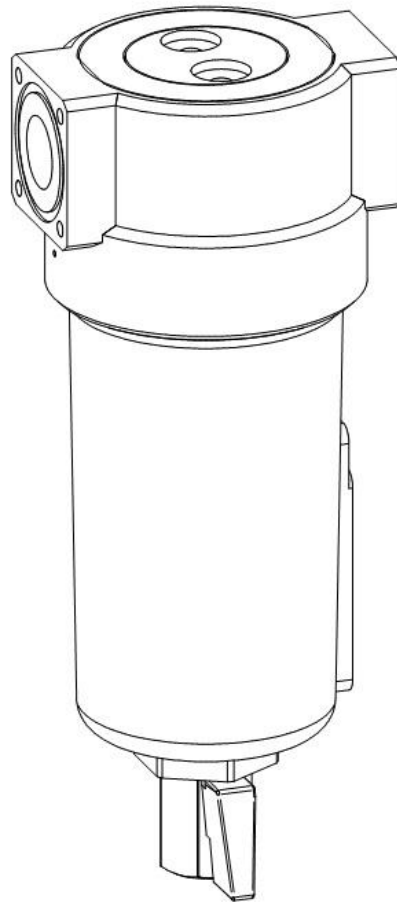




# Installation and operating manual

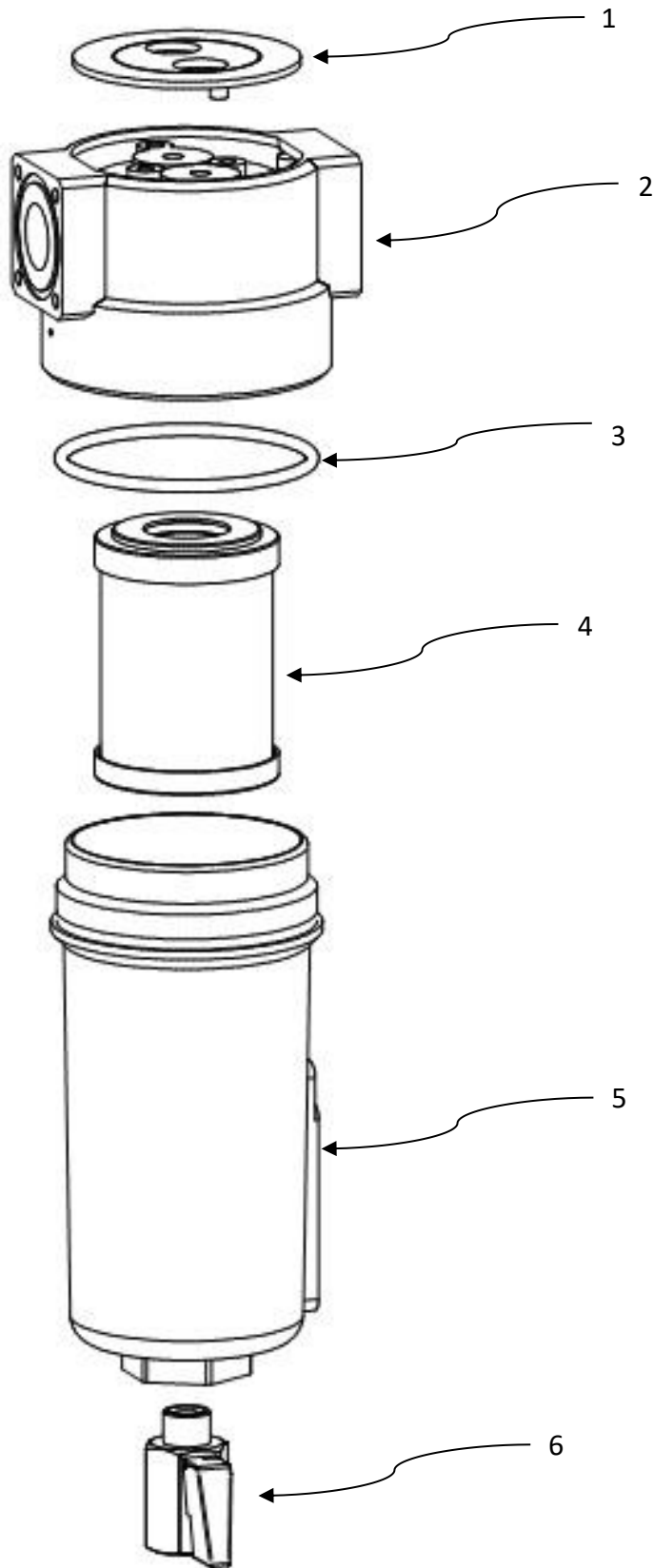
P-VAC



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



## Components



Part	
1	Head cover
2	Filter head
3	O-ring
4	Filter element
5	Filter bowl
6	Ball valve

### Technical data

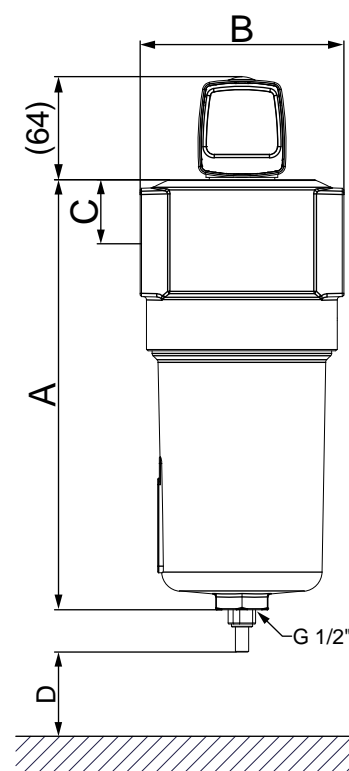
FILTER HOUSING	PIPE SIZE [inch]	FILTER ELEMENT	Capacity <sup>(2)</sup>		DIMENSIONS [mm]				VOLUME [l]	WEIGHT [kg]
			[Nm <sup>3</sup> /h]	[scfm]	A	B	C	D		
P-VAC 0056	3/8"	06050 VACP, VACM	7,5	4,4	192	88	25	60	0,49	0,6
P-VAC 0076	1/2"	07050 VACP, VACM	9,8	5,7	192	88	25	60	0,49	0,6
P-VAC 0106	3/4"	14050 VACP, VACM	15,0	8,8	262	88	25	80	0,68	0,7
P-VAC 0186	1"	12075 VACP, VACM	24,8	14,6	264	125	39	100	1,57	1,2
P-VAC 0306	1"	22075 VACP, VACM	41,9	24,7	364	125	39	120	2,1	1,6
P-VAC 0476	1 1/2"	32075 VACP, VACM	63,8	37,6	464	125	39	140	2,7	1,9
P-VAC 0706	1 1/2"	50075 VACP, VACM	97,5	57,4	644	125	39	160	3,8	2,6
P-VAC 0946	2	51090 VACP, VACM	125,0	73,6	696	164	50	520	6,1	5,7
P-VAC 1506	2	76090 VACP, VACM	187,5	110,4	943	164	50	770	8,3	7,6
P-VAC 1756	2 1/2"	76090 VACP, VACM	210,0	123,6	943	164	50	770	8,4	7,3
P-VAC 2006	3"	51140 VACP, VACM	270,0	158,9	801	242	60	630	16,7	14,1
P-VAC 2406	3"	75140 VACP, VACM	345,0	203	998	242	60	780	21,3	16,7

<sup>(2)</sup>Free air capacity at atmospheric pressure

Operating temperature	1,5 - 65 °C	35 - 149 °F
Operating pressure	20 - 2000mbar(abs)	0,29 – 29 psi
Initial pressure drop VACM	30mbar	0,45 psi
Initial pressure drop VACP	10mbar	0,15 psi

### MATERIALS

Housing material	Aluminum
Fittings, Screws	Brass, Brass-zinc plated, Steel
Cover	ABS
Sealing	NBR
Corrosion protection	Anodized
Outside protection	Powder paint coated (Epoxy-polyester base)
Lubricant	Shell cassida grease RLS 2
Filter media	Borosilicate micro fibers,
Drainage media	Polyester
Support (inner-outer)	Stainless Steel 1.4301
Bonding	Polyurethane
Endcaps	PA6 with 30% glass fibers
Sealing	NBR



## 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  $C_1$ .
- To select a filter to match system flow conditions, multiply the system flow by the correction factor  $C_2$  that corresponds to vacuum in the pipe.

<b>[bar] absolute</b>	1	0,9	0,8	0,7	0,6	0,5	0,4	0,3	0,2	0,1	0,05	0,02
<b>[psi] absolute</b>	14,7	13	11,6	10,2	8,7	7,3	5,8	3,3	2,9	1,45	0,73	0,29
<b><math>C_1</math></b>	1	0,9	0,8	0,7	0,6	0,5	0,4	0,3	0,2	0,1	0,05	0,02
<b><math>C_2</math></b>	1	1,1	1,25	1,43	1,67	2	2,5	3,33	5	10	20	50

There is 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 in accordance with 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.

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 personal safety.

- Do not exceed 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 ad-ons. Maximum temperature and pressure for assembled system is 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.
- Filter has been designed for a primarily static pressure. Rapid changes of pressure are not allowed.
- Ensure that the filter is not subject to vibrations that could cause fatigue fractures.
- 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 kind of 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 filter is installed without any stresses.
- Use original spare parts only.
- Use the device for appropriate purpose only.

### Appropriate use



P-VAC filters are intended for protection of vacuum pumps. 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 can only be used for "GROUPE 2" fluids (PED 2014/68/EU).
- filter can not be used for explosive, toxic, flammable, corrosive and "GROUPE 1" fluids (PED 2014/68/EU).

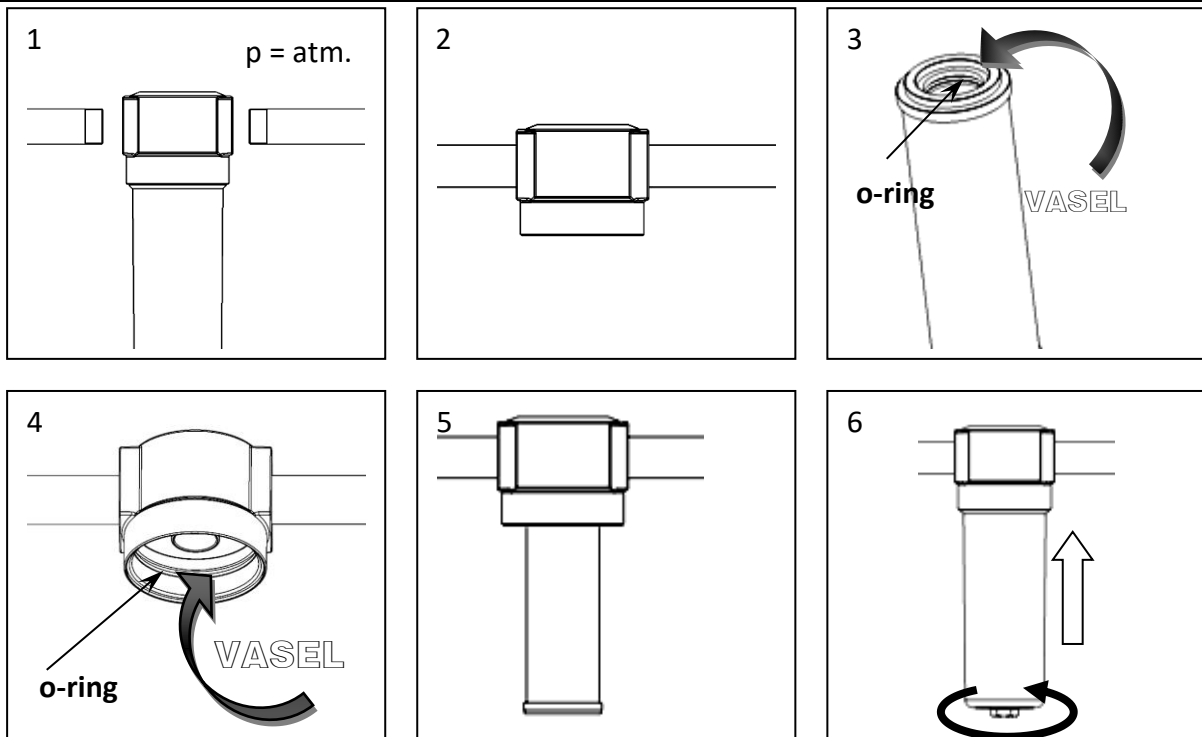
Warning: internal corrosion can seriously reduce the safety of installation: check it during changing the cartridge.

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 unguenuine parts is not covered by Warranty or Product Liability.



## Installation



- Depressurize the system before carrying out any work on the piping. Connect the filter head to the piping and check that the airflow corresponds to the direction of arrow positioned on the filter head cap.
- Lubricate the O-ring and the sealing surfaces of the filter head and filter cartridge.
- Fit the filter cartridge on the filter head simply by pressing, tightness is ensured by one O-ring. (Models 0946 to 2406: Fit the filter cartridge on the filter head centring the filter bottom hole with screwed rod. Tight the hexagonal nut and fix the element.) Fit the filter bowl and tight it accurately.

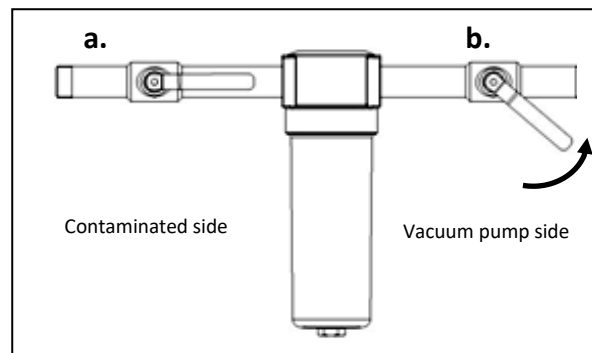
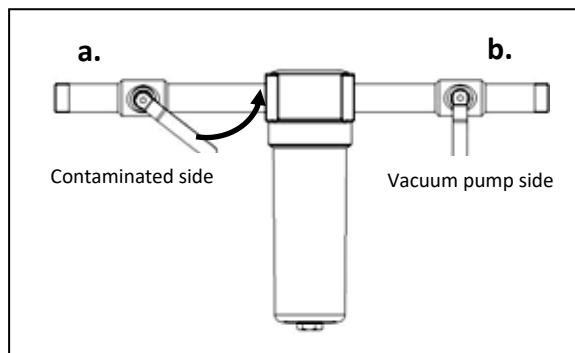
## Starting up

### Before initial commissioning

- 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 changing.
- All the screwed connections of the pressure vessel must be done up to the required and max. permissible tightening torque for the screws and bolts.
- Make a visual check! There must be no external damage visible.
- Your unit can be equipped with various components. Note the permissible working pressures and permissible temperatures for the components. You can find information in the relevant operating instructions and also from the type plate of your unit or its components.
- Make a check for leaks!

### Initial commissioning

- First slowly open the (a) valve.
- Slowly apply pressure to the system by opening the (b) valve.



## Maintenance

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

- Replace filter element every 12 months or follow the instructions for specific filter element. Change the sealing when you disassemble filter housing. Once per year make a visual check of filter housing and make sure there is no visual damage.
- The housing O-ring can be damaged during filter element change. To prevent air 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.
- Filter has been designed for a life of 10 years in normal operating environment. After 10 years periodical checks of filter integrity are strongly recommended for safe operation.
- Carry out a check for leaks once the maintenance work has been finished.
- 

## 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.
- Unauthorised constructional changes were made to the unit or if parts of the unit that may not be opened were dismantled.

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