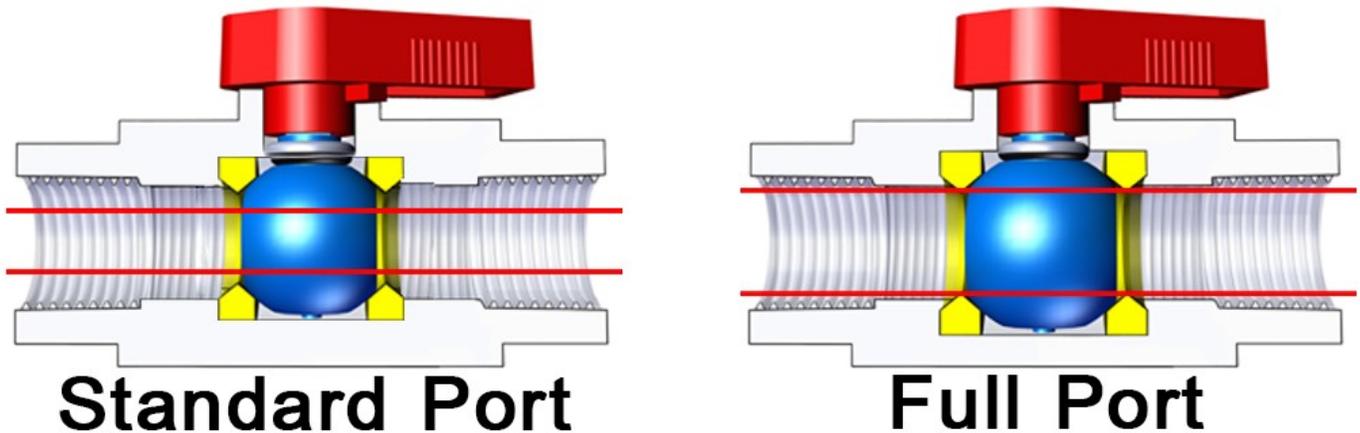


Full Port Ball Valves vs Standard Port

The difference is the relative size of the flow path through the valve body



Bore Size

- The difference between a standard ball valve and a full-port ball valve is in the size of the ball and bore in relation to the nominal pipe size of the valve. For example, the bore size in a 3/4-inch full-port ball valve is 3/4-inch in diameter, while the bore diameter in a standard ball valve is 1/2-inch in diameter. Ball sizes are in proportion to bore sizes. The 1/2-inch diameter is the nominal size of the next smaller pipe. This is typical. Full-port bore size equals pipe size; standard-port bore size is the next smaller pipe size.

Nominal pipe size (NPS) is the approximate internal diameter of standard pipe based on its wall thickness, its Schedule. For example, take a piece of North American standard 2-inch steel pipe. It will probably be referred to as 2-inch nominal steel pipe, Schedule 40. This standard pipe will have an inside diameter of about 2-1/8 inches and an outside diameter of about 2-5/8 inches. [Learn more about nominal pipe size at Werner Sölken's Explore the World of Piping website.](#)

Flow Coefficient

- The flow coefficient is a measure of the resistance to flow of a given part of a fluid system. It is used to calculate the length of straight pipe equivalent to an elbow or valve or anything else that affects the flow. The flow coefficient for a full-port ball valve is almost as low as that of straight pipe so it provides minimal resistance to flow and thus creates only a small pressure drop. The standard-port ball valve has a higher flow coefficient and thus causes a larger pressure drop for a given flow.

It is the sole responsibility of the system designer and user to select products suitable for their specific application requirements and to ensure proper installation, operation, and maintenance of these products. Material compatibility, product ratings and application details should be considered in the selection. Improper selection or use of products described herein can cause personal injury or product damage.



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Wikipedia has a concise but dense [explanation of flow coefficient](#). As a plus, it includes information on the metric system version called **flow factor**. The more technically minded of us here at ISM are partial towards [The Engineering Toolbox version](#) because it includes online flow calculators for air, gases and classes of steam.

[Get more insights into the differences between full port and standard port ball valves.](#)

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