Valve Selection Guide

API RECOMMENDED PRACTICE 615
FIRST EDITION, JUNE 2010

AMERICAN PETROLEUM INSTITUTE

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Downstream Segment

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Suggested revisions are invited and should be submitted to the Standards Department, API, 1220 L Street, NW, Washington, DC 20005, standards@api.org.

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Introduction

API Recommended Practice (RP) 615 was developed to aid in the selection of valves for the Hydrocarbon Processing Industry (HPI), which includes refineries, petrochemical and chemical plants, and the various processes associated with them. This RP may assist in the selection of valves for other industrial processes, such as power or general industry process applications. The task force members who developed this document represent many years of experience in the design and selection of valves and are comprised of professionals from manufacturing, engineering contractors, and end users.

The objective of this RP is to disseminate suggested information on valve selection recommendations as an aid to reduce operational problems and maintenance costs.

While this RP provides guidance on the selection of valves, the valve specifier or end user is required to pay particular attention to, and is ultimately responsible for, all aspects of the application involving process, metallurgical and mechanical considerations.

Typical purchase descriptions are provided in an Annex to assist in the complete definition of valve details to help ensure that the correct product is specified for the intended application.

Of prime importance, however, is that this RP is a general guideline for valve selection, the final responsibility is that of the user of this document.

Valve Selection Guide

1 Scope

This recommended practice (RP) provides guidance on the selection of common types of valves used by the petroleum refining, chemical, petrochemical and associated industries. These include gate, ball, plug, butterfly, check, and globe valves covered by API and ASME Standards.

Modulating control valves and pressure relief valves are outside the scope of this RP.

Installation issues are discussed briefly for a few valve types.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API Standard 594, *Check Valves: Flanged, Lug, Wafer, and Butt-welding*

API Standard 598, *Valve Inspection and Testing*

API Standard 599, *Metal Plug Valves—Flanged, Threaded, and Welding Ends*

API Standard 600, *Steel Gate Valves—Flanged and Butt-welding Ends, Bolted Bonnets*

API Standard 602, *Steel Gate, Globe and Check Valves for Sizes NPS 4 and Smaller*

API Standard 603, *Corrosion-resistant, Bolted Bonnet Gate Valves—Flanged and Butt-welding Ends*

API Standard 607, *Fire Testing for Soft-seated Quarter-turn Valves*

API Standard 608, *Metal Ball Valves—Flanged, Threaded, and Welding Ends*

API Standard 609, *Butterfly Valves—Double Flanged, Lug- and Wafer-Type*

API RP 622, *Type Testing of Process Valve Packing for Fugitive Emissions*

API Recommended Practice 941, *Steels for Hydrogen Service at Elevated Temperatures and Pressures in Petroleum Refineries and Petrochemical Plants*

ASME B16.1 [1], *Gray Iron Pipe Flanges and Flanged Fittings*

ASME B16.24, *Cast Copper Alloy Pipe Flanges and Flanged Fittings*

ASME B16.34, *Valves—Flanged, Threaded, and Welding End*

ASME B16.42, *Ductile Iron Pipe Flanges and Flanged Fittings, Class 150 and 300*

[1] ASME International, 3 Park Avenue, New York, New York 10016-5990, www.asme.org.