SLOVENSKI STANDARD
SIST ISO 10631:2000

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Kovinske lopute za splošno uporabo

Metallic butterfly valves for general purposes

Robinets métalliques à papillon d'usage général

Ta slovenski standard je istoveten z: **ISO 10631:1994**

ICS:

23.060.99 Drugi ventili Other valves

SIST ISO 10631:2000 **en**

INTERNATIONAL STANDARD

ISO 10631

First edition
1994-04-15

Metallic butterfly valves for general purposes

Robinets métalliques à papillon d'usage général

Reference number
ISO 10631:1994(E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 10631 was prepared by Technical Committee ISO/TC 153, *Valves*, Subcommittee SC 1, *Design, manufacture, marking and testing*.

Annexes A and B of this International Standard are for information only.

International Organization for Standardization
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Metallic butterfly valves for general purposes

1 Scope

This International Standard specifies the requirements for metallic butterfly valves

— with centred or eccentric disc,

— with centred or eccentric shaft,

— with metallic, polymeric, elastomeric or composite seating,

— with lined or unlined body,

— coated or uncoated,

to be used in flanged or butt-welded piping systems for shut-off, throttling or flow control.

It covers butterfly valves with nominal diameters DN

40; 50; 65; 80; 100; 125; 150; 200; 250; 300; 350; 400; 450; 500; 550; 600; 650; 700; 750; 800; 900; 1 000; 1 200; 1 400; 1 600; 1 800; 2 000;

and is applicable to valves of nominal pressure PN

2,5; 6; 10; 16; 20; 25; 40; 50.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 185:1988, *Grey cast iron — Classification.*

ISO 1083:1987, *Spheroidal graphite cast iron — Classification.*

ISO 2604-1:1975, *Steel products for pressure purposes — Quality requirements — Part 1: Forgings.*

ISO 3755:1991, *Cast carbon steels for general engineering purposes.*

ISO 4991:—[1], *Steel castings for pressure purposes.*

ISO 5208:1993, *Industrial valves — Pressure testing of valves.*

ISO 5209:1977, *General purpose industrial valves — Marking.*

ISO 5210:1991, *Industrial valves — Multi-turn valve actuator attachments.*

ISO 5211:—[2], *Industrial valves — Part-turn valve actuator attachments.*

ISO 5752:1982, *Metal valves for use in flanged pipe systems — Face-to-face and centre-to-face dimensions.*

ISO 5922:1981, *Malleable cast iron.*

ISO 6708:—[3], *Pipe components — Definition of nominal size (DN).*

1) To be published.

2) To be published. (Revision of ISO 5211-1:1977, ISO 5211-2:1979 and ISO 5211-3:1982)

3) To be published. (Revision of ISO 6708:1980)

ISO 7005-1:1992, *Metallic flanges — Part 1: Steel flanges.*

ISO 7005-2:1988, *Metallic flanges — Part 2: Cast iron flanges.*

ISO 7005-3:1988, *Metallic flanges — Part 3: Copper alloy and composite flanges.*

ISO 7268:1983, *Pipe components — Definition of nominal pressure.*

ISO 9328-1:1991, *Steel plates and strips for pressure purposes — Technical delivery conditions — Part 1: General requirements.*

ISO 9328-2:1991, *Steel plates and strips for pressure purposes — Technical delivery conditions — Part 2: Unalloyed and low-alloyed steels with specified room temperature and elevated temperature properties.*

ISO 9328-3:1991, *Steel plates and strips for pressure purposes — Technical delivery conditions — Part 3: Nickel-alloyed steels with specified low temperature properties.*

ISO 9328-4:1991, *Steel plates and strips for pressure purposes — Technical delivery conditions — Part 4: Weldable fine grain steels with high proof stress supplied in the normalized or quenched and tempered condition.*

ISO 9328-5:1991, *Steel plates and strips for pressure purposes — Technical delivery conditions — Part 5: Austenitic steels.*

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 6708 (DN) and ISO 7268 (PN) and the following definitions apply.

3.1 face-to-face dimensions: Distance between the body ends of the installed equipment (in accordance with ISO 5752).

3.2 differential pressure, Δp: Difference between the upstream pressure of the disc when closed and the downstream pressure. It is expressed in pascals.

3.3 flow velocity, v: Ratio of the volume rate of flow (under given pressure and temperature conditions) to the section calculated with respect to a diameter bore, expressed in millimetres, and of value equal to the DN. It is expressed in metres per second.

4 Pressure/temperature ratings

Pressure/temperature ratings of the body shall meet the specifications given in the appropriate tables of materials in ISO 7005-1, ISO 7005-2 and ISO 7005-3.

The complete assembly shall comply with differential pressure Δp/temperature ratings. The operating temperature may be limited by restrictions in the pressure/temperature ratings of materials used for certain components.

The butterfly valves shall also comply with the requirements for tests as in clause 8.

5 Design

5.1 Construction examples

Three examples of butterfly valve construction are given in figure 1.

5.2 End connections

5.2.1 Double-flanged valves

See figure 2.

These valves have two flanges in accordance with ISO 7005-1, ISO 7005-2 or ISO 7005-3.

5.2.2 Wafer-type valves

5.2.2.1 Valves with lugs, single flange or with U-section

See figure 3.

These valves are for clamping between pipe flanges in accordance with ISO 7005-1, ISO 7005-2 or ISO 7005-3.

5.2.2.2 Flangeless valves

See figure 4.

NOTE 1 The external shape of the valve body shall be such that nuts and bolts in accordance with the standard in force allow for centring the body with respect to the pipe flanges whilst fully ensuring tightness at the connecting flange faces and free movement of the disc.

5.2.3 Butt-welded ends

See figure 5.

5.3 Tightness at shaft seals

If dismantling of the actuator becomes necessary (lever, gear reducer, power actuator), tightness to atmosphere shall be maintained.

5.4 Operation

5.4.1 Direction of rotation

Unless otherwise specified in the synopsis data sheet, the valve shall be closed by operating the handwheel, lever or T-wrench in the clockwise direction when facing those devices.

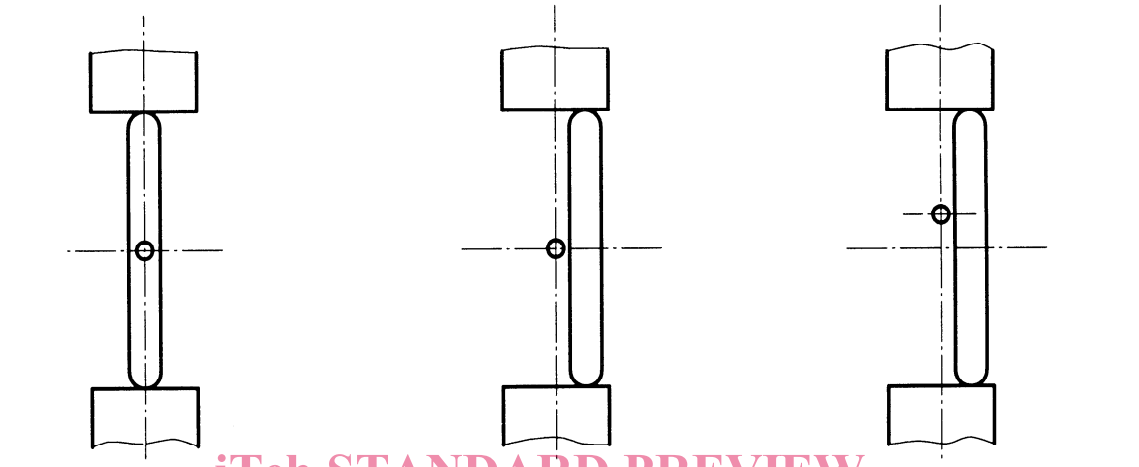


Figure 1 — Construction examples

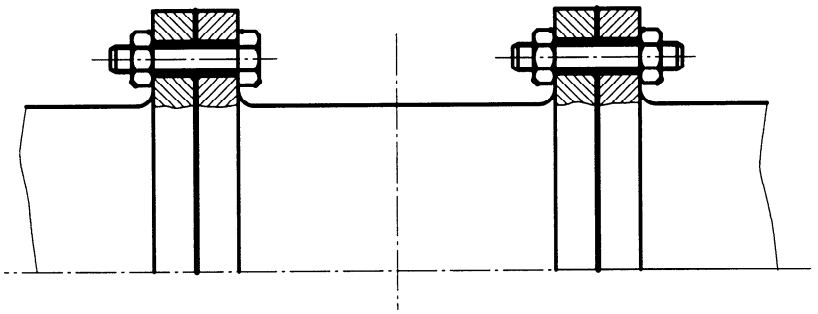
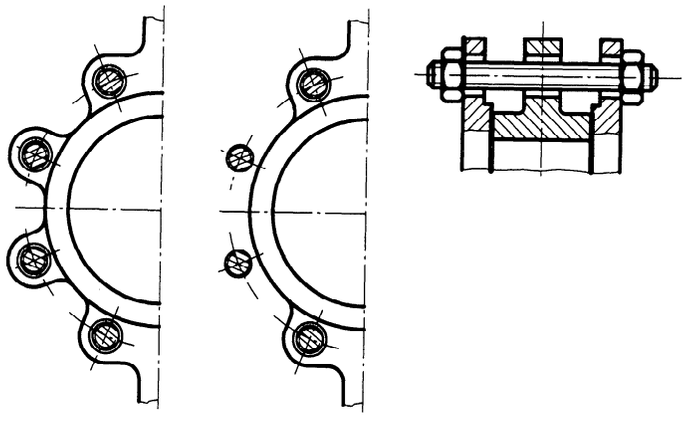
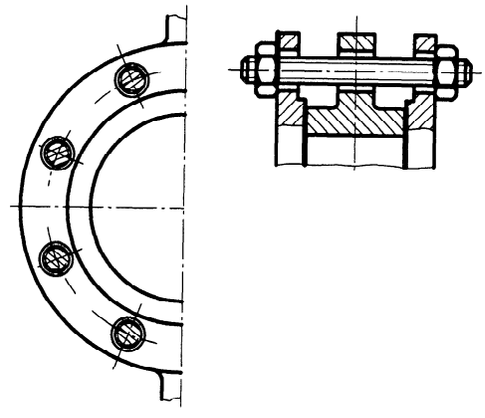


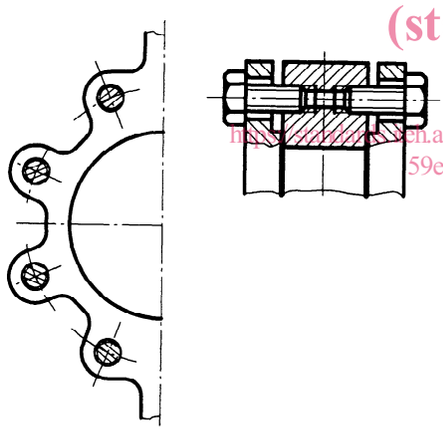
Figure 2 — Double-flanged valves



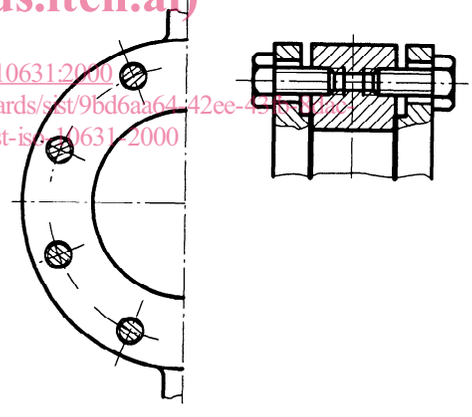
a) Valve with central lugs



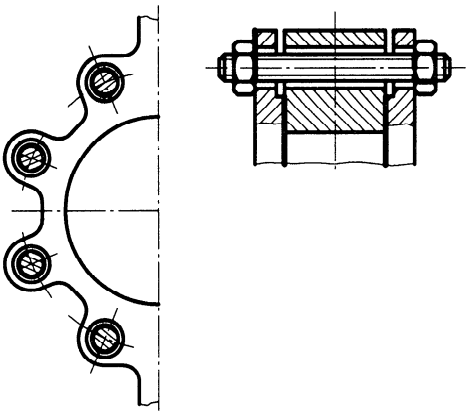
b) Central single-flange valve



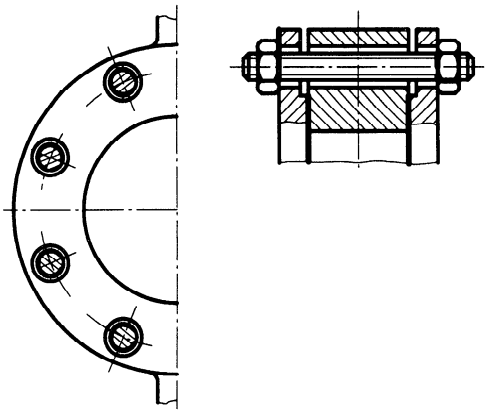
c) Valve with lugs with internally threaded bores



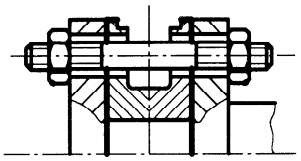
d) Single-flange valve with internally threaded bores



e) Valve with lugs with smooth bores



f) Single-flange valve with smooth bores



g) Valve with U-section

Figure 3 — Valves with lugs, single flange or with U-section

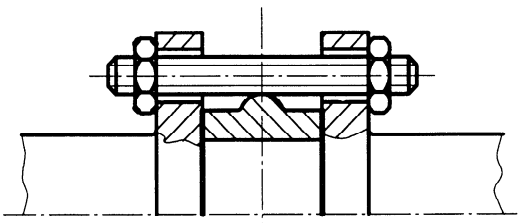


Figure 4 — Flangeless valve

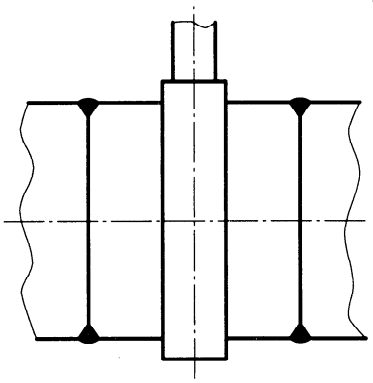


Figure 5 — Butt-welded ends