

Sharpe® Ball Valves for Vacuum Service

Sharpe High Performance 3-piece and full or regular port flanged ball valves can be supplied for vacuum service. Orders and inquiries for vacuum service valves must include all service conditions and vacuum level to ensure that the correct product configurations are supplied or offered.

There are a number of different methods for expressing the level of vacuum in a service application, which can result in confusion on what level of vacuum applies. Vacuum is classified by the American Vacuum Society as follows:

Atmospheric Pressure: 760 mm Hg (absolute)
or 0 inches Hg (vacuum)
or 14.7 PSI (absolute)

Low Vacuum: From "Atmospheric Pressure" to
25 mm Hg (absolute)
or 28.95 inches Hg (vacuum)
or 0.484 PSI (absolute)

Medium Vacuum: From "Low Vacuum" to
0.001 mm Hg (absolute)
or 1×10^{-3} Torr
or 1 micron

High Vacuum: From "Medium Vacuum" to
 1×10^{-6} mm Hg (absolute)
or 1×10^{-6} Torr
or 1×10^{-3} micron

Ball Valve Limitations for Vacuum Service:

1. Standard "off-the-shelf" valves with no special preparation can be used in industrial vacuum service under favorable conditions, through part of the Medium Vacuum range to 0.020 mm Hg (2×10^{-2} Torr or 20 microns). These valves are not recommended for use in the "High Vacuum" range.
2. Only valves with virgin PTFE or TFM® seats and seals are recommended for vacuum service. Satisfactory performance cannot be assured with RTFE, Nova, or other alternative seats.
3. "Favorable conditions" are clean service applications which do not include transport of solids or abrasives by vacuum, and which are within the normal operating temperature range of PTFE seats and seals. Valves which are operated at high cycle rates should be expected to require more frequent maintenance to ensure proper performance.