

Check-All Valve Application Guidelines

The following information is provided to assist in the selection of components when specifying or using Check-All Valve® products. It is presented for **general information only** and should not be considered an all-inclusive list, nor should it replace the on-sight process engineering required to properly apply any valve.

Installation/Mounting

Check-All® valves can be used in horizontal or vertical applications with proper spring selection. This is most evident in vertical flow down installations. Minimum recommended net cracking pressure of 0.125 psi for most valves. The spring selected must be heavy enough in vertical flow down installations to support the weight of the trim in addition to any column of liquid desired to be retained. Consult the factory or your local Check-All Valve® representative for further information.

Elbow, Tee or other Flow Skewing Device

Check-All® valves are best suited for use with fully developed flow. Although there are many factors affecting the achievement of fully developed flow (such as media, pipe roughness and velocity) usually 10 pipe diameters of straight pipe immediately upstream of the valve is sufficient. This is particularly important after flow skewing devices such as elbows, tees, centrifugal pumps, etc.

Valve Material Selection

There are many factors that influence the resistance of materials to corrosion, such as temperature, concentration, aeration, contaminants and media interaction/reaction. Check-All Valve® will provide any assistance it can regarding the selection of products; however, the decision as to specific application of the valves and the materials of construction is beyond the scope of supply of Check-All Valve® products. This is the sole responsibility of the customer based upon his or her own evaluation.

Seat Material Selection

Several seat material options are available for Check-All® valves. The allowable leakage rate associated with the “metal-to-metal” as well as the PTFE o-ring seat, is 188 cc/min per inch of line size, when tested with air at 80 PSI. Resilient o-ring seats are available for a “bubble tight” shut-off (no visible leakage allowed at 80 PSI air as defined by MSS SP-61). All o-ring seats are limited to a maximum operating pressure of 1500 PSI.

Sizing and Spring Selection

Check-All Valve® recommends sizing check valves to ensure proper valve operation and service life. Valves can be sized using the equations on page 49. **Sizing accuracy requires the valve to be fully open, which occurs when the pressure drop across the valve reaches or exceeds three times the spring cracking pressure (five times for 3S valves).** Contact the factory or your local Check-All Valve® representative for further information or assistance.

Shock-Load Applications

Check-All® valves are not designed for use in a shock-load environment, such as the discharge of a reciprocating air compressor. These types of applications produce excessive impact stresses which can adversely affect valve performance.

Fluid Quality

Check-All® valves are best suited for clean, particle-free liquids or gasses. Debris such as sand or fibers can prevent the valve from sealing properly or it can erode internal components or otherwise adversely affect valve travel. These particles should be filtered out prior to entering the valves.

Insert Series Valves

Check-All® Insert series valves such as the F1, F6, LP, UV, etc. are designed to use the existing pipe as part of the valve body. This provides a very cost effective solution for valve requirements. As such, part of the valve functions inside the existing pipe; therefore, dimensional clearance must be maintained for proper valve operation. See the pertinent catalog pages or contact the factory or your local Check-All® representative for more information.