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

GB/T 12221-2005

**Metal valves -- Face to face, end to end, center to face and
center to end dimensions**

(English Translation)

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Foreword

This Standard modifies and adopts ISO 5752.1982 "Metal Valves for Use in Flanged Pipe Systems - Face-to-face and centre-to-face Dimensions". Compared with ISO 5752.1982, the main differences in this Standard are as follows.

- Structure and drafting rules of this Standard are in accordance with GB/T 1.1-2000;

- This Standard adopts some definitions in Chapter 2 of ISO 5752.1982;

- Chapter 4 "Terminology" of ISO 5752.1982 was deleted from this Standard.

Compared with GB/T 12221-1989, the main changes in this Standard are as follows.

- Standard name is changed; the scope of application is extended from flange connection to welded end, wafer type, female thread and male thread.

- Add the basic structural lengths of welded ends, wafer type valves, female threads and male threads, AND structural length dimensions of various valves;

- Valve dimensions with flanged joint adopt ISO 5752.1982;

- Basic series dimensions in Table 1 of original standard were modified. series 6 and 17 (no available data) were deleted; series 25, which is not applicable to flanged joint, was placed to the basic series dimensions of wafer type connecting valves;

- Dimension list of same-type series gate valves in Table 2 of original standard was deleted.

This Standard replaces GB/T 12221-1989 "Metal Valves for Use in Flanged Pipe

Systems - Face-to-Face, and Center-to-Face Dimensions" and GB/T 15188.1 ~ 15188.4-1994 "Face-to-Face, Centre-to-Face, End-to-End and Centre-to-End Dimensions of Valves".

This Standard was proposed by China Machinery Industry Federation.

This Standard shall be under the jurisdiction of the National Technical Committee on Valves of Standardization Administration of China (SAC/TC 188).

Drafting organizations of this Standard. Hefei General Machinery Research Institute, Hubei Hongcheng General Machinery Co., Ltd., Shanghai Research Institute of General Machinery Co., Ltd., CNNC SUFA Technology Industry Co., Ltd., Zhejiang Wuzhou Valve Co., Ltd. AND Shenyang Shengshi High & Medium Pressure Valve Co., Ltd.

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The previous editions replaced by this Standard are as follows.

- GB/T 12221-1989, GB/T 15188.1 ~ 15188.4-1994.

Metal Valves - Face to Face, End to End, Center to Face and Center to End Dimensions

1 Scope

This Standard specifies the basic series of face-to-face, centre-to-face, end-to-end and centre-to-end dimensions of flanged joint valves, welded end valves, wafer type connection valves, female thread connection valves, male thread connection valves, and the permissible variations of structural dimensions.

This Standard is applicable to the face-to-face, centre-to-face, end-to-end and centre-to-end dimensions of gate valves, stop valves, ball valves, butterfly valves, plug valves, diaphragm valves and check valves with nominal pressure (PN) ≤ 42.0 MPa and nominal diameter of DN 3 mm ~ DN 4 000 mm.

2 Normative References

The following normative documents contain provisions which, through reference in this text, constitute provisions of this Standard. For dated references, the subsequent amendments or revisions of these publications do not apply. However, parties who enter into agreements based on this Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below.

GB/T 1047 Pipework Components - Definition and Selection of DN (Nominal Size)
(GB/T 1047-2005, ISO 6708.1995, MOD)

GB/T 1048 Pipework Components - Definition and Selection of PN (GB/T
1048-2005, ISO 7268.1996, MOD)

3.1 Through way type of valves face to face, end to end, center to face and center to end dimensions

The distance between the two planes perpendicular to the valve axis, located at the extremities of the valve-body end ports.

3.2 Angle type of valves face to face, end to end, center to face and center to end dimensions [Translator. for ease of reading, hereafter "face to face, end to end, center to face and center to end dimensions" is abbreviated as structure dimensions]

4.3.5 The basic series of female thread valves' structure dimensions are given in Table 5.

Table 5 Female Thread Valves' Structure Dimensions - Basic Series

Dimensions in millimetres

Nominal size

DN

Basic series

N1 N2 N3 N4 N5 N6 N7 N8 N9 N10 N11 N12 N13 N14 N15 N16 N17 N18

Structure dimensions

- - - -

- -

- - -

- - - - -

10 48 56 80 80 80 80 80 80

15 42 50 52 56 60 65 65 65 68 80 90 90 90 90 90 90 90

20 45 60 60 67 65 70 75 85 78 90 100 100 100 100 100 100 100

25 52 65 70 78 75 80 90 110 86 110 115 120 110 120 120 110 120 120

32 55 75 80 88 85 90 105 120 100 130 130 140 120 130 140 120 140 130

40 60 85 86 104 95 100 120 140 106 150 150 170 135 140 170 135 170 150

50 70 95 104 120 110 110 140 165 130 170 180 200 170 170 200 155 180 170

- -

120 130 165 203

- - - - - 80 90 130

- - -

100 110 145 - 300 -

Note 1: It is applicable to through way type and angle type valves.

Note 2: Tolerances of structure dimensions is ± 1.6 mm.

4.3.8 Wafer knife gate valves' structure dimensions are given in Table 8.

Table 8 Wafer Knife Gate Valves' Structure Dimensions

Dimensions in millimetres

Nominal size

DN

Nominal pressure PN ≤ 2.0 MPa

Structure dimensions

65 -

Basic series J16 J17 J18

Note: Tolerances of structure dimensions is ± 1.6 mm.