COLONIAL VALVE
A DIVISION OF COLONIAL ENGINEERING, INC.

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601 SERIES PVC WAFER CHECK VALVE - INSTALLATION & OPERATION

PLEASE READ THE FOLLOWING INFORMATION PRIOR TO INSTALLING AND USING COLONIAL VALVES and STRAINERS, AND OTHER ASSOCIATED PRODUCTS. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS INJURY.

1. Colonial Valve guarantees its products against defects in material and workmanship only. Colonial Valve assumes no responsibility for damage or injury resulting from improper installation, misapplication, or misuse of any product.
2. Colonial Valve assumes no responsibility for damage or injury resulting from chemical incompatibility between its products and the process fluids to which they are subjected. Compatibility charts provided in Colonial Valve literature are based on ambient temperatures of 70ºF and are for reference only. Customer should always test to determine application correctness.
3. Consult Colonial Valve literature to determine operating pressure and temperature limitations before installing any Colonial Valve product. Note that the maximum recommended fluid velocity through any Colonial Valve product is FIVE feet per second. Higher flow rates can result in possible damage due to water hammer effect. Also note that maximum operating pressure is dependent upon material selection as well as operating temperature.
4. Colonial Valve products are designed primarily for use with non-compressible liquids. They should NEVER be used or tested with compressible fluids such as compressed air or gas.
5. **Systems should always be depressurized and drained prior to installing or maintaining valves.**
6. Temperature effect on piping systems should always be considered when the systems are initially designed. Piping systems must be designed and supported to prevent excess mechanical loading on Colonial Valve equipment due to system misalignment, weight, shock, vibration, and the effects of thermal expansion and contraction.
7. Because PVC plastic products become brittle below 40ºF, Colonial Valve recommends caution in their installation and use below this temperature.

Colonial 601 Series PVC Wafer Check Valves are designed to fit between two ANSI B16.5, Class 150 or DIN Flanges. The valves contain o-ring seals that mate with the flange sealing surface, so no gaskets are required for installation. The valves feature locating ears that center the valve during installation. The ears can be set for ANSI or DIN. Make sure that the locating "ears" on the valve are set for ANSI, as shown in the photo below right, for use with ANSI Class 150 Flanges, and are in the upward position as shown in Illustration A on page 2.

No spacers are required when installing with Sch 80 flanges.

FLANGE CONNECTION:

Use properly sized flat washers under every nut and bolt head. Failure to do so may lead to premature flange failure due to high stress concentrations. Bolts and nuts alone create a high stress point that not only cut into the plastic, but can cause failure in the flange. Washers distribute and reduce the bending force. See Table below for proper bolt, nut and washer sizes, and torque.

Pipe Size (in)	No. of Bolt Holes	Diam. Of Bolt (in)	Hex Head Bolt Length (in)*	Hex Nut Size	Flat Washer OD	Required Torque (ft.lbs)
2-1/2	4	5/8	4	5/8	1-5/16	20-30
3	4	5/8	4	5/8	1-5/16	20-30
4	8	5/8	4.5	5/8	1-5/16	20-30
6	8	3/4	5	5/8	1-5/16	33-50

*Length when using PVC Van Stone (loose-ring) type flanges

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Clean and inspect flange sealing surfaces for dents and any other damage prior to assembly. Bolts and nuts should be clean and lubricated. Make sure bolt holes freely align and that flange faces are parallel to each other. Make sure that one end of the system is free to move enough to allow the faces to come together during tightening. Do not hang excessive weight from a flange. These steps need to be taken to prevent mechanical loading on the pipe and flanges. Tighten nuts in small increments with a wrench holding the bolt head and a torque wrench tightening the nut. Flange faces must remain parallel during bolt-tightening. Uneven tightening and / or over-torqueing will damage flanges. Tighten in a sequential, crisscross manner.

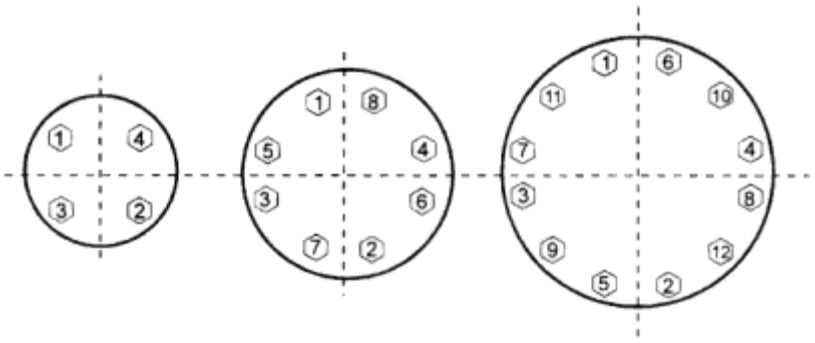
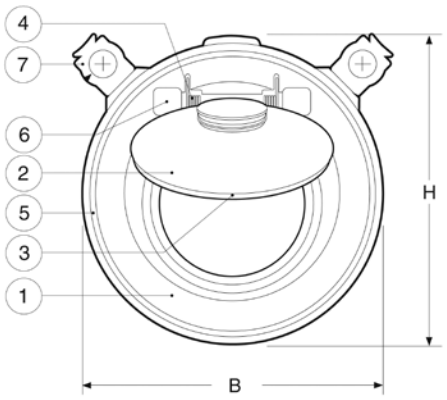


Illustration A



INSTALLATION PRECAUTIONS:
The following should be observed when installing onto the discharge side of a pump:

- **Never install the valve directly to a pump**
- **Never install the valve directly to a bend or elbow**
- **Install all wafer check valves a minimum of 5 times the nominal pipe diameter downstream of pumps, elbows or valves.**
- **Pressure rated up to 145 psi (non-shock water at 73º F).**

Maintenance: (Refer to the drawing upper right. Part numbers for valves and repair-parts are in the table below)
O-rings can be replaced by simply removing the valve from the flanged connection. The two body o-rings (5) and disc o-ring (3) will be accessible.

To disassemble for further maintenance:
After removing from the flanged connection, hold the disc (2) out in the open position while also grasping the body (1).
Pull the disc outward. This will release the hinge plugs (6) and allow the disc to separate from the body.
You can now slip the spring (4) off of the disc-hinge.
If the Locating Ears (7) come loose during the disassembly process, please be sure to re-insert them with ANSI facing out for ANSI flanges, DIN facing out for DIN flanges.

Be sure to install with the FLOW ARROW in the correct direction

Be sure to install with locating EARs positioned upwards as shown in Illustration A above.

Part Numbers – Valves **Part Numbers – Repair-parts**

SIZE	PVC/EPDM	PVC/FKM	SIZE	Ctn Qty	Wgt (lbs)	Cv* Values	EPDM O-ring Kit	FKM O-ring Kit	SPRING	DISC	Hinge plugs and Locating Ears (Kit)
2-1/2	V27601N	V27602N	2-1/2	1	0.40	70	V27601NR	V27602NR	V27601S	V27601D	V27601H
3	V30601N	V30602N	3	1	0.50	100	V30601NR	V30602NR	V30601S	V30601D	V30601H
4	V40601N	V40602N	4	1	0.80	220	V40601NR	V40602NR	V40601S	V40601D	V40601H
6	V60601N	V60602N	6	1	2.30	710	V60601NR	V60602NR	V60601S	V60601D	V60601H