Instructions for Use

VBA Range

179550500 Rev 2

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1 INTRODUCTION

The Instructions for Use (IFU) contain important information covering installation, operation and maintenance for gas filter housings, including important safety and handling information. These instructions should be retained to provide guidance on the safe use of the equipment.

Please read and understand this manual prior to de-crating and installation.

This document applies to Parker supplied ranges with the following the code structures:

VBA - XX - X E

Code	Cartridge Height	End cap	Connection Size
2B	2.5 "	Trueseal	DN10 (1/4")
5B	2.5 "	Trueseal	DN10 (3/8")
7B	2.5 "	Trueseal	DN15 (1/2")
9B	2.5 "	Trueseal	DN20 (3/4")
11A	5 "	Trueseal	DN25 (1")
12A	5 "	Trueseal	DN32 (1.25")
13A	5 "	Trueseal	DN40 (1.5")
141	10 "	C-Style	DN50 (2")
142	20 "	C-Style	DN50 (2")
182	20 "	C-Style	DN65 (2.5")
193	30 "	C-Style	DN80 (3")

Code	Connection Type
A	DIN 11850 Weld End
B	BSPP Female

Code	Seal
E	EPDM

User Safety Responsibility Statement for All Parker Products

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyse all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalogue and in any other materials provided from Parker or its subsidiaries or authorized distributors.

To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

2 DEFINITIONS AND SYMBOLS

Key terms are defined below, and symbols are included in Table 1.

IOMI – Installation, operation and maintenance instructions

Filter Housing - Vessel or container for filter cartridges or elements operating greater than atmospheric pressure (pressure envelope)

Vessel - a housing designed and built to contain fluids under pressure including its direct attachments up to the coupling point connecting it to other equipment; a vessel may be composed of more than one chamber.

Filter Cartridge - Filter element installed inside the 'housing' with a sealing feature

PED - Pressure Equipment Directive 2014/68/EU

PPE - Personal Protective Equipment

Fluid - Gases, liquids and vapours in pure phase as well as mixtures thereof; fluids may contain a suspension of solids.

	General prohibition - instructs when certain behaviours or actions are not allowed
	Mandatory signs – instructs that a course of action must be undertaken
	Warning signs - used to identify potential hazards.

CE	CE Conformity Mark

Table 1

3 GENERAL SAFETY INFORMATION

A filter housing is potentially hazardous if used improperly, and without complying with the instructions included in this document. This document describes permissible uses, applicable safety regulations and prescribes training for maintenance personnel – refer to Table 2.

	• Do not perform unauthorised modifications or repairs; Parker is not liable for any modifications undertaken by end users. • Do not operate outside of the pressure and temperature rating – refer to section 4. • Do not install in an active seismic zone or where weather may impart additional loads. • Do not use in an ATEX designated zone, unless the filter housing is rated to do so with the appropriate control measures implemented that conform to the governing regulations, directives and standards in the country of use. • Do not use with fluids and/or under conditions that are different to the design specification. • Do use in a manner that is deemed contrary to specific national or regional regulations. • Do not use spare parts that are not specific to the model or type of filter housing installed.
	• Compliance to National and local codes of practice, environmental regulations and Health & Safety directives have precedence over this guidance.[1] • Installation, operation and maintenance should only be performed by competent personnel using appropriate risk assessment methodology. • Read and understand any documentation provided for the accessories and comply with the instructions for use. • Suitable protective systems should be fitted to prevent out of control events. • Filter housings must be supported to connecting pipework, as they are not designed to sustain load, vibration or cyclic loading. • The filter housing should be maintained and inspected regularly to ensure it meets the design specification during its service life.
	• If the filter housing shows signs of damage it must not be placed into service. • Residual process fluid in the filter housing or on used filters cartidges may lead to injury or death. • Rapid depressurisation may lead to injury or death. • Poorly installed, operated and maintained pressure equipment may lead to injury or death.

Table 2

[1] Directive 2014/68/EU relating to the making available on the market of pressure equipment

4 TECHNICAL INFORMATION

	• Ensure the process fluid is compatible with the materials of construction of the filter housing and accessories.
	• Incompatible process fluids may impact the design specification of the filter housing resulting in injury or death.

Table 3

4.1 Product Description

Refer to the Parker general arrangement drawing number 179503030 for details of the filter housing; further information can be found in the product specific data sheets.

4.2 Housing – General Layout

A general layout identifying the major components is included in Figure 1.

Pos.	Description
1	Closure Locking Ring
2	Vent Plug (1/4" BSP)
3	Housing Bowl
4	Filter Cartridge
5	Closure Seal
6	Housing Head
7	Drain Plug (1/4" BSP)

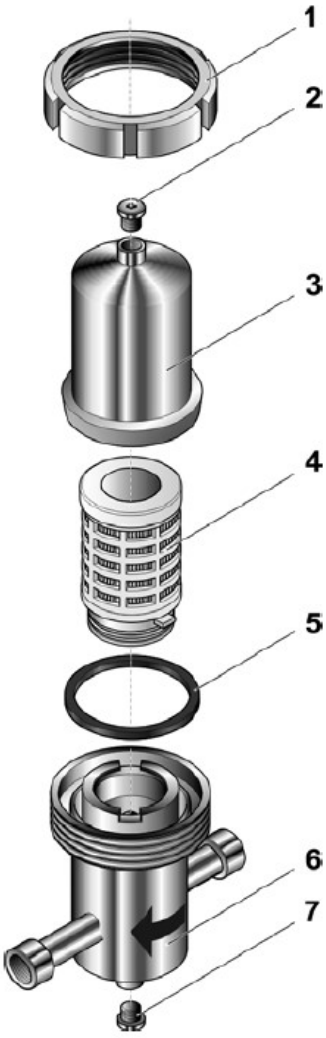


Figure 1

4.3 Spare Parts

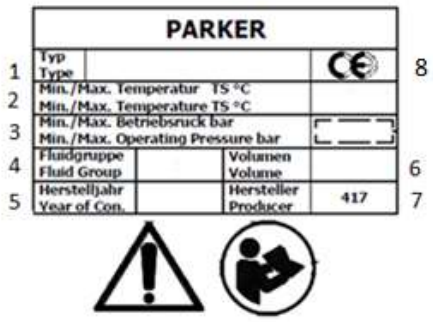
For replacement seals, contact your local Parker representative. Refer to Table 4, for seal kit part numbers.

Housing	Seal Type	Size	Kit Part Number	Kit Part Code
VBA-2B VBA-5B VBA-7B VBA-9B	**Aseptic P-Seal (EPDM)**	DN65	639504151	XHSEP00DN65
VBA-11A VBA-12A VBA-13A		DN80	639504152	XHSEP00DN80
VBA-141 VBA-142		DN100	639504153	XHSEP00DN100
VBA-182 VBA-193		DN125	639504154	XHSEP00DN125

Table 4

4.4 Data Label

A data label is etched to the main filter housing body to provide important information about the specification; see Figure 2.



Pos.	Description
1	Parker Part Code
2	Design Temperature (°C)
3	Design Pressure (Bar)
4	PED Fluid Group
5	Year Built
6	Volume (Litres)
7	Fabricator Number
8	CE mark (and notified body number on PED Category II and higher). Refer to 4.5

Figure 2

4.5 Declaration of Conformity

Filter housings shall display the CE mark and will be supplied with an EU Declaration of Conformity when the PED inspection level is Category I or higher. Where the PED inspection level is Category II or higher, the filter housing nameplate will include the notified body stamp/number. (see Figure 2)

5 INSTALLATION

Please read and understand this document before installing the filter housing and accessories. Refer also to the general safety information in Table 2.

	• Avoid subjecting the pressure equipment to external stresses. • Do not use the filter housing or accessories if there are signs of damage either to the shell or sealing faces.
	• Ensure that connecting pipework is adequately supported, so as not to impose local loads and vibrations onto the filter housing nozzles. • Check for any damage on receipt of the product; inform the supplier immediately of any damage and await instructions whether to proceed. • Packaged filter housings should be stored in a dry environment. • Ensure the use of appropriate PPE during installation. • Ensure necessary and correct handling, assembly, tightening and checking of all joints following installation and maintenance of the filter housing. • Ensure that no stray electrical currents are being transmitted to the filter housing that may result in corrosion or perforation of metal parts; eliminate the source and /or earth appropriately. • Perform a full system check before first use.
	• Filter housings may be heavy – follow site safety controls for manual or mechanical handling to avoid harm.

Table 5

5.1 Receiving and Handling

a) Check for any damage on receipt of the product; inform the supplier immediately of any damage and await instructions whether to proceed.
b) It is recommended to unpack the filter housing near to final installation location to avoid unnecessary movement.
c) Use care when unpacking the filter housing to prevent damage to the contents.
d) Check that no small parts, documentation or certification are disposed of with the packing.
e) Filter housings may be heavy – follow site safety controls for manual or mechanical handling to avoid harm.
f) Immediately notify the supplier if there are too many parts or if parts are missing and await instructions.

5.2 Storage

a) Packaged filter housings should be stored in a dry environment.
b) Use caution if stacking boxes and/or crates; always follow the instructions on the outside of packaging.

5.3 Installation Location

a) Protect the installed equipment from mechanical damage that may impact the integrity of the pressure envelope (i.e. physical barriers and appropriate warning signs).
b) Ensure to check that the housing is not subject to vibration, thermal expansion and undue load on the nozzles or connections.
c) Use appropriate supports to prevent stresses and moments on the filter housing nozzles.
d) Ensure the filter housing is installed in a location with adequate clearance to allow cartridge change out.
e) The filter housing should be installed so that accidental leaks cannot be dispersed into the environment.
f) Take all due measures to prevent fires that could impact the integrity of the pressure envelope.

5.4 Connection and Assembly

a) Safely isolate all supply lines that will connect to the filter housing.
b) Install adequate protective equipment i.e. pressure relief valves within the pressure system to prevent an overpressure situation.
c) All connections to the filter housing, including accessories, should be made by competent personnel.
d) If the housing is damaged during installation then contact the supplier immediately and await instructions.
e) Unscrew the body closure locking ring and set the filter housing head and bowl onto a suitable, level surface to avoid damage.
f) Carefully clean the housing with hot water and suitable detergents designed for stainless steel.
g) Rinse the filter housing with chlorine free to minimise the risk of corrosion. Pay special attention to areas near edges, joints and seals.
h) Observe the direction of flow marked with arrows on the filter housing, when connecting the inlet and outlet.
i) Ensure necessary and correct handling, assembly, tightening and checking of all joints following installation of the filter housing.
j) Conveyancing tubes should be attached to all drain valves and discharges points to prevent fluid from harming personnel, property or the local environment.

6 Operation and Maintenance

Please read and understand this document before operating or maintaining the filter housing. Read and understand any manuals supplied with the filter cartridges and accessories. Refer also to the general safety information in Table 2.

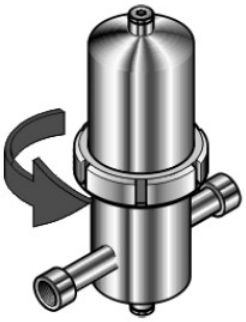
	• Do not touch the filter housing or pipework unprotected, if they are processing hot fluids. • Avoid subjecting the pressure equipment to external stresses. • Never open the filter housing closure system during operation.
	• Ensure that the filter housing has been fully depressurised and any liquid has been drained before dismantling the housing. • Ensure that the filter housing, accessories and connections are sealed and the drain valves are closed before operation.
	• Residual process fluid in the filter housing or on used filters cartidges may lead to injury or death. • Rapid depressurisation may lead to injury or death.

Table 6

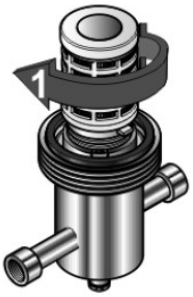
6.1 Filter Cartridge Installation and Replacement

To remove or replace the filter cartridge in the filter housing the procedure in this section should be followed. Additionally, a risk assessment and any control measures identified should be implemented and the local environment should be declared safe, prior to opening the housing.

a) Once the environment has been declared safe, use a C-spanner to loosen the locking ring and remove the housing bowl.



b) Turn the filter cartridge to the removal position of the twist lock end cap (step 1).



c) Remove the used filter cartridge (step 2)

For disposal of the used filter cartridge refer to section: Decommissioning and Disposal

d) Fit the replacement filter cartridge in accordance with the instructions provided in the filter cartridge IOMI.

Inspect the components for signs of damage and/or replace as part of a maintenance schedule. This includes the housing closure seal. Remove any residue or particles.

e) Replace the filter bowl and secure the locking ring, using a C-spanner to tighten (step 3 and step 4).

6.2 Start Up and Operation

a) Ensure that the filter housing, accessories and connections are sealed before operation.
b) Ensure the drain valves and isolation valves are closed, if applicable, before operation.
c) Turn on the supply and partially open the inlet isolation valve to allow the housing to pressurise.
d) Inspect for leaks and remedy.
e) Fully open the inlet isolation valve.
f) Partially open the downstream isolation valve to start flow.
g) Inspect for leaks and remedy.
h) Fully open the outlet isolation valve.

6.3 Housing Maintenance

a) Always be vigilant of pressures, temperatures and redisual process fluid when performing maintenance on the filter housing.
b) Always isolate the filter housing from the process, depressurize and drain process fluids before opening.
c) Frequently inspect the condition of pressurised parts, accessories and connections for corrosion, abrasions, deformation due to blows, breakage or any other abnormal condition which could lead to the onset of a hazardous situation.
d) Replace worn parts with those designed for the filter housing. Check the condition of filter housing seals each time the cartidges are replaced; replace if damaged. It is recommended that the seals are replaced annually except for PTFE and/or FEP seals that should be replaced each time the filter housing is opened.

7 Decommissioning and Disposal

Table 7 contains guidelines for safe disposal of materials; local laws take precedence.

What	Materials	Disposal Route
Filter housing packaging Filter packaging	Wood, cardboard, plastic film and packaging supports	Wood – widely recyclable Cardboard - widely recyclable Plastic film – potentially recyclable (check locally) Packaging supports - potentially recyclable (check locally) Avoid landfill, where possible, and use incineration to energy schemes.
Consumables and filter cartridges	Elastomers, polyolefins, thermoplastics (potentially contamination)	Non-hazardous waste - avoid landfill, where possible, and use incineration to energy schemes. Hazardous waste – follow local regulations.
Filter Housing	Stainless steel	Recyclable after decontamination (check locally).

Table 7

8 Trouble Shooting

Refer to Table 8 for possible faults and remedies.

Event	Cause	Risk	Remedy
Localized corrosion with perforation of components bathed by the fluid	▪ Process fluid incompatible with the housing material ▪ Insufficient surface cleaning (removal of beginning of corrosion) ▪ Presence of stray currents	Fluid leakage and/or explosion	Replace corroded components. Contact Parker representative for further advice
Pressure gauge improperly set – the pointer does not go back to its zero position	▪ Overpressure	Fluid leakage and/or explosion	Replace part
Closure elements seized	▪ Wear or incorrect use	Closure element ceases to work properly	Replace closure locking ring or housing (contact your local Parker representative)
Leakage of fluids from access connections to the tank	▪ Inadequately tightened connections ▪ Contamination on seal faces ▪ Excessive load applied to connections	Fluid leakage and / or damage to the filter housing	Re-torque connections Clean sealing faces Use pipeline holders
Bowl falls to a hard surface	▪ Incorrect handling ▪ Lifting system not conform to bowl weight and not safety lock	Damage to the pressure envelope / loss of integrity	Replace part
Corrosion	▪ Fluid not compatible with housing material ▪ Chlorine ions ▪ Ferrous particles deposited ▪ Eddy currents	Fluid contamination Corroded element ceases to work properly Reduced mechanical strength leading to failure below design rating	Contact supplier; remove corroded zone; check the earthing

Table 8

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