

Check Valves: Flanged, Lug, Wafer, and Butt-welding

API STANDARD 594
SEVENTH EDITION, SEPTEMBER 2010



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1 Scope

This international standard covers design, material, face-to-face dimensions, pressure-temperature ratings, and examination, inspection, and test requirements for two types of check valves.

- Type 'A' check valves are short face-to-face as defined in Table 3 and Table 4 and can be: wafer, lug, or flange flanged; single plate or dual plate; gray iron, ductile iron, steel, nickel alloy, or other alloy designed for installation between Classes 125 and 250 cast iron flanges as specified in ASME B16.1, between Classes 150 and 300 ductile iron flanges as specified in ASME B16.42, between Classes 150 and 2500 steel flanges as specified in ASME B16.5, and between Classes 150 and 600 steel pipeline flanges as specified in MSS SP-44 or steel flanges as specified in ASME B16.47.
- Type 'B' bolted cover swing check valves are long face-to-face as defined in 5.1.2 and can be: flanged or butt-welding ends of steel, nickel alloy, or other alloy material. End flanges shall be as specified in ASME B16.5 or ends shall be butt-welding as specified in ASME B16.25.

This standard covers the following ranges:

- Type 'A' valves:
 - a) Classes 125 and 250, $50 \leq DN \leq 1200$ ($2 \leq NPS \leq 48$) (excluding DN 90 [NPS 3¹/₂]);
 - b) Classes 150 and 300, $50 \leq DN \leq 1200$ ($2 \leq NPS \leq 48$)*;
 - c) Class 600, $50 \leq DN \leq 1050$ ($2 \leq NPS \leq 42$)*;
 - d) Classes 900 and 1500, $50 \leq DN \leq 600$ ($2 \leq NPS \leq 24$)*;
 - e) Class 2500, $50 \leq DN \leq 300$ ($2 \leq NPS \leq 12$)*;
- Type 'B' valves:
 - a) Classes 150 through 1500, $50 \leq DN \leq 600$ ($2 \leq NPS \leq 24$)*;
 - b) Class 2500, $50 \leq DN \leq 300$ ($2 \leq NPS \leq 12$)*.

NOTE *Valve sizes DN 90 and DN 125 (NPS 3¹/₂ and 5) are non-preferred sizes whose usage is discouraged.

- Sizes:

NPS: 2, 2¹/₂, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20, 24, 30, 36, 42, 48;

corresponding to nominal pipe sizes DN:

DN: 50, 65, 80, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 750, 900, 1050, 1200.

Information to be specified by the purchaser is shown in Annex A.

The standard nomenclature for valve parts is shown in Annex B. Figure B.1, Figure B.2, Figure B.3, and Figure B.4 illustrate typical Type 'A' check valves and Figure B.5 illustrates a typical Type 'B' check valve. These figures show typical designs only and are not to be construed as precluding other available designs that comply with the