

# Installation and operating instructions

## JUDO HEIFI-TOP $\frac{3}{4}$ " - 2"

Backwash filter with deaeration system

### Model JHF-T

Valid for: Canada

---

#### Attention:

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

These instructions must always be issued to the owner/user.

---

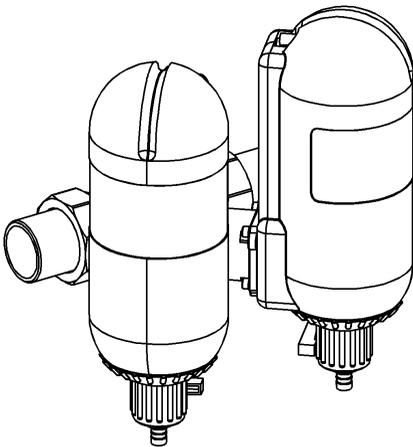


Fig.: JHF-T 1½" - 2"

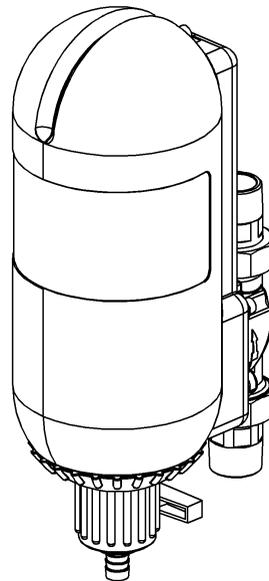


Fig.: JHF-T  $\frac{3}{4}$ " - 1¼"



---

**Corporate head office**

JUDO Wasseraufbereitung GmbH  
P.O. Box 380  
D-71351 Winnenden  
Germany  
e-mail: info@judo.eu  
judo.eu

**Manufacturing plant**

JUDO Wasseraufbereitung GmbH  
Hohreuschstraße 39-41  
D-71364 Winnenden  
Germany

**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.**

**The backwash filter with deaeration system is used in heating circuits to filter and degassify the water. It removes coarse and fine-grained contaminations (e.g. rust silt), which can result in malfunctions in the controls. The backwash filter and deaeration system also removes undissolved, disruptive or corrosive gases (e.g. nitrogen and oxygen).**

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

Trademarks:

Trademarks used in this document are protected and registered trademarks of the respective holder.

© JUDO Wasseraufbereitung GmbH  
D-71364 Winnenden

All rights reserved.

Reprints – even of extracts – are only permitted with special written approval.

**Table of Contents**

**1. About this instruction manual..... 3**

1.1 Symbols used ..... 4

1.2 Safety information and dangers due to non-compliance ..... 4

1.3 Units used..... 4

**2. Intended use ..... 5**

2.1 Water pressure ..... 5

2.2 Notes on special dangers ..... 5

**3. Product information ..... 6**

3.1 Intended purpose..... 6

**4. Installation ..... 6**

4.1 General..... 6

4.2 Discharging the backwashing water ..... 9

4.3 Backwashing process ..... 9

**5. Operation ..... 11**

5.1 Commissioning ..... 11

5.2 Functional description..... 11

5.3 Backwashing ..... 12

5.4 Backwashing interval..... 12

5.5 Modifications / changes / spare parts..... 12

5.6 Stoppages ..... 12

**6. Faults ..... 13**

**7. Maintenance..... 14**

7.1 Cleaning ..... 14

**8. Warranty and services ..... 14**

**9. Data sheet ..... 15**

9.1 Type..... 15

9.2 Models ..... 15

9.3 Technical data ..... 15

9.4 Installed dimensions ¾" - 1¼" ... 16

9.5 Installed dimensions 1½" - 2" .... 16

9.6 Extent of supply ..... 17

9.7 Accessories JHF-T ¾"-2" ..... 17

**10. Spare parts..... 18**

**11. Customer service ..... 20**

**1. About this instruction manual**



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

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

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

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

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

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

- **installation**
- **operation**
- **maintenance**  
(servicing, inspection, repair)

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

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

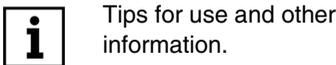
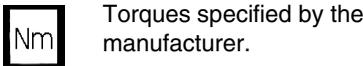
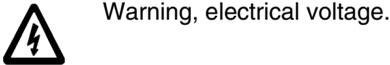
Therefore, this instruction manual must always be read by the fitter and responsible

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

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

### 1.1 Symbols used

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



Notes directly attached to the filter, e.g.

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

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

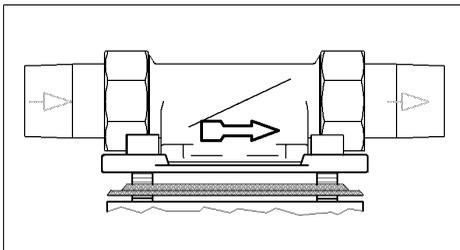


Fig. 1: Built-in rotary flange

### 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 = Système international d'unités), the following units are used:

Unit	Conversion
°F	°F = 9/5 °C + 32
psi	kPa = 0.001 N/mm <sup>2</sup>
gpm	1 m <sup>3</sup> /h = 4.4 gpm
¾"	DN 20
1"	DN 25
1¼"	DN 32
1½"	DN 40
2"	DN 50

## 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 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 must not exceed 15 psi (100 kPa) 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.

## 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).

### 3. Product information

#### 3.1 Intended purpose

The filter is suitable for use in heating circuits up to a hot water temperature of max 90 °C (194 °F).

It is not possible to install it in drinking water pipes!

### 4. Installation

#### 4.1 General



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

The unit may only be installed by skilled personnel.

The chapter “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.

A space of at least 250 mm 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!**



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

- 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 and downstream 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.

### 4.1.2 Installed position



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

Always install the filter in a vertical position ( $\pm 5^\circ$ )!

### 4.1.3 Mounting the built-in rotary flanges

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 is suitable both for horizontal and vertical pipes.

It is suitable for both horizontal and vertical pipes.

**The built-in rotary flange must be installed in the direction of flow. This is marked by a cast in arrow.**

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

It must be ensured that no backflow preventer, gravity brake or any other automatic shut-off device is installed between the filter and the expansion vessel.

If this is not observed, backwashing is not possible as no backwashing water is available.



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

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

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

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

### 4.1.4 Installing the filter

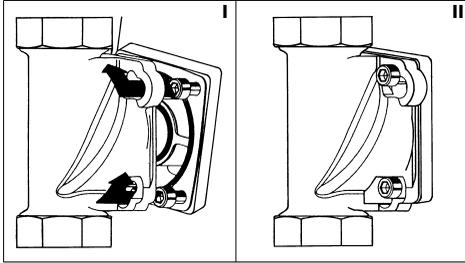


Fig. 2: Built-in rotary flange with bayonet fixture

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

#### Do not unscrew the screws!

- Insert the four flange screws in the bayonet drill holes on the built-in rotary flange (see fig. 2 I).
- Turn the filter in a clockwise direction as far as it will go (see fig. 2 II).
- Tighten the four flange screws.



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



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

The section of the profiled flange gasket must point towards the built-in rotary flange. Failure to observe this can lead to leaks and water escaping. This can in turn cause water damage to the house and its installations (see fig. 3).

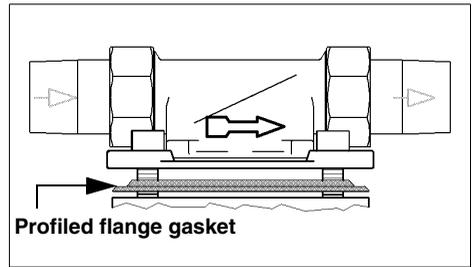


Fig. 3: Built-in rotary flange

## 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. If there is no wastewater connection an appropriately sized bucket can be used.

## 4.3 Backwashing process



ATTENTION



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

During the backwashing process hot water is discharged at the wastewater sockets – **careful - risk of scalding!**

If retrospectively installed in the heating system, the filter should be backwashed every 14 days until the backwashing water is clear. After this it suffices to backwash the system at the start and end of each heating period.

For backwashing the handwheel must be turned to the left up until the limit stop. This makes the integrated ball valve handle accessible from the front. By opening the ball valve the filter is backwashed (see chapter “Backwashing”).

### Caution – risk of scalding!

After approx. 2 to 3 liters of backwashing water has been flushed through the ball valve must be tightly closed again. Turn the handwheel back to the right up to the limit stop. This places the filter back in the operating position. The ball valve handle is now at the back of the filter again.

The heating water circuit must be returned to operating pressure by topping it up through the infeed point, unless a filling station has been installed. The expansion ves-

sel inlet pressure and the operating pressure must be set before the filter is put into service. They must be checked and set at least once a year.

The following points must be observed if a bucket is used for the backwashing:

- If the pressure is high water can splash out of the bucket and the end of the hose can fall out of the bucket. **Caution – risk of scalding!** In this case objects near the filter can be damaged.
- When the bucket is half full the backwashing process must be ended. Otherwise the bucket can overflow. Therefore the bucket must be adequately dimensioned (see fig. 4).

### 4.3.1 Backwashing water discharge options

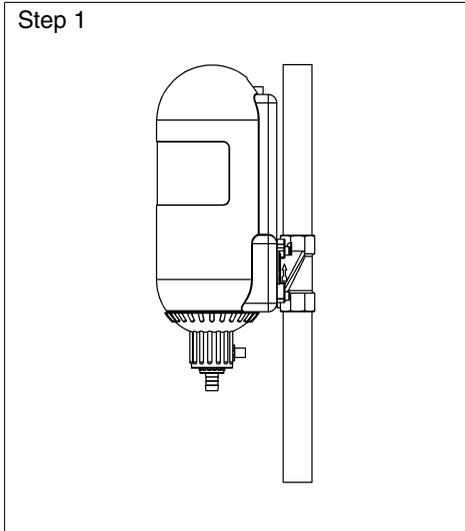


Fig. 4: Operation position

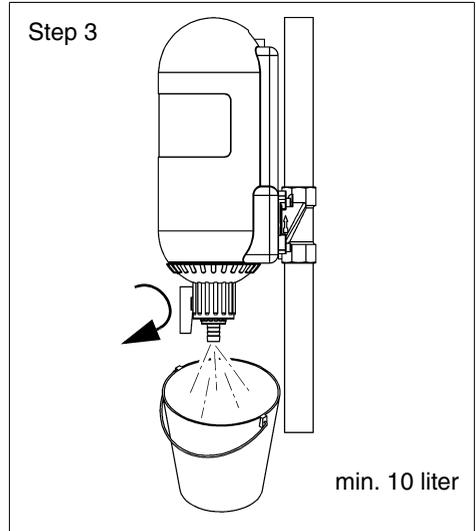


Fig. 6: The backwash performance will be started through the turning on of the flush-faucet. Hold available a collecting vessel with a capacity of 10 litres. Attention hot water, scald danger.

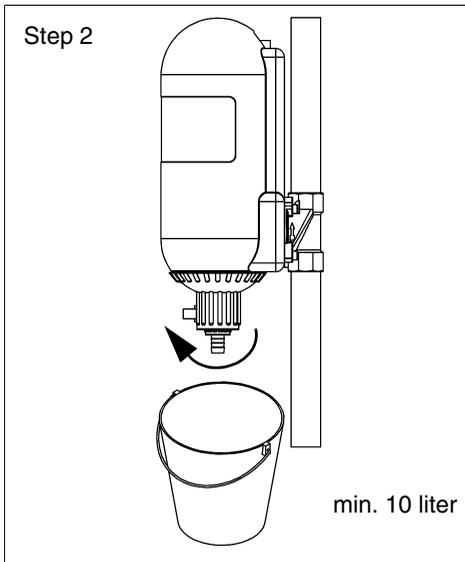


Fig. 5: Prior to the backwash performance turn the flush-faucet forth. Due to this an interruption of the flow-through of the device is brought about.

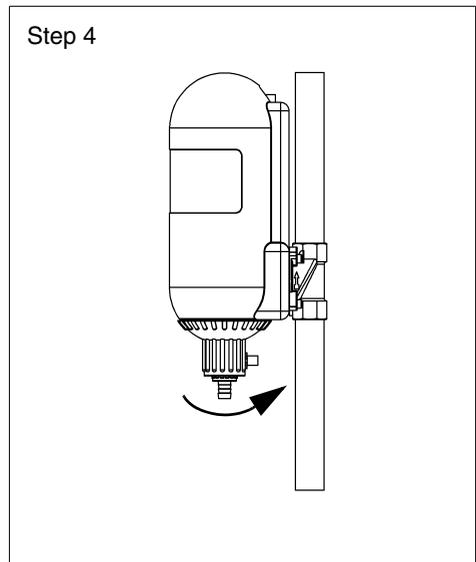


Fig. 7: Upon having finished the backwash performance, close the flush-faucet and turn it back. Other than that the device is inoperable.

## 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 do this, after installation the filter is brought to operating pressure by filling it at the infeed point of the heating water circuit.
- The filter is now under water pressure.
- The enclosed air is removed from the filter through the deaeration system. It is advisable to carry out a trial backwash after venting (see chapter “Discharging the backwashing water”).
- On the delivery status the sealing cap (7), positioned on the outlet of the exhauster is in a “one turn open” position, to ensure an unhindered escape of the air.
- After backwashing and venting the filter is ready for use.

### 5.2 Functional description

The heating water (a) flows through the built-in rotary flange (1) into the filter. This flushes the round filter brush (2) from below upwards. The dirt particles in the heating water (a) settle on the round filter brushes (2). Gas bubbles form in the heating water (a), which are collected by the round filter brushes (2) and are passed into the upper housing chamber (3). The heating water is degassed by a rapid venter (4) and the filtered and de-

gassed heating water (b) thus returns to the heating circuit.

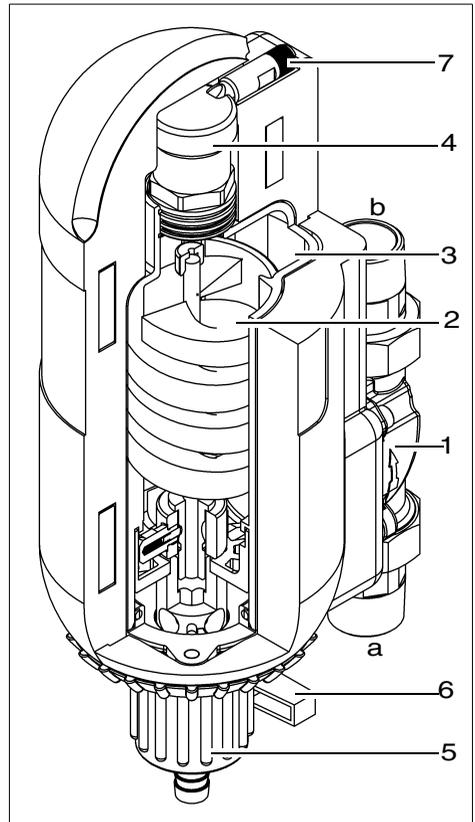


Fig. 8: Functional description

- 1 Built-in rotary flange
- 2 Round filter brush
- 3 Housing chamber
- 4 Rapid venter
- 5 Handwheel
- 6 Ball valve handle
- 7 Sealing cap
- a Heating water inlet
- b Filtered water

### 5.3 Backwashing

The filter must be backwashed (cleaned) at the prescribed intervals in order to remove the dirt particles (see chapter “Backwashing process”).



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

In the operating position the ball valve handle (6) on the handwheel (5) is at the back of the filter. The handwheel (5) must be turned to the left up to the limit stop for backwashing, so that the integrated ball valve handle (6) is accessible from the front. During this turning movement the inlet valve is closed internally and the dirt particles are brushed by the round filter brush (2).

The filter is backwashed by opening the ball valve.

#### Caution – risk of scalding!

During the backwashing the heating water flows from the top downwards (reversed flow) through the round filter brush (2), this flushes the dirt particles downwards through the open ball valve. After approx. 2 to 3 liters of backwashing water have been flushed through, the ball valve must be closed again tightly. Turn the handwheel (5) back to the right up to the limit stop. The filter is now in the operating position. The ball valve handle (6) is now back behind the filter (see fig. 7).

After backwashing the system pressure must be checked and, if necessary, filling water must be refed.

### 5.4 Backwashing interval

If the filter is installed retrospectively in old heating systems the backwashing should be carried out every 14 days until the backwashing water clears. After that it suffices to carry out the backwashing as for a new heat-

ing system, i.e. at the start and end of each heating period.

### 5.5 Modifications / changes / spare parts

Before working on the filter extending beyond pure operational controls, the filter must be depressurised and left to cool!

#### 5.5.1 Servicing / repair

Before working on the backwash filter extending beyond pure operational controls, the backwash filter must be depressurised and left to cool! Failure to observe this can lead to an uncontrolled escape of water and therefore lead to water damage in the building. Strictly comply with the instructions given in the “Installation” and “Maintenance” chapters.

### 5.6 Stoppages



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

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

- Protect the flange surfaces from damage! Damaged flange surfaces cannot close tight any longer. As a result, escaping water can damage the building and installations.
- Ensure that no dirt can get into the filter! Upon recommissioning this dirt can get into contact with the drinking water and be discharged into the drinking water. The health of people consuming polluted water is at risk.

- Store the filter in frost-free conditions! The water contained in the hollows of the filter can freeze due to frost and thus the filter can be mechanically damaged to a degree that it will become loose at operating pressure or that it can burst. Leaking water can cause major material-damages to the building. In addition, people near the filter can be injured by blistering filter parts.
- When recommissioning the filter, same course of action as applied to the new filter.

## 6. 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
Heating is cold!	The backwashing was not fully completed. The handwheel has not yet been turned back. (Ball valve handle at the front).	Turn the handwheel back to the right up to the limit stop. The filter is now back in the operating position!
	The heating system's circulating pump is defective.	Inform the fitter or your nearest customer service centre.
No backwashing water!	The expansion vessel or the heating system is depressurised.	Top up service water. Check the expansion vessel.
	A backflow preventer, a gravity brake or an automatic shut-off valve is installed in the direction of flow between the filter and the expansion filter.	Open the shut-off valve or if necessary install the filter in a more suitable location.
	In water heaters the heating circuit may be automatically shut-off by the heating of the water supply.	In this case you must wait until the service water has heated up.
Highly soiled backwashing water!	Backwashing intervals too long.	Reduce backwashing intervals.
Leak in the filter!		Inform fitter or nearest customer service centre.
Handwheel cannot be turned!		

## 7. Maintenance



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

Always observe the chapter “Intended use”!

### 7.1 Cleaning



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

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

Domestic all-purpose cleaners and glass cleaners can contain up to 25 % solvents or alcohol (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 receive your legal warranty rights, under DIN EN 806 - 5, it is necessary for the unit to be visually inspected and back-washed at least once before and after the heating period. If the heating water is severely soiled the backwashing must be repeated at 2-week intervals until a clear improvement occurs.

## 9. Data sheet

### 9.1 Type

JUDO HEIFI-TOP Backwash filter  
with deaeration system

Abbreviated name: JHF-T

### 9.2 Models

Model	Order no.
JHF-T ¾"	8060053
JHF-T 1"	8060054
JHF-T 1¼"	8060055
JHF-T 1½"	8060056
JHF-T 2"	8060057

### 9.3 Technical data

The following applies for all the models of the device:

- Maximum water temperature: 90 °C (194 °F)
- Threaded connection to DIN 2999.

#### Nominal pressure

Model	Operating pressure	Nominal pressure
JHF-T ¾" – 2"	22 - 150 psi (150 - 1000 kPa)	PN 10

#### Weight

Model	Weight
JHF-T ¾"	5.0 kg
JHF-T 1"	5.5 kg
JHF-T 1¼"	6.0 kg
JHF-T 1½"	15.0 kg
JHF-T 2"	16.0 kg

#### Water flow rate

Model	Water flow rate up to	Pressure loss after back-washing
JHF-T ¾"	2 m <sup>3</sup> /h (8.8 gpm)	0.9 psi (6 kPa)
JHF-T 1"	3 m <sup>3</sup> /h (13 gpm)	1.5 psi (10 kPa)
JHF-T 1¼"	4 m <sup>3</sup> /h (17.5 gpm)	2.6 psi (18 kPa)
JHF-T 1½"	6 m <sup>3</sup> /h (26.5 gpm)	1.5 psi (10 kPa)
JHF-T 2"	8 m <sup>3</sup> /h (35 gpm)	2.6 psi (18 kPa)

#### Back-flush volume stream

Model	Back-flush volume stream
JHF-T ¾"	0.2 - 0.4 l/s (3 - 6.5 gpm)
JHF-T 1"	0.2 - 0.4 l/s (3 - 6.5 gpm)
JHF-T 1¼"	0.2 - 0.4 l/s (3 - 6.5 gpm)
JHF-T 1½"	0.2 - 0.4 l/s (3 - 6.5 gpm)
JHF-T 2"	0.2 - 0.4 l/s (3 - 6.5 gpm)

The backwashing volumetric flow given applies to 29 - 44 psi (200 - 300 kPa) mains pressure and for a completely opened flushing water valve.

**9.4 Installed dimensions ¾" - 1¼"**

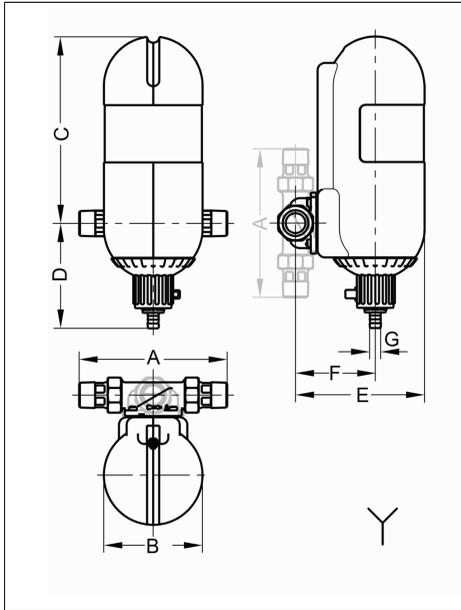


Fig. 9: Installed dimensions ¾" - 1¼"

Model	A	B	C	D	E	F	G
JHF-T ¾"	180 (7.0)	130 (5.0)	245 (10)	141 (5.5)	170 (6.7)	104 (4.0)	15 (0.6)
JHF-T 1"	195 (7.5)	130 (5.0)	245 (10)	141 (5.5)	170 (6.7)	104 (4.0)	15 (0.6)
JHF-T 1¼"	230 (9.0)	130 (5.0)	245 (10)	141 (5.5)	175 (6.9)	109 (4.0)	15 (0.6)

All dimensions in mm (inch) (see fig. 9)

Y = sewer junction necessary

A = Installation length

B = Unit width

C = Height above pipe centre

D = Height below pipe centre

E = Depth to pipe centre

F = Connection dimension residual water

G = Nominal diameter

**9.5 Installed dimensions 1½" - 2"**

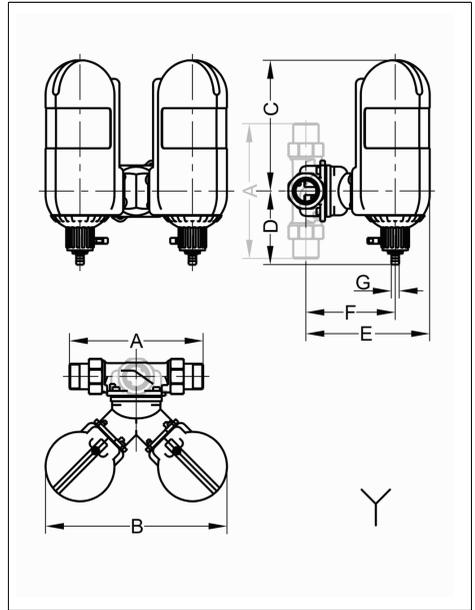


Fig. 10: Installed dimensions 1½" - 2"

Model	A	B	C	D	E	F	G
JHF-T 1½"	280 (11)	342 (13.5)	245 (10)	141 (5.5)	234 (9.2)	169 (6.7)	15 (0.6)
JHF-T 2"	280 (11)	342 (13.5)	245 (10)	141 (5.5)	234 (9.2)	177 (7.0)	15 (0.6)

All dimensions in mm (inch) (see fig. 10)

Y = sewer junction necessary

A = Installation length

B = Unit width

C = Height above pipe centre

D = Height below pipe centre

E = Depth to pipe centre

F = Connection dimension residual water

G = Nominal diameter

## 9.6 Extent of supply

- Pre-installed backwash filter
- Installation and operating Instructions

### **JHF-T ¾" – 1¼": (Male NPT thread)**

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

### **JHF-T 1½" – 2": (Male NPT thread)**

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

## 9.7 Accessories JHF-T ¾"-2"

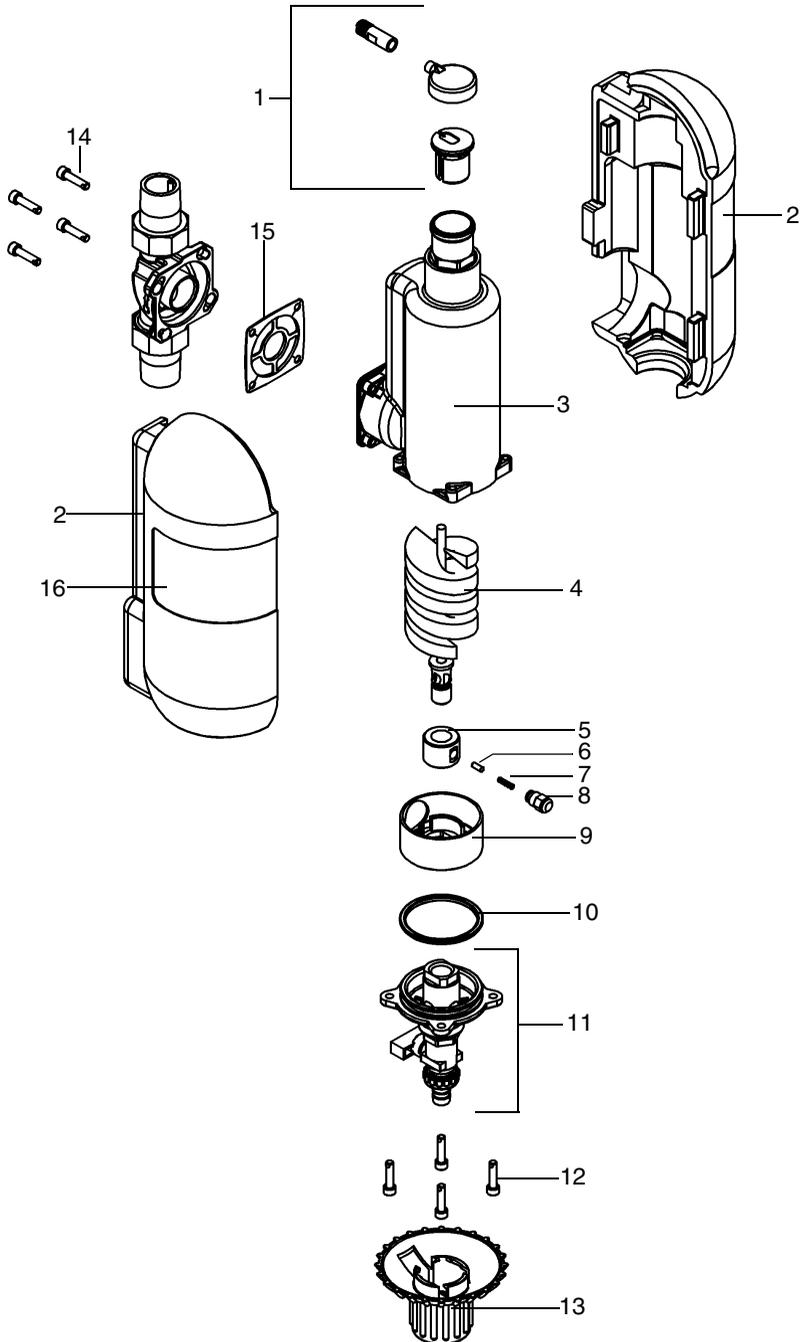
JHF-F feed station

Order no. 8060040

The JUDO HEIFI-FÜL feed station consists of a ball valve, pressure reducer, and manometer and type BA pipe disconnecter. The installed pressure reducer maintains a constant pressure and if the pressure drops the system is automatically topped up. This way the backwashing takes place with fresh water.

Ideally used in conjunction with the JUDO HEIFI-TOP backwash filter.

## 10. Spare parts



## List of spare parts JHF-T ¾" – 2"

Item	Designation (Recommended average replacement interval for wearing parts [**])	Piece(s)	Order no.
1	Spare parts kit vent Pro 163	1	1880011
2	Insulation shells (set)	1	1140093
3	Housing JUDO HEIFI-TOP	1	2060073
4	Circular brush, diameter = 60	****	1980214
5	Clamping nut	1	2060061
6	Dowel pin 4m6x10	1	1650226
7	Pressure spring	1	1650224
8	Lock housing	1	2060062
9	Shut-off valve	1	2060059
10	O-ring 60x4	****	1200397
11	Tappet cover complete	****	2060077
12	Allen screw M6x25	4	1633140
13	Hand wheel	1	1120565
14	Allen screw M6x25	4	2010199
15	Profiled flange gasket	**	1200218

Replacement interval

\*\* = 2 years

\*\*\*\* = 4 years

\*\*\*\*\* = 5 years

## 11. Customer service



### JUDO Water Treatment Inc.

240 Lesmill Road  
Toronto, ON M3B 2T5  
Canada

Telephone: (416) 441-1556

Toll-free (Canada/USA): (866) 451-5836

Fax: (416) 391-4273

Toll-free fax (Canada/USA): (877) 761-3335

e-mail: [info@judo-online.com](mailto:info@judo-online.com)

[judo-online.com](http://judo-online.com)

Installed by:

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.

1701610 • 2013/11