



SLOVENSKI STANDARD SIST EN ISO 15761:2020

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Nadomešča:

SIST EN ISO 15761:2004

Tablasti, krogelni in nepovratni ventili za velikosti DN 100 in manj za industrijo nafte in zemeljskega plina (ISO 15761:2020)

Steel gate, globe and check valves for sizes DN 100 and smaller, for the petroleum and natural gas industries (ISO 15761:2020)

Schieber, Kugel- und Rückschlagventile aus Stahl mit Nennweiten DN 100 und kleiner für die Erdöl- und Erdgasindustrie (ISO 15761:2020)

Robinets-vannes, robinets à soupape et clapets de non retour en acier de dimensions DN 100 et inférieures, pour les industries du pétrole et du gaz naturel (ISO 15761:2020)

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EUROPEAN STANDARD

EN ISO 15761

NORME EUROPÉENNE

EUROPÄISCHE NORM

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Steel gate, globe and check valves for sizes DN 100 and smaller, for the petroleum and natural gas industries (ISO 15761:2020)

Robinets-vannes, robinets à soupape et clapets de non retour en acier de dimensions DN 100 et inférieures, pour les industries du pétrole et du gaz naturel (ISO 15761:2020)

Schieber, Kugel- und Rückschlagventile aus Stahl mit Nennweiten DN 100 und kleiner für die Erdöl- und Erdgasindustrie (ISO 15761:2020)

This European Standard was approved by CEN on 22 August 2020.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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Contents	Page
European foreword.....	3

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[SIST EN ISO 15761:2020](https://standards.iteh.ai/catalog/standards/sist/f2a9c761-f157-4038-b2a6-7bd3db8502d2/sist-en-iso-15761-2020)
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European foreword

This document (EN ISO 15761:2020) has been prepared by Technical Committee ISO/TC 153 "Valves" in collaboration with Technical Committee CEN/TC 12 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2021, and conflicting national standards shall be withdrawn at the latest by March 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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INTERNATIONAL
STANDARD

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Second edition
2020-08

**Steel gate, globe and check valves
for sizes DN 100 and smaller, for the
petroleum and natural gas industries**

*Robinets-vannes, robinets à soupape et clapets de non retour en acier
de dimensions DN 100 et inférieures, pour les industries du pétrole et
du gaz naturel*

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Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	3
4 Pressure/temperature ratings	3
4.1 Valve ratings.....	3
4.2 Temperature constraints.....	4
5 Design	4
5.1 Reference design.....	4
5.2 Flow passageway.....	5
5.3 Wall thickness.....	6
5.4 Valve body.....	7
5.4.1 General.....	7
5.4.2 Socket welding ends.....	7
5.4.3 Threaded ends.....	8
5.4.4 Flanged ends.....	9
5.4.5 Butt-welding ends.....	10
5.4.6 Body seats.....	11
5.5 Valve bonnet or cover.....	11
5.6 Obturator.....	13
5.6.1 Seating surfaces.....	13
5.6.2 Gate valve obturators.....	13
5.6.3 Globe valve obturators.....	13
5.6.4 Check valve obturators.....	13
5.7 Stem.....	14
5.8 Stem nut or stem bushing.....	16
5.9 Packing, packing chamber, and gland.....	16
5.10 Packing retention.....	17
5.11 Handwheel.....	17
6 Materials	17
6.1 Trim materials.....	17
6.2 Materials other than trim.....	17
7 Marking	18
7.1 Legibility.....	18
7.2 Body marking.....	18
7.3 Ring joint groove marking.....	20
7.4 Identification plate marking.....	20
7.5 Weld fabrication marking.....	21
8 Testing and inspection	21
8.1 Pressure tests.....	21
8.1.1 General.....	21
8.1.2 Shell test.....	22
8.1.3 Closure leakage test.....	22
8.1.4 Optional closure leakage test for gate valves.....	23
8.1.5 Backseat leakage test.....	23
8.1.6 Fugitive emission testing.....	23
8.2 Inspection.....	24
9 Preparation for despatch	24
Annex A (normative) Requirements for extended body gate valve bodies	25

ISO 15761:2020(E)

Annex B (normative) Requirements for valves with bellows stem seals	30
Annex C (normative) Type testing of bellows stem seals	34
Annex D (informative) Identification of valve parts	37
Annex E (informative) Information to be specified by the purchaser	40
Annex F (informative) Valve material combinations	42
Bibliography	46

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(standards.iteh.ai)

[SIST EN ISO 15761:2020](https://standards.iteh.ai/catalog/standards/sist/f2a9c761-f157-4038-b2a6-7bd3db8502d2/sist-en-iso-15761-2020)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html (standards.iteh.ai)

This document was prepared by Technical Committee ISO/TC 153, *Valves*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 12, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 15761:2002), which has been technically revised:

- [Clause 2](#) "Normative references" was updated;
- addition of ASME Class 2 500 designation and relevant dimensions;
- addition of higher PN Class designations, including PN 63, 250 and 400, and relevant dimensions.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

ISO 15761:2020(E)**Introduction**

The purpose of this document is to establish basic requirements and practices for steel gate, globe and check valves which can be socket welded, butt welded or flanged ended with reduced body seat openings, whose general construction parallels that described in API 602 and BS 5352.

The form of this document corresponds to ISO 6002 and ISO 10434.

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Steel gate, globe and check valves for sizes DN 100 and smaller, for the petroleum and natural gas industries

1 Scope

This document specifies the requirements for a series of compact steel gate, globe and check valves for petroleum and natural gas industry applications.

It is applicable to valves of:

- nominal sizes DN 8, 10, 15, 20, 25, 32, 40, 50, 65, 80 and 100,
- corresponding to nominal pipe sizes NPS $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3 and 4,
- pressure designations PN 16, 25, 40, 63, 100, 250 and 400, and
- pressure designations Class 150, 300, 600, 800, 1 500 and 2 500.

Class 800 is not a listed class designation, but is an intermediate Class number widely used for socket welding and threaded end compact valves covered by this document. There is no equivalent PN designation.

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This document includes provisions for the following valve characteristics:

- outside screw with rising stems (OS & Y): in sizes $8 \leq DN \leq 100$;
- inside screw with rising stems (ISRS): in sizes $8 \leq DN \leq 65$ with a pressure designation PN ≤ 100 or Class ≤ 800 ;
- socket welding or threaded ends: in sizes $8 \leq DN \leq 65$;
- flanged or butt-welding ends excluding flanged end Class 800;
- bonnet joint construction that is bolted, welded or threaded with seal weld;
- bonnet joint construction that uses a union nut with a pressure designation PN ≤ 45 or Class ≤ 800 ;
- body seat openings;
- materials: as specified;
- testing and inspection.

This document covers valve end flanges in accordance with EN 1092-1 and ASME B16.5 and valve body ends having tapered pipe threads in accordance with ISO 7-1 or ASME B1.20.1. It is applicable to extended body construction in sizes $15 \leq DN \leq 50$ with pressure designations Class 800 and Class 1 500 and to bellows and bellows assembly construction adaptable to gate or globe valves in sizes $8 \leq DN \leq 50$. Also covered are requirements for bellows stem seal type testing.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 15761:2020(E)

ISO 7-2, *Pipe threads where pressure-tight joints are made on the threads — Part 2: Verification by means of limit gauges*

ISO 2902, *ISO metric trapezoidal screw threads — General plan*

ISO 2903, *ISO metric trapezoidal screw threads — Tolerances*

ISO 2904, *ISO metric trapezoidal screw threads — Basic dimensions*

ISO 5208, *Industrial valves — Pressure testing of metallic valves*

ISO 5209, *General purpose industrial valves — Marking*

ISO 5752, *Metal valves for use in flanged pipe systems — Face-to-face and centre-to-face dimensions*

ISO 9606-1, *Qualification testing of welders — Fusion welding — Part 1: Steels*

ISO 15607, *Specification and qualification of welding procedures for metallic materials — General rules*

ISO 15609-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 1: Arc welding*

ISO 15610, *Specification and qualification of welding procedures for metallic materials — Qualification based on tested welding consumables*

ISO 15614-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys*

ISO 15614-2, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 2: Arc welding of aluminium and its alloys*

ISO 15649, *Petroleum and natural gas industries — Piping*

EN 1092-1, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 1: Steel flanges*

EN 10269, *Steels and nickel alloys for fasteners with specified elevated and/or low temperature properties*

EN 12516-1:2014+A1:2018, *Industrial valves — Shell design strength — Part 1: Tabulation method for steel valve shells*

ASME B1.1, *Unified Inch Screw Threads (UN and UNR Thread Form)*

ASME B1.5, *Acme Screw Threads*

ASME B1.8, *Stub Acme Screw Threads*

ASME B1.20.1, *Pipe Threads, General Purpose, Inch*

ASME B16.5, *Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 24 Metric/Inch Standard*

ASME B16.10, *Face-to-Face and End-to-End Dimensions of Valves*

ASME B16.11, *Forged Fittings, Socket-Welding and Threaded*

ASME B16.34:2017, *Valves Flanged, Threaded and Welding End*

ASME BPVC-IX, *Boiler and Pressure Vessel Code — Section IX — Welding, Brazing, and fusing Qualifications*

ASTM A307, *Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

PN

Class

alphanumeric designation for pressure-temperature rating that is common for components used in a piping system, used for reference purposes, comprising the letters "PN" or "Class" followed by a dimensionless number indirectly related to the pressure retaining capability as a function of temperature of the component

Note 1 to entry: The number following the letters PN or Class does not represent a measurable value and is not used for calculation purposes except where specified in the relevant standard. There is no definitive correlation that links PN designations to Class designations.

Note 2 to entry: The allowable pressure for a valve having a PN or Class number depends on the valve material and its application temperature and is to be found in tables of pressure/temperature ratings. PN or Class usage is applicable to steel valves bearing DN or NPS *nominal size* (3.2) designations.

Note 3 to entry: See ISO 7268 and ASME B16.34.

3.2

nominal size

DN

NPS

alphanumeric designation of size for components of a pipework system, which is used for reference purposes, comprising the letters DN or NPS followed by a dimensionless number indirectly related to the physical size, in millimetres, of the bore or outside diameter of the end connections

Note 1 to entry: The number following the letters DN or NPS does not represent a measurable value and is not used for calculation purposes except where specified in the relevant standard. Prefix DN or NPS usage is applicable to steel valves bearing *PN* or *Class* (3.1) designations.

Note 2 to entry: See ISO 6708 and ASME B16.34.

4 Pressure/temperature ratings

4.1 Valve ratings

4.1.1 For Class designated valves the applicable pressure/temperature ratings shall be in accordance with those specified in the tables of ASME B16.34 for standard Class for the applicable material specification and the applicable Class.

4.1.2 For PN designated valves the applicable pressure/temperature ratings shall be in accordance with those specified in the tables of EN 12516-1:2014+A1:2018 for the applicable material specification and the applicable PN number.