

Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanged piping systems —

Part 2: Class-designated valves

The European Standard EN 558-2:1995 has the status of a
British Standard

ICS 23.060.00

Committees responsible for this British Standard

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 Association of Bronze and Brass Founders
 British Foundry Association
 British Gas plc
 British Plumbing Fittings Manufacturers' Association
 British Valve and Actuator Manufacturers' Association
 British Water
 Chartered Institution of Building Services Engineers
 Electricity Association
 Energy Industries Council
 Engineering Equipment and Materials Users' Association
 GAMBICA (BEAMA) Ltd.
 Health and Safety Executive
 Institution of Mechanical Engineers
 LP Gas Association
 Pipeline Industries Guild
 Society of British Water Industries
 Water Services Association of England and Wales
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 Coopted members

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National foreword

This British Standard has been prepared by Technical Committee PSE/7 and is the English language version of EN 558-2:1995 *Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems — Part 2: Class-designated valves*, published by the European Committee for Standardization (CEN). EN 558-2 was produced as the result of international discussions in which the United Kingdom took an active part.

Together with BS EN 558-1:1989, it partially supersedes BS 2080:1989, which has been amended.

Cross-reference

Publication referred to	Corresponding British Standard
EN 26554:1991	BS EN 26554:1991 <i>Specification for face-to-face dimensions for flanged automatic steam traps</i>

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 24, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

ICS 23.060.00

Descriptors: Industrial valves, valves-and fittings, flanged valves, metallurgical products, dimensions, dimensional tolerances

English version

Industrial valves — Face-to-face and centre-to-face
dimensions of metal valves for use in flanged pipe
systems —
Part 2: Class-designated valves

Robinetterie industrielle — Dimensions
face-à-face et face-à-axe de la robinetterie
métallique utilisée dans les systèmes de
canalisations à brides —
Partie 2: Appareils de robinetterie désignés
Class

Industriearmaturen — Baulängen von
Armaturen aus Metall zum Einbau in
Rohrleitungen mit Flanschen —
Teil 2: Nach Class bezeichnete Armaturen

This European Standard was approved by CEN on 1995-10-16. 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 Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This European Standard 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 the publication of an identical text or by endorsement, at the latest by April 1996, and conflicting national standards shall be withdrawn at the latest by April 1996.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

This standard was drawn up on the basis of the draft International Standard ISO/DIS 5752 and contains two Parts which can be used separately:

EN 558-1, *Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems — Part 1: PN-designated valves.*

EN 558-2, *Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems — Part 2: Class-designated valves.*

The progress in work in the standardization of the different products can require a revision of the standard by adding or subtracting some basic series.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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Introduction

All tables of face-to-face and centre-to-face dimensions are drafted separately for PN-designated valves in EN 558-1 and for Class designated valves in EN 558-2.

The basic series in this standard are taken from the origin series shown in Annex A (informative).

Changes made to the origin series will not be automatically incorporated into this standard.

The numbers of the basic series are maintained as in ISO/DIS 5752:1993.

1 Scope

This Part of this standard specifies face-to-face (FTF) and centre-to-face (CTF) dimensions for Class designated metal valves used in flanged pipe systems.

This Part of this standard covers valves having the following Class and DN values:

- Class 125, Class 150, Class 250, Class 300, Class 600.
- DN 10; DN 15; 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 1 200; DN 1 400; DN 1 600; DN 1 800; DN 2 000.

Face-to-face dimensions of automatic steam traps are specified in EN 26554.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of the cited publication apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

EN 736-1, *Valves — Terminology — Part 1: Definitions of types of valves.*

EN 26554, *Flanged automatic steam traps — Face-to-face dimensions.*

3 Definitions

For the purposes of this standard, prEN 736-1 and the following definitions apply:

3.1

face-to-face dimension (FTF) (for straight pattern valves)

the distance, expressed in millimetres, between the two planes perpendicular to the valve axis located at the extremities of the body and ports or as may be specified in the relevant valve product standard (see Figure 1 and Figure 2)

3.2

centre-to-face dimension (CTF) (for angle pattern valves)

the distance, expressed in millimetres, between the plane located at the extremity of either body end port and perpendicular to its axis and the axis of the other body end port (see Figure 1 and Figure 2)

4 Dimensions and tolerances

4.1 Basic series

The basic series of FTF and CTF dimensions shall be as given in Table 1.

For each type of valve, the basic series to be taken into consideration are given in Table 3 to Table 17.

4.2 Dimensions for unlined valves

4.2.1 *Flat face flanges*

For valves having flanges with flat face:

- in grey cast iron Class 125;
- in copper alloy Class 150 and Class 360.

The FTF and CTF dimensions shall be in accordance with Figure 1 and Figure 2.

4.2.2 *Raised face flanges*

For valves:

- having flanges with 1,6 mm raised face:
 - in grey cast iron, Class 250;
 - in ductile cast iron, Class 150 and Class 300;
 - in steel, Class 150 and Class 300;
- having flanges with 6,4 mm raised face:
 - in steel, Class 600.

The FTF and CTF dimensions shall be in accordance with Figure 1 and Figure 3.

4.2.3 *Ring joint flanges*

For valves with flange facings designed to be used with metallic ring joints having octagonal or oval section, the FTF or CTF dimensions shall be in accordance with Figure 4.

4.2.4 Other flange facings

For Class 150, Class 300 and Class 600 valves with large and small male and female faces and large and small tongue and groove facings, the FTF and CTF dimensions shall be in accordance with Figure 1 and Figure 5.

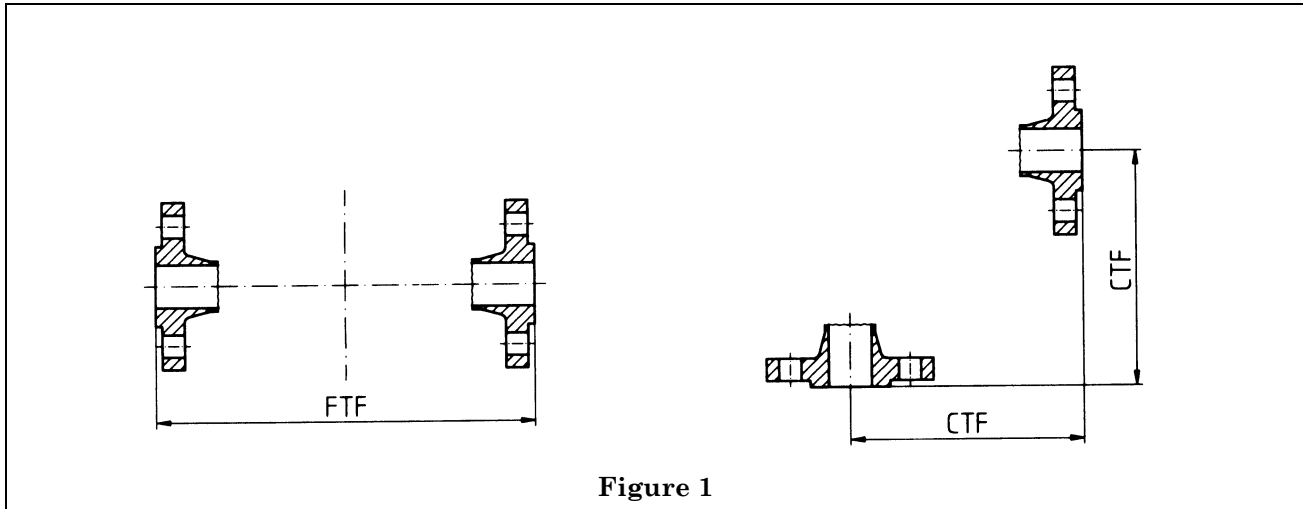


Figure 1

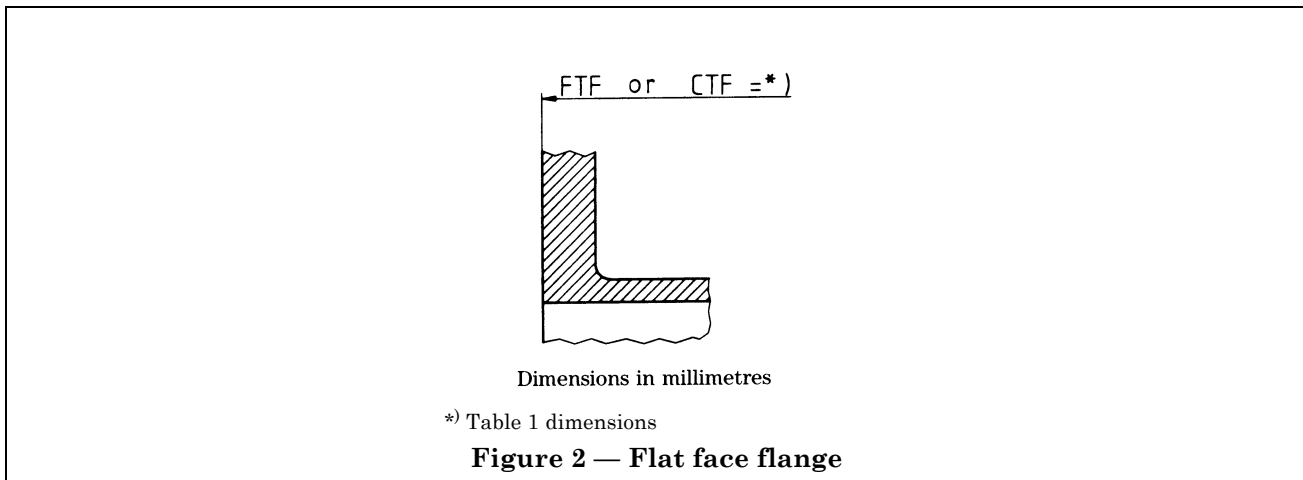


Figure 2 — Flat face flange

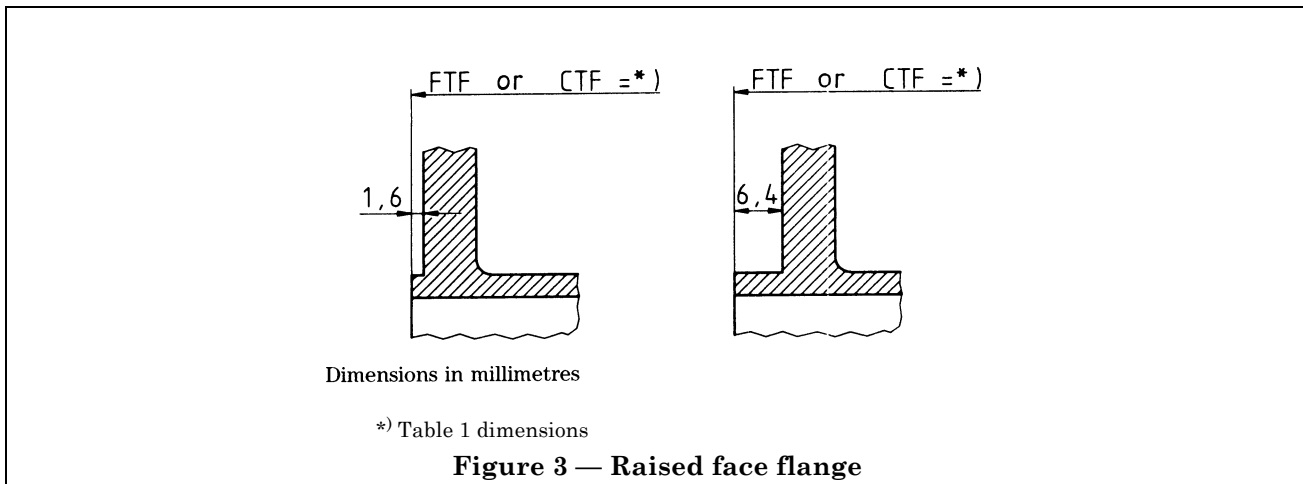
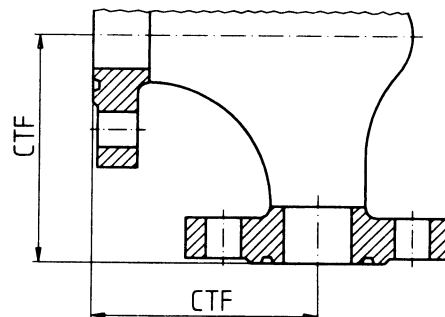
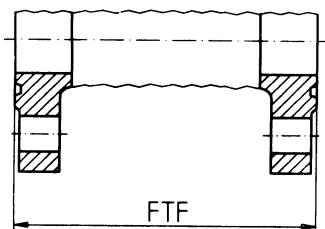


Figure 3 — Raised face flange



FTF = Table 1 dimension + X

CTF = Table 1 dimension + 0,5 X

Dimensions in millimetres

Nominal size	Additional length X for ring joint flanges			
	DN	Class 150	Class 300	Class 600
15	11,1	11,1	- 1,6	
20				
25			12,7	0
32				
40				
50				
65				
80				
100				
125				
150			15,9	3,2
200	12,7			
250				
300				
350				
400				
450				
500			19,1	6,4
600			22,2	9,5
700				
750			25,4	12,7
800				
900			28,6	15,9
1 000				

Figure 4

	Class 150 and Class 300	Class 600
Large or small male face	<p> $FTF = *) + 12,7$ $CTF = *) + 6,4$ $6,4$ *) </p>	<p> $FTF \text{ or } CTF = 6,4$ </p>
Large or small female face	<p> $FTF = *) + 9,6$ $CTF = *) + 4,8$ $4,8$ *) </p>	<p> $*)$ $FTF = *) - 3,2$ $1,6$ $CTF = *) - 1,6$ </p>
Large or small tongue	<p> $FTF = *) + 12,7$ $CTF = *) + 6,4$ $6,4$ *) </p>	<p> $FTF \text{ or } CTF = *)$ $6,4$ </p>
Large or small groove	<p> $FTF = *) + 9,6$ $CTF = *) + 4,8$ $4,8$ *) </p>	<p> $*)$ $FTF = *) - 3,2$ $1,6$ $CTF = *) - 1,6$ </p>

Dimensions in millimetres

*) Table 1 dimension

Figure 5

4.3 Dimensions for lined valves

4.3.1 For valves having a resilient lining which forms the gasket joint with the mating flanges, the FTF and CTF dimensions shall be the distance between the extremities of the valve in the installed condition.

The overall valve dimensions before assembly shall be provided by the manufacturer.

4.3.2 For valves having resilient or hard linings as a regular production feature the thickness of the lining on the mating surface shall be included in the FTF and CTF dimensions given in Table 1 unless the design of the valve precludes such an inclusion.

Where the design does not permit the lining to be included in the FTF and CTF dimensions given in Table 1, then the thickness of the lining may be added to the basic dimension.

4.3.3 For valves having resilient or hard linings which are not normally a regular production feature, the thickness of the lining on the flange faces may be added to the FTF and CTF dimensions given in Table 1.

4.4 Tolerances

Tolerances on FTF and CTF dimensions are given in Table 2.

Table 1 — Dimensions of basic series

Dimensions in millimetres

DN	Basic series																
	1	2	3	4	5	7	8 ^a	9 ^a	10	11 ^a	12	13	14	16	18	19	20
10	130	210	102	—	—	108	90	105	—	—	130	—	115	—	80	—	—
15	130	210	108	140	165	108	90	105	108	57	130	—	115	—	80	140	—
20	150	230	117	152	190	117	95	115	117	64	130	—	120	—	90	152	—
25	160	230	127	165	216	127	100	115	127	70	140	—	125	—	100	165	—
32	180	260	140	178	229	146	105	130	140	76	165	—	130	—	110	178	—
40	200	260	165	190	241	159	115	130	165	83	165	106	140	33	120	190	33
50	230	300	178	216	292	190	125	150	203	102	203	108	150	43	135	216	43
65	290	340	190	241	330	216	145	170	216	108	222	112	170	46	165	241	46
80	310	380	203	283	356	254	155	190	241	121	241	114	180	64	185	283	46
100	350	430	229	305	432	305	175	215	292	146	305	127	190	64	229	305	52
125	400	500	254	381	508	356	200	250	330	178	356	140	200	70	—	381	56
150	480	550	267	403	559	406	225	275	356	203	394	140	210	76	—	403	56
200	600	650	292	419	660	521	275	325	495	248	457	152	230	89	—	419	60
250	730	775	330	457	787	635	325	—	622	311	533	165	250	114	—	457	68
300	850	900	356	502	838	749	375	—	698	349	610	178	270	114	—	502	78
350	980	1 025	381	762	889	—	425	—	787	394	686	190	290	127	—	572	78
400	1 100	1 150	406	838	991	—	475	—	914	457	762	216	310	140	—	610	102
450	1 200	1 275	432	914	1 092	—	500	—	978	483	864	222	330	152	—	660	114
500	1 250	1 400	457	991	1 194	—	—	—	978	—	914	229	350	152	—	711	127
600	1 450	1 600	508	1 143	1 397	—	—	—	1 295	—	1 067	267	390	178	—	787	154
700	1 650	—	610	1 346	1 549	—	—	—	1 448	—	—	292	430	229	—	—	165
750	—	—	610	1 397	1 651	—	—	—	1 524	—	—	—	—	—	—	—	190
800	1 850	—	660	—	1 651	—	—	—	1 676	—	—	318	470	241	—	—	190
900	2 050	—	711	1 727	—	—	—	—	1 956	—	—	330	510	241	—	—	203
1 000	2 250	—	813	1 981	—	—	—	—	—	—	—	410	550	300	—	—	216
1 200	—	—	—	—	—	—	—	—	—	—	—	470	630	350	—	—	254
1 400	—	—	—	—	—	—	—	—	—	—	—	530	710	390	—	—	279
1 600	—	—	—	—	—	—	—	—	—	—	—	600	790	440	—	—	318
1 800	—	—	—	—	—	—	—	—	—	—	—	670	870	490	—	—	356
2 000	—	—	—	—	—	—	—	—	—	—	—	760	950	540	—	—	406

NOTE 1 Table 1 gives complete series. In Table 3 to Table 17 the columns of series may be incomplete.

NOTE 2 For certain sizes/types of valves alternative dimensions are permitted and these are specified in Table 3 to Table 17 as appropriate.

NOTE 3 The origin of the basic series is shown in Annex A (informative).

NOTE 4 Relationship between DN and NPS is shown in Annex B (informative).

^a CTF dimensions for angle pattern valves.

Table 1 — Dimensions of basic series

Dimensions in millimetres

DN	Basic series																
	21	22 ^a	23 ^a	24 ^a	25	32 ^a	33	36	37	38	39	40 ^a	41 ^a	42 ^a	50	51	52
10	—	65	70	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15	152	65	70	83	—	76	—	—	—	—	—	—	—	—	—	—	25
20	178	70	75	95	—	89	—	76	—	—	—	—	—	—	—	—	31,5
25	216	80	85	108	—	102	—	102	184	197	210	92	98	105	—	—	35,5
32	229	90	95	114	—	108	—	—	—	—	—	—	—	—	—	—	40
40	241	95	100	121	—	114	152	114	222	235	251	111	117	125	—	—	45
50	267	105	115	146	—	133	178	124	254	267	286	127	133	143	54	54	56
65	292	115	125	165	—	146	216	—	—	—	—	—	—	—	54	60	63
80	318	125	135	178	49	159	254	165	298	317	337	149	159	168	57	67	71
100	356	135	146	216	56	178	305	194	352	368	394	176	184	197	64	67	80
125	400	—	—	254	64	200	381	—	—	—	—	—	—	—	70	83	110
150	444	—	—	279	70	222	457	229	451	473	508	225	236	254	76	95	125
200	533	—	—	330	71	279	584	243	543	568	610	272	284	305	95	127	160
250	622	—	—	394	76	311	711	297	673	708	752	337	354	376	108	140	200
300	711	—	—	419	83	356	813	338	737	775	819	368	387	410	143	181	250
350	838	—	—	—	92	—	889	—	889	927	972	445	464	486	184	222	280
400	864	—	—	—	102	—	991	400	1 016	1 057	1 108	508	529	554	191	232	—
450	978	—	—	—	114	—	1 092	—	—	—	—	—	—	—	203	264	—
500	1 016	—	—	—	127	—	1 194	—	—	—	—	—	—	—	213	292	—
600	1 346	—	—	—	154	—	1 397	—	—	—	—	—	—	—	222	318	—
700	1 499	—	—	—	—	—	1 549	—	—	—	—	—	—	—	321	381	—
750	1 594	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
800	1 778	—	—	—	—	—	—	—	—	—	—	—	—	—	356	—	—
900	2 083	—	—	—	—	—	—	—	—	—	—	—	—	—	368	489	—
1 000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	419	—	—
1 200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1 400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1 600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1 800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2 000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE 1 Table 1 gives complete series. In Table 3 to Table 17 the columns of series may be incomplete.
 NOTE 2 For certain sizes/types of valves alternative dimensions are permitted and these are specified in Table 3 to Table 17 as appropriate.
 NOTE 3 The origin of the basic series is shown in Annex A (informative).
 NOTE 4 Relationship between DN and NPS is shown in Annex B (informative).

^a CTF dimensions for angle pattern valves.

Table 2 — Tolerances

Dimensions in millimetres

FTF or CTF dimension		Tolerances
above	up to and including	
0	250	± 2
250	500	± 3
500	800	± 4
800	1 000	± 5
1 000	1 600	± 6
1 600	2 250	± 8

Table 3 — Gate valves

Dimensions in millimetres

DN	FTF dimension								
	Class 125/Class 150			Class 250/Class 300				Class 600	
10	80	102	108	80	108	—	—	—	—
15	80	108	108	80	108	140	140	—	165
20	90	117	117	90	117	152	152	—	190
25	100	127	127	100	127	165	165	—	216
32	110	140	146	110	146	178	178	—	229
40	120	165	159	120	159	190	190	152	241
50	135	178	190	135	190	216	216	178	292
65	165	190	216	165	216	241	241	216	330
80	185	203	254	185	254	283	283	254	356
100	229	229	305	229	305	305	305	305	432
125	—	254	—	—	—	381	381	381	508
150	—	267	—	—	—	403	403	457	559
200	—	292	—	—	—	419	419	584	660
250	—	330	—	—	—	457	457	711	787
300	—	356	—	—	—	502	502	813	838
350	—	381	—	—	—	572	762	889	889
400	—	406	—	—	—	610	838	991	991
450	—	432	—	—	—	660	914	1 092	1 092
500	—	457	—	—	—	711	991	1 194	1 194
600	—	508	—	—	—	787	1 143	1 397	1 397
700	—	610	—	—	—	—	1 346	1 549	1 549
750	—	610	—	—	—	—	1 397	—	1 651
800	—	660	—	—	—	—	—	—	—
900	—	711	—	—	—	—	1 727	—	—
1 000	—	813	—	—	—	—	1 981	—	—
Basic series	18 ^c	3	7 ^c	18 ^c	7 ^c	19	4 ^b	33 ^a	5

^a These dimensions apply to pressure seal or flangeless bonnet valves. They may be applied at the manufacturer's option to valves with flanged bonnets.

^b This series applies to Class 300 steel valves only.

^c These series apply to copper alloy valves only; not to be used for cast iron or steel valves.

Table 4 — Butterfly valves — Flanged type

Dimensions in millimetres

DN	FTF dimension	
	Class 125/Class 150	Class 300
40	106	140
50	108	150
65	112	170
80	114	180
100	127	190
125	140	200
150	140	210
200	152	230
250	165	250
300	178	270
350	190	290
400	216	310
450	222	330
500	229	350
600	267	390
700	292	430
800	318	470
900	330	510
1 000	410	550
1 200	470	630
1 400	530	710
1 600	600	790
1 800	670	870
2 000	760	950
Basic series	13	14

Table 5 — Butterfly valves — Wafer type

Dimensions in millimetres

DN	FTF dimension			
	Class 125/Class 150			Class 300
40	33	—	33	33
50	43	—	43	43
65	46	—	46	46
80	46	49	64	64
100	52	56	64	64
125	56	64	70	70
150	56	70	76	76
200	60	71	89	89
250	68	76	114	114
300	78	83	114	114
350	92 ^a	92	127	127
400	102	102	140	140
450	114	114	152	152
500	127	127	152	152
600	154	154	178	178
700	165	—	229	—
800	190	—	241	—
900	203	—	241	—
1 000	216	—	300	—
1 200	254	—	350	—
1 400	279	—	390	—
1 600	318	—	440	—
1 800	356	—	490	—
2 000	406	—	540	—
Basic series	20	25 ^b	16	16

^a or 78 mm until deletion of basic series 25 (see ^b).^b Basic series 25 will be deleted five years after the first publication of this standard.

Table 6 — Plug valves and ball valves

Dimensions in millimetres

DN	FTF dimension						
	Class 125/Class 150			Class 250		Class 300	
10	102	130	130	—	130	130	—
15	108	130	130	140	130	130	165
20	117	130	150	152	150	150	190
25	127	140	160	165	160	160	216
32	140	165	180	178	180	180	229
40	165	165	200	190	200	200	241
50	178	203	230	216	230	230	292
65	190	222	290	241	290	290	330
80	203	241	310	283	310	310	356
100	229	305	350	305	350	350	432
125	254	356	400	381	400	400	508
150	267	394	480	403	480	480	559
200	292	457	600	419 ^b	600	600	660
250	330	533	730	457 ^b	730	730	787
300	356	610	850	502 ^b	850	850	838
350	381	686	980	762	980	980	889
400	406	762	1 100	838	1 100	1 100	991
450	432	864	1 200	914	1 200	1 200	1 092
500	457	914	1 250	991	1 250	1 250	1 194
600	508	1 067	1 450	1 143	1 450	1 450	1 397
Basic series	3 ^a	12	1	4	1	1	5

^a Above DN 40, this series does not apply to top entry full bore ball valves.
Above DN 300, this series does not apply to full bore ball and plug valves.

^b Alternative FTF dimensions for ball valves are: 502 (DN 200);
568 (DN 250);
648 (DN 300).

Table 7 — Diaphragm valves

Dimensions in millimetres

DN	FTF dimension	
	Class 125/Class 150	
10	108	130
15	108	130
20	117	150
25	127	160
32	146	180
40	159	200
50	190	230
65	216	290
80	254	310
100	305	350
125	356	400
150	406	480
200	521	600
250	635	730
300	749	850
Basic series	7	1

Table 8 — Globe valves — Straight and oblique pattern

Dimensions in millimetres

DN	FTF dimension								
	Class 125/Class 150				Class 250/Class 300				Class 600
10	80	108	—	130	80	108	—	130	—
15	80	108	108	130	80	108	152	130	165
20	90	117	117	150	90	117	178	150	190
25	100	127	127	160	100	127	216 ^c	160	216
32	110	146	140	180	110	146	229 ^c	180	229
40	120	159	165	200	120	159	241 ^c	200	241
50	135	190	203	230	135	190	267	230	292
65	165	216	216	290	165	216	292	290	330
80	185	254	241	310	185	254	318	310	356
100	229	305	292	350	229	305	356	350	432
125	—	—	330 ^a	400	—	—	400	400	508
150	—	—	356 ^a	480	—	—	444	480	559
200	—	—	495	600	—	—	533 ^c	600	660
250	—	—	622	730	—	—	622	730	787
300	—	—	698	850	—	—	711	850	838
350	—	—	787	980	—	—	838	980	889
400	—	—	914	1 100	—	—	864	1 100	991
450	—	—	978 ^b	1 200	—	—	978	1 200	1 092
Basic series	18 ^d	7 ^d	10	1	18 ^d	7 ^d	21	1	5

^a For Class 150 valves in steel use: 356 (DN 125);
406 (DN 150).

^b For Class 125 valves in cast iron use: 965 (DN 450).

^c For Class 300 valves in steel use: 203 (DN 25);
216 (DN 32);
229 (DN 40);
559 (DN 200).

^d This series applies to copper alloy valves only; not to be used for cast iron or steel valves.

Table 9 — Globe valves and lift check valves — Angle pattern

Dimensions in millimetres

DN	CTF dimension								
	Class 125/Class 150				Class 250/Class 300				Class 600
10	—	65	70	65	70	—	90	—	105
15	57	65	70	65	70	76	90	83	105
20	64	70	75	70	75	89	95	95	115
25	70	80	85	80	85	102	100	108	115
32	76	90	95	90	95	108	105	114	130
40	83	95	100	95	100	114	115	121	130
50	102	105	115	105	115	133	125	146	150
65	108	115	125	115	125	146	145	165	170
80	121	125	135	125	135	159	155	178	190
100	146	135	146	135	146	178	175	216	215
125	178	—	—	—	—	200	200	254	250
150	203	—	—	—	—	222	225	279	275
200	248	—	—	—	—	279	275	330	325
250	311	—	—	—	—	311	325	394	—
300	349	—	—	—	—	356	375	419	—
350	394	—	—	—	—	—	425	—	—
400	457	—	—	—	—	—	475	—	—
450	483	—	—	—	—	—	500	—	—
Basic series	11	22 ^a	23 ^a	22 ^a	23 ^a	32	8	24	9

^a This series applies to copper alloy valves only; not to be used for cast iron or steel valves.

Table 10 — Check valves — Flanged type^a

Dimensions in millimetres

DN	FTF dimension									
	Class 125/Class 150					Class 250/Class 300				Class 600
10	80	—	108	—	130	80	108	130	—	—
15	80	—	108	108	130	80	108	130	152	165
20	90	—	117	117	150	90	117	150	178	190
25	100	—	127	127	160	100	127	160	216 ^d	216
32	110	—	146	140	180	110	146	180	229 ^d	229
40	120	140	159	165	200	120	159	200	241 ^d	241
50	135	150	190	203	230	135	190	230	267	292
65	165	170	216	216	290	165	216	290	292	330
80	185	180	254	241	310	185	254	310	318	356
100	229	190	305	292	350	229	305	350	356	432
125	—	200	—	330 ^c	400	—	—	400	400	508
150	—	210	—	356 ^c	480	—	—	480	444	559
200	—	230	—	495	600	—	—	600	533 ^d	660
250	—	250	—	622	730	—	—	730	622	787
300	—	270	—	698	850	—	—	850	711	838
350	—	290	—	787	980	—	—	980	838	889
400	—	310	—	914 ^e	1 100	—	—	1 100	864	991
450	—	330	—	978 ^e	1 200	—	—	1 200	918	1 092
500	—	350	—	978	1 250	—	—	1 250	1 016	1 194
600	—	390	—	1 295	1 450	—	—	1 450	1 346	1 397
700	—	430	—	1 448	1 650	—	—	1 650	1 499	1 549
800	—	470	—	1 676	1 850	—	—	1 850	1 778	—
900	—	510	—	1 956	2 050	—	—	2 050	2 083	—
1 000	—	550	—	—	2 250	—	—	2 250	—	—
Basic series	18 ^b	14	7 ^b	10	1	18 ^b	7 ^b	1	21	5

^a For lift check valves — angle pattern use Table 9.^b This series applies to copper alloy valves only; not to be used for cast iron or steel valves.^c For Class 150 lift check valves in steel use: 356 (DN 125);
406 (DN 150);^d For Class 300 lift check valves in steel use: 203 (DN 25);
216 (DN 32);
229 (DN 40);
559 (DN 200).^e For Class 125 valves in cast iron use: 965 (DN 450).^f For Class 150 swing check valves in steel use: 864 (DN 400).

Table 11 — Check valves — Wafer type

Dimensions in millimetres

DN	FTF dimension			
	Class 125/Class 150/Class 300			
10	—	—	—	—
15	—	—	—	25
20	—	—	—	31,5
25	—	—	—	35,5
32	—	—	—	40
40	33	—	—	45
50	43	54	54	56
65	46	54	60	63
80	64	57	67	71
100	64	64	67	80
125	70	70	83	110
150	76	76	95	125
200	89	95	127	160
250	114	108	140	200
300	114	143	181	250
350	127	184	222	280
400	140	191	232	—
450	152	203	264	—
500	152	213	292	—
600	178	222	318	—
700	229	321	381	—
800	241	356	—	—
900	241	368	489	—
1 000	300	419	—	—
Basic series	16	50	51	52

Table 12 — Globe control valves — Straight pattern

Dimensions in millimetres

DN	FTF dimension					
	Class 150		Class 300		Class 600	
25	160	184	160	197	210	230
40	200	222	200	235	251	260
50	230	254	230	267	286	300
80	310	298	310	317	337	380
100	350	352	350	368	394	430
150	480	451	480	473	508	550
200	600	543	600	568	610	650
250	730	673	730	708	752	775
300	850	737	850	775	819	900
350	980	889	980	927	972	1 025
400	1 100	1 016	1 100	1 057	1 108	1 150
Basic series	1	37	1	38	39	2

Table 13 — Globe control valves — Angle pattern

Dimensions in millimetres

DN	CTF dimension					
	Class 150		Class 300		Class 600	
25	70	92	98	102	105	108
40	83	111	117	114	125	121
50	102	127	133	133	143	146
80	121	149	159	159	168	178
100	146	176	184	178	197	216
150	203	225	236	222	254	279
200	248	272	284	279	305	330
250	311	337	354	311	376	394
300	349	368	387	356	410	419
350	394	445	464	—	486	—
400	457	508	529	—	554	—
Basic series	11	40	41	32	42	24

**Table 14 — Butterfly control valves —
Flanged type**

Dimensions in millimetres

DN	FTF dimension		
	Class 160		Class 300
40	106	140	140
50	108	150	150
65	112	170	170
80	114	180	180
100	127	190	190
125	140	200	200
150	140	210	210
200	152	230	230
250	165	250	250
300	178	270	270
350	190	290	290
400	216	310	310
450	222	330	330
500	229	350	350
600	267	390	390
700	292	430	430
800	318	470	470
900	330	510	510
1 000	410	550	550
1 200	470	630	630
1 400	530	710	710
1 600	600	790	790
1 800	670	870	870
2 000	760	950	950
Basic series	13	14	14

Table 15 — Butterfly control valves — Wafer type

Dimensions in millimetres

DN	FTF dimension				
	Class 150			Class 300	
40	33	—	33	33	—
50	43	—	43	43	—
65	46	—	46	46	—
80	46	49	64	64	49
100	52	56	64	64	56
125	56	64	70	70	64
150	56	70	76	76	70
200	60	71	89	89	71
250	68	76	114	114	76
300	78	83	114	114	83
350	92 ^a	92	127	127	92
400	102	102	140	140	102
450	114	114	152	152	114
500	127	127	152	152	127
600	154	154	178	178	154
700	165	—	229	229	—
800	190	—	241	241	—
900	203	—	241	241	—
1 000	216	—	300	300	—
1 200	254	—	350	350	—
1 400	279	—	390	390	—
1 600	318	—	440	440	—
1 800	356	—	490	490	—
2 000	406	—	540	540	—
Basic series	20	25 ^b	16	16	25 ^b

^a or 78 mm until deletion of basic series 25 (see ^b).^b Basic series 25 will be deleted five years after the first publication of this standard.

Table 16 — Eccentric rotary plug control valves and segmented ball control valves — Wafer type and flanged type

Dimensions in millimetres

DN	FTF dimension	
	Class 150 – Class 300 – 600	
20	76	
25	102	
40	114	
50	124	
80	165	
100	194	
150	229	
200	243	
250	297	
300	338	
400	400	
Basic series	36	

Table 17 — Ball control valves

Dimensions in millimetres

DN	FTF dimension					
	Class 150		Class 300		Class 600	
10	102	—	—	—	—	—
15	108	—	140	—	165	—
20	117	—	152	—	190	—
25	127	—	165	197	216	210
32	140	—	178	—	229	—
40	165	—	190	235	241	251
50	178	—	216	267	292	286
65	190	—	241	—	330	—
80	203	—	283	317	356	337
100	229	—	305	368	432	394
125	—	—	381	—	508	—
150	—	394	403	473	559	508
200	—	457	502 ^a	568	660	610
250	—	533	568 ^a	708	787	752
300	—	610	648 ^a	775	838	819
350	—	686	762	927	889	972
400	—	762	838	1 057	991	1 108
450	—	864	914	—	1 092	—
500	—	914	991	—	1 194	—
600	—	1 067	1 143	—	1 397	—
Basic series	3	12	4	38	5	39

^aThis dimension is other than given in Table 1.

Annex A (informative)

Origin of basic series

Table A.1 — Origin of basic series

Basic series	Origin
1	DIN 3202-1 — Series F1
2	DIN 3202-1 — Series F 2
3	ASME/ANSI B 16.10 Table 1, column 8 and 9
4	ASME/ANSI B 16.10 Table 2, column 11
5	ASME/ANSI B 16.10 Table 4, column 5
7	BS 2080 Table 1 Series 7
8	DIN 3202-1 — Series F 32
9	DIN 3202-1 — Series F 33
10	ASME/ANSI B 16.10 Table 1, column 16
11	ASME/ANSI B 16.10 Table 1, column 17
12	ASME/ANSI B 16.10 Table 1, column 3; BS 2080 Table 1, column 12
13	BS 2080 Table 1 Series 13
14	DIN 3202-1 — Series F 4
16	BS 2080 Table 1, Series 16
18	BS 2080 Table 1, Series 18
19	ASME/ANSI B 16.10 Table 2, column 1
20	ASME/ANSI B 16.10 Table 9, columns 3 and 4
21	ASME/ANSI B 16.10 Table 40, columns 16 and 18
22	BS 2080 Table 1, Series 63
23	BS 2080 Table 1, Series 64
24	ASME/ANSI B 16.10 Table 4, column 12
25	ASME/ANSI B 16.10 Table 9, column 4
32	ASME/ANSI B 16.10 Table 2, column 17
33	ASME/ANSI B 16.10 Table 4, column 6
36	IEC 534-3-2 Table 1
37	IEC 534-3-1 Table 1
38	IEC 534-3-1 Table 1
39	IEC 534-3-1 Table 1
40	—
41	—
42	—
50	NF E 29-377
51	NF E 29-377
52	DIN 3202-3: Series K 5
NOTE References in ASME/ANSI B 16.10 are taken from 1986 revision.	

Annex B (informative)
Relationship between DN and NPS

Table B.1 — Relationship between DN and NPS

DN	10	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400
NPS	—	½	¾	1	1¼	1½	2	2½	3	4	5	6	8	10	12	14	16

DN	450	500	—	600	—	700	750	800	900	1 000	1 200	1 400	1 600	1 800	2 000
NPS	18	20	22	24	26	28	30	32	36	42	48	56	64	72	80

List of references

See national foreword.

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