

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

Part 1: PN-designated valves

The European Standard EN 558-1:1995 has the status of a
British Standard

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee PSE/7, Valves, upon which the following bodies were represented:

- Amalgamated Engineering Union
- 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
- West Midlands CBI
- 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 558-1:1995 *Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems — Part 1: PN-designated valves*, published by the European Committee for Standardization (CEN). EN 558-1 was produced as the result of international discussions in which the United Kingdom took an active part.

Together with BS EN 558-2:1996, 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.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 22, 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.

Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems Part 1: PN-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 1: Appariels de robinetterie désignés PN

Industriearmaturen — Baulängen von Armaturen aus Metall zum Einbau in Rohrleitungen mit Flanschen —
Teil 1: Nach PN bezeichnete Armaturen

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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.

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CEN

European Committee for Standardization
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Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

This European Standard was 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 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 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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0 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 PN designated metal valves used in flanged pipe systems.

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

- PN 2,5; PN 6; PN 10; PN 16; PN 25; PN 40; PN 63; PN 100.
- 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 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 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 end 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

For unlined valves the FTF and CTF dimensions shall be in accordance with Figure 1 and Figure 2.

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.

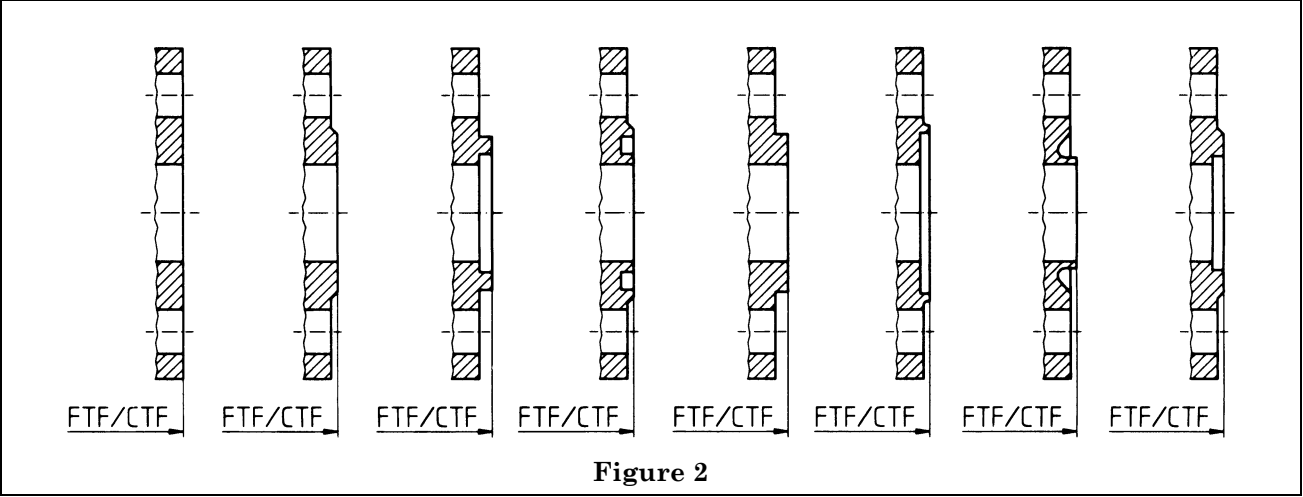
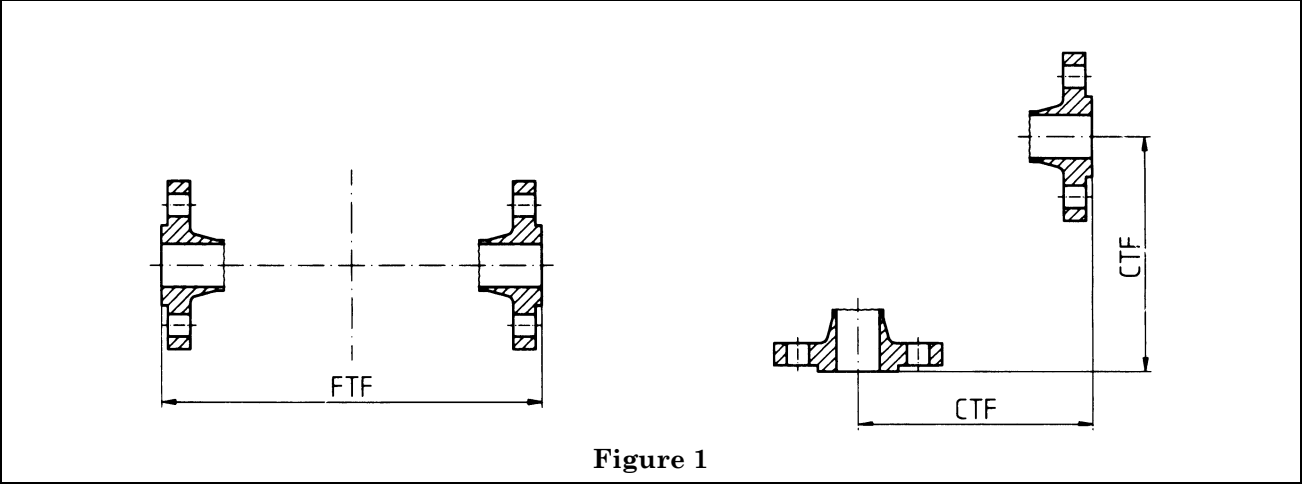


Table 1 — Dimensions of basic series

Dimensions in millimetres

DN	Basic series																					
	1	2	3	4	5	7	8 ^a	9 ^a	10	11 ^a	12	13	14	15	16	18	19	20	21	22 ^a	23 ^a	25
10	130	210	102	—	—	108	90	105	—	—	130	—	115	—	—	80	—	—	—	65	70	—
15	130	210	108	140	165	108	90	105	108	57	130	—	115	—	—	80	140	—	152	65	70	—
20	150	230	117	152	190	117	95	115	117	64	130	—	120	—	—	90	152	—	178	70	75	—
25	160	230	127	165	216	127	100	115	127	70	140	—	125	120	—	100	165	—	216	80	85	—
32	180	260	140	178	229	146	105	130	140	76	165	—	130	140	—	110	178	—	229	90	95	—
40	200	260	165	190	241	159	115	130	165	83	165	106	140	240	33	120	190	33	241	95	100	—
50	230	300	178	216	292	190	125	150	203	102	203	108	150	250	43	135	216	43	267	105	115	—
65	290	340	190	241	330	216	145	170	216	108	222	112	170	270	46	165	241	46	292	115	125	—
80	310	380	203	283	356	254	155	190	241	121	241	114	180	280	64	185	283	46	318	125	135	49
100	350	430	229	305	432	305	175	215	292	146	305	127	190	300	64	229	305	52	356	135	146	56
125	400	500	254	381	508	356	200	250	330	178	356	140	200	325	70	—	381	56	400	—	—	64
150	480	550	267	403	559	406	225	275	356	203	394	140	210	350	76	—	403	56	444	—	—	70
200	600	650	292	419	660	521	275	325	495	248	457	152	230	400	89	—	419	60	533	—	—	71
250	730	775	330	457	787	635	325	—	622	311	533	165	250	450	114	—	457	68	622	—	—	76
300	850	900	356	502	838	749	375	—	698	349	610	178	270	500	114	—	502	78	711	—	—	83
350	980	1 025	381	762	889	—	425	—	787	394	686	190	290	550	127	—	572	78	838	—	—	92
400	1 100	1 150	406	838	991	—	475	—	914	457	762	216	310	600	140	—	610	102	864	—	—	102
450	1 200	1 275	432	914	1 092	—	500	—	978	483	864	222	330	650	152	—	660	114	978	—	—	114
500	1 250	1 400	457	991	1 194	—	—	—	978	—	914	229	350	700	152	—	711	127	1 016	—	—	127
600	1 450	1 600	508	1 143	1 397	—	—	—	1 295	—	1 067	267	390	800	178	—	787	154	1 346	—	—	154
700	1 650	—	610	—	—	—	—	—	1 448	—	—	292	430	900	229	—	—	165	1 499	—	—	—
800	1 850	—	660	—	—	—	—	—	1 676	—	—	318	470	1 000	241	—	—	190	1 778	—	—	—
900	2 050	—	711	—	—	—	—	—	1 956	—	—	330	510	1 100	241	—	—	203	2 083	—	—	—
1 000	2 250	—	813	—	—	—	—	—	—	—	—	410	550	1 200	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	—	—	—	—

Table 1 — Dimensions of basic series

Dimensions in millimetres

DN	Basic series																					
	26	27	28	29	30	36	37	38	39	40 ^a	41 ^a	42 ^a	43	44	45	46	47	48	49	50	51	53
10	—	115	130	108	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15	—	115	130	108	150	—	—	—	—	—	—	—	90	—	140	165	—	—	16	—	—	—
20	—	120	150	117,5	160	76	—	—	—	—	—	—	100	—	152	250	75	—	19	—	—	—
25	—	125	160	127	160	102	184	197	210	92	98	105	115	—	210	255	80	—	22	—	—	—
32	—	130	180	127	180	—	—	—	—	—	—	—	130	36	230	265	90	—	28	—	—	—
40	240	140	200	136	190	114	222	235	251	111	117	125	150	38	240	280	100	180	31,5	—	—	38
50	250	150	230	142	200	124	254	267	286	127	133	143	170	40	250	300	110	200	40	54	54	40
65	290	170	290	154	215	—	—	—	—	—	—	—	—	42	270	340	130	240	46	54	60	42
80	310	180	310	160	230	165	298	317	337	149	159	168	—	44	280	360	150	260	50	57	67	44
100	350	190	350	172	250	194	352	368	394	176	184	197	—	46	300	400	160	300	60	64	67	46
125	400	325	400	186	275	—	—	—	—	—	—	—	—	48	350	450	200	350	90	70	83	48
150	450	350	450	200	300	229	451	473	508	225	236	254	—	50	375	500	210	400	106	76	95	50
200	550	400	550	228	350	243	543	568	610	272	284	305	—	60	425	600	—	500	140	95	127	60
250	650	450	650	255	400	297	673	708	752	337	354	376	—	65	450	700	—	600	—	108	140	65
300	750	500	750	285	425	338	737	775	819	368	387	410	—	75	500	800	—	700	—	143	181	75
350	850	550	850	315	475	—	889	927	972	445	464	486	—	80	550	—	—	800	—	184	222	80
400	950	762	950	340	525	400	1 016	1 057	1 108	508	529	554	—	95	600	—	—	900	—	191	232	95
450	1 050	—	—	360	575	—	—	—	—	—	—	—	—	107	—	—	—	1 000	—	203	264	107
500	1 150	914	1 150	380	625	—	—	—	—	—	—	—	—	120	—	—	—	1 100	—	213	292	120
600	1 350	—	—	425	725	—	—	—	—	—	—	—	—	144	—	—	—	1 300	—	222	318	144
700	1 550	—	—	470	825	—	—	—	—	—	—	—	—	160	—	—	—	1 500	—	321	381	160
800	1 750	—	—	510	925	—	—	—	—	—	—	—	—	180	—	—	—	1 700	—	356	—	180
900	1 950	—	—	555	1 025	—	—	—	—	—	—	—	—	195	—	—	—	1 900	—	368	489	195
1 000	2 150	—	—	600	1 125	—	—	—	—	—	—	—	—	210	—	—	—	2 100	—	419	—	210
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).

^a CTF dimensions for angle pattern valves.

Table 2 — Tolerances

Dimensions in millimetres

FTF or CTF dimension		Tolerance
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																	
	PN 6 – PN 16								PN 25 – PN 40								PN 63 – PN 100	
10	—	80	—	102	108	—	108	—	—	80	108	—	—	—	—	—	—	—
15	—	80	—	108	108	—	108	150	—	80	108	140	140	—	—	140	—	165
20	75	90	—	117	117	—	117	160	75	90	117	152	152	—	—	152	—	250
25	80	100	125	127	127	120	127	160	80	100	127	165	165	120	—	210	—	255
32	90	110	130	140	146	140	127	180	90	110	146	178	178	140	—	230	—	256
40	100	120	140	165	159	240	136	190	100	120	159	190	190	240	240	240	240	280
50	110	135	150	178	190	250	142	200	110	135	190	216	216	250	250	250	250	300
65	130	165	170	190	216	270	154	215	130	165	216	241	241	270	290	270	290	340
80	150	185	180	203	254	280	160	230	150	185	254	283	283	280	310	280	310	360
100	160	229	190	229	305	300	172	250	160	229	305	305	305	300	350	300	350	400
125	200	—	200	254	—	325	186	275	200	—	—	381	381	325	400	350	400	450
150	210	—	210	267	—	350	200	300	210	—	—	403	403	350	450	375	450	500
200	—	—	230	292	—	400	228	350	—	—	—	419	419	400	550	425	550	600
250	—	—	250	330	—	450	255	400	—	—	—	457	457	450	650	450	650	700
300	—	—	270	356	—	500	285	425	—	—	—	502	502	500	750	500	750	800
350	—	—	290	381	—	550	315	475	—	—	—	572	762	550	850	550	850	—
400	—	—	310	406	—	600	340	525	—	—	—	610	838	600	950	600	950	—
450	—	—	330	432	—	650	360	575	—	—	—	660	914	650	1 050	—	1 050	—
500	—	—	350	457	—	700	380	625	—	—	—	711	991	700	1 150	—	1 150	—
600	—	—	390	508	—	800	425	725	—	—	—	787	1 143	800	1 350	—	1 350	—
700	—	—	430	610	—	900	470	825	—	—	—	—	—	—	—	—	—	—
800	—	—	470	660	—	1 000	510	925	—	—	—	—	—	—	—	—	—	—
900	—	—	510	711	—	1 100	555	1 025	—	—	—	—	—	—	—	—	—	—
1 000	—	—	550	813	—	1 200	600	1 125	—	—	—	—	—	—	—	—	—	—
Basic Series	47 ^c	18 ^c	14 ^a	3	7 ^c	15	29	30	47 ^c	18 ^c	7 ^c	19	4	15	26	45	26	46 ^b

^a This series is used for grey cast iron gate valves isomorphic series (details see relevant product standards).

^b This series applies only to PN 63.

^c This series applies 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 Dimensions		
	PN 2,5 – PN 6 – PN 10 – PN 16 – PN 25		PN 40
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 5 — Butterfly valves — Wafer type

Dimensions in millimetres

DN	FTF Dimensions				
	PN 2,5 – PN 6 – PN 10 – PN 16 – PN 25				PN 40
40	38	33	—	33	33
50	40	43	—	43	43
65	42	46	—	46	46
80	44	46	49	64	64
100	46	52	56	64	64
125	48	56	64	70	70
150	50	56	70	76	76
200	60	60	71	89	89
250	65	68	76	114	114
300	75	78	83	114	114
350	80	92 ^b	92	127	127
400	95	102	102	140	140
450	107	114	114	152	152
500	120	127	127	152	152
600	144	154	154	178	178
700	160	165	—	229	—
800	180	190	—	241	—
900	195	203	—	241	—
1 000	210	216	—	300	—
1 200	—	254	—	350	—
1 400	—	279	—	390	—
1 600	—	318	—	440	—
1 800	—	356	—	490	—
2 000	—	406	—	540	—
Basic series	53 ^a	20	25 ^c	16	16

^a For PN 2,5, PN 6 and PN 10 only.
^b or 78 mm until deletion of basic series (see footnote ^c).
^c 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										
	PN 6 – PN 10 – PN 16					PN 25 – PN 40				PN 63 – PN 100	
10	—	102	115	130	130	110	—	130	130	130	130
15	90	108	115	130	130	115	140	130	130	130	130
20	100	117	120	130	150	120	152	150	150	150	150
25	115	127	125	140	160	125	165	160	160	160	160
32	130	140	130	165	180	130	178	180	180	180	180
40	150	165	140	165	200	140	190	200	200	200	200
50	170	178	150	203	230	150	216	230	230	230	230
65	—	190	170	222	290	170	241	290	290	290	290
80	—	203	180	241	310	180	283	310	310	310	310
100	—	229	190	305	350	190	305	350	350	350	350
125	—	254	325	356	400	325	381	400	400	400	400
150	—	267	350	394	480	350	403	450	480	450	480
200	—	292	400	457	600	400	419 ^b	550	600	550	600
250	—	330	450	533	730	450	457 ^b	650	730	650	730
300	—	356	500	610	850	500	502 ^b	750	850	750	850
350	—	381	550	686	980	550	762	850	980	850	980
400	—	406	762	762	1 100	762	838	950	1 100	950	1 100
450	—	432	—	864	1 200	—	914	—	1 200	—	1 200
500	—	457	914	914	1 250	914	991	1 150	1 250	1 150	1 250
600	—	508	—	1 067	1 450	—	1 143	—	1 450	—	—
Basic series	43 ^c	3 ^a	27	12	1	27	4	28	1	28	1

^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).

^c This series applies only for PN 10 ball valves.

Table 7 — Diaphragm valves

Dimensions in millimetres

DN	FTF dimension			
	PN 6	PN 10 – PN 16		PN 25 – PN 40
10	108	108	130	130
15	108	108	130	130
20	117	117	150	150
25	127	127	160	160
32	146	146	180	180
40	159	159	200	200
50	190	190	230	230
65	216	216	290	290
80	254	254	310	310
100	305	305	350	350
125	356	356	400	400
150	406	406	480	480
200	521	521	600	600
250	635	635	730	730
300	749	749	850	850
Basic series	7	7	1	1

Table 8 — Globe valves — Straight and oblique pattern

Dimensions in millimetres

DN	FTF dimension										
	PN 6 – PN 10 – PN 16					PN 25 – PN 40					PN 63 – PN 100
10	80	108	115	—	130	80	108	115	—	130	210
15	80	108	115	108	130	80	108	115	152	130	210
20	90	117	120	117	150	90	117	120	178	150	230
25	100	127	125	127	160	100	127	125	216 ^c	160	230
32	110	146	130	140	180	110	146	130	229 ^c	180	260
40	120	159	140	165	200	120	159	140	241 ^c	200	260
50	135	190	150	203	230	135	190	150	267	230	300
65	165	216	170	216	290	165	216	170	292	290	340
80	185	254	180	241	310	185	254	180	318	310	380
100	229	305	190	292	350	229	305	190	356	350	430
125	—	—	200	330	400	—	—	200	400	400	500
150	—	—	210	356	480	—	—	210	444	480	550
200	—	—	230	495	600	—	—	230	533 ^c	600	650
250	—	—	250	622	730	—	—	250	622	730	775
300	—	—	270	698	850	—	—	270	711	850	900
350	—	—	—	787	980	—	—	—	838	980	1 025
400	—	—	—	914	1 100	—	—	—	864	1 100	1 150
450	—	—	—	978	1 200	—	—	—	978	1 200	1 275
Basic series	18 ^d	7 ^d	14	10	1	18 ^d	7 ^d	14	21	1	2

^a HHFor PN 10 and PN 16 valves in steel use: 356 (DN 125); 406 (DN 150).
^b HHFor PN 10 and PN 16 valves in cast iron use: 965 (DN 450).
^c For PN 25 and PN 40 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									
	PN 6		PN 10 – PN 16				PN 25 – PN 40			PN 63 – PN 100
10	65	70	—	65	70	90	65	70	90	105
15	65	70	57	65	70	90	65	70	90	105
20	70	75	64	70	75	95	70	75	95	115
25	80	85	70	80	85	100	80	85	100	115
32	90	95	76	90	95	105	90	95	105	130
40	95	100	83	95	100	115	95	100	115	130
50	105	115	102	105	115	125	105	115	125	150
65	115	125	108	115	125	145	115	125	145	170
80	125	135	121	125	135	155	125	135	155	190
100	135	146	146	135	146	175	135	146	175	215
125	—	—	178 ^b	—	—	200	—	—	200	250
150	—	—	203 ^b	—	—	225	—	—	225	275
200	—	—	248	—	—	275	—	—	275	325
250	—	—	311	—	—	325	—	—	325	—
300	—	—	349	—	—	375	—	—	375	—
350	—	—	394	—	—	425	—	—	425	—
400	—	—	457	—	—	475	—	—	475	—
450	—	—	483	—	—	500	—	—	500	—
Basic series	22 ^a	23 ^a	11	22 ^a	23 ^a	8	22 ^a	23 ^a	8	9

^a This series applies to copper alloy valves only; not to be used for cast iron or steel valves.
^b For PN 10 and PN 16 valves in cast iron use: 165 (DN 125); 178 (DN 150).

Table 10 — Check valves — Flanged type^a

Dimensions in millimetres

DN	FTF dimension										
	PN 6 – PN 10 – PN 16						PN 25 – PN 40				PN 63 – PN 100
10	80	108	—	—	—	130	80	108	130	—	210
15	80	108	—	108	—	130	80	108	130	152	210
20	90	117	—	117	—	150	90	117	150	178	230
25	100	—	127	127	—	160	100	127	160	216 ^d	230
32	110	—	146	140	—	180	110	146	180	229 ^d	260
40	120	140	159	165	180	200	120	159	200	241 ^d	260
50	135	150	190	203	200	230	135	190	230	267	300
65	165	170	216	216	240	290	165	216	290	292	340
80	185	180	254	241	260	310	185	254	310	318	380
100	229	190	305	292	300	350	229	305	350	356	430
125	—	200	—	330 ^c	350	400	—	—	400	400	500
150	—	210	—	356 ^c	400	480	—	—	480	444	550
200	—	230	—	495	500	600	—	—	600	533 ^d	650
250	—	250	—	622	600	730	—	—	730	622	775
300	—	270	—	698	700	850	—	—	850	711	900
350	—	290	—	787	800	980	—	—	980	838	1 025
400	—	310	—	914 ^f	900	1 100	—	—	1 100	864	1 150
450	—	330	—	978 ^e	1 000	1 200	—	—	1 200	978	1 275
500	—	350	—	978	1 100	1 250	—	—	1 250	1 016	1 400
600	—	390	—	1 295	1 300	1 450	—	—	1 450	1 346	1 600
700	—	430	—	1 448	1 500	1 650	—	—	1 650	1 499	—
800	—	470	—	1 676	1 700	1 850	—	—	1 850	1 778	—
900	—	510	—	1 956	1 900	2 050	—	—	2 050	2 083	—
1 000	—	550	—	—	2 100	2 250	—	—	2 250	—	—
Basic series	18 ^b	14	7 ^b	10	48	1	18 ^b	7 ^b	1	21	2

^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 PN 16 lift check valves in steel, use: 356 (DN 125); 406 (DN 150).^d For PN 40 lift check valves in steel, use: 203 (DN 25); 216 (DN 32); 229 (DN 40); 559 (DN 200).^e For PN 16 valves in cast iron, use: 965 (DN 450).^f For PN 6 swing check valves in steel, use: 864 (DN 400).

Table 11 — Check valves — Wafer type

Dimensions in millimetres

DN	FTF dimension			
	PN 6 – PN 10 – PN 16 – PN 25 – PN 40			
10	—	—	—	—
15	16	—	—	—
20	19	—	—	—
25	22	—	—	—
32	28	—	—	—
40	31,5	33	—	—
50	40	43	54	54
65	46	46	54	60
80	50	64	57	67
100	60	64	64	67
125	90	70	70	83
150	106	76	76	95
200	140	89	95	127
250	—	114	108	140
300	—	114	143	181
350	—	127	184	222
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	49	16	50	51

Table 12 — Globe control valves — Straight pattern

Dimensions in millimetres

DN	FTF dimension					
	PN 10 – PN 16		PN 25 – PN 40		PN 63 – PN 100	
15	130	—	130	—	—	210
20	150	—	150	—	—	230
25	160	184	160	197	210	230
32	180	—	180	—	—	260
40	200	222	200	235	251	260
50	230	254	230	267	286	300
65	290	—	290	—	—	340
80	310	298	310	317	337	380
100	350	352	350	368	394	430
125	400	—	400	—	—	500
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 dimensions					
	PN 10 – PN 16		PN 25 – PN 40		PN 63 – PN 100	
25	100	92	100	98	105	115
40	115	111	115	117	125	130
50	125	127	125	133	143	150
80	155	149	155	159	168	190
100	175	176	175	184	197	215
150	225	225	225	236	254	275
200	275	272	275	284	305	325
250	325	337	325	354	376	—
300	375	368	375	387	410	—
350	425	445	425	464	486	—
400	475	508	475	529	554	—
Basic series	8	40	8	41	42	9

Table 14 — Butterfly control valves — Flanged type

Dimensions in millimetres

DN	FTF dimension		
	PN 2,5 – PN 6 – PN 10 – PN 16		PN 25 – PN 40
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		
	PN 10 – PN 16 – PN 25 – PN 40		
40	33	—	33
50	43	—	43
65	46	—	46
80	46	49	64
100	52	56	64
125	56	64	70
150	56	70	76
200	60	71	89
250	68	76	114
300	78	83	114
350	92 ^a	92	127
400	102	102	140
450	144	114	152
500	127	127	152
600	154	154	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

^a or 78 mm until deletion of basic series 25 (see ^b).^b Basic series 25 shall 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			
	PN 10 – PN 16 – PN 25 – PN 40		PN 63 – PN 100	
20	76	150	76	150
25	102	160	102	160
40	114	200	114	200
50	124	230	124	230
80	165	310	165	310
100	194	350	194	350
150	229	480	229	480
200	243	600	243	600
250	297	730	297	730
300	338	850	338	850
400	400	1 100	400	1 000
Basic series	36	1	36	1 ^a

^a Applies to eccentric rotary plug control valves only.

Table 17 — Ball control valves

Dimensions in millimetres

DN	FTF dimension								
	PN 10 – PN 16			PN 25 – PN 40			PN 63 – PN 100		
10	102	—	130	—	—	130	130	—	—
15	108	—	130	140	—	130	130	165	—
20	117	—	150	152	—	150	150	190	—
25	127	—	160	165	197	160	160	216	210
32	140	—	180	178	—	180	180	229	—
40	165	—	200	190	235	200	200	241	251
50	178	—	230	216	267	230	230	292	286
65	190	—	290	241	—	290	290	330	—
80	203	—	310	283	317	310	310	356	337
100	229	—	350	305	368	350	350	432	394
125	—	—	400	381	—	400	400	508	—
150	—	394	480	403	473	480	480	559	508
200	—	457	600	502 ^a	568	600	600	660	610
250	—	533	730	568 ^a	708	730	730	787	752
300	—	610	850	648 ^a	775	850	850	838	819
350	—	686	980	762	927	980	980	889	972
400	—	762	1 100	838	1 057	1 100	1 100	991	1 108
450	—	864	1 200	914	—	1 200	1 200	1 092	—
500	—	914	1 250	991	—	1 250	1 250	1 194	—
600	—	1 067	1 450	1 143	—	1 450	1 450	1 397	—
Basic series	3	12	1	4	38	1	1	5	39

^a This 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 F 1
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
15	DIN 3202-1 — Series F 5
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 10, columns 16 and 18
22	BS 2080 Table 1 Series 63
23	BS 2080 Table 1 Series 63
25	BS 2080 Table 1 Series 64
26	ASME/ANSI B 16.10 Table 9, column 4
27	DIN 3357-2 ff
28	DIN 3357-2 ff
29	NF E 29-377
30	NF E 29-377
36	IEC 534-3-2 Table 1
37	IEC 534-3-2 Table 1
38	IEC 534-3-2 Table 1
39	IEC 534-3-2 Table 1
40	—
41	—
42	—
43	NF E 29-305-2
44	NF E 29-305-2
45	NF E 29-305-2

Table A.1 — Origin of basic series

Basic series	Origin
46	NF E 29-331
47	DIN 3202-1 Series F 19
48	DIN 3202-1 Series F 6
49	DIN 3202-3 Series K 4
50	NF E 29-377
51	NF E 29-377
53	NF E 29-305-2 FR 10
NOTE References in ASME/ANSI B 16.10 are taken from 1986 revision.	

List of references

See national foreword.

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