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BSI Standards Publication

Industrial valves - Metallic butterfly valves for general purposes

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National foreword

This British Standard is the UK implementation of EN 593:2017. It supersedes BS EN 593:2009+A1:2011, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PSE/18/3, Industrial valves, steam traps, actuators and safety devices against excessive pressure - Part turn valves (Ball, plug and butterfly).

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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Amendments/corrigenda issued since publication

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English Version

Industrial valves - Metallic butterfly valves for general purposes

Robinetterie industrielle - Robinets métalliques à papillon d'usage général

Industriearmaturen - Metallische Klappen für den allgemeinen Gebrauch

This European Standard was approved by CEN on 31 August 2017.

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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European foreword

This document (EN 593:2017) has been prepared by Technical Committee CEN/TC 69 "Industrial valves", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by April 2018, and conflicting national standards shall be withdrawn at the latest by April 2018.

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.

This document supersedes EN 593:2009+A1:2011.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2014/68/EU.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

The main technical changes compared to the previous edition are:

- a) the extension of the dimensions to cover PN 2,5 to PN 160, Class 150 to Class 900 and DN 20 to DN 4 000;
- b) the inclusion of single, double and triple eccentric designs;
- c) a reference to EN 16668 for valves subject to European legislation on pressure equipment;
- d) the addition of informative Annex D giving the correspondence between DN and NPS;
- e) the addition of informative Annex E on valve torque curves at different flow velocities;
- f) the updating of Annex ZA according to the new PED.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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1 Scope

This European Standard specifies minimum general requirements for butterfly valves having metallic bodies for use with all type of pipe end connections (e.g. wafer, lug, flange, butt welding) and used for isolating, regulating or control applications.

The PN and Class ranges are:

- PN 2,5; PN 6; PN 10; PN 16; PN 25; PN 40; PN 63; PN 100; PN 160;
- Class 150; Class 300; Class 600; Class 900.

The size range is:

- DN 20; DN 25; DN 32; DN 40; DN 50; DN 65; DN 80; DN 100; DN 125; DN 150; DN 200; DN 250; DN 300; DN 350; DN 400; DN 450; DN 500; DN 600; DN 700; DN 750; DN 800; DN 900; DN 1 000; DN 1 050; DN 1 100; DN 1 200; DN 1 400; DN 1 500; DN 1 600; DN 1 800; DN 2 000; DN 2 200; DN 2 400; DN 2 600; DN 2 800; DN 3 000; DN 3 200; DN 3 400; DN 3 600; DN 3 800; DN 4 000.

DN 750 and DN 1 050 are used only for Class 150 and Class 300.

Intermediate DN's are allowed upon agreement between manufacturer and customer.

For valves subject to European legislation on pressure equipment, EN 16668 applies together with this European Standard.

For industrial process control valves, EN 1349 and EN 60534-2-1 apply together with this European Standard.

For water supply application, EN 1074-1 and EN 1074-2 apply together with this European Standard.

NOTE 1 Butterfly valves for water supply application do not comply with Annex ZA and are not CE marked because they are excluded from the pressure equipment European legislation.

NOTE 2 The range of DN, applicable to each PN, for wafer and wafer lug valve types is as given in the appropriate part of EN 1092 for Type 11 flanges for the applicable material. The range of DN, applicable to each PN, for flanged valve types is as given in the appropriate part of EN 1092 for Type 21 flanges for the applicable material.

The correspondence between DN and NPS is given for information in Annex D.

2 Normative references

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

EN 19:2016, *Industrial valves — Marking of metallic valves*

EN 558:2017, *Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems — PN and Class designated valves*

EN 736-1:1995, *Valves — Terminology — Part 1: Definition of types of valves*

EN 736-2:2016, *Valves — Terminology — Part 2: Definition of components of valves*

EN 736-3:2008, *Valves — Terminology — Part 3: Definition of terms*

EN 1074-2:2000, *Valves for water supply — Fitness for purpose requirements and appropriate verification tests — Part 2: Isolating valves*