

Valve Selection Guide

The proper valve selection can prevent failures, replacements, repairs, downtime and lost production. Note the following basic avenues of approach when selecting a valve.

1. Evaluate the system criteria of each application.
2. Utilize the expertise of a qualified sales representative.
3. Consider safety, reliability and suitability to the environment

The following criteria should be considered to assure you select the correct valve and materials of construction:

Process Parameters:

- Pressure
- Temperature
- Flow

Process Capability:

- Concentration
- % Of solids
- Specific Gravity (sg)
- Media

Process Requirements

- On/Off verses control service
- Emission Control
- Allowable leakage rate
- Structural considerations and space available
- Cost of ownership
- Industrial Regulations: ANSI/ASME, EPA, OSHA, FDA, 3A, MSS

The following information is provided as a service to the End User, Consultant, A&E, or Technical Representative recommending or purchasing a valve

Ball Valves

Ball valves are excellent in most clean liquid and gas applications when the proper alloy, stem seals and seat materials are specified. Ball valves are available in a variety of configurations, including 3-piece, 2-piece, and 1-piece. End connections available are, screwed end (NPT), socket end, butt weld end, and flanged in 150 ANSI, 300 ANSI, 600 ANSI and 900 ANSI. The ball valve in higher pressure configuration are also available.

The advantages of a ball valve include ease of operation, high flow capacity, standard face-to-face dimensions, high pressure and temperature limits, and the ability to handle severe service chemicals. The quarter turn operation is an advantage to most operators plus they are easy to automate with electric or pneumatic actuators. The face-to-face dimensions

comply with ASME, making the ball valve easy to retrofit and replace in line with most other types of valves. The ball valve temperature limits are dependent on the seal and seat materials.

Ball valves are available in full port and reduced port designs. The benefits of these flow parameters are reduced pump size and less systems wear due to lower velocities.

Always read and follow the Manufacturer's recommended procedures for installing the valves properly.

Butterfly Valves

Butterfly Valves are normally used in large line sizes in waste and water treatment, chemical service and many other applications where the valve's materials of construction are compatible with the media. The butterfly valve design incorporates a small face-to-face dimension and lower weight than most valve types; the butterfly valve is an economical choice for larger line sizes. The ASME pressure classes adhere to most manufacturers specifications.

The butterfly valve is considered a high flow valve, since only the disc obstructs the valve flow path. The Cv is generally high and the pressure drop across the valve is low compared to a globe type valve.

The quarter turn operation is an advantage to most customers, plus the butterfly valve is easy to automate with electric or pneumatic actuators.

Extra care should be taken when selecting the seat and disc materials for the valve. The body material is less critical since the flow media does not come in contact with the body of the valve. However, when selecting the body material, consideration should be given to the atmospheric conditions.