lead. Pull it out until the lamp end piece and the lamp connector are exposed.
- Disconnect the connector from the lamp. You may need a small screwdriver to help lever them apart.
- Completely remove the UV lamp from the reactor.
- Install new UV lamp as described in the 'REACTOR ASSEMBLY' section.

Servicing the Quartz Thimble:

- Remove the UV lamp as described in the section above- 'Servicing the UV Lamp'.
Ensure the reactor is hydraulically isolated and depressurized.
- Unscrew the sealing nut from the chamber, taking care when reaching the end of the thread as the quartz will spring out when the threads become disengaged.
- Once the sealing nut is free from the chamber remove the quartz completely from the chamber and carefully remove the sealing nut from the end of the quartz thimble.
- Wipe down the quartz thimble to remove any deposits. You may use detergents and scouring pad if necessary.
- Reinstall the quartz thimble, with a new O ring, as described in the 'REACTOR ASSEMBLY' section.

Spare Parts

Defender Model	UV Model	UV lamp	Quartz Thimble	O ring
D4, D5, D7, D8A, S4, S5	D0600	LL053A-S4	QD52025	O25-SK
D6, D9, S6	D0750	LL085-S4	QD60028	O28-SK

Guarantee

Reactor

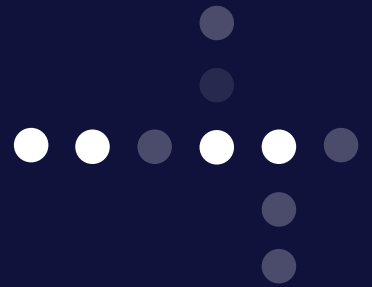
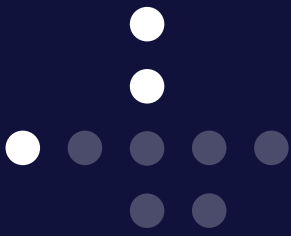
The stainless steel reactor is guaranteed for two years for faults with material and workmanship, provided it is installed and maintained in accordance with these instructions. This warranty does not cover installations where saltwater passes through the reactor.

Power Supply Box

The power supply box is guaranteed for one year for faults with material and workmanship, provided it is installed and maintained in accordance with these instructions.

UV Lamp

The UV lamp is guaranteed for one year, pro-rata, for faults with material and workmanship, provided it is installed and maintained in accordance with these instructions. Lamp warranty will be void if the unit is switched on and off more than four times in a 24 hour period.



section four:

SKAN Cartridge Manual

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FILTRATION

WATER FILTER INSTALLATION AND MAINTENANCE MANUAL

General direction for use

- Use only for filtration of water with pH from 6.5 to 8.5. In case of water with pH below or above the limits use only housings marked as Pure Polypropylene (PP).
- In case of filtration of drinking water, do not use with unsafe water or with water of unknown quality without adequate disinfection before or after the filter.
- For anti-scale treatment of drinking water with polyphosphate dosing systems, use only PROPORTIONAL dosing systems. Please note: polyphosphate is not designed to soften water, but to condition it, for example to prevent limescale formation in the boiler and to protect against corrosion.
- Keep protected from light, install under direct light only models with opaque bowl.
- Keep protected from back-flows with a non-return valve.
- Keep protected from water hammer with an anti-water hammer device.
- Do not install near to electric appliances.

WARNING: respect the working conditions, as shown in the sticker affixed to the product.

If the sticker is tampered, damaged, not legible or missing, applicable working conditions are: maximum operating pressure 8 bar (10 bar for filters with metal/brass head), maximum operating temperature 45°C (80° for filters marked HOT / 35°C for dosing systems), maximum water hardness 50°f (500 ppm CaCO₃) for dosing systems with polyphosphate crystals. If pressure exceeds the working conditions, protect the product with a pressure reducer.

Installation guidelines

- Install the products in sheltered rooms and protected from freeze and excessive heat.
 - Before the installation, check if the hydraulic system has been set-up according to the rules-of-the art in force. Refer to figures:
A General information.
B IN - OUT directions presentation in different filter housings models.
C Installation lay-out:
1. Municipal water mains | 2. Non-return valve | 3. Pressure reducer | 4. By-pass | 5. Anti-water hammer device (expansion vessel)
- check from the table for the appropriate device volume (V) depending on piping diameter (Ø) | 6. Any type of filtration or dosing unit |
7. Other utilities.
- * For products with pressure gauges: apply sealing tape on threads of the pressure gauges and then screw them, do not overtighten, onto 1/8" of the threaded connection at the top of the head; when the filter is set operational, if water is leaking, add sealing tape or screw tighter. For models with brass head, unscrew the caps at the top of the head and screw the pressure gauges according to the procedure indicated above.
- * For products with plugs (screws) for pressure gauges: screw the plugs (provided with o-rings) on tightly.
- * For products with drain kit: screw the plastic nipple with o-ring to the threaded connection for the drain at the bottom of the container, screw the ball valve onto the nipple, after having made sure there is a gasket, then screw the ball valve to the drain funnel or to the hose connector tube, after having made sure there is a gasket.
- * For products with drain plug: screw the plug on tightly.

Installation

- Turn-off the water main.
- Avoid all kind of tensions by using wall brackets as a support.
- Connect the inlet to the product's side with the indication IN and the outlet to the side with the indication OUT.
- Connect to pipes using cylindrical (parallel) fittings (BSP - ISO 228), possibly with flexible hoses.
- Connect to tapered (conical) fittings (ANSI/ASME B1.20.1) only if the product is marked with NPT on head.
- Use only sealing tape as a sealant for the connections.
- The installation of a by-pass is recommended.
- Open the main water tap.
- Vent the filter by unscrewing the breather valve, then retighten it.
- For products with drain kit, with pressure gauges or with drain plugs and/or pressure gauges, make sure that all parts are sealed without water leakage; if there is leakage after having tightened, seal all the threads of all the parts with sealing tape and check that there is no further leakage.

NOTE: after the installation, let the water flow for at least 5 minutes before the use.

Maintenance

- Periodically clean with cold water and a soft sponge. Replace the filter cup every 5 years at least.
- Before opening: turn-off water main and release the pressure by un-screwing the vent-valve on housing head. Then screw and tighten the vent-valve.
- For PROPORTIONAL polyphosphate dosing systems, periodically clean the brass nozzle inside using a needle.
- If not in use for a long time: remove the cartridge or the polyphosphate refill; when re-using apply a new cartridge or new polyphosphate refill.
- Check the housing tightening, if water leaks between sump and head lubricate the o-ring or change with a new one.

NOTE: after the maintenance, let the water flow for at least 5 minutes before the use.

Replacement of the cartridge or of the polyphosphate refill

Follow standards in force regarding waste disposal of used cartridges and polyphosphate refills.

1. Before opening the filter housing turn-off the water main.
2. Release the pressure from the product by un-screwing the vent-valve of the head. Then screw and tighten the vent-valve.
3. Open the housing unscrewing the housing using a proper wrench.
4. Remove the used cartridge or polyphosphate refill.
5. Wipe clean the filter housing with cold water and a soft sponge.
6. Open the new cartridge wrap and discard wrap.
7. Put a new cartridge or polyphosphate refill in the container.
8. Tighten the housing bowl to housing's head using a proper wrench. Do not over-tighten.
9. Turn-on the water main.
10. Slowly turn-on a water supply (tap) downstream the filter.
11. Wait for air purge from the vent-valve, then screw and tighten the vent-valve.

NOTE: let the water flow for at least 5 minutes before the use.

**Talk to
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