BERG Kompressoren GmbH
Compressed Air Technology | Air Separation

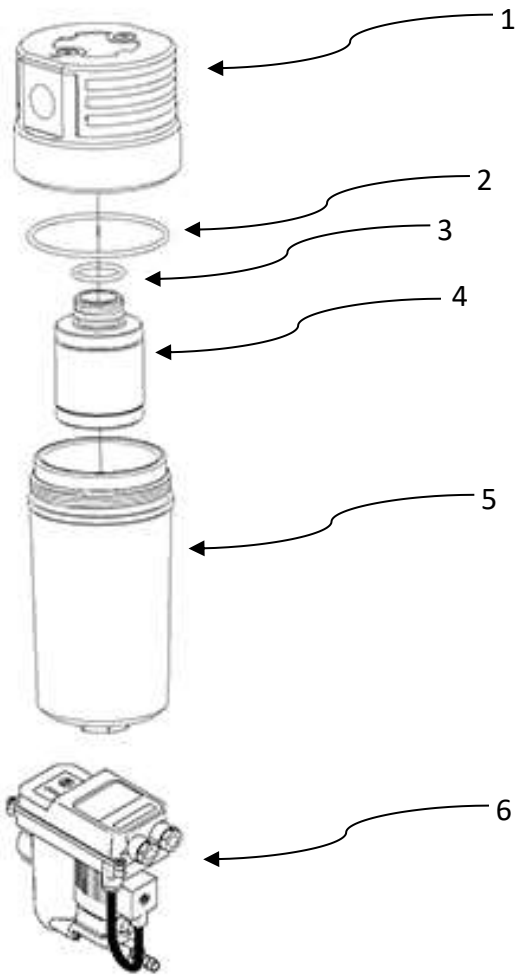
INSTALLATION AND OPERATING MANUAL

High pressure compressed air filter
PUREBERG FWHP50

Please read the following instructions carefully before installing filter into service. Trouble-free and safe operating of the filter can only be guaranteed if recommendations and conditions stated in this manual are respected.

CE

Components



	Part
1	Filter head
2	Housing sealing
3	Filter element sealing
4	Filter element
5	Filter bowl
6	Condensate drain (optional)

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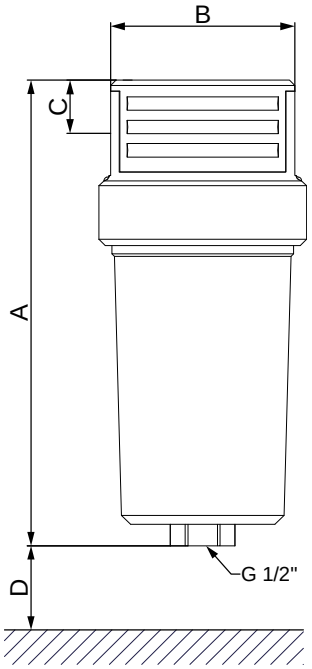
Technical data

TYPE	PIPE SIZE [inch]	FILTER ELEMENT	FLOW CAPACITY		DIMENSIONS [mm]				VOLUME [l]	MASS [kg]
			[Nm³/h]	[scfm]	A	B	C	D		
F 01 (type) WHP50	1/2	Element F 01 (type)WHP50	433	265	250	110	30	80	0,8	2,4
F 02 (type) WHP50	3/4	Element F 02 (type)WHP50	683	402	250	110	30	90	0,8	2,4
F 03 (type) WHP50	1	Element F 03 (type)WHP50	1244	732	250	110	30	140	0,8	2,4
F 05 (type) WHP50	1 1/2	Element F 05 (type)WHP50	1720	1012	535	160	45	260	4,0	6,1
F 07 (type) WHP50	1 1/2	Element F 07 (type)WHP50	2440	1433	535	160	45	360	4,0	6,1
F 08 (type) WHP50	2	Element F 08 (type)WHP50	3013	1775	715	160	45	540	5,5	13,0

Flow capacity at 7 bar(g), 20°C
*D dimension is applicable for Filter housing with no drain valve only.

Operating temperature	1,5 - 65 °C	35 - 149 °F
Operating pressure	0 - 50 bar(g)	0 - 725 psi



MATERIALS

Housing material	Aluminum
Fittings, Screws	Brass, Brass-zinc plated, Steel
Cover	ABS
Sealing	NBR*
Corrosion protection	Anodized (optional)
Outside protection	Powder paint coated (Epoxi-polyester base)
Lubricant	Shell cassida grease RLS 2*

*Filter sealing and lubricants depend on gas selected.

CORRECTION FACTORS

To calculate the correct capacity of a given filter based on actual operating conditions, multiply the nominal flow capacity by the appropriate correction factor(s).
CORRECTED CAPACITY = NOMINAL FLOW CAPACITY x C_{OP}

[bar]	17	18	19	20	25	30	35	40	45	50
C_{OP}	0,44	0,46	0,48	0,50	0,61	0,70	0,78	0,86	0,93	1

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PRESSURE EQUIPMENT DIRECTIVE PED 2014/68/EU (Fluid group 2)

F 01 (type) WHP50 - F 03 (type) WHP50	Article 4.3
F 05 (type) WHP50 - F 07 (type) WHP50	Category 1, Module H
F 08 (type) WHP50	Category 2, Module H

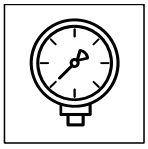
PRESSURE EQUIPMENT DIRECTIVE PED 2014/68/EU (Fluid group 1) (*)

F 01 (type) WHP50 - F 03 (type) WHP50	Article 4.3
F 05 (type) WHP50 - F 07 (type) WHP50	Category 2, Module H
F 08 (type) WHP50	Category 3, Module H

(*) The fluid group must be specified in the order. If not, standard fluid group 2 is selected.

There is a Technical datasheet available. For additional technical specification, contact manufacturer.

Safety instructions


The relevant safety at work and accident prevention regulations, plus operating instructions, shall apply for operating the filter. The filter has been constructed by the generally recognized rules of engineering. It complies with the requirements of directive 2014/68/EU concerning pressure equipment.

Ensure that installation complies with local laws for operation and routine testing of pressure equipment at the place of installation.

The operator/user of the filter should make himself familiar with the function, installation, and start-up of the unit. All the safety information is always intended to ensure your safety.

- Do not exceed the max. operating pressure or operating temperature range (see data label).
- The permissible working temperatures and pressures for ad-on parts and filter elements are given under Technical data for those add-ons. The maximum temperature and pressure for the assembled system are the lowest of any individual part.
- It is necessary to ensure that the unit is equipped with the corresponding safety and test devices to prevent the permissible operating parameters from being exceeded.
- The filter has been designed for primarily static pressure. Rapid changes in pressure are not allowed.
- Ensure that the filter is not subject to vibrations that could cause fatigue fractures.

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- A filter is not to be subjected to mechanical stresses.
- The medium used may not have any corrosive components that could attack the materials of the filter in a way that is not permitted. Do not use the filter in hazardous areas with potentially explosive atmospheres.
- All installation and maintenance work on the filter may only be carried out by trained and experienced specialists.
- It is forbidden to carry out any work on the filter and piping, including welding and constructional changes, etc.
- A pressure gauge, which shows the operational pressure, must be installed in the unit, respectively, in the pipeline.
- Depressurize the system before carrying out the installation work. The unit must be installed vertically in the piping.
- Ensure that the filter is installed without any stresses.
- Use original spare parts only.
- Use the device for an appropriate purpose only.

Appropriate use

PUREBERG FWHP50 series filters are designed for high efficient removal of solid particles, water, oil aerosols, hydrocarbons, odor and vapors from compressed gas systems. This appliance must be used only for the purpose for which it was specifically designed. All other uses are to be considered incorrect.

Specifically:

- filter is not intended for human breathing without proper additional equipment.

Warning: internal corrosion can seriously reduce the safety of installation: check it during changing the cartridge.

The manufacturer will under no circumstances be responsible for any damage resulting from improper, incorrect, or unreasonable use.

Use genuine spare parts only. Any damage or malfunction caused by the use of ungenuine parts is not covered by Warranty or Product Liability.

The filter and filter elements must be stored indoors in a dry place. Store them in original packing until they are used.

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Installation

Operations should be performed only by qualified personnel. Never operate with installation under pressure. The user is responsible for ensuring that the filter never operates at a pressure exceeding the nominal values. Eventual over-pressure could be dangerous and hazardous to the operator and the equipment.

Danger due to the release of a critical gas!
The release of a critical (Fluid group 1) gas from the network can constitute a considerable risk for man and environment. Therefore heed the following before working on filters for critical gases:

- flush the pipe section in question with inert gas
- have the notes on hazardous substances for the used gas ready
- take appropriate protection measures

<u>The filter assembly and installation procedures are as follows:</u>

- If provided, install the pressure drop indicator or the Differential Pressure Gauge (optional) on the filter head.
- Connect the filter head to the compressed gas piping and check that the gas flow corresponds to the direction of the arrow positioned on the filter head cap.
- Clean the piping and the filter head outlets accurately, remove any shaving, slaver, or scrap from tooling.
- Lubricate the O-ring and the sealing surfaces of the filter head and cartridge, use proper grease for the application selected.
- Fit the filter cartridge on the filter head by screwing it to the thread.
- Fit the filter bowl and tight it accurately.
- Filters must always be installed in a vertical position with sufficient space around. The minimum distance (D in the technical data table) has to be assured under the filter bowl, which is necessary for filter cartridge change.
- Stick the adhesive label showing the month and year for the next filtering element change (max. one year) on the filter bowl.
- Slowly pressurize the installation and check it for leakage.

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Maintenance

Hazard due to a sudden release of pressure!
Never remove any parts of the filter, for as long as the filter is still pressurized!
Depressurize the filter before carrying out any work on the filter.

Danger due to the release of a critical gas!
The release of a critical (Fluid group 1) gas from the network can constitute a considerable risk for man and environment. Therefore heed the following before working on filters for critical gases:

- flush the pipe section in question with inert gas
- have the notes on hazardous substances for the used gas ready
- take appropriate protection measures

Filter elements are subject to wear. To maintain system efficiency, optimal performance, and best air quality, these rules of proper maintenance should be followed:

- Never use unsuitable tools to open and close the filter housings.
- Replace filter elements, as stated in the filter element product data-sheet.
- The housing O-ring can be damaged during the filter element change. To prevent gas leakage and malfunction, replace housing O-ring if necessary. For replacement contact manufacturer.
- Damaged components are to be replaced by new ones. If a marked degree of damage is found, the entire filter is to be replaced.
- The filter has been designed for a life of 10 years, in the normal operating environment. After 10 years, periodical checks of filter integrity are strongly recommended for safe operation.
- Slowly apply pressure and carry out a check for leaks once the maintenance work has been finished.

<u>Disposing of filter elements:</u>
The filter element or cartridge might be contaminated by the filtered substances. Heed the notes on hazardous substances for the filtered gas and appropriate disposal regulations when disposing.

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Warranty exclusion

The guarantee shall be void if:

- The operating instructions were not followed with respect to initial commissioning and maintenance.
- The unit was not operated properly and appropriately.
- The unit was operated when it was clearly defective.
- Non-original spare parts or replacement parts were used.
- The unit was not operated within the permissible technical parameters.
- Unauthorized constructional changes were made to the unit or if parts of the unit that may not be opened were dismantled.

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