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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 20173-2025

Replacing GB/T 20173-2013

Valves for petroleum and natural gas industries

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(English Translation)

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Table of Contents

Preface
1 Scope
2 Normative References
3 Terms and Definitions
4 Abbreviations
5 Types and structural forms of valves
5.1 Type
5.2 Structural Form
6 Technical Requirements
6.1 Pressure-temperature rating
6.2 Valve Flow Channel Form
6.3 Structural length
6.4 End connection
6.5 Bolted connection
6.6 Operational adaptability
7 Design
7.1 Design Program
7.2 Design Standards and Calculations
7.3 Valve stem anti-flyout
7.4 Antistatic
7.5 Flow coefficient
7.6 Valve chamber pressure relief
7.7 Valve body interface
7.8 Transmission Chain Design
7.9 Hoisting
8 Material
8.1 Metallic Materials
8.2 Non-metallic materials
8.3 Bolt
9 Welding
9.1 General Rule
9.2 Welding materials

- 9.3 Welding Qualification
- 9.4 Corrosion-resistant alloy (CRA) surfacing
- 9.5 Weld impact test
- 9.6 Hardness
- 9.7 Visual Inspection
- 9.8 NDE
- 9.9 Repair welding
- 10 Quality Control
 - 10.1 Measurement and testing equipment
 - 10.2 Visual Inspection
 - 10.3 Storage of Non-metallic Seals
 - 10.4 Valve Assembly
- 11 Factory Acceptance Test
 - 11.1 Pressure Test
 - 11.2 Valve stem back seal
 - 11.3 Shell hydrostatic pressure test
 - 11.4 Valve seat hydrostatic pressure test
 - 11.5 Pressure relief valve set pressure test
- 12 Paint
 - 12.1 General Requirements
 - 12.2 External coating of end connector
- 13 Mark
 - 13.1 General Requirements
 - 13.2 Valve size marking
 - 13.3 Nameplate
 - 13.4 Supplementary Requirement
- 14 Shipment Preparation
 - 14.1 Emptying
 - 14.2 Protection
 - 14.3 Transportation Preparation
- 15 Documents
 - 15.1 File saving
 - 15.2 Random File
- Appendix A (Normative) Structural Lengths and Tolerances
- Appendix B (Normative) Design Validation Test

Appendix C (Normative) Supplementary Design and Manufacturing Requirements
Designated by the Purchaser

Appendix D (Normative) Qualification of Heat Treatment Equipment

Appendix E (Normative) Quality Specification Level (QSL) Requirements and
Supplementary Tests

References

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document supersedes GB/T 20173-2013 "Pipeline Valves for Pipeline Transmission Systems in the Oil and Gas Industry" and is consistent with GB/T 20173-2013, aside from structural adjustments and editorial changes, the main technical changes are as follows.

- a) The scope has been changed (see Chapter 1, Chapter 1 of the 2013 edition);
- b) Added terms and definitions for two-way valve seats and transition pipes (see 3.1, 3.8);
- c) The compliance requirement has been removed (see Chapter 3 of the 2013 edition);
- d) Terms and definitions such as ASME rating levels, venting, protocols, handwheels, nominal diameter, nominal pressure, and pigging have been removed (see 2013).
(Pages 4.1, 4.3, 4.6, 4.12, 4.16, 4.17, and 4.23 of the 2016 edition)
- e) Added abbreviations such as "BSL" and "MAWP" (see Chapter 4), and removed symbols (see 5.1 of the 2013 edition);
- f) Increased the types and structural forms of axial flow valves (see 5.2.1);
- g) The requirements for pressure-temperature ratings have been changed (see 6.1, 7.2 of the 2013 edition);
- h) Added requirements for reduced-bore valves with a circular through-hole as the closing element (see 6.2.2);
- i) The dimensional requirements for face distance and end distance for all valves with nominal pressure Class 400 have been removed (see Tables 2-5 in the 2013 edition);
- j) The requirements for bolted connections have been changed (see 6.5, 8.6 in the 2013 edition);
- k) Increased the requirement for valve chamber pressure relief (see 7.6);

- l) The requirements for vent and discharge pipe dimensions have been changed (see Table 2, Table 7 in the 2013 edition);
- m) Tensile strength requirements have been added (see 8.1.6);
- n) The minimum Charpy V-notch impact toughness requirements for duplex and super duplex stainless steels have been increased (see Table 3);
- o) Requirements for non-metallic materials have been added (see 8.2);
- p) The requirement for corrosion-resistant alloy overlay welding has been increased (see 9.4);
- q) Added requirements for visual inspection of welds (see 9.7);
- r) Added requirements for repair welding (see 9.9);
- s) Increased requirements for hydrostatic testing of the shell at higher pressures (see 11.3.2);
- t) Added requirements for hydrostatic pressure testing of the shell with transition pipe (see 11.3.4);
- u) The minimum holding time requirement for the valve seat hydrostatic test has been changed (see Table 8, Table 11 in the 2013 edition);
- v) The acceptance criteria for the valve seat hydrostatic pressure test have been changed (see 11.4.1, 11.4.3 in the 2013 version);
- w) The structural length and tolerance requirements for axial flow valves have been increased (see Appendix A);
- x) Design validation tests have been added (see Appendix B);
- y) Additional design and manufacturing requirements specified by the purchaser have been added (see Appendix C).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Petroleum Drilling Equipment and Tools (SAC/TC96).

1 Scope

This document specifies the design, materials, welding, and quality control of axial flow valves, ball valves, check valves, gate valves, and plug valves used in the oil and gas industry.

Requirements for manufacturing, factory acceptance testing, painting, marking, shipping