



Installation and Operating Instructions

JUDO PROFIMAT

Automatic Backwash-Protective Filter

JPF-A/TP DN125 – 200 (5" – 8")

Indoor use only



Fig.1:

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.

Order-No: 1701648 status quo: 2008/03



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Operating Instructions: JPF-A/TP DN125-DN200 (5" – 8") GB CDN

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Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



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1 Introduction

Thank you for the confidence you have shown in us by purchasing this device. To ensure you will enjoy your device for a long time to come, please note the following operating instruction. These Operating Instructions contain all the Information needed to install, operate and maintain the device that is described.

For all questions related to water treatment, for example expanding the installed system by adding additional elements, please contact our Customer Service Department directly at the factory in Winnenden, Germany. When making requests, please quote the information that appears on the manufacturer's label.

JUDO Wasseraufbereitung GmbH

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71364 WINNENDEN

GERMANY

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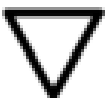
www.judo-online.com

1.1 Symbols and Their Meaning

The terms Warning, Caution and Note are used to draw attention to important information. Their meanings are as follow:



Warning Danger of injuries and accidents!



Caution Danger of improper functionality or damage to the device!



Note Explanation of a special feature!



1.2 Warranty

The warranty as defined by our General Terms and Conditions of Sales and Delivery will only be honoured if

- the device is used according to the explanations in these Operating Instructions.
- the device has not been opened or handled improperly in any other way.
- repairs have only been performed by authorized professionals.
- original replacement parts have been used exclusively for all repairs.

For additional information, see Section "7.2 Maintenance".

1.3 Using the Device

The JUDO PROFIMAT Automatic Backwash Protective Filter described here is used to protect pipeline systems and the following devices.



Warning

Any other uses are considered improper and unintended uses and are not permitted. JUDO Wasseraufbereitung GmbH shall not be liable for any resulting damage.

1.4 Responsibilities of the operator

The operator of the system is responsible for the following items:

- Instructing operating personnel
- ensuring that maintenance is performed regularly

2 Product Information

2.1 Manufacturer and Type

Manufacturer:

JUDO Wasseraufbereitung GmbH

Hohreuschstraße 39-41

71364 WINNENDEN

GERMANY

Phone: +49 (0)7195/692-0

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Type:

JUDO PROFIMAT Automatic Backwash Protective Filter

JPF-A/TP DN125-200 (5" – 8")

2.2 Models

Model	Time control (T)	Pressure differential control (P)	Order-No.
JPF-A/TP DN125 (5")	*	*	8320016
JPF-A/TP DN150 (6")	*	*	8025025
JPF-A/TP DN200 (8")	*	*	8320015

Tab.1

All models are time and differential pressure controlled.

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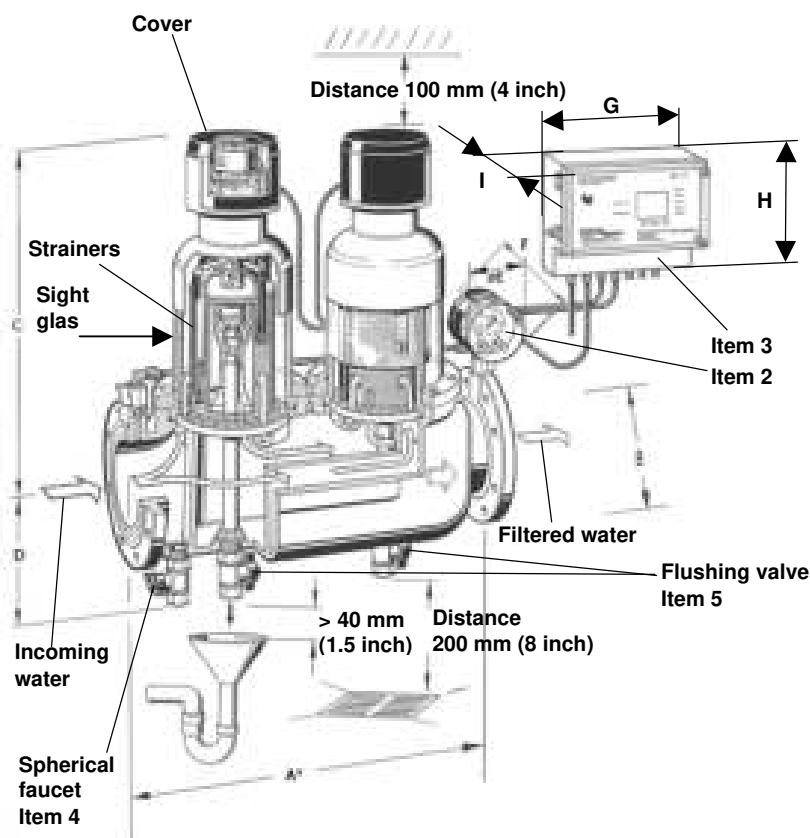
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2.3 Scope of supply

JPF-A/TP DN125 (5")



Item 1

Filter housing with strainers:
DN125 (5") / 2 strainers
DN150 (6") / 3 strainers
DN200 (8") / 4 strainers

Item 2

Differential pressure gauge

Item 3

Control box

Item 4

Spherical faucet

Item 5

Flushing valve
Operating Instructions

Fig. 2:

2.4 Dimensions

Model JPF-A/TP	A* mm (inch)	B mm (inch)	C mm (inch)	D mm (inch)	E mm (inch)	F mm (inch)
DN125 (5")	560 (22)	250 (10)	505 (20)	200 (8)	100 (4)	105 (4.2)
DN150 (6")	560 (22)	470 (18.5)	525 (20.7)	220 (8.5)	100 (4)	105 (4.2)
DN200 (8")	600 (24)	470 (18.5)	535 (21)	250 (10)	100 (4)	105 (4.2)

Tab.2: Dimensions

*Fitting length

Dimensions control box:

width x height x depth in mm 257 x 214 x 218 (10 x 8.4 x 8.6 inch)

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2.5 Technical specifications

Model JPF-A/TP	DN125 (5")	DN150 (6")	DN200 (8")
Maximum water flow rate* in m ³ /h (gpm)	100 (440)	150 (660)	200 (880)
Pressure loss after backwashing in psi (kPa)	3 (20)	3 (20)	3 (20)
Minimum operating pressure in psi (kPa) Maximum operating pressure in psi (kPa)	22 (150) 150 (1000)	22 (150) 150 (1000)	22 (150) 150 (1000)
nominal pressure In psi (kPa)	150 (1000)	150 (1000)	150 (1000)
Back flush Volume Stream in l/s (gpm)	0.5 – 1.5 (8 – 25)	0.5 – 1.5 (8 – 25)	0.5 – 1.5 (8 – 25)
Back flush time in minutes approx.	4	6	8
Standard mesh size** in mm (inch)	0.1 (0.004)	0.1 (0.004)	0.1 (0.004)
Operating temperature max. in °C (°F)	30 (86)	30 (86)	30 (86)
Maximum ambient temperature in °C (°F)	30 (86)	30 (86)	30 (86)
Pipe connection	5"	6"	8"
Electrical connection in V/Hz	120 / 60	120 / 60	120 / 60
Maximum rated power in W	25	25	25
Protection class with closed control cover (only control box)	NEMA 12	NEMA 12	NEMA 12
Weight complete in kg	95	145	200

Tab 3: Technical specifications

*Information on water flow applies to drinking water. If the water contains excessive impurities, the maximum water flow may be less, depending on the mesh sizing. In that case, a larger dimension must be selected.

**The standard mesh size is 0.1 mm (0.004 inch). The mesh is made of stainless steel. Mesh sizing of 0.03 / 0.32 and 0.5 mm (0.001 / 0.01 and 0.02 inch) are also available for technical purposes.

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2.6 Scope of Application

The JUDO PROFIMAT Automatic Backwash-Protective Filter removes all coarse and fine-grain solid impurities that cause pitting corrosion as aeration elements in cold water lines and hot water supply systems.

2.7 Backwash

The backwash functional sequence is performed automatically by the electrical control system.

1. Backwash based on exceeding the differential pressure:

Impurities that have been filtered out of the untreated water remain on the permanent filter inserts. This results in an increase in the differential pressure between the filter intake and outlet.

The differential pressure measuring device measures the difference in pressure caused by the presence of the filter.

If the differential pressure exceeds the value that can be set the S1 button (see Section "5.1 Adjusting the Differential Pressure Gauge"), the backwash process is initiated automatically. Backwash is only initiated while water flow is in progress (water removal), since it is only then that a differential pressure is present on the filter.

The cleaning interval is reset after backwash has been initiated by the differential pressure.

2. Backwash after an adjustable period of time has elapsed:

To prevent excessive accumulation of impurities on the permanent filter elements, a backwash process is initiated automatically after an adjustable cleaning interval has elapsed.

Backwash process:

The water flows into the JUDO PROFIMAT Automatic Backwash Protective Filter from outside and through a cylindrical filter insert inside the device. Impurities that have been filtered out are visible through the transparent filter bell. If the filter is dirty, it is cleaned without any interruption in operation.



The spherical faucet (item 4 in Fig. 2) should only be opened to rinse out coarse particles from the grit trap.

The flushing valves (item 5 in Fig. 2) must only be closed in the event of an emergency. They are designed to act as a throttle for the backwash flow of water at high water pressures (see Section „5.2 Limiting the Rate of Backwash Water Flow“).



3 Safety

3.1 Safety Instructions and Tips

For an explanation of how the terms Warning, Caution and Note are used, see Section „1.1 Symbols and Their Meaning“

3.2 Proper Usage

The JUDO PROFIMAT Automatic Backwash Protective Filter has been developed and tested according to the requirements for mechanical filters used with drinking water. It complies with the technical rules for drinking water installations.



Particles that settle on the filter screen insert and adhere to it can be rinsed off by the mechanical cleaning mechanism.



The materials and protective coatings that are used are resistant to the anticipated chemical and corrosive loads. All materials, protective coatings and auxiliary materials are hygienically and physiologically harmless.



Substances of a marked polar nature, for example alcohols, concentrated mineral acids, formic acid, phenol, m-cresol, tetrahydrofurane, pyridine, dimethylformamide and mixtures of chloroform and methanol must not be present in water to be filtered. They will cause damage to plastic materials. Caution, danger of breakage!



Installation and use of the filter is subject to applicable national regulations. In addition to the Operating Instructions and binding regulations for accident prevention applicable in the country and at the location where the device is used, recognized rules for safety and proper work procedure in any relevant specialized technical areas must also be observed.

The water used for filtering must meet the requirements of the national Drinking Water Regulation!

Before using water of any other quality or with any additives, it is imperative to consult with the manufacturer or vendor!

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

It has been manufactured according to the latest state of technology and recognized technical safety rules in Germany.

The filter must only be used as described in the Operating Instructions. Any other use or usage beyond what is described in the Operating Instructions will be considered improper use.

Improper use or failure to observe danger symbols and safety instructions will result in additional dangers. The manufacturer or vendor shall not be responsible for any resulting damage. The user alone bears the responsibility.

Proper use of the device includes observing the Operating Instructions.

Before using the filter beyond the limits of usage described in the Operating Instructions, it is essential to consult with the manufacturer or vendor.



Filters must only be used when they are in flawless technical condition, with due consideration for safety and awareness of possible dangers. They must be used according to their intended purpose and in conformity with the Operating Instructions! Eliminate all faults and malfunctions immediately!

3.3 Water Pressure

The water pressure must be between 73 psi (500 kPa) and 22 psi (150 kPa).

The water pressure must not fall below 22 psi (150 kPa). If it does, the backwash function will be negatively affected! If backwashing of the filter is not performed regularly, there may be a loss of pressure, which will adversely affect filter functionality.

3.4 Sources of Danger



Because electrical voltages are conducted openly inside the control box, installation and maintenance work, for example connecting the mains power line, checking or replacing fuses or wiring the potential-free inputs and outputs, must only be performed by specialists who are adequately trained to do so. Applicable safety requirements and electrical regulations must be observed without exception!

The following limit values apply when wiring the potential-free outputs of the JUDO PROFIMAT Automatic Backwash Protective Filter:

- max. load current: 1 A
- max. switching voltage: 24 V



Only potential-free switching contacts may be connected to the optional inputs of the control unit (see Section 6.5 "Potential-Free Inputs and Outputs"). An external voltage must never be applied to the inputs! A two-wire cable with an external cable diameter of 4.5 – 10 mm (0.18 – 0.4 inch) must be used to connect the potential-free switching contacts. No more than 3 cm (1 inch) of coating must be removed.

4 Installation

4.1 Requirements for the Installation Location

The JUDO PROFIMAT Automatic Backwash Protective Filter must be installed in a dry place not subject to freezing. There must be a wastewater connection present (for example a floor drain) to carry away backwash water. There should be an electrical connection 120 V / 60 Hz in the immediate vicinity of the filter. The electrical connection must be made by a professional electrician in conformity with the local requirements of the electricity supplier. Avoid direct sunlight on the device.

4.2 Installation Instructions

- The JUDO PROFIMAT Automatic Backwash Protective Filter may be installed in lines made of steel, copper or plastic in pipelines running horizontally in any direction of flow (note embedded flow direction arrow). Vertical installation should only be used if there is no possibility of horizontal installation. If the device is installed vertically, coarse particles that accumulated in the grit trap cannot be rinsed out as well as is the case for horizontal installation.
- The JUDO PROFIMAT Automatic Backwash Protective Filter must not be installed in a suction line.
- The JUDO PROFIMAT Automatic Backwash Protective Filter can be connected to the water network with standard fittings commercially available.
- The water pressure at the installation location must not exceed the admissible nominal pressure of 150 psi (1000 kPa).
- For water pressures over 150 psi (1000 kPa), a pressure reducer must be installed upstream from the JUDO PROFIMAT Automatic Backwash Protective Filter.
- For simple operation and maintenance, make certain to install the JUDO PROFIMAT Automatic Backwash Protective Filter in an easily accessible location.
- To ensure convenient operation and maintenance, observe the minimum clearances to the ceiling and floor specified in fig. 2.
- An appropriate wastewater connection must be present for the backwash water, for example a floor drain that is able to carry away the amount of water specified in the operating data without backups.
- If it is not possible to install a wastewater connection directly under the filter, the backwash water can also be directed into a wastewater connection through a hose or a $\frac{3}{4}$ " pipeline.
- If the wastewater drain is above the filter, the backwash water will be directed upward. In this case, make certain there is a free outlet > 40 mm (1.5 inch).
- When screwing in a pipe to drain the backwash water, make certain not to twist the flushing valves.
- To achieve good cleaning results with the permanent filter inserts, a backwash flow rate must be reached that matches the values specified in the Technical Data. At the same time, the minimum flow pressure or counter pressure on the filter discharge during backwashing must not be below 22 psi (150 kPa). If these values are not maintained, for example with free discharge after the filter or open circuits (cooling circuit), sufficient backwash cannot be guaranteed.
- The shut-off fittings in the filter intake and outlet and outlet must be installed so that the shut-off fittings are not rendered ineffective while the filter is being installed or removed (for example do not install intermediate flaps directly before or after the filter).
- Installation before the water meter is only permitted with the approval of the local water supply authority.
- If a catch basin (pump sump) is installed for the backwash water, it must be ensured that the pump being used will remove the backwash water even if there are several backwashes one immediately after the other or that an alarm will be generated if the catch basin reaches "overflow". This alarm signal can be connected to the "Backwash lock" potential-free input at end of the backwash of the PLC filter control unit (see Section "6.5.3 Potential-Free Input "Backwash Lock").

- Observe technical information, local installation requirements and general regulations.
- To vent the JUDO PROFIMAT Automatic Backwash Protective Filter, perform backwash immediately after installation.
- For information on the electrical connection of the potential-free input or output signals, please refer to the terminal diagram.

4.3 Design of the Backwash Connection

The dimensions of the conduit cross section for backwash water should be based on specific local features, for example the inclination of the wastewater pipeline, number of bends, length of the wastewater line, etc.



It must be ensured at all times, including the case of a technical malfunction, that wastewater can be removed without causing any damage.

The backwash flow volume with a JUDO PROFIMAT Automatic Backwash Protective Filter is 0.5 to 1.5 litres per second (8 to 25 gpm) with the flushing valve completely open and approximately 29 to 43 psi (200 to 300 kPa) of water pressure. For backwash time, see the table in Technical Data. With all options for removing the backwash water, make certain to allow for free discharge.



5 Placing the Device in Operation

The device must only be placed in operation by JUDO Customer Service.

5.1 Adjusting the Differential Pressure Gauge

Pointer Zero-Point Setting

If there is no flow of water and both control lines have been placed in operation by opening the spherical faucets, the pointer of the difference indicator should be at zero. If this is not the case, the pointer can be adjusted after unscrewing the transparent hood of the differential pressure gauge by turning the zero-point correction screw to the zero-point of the scale.

Switching Point Setting - Switch 1

This setting is used to adjust the differential pressure value at which backwash is automatically initiated. Screw on the stop plug in the transparent hood.

Move the switching point adjustment button with its mark to the desired switching point. Make the switching point setting starting from zero 0 to 36 psi (0 to 250 kPa). Setting: 14.5 to max. 29 psi (100 to max. 200 kPa). Achievable setting accuracy +/- 5%, screw in the stop plug again (factory setting 7 psi (50 kPa)).

The differential pressure to be set is based on the nature and amount of impurities in the untreated water. Setting the differential pressure too high may cause damage to the filter inserts or cause impurities to accumulate on them. A differential pressure that is too low may cause increased consumption of flushing water and wear or fault messages (see Section "8.2 Causes of Faults; Eliminating Faults").

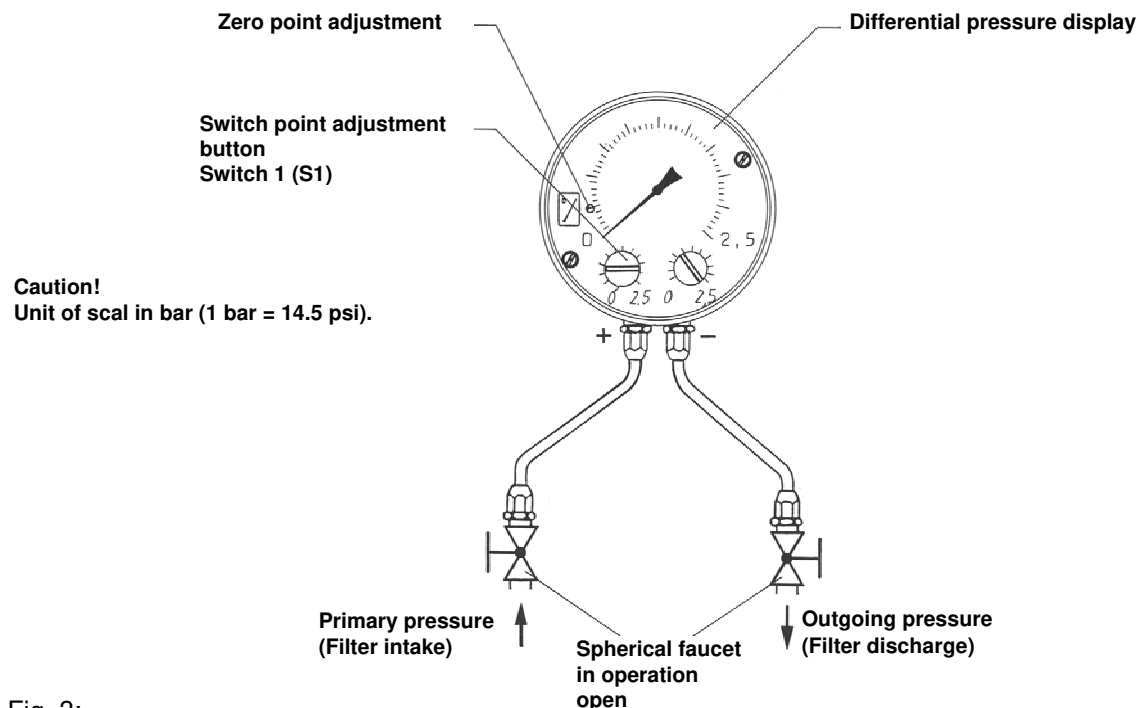


Fig. 3:

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5.2 Limiting the Rate of Backwash Water Flow

To ensure a long service life of the filter and filter screen inserts, the backwash flow of water must be restricted with flushing valves for water pressures greater than 90 psi (600 kPa) (see fig. 2, item5). This prevents the fabric of the filter screen from being damaged if the backwash water flow is too high. At the same time, there is less consumption of backwash water and any flow noises are also reduced.



If the flushing valves are too heavily restricted, the flushing water discharge may become clogged.

5.3 Visual Inspection, Functional Check

After the device has been placed in operation, the entire filter, its connections, and the backwash water discharge must be checked for any leaks while they are under pressure.

Then a functional check of filter flushing must be performed. To do this, initiate a filter flushing by pressing the "Manual Backwash" function key (press the button for 5 seconds).

After the filter flushing, check the filter and backwash water discharge for leaks again.

5.4 New Installation

In the case of new installations, experience points to increased dirt on the filter inserts during the beginning period. Because of this, automatic backwash must not be taken out of operation, for example by turning off the control system. If backwash is not performed when required, it is possible the filter screen inserts could be destroyed.

5.5 Adjusting the Cleaning Interval

Section "6 Control System" describes how to adjust the cleaning interval.



6 Control System



Fig. 4:



Note:

Only the steps described in this section for adjusting the filter control system may be performed. Any deviation from the steps in this descriptions may result in damage to the filter and control system. The DIP switches inside are for use by service technicians only. Adjusting them incorrectly may cause the filter to function improperly. All claims under the warranty will be null and void.



The JUDO PROFIMAT Automatic Backwash Protective Filter is controlled by a programmable PLC. The setting for filter cleaning can be adjusted according to actual usage conditions with the aid of the PLC function keys.



Fig. 5: SPS, control key, label, LEDs

Description of the function keys



The **arrow keys** ◀ ▲ ▼ ▶ (lower line) can be used to select a menu.
 The **+/- keys** (right) can be used to increase or reduce a value.
 You can use the **OK** key to confirm a menu item or value.
 The **ESC** key can be used to cancel a selection.
 In the following section, display items are represented in **italics** and key commands are shown in **bold type**.

6.1 Manual Backwashing

Manual backwashing can be initiated by hand by pressing the **arrow key** ▶ (for about 2 sec.). After backwashing is initiated, the filter performs a cleaning cycle for all connected filter units and then returns to the normal operating setting.

In the first line of the display, "Cleaning Filter1" is displayed while the first filter unit is being cleaned, for example.

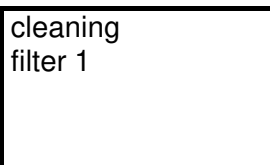


Fig.6: Display for Manual Backwashing



6.2 Individual Filter Cleaning

After the **arrow key ▼** is activated, the number of filter units present is shown in the 1st and 2nd lines of the display. The filter unit selected for cleaning is shown in the 3rd and 4th lines of the display. Activating the **+/- keys** makes it possible to select the filter unit. Pressing the **OK key** starts the cleaning of the selected filter unit. You can use the **ESC key** to exit this menu without starting cleaning.

number of
filter: 4 unit
cleaning
filter 1 OK?

Fig.7: Display for Individual Filter Cleaning

6.3 Cleaning Interval

The filter is automatically cleaned after the set time of the cleaning interval has elapsed. The cleaning interval time can be adjusted within a range from 1 to 2000 hours. To adjust the cleaning interval time, follow these steps:

After you press the **arrow key ◀** the cleaning interval is displayed.

You can use the **+/- keys** to increase or reduce the value of the cleaning time interval.

After the cleaning time interval has been set, confirm the setting with **OK**. Then the value is saved.

Cleaning Interval	Setting
1h	1
12h	12
1 day	24
1 week	168
1 month	720
2 month	1440

Tab.4: Cleaning Interval

cleaning interval:
100 h

Fig.8: Display for the Attitude of the cleaning interval



If the JUDO PROFIMAT Automatic Backwash Protective Filter is operated with short backwash intervals (for example 1 hour or 1 day), you should count on increased wear on the suction pipe mouthpieces, carriers, seals and filter screen inserts. With backwash intervals of 1 hour, these parts should be checked twice a year and replaced if necessary.



6.4 Acknowledging a Fault Message

The **arrow keys ▲** can be used to reset a fault message (see Section “8.2 Causes of Faults; Eliminating Faults”).

6.5 Potential-Free Inputs and Outputs



Observe the instructions from Section “3.4 Sources of Danger”!

6.5.1 Potential-Free Output “Fault Messages “

When a fault message is received (see Section “8 Operating Faults”) or if no operating voltage is present, terminals S5 and C4 are short-circuited internally in the control system. These terminals can be used for remote reporting of the fault.

6.5.2 Potential-Free Output “Filter Cleaning “

When filter cleaning is in progress, terminals S4 and C4 are short-circuited internally in the control system. These terminals can be used for remote reporting of the filter cleaning.

6.5.3 Potential-Free Input “Backwash Lock “

When terminals SP and V+ are short-circuited, filter cleaning that is in progress is stopped. In addition, it is not possible to initiate any filter cleaning.

6.5.4 Potential-Free Input “External Backwash “

When terminals EX and V+ are short-circuited, filter cleaning is started.

7 Operation and Maintenance

7.1 Visual Inspection

Depending on operating conditions, a visual inspection of the JUDO PROFIMAT Automatic Backwash Protective Filter should be performed at regular intervals.

7.2 Maintenance

To retain your legal claim to warranty, it is required according to perform backwash according to existing operating conditions, but at least once every 2 months. Regular maintenance of the system is indispensable to ensure successful operation for many years after it has been placed in service. In the area of household technology. A maintenance contract is the best way to ensure good operating functionality even beyond the warranty period. Every effort should be made to ensure regular maintenance work and a supply of consumable and wear materials etc. by suitable specialists or the factory Customer Service Department.

7.3 Wear Parts

See the note in Section “5.5 Adjusting the Cleaning Interval”.
For replacement intervals, see Section “10 List of Spare Parts JPF-A/TP DN125-200 (5” – 8”)”



8 Operating Faults

8.1 Fault Message

Faults that occur during the cleaning process are reported immediately as follows:

- Flashing red "Fault" LED on the front plate.
- Audio signal from the built-in horn.
- Message text on the PLC display.
- The potential-free fault message relay switches to the fault setting.

8.2 Causes of Faults; Eliminating Faults

The following table can be used to help determine the cause of the fault. The fault message can be acknowledged and reset by pressing the arrow key ▲. Then you can attempt to eliminate the cause of the error by performing the corresponding measures described for that fault.

Fault Message	Possible Cause	Remedy
The green "Operation" LED is not lit; nothing appears in the PLC display; filter cleaning is not possible.	Power failure or defective fuse	Re-establish the power supply, check the fuses. Caution! See the note in Section "3.4 Sources of Danger".
Message "Fault – F1 HE-contactactor" appears in the display. Filter cleaning is still possible.	The HE contact maker is faulty or defective plug connection	Check all plug connections. Then start filter cleaning manually and monitor the cleaning process.
Message "Fault, differential pressure" appears in the display No filter cleaning is possible.	Heavy impurities in the water line. The value for the cleaning interval is set too high. The differential cleaning limit value is set too low.	After the fault message is reset, clean the filter by manual activation. Then check the setting of the differential pressure limit value at maximum water flow rate. After consulting with Customer Service, increase this value or reduce the cleaning interval as appropriate.

Tab.5:

If the fault cannot be eliminated, please request assistance from JUDO Customer Service or an authorized company specializing in this area.

Customer Service:

Address **JUDO Water Treatment Inc.**
2060 Steeles Avenue. West, Unit #4, Concord, Ontario, Canada, L4K 2V1

Tel. (905) 761 - 1555

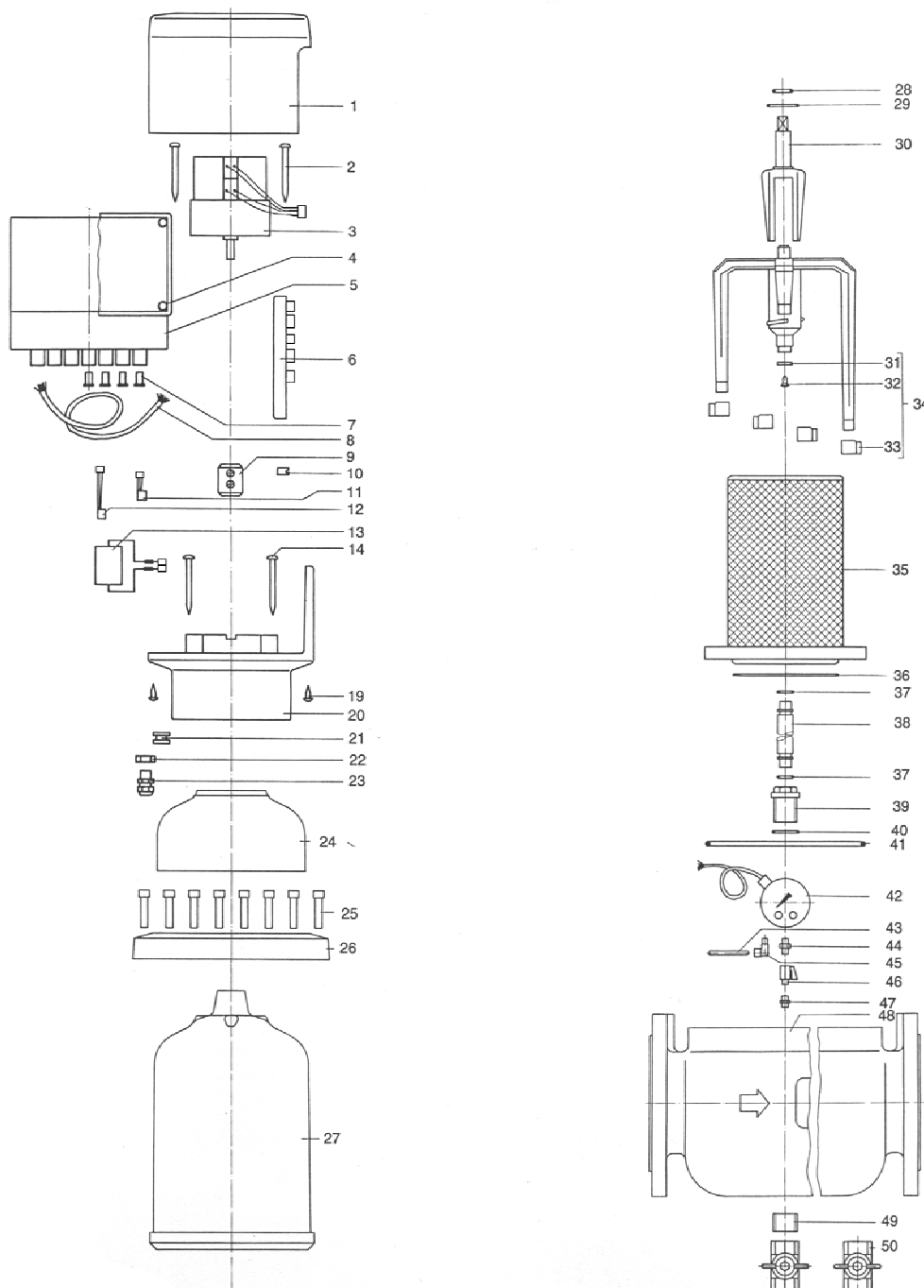
Fax (905) 761 - 3335

e-mail service@judo-online.com

www www.judo-online.com



9 Spare Parts Drawing JPF-A/TP DN125-200 (5" – 8")



creation date: 6/12/2006
release date:

amendment date: 3/19/2008
version: 2008/03

Operating Instructions: JPF-A/TP DN125-DN200 (5" – 8") GB CDN

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Changes in the interest of the technical progress reserve!

21-24



10 List of Spare Parts JPF-A/TP DN125-200 (5" – 8")

Item	Designation (Recommended average replacement interval for wearing parts [*)	Order No.	DN125 (5") Piece(s)	DN150 (6") Piece(s)	DN200 (8") Piece(s)
1	Housing cover	1607204	2	3	4
2	Plate screw C3.9x22	1650191	8	12	16
3	Synchronous motor	2320135	2	3	4
4	Control cover	1150062	8	1	1
5	SPS - filter control DN125 (5") SPS - filter control DN150 (6") SPS - filter control DN200 (8")	2320152 2320153 2320154	1	1	1
6	Distributor	2320132	2	3	4
7	Cable plug	2020057	3	2	1
8	Connecting cable	2320133	2	3	4
9	Motor flange	2020110	2	3	4
10	Threaded pin	1607216	4	6	8
11	HE- contactor red	2320137	2	3	4
12	HE- contactor yellow	2320136	2	3	4
13	Capacitor	2320134	2	3	4
14	Plate screw C 3.9x9.5	1607213	8	12	16
19	Plate screw C 3.5x9.5	1650130	8	12	16
20	Motor housing	2320150	2	3	4
21	Grommet	1607215	2	3	4
22	Nut	1440183	2	3	4
23	Cable connection	1440182	2	3	4
24	Casing top part	2320156	2	3	4
25	Cylinder screw M8x45	1650208	32	48	64
26	Flange ring	2010032	2	3	4
27	Filter hood	2020038	2	3	4
28	O-ring 15x3.2	**** 1607420	2	3	4
29	O-ring 28x2.5	**** 1200027	2	3	4
30	Carrier	2020034	2	3	4

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Item	Designation (Recommended average replacement interval for wearing parts [*])	Order No.	DN125 (5") Piece(s)	DN150 (6") Piece(s)	DN200 (8") Piece(s)
31	Suction Pipe Gasket ****	1200056	2	3	4
32	Plate screw C4.2x9.5	1650125	2	3	4
33	Nozzle	1120135	8	12	16
34	Complete Suction Pipe	2020040	2	3	4
35	Filter Screen 0.1 mm (0.004 inch) **	2010376	2	3	4
36	O-ring 100x1.5 ****	1200124	4	6	8
37	O-ring 12x3 ****	1607110	2	3	4
38	Water-jet pipe DN125 (5")	2010060	2	—	—
38	Water-jet pipe DN150 (6")	2010061	—	3	—
38	Water-jet pipe DN200 (8")	2010062	—	—	4
39	Connection Piece	2010031	2	3	4
40	O-ring 26x3 ****	1607111	2	3	4
41	O-ring 178x6 ****	1200058	2	3	4
42	Differential pressure gauge	1610234	1	1	1
43	Differential pressure hose	2320004	1	1	—
43	Differential pressure hose	2320005	—	—	1
44	Double nipple 1/4"	1440058	1	1	1
45	Screwed joint	1440059	2	2	2
46	Mini-Spherical faucet G 1/4"	1610010	2	2	2
47	Double nipple	1450103	2	2	2
48	Filter Bottom Piece DN125 (5")	2010053	1	—	—
48	Filter Bottom Piece DN150 (6")	2010056	—	1	—
48	Filter Bottom Piece DN200 (8")	2010059	—	—	1
49	Nipple	2010012	1	1	1
50	Spherical faucet	1610004	3	4	5

Replacement interval

** = 2 years

**** = 4 years

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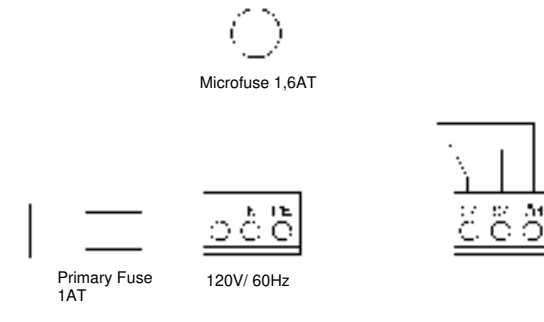
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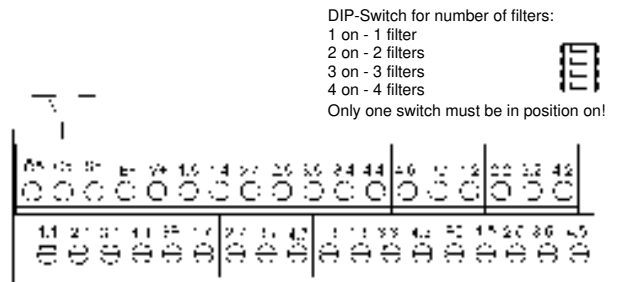


11 Terminal plan

Power board



I/O board



L, N, PE - Power supply
 PD, PD - Differential pressure switch

Optional:
 C4, S4, Ö4 - Advice backwashing
 (Terminal S4-C4 during backwashing is closed)

C5, S5, Ö5 - Advice fault
 (Terminal Ö5-C5 during fault is closed)

SP, V+ - Lock backwashing
 (If SP - V+ is short circuited, no backwashing is possible)

EX, V+- extern backwashing
 (If EX - V+ short circuited, backwashing is starts)

Connecting cable filter 1		
Lead	Signal	Terminal
1	HE GND	1.1
2	HE yellow	1.2
3	HE red	1.3
4	Motor up	1.4
5	Motor	1.5
6	Motor down	1.6
7	HE V+	1.7
Connecting cable filter 2		
1	HE GND	2.1
2	HE yellow	2.2
3	HE red	2.3
4	Motor up	2.4
5	Motor	2.5
6	Motor down	2.6
7	HE V+	2.7
Connecting cable filter 3		
1	HE GND	3.1
2	HE yellow	3.2
3	HE red	3.3
4	Motor up	3.4
5	Motor	3.5
6	Motor down	3.6
7	HE V+	3.7
Connecting cable filter 4		
1	HE GND	4.1
2	HE yellow	4.2
3	HE red	4.3
4	Motor up	4.4
5	Motor	4.5
6	Motor down	4.6
7	HE V+	4.7

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