

MSS SP-81-2017

**Stainless-Steel or
Stainless-Steel-Lined, Bonnetless,
Knife Gate Valves with
Flanged Ends**

Standard Practice
Developed and Approved by the
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The SI (metric) units and U.S. customary units in this Standard Practice are regarded separately as the standard; each should be used independently of the other. Combining or converting values between the two systems may result in non-conformance with this Standard Practice.

Substantive changes in this 2017 edition are “flagged” by parallel bars as shown on the margins of this paragraph. The specific detail of the change may be determined by comparing the material flagged with that in the previous edition.

Non-toleranced dimensions in this Standard Practice are nominal unless otherwise specified.

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STAINLESS-STEEL OR STAINLESS-STEEL-LINED, BONNETLESS, KNIFE GATE VALVES WITH FLANGED ENDS

1. SCOPE AND FIELD OF APPLICATION

1.1 This Standard Practice covers all stainless-steel or stainless-steel-lined, cast, or fabricated bonnetless, knife gate valves with flanged ends from size NPS 2 (DN 50) through NPS 36 (DN 900).

1.2 The valves identified in this Standard Practice are intended for use in applications where shock loadings are not encountered. Applications at conditions other than those specified in Section 3 require special design considerations.

2. STANDARD UNITS

The values stated in either U.S. customary units or SI (metric) units are to be regarded separately as the “standard”. Within the text, the SI (metric) units are shown in parenthesis. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other. Combining values from the two systems may result in non-conformance with this Standard Practice.

3. PRESSURE RATING

This Standard Practice covers valves with a gauge pressure rating not exceeding the values in the following table, at temperatures between 32 °F and 150 °F (0 °C and 66 °C).

U.S. Customary		SI (Metric)	
NPS	psi	DN	bar
2 – 24	150	50 – 600	10.3
30, 36	100	750, 900	6.9

4. SIZE

The valve sizes in Table 1 (NPS) and Table 2 (DN) are the nominal sizes of the end connections.

5. MARKING

The valve shall be marked in accordance with MSS SP-25, including the following requirements and modifications:

- a) Manufacturer’s name or trademark/logo.
- b) The body material of construction or code. When more than one material or grade of material is used, each shall be identified. The material in contact with the fluid media shall be listed and identified as “lining” on the name plate. It is not required to repeat the material designation of fabricated bodies.
- c) Marking to show “seat side” of valve. Since most valves are manufactured for closure in one direction only, the valve shall be marked showing the “seat side” (downstream side) of the valve in such a manner that the markings can be seen with the valve installed in the pipeline. The user shall be responsible for correct directional installation. When bi-directional performance is required, testing in the reverse direction from the seat shall be as per agreement between the customer and the manufacturer. Markings shall still indicate the seat side of the valve. Bi-directional designs do not require a flow direction indicator.