

1/2"-3" Threaded Vacuum Breaker Models 100VB to 103VB

Operation, Maintenance and Installation Manual

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VAL-MATIC'S 1/2"-3" VACUUM BREAKER OPERATION, MAINTENANCE AND INSTALLATION

INTRODUCTION

The Vacuum Breaker has been designed with stainless steel trim to give years of trouble-free operation. This manual will provide you with the information to properly install and maintain the valve to ensure a long service life. The Vacuum Breaker is designed to open fully and allow air to enter the piping system during critical vacuum conditions caused by power failure or rapid draining of the system.

NOTE: The vacuum breaker will not allow air to escape from the pipeline. An optional air release valve piped near the vacuum breaker would be needed to release accumulated air during system operation.

Also, this valve is not intended for fluids containing suspended solids such as wastewater.

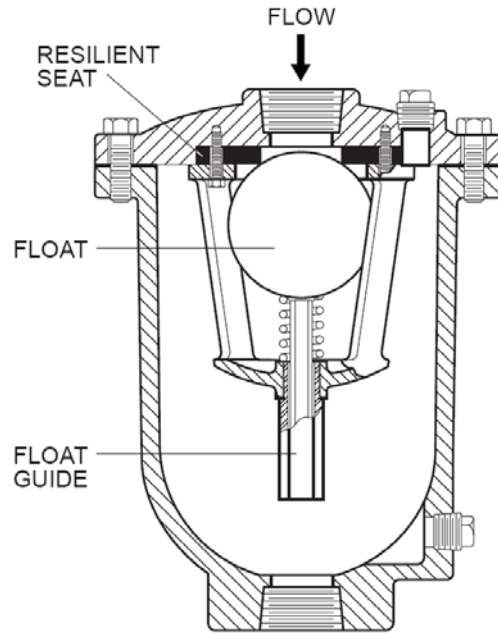


FIGURE 1. 1/2"-3" VACUUM BREAKER

CAUTION: This valve is not intended for fuel service or fluids containing suspended solids.

DESCRIPTION OF OPERATION

The Vacuum Breaker is designed to prevent vacuum conditions from occurring in pipes or tanks. After a power failure or rapid draining of the system, a vacuum condition often occurs in a pipe or tank. The pressure difference between the inside vacuum and outside air will cause a downward force on the float. At vacuum pressures greater than -0.25 psig, the float will compress the spring and move downward allowing free flow of outside air into the pipe or tank to eliminate the vacuum.

When positive pressure is restored in the pipe or tank, the vacuum breaker will automatically close and seal tightly against the resilient seat. Optional valves can be piped to the vacuum breaker to vent trapped air in the pipeline if needed.

The valve may be supplied with an optional threaded hood for insertion into the top of the valve. The only moving parts in the valve are the float and the spring. The float guide controls the movement of the float and assures that the float contacts the seat evenly.

The valve is a float-operated, resilient-seated valve designed to handle clean fluids. The Size, Maximum Working Pressure, and Series No. are stamped on the nameplate for reference.

RECEIVING AND STORAGE

Inspect valves upon receipt for damage in shipment. Unload all valves carefully to the ground without dropping.

Valves should remain boxed, clean and dry until installed to prevent weather related damage. For long term storage greater than six months, the rubber surfaces of the seat should be coated with a thin film of FDA approved grease such as Lubriko #CW-606. Do not expose seat to sunlight or ozone for any extended period.

INSTALLATION

The installation of the Vacuum Breaker is important for its proper operation. The seat end must be oriented upward. The device should be installed on top of horizontal lines or tanks and equipped with a full-ported isolation valve. If installed in a vault, adequate ventilation is needed to supply air to the vacuum breaker.

If leakage occurs at the pipe connection, torque valve tighter or reapply pipe dope to threaded joint.

VALVE CONSTRUCTION

The Vacuum Breaker body and cover are cast iron. All internal components are stainless steel with the exception of the valve seat which is resilient. The float (5) and float guide shaft (20) are the only moving parts assuring long life with minimal maintenance. The general details of construction are illustrated in Figure 2. The body (1) is threaded for connection to the pipeline. The seat (4) is retained in the cast cover (2). The seat (4) is retained by a baffle (3).

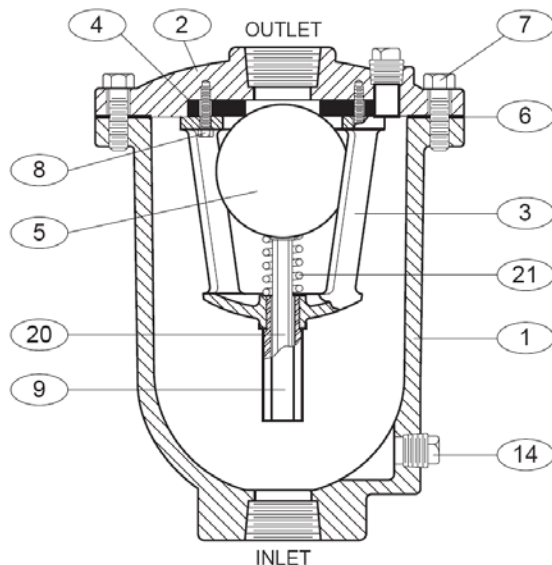


FIGURE 2. 1/2"-3" VACUUM BREAKER

ITEM	DESCRIPTION	MATERIAL
1	Body	Cast Iron
2	Cover	Cast Iron
3	Baffle	Ductile Iron
4	Seat*	Buna-N
5	Float*	Stainless Steel
6	Gasket*	Non-Asbestos
7	Cover Bolt	Alloy Steel
8	Retaining Screw*	Stainless Steel
9	Guide Bushing*	Stainless Steel
14	Pipe Plug	Iron
20	Guide Shaft*	Stainless Steel
21	Spring*	Stainless Steel

*RECOMMENDED SPARE PART

TABLE 1. 1/2"-3" Vacuum Breaker Parts List

MAINTENANCE

The Vacuum Breaker requires no scheduled lubrication or maintenance.

TROUBLESHOOTING

Several problems and solutions are presented below to assist you in troubleshooting the vacuum breaker assembly in an efficient manner.

•Leakage at Bottom Connection: Tighten threaded connection. If leak persists, remove device and seal threads with Teflon sealant.

•Leakage at Cover: Tighten bolts, replace gasket.

•Device Leaks when Closed: Inspect seat for damage and replace.

DISASSEMBLY

The device can be disassembled without removing it from the pipeline. Or for convenience, the device can be removed from the line. All work on the valve should be performed by a skilled mechanic with proper tools.

WARNING: The line must be drained before removing the cover or pressure may be released causing bodily harm.

DISASSEMBLY (continued)

1. Close inlet shut-off valve. Open drain valve or remove drain plug. Remove the cover bolts (7) on the top cover.
2. Pry cover (2) loose and lift off body (1).
3. Remove retainer bolts (8) and inspect seat for cracks in rubber or wear in sealing surface.
4. Turn guide bushing (9) to remove it from the cast baffle (3).
5. Clean and inspect parts. Replace worn parts as necessary.

RE-ASSEMBLY

All parts must be cleaned and gasket surfaces should be cleaned with a stiff wire brush in the direction of the serrations or machine marks. Worn parts, gaskets and seals should be replaced during reassembly.

1. Apply Loctite to guide bushing threads (9) and thread bushing into baffle (3). Insert float shaft into float (5).
2. Lay seat (4) over inverted cover with flat surface directed toward cover.
3. Install float assembly and spring (21) and baffle over seat and secure with retaining bolts (8) at 10 ft-lbs.
4. Lay cover gasket (6) and cover (2) over bolt holes in body (1).
5. Insert lubricated bolts (7) and tighten to the torques listed in Table 2.

<u>SIZE</u>	<u>TORQUE (FT-LBS)</u>
5/16"	10
3/8"	24
1/2"	59
5/8"	117

TABLE 2. VALVE COVER BOLT TORQUES

PARTS AND SERVICE

Parts and service are available from your local representative or the factory. Make note of the valve Size, Series No, and Serial No. located on the valve nameplate and contact:

Val-Matic Valve and Mfg. Corp.
905 Riverside Drive
Elmhurst, IL 60126
PH: 630/941-7600
FAX: 630/941-8042

A sales representative will quote prices for parts or arrange for service as needed.

LIMITED WARRANTY

All products are warranted to be free of defects in material and workmanship for a period of one year from the date of shipment, subject to the limitations below.

If the purchaser believes a product is defective, the purchaser shall: (a) Notify the manufacturer, state the alleged defect and request permission to return the product; (b) if permission is given, return the product with transportation prepaid. If the product is accepted for return and found to be defective, the manufacturer will, at his discretion, either repair or replace the product, f.o.b. factory, within 60 days of receipt, or refund the purchase price. Other than to repair, replace or refund as described above, purchaser agrees that manufacturer shall not be liable for any loss, costs, expenses or damages of any kind arising out of the product, its use, installation or replacement, labeling, instructions, information or technical data of any kind, description of product use, sample or model, warnings or lack of any of the foregoing. NO OTHER WARRANTIES, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY, ARE MADE OR AUTHORIZED. NO AFFIRMATION OF FACT, PROMISE, DESCRIPTION OF PRODUCT OF USE OR SAMPLE OR MODEL SHALL CREATE ANY WARRANTY FROM MANUFACTURER, UNLESS SIGNED BY THE PRESIDENT OF THE MANUFACTURER. These products are not manufactured, sold or intended for personal, family or household purposes.



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