



— SERIES — **DBO**

Duckbill Check Valves Slip-Over Style

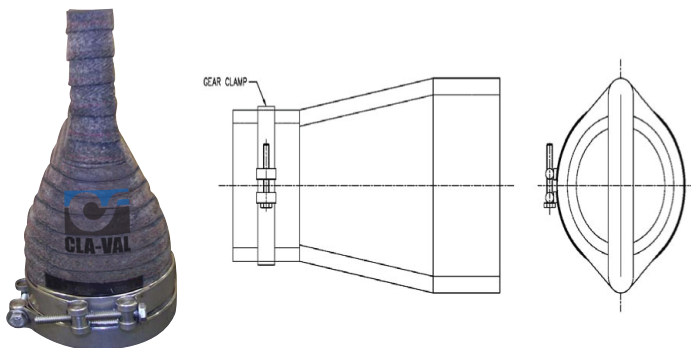
Installation Procedures For DBO Style Check Valves

Preferred Orientation

For all styles, bill (lips) should be installed in as close to a vertical position as possible. Only with the bill (lips) in a vertical position, can the check valve function properly. Installing the check valve in a position that is not vertical may prevent the check valve from closing. In cases where clearance is minimal, special consideration to mounting orientation may be made. Please consult factory.

Small Check Valve Installation with hose style clamps (10" and Under)

1. Circumference of the pipe must be smooth and free of burrs and sharp edges. It will prevent cutting the check valve.
2. After the check valve is safely positioned, install the clamp(s). If the valve has two clamps, they should be rotated relative to each other for 90 degrees. It will ensure even pressure, making the clamps more effective. A thin coat of mild lubricant or glycerine may be applied on the inner surface(s) of the clamp(s). It will reduce the friction when tightening the clamp(s).
3. Ensure a snug fit over the pipe and be careful not to over torque the clamps; by doing so, you could cut the rubber. The recommended torque values for gear clamps for 1 3/4" opening and under is 3 ft-lbs and for over 1 3/4" opening is 5 ft-lbs or as otherwise noted by Cla-Val Technical Department. **Do not use a lubricant to ease the installation of the valve on the pipe. It will cause the valve slip off the pipe.**



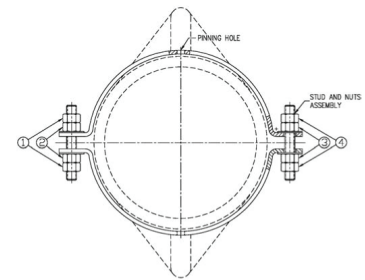
Larger Check Valve Installation with "U" Shape Split Clamps (12" and Up)

1. Circumference of the pipe must be smooth and free of burrs and sharp edges. It will prevent cutting the check valve.
2. After the check valve is safely positioned, install the clamp(s). If the valve has two or more clamps, they should be rotated relative to each other equally. It will ensure even pressure on the common surface in between the cuff and the pipe, and as a result it will produce higher effectiveness of the clamps. A thin coat of mild lubricant or glycerine may be applied on the inner surface(s) of the clamp(s). It will reduce the friction when tightening the clamp(s).
3. When clamping the check valve, the sets of nuts 2 and 3 are used to clamp the valve to the pipe. Tighten them until you have taken the slack off the nut and the cuff is snug up to outside of pipe. Using a torque wrench torque set at 10 ft-lbs, torque it down to a snug fit, to a point where you can't physically remove the valve from the pipe without damaging the check valve. Use 20 ft-lbs torque setting on valves 32" and up. The sets of nuts 1 and 4 are

use to lock in place the sets of nuts 2 and 3 so not to have the clamp come loose.

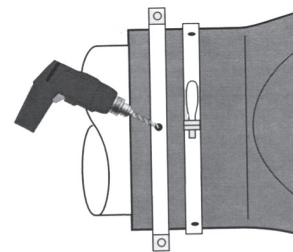
4. We recommend that check valves 24" and larger should be pinned to the outfall line. The potential energy generated on an outfall on large diameter check valves could be quite large, and could have a tendency to push the check valve off the outfall pipe. The metal clamps on large size check valves (12" and larger) are provided with drilled holes for pinning bolts. Use these holes as a drilling pattern for drilling the holes through the rubber and the outfall pipe. Installed bolts should be at 90 degrees to the clamp. See Duckbill Clamp Installation Section for clarity. This type of installation can also be done on a smaller valve, provided that the factory has all information at time of quote.

5. On check valves of 18" and larger, it is recommended that a nylon sling be used to assist in the installation of the valve.



Securing Check Valve Instruction

For check valves over 24", clamps are secured using a standard steel drill bit and drill holes through the cuff. Insert stainless steel bolts through the cuff and secure opposite side with stainless steel nut and washers. Holding bolts are not supplied with valves due to various thicknesses of outfall pipes.



After desired tightness is achieved, heads of holding bolts can be tack welded to the clamps using tiny tacks. Certain installations will not permit installing of nuts to bolts. In these situations, the bolts may be tack welded to the clamps, the tightness of the clamps and tack weld of bolts will assure good support.

