

BOJIANG FITTING

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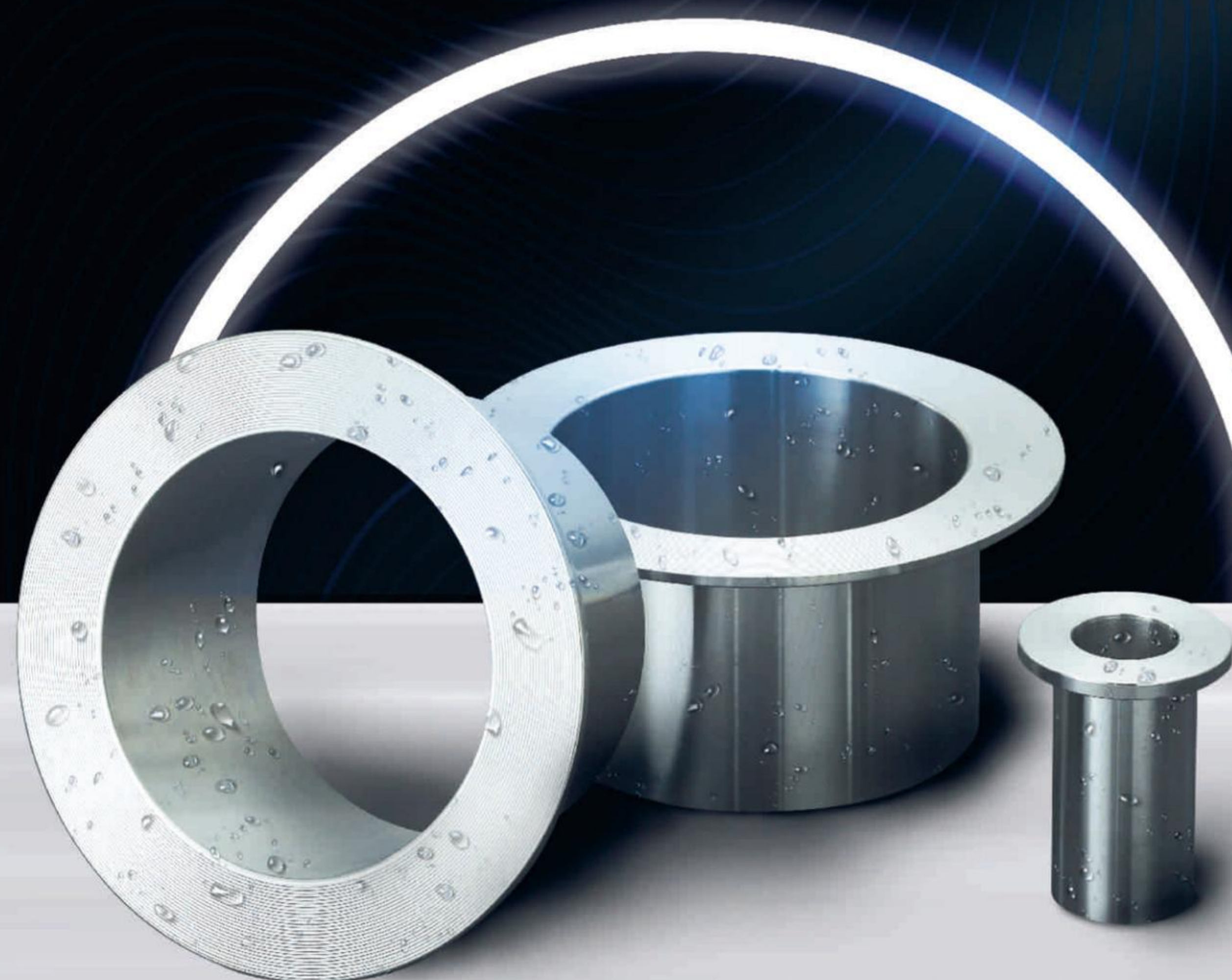
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专业精神 专业制造 专业服务

ASME B16.9

MSS SP-43



规格范围: " 1/2" - 48

标准范围: ASME B16.9、ASME B16.5、ASME B16.11、MSS SP-43、GB/T 12459、GB/T 14383、GB/T 19326、GB/T 10752、GB/T 9124、HG/T 20592、HG/T 20615、SH/T 3408、SH/T 3406、JIS B 2309、JIS B 2220、JIS B 2311、JIS B 2312、JIS B 2313、JIS B 2316、EN 1092-1、EN 10253-2、ISO 5251、BS EN 10253-3

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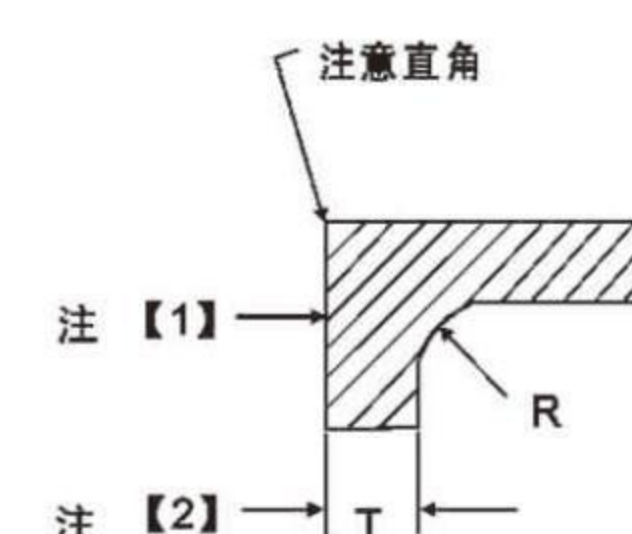
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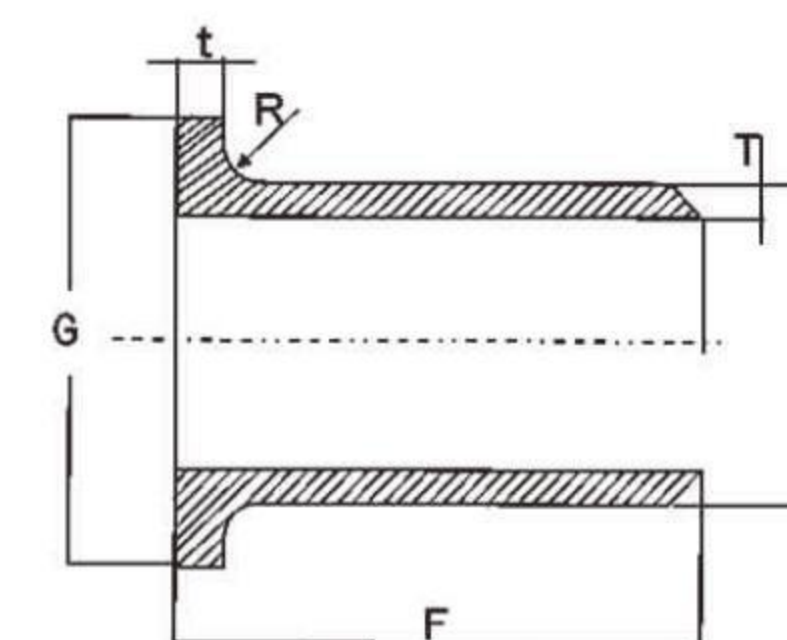
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搭接边放大剖面



翻边短节Lap Joint Stub End

表10 翻边短节尺寸
Table 10 Dimensions of Lap Joint Stub End

DN	公称尺寸 Nominal Pipe size (NPS)	端部外径 Outside Diameter at Bevel D		长型长度 Long Pattern Length	短型长度 Short Pattern Length	圆角半径 Radius of Rillet		搭接面直径 Diameter of Lap
		Max	Min			A型	B型	
				F	F	R		G
15	1/2	22.8	20.5	76	51	3	0.8	35
20	3/4	28.1	25.9	76	51	3	0.8	43
25	1	35.0	32.6	102	51	3	0.8	51
32	1 1/4	43.6	41.4	102	51	5	0.8	64
40	1 1/2	49.9	47.5	102	51	6	0.8	73
50	2	62.4	59.5	152	64	8	0.8	92
65	2 1/2	75.3	72.2	152	64	8	0.8	105
80	3	91.3	88.1	152	64	10	0.8	127
90	3 1/2	104.0	100.8	152	76	10	0.8	140
100	4	116.7	113.5	152	76	11	0.8	157
125	5	144.3	140.5	203	76	11	1.6	186
150	6	171.3	167.5	203	89	13	1.6	216
200	8	222.1	218.3	203	102	13	1.6	270
250	10	277.2	272.3	254	127	13	1.6	324
300	12	328.0	323.1	254	152	13	1.6	381
350	14	359.9	354.8	305	152	13	1.6	413
400	16	411.0	405.6	305	152	13	1.6	470
450	18	462	456	305	152	13	1.6	533
500	20	514	507	305	152	13	1.6	584
550	22	565	558	305	152	13	1.6	641
600	24	616	609	305	152	13	1.6	692

备注:

(a) 尺寸单位为: mm

(b) 公差见表2:

(c) 使用条件和连接结构常常规定接管长度要求,因此在订货时,采购方应指定长短型。

注:

(1) 垫片表面加工应按ASME B16.5凸面法兰的规定;

(2) 搭接厚度T应不小于公称管子壁厚,见表2最大公差;

(3) 当短型接管端用300磅级和600磅级的较大法兰及属于大于等于900磅级的大部分规格法兰时,和当长型接管端用1500

磅级和2500磅级的较大法兰时,为了避免法兰覆盖焊缝,可能需要增加连管的长度,增加量由制造商与采购方协商;

(4) 当采用面和凹凸面等特殊面时,必须增加搭接边的厚度,增加厚度应该在基本长度F之外(不包括在基本长度内);

(5) 这些尺寸应与ASME B16.5《管道法兰和法兰管件》中搭接法兰的规定半径相等;

(6) 本尺寸与ASME B16.5中所示的标准机施工面一致,搭接的背面应进行机加工,使其与安装表面一致,当采用环端面时选用

ASME B16.5中给定的尺寸F值。

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8 端部坡口
8 end bevel

8.1 除非另有要求, 管件端部应加工焊接坡口, 其形状和尺寸应符合图10和表11的规定。
8.1 Unless otherwise required, the ends of pipe fittings shall be processed with welding grooves, and their shapes and dimensions shall comply with the requirements of Figure 10 and Table 11.

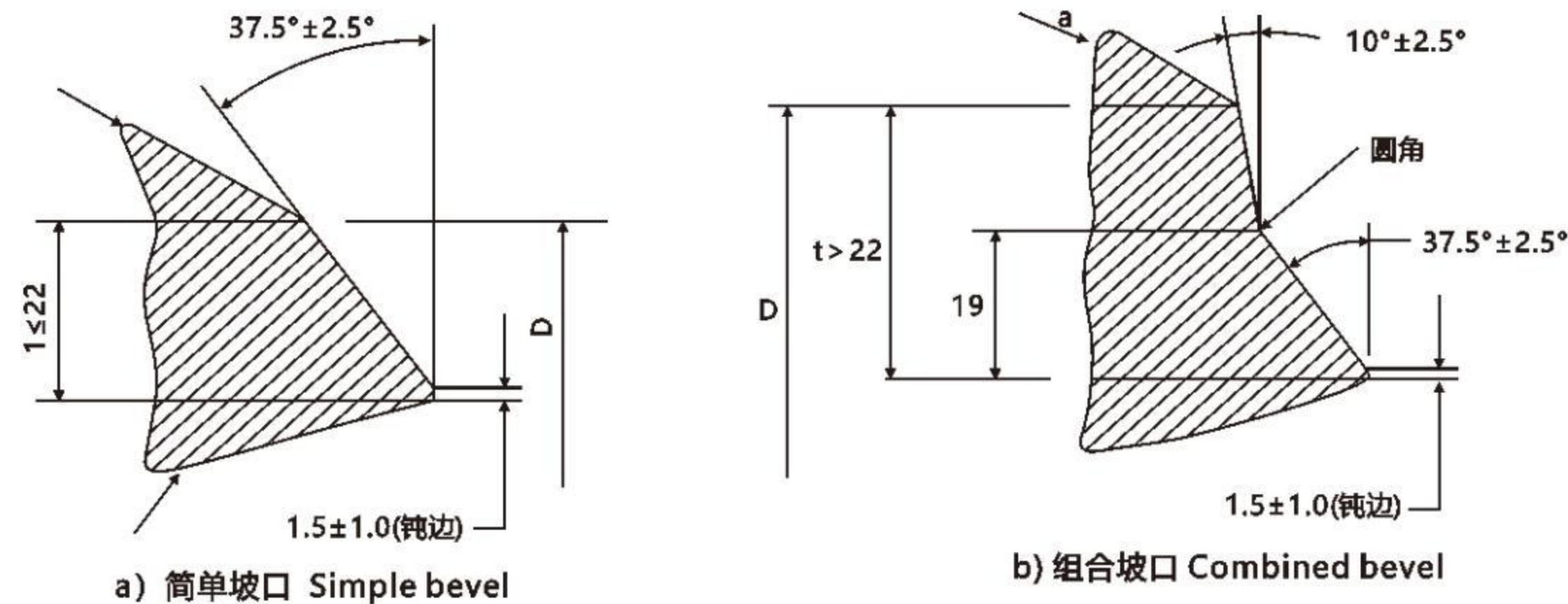


图10 管件端部坡口形状及尺寸
Figure 10 Shape and size of end bevel of pipe fittings

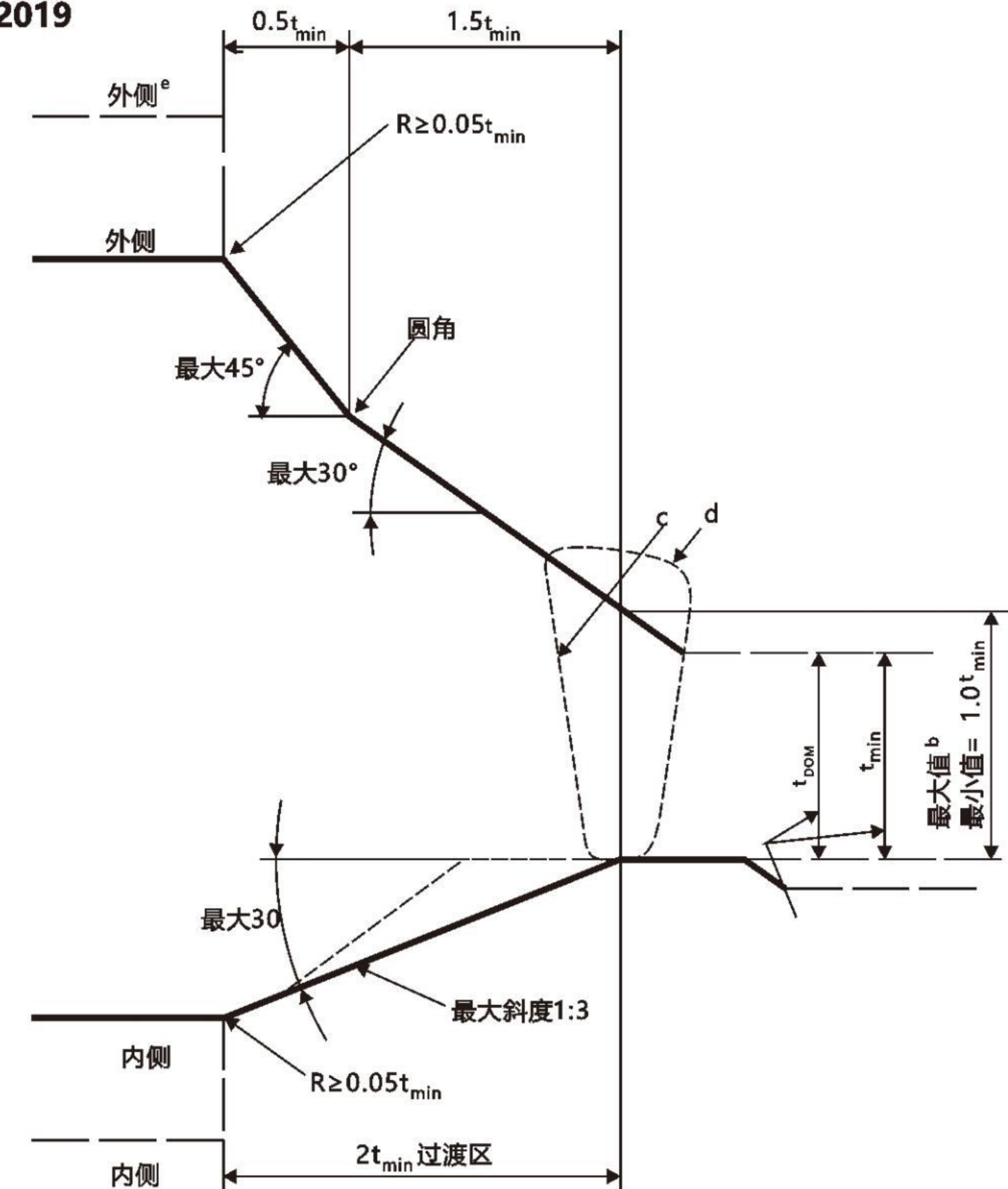
表11 管件的焊接坡口和钝边
Table 11 Welding grooves and blunt edges of pipe fittings

公称壁厚 t_{nom}/mm	端部制备 End preparation
$t_{nom} < 3$	直角或轻微倒角, 由制造商确定 Right angle or slight chamfer, determined by manufacturer
$3 \leq t_{nom} \leq 22$	简单坡口, 如图10a)所示 Simple groove, as shown in Figure 10a)
$t_{nom} > 22$	组合坡口, 如图10b)所示 Combined groove, as shown in Figure 10b)

8.2 管件焊接端部过渡部分的最大包络线应符合图11的要求。除图11的脚注e或特殊订货外, 在图11所示的最大包络线范围内, 由焊接坡口到管件的外表面以及由根部钝边到管件的内表面的过渡由制造商自定。

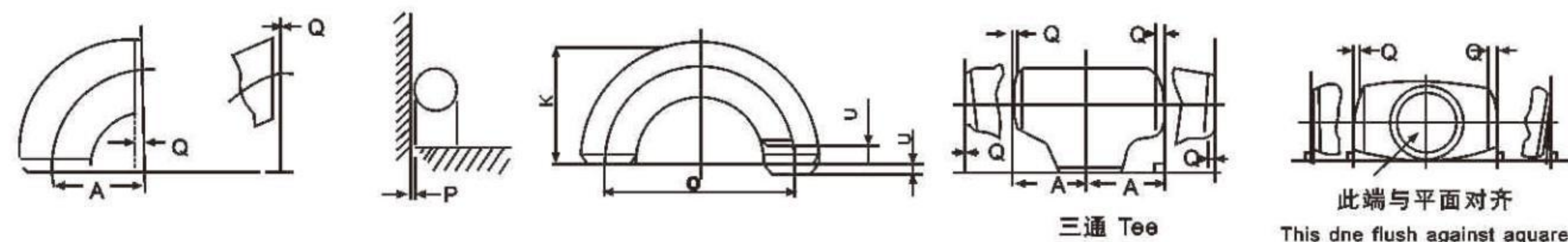
8.2 The maximum envelope curve of the transition part of the welded end of the pipe fitting shall comply with the requirements of Figure 11. Except in footnote e of Figure 11 or by special order, the transition from the welding groove to the outside surface of the fitting and from the root blunt edge to the inside surface of the fitting within the maximum envelope range shown in Figure 11 is left to the discretion of the manufacturer.

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- a t_{min} 为最小壁厚。除非合同另有规定, 为公称壁厚 t_{nom} 的87.5%。
 t_{min} is the minimum wall thickness. Unless otherwise specified in the contract, it is 87.5% of the nominal wall thickness t_{nom} .
- b 管件端部的最大壁厚为:
The maximum wall thickness at the end of the fitting is:
——当以最小壁厚订货时, 为 $t_{min} + 4mm$ 或 $1.15t_{min}$ 中的较大者;
When ordering with the minimum wall thickness, it is the greater of $t_{min} + 4mm$ or $1.15t_{min}$;
——当以公称壁厚订货时, 为 $t_{min} + 4mm$ 或 $1.10t_{nom}$ 中的较大者。
When ordering with nominal wall thickness, it is the greater of $t_{min} + 4mm$ or $1.10t_{nom}$.
- c 焊接坡口仅作示意。
Welding grooves are for illustration only.
- d 由适用规范允许的焊接补强可位于最大包络线外。
Weld reinforcements permitted by applicable codes may be located outside the maximum envelope.
- e 当采用最大斜度的过渡段不能与内表面或外表面相交时, 则应如虚线轮廓所示采用最大斜度。或者采用在包络区内的圆弧过渡。
When a transition section with a maximum slope cannot intersect the inner or outer surface, the maximum slope shall be used as shown by the dashed outline. Or use an arc transition within the envelope area.

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对焊管件尺寸的极限偏差 Tolerances for Buttwelding Fittings

GB/T 12459																
所有管件 All Fittings				弯头、三通 Elbows and tees 90° 45°	异径接头 Reducers and Lap Joint Stub Ends	管帽 Caps	180°弯头 180degree Returns		Lap Joint Stub Ends 翻边短节				工称 管子 规格 Nominal pipe size	Angularity Tolerance 形位公差		
公称尺寸 (DN) Nominal pipe size	坡口外 径 Outside Diameter at Bevel	端部内径 Inside Diameter at End	壁厚 Wall Thickness	中心至端 部尺寸 Center to End dimension	总长 Over all Length	总长 Over all Length	中心至中 心尺寸 Center to Center Dimension	背部至端 面尺寸 Back to Face Dimension	Outside Diameter of Lap Joints 翻边短节	搭接边外 径 圆角半径 Fillet Radius of Lap Joint	短节外径 Outside Diameter of Lap Joint	搭接 边厚度 Thickness of Lap	NPS	弯头、三通 Elbows Tees and Reducers	弯头及 三通 Elbows and Tees 90°和45°	端部不 符合度 Mismatch of End
DN	D		T	A, B, C, M	F, H	E	O	K	G	R	D	T	NPS	Q	P	U
15-65	±1.6 -0.8	±0.8	不小于公称壁厚 的87.5%	±2	±2	±3	±6	±6	0 -1	0 -1	极限尺寸见「翻边短节」表	+1.6 0	15-100	1	2	1
80-90	±1.6	±1.6		±2	±2	±3	±6	±6	0 -1	0 -1		+1.6 0	125-200	2	4	1
100	±1.6	±1.6		±2	±2	±3	±6	±6	0 -1	0 -2		+1.6 0	250-300	3	5	2
125-200	±2.4 -1.6	±1.6		±2	±2	±6	±6	±6	0 -1	0 -2		+1.6 0	350-400	3	6	2
250-450	±4.0 -3.2	±3.2		±2	±2	±6	±10	±6	0 -2	0 -2		+3.2 0	450-600	4	10	2
500-600	±6.4 -4.8	±4.8		±2	±2	±6	±10	±6	0 -2	0 -2		+3.2 0	650-750	5	10	-
650-750	±6.4 -4.8	±4.8		±3	±5	±10	-	-	-	-		-	800-1050	5	13	-
800-1200	±8.4 -4.8	±4.8		±5	±5	±10	-	-	-	-		-	1100-1200	5	19	-
1300-1500	±9.5 -6.4	±4.8		±6.4	±10	±10	-	-	-	-		-	1300-1500	5	19	-

A. The roundness is the summation of positive and negative deviation's absolute value.
B. These tolerances do not apply to certain parts of the formed pipe fittings when there is need to increase fitting thickness for enduring the inside pressure.
C. The inside diameter at the end and nominal wall thickness are decided by the purchasers.
D. Except purchaser's special request, the tolerance apply to the case of nominal inside diameter equaling to outside minus twice nominal wall thickness.
A. 圆度为正负偏差绝对值之和;
B. 但需要不得增加管壁厚度以满足抗内压需求时, 该公差可能不适用于成型管件的局部区域;
C. 端部内径和公称壁厚由采购方指定;
D. 除非采购方另有规定这些差适用于公称外径减去两倍公称壁厚的场合。

公称尺寸 Nominal size		形位公差 mm	
DN	NPS	Q	P
15~100	1/2~4	1	2
125~200	5~8	2	4
250~300	10~12	3	5
350~400	14~16	4	6
450~600	18~24	5	10
650~750	26~30	5	10
800~1050	32~42	5	13
1100~1200	44~48	5	19
1300~1600	52~64	6	22
1700~3400	68~136	10	25

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HG/T 20615-2009



规格范围: " 1/2"- 48

标准范围: ASME B16.9、ASME B16.5、ASME B16.11、MSS SP-43、GB/T 12459、GB/T 14383、GB/T 19326、GB/T 10752、GB/T 9124、HG/T 20592、HG/T 20615、SH/T 3408、SH/T 3406、JIS B 2309、JIS B 2220、JIS B 2311、JIS B 2312、JIS B 2313、JIS B 2316、EN 1092-1、EN 10253-2、ISO 5251、BS EN 10253-3

材质范围:

S30408 (06Cr19Ni10) 304, S30403 (022Cr19Ni10) 304L, S31008 (06Cr25Ni20) 310S, S31603 (022Cr17Ni12Mo2) 316 L, S31608 (06Cr17Ni12Mo2) 316, S31668 (06Cr17Ni12Mo2Ti) 316Ti, S32168 (06Cr18Ni11Ti) 321, S22053 (022Cr23 Ni5Mo3N) 2205, S39042 (015Cr21Ni26Mo5Cu2) 904L, S25073 (022Cr25Ni7Mo4N) 2507,

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对焊环松套钢制管法兰

Butt welding ring loose sleeve steel pipe flange

Class系列
Class series

HG/T 20615-2009

1.0.1 本标准规定了钢制管法兰（Class系列）的公称尺寸、公称压力、材料、压力-温度额定值、法兰类型和尺寸、密封面、公差及标记。

1.0.1 This standard specifies the nominal dimensions, nominal pressure, materials, pressure-temperature ratings, flanges of steel pipe flanges (Class series) Type and size, sealing surface, tolerances and markings.

1.0.2 本标准适用于公称压力Class150 (PN20) ~ Class2500 (PN420) 的钢制管法兰和法兰盖。法兰公称压力等级采用Class表示，包括下列六个等级：Class150, Class300, Class600, Class900, Class1500, Class2500。

1.0.2 This standard applies to steel pipe flanges and flange covers with nominal pressures of Class150 (PN20) ~ Class2500 (PN420). The nominal pressure level of Lan is represented by Class, including the following six levels: Class150, Class300, Class600, Class900, Class1500, Class2500.

表1.0.2 法兰的公称压力等级对照表

Table 1.0.2 Nominal pressure grade comparison table of flanges

Class	PN	Class	PN
Class150	PN20	Class900	PN150
Class300	PN50	Class1500	PN260
Class600	PN110	Class2500	PN420

1.0.3 本标准适用的钢管公称尺寸DN和钢管外径按表1.0.3的规定。

1.0.3 The nominal size DN and outer diameter of steel pipes applicable to this standard are as specified in Table 1.0.3.

HG/T 20615-2009

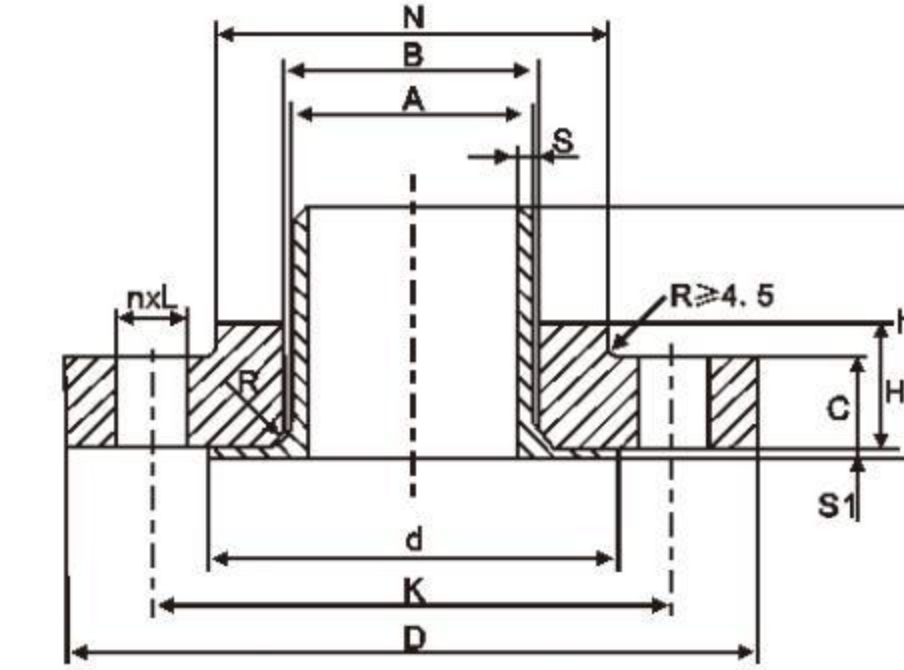


图8.2.7 对焊环松套钢制管法兰（带颈松套LF/对焊环SE）尺寸

Figure 8.2.7 Butt welding ring loose sleeve steel pipe flange (necked loose sleeve LF/butt welding ring SE) dimensions

表8.2.7-1 Class150 (PN20) 对焊环松套钢制管法兰

Table 8.2.7-1 Class150 (PN20) butt welding ring loose sleeve steel pipe flange

(mm)

公称尺寸 Nominal size	钢管 外径 Steel pipe outer diameter	连接尺寸 Connection size						法兰 厚度 Flange thickness	法兰 内径 Flange inner diameter	法兰颈 大端 Flange neck big end	法兰 高度 Flange height	圆角 rounded corners	对焊环 Butt welding ring	
		法兰 外径 Flange outer diameter	螺栓孔中 心圆直径 Bolt hole center diameter	螺栓孔 直径 Bolt hole diameter	螺栓 bolt	螺栓孔 数量 Number of bolt holes	螺栓孔 直径 Bolt hole diameter						高度 high	外径 outer diameter
DN	NPS	A	D	K	L	Th	n (个)	C	B	N	H	R1	h	d
15	½	21.3	90	60.3	16	M14	4	11.2	22.9	30	16	3	51	34.9
20	¾	26.9	100	69.9	16	M14	4	12.7	28.2	38	16	3	51	42.9
25	1	33.7	110	79.4	16	M14	4	14.3	34.9	49	17	3	51	50.8
32	1¼	42.4	115	88.9	16	M14	4	15.9	43.7	59	21	5	51	63.5
40	1½	48.3	125	98.4	16	M14	4	17.5	50.0	65	22	6	51	73.0
50	2	60.3	150	120.7	18	M16	4	19.1	62.5	78	25	8	64	92.1
65	2½	76.1	180	139.7	18	M16	4	22.3	78.5	90	29	8	64	104.8
80	3	88.9	190	152.4	18	M16	4	23.9	91.4	108	30	10	64	127.0
100	4	114.3	230	190.5	18	M16	8	23.9	116.8	135	33	11	76	157.2
125	5	139.7	255	215.9	22	M20	0	23.9	144.4	164	36	11	76	185.7
150	6	168.3	280	241.3	22	M20	8	25.4	171.4	192	40	13	89	215.9
200	8	219.1	345	298.58	22	M20	8	28.6	222.2	246	44	13	102	269.9
250	10	273	405	362.0	26	M24	12	30.2	277.4	305	49	13	127	323.8
300	12	323.9	485	431.8	26	M24	12	31.8	328.2	365	56	13	152	381.0
350	14	355.6	535	476.3	30	M27	12	35.0	360.2	400	79	13	152	412.8
400	16	406.4	595	539.8	30	M27	16	36.6	411.2	457	87	13	152	469.9
450	18	457	635	577.9	33	M30	16	39.7	462.3	505	97	13	152	533.4
500	20	508	700	635.0	33	M30	20	42.9	514.4	559	103	13	152	584.2
600	24	610	815	749.3	36	M33	20	47.7	616.0	663	111	13	152	692.2

注：1对焊环的壁厚S一般不小于钢管名义厚度，用户应在订货时注明。

2对焊环的翻边厚度S应不小于钢管最小壁厚(0.875S)。

HG/T 20615-2009

表8.2.7-2 Class300 (PN50) 对焊环松套钢制管法兰
Table 8.2.7-2 Class300 (PN50) butt welding ring loose sleeve steel pipe flange (mm)

公称尺寸 Nominal size		钢管 外径 Steel pipe outer diameter	连接尺寸 Connection size					法兰 厚度	法兰 内径	法兰颈 大端	法兰 高度	圆角 rounded corners	对焊环 Butt welding ring	
DN	NPS		法兰 外径 Flange outer diameter	螺栓孔中 心圆直径 Bolt hole center diameter	螺栓孔 直径 Bolt hole diameter	螺栓 bolt	螺栓孔 数量 Number of bolt holes	Flange thickness	Flange inner diameter	Flange neck big end	Flange height		高度 high	外径 outer diameter
			A	D	K	L	Th	n (个)	C	B	N		H	R1
15	½	21.3	95	66.7	16	M14	4	14.3	22.9	38	22	3	51	34.9
20	¾	26.9	115	82.6	18	M16	4	15.9	28.2	48	25	3	51	42.9
25	1	33.7	125	88.9	18	M16	4	17.5	34.9	54	27	3	51	50.8
32	1¼	42.4	135	98.4	18	M16	4	19.1	43.7	64	27	5	51	63.5
40	1½	48.3	155	114.3	22	M20	4	20.7	50.0	70	30	6	51	73.0
50	2	60.3	165	127.0	18	M16	8	22.3	62.5	84	33	8	64	92.1
65	2½	76.1	190	149.2	22	M20	8	25.4	78.5	100	38	8	64	104.8
80	3	88.9	210	168.3	22	M20	8	28.6	91.4	117	43	10	64	127.0
100	4	114.3	255	200.0	22	M20	8	31.8	116.8	146	48	11	76	157.2
125	5	139.7	280	235.0	22	M20	8	35.0	144.4	178	51	11	76	185.7
150	6	168.3	320	269.9	22	M20	12	36.6	171.4	206	52	13	89	215.9
200	8	219.1	380	330.2	26	M24	12	41.3	222.2	260	62	13	102	269.9
250	10	273	445	387.4	30	M27	16	47.7	277.4	321	95	13	254	323.8
300	12	323.9	520	450.8	33	M30	16	50.8	328.2	375	102	13	254	381.0
350	14	355.6	585	514.4	33	M30	20	54.0	360.2	425	111	13	305	412.8
400	16	406.4	650	571.5	36	M33	20	57.2	411.2	483	121	13	305	469.9
450	18	457	710	628.6	36	M33	24	60.4	462.3	533	130	13	305	533.4
500	20	508	775	685.8	36	M33	24	63.5	514.4	587	140	13	305	584.2
600	24	610	915	812.8	42	M39X3	24	69.9	616.0	702	152	13	305	692.2

注: 1对焊环的壁厚S一般不小于钢管名义厚度, 用户应在订货时注明。
2对焊环的翻边厚度S应不小于钢管最小壁厚(0.875S)。

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表8.2.7-33Class600 (PN110) 对焊环松套钢制管法兰
Table 8.2.7-33Class600 (PN110) butt welding ring loose sleeve steel pipe flange (mm)

公称尺寸 Nominal size		钢管 外径 Steel pipe outer diameter	连接尺寸 Connection size					法兰 厚度	法兰 内径	法兰颈 大端	法兰 高度	圆角 rounded comers	对焊环 Butt welding ring	
DN	NPS		法兰 外径 Flange outer diameter	螺栓孔中 心圆直径 Bolt hole center diameter	螺栓孔 直径 Bolt hole diameter	螺栓 bolt	螺栓孔 数量 Number of bolt holes	Flange thickness	Flange inner diameter	Flange neck big end	Flange height		高度 high	外径 outer diameter
			A	D	K	L	Th	n (个)	C	B	N		H	R1
15	½	21.3	95	66.7	16	M14	4	14.3	22.9	38	22	3	76	34.9
20	¾	26.9	115	82.6	18	M16	4	15.9	28.2	48	25	3	76	42.9
25	1	33.7	125	88.9	18	M16	4	17.5	34.9	54	27	3	102	50.8
32	1¼	42.4	135	98.4	18	M16	4	20.7	43.7	64	29	5	102	63.5
40	1½	48.3	155	114.3	22	M20	4	22.3	50.0	70	32	6	102	73.0
50	2	60.3	165	127.0	18	M16	8	25.4	62.5	84	37	8	152	92.1
65	2½	76.1	190	149.2	22	M20	8	28.6	78.5	100	41	8	152	104.8
80	3	88.9	210	168.3	22	M20	8	31.8	91.4	117	46	10	152	127.0
100	4	114.3	275	215.9	26	M24	8	38.1	116.8	152	54	11	152	157.2
125	5	139.7	330	266.7	30	M27	8	44.5	144.4	189	60	11	203	185.7
150	6	168.3	355	292.1	30	M27	12	47.7	171.4	222	67	13	203	215.9
200	8	219.1	420	349.2	33	M30	12	55.6	222.2	273	76	13	203	269.9
250	10	273	510	431.8	36	M33	16	63.5	277.4	343	111	13	254	323.8
300	12	323.9	560	489.0	36	M33	20	66.7	328.2	400	117	13	254	381.0
350	14	355.6	605	527.0	39	M36×3	20	69.9	360.2	432	127	13	305	412.8
400	16	406.4	685	603.2	42	M39×3	20	76.2	411.2	495	140	13	305	469.9
450	18	457	745	654.0	45	M42×3	20	82.6	462.3	546	152	13	305	533.4
500	20	508	815	723.9	45	M42×3	24	88.9	514.4	610	165	13	305	584.2
600	24	610	940	838.2	51	M48X3	24	101.6	616.0	718	184	13	305	692.2

注: 1对焊环的壁厚S一般不小于钢管名义厚度, 用户应在订货时注明。
2对焊环的翻边厚度S应不小于钢管最小壁厚 (0.875S)。

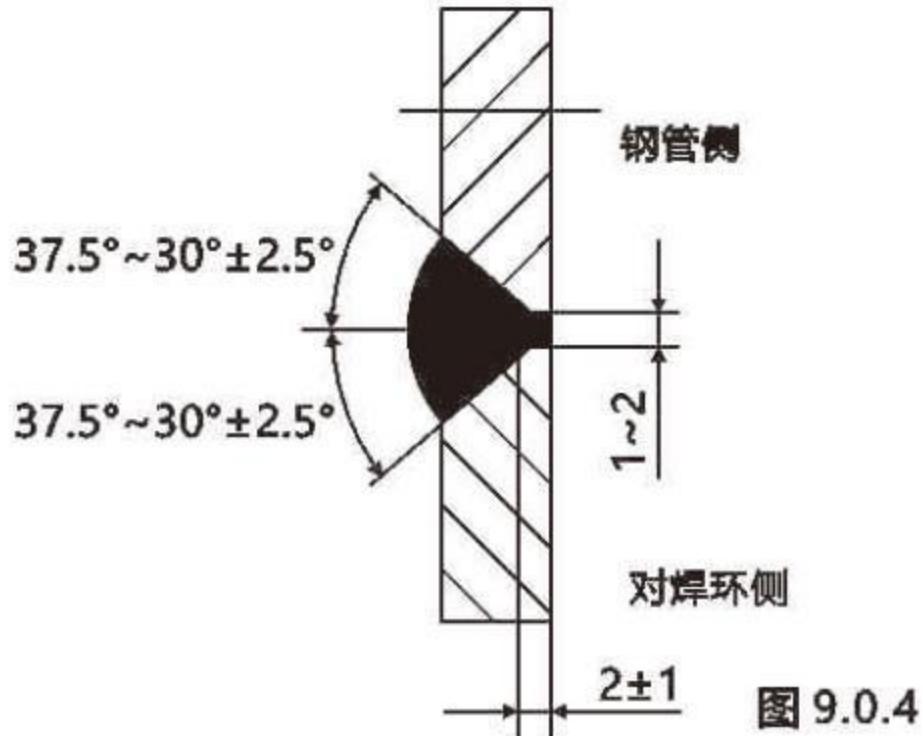
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表10.0.1-2 松套法兰用对焊环尺寸公差

Table 10.0.1-2 Dimensional tolerances of butt welding rings for loose sleeve flanges (mm)

项目 project	尺寸范围 Size range	尺寸公差 Dimensional tolerance
对焊环端部外径A Butt welding ring end outer diameter A	DN15~DN65	+1.6 -0.8
	DN80~DN100	±1.6
	DN125~DN200	+2.4 -1.6
	≥DN250	+4.0 -3.2
对焊环内径B Butt welding ring inner diameter B	DN15~DN65	±0.8
	DN80~DN200	±1.6
	≥DN250	±3.2
对焊环长度h Butt welding ring length h	—	±2
对焊环密封面外径d Butt welding ring sealing surface outer diameter d	DN15~DN200	0 -1
	≥DN250	0 -2
圆角半径R ₂ Fillet radius R ₂	DN15~DN80	0 -1
	≥DN100	0 -2
对焊环翻边厚度S Butt welding ring flanging thickness S		+1.6 -12.5%钢管名义原度

10.0.2 环连接面的密封面尺寸公差按表10.0.2的规定。法兰环槽密封面的硬度应高于所配合的金属环形垫的硬度。
10.0.2 The dimensional tolerance of the sealing surface of the ring connection surface shall be as specified in Table 10.0.2. The hardness of the flange ring groove sealing surface should be higher than the hardness of the matching metal ring gasket.

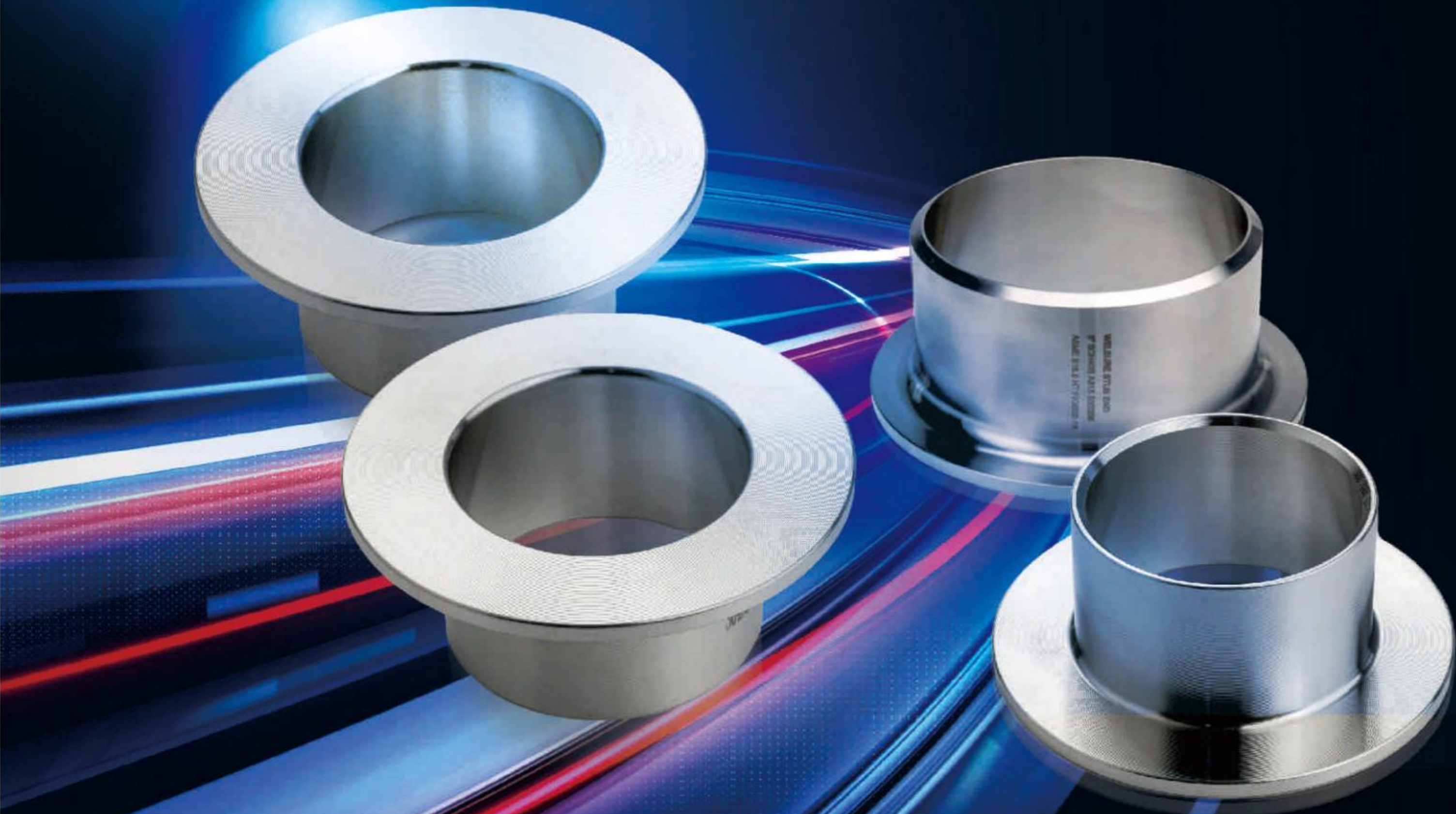


9.0.4 对焊环（松套法兰）与钢管连接的焊接接头和坡口尺寸应符合图9.0.4的要求。
9.0.4 The dimensions of the welded joint and groove connecting the butt welding ring (loose flange) and the steel pipe shall comply with the requirements of Figure 9.0.4.

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标准范围: ASME B16.9、ASME B16.5、ASME B16.11、MSS SP-43、GB/T 12459、GB/T 14383、GB/T 19326、GB/T 10752、GB/T 9124、HG/T 20592、HG/T 20615、SH/T 3408、SH/T 3406、JIS B 2309、JIS B 2220、JIS B 2311、JIS B 2312、JIS B 2313、JIS B 2316、EN 1092-1、EN 10253-2、ISO 5251、BS EN 10253-3
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对焊环松套钢制管法兰

Butt welding ring loose sleeve steel pipe flange

PN系列

PN series

HG/T 20592-2009

1.0.1 本标准规定了钢制管法兰（PN系列）的基本技术要求，包括公称尺寸、公称压力、材料、压力-温度额定值、法兰类型和尺寸、密封面、公差及标记。

1.0.1 This standard specifies the basic technical requirements for steel pipe flanges (PN series), including nominal dimensions, nominal pressure, materials, pressure-temperature ratings, flange types and sizes, sealing surfaces, tolerances and markings.

1.0.2 本标准适用于公称压力PN2.5 ~ PN160的钢制管法兰和法兰盖。法兰公称压力等级采用PN表示，包括下列九个等级：PN2.5, PN6, PN10, PN16, PN25, PN40, PN63, PN100, PN160。

1.0.2 This standard is applicable to steel pipe flanges and flange covers with nominal pressures PN2.5 ~ PN160. The nominal pressure grade of the flange is represented by PN. Including the following nine grades: PN2.5, PN6, PN10, PN16, PN25, PN40, PN63, PN100, PN160.

1.0.3 公称尺寸和钢管外径

本标准适用的钢管外径包括A、B两个系列，A系列为国际通用系列（俗称英制管）、B系列为国内沿用系列（俗称公制管）。其公称尺寸DN和钢管外径按表1.0.3的规定。

采用B系列钢管的法兰，应在公称尺寸DN的数值后标记“B”以示区别。但采用A系列钢管的法兰，不必在公称尺寸DN的数值后标记“A”，详见本标准第13章、第14章。

1.0.3 Nominal size and outer diameter of steel pipe

The outer diameters of steel pipes applicable to this standard include two series, A and B. Series A is an internationally common series (commonly known as British pipes), and series B is a domestic series (commonly known as metric pipes). The nominal size DN and steel pipe outer diameter are as specified in Table 1.0.3.

Flanges using B series steel pipes should be marked with "B" after the numerical value of the nominal size DN to indicate the difference. However, flanges using A series steel pipes do not need to be specified after the nominal size DN. Mark "A", see Chapter 13 and Chapter 14 of this standard for details.

表1.0.3 公称尺寸和钢管外径

Table 1.0.3 Nominal dimensions and outer diameter of steel pipes

(mm)

公称尺寸DN Nominal size DN		10	15	20	25	32	40	50	65	80	
铜管外径 Copper tube outer diameter	A	17.2	21.3	26.9	33.7	42.4	48.3	60.3	76.1	88.9	
	B	14	18	25	32	38	45	57	76	89	
公称尺寸DN Nominal size DN		100	125	150	200	250	300	350	400	450	500
钢管外径 Steel pipe outer diameter	A	114.3	139.7	168.3	219.1	273	323.9	355.6	406.4	457	508
	B	108	133	159	219	273	325	377	426	480	530
公称尺寸DN Nominal size DN		600	700	800	900	1000	1200	1400	1600	1800	2000
钢管外径 Steel pipe outer diameter	A	610	711	813	914	1016	1219	1422	1626	1829	2032
	B	630	720	820	920	1020	1220	1420	1620	1820	2020

1.0.4 本标准也适用于采用法兰作为连接型式的阀门、泵、化工机械、管路附件和设备零部件。

1.0.4 This standard also applies to valves, pumps, chemical machinery, pipeline accessories and equipment parts that use flanges as connection types.

1.0.5 本标准不包括特殊流体工况下材料的选择原则。

1.0.5 This standard does not include material selection principles under special fluid conditions.

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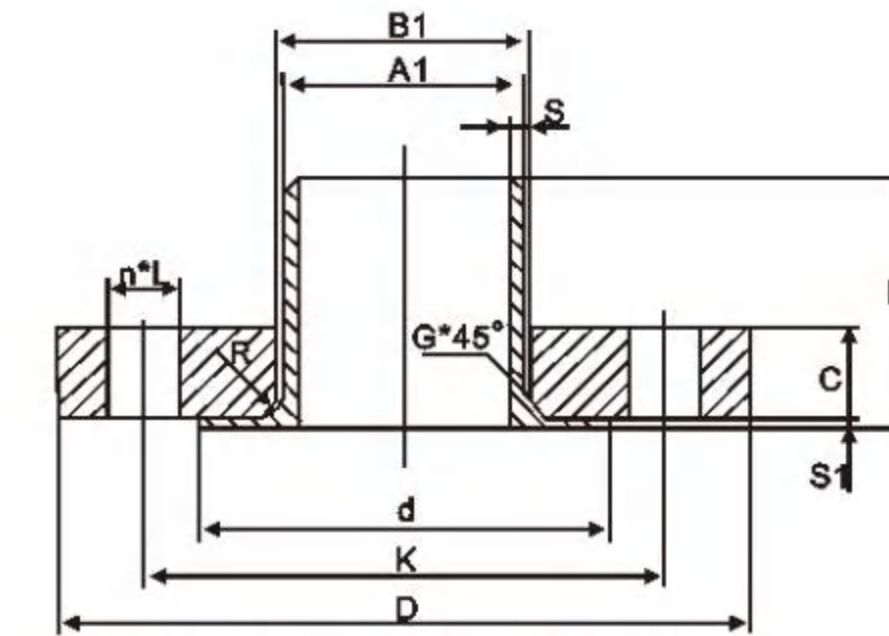


图8.2.7 对焊环松套钢制法兰

表8.2.7-1PN6 对焊环松套钢制管法兰

Table 8.2.7-1PN6 butt welding ring loose sleeve steel pipe flange

公称尺寸 Nominal size	钢管外径 (对焊环颈部外径) A1 Steel pipe outer diameter (butt welding ring neck outer diameter) A1		连接尺寸 Connection size					法兰厚度 Flange thickness	法兰内径 B1 Flange inner diameter B1		圆角 rounded corners	倒角 chamfer	对焊环 Butt welding ring			
			法兰 外径 Flange outer diameter	螺栓孔 中心圆 直径 Bolt hole center circle diameter	螺栓孔 直径 Bolt hole diameter	螺栓孔 数量 Number of bolt holes	螺栓 数量 Number of bolts						高度 high	外径 outer diameter	厚度 thickness	搭接面 厚度 Thickness of overlapping surface
DN	A	B	D	K	L	n	Th	C	A	B	R1	G	h	d	S	S1
10	17.2	14	75	50	11	4	M10	12	21	18	3	3	28	35	1.8	1.8
15	21.3	18	80	55	11	4	M10	12	25	22	3	3	30	40	2.0	2.0
20	26.9	25	90	65	11	4	M10	14	32	29	4	4	32	50	2.3	2.3
25	33.7	32	100	75	11	4	M10	14	38	36	4	4	35	60	2.6	2.6
32	42.4	38	120	90	14	4	M12	16	46	42	5	5	35	70	2.6	2.6
40	48.3	45	130	100	14	4	M12	16	53	50	5	5	38	80	2.6	2.6
50	60.3	57	140	110	14	4	M12	16	65	62	5	5	38	90	2.9	2.9
65	76.1	76	160	130	14	4	M12	16	81	81	6	6	38	110	2.9	2.9
80	88.9	89	190	150	18	4	M16	18	94	94	6	6	42	128	3.2	3.2
100	114.3	108	210	170	18	4	M16	18	120	114	6	6	45	148	3.6	3.6
125	139.7	133	240	200	18	8	M16	20	145	139	6	6	48	178	4.0	4.0
150	168.3	159	265	225	18	8	M16	20	174	165	6	6	48	202	4.5	4.5
200	219.1	219	320	280	18	8	M16	22	226	226	6	6	55	258	6.3	6.3
250	273	273	375	335	18	12	M16	24	281	281	8	8	60	312	6.3	6.3
300	323.9	325	440	395	22	12	M20	24	333	334	8	8	62	365	7.1	7.1
350	355.6	377	490	445	22	12	M20	26	365	386	8	8	62	415	7.1	7.1
400	406.4	426	540	495	22	16	M20	28	416	435	8	8	65	465	7.1	7.1
450	457	480	595	550	22	16	M20	30	467	490	8	8	65	520	7.1	7.1
500	508	530	645	600	22	20	M20	30	519	541	8	8	68	570	7.1	7.1
600	610	630	755	705	26	20	M24	32	622	642	8	8	70	670	7.1	7.1

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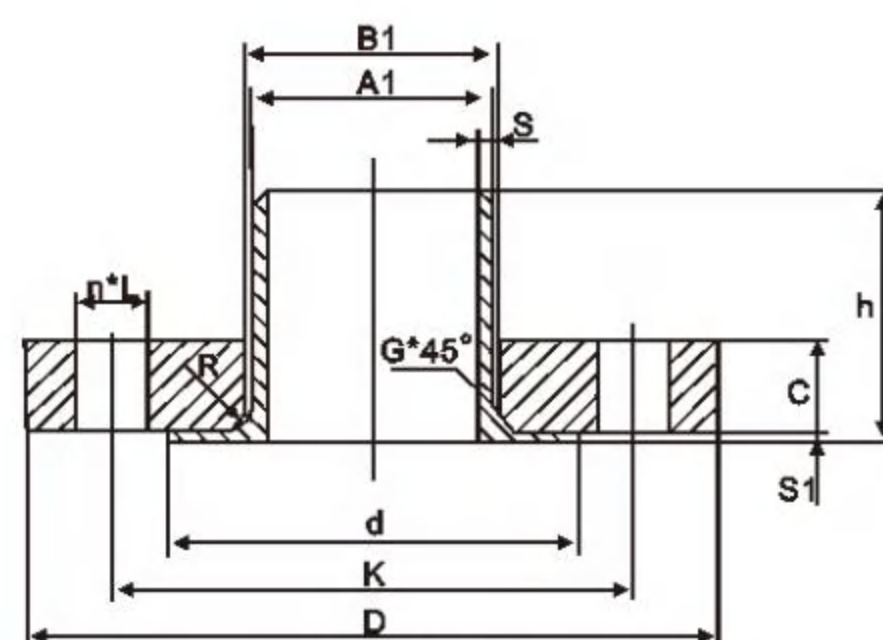


图8.2.7 对焊环松套钢制法兰

表8.2.7-2 PN10 对焊环松套钢制管法兰

Table 8.2.7-2 butt welding ring loose sleeve steel pipe flange

公称尺寸 Nominal size	钢管外径 (对焊环颈部外径) A1 Steel pipe outer diameter (butt welding ring neck outer diameter) A1		连接尺寸 Connection size					法兰厚度 Flange thickness	法兰内径 B1 Flange inner diameter B1		圆角 rounded corners	倒角 chamfer	对焊环 Butt welding ring			
			法兰外径 Flange outer diameter	螺栓孔中心圆直径 Bolt hole center circle diameter	螺栓孔直径 Bolt hole diameter	螺栓孔数量 Number of bolt holes	螺栓 bolt						高度 high	外径 outer diameter	厚度 thickness	搭接面厚度 Thickness of overlapping surface
DN	A	B	D	K	L	n	Th	C	A	B	R1	G	h	d	S	S1
10	17.2	14	90	60	14	4	M12	14	21	18	3	3	35	40	1.8	1.8
15	21.3	18	95	65	14	4	M12	14	25	22	3	3	38	45	2.0	2.0
20	26.9	25	105	75	14	4	M12	16	31	29	4	4	40	58	2.3	2.3
25	33.7	32	115	85	14	4	M12	16	38	36	4	4	40	68	2.6	2.6
32	42.4	38	140	100	18	4	M16	18	47	42	5	5	42	78	2.6	2.6
40	48.3	45	150	110	18	4	M16	18	53	50	5	5	45	88	2.6	2.6
50	60.3	57	165	125	18	4	M16	19	65	62	5	5	45	102	2.9	2.9
65	76.1	76	185	145	18	8	M16	20	81	81	6	6	45	122	2.9	2.9
80	88.9	89	200	160	18	8	M16	20	94	94	6	6	50	138	3.2	3.2
100	114.3	108	220	180	18	8	M16	22	120	114	6	6	52	158	3.6	3.6
125	139.7	133	250	210	18	8	M16	22	145	139	6	6	55	188	4.0	4.0
150	168.3	159	285	240	22	8	M20	24	174	165	6	6	55	212	4.5	4.5
200	219.1	219	340	295	22	8	M20	24	226	226	6	6	62	268	6.3	6.3
250	273	273	395	350	22	12	M20	26	281	281	8	8	68	320	6.3	6.3
300	323.9	325	445	400	22	12	M20	26	333	334	8	8	68	370	7.1	7.1
350	355.6	377	505	460	22	16	M20	28	365	386	8	8	68	430	7.1	7.1
400	406.4	426	565	515	26	16	M24	32	416	435	8	8	72	482	7.1	7.1
450	457	480	615	565	26	20	M24	36	467	490	8	8	72	532	7.1	7.1
500	508	530	670	620	26	20	M24	38	519	541	8	8	75	585	7.1	7.1
600	610	630	780	725	30	20	M27	42	622	642	8	8	80	685	7.1	7.1

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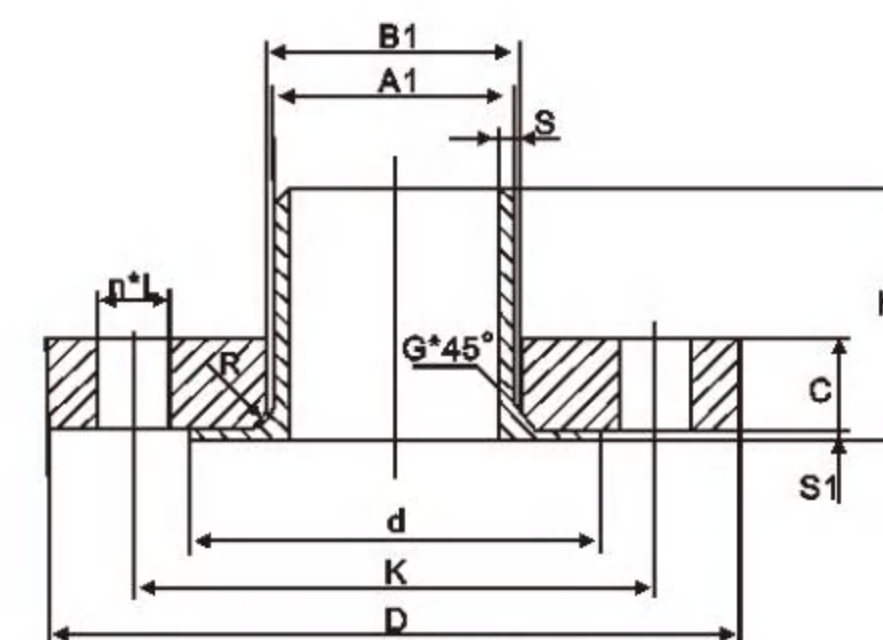


图8.2.7 对焊环松套钢制法兰

表8.2.7-3 PN16 对焊环松套钢制管法兰

Table 8.2.7-3 PN16 butt welding ring loose sleeve steel pipe flange

公称尺寸 Nominal size	钢管外径 (对焊环颈部外径) A1 Steel pipe outer diameter (butt welding ring neck outer diameter) A1		连接尺寸 Connection size					法兰厚度 Flange thickness	法兰内径 B1 Flange inner diameter B1		圆角 rounded corners	倒角 chamfer	对焊环 Butt welding ring			
			法兰外径 Flange outer diameter	螺栓孔中心圆直径 Bolt hole center circle diameter	螺栓孔直径 Bolt hole diameter	螺栓孔数量 Number of bolt holes	螺栓 bolt						高度 high	外径 outer diameter	厚度 thickness	搭接面厚度 Thickness of overlapping surface
DN	A	B	D	K	L	n	Th	C	A	B	R1	G	h	d	S	S1
10	17.2	14	90	60	14	4	M12	14	21	18	3	3	35	40	1.8	1.8
15	21.3	18	95	65	14	4	M12	14	25	22	3	3	38	45	2.0	2.0
20	26.9	25	105	75	14	4	M12	16	31	29	4	4	40	58	2.3	2.3
25	33.7	32	115	85	14	4	M12	16	38	36	4	4	40	68	2.6	2.6
32	42.4	38	140	100	18	4	M16	18	47	42	5	5	42	78	2.6	2.6
40	48.3	45	150	110	18	4	M16	18	53	50	5	5	45	88	2.6	2.6
50	60.3	57	165	125	18	4	M16	19	65	62	5	5	45	102	2.9	2.9
65	76.1	76	185	145	18	8	M16	20	81	81	6	6	45	122	2.9	2.9
80	88.9	89	200	160	18	8	M16	20	94	94	6	6	50	138	3.2	3.2
100	114.3	108	220	180	18	8	M16	22	120	114	6	6	52	158	3.6	3.6
125	139.7	133	250	210	22	8	M16	22	145	139	6	6	55	188	4.0	4.0
150	168.3	159	285	240	22	8	M20	24	174	165	6	6	55	212	4.5	4.5
200	219.1	219	340	295	26	12	M20	26	226	226	6	6	62	268	6.3	6.3
250	273	273	405	355	26	12	M24	29	281	281	8	8	70	320	6.3	6.3
300	323.9	325	460	410	26	12	M24	32	333	334	8	8	78	378	7.1	7.1
350	355.6	377	520	470	30	16	M24	35	365	386	8	8	82	428	8.0	8.0
400	406.4	426	580	525	30	16	M27	38	416	435	8	8	85	490	8.0	8.0
450	457	480	640	585	33	20	M27	42	467	490	8	8	87	550	8.0	8.0
500	508	530	715	650	33	20	M30	46	519	541	8	8	90	610	8.0	8.0
600	610	630	840	770	36	20	M30	52	622	642	8	8	95	725	8.8	8.8

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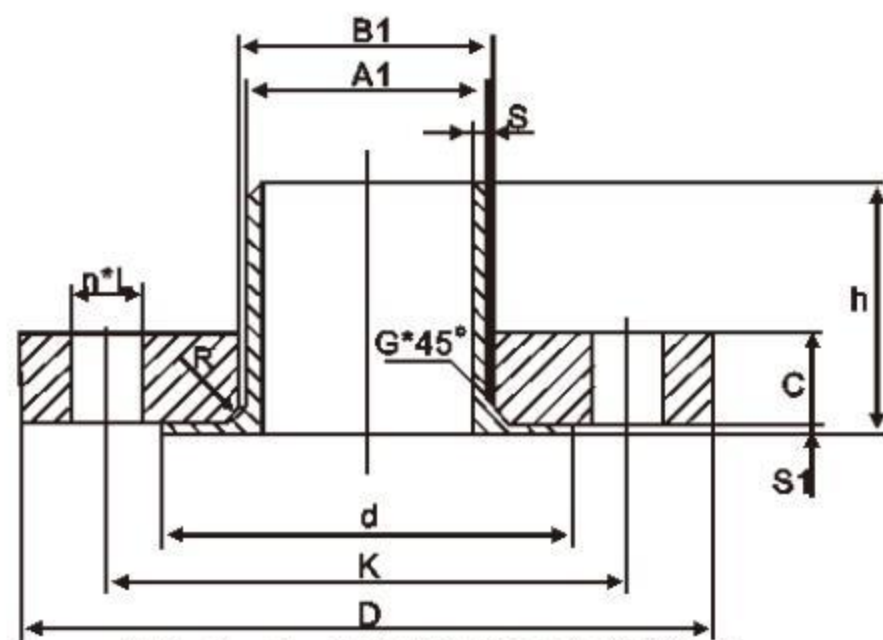


图8.2.7 对焊环松套钢制法兰

表8.2.7-4 PN25 对焊环松套钢制管法兰

Table 8.2.7-4 PN25 butt welding ring loose sleeve steel pipe flange

公称尺寸 Nominal size	钢管外径 (对焊环颈部外径) A1 Steel pipe outer diameter (butt welding ring neck outer diameter) A1		连接尺寸 Connection size					法兰厚度 Flange thickness	法兰内径 B1 Flange inner diameter B1		圆角 rounded corners	倒角 chamfer	对焊环 Butt welding ring			
			法兰 外径 Flange outer diameter	螺栓孔 中心圆 直径 Bolt hole center circle diameter	螺栓孔 直径 Bolt hole diameter	螺栓孔 数量 Number of bolt holes	螺栓 bolt						高度 high	外径 outer diameter	厚度 thickness	搭接口 厚度 Thickness of overlapping surface
DN	A	B	D	K	L	n	Th	C	A	B	R1	G	h	d	S	S1
10	17.2	14	90	60	14	4	M12	14	21	18	3	3	35	40	1.8	1.8
15	21.3	18	95	65	14	4	M12	14	25	22	3	3	38	45	2.0	2.0
20	26.9	25	105	75	14	4	M12	16	31	29	4	4	40	58	2.3	2.3
25	33.7	32	115	85	14	4	M12	16	38	36	4	4	40	68	2.6	2.6
32	42.4	38	140	100	18	4	M16	18	47	42	5	5	42	78	2.6	2.6
40	48.3	45	150	110	18	4	M16	18	53	50	5	5	45	88	2.6	2.6
50	60.3	57	165	125	18	4	M16	20	65	62	5	5	48	102	2.9	2.9
65	76.1	76	185	145	18	8	M16	22	81	81	6	6	52	122	2.9	2.9
80	88.9	89	200	160	18	8	M16	24	94	94	6	6	58	138	3.2	3.2
100	114.3	108	235	190	22	8	M20	26	120	114	6	6	65	162	3.6	3.6
125	139.7	133	270	220	26	8	M24	28	145	139	6	6	68	188	4.0	4.0
150	168.3	159	300	250	26	8	M24	30	174	165	6	6	75	218	4.5	4.5
200	219.1	219	360	310	26	12	M24	32	226	226	6	6	80	278	6.3	6.3
250	273	273	425	370	30	12	M27	35	281	281	8	8	88	335	7.1	7.1
300	323.9	325	485	430	30	16	M27	38	333	334	8	8	92	395	8.0	8.0
350	355.6	377	555	490	33	16	M30	42	365	386	8	8	100	450	8.0	8.0
400	406.4	426	620	550	36	16	M33	46	416	435	8	8	110	505	8.8	8.8
450	457	480	670	600	36	20	M33	50	467	490	8	8	110	555	8.8	8.8
500	508	530	730	660	36	20	M33	56	519	541	8	8	125	615	10.0	10.0
600	610	630	845	770	39	20	M36X3	68	622	642	8	8	125	720	11.0	11.0

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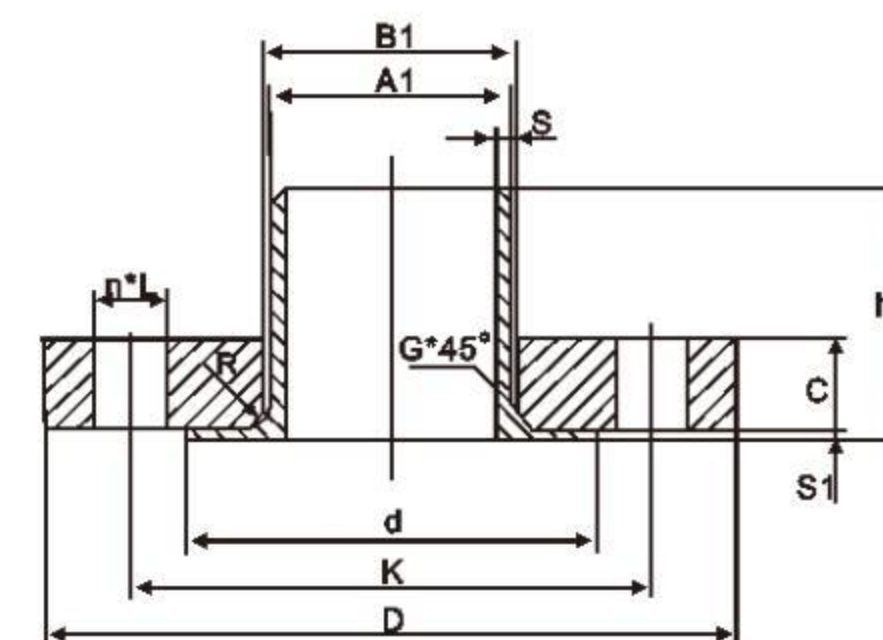


图8.2.7 对焊环松套钢制法兰

表8.2.7-5 PN40 对焊环松套钢制管法兰

Table 8.2.7-5 PN40 butt welding ring loose sleeve steel pipe flange

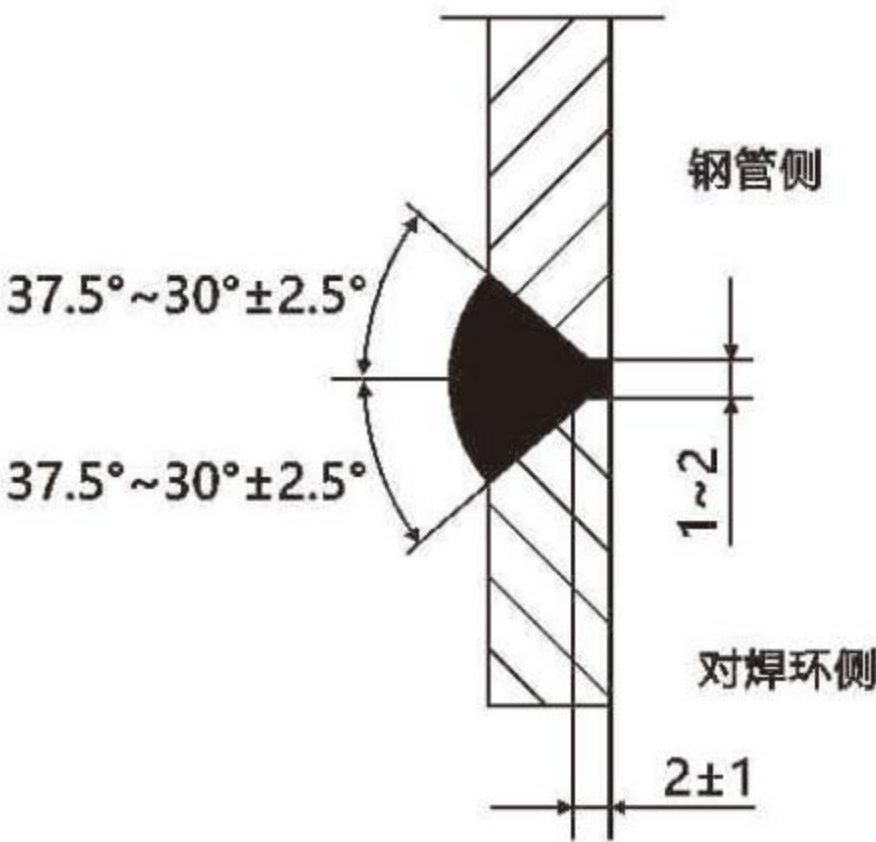
公称尺寸 Nominal size	钢管外径 (对焊环颈部外径) A1 Steel pipe outer diameter (butt welding ring neck outer diameter) A1		连接尺寸 Connection size					法兰厚度 Flange thickness	法兰内径 B1 Flange inner diameter B1		圆角 rounded corners	倒角 chamfer	对焊环 Butt welding ring			
			法兰 外径 Flange outer diameter	螺栓孔 中心圆 直径 Bolt hole center circle diameter	螺栓孔 直径 Bolt hole diameter	螺栓孔 数量 Number of bolt holes	螺栓 bolt						高度 high	外径 outer diameter	厚度 thickness	搭接口 厚度 Thickness of overlapping surface
DN	A	B	D	K	L	n	Th	C	A	B	R1	G	h	d	S	S1
10	17.2	14	90	60	14	4	M12	14	21	18	3	3	35	40	1.8	1.8
15	21.3	18	95	65	14	4	M12	14	25	22	3	3	38	45	2.0	2.0
20	26.9	25	105	75	14	4	M12	16	31	29	4	4	40	58	2.3	2.3
25	33.7	32	115	85	14	4	M12	16	38	36	4	4	40	68	2.6	2.6
32	42.4	38	140	100	18	4	M16	18	47	42	5	5	42	78	2.6	2.6
40	48.3	45	150	110	18	4	M16	18	53	50	5	5	45	88	2.6	2.6
50	60.3	57	165	125	18	4	M16	20	65	62	5	5	48	102	2.9	2.9
65	76.1	76	185	145	18	8	M16	22	81	81	6	6	52	122	2.9	2.9
80	88.9	89	200	160	18	8	M16	24	94	94	6	6	58	138	3.2	3.2
100	114.3	108	235	190	22	8	M20	26	120	114	6	6	65	162	3.6	3.6
125	139.7	133	270	220	26	8	M24	28	145	139	6	6	68	188	4.0	4.0
150	168.3	159	300	250	26	8	M24	30	174	165	6	6	75	218	4.5	4.5
200	219.1	219	375	320	30	12	M27	36	226	226	6	6	88	285	6.3	6.3
250	273	273	450	385	33	12	M30	42	281	281	8	8	105	345	7.1	7.1
300	323.9	325	515	450	33	16	M30	48	333	334	8	8	115	410	8.0	8.0
350	355.6	377	580	510	36	16	M33	54	365	386	8	8	125	465	8.8	8.8
400	406.4	426	660	585	39	16	M36*3	60	416	435	8	8	135	535	11.0	11.0
450	457	480	685	610	39	20	M36*3	66	467	490	8	8	135	560	12.5	12.5
500	508	530	755	670	42	20	M39*3	72	519	541	8	8	140	615	14.2	14.2
600	610	630	890	795	48	20	M45*3	84	622	642	8	8	150	735	16.0	16.0

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9.5 对焊环
9.5 Butt welding ring

对焊环（松套法兰）与钢管连接的焊接接头和坡口尺寸应符合图9.5的要求。

The dimensions of the welded joint and groove connecting the butt welding ring (loose flange) and the steel pipe should comply with the requirements of Figure 9.5.



注：当对焊环与公称壁厚小于或等于3.2mm的奥氏体钢管连接时，钝边可取消。
Note: When the butt welding ring is connected to an austenitic steel pipe with a nominal wall thickness less than or equal to 3.2mm, the blunt edge can be cancelled.

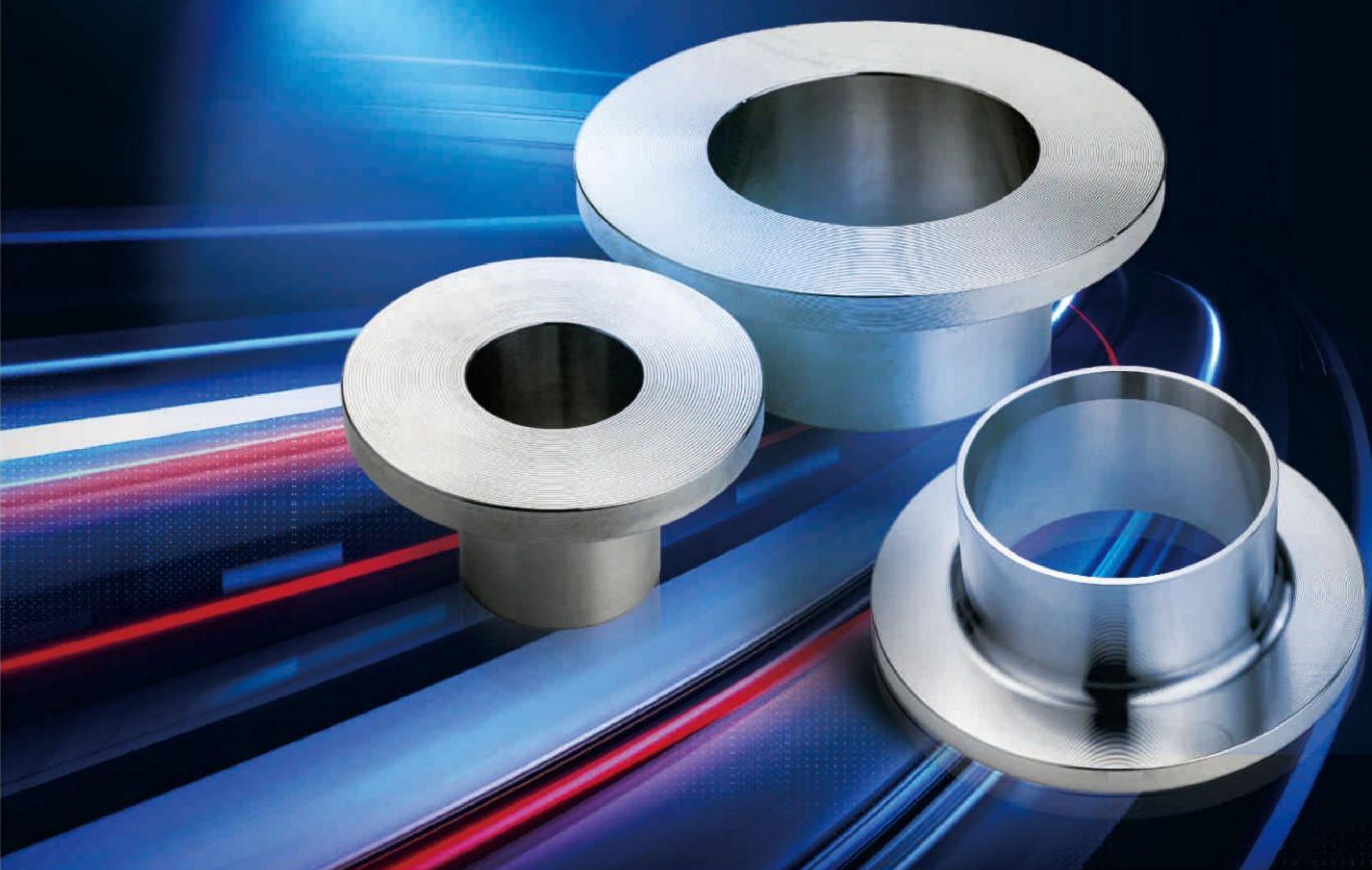
图9.5对焊环与钢管连接的焊接接头
Figure 9.5 Welded joint between butt welding ring and steel pipe

项目 project	法兰型式 Flange type	尺寸范围 Size range	尺寸公差 Dimensional tolerance
对焊环焊端以及翻边壁厚 Butt welding ring weld end and flange wall thickness	对焊环 Butt welding ring	+1.6 - 12.5%钢管名义厚度	
对焊环端部外径A或A1 Butt welding ring end outer diameter A or A1	对焊环 Butt welding ring	≤DN125	+3.0 0
		DN150~DN1200	+4.5 0
		≥DN1300	+6.0 0
搭接面外径 Overlap surface outer diameter	所有型式 All styles	≤DN250	+2.0 -1.0
		> DN250	+3.0 -1.0
对焊环高度 Butt welding ring height	对焊环 Butt welding ring	≤DN80	±1.5
		DN100~DN250	±2.0
		≥DN300	±3.0

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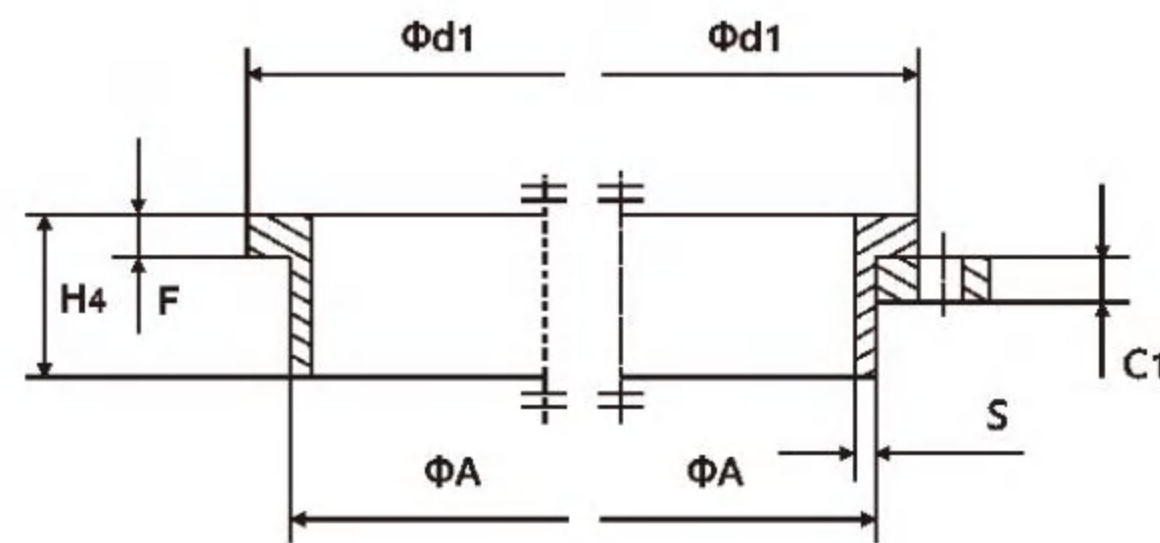
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规格范围: " ½"- 48
标准范围: ASME B16.9、ASME B16.5、ASME B16.11、MSS SP-43、GB/T 12459、GB/T 14383、GB/T 19326、GB/T 10752、GB/T 9124、HG/T 20592、HG/T 20615、SH/T 3408、SH/T 3406、JIS B 2309、JIS B 2220、JIS B 2311、JIS B 2312、JIS B 2313、JIS B 2316、EN 1092-1、EN 10253-2、ISO 5251、BS EN 10253-3
材质范围:
S30408 (06Cr19Ni10) 304, S30403 (022Cr19Ni10) 304L, S31008 (06Cr25Ni20) 310S, S31603 (022Cr17Ni12Mo2) 316 L, S31608 (06Cr17Ni12Mo2) 316, S31668 (06Cr17Ni12Mo2Ti) 316Ti, S32168 (06Cr18Ni11Ti) 321, S22053 (022Cr23 Ni5Mo3N) 2205, S39042 (015Cr21Ni26Mo5Cu2) 904L, S25073 (022Cr25Ni7Mo4N) 2507,

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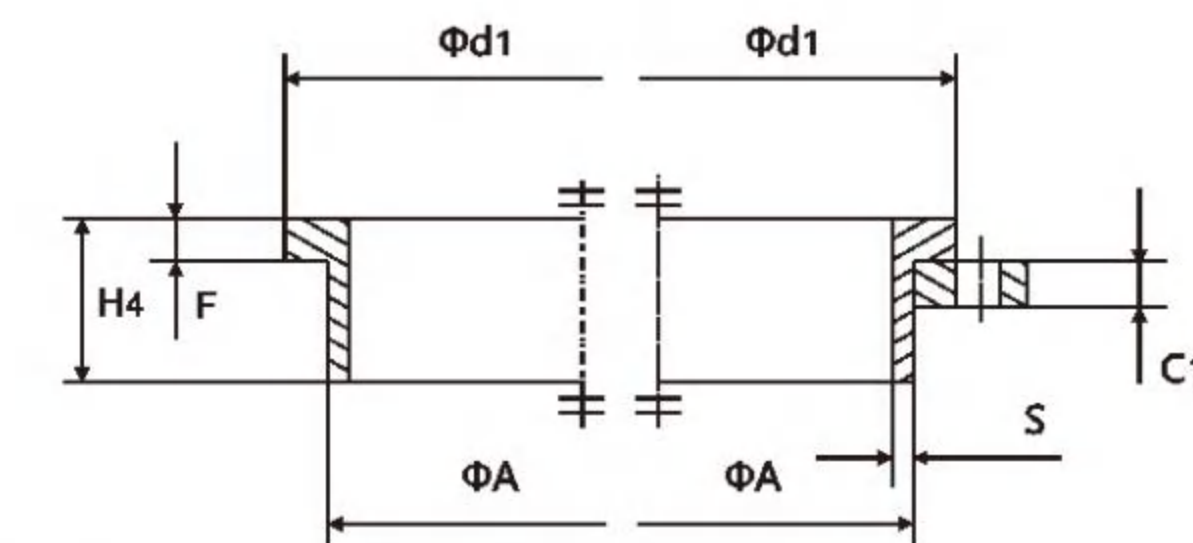
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PN 2.5钢制管法兰尺寸— Dimensions of PN 2.5 flanges

DN	配合尺寸 Matching size					颈部 外径 Neck outer diameter A	孔径 Aperture B2	法兰厚度 Flange thickness C1	短节搭接面 厚度 Thickness of lap joint of pup joint F	对焊环 Butt welding ring			
	法兰 外径 Flange outer diameter D	螺栓 圆直径 Bolt circle diameter K	螺栓 孔直径 Bolt hole diameter L	螺栓连接 Bolted connection						高度 high H4	搭接面 外径 Overlap surface outer diameter d1	管厚 Pipe thickness S	焊端厚 Welding end thickness S _p
				数量 quantity	尺寸 size								
	Flange type												
	02					35	02	02	35	35	35		
	10	75	50	11	4	M10	17.2	21	12	5	28	35	3
15	80	55	11	4	M10	21.3	25	12	5	30	40	3	2
20	96	65	11	4	M10	26.9	31	14	6	32	50	3	2
25	100	75	11	4	M10	33.7	38	14	7	35	60	3	2
32	120	90	14	4	M12	42.4	46	16	8	35	70	3	2
40	130	100	14	4	M12	48.3	53	16	8	38	80	3	2
50	140	110	14	4	M12	60.3	65	16	8	38	90	3	2
65	160	130	14	4	M12	76.1	81	16	8	38	110	4	2
80	190	150	18	4	M16	88.9	94	18	10	42	128	4	2
100	210	170	18	4	M16	114.3	120	18	10	45	148	4	2
125	240	200	18	8	M16	139.7	145	20	10	48	178	5	2
150	265	225	18	8	M16	168.3	174	20	10	48	202	6	2
200	320	280	18	8	M16	219.1	226	22	11	55	258	6	2.6
250	375	335	18	12	M16	273.0	281	24	12	60	312	8	3.2
300	440	395	22	12	M20	323.9	333	24	12	62	365	8	3.2
350	490	445	22	12	M20	355.6	365	26	13	62	415	8	3.2
400	540	495	22	16	M20	406.4	416	28	14	65	465	8	3.2
450	595	550	22	16	M20	457.0	467	30	15	65	520	8	3.6
500	645	600	22	20	M20	508.0	519	30	16	68	570	8	4
600	755	705	26	20	M24	610.0	622	32	16	70	670	8	5
700	860	810	26	24	M24	711.0	721	40	16	70	775	8	5
800	975	920	30	24	M27	813.0	828	44	16	70	880	10	6.3
900	1075	1020	30	24	M27	914.0	926	48	16	70	980	10	6.3
1000	1175	1120	30	28	M27	1016.0	1028	52	18	70	1080	12	8
1200	1375	1320	30	32	M27	1219	1234	60	20	90	1280	14	10

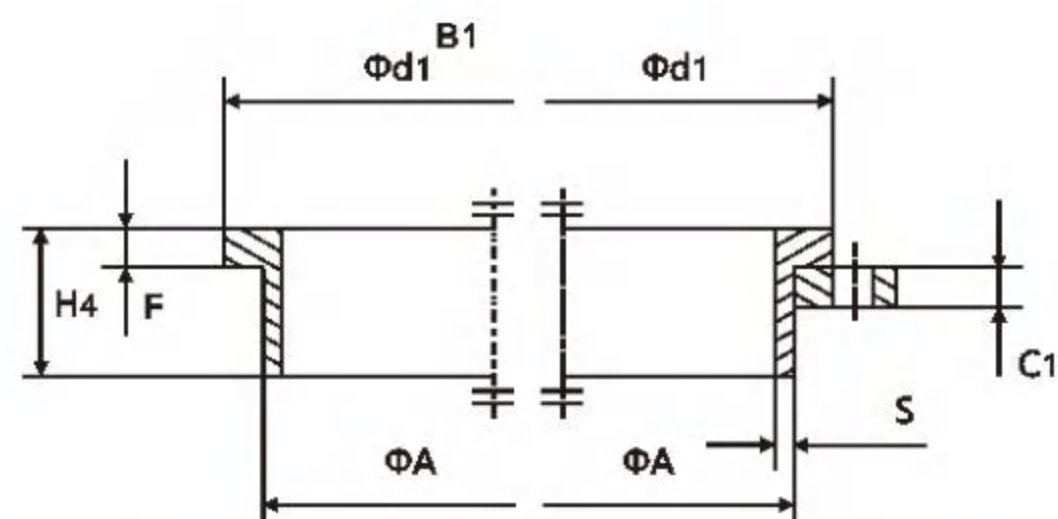
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PN6 钢制管法兰尺寸— Dimensions of PN 6 flanges

DN	配合尺寸 Matching size					颈部 外径 Neck outer diameter A	孔径 Aperture B2	法兰厚度 Flange thickness C1	短节搭接面 厚度 Thickness of lap joint of pup joint F	对焊环 Butt welding ring			
	法兰 外径 Flange outer diameter D	螺栓 圆直径 Bolt circle diameter K	螺栓 孔直径 Bolt hole diameter L	螺栓连接 Bolted connection						高度 high H4	搭接面 外径 Overlap surface outer diameter d1	管厚 Pipe thickness S	焊端厚 Welding end thickness S _p
				数量 尺寸 quantity size									
Flange type													
02						35	02	02	35	35	35		
10	75	50	11	4	M10	17.2	21	12	5	28	35	3	2
15	80	55	11	4	M10	21.3	25	12	5	30	40	3	2
20	90	65	11	4	M10	26.9	31	14	6	32	50	3	2
25	100	75	11	4	M10	33.7	38	14	7	35	60	3	2
32	120	90	14	4	M12	42.4	46	16	8	35	70	3	2
40	130	100	14	4	M12	48.3	53	16	8	38	80	3	2
50	140	110	14	4	M12	60.3	65	16	8	38	90	3	2
65	160	130	14	4	M12	76.1	81	16	8	38	110	4	2
80	190	150	18	4	M16	88.9	94	18	10	42	128	4	2
100	210	170	18	4	M16	114.3	120	18	10	45	148	4	2
125	240	200	18	8	M16	139.7	145	20	10	48	178	5	2
150	265	225	18	8	M16	168.3	174	20	10	48	202	6	2
200	320	280	18	8	M16	219.1	226	22	11	55	258	6	2.6
250	375	335	18	12	M16	273.0	281	24	12	60	312	8	3.2
300	440	395	22	12	M20	323.9	333	24	12	62	365	8	3.2
350	490	445	22	12	M20	355.6	365	26	13	62	415	8	3.2
400	540	495	22	16	M20	406.4	416	28	14	65	465	8	3.2
450	595	550	22	16	M20	457.0	467	30	15	72	520	8	3.6
500	645	600	22	20	M20	508.0	519	30	16	75	570	8	4
600	755	705	26	20	M24	610.0	622	32	16	70	670	8	5
700	860	810	26	24	M24	711.0	721	40	16	70	775	8	5
800	975	920	30	24	M27	813.0	824	44	16	70	880	10	6.3
900	1075	1020	30	24	M27	914.0	926	48	16	70	980	10	6.3
1000	1175	1120	30	28	M27	1016.0	1028	52	18	70	1080	12	8
1200	1405	1340	33	32	M30	1219.0	1234	60	20	90	1295	14	10

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PN 10钢制管法兰尺寸—Dimensions of PN 10 flanges

DN	配合尺寸 Matching size					颈部 外径 Neck outer diameter A	孔径 Aperture B2	法兰厚度 Flange thickness C1	短节搭接面 厚度 Thickness of lap joint of pup joint F	对焊环 Butt welding ring			
	法兰 外径 Flange outer diameter D	螺栓 圆直径 Bolt circle diameter K	螺栓 孔直径 Bolt hole diameter L	螺栓连接 Bolted connection						高度 high H4	搭接面 外径 Overlap surface outer diameter d1	管厚 Pipe thickness S	焊端厚 Welding end thickness S _p
				数量 quantity	尺寸 size								
	Flange type												
	02					35	02	02	35	35	35		
	10	90	60	14	4	M12	17.2	21	14	5	35	40	3
15	95	65	14	4	M12	21.3	25	14	5	38	45	3	2
20	105	75	14	4	M12	26.9	31	16	6	40	58	3	2
25	115	85	14	4	M12	33.7	38	16	7	40	68	3	2
32	140	100	18	4	M16	42.4	47	18	8	42	78	3	2
40	150	110	18	4	M16	48.3	53	18	8	45	88	3	2
50	165	125	18	4	M16	60.3	65	20	8	45	102	3	2
65	185	145	18	8 ^d	M16	76.1	81	20	8	45	122	4	2
80	200	160	18	8	M16	88.9	94	20	10	50	138	4	2
100	220	180	18	8	M16	114.3	120	22	10	52	158	4	2
125	250	210	18	8	M16	139.7	145	22	10	55	188	5	2
150	285	240	22	8	M20	168.3	174	24	10	55	212	6	2
200	340	295	22	8	M20	219.1	226	24	11	62	268	6	2.6
250	395	350	22	12	M20	273.0	281	26	12	68	320	8	3.2
300	445	400	22	12	M20	323.9	333	26	12	68	370	8	3.2
350	505	460	22	16	M20	355.6	365	30	13	68	430	8	3.2
400	565	515	26	16	M24	406.4	416	32	14	72	482	8	3.2
450	615	565	26	20	M24	457.0	467	36	15	72	532	8	3.6
500	670	620	26	20	M24	508.0	519	38	16	75	585	8	4
600	780	725	30	20	M27	610.0	622	42	18	80	685	10	5
700	895	840	30	24	M27	711.0	721	50	20	80	800	10	6.3
800	1015	950	33	24	M30	813.0	824	56	20	90	905	12	6.3
900	1115	1050	33	28	M30	914.0	926	62	22	95	1005	12	8
1000	1230	1160	36	28	M33	1016.0	1028	70	24	95	1110	12	8
1200	1455	1380	39	32	M36	1219.0	1234	83	26	115	1330	16	10

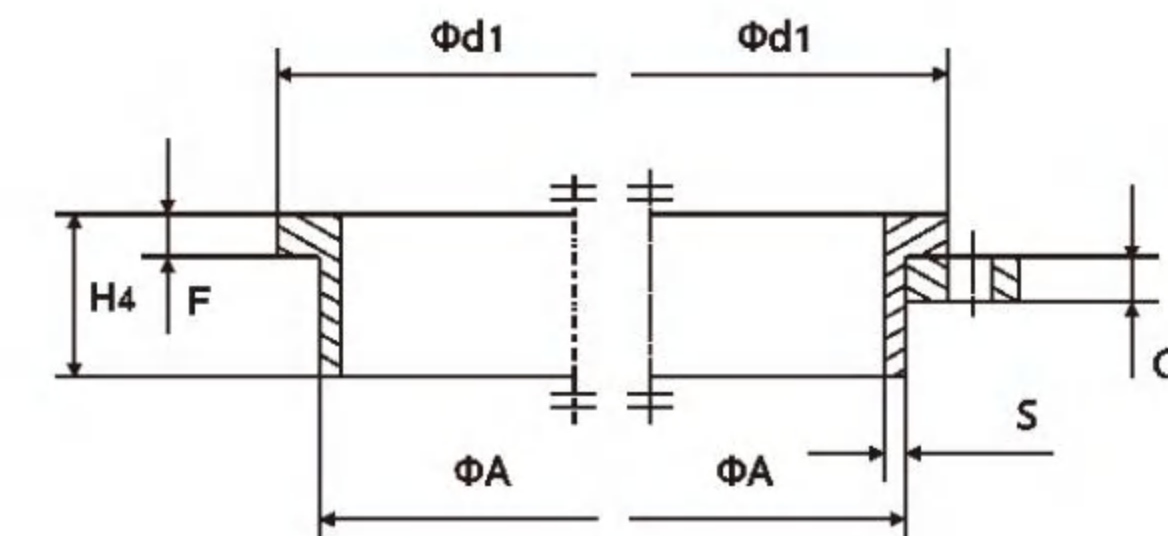
a For flanges type 21 the outside hub diameter approximately corresponds to the outside pipe diameter and the nominal value dimensions A, N3 and R1 and their tolerances are included for guidance only.

b To be specified by the purchaser.

c Use is limited up to DN 600.

d According to EN 1092-2 (Cast iron flanges) and EN 1092-3 (Copper alloy flanges), the flanges in this DN and PN may be supplied with 4 holes. Where steel flanges are required with 4 holes, these may be supplied by agreement between flange manufacturer and purchaser.

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PN 16钢制管法兰尺寸—Dimensions of PN 16 flanges

DN	配合尺寸 Matching size					颈部 外径 Neck outer diameter A	孔径 Aperture B2	法兰厚度 Flange thickness C1	短节搭接面 厚度 Thickness of lap joint of pup joint F	对焊环 Butt welding ring			
	法兰 外径 Flange outer diameter D	螺栓 圆直径 Bolt circle diameter K	螺栓 孔直径 Bolt hole diameter L	螺栓连接 Bolted connection						高度 high H4	搭接面 外径 Overlap surface outer diameter d1	管厚 Pipe thickness S	焊端厚 Welding end thickness S _p
				数量 quantity	尺寸 size								
	Flange type												
	02					35	02	02	35	35	35		
	10	90	60	14	4	M12	17.2	21	14	5	35	40	3
15	95	65	14	4	M12	21.3	25	14	5	38	45	3	2
20	105	75	14	4	M12	26.9	31	16	6	40	58	3	2
25	115	85	14	4	M12	33.7	38	16	7	40	68	3	2
32	140	100	18	4	M16	42.4	47	18	8	42	78	3	2
40	150	110	18	4	M16	48.3	55	18	8	45	88	3	2
50	165	125	18	4	M16	60.3	65	20	8	45	102	3	2
65	185	145	18	8 ^b	M16	76.1	81	20	8	45	122	4	2
80	200	160	18	8	M16	88.9	94	20	10	50	138	4	2
100	220	180	18	8	M16	114.3	120	22	10	52	158	4	2
125	250	210	18	8	M16	139.7	145	22	10	55	188	5	2
150	285	240	22	8	M20	168.3	174	24	10	55	212	6	2
200	340	295	22	12	M20	219.1	226	26	11	62	268	6	2.6
250	405	355	26	12	M24	273.0	281	29	12	70	320	8	3.2
300	460	410	26	12	M24	323.9	333	32	14	78	378	10	4
350	520	470	26	16	M24	355.6	365	35	18	82	438	10	4
400	580	525	30	16	M27	406.4	416	38	20	85	490	12	5
450	640	585	30	20	M27	457.0	467	42	22	87	550	12	5
500	715	650	33	20	M30	508.0	519	46	22	90	610	12	6.3
600	840	770	36	20	M33	610.0	622	55	24	95	725	12	8
700	910	840	36	24	M33	711.0	721	63	26	100	795	14	8
800	1025	950	39	24	M36	813.0	824	74	28	105	900	16	10
900	1125	1050	39	28	M36	914.0	926	82	30	110	1000	18	10
1000	1255	1170	42	28	M39	1016.0	1030	90	35	120	1115	18	10
1200	1485	1390	48	32	M45	1219.0	—	c	—	—	1330	—	—

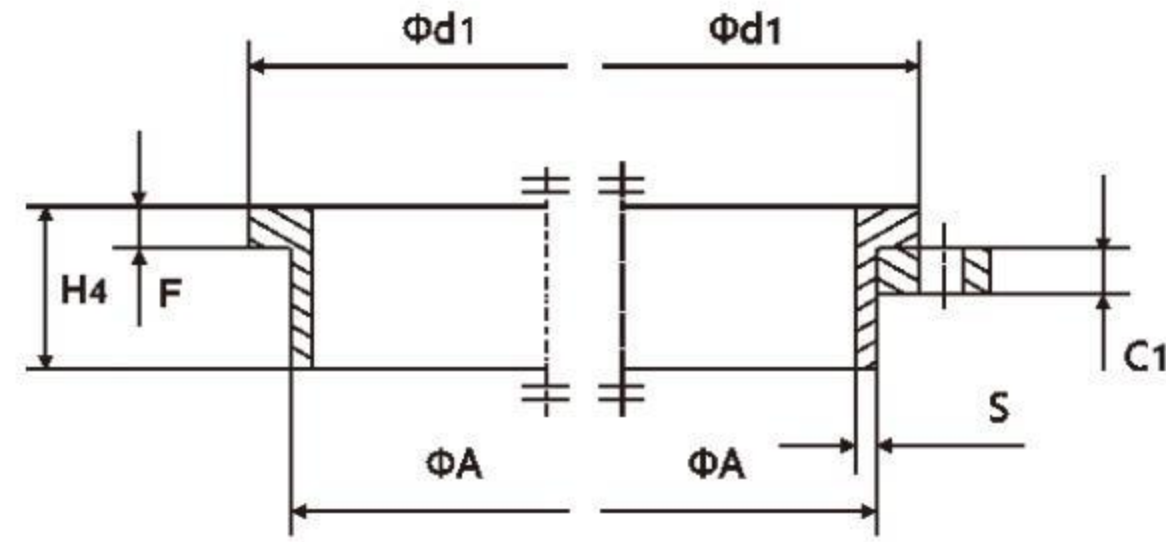
a For flanges type 21 the outside hub diameter approximately corresponds to the outside pipe diameter and the nominal value dimensions A, N3 and R1 and their tolerances are included for guidance only.

b According to EN 1092-2 (Cast iron flanges) and EN 1092-3 (Copper alloy flanges), the flanges in this DN and PN may be supplied with 4 holes. Where steel flanges are required with 4 holes, these may be supplied by agreement between flange manufacturer and purchaser.

c To be specified by the purchaser.

d Use is limited up to DN 600.

EN 1092-1:2018



PN 25钢制管法兰尺寸—Dimensions of PN 25 flanges

DN	配合尺寸 Matching size					颈部 外径 Neck outer diameter A	孔径 Aperture B2	法兰厚度 Flange thickness C1	短节搭接面 厚度 Thickness of lap joint of pup joint F	对焊环 Butt welding ring				
	法兰 外径 Flange outer diameter D	螺栓 圆直径 Bolt circle diameter K	螺栓 孔直径 Bolt hole diameter L	螺栓连接 Bolted connection						高度 high H4	搭接面 外径 Overlap surface outer diameter d1	管厚 Pipe thickness S	焊端厚 Welding end thickness S _p	
				数量 quantity	尺寸 size									
	Flange type													
	02						35	02	02	35	35	35		
10	90	60	14	4	M12	17.2	21	14	5	35	40	3	2	
15	95	65	14	4	M12	21.3	25	14	5	38	45	3	2	
20	105	75	14	4	M12	26.9	31	16	6	40	58	3	2	
25	115	85	14	4	M12	33.7	38	16	7	40	68	3	2	
32	140	100	18	4	M16	42.4	47	18	8	42	78	3	2	
40	150	110	18	4	M16	48.3	53	18	8	45	88	3	2	
50	165	125	18	4	M16	60.3	65	20	10	48	102	4	2.6	
65	185	145	18	8	M16	76.1	81	22	11	52	122	5	2.6	
80	200	160	18	8	M16	88.9	94	24	12	58	138	6	2.6	
100	235	190	22	8	M20	114.3	120	26	14	65	162	6	3.2	
125	270	220	26	8	M24	139.7	145	28	16	68	188	6	3.2	
150	300	250	26	8	M24	168.3	174	30	18	75	218	8	3.2	
200	360	310	26	12	M24	219.1	226	32	18	80	278	8	3.2	
250	425	370	30	12	M27	273.0	281	35	18	88	335	10	5	
300	485	430	30	16	M27	323.9	333	38	20	92	395	10	6.3	
350	555	490	33	16	M30	355.6	365	42	22	100	450	12	6.3	
400	620	550	36	16	M33	406.4	416	48	24	110	505	14	8	
450	670	600	36	20	M33	457.0	467	54	26	110	555	15	8	
500	730	660	36	20	M33	508.0	519	58	28	125	615	16	10	
600	845	770	39	20	M36	610.0	622	68	30	125	720	18	10	
700	960	875	42	24	M39	711.0	721	85	30	125	820	20	14.2	
800	1085	990	48	24	M45	813.0	824	95	35	135	930	20	14.2	
900	1185	1090	48	28	M45	914.0	—	b	—	—	1030	—	—	
1000	1320	1210	56	28	M52	1016.0	—		—	—	1140	—	—	

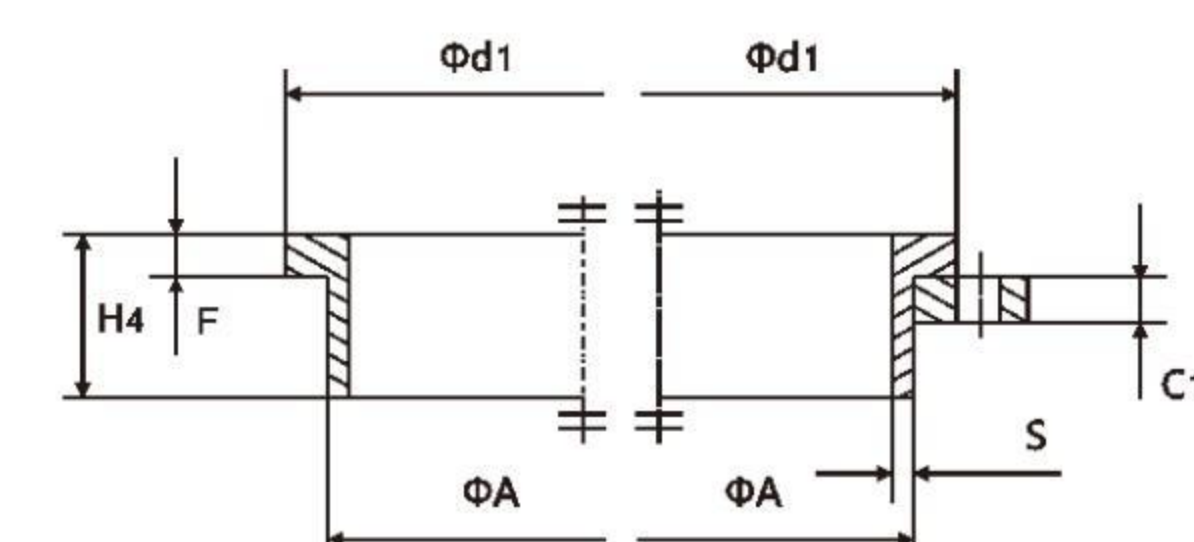
a For flanges type 21 the outside hub diameter approximately corresponds to the outside pipe diameter and the nominal value dimensions A, N3 and R1 and their tolerances are included for guidance only.

b To be specified by the purchaser.

c Use is limited up to DN 500.

p Only mating dimensions fixed, see Annex J.

EN 1092-1:2018



PN 40钢制管法兰尺寸—Dimensions of PN 40 flanges

DN	配合尺寸 Matching size					颈部 外径 Neck outer diameter A	孔径 Aperture B2	法兰厚度 Flange thickness C1	短节搭接面 厚度 Thickness of lap joint of pup joint F	对焊环 Butt welding ring				
	法兰 外径 Flange outer diameter D	螺栓 圆直径 Bolt circle diameter K	螺栓 孔直径 Bolt hole diameter L	螺栓连接 Bolted connection						高度 high H4	搭接面 外径 Overlap surface outer diameter d1	管厚 Pipe thickness S	焊端厚 Welding end thickness Sp	
				数量 quantity	尺寸 size									
	Flange type													
	02						35	02	02	35	35	35		
10	90	60	14	4	M12	17.2	21	14	5	35	40	3	2	
15	95	65	14	4	M12	21.3	25	14	5	38	45	3	2	
20	105	75	14	4	M12	26.9	31	16	6	40	58	3	2	
25	115	85	14	4	M12	33.7	38	16	7	40	68	3	2	
32	140	100	18	4	M16	42.4	47	18	8	42	78	3	2	
40	150	110	18	4	M16	48.3	53	18	8	45	88	3	2	
50	165	125	18	4	M16	60.3	65	20	10	48	102	4	2.6	
65	185	145	18	8	M16	76.1	81	22	11	52	122	5	2.6	
80	200	160	18	8	M16	88.9	94	24	12	58	138	6	2.6	
100	235	190	22	8	M20	114.3	120	26	14	65	162	6	3.2	
125	270	220	26	8	M24	139.7	145	28	16	68	188	6	3.2	
150	300	250	26	8	M24	168.3	174	30	18	75	218	8	4	
200	375	320	30	12	M27	219.1	226	36	20	88	285	10	5	
250	450	385	33	12	M30	273.0	281	42	22	105	345	12	6.3	
300	515	450	33	16	M30	323.9	333	52	25	115	410	12	8	
350	580	510	36	16	M33	355.6	365	58	28	125	465	14	8	
400	660	585	39	16	M36	406.4	416	d	32	135	535	16	10	
450	685	610	39	20	M36	457.0	467		—	—	560	—	—	
500	755	670	42	20	M39	508.0	519		—	—	615	—	—	
600	890	795	48	20	M45	610.0	622		—	—	735	—	—	

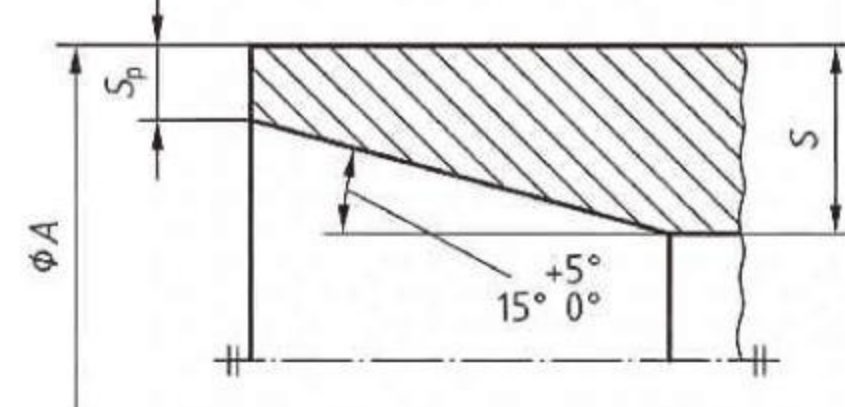
a For flanges type 21 the outside hub diameter approximately corresponds to the outside pipe diameter and the nominal value dimensions A, N3 and R1 and their tolerances are included for guidance only.

b Only mating dimensions fixed, see Annex JJ.

c Use is limited up to DN 600.

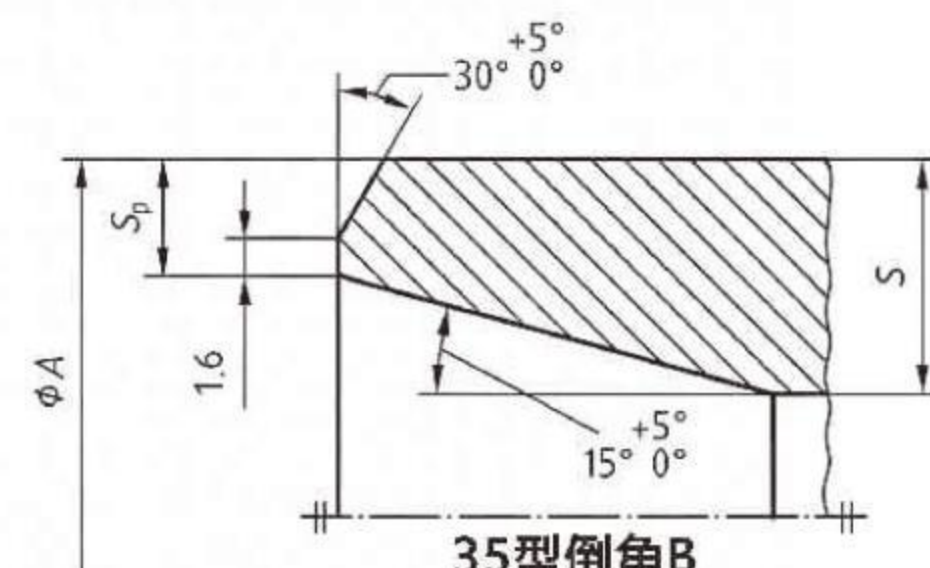
d To be specified by the purchaser.

EN 1092-1:2018



35型倒角A

Figure A.4 — Chamfer A for type 35



35型倒角B

Figure A.5 — Chamfer B for type 35

35型的壁厚尺寸

Table A.2 — Wall thickness for type 35

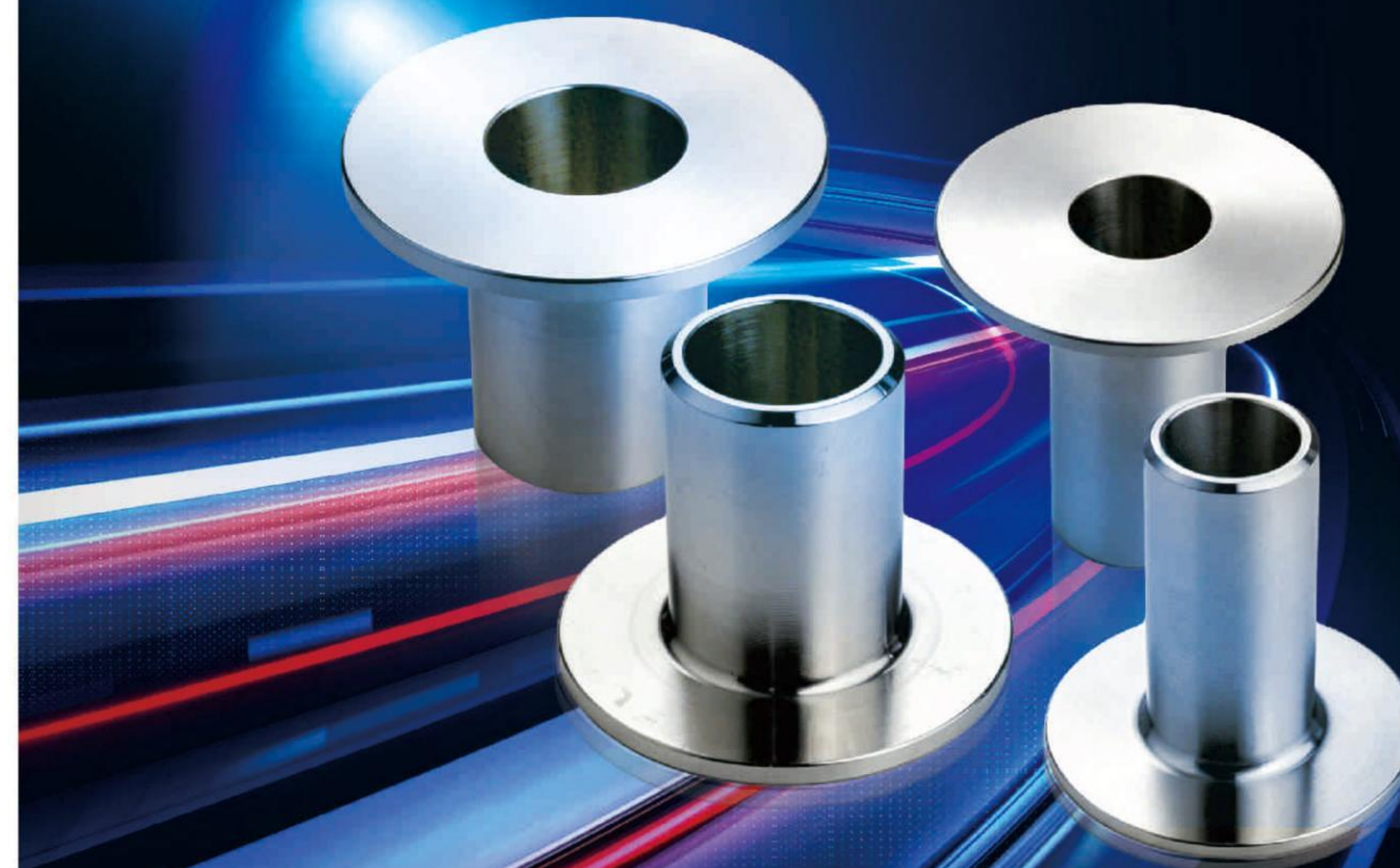
φA	PN 2,5		PN6		PN 10		PN 16		PN 25		PN 40		倒角 Chamfer
	管厚 S	焊端厚度 S _p	管厚 S	焊端厚度 S _p	管厚 S	焊端厚度 S _p	管厚 S	焊端厚度 S _p	管厚 S	焊端厚度 S _p	管厚 S	焊端厚度 S _p	
17.2	3	2	3	2	3	2	3	2	3	2	3	2	A
21.3	3	2	3	2	3	2	3	2	3	2	3	2	
26.9	3	2	3	2	3	2	3	2	3	2	3	2	
33.7	3	2	3	2	3	2	3	2	3	2	3	2	
42.4	3	2	3	2	3	2	3	2	3	2	3	2	
48.3	3	2	3	2	3	2	3	2	3	2	3	2	
60.3	3	2	3	2	3	2	3	2	4	2.6	4	2.6	
76.1	4	2	4	2	4	2	4	2	5	2.6	5	2.6	
88.9	4	2	4	2	4	2	4	2	6	2.6	6	2.6	
114.3	4	2	4	2	4	2	4	2	6	3.2	6	3.2	
139.7	5	2	5	2	5	2	5	2	6	3.2	6	3.2	B
168.3	6	2	6	2	6	2	6	2	8	3.2	8	4	
219.1	6	2.6	6	2.6	6	2.6	6	2.6	8	3.2	10	5	
273	8	3.2	8	3.2	8	3.2	8	3.2	10	5	12	6.3	
323.9	8	3.2	8	3.2	8	3.2	10	4	10	6.3	12	8	
355.6	8	3.2	8	3.2	8	3.2	10	4	12	6.3	14	8	
406.4	8	3.2	8	3.2	8	3.2	12	5	14	8	16	10	
457	8	3.6	8	3.6	8	3.6	12	5	15	8			
508	8	4	8	4	8	4	12	6.3	16	10			
610	8	5	8	5	10	5	12	8	18	10			
711	8	5	8	5	10	6.3	14	8	20	14.2			
813	10	6.3	10	6.3	12	6.3	16	10	20	14.2			
914	10	6.3	10	6.3	12	8	18	10					
1016	12	8	12	8	12	8	18	10					
1219	14	10	14	10	16	10							

项目 project	法兰型式 Flange type	尺寸范围 Size range	尺寸公差/mm Dimensional tolerance/mm
对焊端壁厚S _p Butt weld end wall thickness S _p	TYPE35	S ≤ 6	+1.0 0
		S > 6	+2.0 0
环厚度F, F1 Ring thickness F, F1	TYPE35 两侧已机械加工 TYPE35 Both sides are machined	F ≤ 18 mm	±1.0
		F > 18 mm	±1.5
	TYPE35 仅一侧机械加工或未机械加工 TYPE35 Only one side is machined or not machined	F ≤ 18 mm	+2.0 -1.3
		F > 18 mm	+4.0 -1.5
搭接面外径 Overlap surface outer diameter	TYPE35	≤ DN250	+2.0 -1.0
		≥ DN300	+3.0 -1.0
颈部外径 Neck outer diameter	TYPE35	≤ DN150	+0.75% 最小为±0.3
		≥ DN200	±1% 最大为±3.0
高度 high	TYPE35	≤ DN 80	± 1.5
		> DN 100 ≤ DN 250	± 2.0
		≥ DN300	± 3.0
接管壁厚S Nozzle wall thickness S	TYPE35	S ≤ 8	+15% -10%
		S > 8	+15% -5%

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规格范围: " ½"- 48

标准范围: ASME B16.9、ASME B16.5、ASME B16.11、MSS SP-43、GB/T 12459、GB/T 14383、GB/T 19326、GB/T 10752、GB/T 9124、HG/T 20592、HG/T 20615、SH/T 3408、SH/T 3406、JIS B 2309、JIS B 2220、JIS B 2311、JIS B 2312、JIS B 2313、JIS B 2316、EN 1092-1、EN 10253-2、ISO 5251、BS EN 10253-3

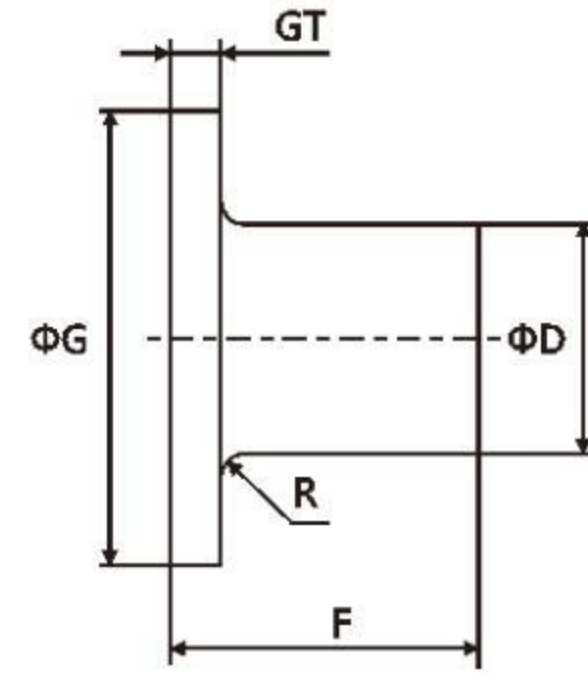
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S30408 (06Cr19Ni10) 304, S30403 (022Cr19Ni10) 304L, S31008 (06Cr25Ni20) 310S, S31603 (022Cr17Ni12Mo2) 316 L, S31608 (06Cr17Ni12Mo2) 316, S31668 (06Cr17Ni12Mo2Ti) 316Ti, S32168 (06Cr18Ni11Ti) 321, S22053 (022Cr23Ni5Mo3N) 2205, S39042 (015Cr21Ni26Mo5Cu2) 904L, S25073 (022Cr25Ni7Mo4N) 2507,

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JIS B 2220:2012



翻边短节尺寸
Shapes and dimensions of stub end

JIS B 2220									
DN	NPS	管外径 Pipe outer diameter	长度 length	搭接面外径(5K) Overlap surface outer diameter (5K)	搭接面外径(10K) Overlap surface outer diameter (10K)	搭接面外径(16K) Overlap surface outer diameter (16K)	搭接面外径(20K) Overlap surface outer diameter (20K)	R角(最大) R angle (maximum)	R角(最小) R angle (minimum)
15	½	21.7	30	44	51	51	51	3	1.5
20	¾	27.3	30	49	56	56	56	3	1.5
25	1	34.0	50	59	67	67	67	3	1.5
32	1¼	42.7	50	70	76	76	76	4	2
40	1½	48.6	50	75	81	81	81	4	2
50	2	60.5	50	85	96	96	96	4	2
65	2½	76.3	50	110	116	116	116	5	2.5
80	3	89.1	50	121	126	132	132	5	2.5
90	3½	101.6	50	131	136	145	145	5	2.5
100	4	114.3	50	141	151	160	160	5	2.5
125	5	139.8	50	176	182	195	195	6	3
150	6	165.2	50	206	212	230	230	6	3
200	8	216.3	65	252	262	275	275	9	3
250	10	267.4	65	317	324	345	345	6	3
300	12	318.5	65	360	368	395	395	6	3
350	14	355.6	150	403	413	440	440	9	3
400	16	406.4	150	463	475	495	495	9	3
450	18	457.2	150	523	530	560	560	9	3
500	20	508.0	150	573	585	615	615	9	3
550	22	558.8	150	630	640	670	670	9	3
600	24	609.6	150	680	690	720	720	9	3

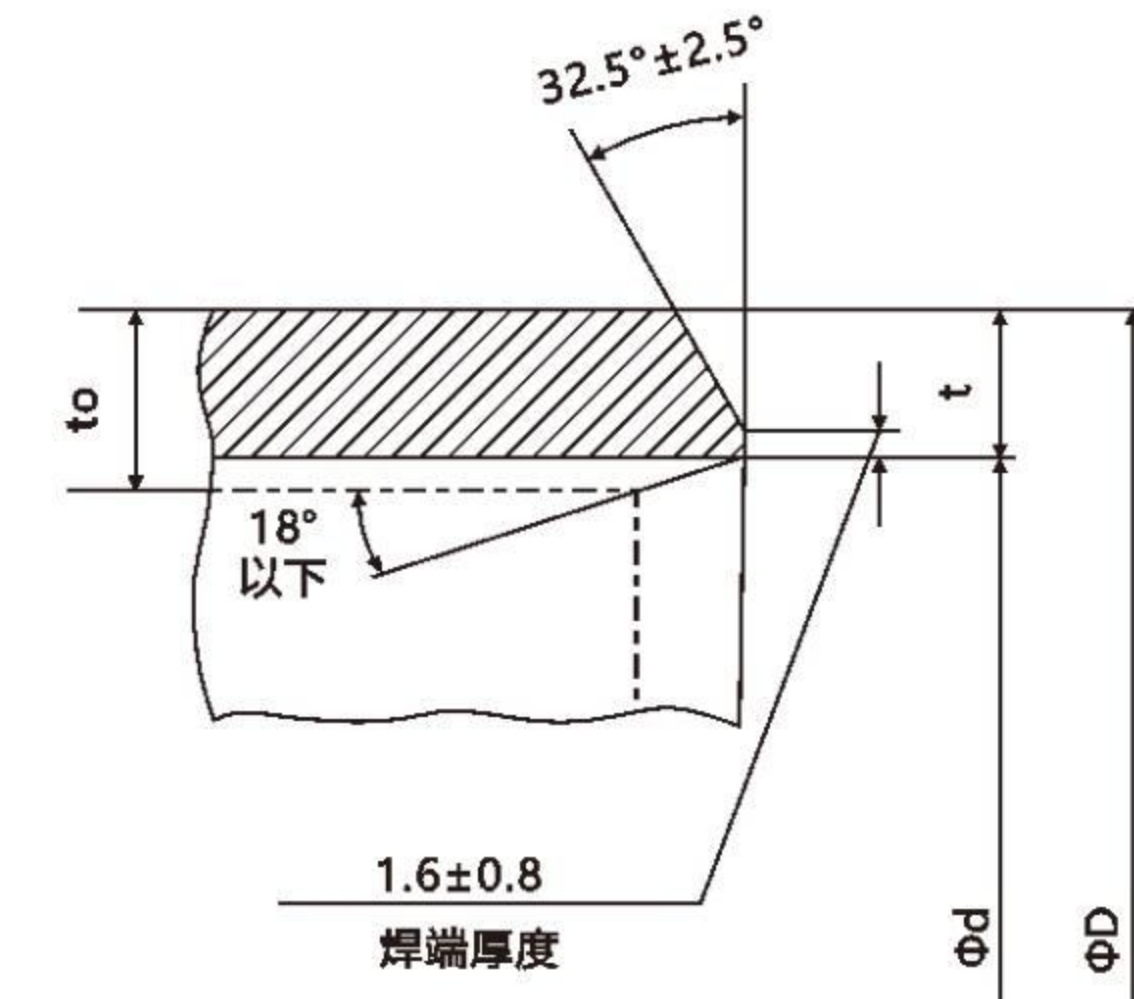
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尺寸容许偏差表
Dimensional tolerance table

单位:mm

项目 project	A	15~65	80~100	125~200	250~450	500~600
	B	½~2½	3~4	5~8	10~18	20~24
外径 (D) Outer diameter (D)		+1.6 -0.8	±1.6	+2.4 -1.6	+4.0 -3.2	+6.4 -4.8
端面内径(d) End face inner diameter (d)		±0.8	±1.6	±3.2	±4.8	
厚度 (t) Thickness (t)		+未规定尺寸 -12.5%				
翻边厚度 (GT) Flange thickness (GT)		+1.6 0			+3.2 0	
总长 (F) Total length (F)		±1.6			±2.4	
搭接面直径 (G) Overlapping surface diameter (G)		0 -0.8			0 -1.6	

单位:mm



to: 短截端的实际厚度
t: 厚度
d: 端面内径
D: 外径

注: 厚度(t)未滿4mm制成平端
Note: The thickness (t) is less than 4mm and is made into a flat end.

钢制对焊管件

GB/T 12459-2025
SH/T 3408-2022

ASME B16.9-2018
GB/T 19326-2022



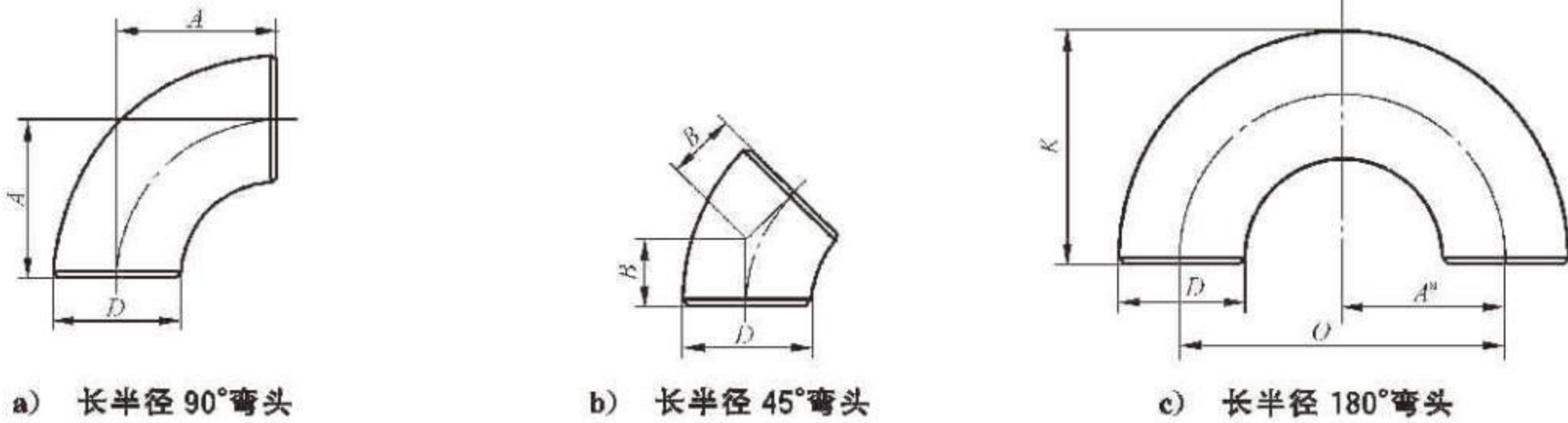
规格范围: " ½"- 48
标准范围: ASME B16.9、ASME B16.5、ASME B16.11、MSS SP-43、GB/T 12459、GB/T 14383、GB/T 19326、GB/T 10752、GB/T 9124、HG/T 20592、HG/T 20615、SH/T 3408、SH/T 3406、JIS B 2309、JIS B 2220、JIS B 2311、JIS B 2312、JIS B 2313、JIS B 2316、EN 1092-1、EN 10253-2、ISO 5251、BS EN 10253-3
材质范围:
S30408 (06Cr19Ni10) 304, S30403 (022Cr19Ni10) 304L, S31008 (06Cr25Ni20) 310S, S31603 (022Cr17Ni12Mo2) 316 L, S31608 (06Cr17Ni12Mo2) 316, S31668 (06Cr17Ni12Mo2Ti) 316Ti, S32168 (06Cr18Ni11Ti) 321, S22053 (022Cr23Ni5Mo3N) 2205, S39042 (015Cr21Ni26Mo5Cu2) 904L, S25073 (022Cr25Ni7Mo4N) 2507,

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GB/T 12459—2025

用系列, 当选用Ⅱ系列时应注明 “-Ⅱ”
6.1.3长半径90°、45°和180°弯头的形状和尺寸见图1和表2, 长半径90°异径弯头的形状和尺寸见图2和表3, 短半径90°和180°弯头的形状和尺寸见图3和表4, 90°和45°3D弯头的形状和尺寸见图4和表5, 等径三通和四通的形状和尺寸见图5和表6, 异径三通和四通的形状和尺寸见图6和表7, 翻边短节的形状和尺寸见图7和表8, 管帽的形状和尺寸见图8和表9, 异径管的形状和尺寸见图9和表10。

When selecting series, please indicate “-II” when selecting series II.
6.1.3 The shapes and dimensions of long radius 90°, 45° and 180° elbows are shown in Figure 1 and Table 2. The shapes and dimensions of long radius 90° reducing elbows are shown in Figure 2 and Table 3. The shapes and dimensions of short radius 90° and 180° elbows are shown in Figure 3 and Table 4. The shapes of 90° and 45° 3D elbows and dimensions are shown in Figure 4 and Table 5, the shape and dimensions of the equal-diameter tee and cross are shown in Figure 5 and Table 6, the shape and dimensions of the reducing tee and cross are shown in Figure 6 and Table 7, the shape and dimensions of the flange nipple are shown in Figure 7 and Table 8, the shape and dimensions of the pipe cap are shown in Figure 8 and Table 9, and the shape and dimensions of the reducer are shown in Figure 9 and Table 10.



a 尺寸A等于尺寸O的一半。
a Dimension A is equal to half of dimension O.

图1 长半径90°、45°和180°弯头形状
Figure 1 Long radius 90°, 45° and 180° elbow shapes

表2 长半径90°、45°和180°弯头尺寸
Table 2 Dimensions of long radius 90°, 45° and 180° elbows

公称尺寸 Nominal size		端部外径 End outer diameter mm	中心至端面 Center to end face mm		中心至中心 center to center mm	背部至端面 Back to end face mm
			90°弯头	45°弯头	180°弯头	180°弯头
DN	NPS	D	A	B	O	K
15	1/2	21.3	38	16	76	48
20	3/4	26.9	38	19	76	51
25	1	33.7	38	22	76	56
32	1¼	42.4	48	25	95	70
40	1½	48.3	57	29	114	83
50	2	60.3	76	35	152	106
65	2½	73.0	95	44	190	132
80	3	88.9	114	51	229	159
90	3½	101.6	133	57	267	184
100	4	114.3	152	64	305	210
125	5	141.3	190	79	381	262
150	6	168.3	229	95	457	313
200	8	219.1	305	127	610	414
250	10	273.0	381	159	762	518
300	12	323.9	457	190	914	619
350	14	355.6	533	222	1067	711
400	16	406.4	610	254	1219	813

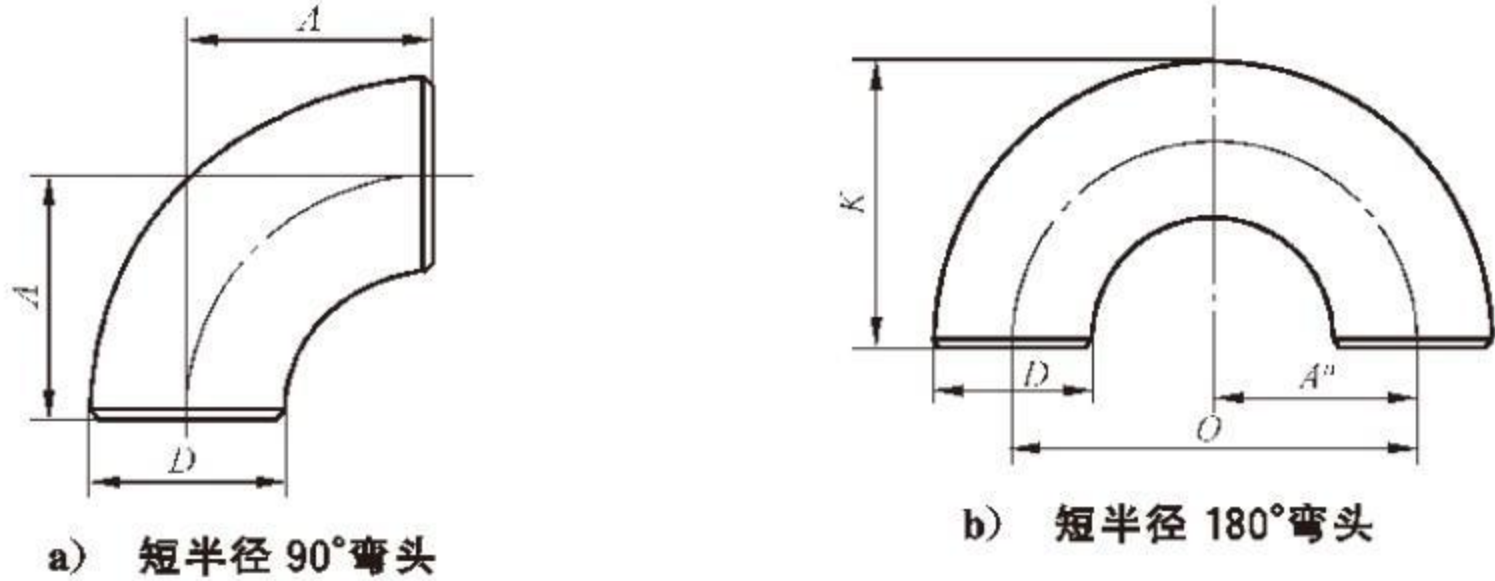
注: 口径分A、B系列。

GB/T 12459—2025

表2 长半径90°、45°和180°弯头尺寸 (续)
Table 2 Dimensions of long radius 90°, 45° and 180° elbows (continued)

公称尺寸 Nominal size		端部外径 End outer diameter mm	中心至端面 Center to end face mm		中心至中心 center to center mm	背部至端面 Back to end face mm
			90°弯头	45°弯头	180°弯头	180°弯头
DN	NPS	D	A	B	O	K
450	18	457	686	286	1372	914
500	20	508	762	318	1524	1016
550	22	559	838	343	1676	1118
600	24	610	914	381	1829	1219
650	26	660	991	406	—	—
700	28	711	1067	438	—	—
750	30	762	1143	470	—	—
800	32	813	1219	502	—	—
850	34	864	1295	533	—	—
900	36	914	1372	565	—	—
950	38	965	1448	600	—	—
1000	40	1016	1524	632	—	—
1050	42	1067	1600	660	—	—
1100	44	1118	1676	695	—	—
1150	46	1168	1753	727	—	—
1200	48	1219	1829	759	—	—
1300	52	1321	1981	821	—	—
1400	56	1422	2134	884	—	—
1500	60	1524	2286	947	—	—
1600	64	1626	2438	1010	—	—
1700	68	1727	2591	1073	—	—
1800	72	1829	2743	1137	—	—
1900	76	1930	2896	1199	—	—
2000	80	2032	3048	1263	—	—
2200	88	2235	3353	1389	—	—
2400	96	2438	3657	1515	—	—
2600	104	2642	3963	1642	—	—
2800	112	2845	4268	1768	—	—
3000	120	3048	4572	1894	—	—
3200	128	3251	4876	2020	—	—
3400	136	3454	5182	2146	—	—

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a 尺寸A等于尺寸O的一半
a Dimension A is equal to half of dimension O

图3 短半径90°和180°弯头形状
Figure 3 Short radius 90° and 180° elbow shapes

表4 短半径90°和180°弯头尺寸
Table 4 Dimensions of short radius 90° and 180° elbows

公称尺寸 Nominal size		端部外径 End outer diameter mm	中心至端面 Center to end face mm		中心至中心 center to center mm	背部至端面 Back to end face mm
			90°弯头	45°弯头	180°弯头	180°弯头
DN	NPS	D	A	O	K	
25	1	33.7	25	51	41	
32	1¼	42.4	32	64	52	
40	1½	48.3	38	76	62	
50	2	60.3	51	102	81	
65	2½	73.0	64	127	100	
80	3	88.9	76	152	121	
90	3½	101.6	89	178	140	
100	4	114.3	102	203	159	
125	5	141.3	127	254	197	
150	6	168.3	152	305	237	
200	8	219.1	203	406	313	
250	10	273.0	254	508	391	
300	12	323.9	305	610	467	
350	14	355.6	356	711	533	
400	16	406.4	406	813	610	
450	18	457	457	914	686	
500	20	508	508	1016	762	
550	22	559	559	1118	838	
600	24	610	610	1219	914	
650	26	660	660	—	—	
700	28	711	711	—	—	
750	30	762	762	—	—	

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表4 短半径90°和180°弯头尺寸 (续)
Table 4 Dimensions of short radius 90° and 180° elbows (continued)

公称尺寸 Nominal size		端部外径 End outer diameter mm	中心至端面 Center to end face mm	中心至中心 center to center mm	背部至端面 Back to end face mm
			90°弯头	180°弯头	180°弯头
DN	NPS	D	A	O	K
800	32	813	813	—	—
850	34	864	864	—	—
900	36	914	914	—	—
950	38	965	965	—	—
1000	40	1016	1016	—	—
1050	42	1067	1067	—	—
1100	44	1118	1118	—	—
1150	46	1168	1168	—	—
1200	48	1219	1219	—	—
1300	52	1321	1321	—	—
1400	56	1422	1422	—	—
1500	60	1524	1524	—	—
1600	64	1626	1626	—	—
1700	68	1727	1727	—	—
1800	72	1829	1829	—	—
1900	76	1930	1930	—	—
2000	80	2032	2032	—	—
2200	88	2235	2235	—	—
2400	96	2438	2438	—	—
2600	104	2642	2642	—	—
2800	112	2845	2845	—	—
3000	120	3048	3048	—	—
3200	128	3251	3251	—	—
3400	136	3454	3454	—	—

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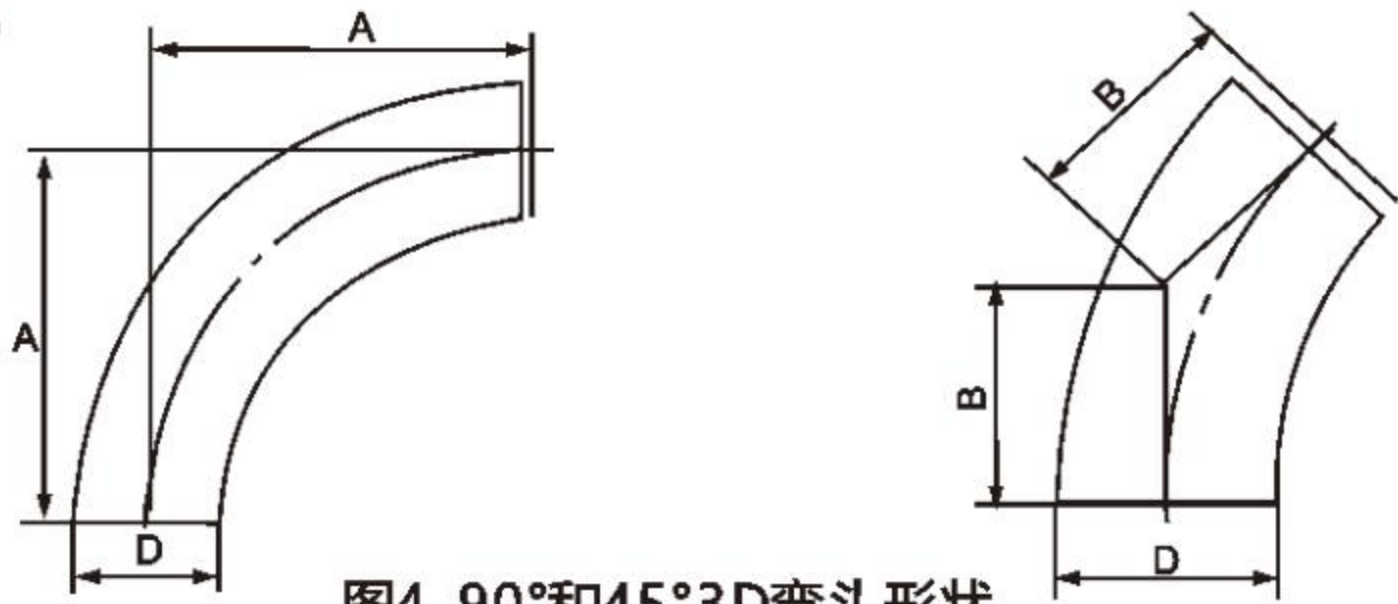


图4 90°和45°3D弯头形状
Figure 4 90° and 45° 3D elbow shapes

表5 90°和45°3D弯头尺寸
Table 5 90° and 45° 3D elbow dimensions

公称尺寸 Nominal size		端部外径 End outer diameter mm	背部至端面 Back to end face mm	
			90°弯头	45°弯头
DN	NPS	D	A	B
20	3/4	26.9	57	24
25	1	33.7	76	31
32	1¼	42.4	95	39
40	1½	48.3	114	47
50	2	60.3	152	63
65	2½	73.0	190	79
80	3	88.9	229	95
90	3½	101.6	267	111
100	4	114.3	305	127
125	5	141.3	381	157
150	6	168.3	457	189
200	8	219.1	610	252
250	10	273.0	762	316
300	12	323.9	914	378
350	14	355.6	1067	441
400	16	406.4	1219	505
450	18	457	1372	568
500	20	508	1524	632
550	22	559	1676	694
600	24	610	1829	757
650	26	660	1981	821
700	28	711	2134	883
750	30	762	2286	946
800	32	813	2438	1010
850	34	864	2591	1073
900	36	914	2743	1135
950	38	965	2896	1200
1000	40	1016	3048	1264
1050	42	1067	3200	1326
1100	44	1118	3353	1389
1150	46	1168	3505	1453
1200	48	1219	3658	1516
1300	52	1321	3962	1641
1400	56	1422	4267	1768
1500	60	1524	4572	1894
1600	64	1626	4877	2020

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Ni5Mo3N) 2205, S39042 (015Cr21Ni26Mo5Cu2) 904L, S25073 (022Cr25Ni7Mo4N) 2507,

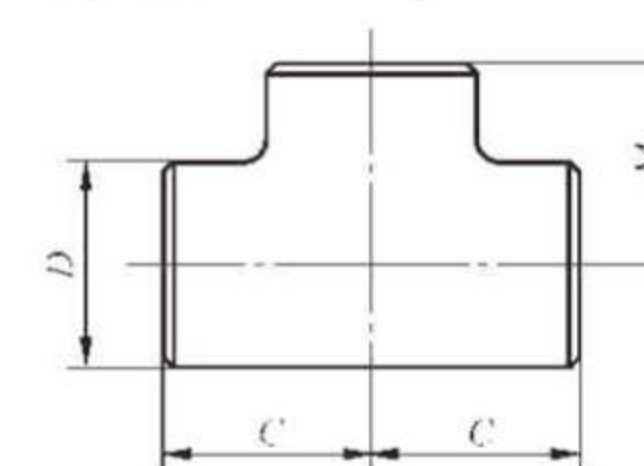
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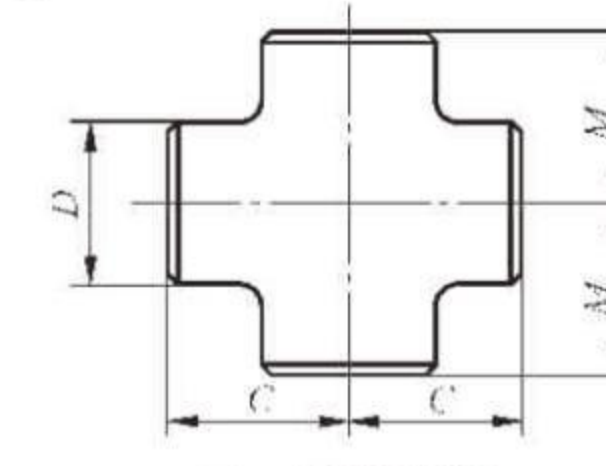
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三通(等径、异径)TEES(STRAIGHT AND REDUCING)



a) 等径三通



b) 等径四通

图5 等径三通和四通形状

Figure 5 Shapes of equal-diameter tees and crosses

表6 等径三通和四通尺寸

Table 6 Dimensions of equal diameter tees and crosses

公称尺寸 Nominal size		端部外径 End outer diameter mm	中心至端面 Center to end face mm	
			主管 director	支管 Branch pipe
DN	NPS	D	C	M
15	1/2	21.3	25	25
20	3/4	26.9	29	29
25	1	33.7	38	38
32	1 1/4	42.4	48	48
40	1 1/2	48.3	57	57
50	2	60.3	64	64
65	2 1/2	73.0	76	76
80	3	88.9	86	86
90	3 1/2	101.6	95	95
100	4	114.3	105	105
125	5	141.3	124	124
150	6	168.3	143	143
200	8	219.1	178	178
250	10	273.0	216	216
300	12	323.9	254	254
350	14	355.6	279	279
400	16	406.4	305	305
450	18	457	343	343
500	20	508	381	381
550	22	559	419	419
600	24	610	432	432
650	26	660	495	495
700	28	711	521	521
750	30	762	559	559
800	32	813	597	597
850	34	864	635	635
900	36	914	673	673
950	38	965	711	711
1000	40	1016	749	749
1050	42	1067	762	711
1100	44	1118	813	762
1150	46	1168	851	800
1200	48	1219	889	838
1300	52	1321	978	908
1400	56	1422	1054	978

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表6等径三通和四通尺寸 (续)

Table 6 Dimensions of equal diameter tees and crosses (continued)

公称尺寸 Nominal size		端部外径 End outer diameter mm	中心至端面 Center to end face mm	
			主管 director	支管 Branch pipe
DN	NPS	D	C	M
1500	60	1524	1118	1054
1600	64	1626	1194	1092
1700	68	1727	1252	1086
1800	72	1829	1326	1147
1900	76	1930	1399	1208
2000	80	2032	1473	1269
2200	88	2235	1620	1391
2400	96	2438	1768	1513

aDN650(NPS26)及其以上的三通和四通, M为推荐值。
b尺寸适用于DN600 (NPS24)及其以下的四通。



图6 异径三通和四通形状
Figure 6 Reducing tee and cross shapes

表7 异径三通和四通尺寸
Table 7 Dimensions of reducing tee and cross

公称尺寸 Nominal size		端部外径 End outer diameter mm		中心至端面 Center to end face mm	
		主管 director	支管 Branch pipe	主管 director	支管 Branch pipe
DN	NPS	D	D1	C	M
15×15×10	1/2×1/2×3/8	21.3	17.2	25	25
15×15×8	1/2×1/2×1/4	21.3	13.5		
20×20×15	3/4×3/4×1/2	26.9	21.3	29	29
20×20×10	3/4×3/4×3/8	26.9	17.2		
25×25×20	1×1×3/4	33.7	26.9	38	38
25×25×15	1×1×1/2	33.7	21.3		
32×32×25	1 1/4×1 1/4×1	42.4	33.7	48	48

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表7 异径三通和四通尺寸 (续)

Table 7 Dimensions of reducing tees and crosses (continued)

公称尺寸 Nominal size		端部外径 End outer diameter mm		中心至端面 Center to end face mm	
		主管 director	支管 Branch pipe	主管 director	支管 Branch pipe
DN	NPS	D	D1	C	M
32×32×20	1 1/4×1 1/4×3/4	42.4	26.9	48	48
32×32×15	1 1/4×1 1/4×1/2	42.4	21.3		
40×40×32	1 1/2×1 1/2×1 1/4	48.3	42.4	57	57
40×40×25	1 1/2×1 1/2×1	48.3	33.7		
40×40×20	1 1/2×1 1/2×3/4	48.3	26.9		
40×40×15	1 1/2×1 1/2×1/2	48.3	21.3		
50×50×40	2×2×1 1/2	60.3	48.3	64	60
50×50×32	2×2×1 1/4	60.3	42.4		57
50×50×25	2×2×1	60.3	33.7		51
50×50×20	2×2×3/4	60.3	26.9		44
65×65×50	2 1/2×2 1/2×2	73.0	60.3	76	70
65×65×40	2 1/2×2 1/2×1 1/2	73.0	48.3		67
65×65×32	2 1/2×2 1/2×1 1/4	73.0	42.4		64
65×65×25	2 1/2×2 1/2×1	73.0	33.7		57
80×80×65	3×3×2 1/2	88.9	73.0	86	83
80×80×50	3×3×2	88.9	60.3		76
80×80×40	3×3×1 1/2	88.9	48.3		73
80×80×32	3×3×1 1/4	88.9	42.4		70
90×90×80	3 1/2×3 1/2×3	101.6	88.9	95	92
90×90×65	3 1/2×3 1/2×2 1/2	101.6	73.0		89
90×90×50	3 1/2×3 1/2×2	101.6	60.3		83
90×90×40	3 1/2×3 1/2×1 1/2	101.6	48.3		79
100×100×90	4×4×3 1/2	114.3	101.6	105	102
100×100×80	4×4×3	114.3	88.9		98
100×100×65	4×4×2 1/2	114.3	73.0		95
100×100×50	4×4×2	114.3	60.3		89
100×100×40	4×4×1 1/2	114.3	48.3	124	86
125×125×100	5×5×4	141.3	114.3		117
125×125×90	5×5×3 1/2	141.3	101.6		114
125×125×80	5×5×3	141.3	88.9		111
125×125×65	5×5×2 1/2	141.3	73.0		108
125×125×50	5×5×2	141.3	60.3		105

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表7 异径三通和四通尺寸 (续)
Table 7 Dimensions of reducing tees and crosses (continued)

公称尺寸 Nominal size		端部外径 End outer diameter mm		中心至端面 Center to end face mm	
		主管 director	支管 Branch pipe	主管 director	支管 Branch pipe
Na	NPS	D	D1	C	M
150×150×125	6×6×5	168.3	141.3	143	137
150×150×100	6×6×4	168.3	114.3		130
150×150×90	6×6×3½	168.3	101.6		127
150×150×80	6×6×3	168.3	88.9		124
150×150×65	6×6×2½	168.3	73.0		121
200×200×150	8×8×6	219.1	168.3	178	168
200×200×125	8×8×5	219.1	141.3		162
200×200×100	8×8×4	219.1	114.3		156
200×200×90	8×8×3½	219.1	101.6		152
250×250×200	10×10×8	273.0	219.1	216	203
250×250×150	10×10×6	273.0	168.3		194
250×250×125	10×10×5	273.0	141.3		191
250×250×100	10×10×4	273.0	114.3		184
300×300×250	12×12×10	323.9	273.0	254	241
300×300×200	12×12×8	323.9	219.1		229
300×300×150	12×12×6	323.9	168.3		219
300×300×125	12×12×5	323.9	141.3		216
350×350×300	14×14×12	355.6	323.9	279	270
350×350×250	14×14×10	355.6	273.0		257
350×350×200	14×14×8	355.6	219.1		248
350×350×150	14×14×6	355.6	168.3		238
400×400×350	16×16×14	406.4	355.6	305	305
400×400×300	16×16×12	406.4	323.9		295
400×400×250	16×16×10	406.4	273.0		283
400×400×200	16×16×8	406.4	219.1		273
400×400×150	16×16×6	406.4	168.3		264
450×450×400	18×18×16	457	406.4	343	330
450×450×350	18×18×14	457	355.6		330
450×450×300	18×18×12	457	323.9		321
450×450×250	18×18×10	457	273.0		308
450×450×200	18×18×8	457	219.1		298
500×500×450	20×20×18	508	457	381	368

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表7 异径三通和四通尺寸 (续)
Table 7 Dimensions of reducing tees and crosses (continued)

公称尺寸 Nominal size		端部外径 End outer diameter mm		中心至端面 Center to end face mm	
		主管 director	支管 Branch pipe	主管 director	支管 Branch pipe
DN	NPS	D	D1	C	M
500×500×400	20×20×16	508	406.4	381	356
500×500×350	20×20×14	508	355.6		356
500×500×300	20×20×12	508	323.9		346
500×500×250	20×20×10	508	273.0		333
500×500×200	20×20×8	508	219.1		324
550×550×500	22×22×20	559	508	419	406
550×550×450	22×22×18	559	457		394
550×550×400	22×22×16	559	406.4		381
550×550×350	22×22×14	559	355.6		381
550×550×300	22×22×12	559	323.9		371
550×550×250	22×22×10	559	273.0		359
600×600×550	24×24×22	610	699	432	432
600×600×500	24×24×20	610	508		432
600×600×450	24×24×18	610	457		419
600×600×400	24×24×16	610	406.4		406
600×600×350	24×24×14	610	355.6		406
600×600×300	24×24×12	610	323.9		397
600×600×250	24×24×10	610	273.0		384
650×650×600	26×26×24	660	610	495	483
650×650×550	26×26×22	660	559		470
650×650×500	26×26×20	660	508		457
650×650×450	26×26×18	660	457		444
650×650×400	26×26×16	660	406.4		432
650×650×350	26×26×14	660	355.6		432
650×650×300	26×26×12	660	323.9		422
700×700×650	28×28×26	711	660	521	521
700×700×600	28×28×24	711	610		508
700×700×550	28×28×22	711	559		495
700×700×500	28×28×20	711	508		483
700×700×450	28×28×18	711	457		470
700×700×400	28×28×16	711	406.4		457
700×700×350	28×28×14	711	355.6		457

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表7 异径三通和四通尺寸 (续)
Table 7 Dimensions of reducing tees and crosses (continued)

公称尺寸 Nominal size		端部外径 End outer diameter mm		中心至端面 Center to end face mm	
		主管 director	支管 Branch pipe	主管 director	支管 Branch pipe
DN	NPS	D	D1	C	M
700×700×300	28×28×12	711	323.9	521	448
750×750×700	30×30×28	762	711	559	546
750×750×650	30×30×26	762	660		546
750×750×600	30×30×24	762	610		533
750×750×550	30×30×22	762	559		521
750×750×500	30×30×20	762	809		508
750×750×450	30×30×18	762	457		495
750×750×400	30×30×16	762	406.4		483
750×750×350	30×30×14	762	355.6		483
750×750×300	30×30×12	762	323.9		473
750×750×250	30×30×10	762	273.0		460
800×800×750	32×32×30	813	762	597	584
800×800×700	32×32×28	813	711		572
800×800×650	32×32×26	813	660		572
800×800×600	32×32×24	813	610		559
800×800×550	32×32×22	813	559		546
800×800×500	32×32×20	813	508		533
800×800×450	32×32×18	813	457		521
800×800×400	32×32×16	813	406.4		508
800×800×350	32×32×14	813	355.6		508
850×850×800	34×34×32	864	813	635	622
850×850×750	34×34×30	864	762		610
850×850×700	34×34×28	864	711		597
850×850×650	34×34×26	864	660		597
850×850×600	34×34×24	864	610		584
850×850×550	34×34×22	864	559		572
850×850×500	34×34×20	864	508		559
850×850×450	34×34×18	864	457		546
850×850×400	34×34×16	864	406.4		533
900×900×850	36×36×34	914	864	673	660
900×900×800	36×36×32	914	813		648
900×900×750	36×36×30	914	762		635

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表7 异径三通和四通尺寸 (续)
Table 7 Dimensions of reducing tees and crosses (continued)

公称尺寸 Nominal size		端部外径 End outer diameter mm		中心至端面 Center to end face mm	
		主管 director	支管 Branch pipe	主管 director	支管 Branch pipe
DN	NPS	D	D1	C	M
900×900×700	36×36×28	914	711	673	622
900×900×650	36×36×26	914	660		622
900×900×600	36×36×24	914	610		610
900×900×550	36×36×22	914	559		597
900×900×500	36×36×20	914	508		584
900×900×450	36×36×18	914	457		572
900×900×400	36×36×16	914	406.4		559
950×950×900	38×38×36	965	914	711	711
950×950×850	38×38×34	965	864		698
950×950×800	38×38×32	965	813		686
950×950×750	38×38×30	965	762		673
950×950×700	38×38×28	965	711		648
950×950×650	38×38×26	965	660		648
950×950×600	38×38×24	965	610		635
950×950×550	38×38×22	965	559		622
950×950×500	38×38×20	965	508		610
950×950×450	38×38×18	965	457		597
1000×1000×950	40×40×38	1016	965	749	749
1000×1000×900	40×40×36	1016	914		737
1 000×1000×850	40×40×34	1016	864		724
1000×1 000×800	40×40×32	1016	813		711
1 000×1000×750	40×40×30	1016	762		698
1 000×1000×700	40×40×28	1016	711		673
1000×1000×650	40×40×26	1016	660		673
1000×1000×600	40×40×24	1016	610		660
1 000×1000×550	40×40×22	1016	559		648
1000×1000×500	40×40×20	1016	508		635
1 000×1000×450	40×40×18	1016	457		622

SH/T 3408-2022

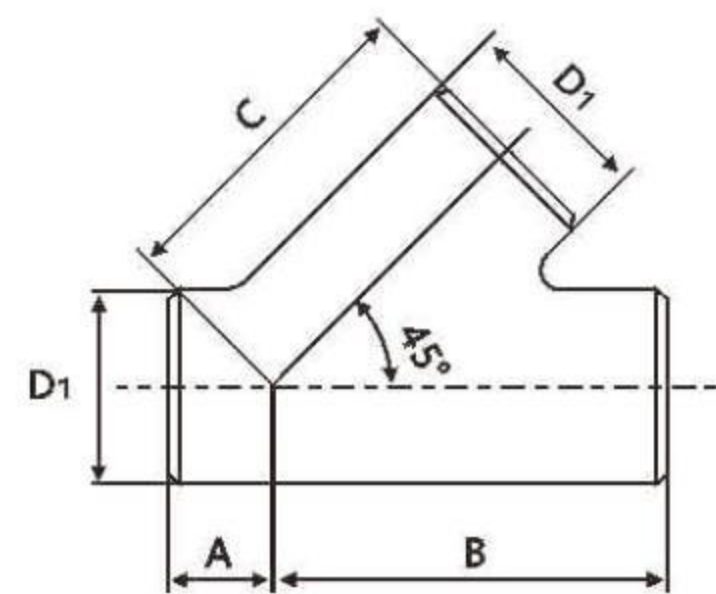


图4.1.7 45°等径Y型无缝三通外形
Figure 4.1.7 Appearance of 45° equal diameter Y-shaped seamless tee

表4.1.7 45°等径Y型无缝三通尺寸
Table 4.1.7 Dimensions of 45° equal diameter Y-shaped seamless tee

公称直径 Nominal diameter DN	端部外径D1 End outer diameter D1 mm	中心至端面 Center to end face mm		
		中心至端面A Center to end face A	中心至端面B Center to end face B	中心至端面C Center to end face C
50	60.3	40	110	110
65	73.0	45	130	130
80	88.9	50	165	165
90	101.6	55	175	175
100	114.3	60	180	180
150	168.3	80	270	270
200	219.1	130	360	360
250	273.1	140	430	430
300	323.9	145	500	500
350	355.6	150	560	560
400	406.4	160	620	620
450	457.0	180	720	720
500	508.0	190	750	750
550	559.0	205	810	810
600	610.0	220	850	850

4.1.8 45°异径Y型无缝三通外形见图4.1.8, 45°异径Y型无缝三通尺寸应符合表4.1.8的规定。
4.1.8 The appearance of the 45° reducing Y-shaped seamless tee is shown in Figure 4.1.8. The dimensions of the 45° reducing Y-shaped seamless tee should comply with the provisions of Table 4.1.8.

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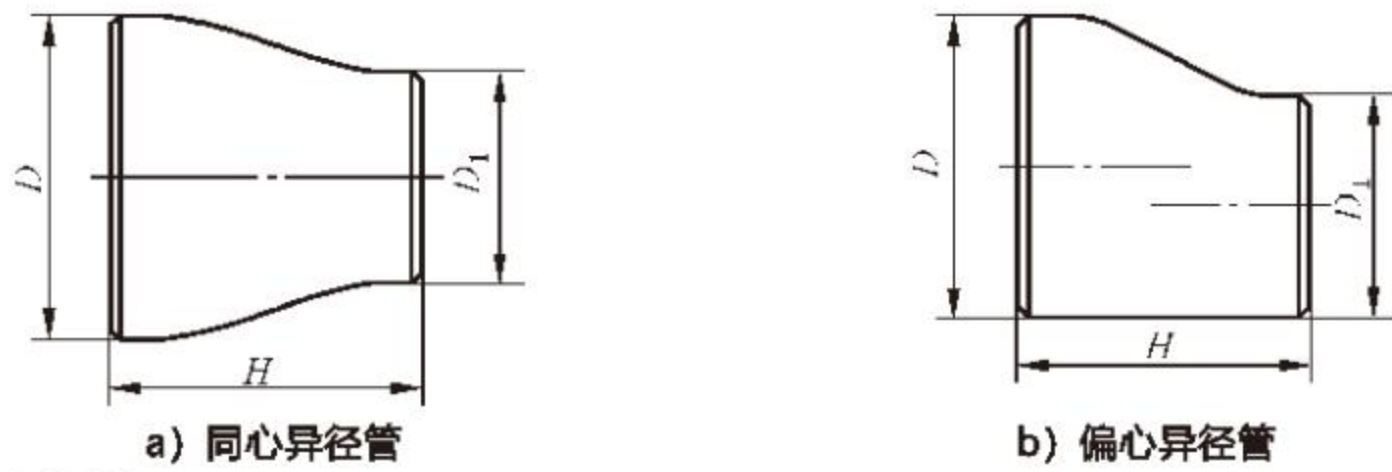
GB/T 12459—2025



规格范围: " ½"- 48
标准范围: ASME B16.9、ASME B16.5、ASME B16.11、MSS SP-43、GB/T 12459、GB/T 14383、GB/T 19326、GB/T 10752、GB/T 9124、HG/T 20592、HG/T 20615、SH/T 3408、SH/T 3406、JIS B 2309、JIS B 2220、JIS B 2311、JIS B 2312、JIS B 2313、JIS B 2316、EN 1092-1、EN 10253-2、ISO 5251、BS EN 10253-3
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S30408 (06Cr19Ni10) 304, S30403 (022Cr19Ni10) 304L, S31008 (06Cr25Ni20) 310S, S31603 (022Cr17Ni12Mo2) 316 L, S31608 (06Cr17Ni12Mo2) 316, S31668 (06Cr17Ni12Mo2Ti) 316Ti, S32168 (06Cr18Ni11Ti) 321, S22053 (022Cr23Ni5Mo3N) 2205, S39042 (015Cr21Ni26Mo5Cu2) 904L, S25073 (022Cr25Ni7Mo4N) 2507,

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注: 图示为钟形异径管, 但不限制圆锥形异径管的使用。
Note: The figure shows a bell-shaped reducer, but it does not limit the use of conical reducers.

图9 异径管形状
Figure 9 Shape of reducer

表10 异径管尺寸
Table 10 Reducer dimensions

公称尺寸 Nominal size		端部外径 End outer diameter mm		端面至端面 End to end mm
		大端 big endian	小端 little endian	
DN	NPS	D	D1	H
20×10	3/4×3/8	26.9	17.2	38
20×15	3/4×1/2	26.9	21.3	
25×20	1×3/4	33.7	26.9	
25×15	1×1/2	33.7	21.3	51
32×25	1¼×1	42.4	33.7	
32×20	1¼×3/4	42.4	26.9	
32×15	1¼×1/2	42.4	21.3	
40×32	1½×1¼	48.3	42.4	64
40×25	1½×1	48.3	33.7	
40×20	1½×3/4	48.3	26.9	
40×15	1½×1/2	48.3	21.3	
50×40	2×1½	60.3	48.3	76
50×32	2×1¼	60.3	42.4	
50×25	2×1	60.3	33.7	
50×20	2×3/4	60.3	26.9	
65×50	2½×2	73.0	60.3	89
65×40	2½×1½	73.0	48.3	
65×32	2½×1¼	73.0	42.4	
65×25	2½×1	73.0	33.7	
80×65	3×2½	88.9	73.0	
80×50	3×2	88.9	60.3	
80×40	3×1½	88.9	48.3	
80×32	3×1¼	88.9	42.4	
90×80	3½×3	101.6	88.9	102
90×65	3½×2½	101.6	73.0	
90×50	3½×2	101.6	60.3	
90×40	3½×1½	101.6	48.3	
90×32	3½×1¼	101.6	42.4	
100×90	4×3½	114.3	101.6	
100×80	4×3	114.3	6.88	
100×65	4×2½	114.3	73.0	
100×50	4×2	114.3	60.3	
100×40	4×1½	114.3	48.3	

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表10 异径管尺寸 (续)
Table 10 Reducer dimensions (continued)

公称尺寸 Nominal size		端部外径 End outer diameter mm		端面至端面 End to end mm
		大端 big endian	小端 little endian	
DN	NPS	D	D1	H
125×100	5×4	141.3	114.3	127
125×90	5×3½	141.3	101.6	
125×80	5×3	141.3	88.9	
125×65	5×2½	141.3	73.0	
125×50	5×2	141.3	60.3	
150×125	6×5	168.3	141.3	140
150×100	6×4	168.3	114.3	
150×90	6×3½	168.3	101.6	
150×80	6×3	168.3	88.9	
150×65	6×2½	168.3	73.0	152
200×150	8×6	219.1	168.3	
200×125	8×5	219.1	141.3	
200×100	8×4	219.1	114.3	
200×90	8×3½	219.1	101.6	
250×200	10×8	273.0	219.1	178
250×150	10×6	273.0	168.3	
250×125	10×5	273.0	141.3	
250×100	10×4	273.0	114.3	
300×250	12×10	323.9	273.0	203
300×200	12×8	323.9	219.1	
300×150	12×6	323.9	168.3	
300×125	12×5	323.9	141.3	
350×300	14×12	355.6	323.9	330
350×250	14×10	355.6	273.0	
350×200	14×8	355.6	219.1	
350×150	14×6	355.6	168.3	
400×350	16×14	406.4	355.6	356
400×300	16×12	406.4	323.9	
400×250	16×10	406.4	273.0	
400×200	16×8	406.4	219.1	
450×400	18×16	457	406.4	381
450×350	18×14	457	355.6	

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表10 异径管尺寸 (续)
Table 10 Reducer dimensions (continued)

公称尺寸 Nominal size		端部外径 End outer diameter mm		端面至端面 End to end mm
		大端 big endian	小端 little endian	
Na	NPS	D	D ₁	H
450×300	18×12	457	323.9	381
450×250	18×10	457	273.0	
500×450	20×18	508	457	508
500×400	20×16	508	406.4	
500×350	20×14	508	355.6	
500×300	20×12	508	323.9	
550×500	22×20	559	508	
550×450	22×18	559	457	
550×400	22×16	559	406.4	
550×350	22×14	559	355.6	
600×550	24×22	610	559	
600×500	24×20	610	508	
600×450	24×18	610	457	
600×400	24×16	610	406.4	610
650×600	26×24	660	610	
650×550	26×22	660	559	
650×500	26×20	660	508	
650×450	26×18	660	457	
700×650	28×26	711	660	
700×600	28×24	711	610	
700×550	28×22	711	559	
700×500	28×20	711	508	
750×700	30×28	762	711	
750×650	30×26	762	660	
750×600	30×24	762	610	
750×550	30×22	762	559	
800×750	32×30	813	762	
800×700	32×28	813	711	
800×650	32×26	813	660	
800×600	32×24	813	610	
850×800	34×32	864	813	
850×750	34×30	864	762	

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表10 异径管尺寸 (续)
Table 10 Reducer dimensions (continued)

公称尺寸 Nominal size		端部外径 End outer diameter mm		端面至端面 End to end mm
		大端 big endian	小端 little endian	
DN	NPS	D	D ₁	H
850×700	34×28	864	711	610
850×650	34×26	864	660	
900×850	36×34	914	864	
900×800	36×32	914	813	
900×750	36×30	914	762	
900×700	36×28	914	711	
900×650	36×26	914	660	
950×900	38×36	965	914	
950×850	38×34	965	864	
950×800	38×32	965	813	
950×750	38×30	965	762	
950×700	38×28	965	711	
950×650	38×26	965	660	
1000×950	40×38	1016	965	
1000×900	40×36	1016	914	
1000×850	40×34	1016	864	
1000×800	40×32	1016	813	
1000×750	40×30	1016	762	
1050×1000	42×40	1067	1016	
1050×950	42×38	1067	965	
1050×900	42×36	1067	914	
1050×850	42×34	1067	864	711
1050×800	42×32	1067	813	
1050×750	42×30	1067	762	
1100×1050	44×42	1118	1067	
1100×1000	44×40	1118	1016	
1100×950	44×38	1118	965	711
1100×900	44×36	1118	914	
1150×1100	46×44	1168	1118	
1150×1050	46×42	1168	1067	711

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表10 异径管尺寸 (续)
Table 10 Reducer dimensions (continued)

公称尺寸 Nominal size		端部外径 End outer diameter mm		端面至端面 End to end mm
		大端 big endian	小端 little endian	
DN	NPS	D	D1	H
1150×1000	46×40	1168	1016	711
1150×950	46×38	1168	965	
1200×1150	48×46	1219	1168	
1200×1100	48×44	1219	1118	
1200×1050	48×42	1219	1067	
1200×1000	48×40	1219	1016	
1300×1200	52×48	1321	1219	
1300×1100	52×44	1321	1118	
1300×1050	52×42	1321	1067	
1300×1000	52×40	1321	1016	
1400×1300	56×52	1422	1321	
1400×1200	56×48	1422	1219	
1400×1100	56×44	1422	1118	
1500×1400	60×56	1524	1422	
1500×1300	60×52	1524	1321	
1500×1200	60×48	1524	1219	1219
1600×1500	64×60	1626	1524	
1600×1400	64×56	1626	1422	
1600×1300	64×52	1626	1321	
1800×1700	72×68	1829	1727	
1800×1600	72×64	1829	1626	
1800×1500	72×60	1829	1524	
2000×1900	80×76	2032	1930	
2000×1800	80×72	2032	1829	
2000×1700	80×68	2032	1727	

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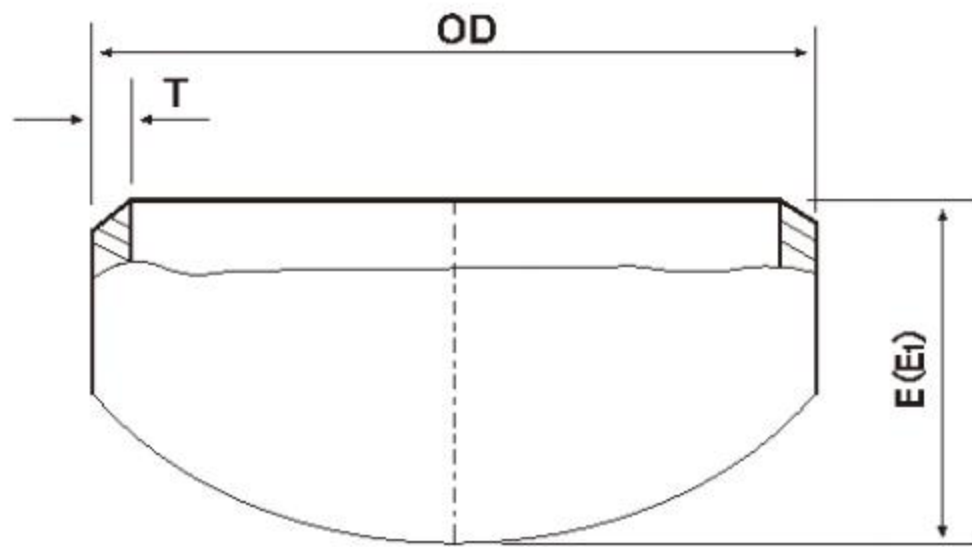


规格范围: " ½~" 48
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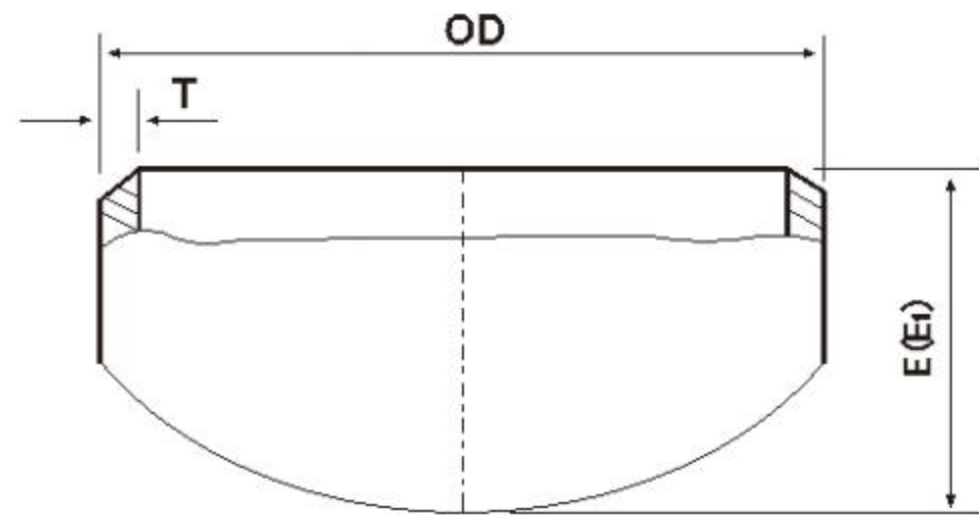


公称通径 Nominal diameter		端部外径 Outside diameter	长度 Length		对尺寸E的限制厚度 Limiting Wall Thickness for Length E
DN	NPS	OD	E	E1	
15	1/2	18 21.3	25	25	4.57
20	3/4	25 26.7		25	3.81
25	1	32 33.7	38	38	4.57
32	1 1/4	38 42.4			4.83
40	1 1/2	45 48.3			5.08
50	2	57 60.3		44	5.59
65	2 1/2	76 73.0		51	7.11
80	3	89		51	7.62
90	3 1/2	101.6	64	76	8.13
100	4	108 114.3	64	76	8.64
125	5	133 139.7 141.3	76	89	9.65
150	6	159 168.3 165.2	89	102	10.92
200	8	219 216.1	102	127	12.70
250	10	273 267.4	127	152	12.70

上述尺寸符合GB/T 12459、GB/T 13401、SH 3408、SH 3409、HG/T 21635 HG/T 21631、SY/T 05010、ASME B16.9标准。
Above dimensions acc. to GB/T 12459、GB/T 13401、SH 3408、SH 3409、HG/T 21635、HG/T 21631、SY/T 05010、ASME B16.9
理论重量按ANSI B16.9标准壁厚测算。
Weights are approximate and based on manufacture's date, according to ANSI B16.9.

GB/T 12459—2025

管帽CAPS
Pipe Caps CAPS



公称通径 Nominal diameter		外径 Outside diameter	端面至端面的距离 End to end		对尺寸E的限制厚度 Limiting Wall Thickness for Length E
DN	NPS	OD	E	E1	
300	12	325 323.9 318.5	152	178	12.70
350	14	377 355.6	165	191	12.70
400	16	426 406.4	178	203	12.70
450	18	478 457.2	203	229	12.70
500	20	529 508.0	229	254	12.70
550	22	559	254	254	12.70
600	24	630 610	267	305	12.70
650	26	660		-	-
700	28	720 711		-	-
750	30	762		-	-
800	32	820 813		-	-
850	34	864		-	-
900	36	920 914	305	-	-
950	38	965		-	-
1000	40	1016		-	-
1050	42	1067	343	-	-
1100	44	1118		-	-
1150	46	1168		-	-
1200	48	1219	368	-	-
1300	52	1321		-	-
1400	56	1422	406	-	-
1500	60	1524	419	-	-

上述尺寸符合GB/T12459、GB/T13401、SH3408、SH3409、HG/T21635、HG/T21631、SY/T05010、ASMEB16.9标准。
Above dimensions acc.toGB/T12459、GB/T 13401、SH 3408、SH 3409、HG/T21635、HG/T21631、SY/T05010、ASME B16.9
理论重量按ANSIB16.9标准壁厚测算。
Weights are approximate and based on manufacture's date, according to ANSI B16.9.

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8 端部坡口

8 end bevel

8.1 除非另有要求，管件端部应加工焊接坡口，其形状和尺寸应符合图10和表11的规定。

8.1 Unless otherwise required, the ends of pipe fittings shall be processed with welding grooves, and their shapes and dimensions shall comply with the requirements of Figure 10 and Table 11.

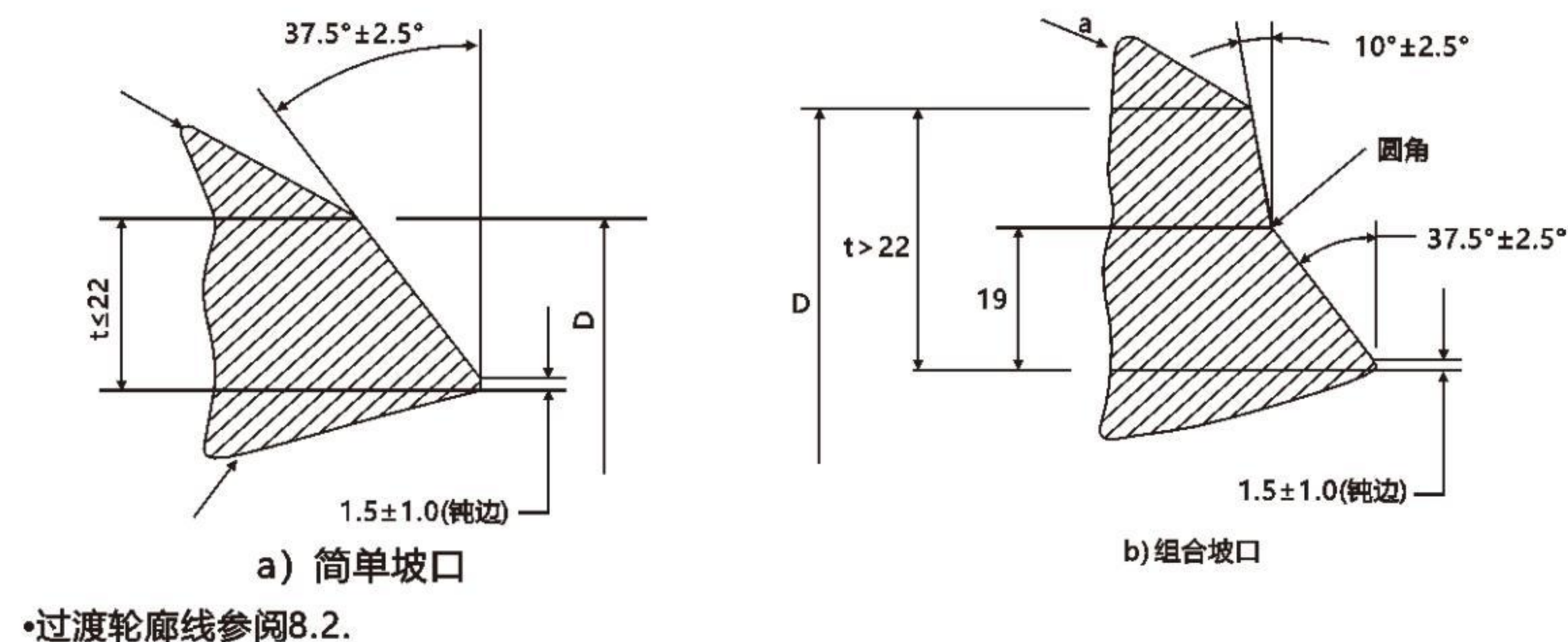


图10 管件端部坡口形状及尺寸
Figure 10 Shape and size of end bevel of pipe fittings

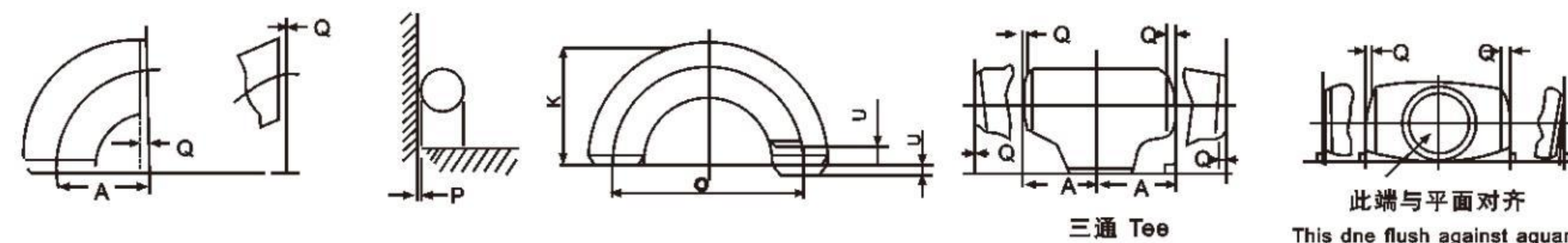
表11 管件的焊接坡口和钝边
Table 11 Welding grooves and blunt edges of pipe fittings

公称壁厚 Nominal wall thickness t_{nom}/mm	端部制备 End preparation
$t_{nom} < 3$	直角或轻微倒角，由制造商确定 Right angle or slight chamfer, determined by manufacturer
$3 \leq t_{nom} \leq 22$	简单坡口，如图10a)所示 Simple groove, as shown in Figure 10a)
$t_{nom} > 22$	组合坡口，如图10b)所示 Combined groove, as shown in Figure 10b)

8.2 管件焊接端部过渡部分的最大包络线应符合图11的要求。除图11的脚注e或特殊订货外，在图11所示的最大包络线范围内，由焊接坡口到管件的外表面以及由根部钝边到管件的內表面的过渡由制造商自定。

8.2 The maximum envelope of the transition portion of the welded end of the pipe fitting shall comply with the requirements of Figure 11. Except in footnote e of Figure 11 or by special order, the transition from the welding groove to the outside surface of the fitting and from the root blunt edge to the inside surface of the fitting within the maximum envelope range shown in Figure 11 is left to the discretion of the manufacturer.

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对焊管件尺寸的极限偏差 Tolerances for Buttwelding Fittings

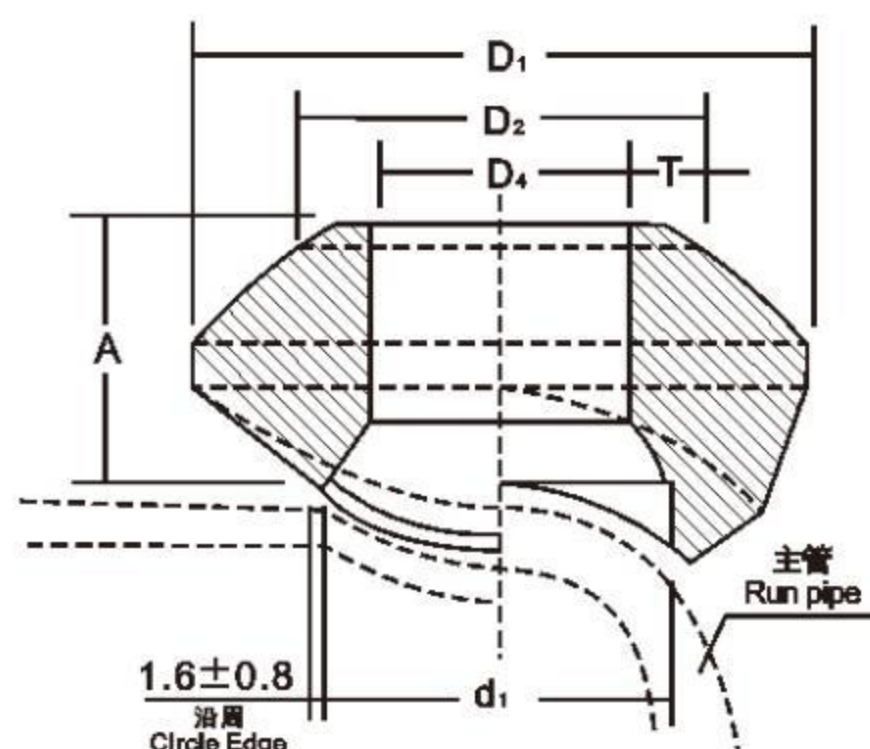
GB/T 12459																
所有管件 All Fittings				弯头、三通 Elbows and tees 90° 45°	异径接头 Reducers and Lap Joint Stub Ends	管帽 Caps	180°弯头 180degree Returns		Lap Joint Stub Ends 翻边短节				工 序 号 管 子 规 格 Nominal pipe size	Angularity Tolerance 形位公差		
公称尺寸 (DN) Nominal pipe size	坡口外 径 Outside Diameter at Bevel	端部内径 Inside Diameter at End	壁厚 Wall Thickness	中心至端 部尺寸 Center to End dimension	总长 Over all Length	总长 Over all Length	中心至中 心尺寸 Center to Center Dimension	背部至端 面尺寸 Back to Face Dimension	Outside Diameter of Lap 搭接边 外径	搭接边外 圆角半径 Fillet Radius of Lap Joint	短节外径 Outside Diameter of Lap Joint	搭接 边厚度 Thickness of Lap		弯头、三通 Elbows Tees and Reducers	弯头及 三通 Elbows and Tees 90和45	端部不 重合度 Misalign ment of End
DN	D		T	A, B, C, M	F, H	E	O	K	G	R	D	T	NPS	Q	P	U
15-65	±1.6 -0.8	±0.8	不小于公称壁厚 87.5%	Not less than 87.5% of the nominal wall thickness	±2	±2	±3	±6	±6	0 -1	0 -1	+1.6 0	15-100	1	2	1
80-90	±1.6	±1.6			±2	±2	±3	±6	±6	0 -1	0 -1	+1.6 0	125-200	2	4	1
100	±1.6	±1.6			±2	±2	±3	±6	±6	0 -1	0 -2	+1.6 0	250-300	3	5	2
	±2.4 -1.6	±1.6			±2	±2	±6	±6	±6	0 -1	0 -2	+1.6 0	350-400	3	6	2
250-450	±4.0 -3.2	±3.2			±2	±2	±6	±10	±6	0 -2	0 -2	+3.2 0	450-600	4	10	2
500-600	±6.4 -4.8	±4.8			±2	±2	±6	±10	±6	0 -2	0 -2	+3.2 0	650-750	5	10	-
650-750	±6.4 -4.8	±4.8			±3	±5	±10	-	-	-	-	-	800-1050	5	13	-
800-1200	±6.4 -4.8	±4.8			±5	±5	±10	-	-	-	-	-	1100-1200	5	19	-
1300-1500	±6.4 -4.8	±4.8			±10	±10	±10	-	-	-	-	-	1300-1500	6	22	-
极限尺寸见「翻边短节」表 See the table of "Flanged short nipple" for limit dimensions																

A. The roundness is the summation of positive and negative deviation's absolute value.
B. These tolerances do not apply to certain parts of the formed pipe fittings when there is need to increase fitting thickness for enduring the inside pressure.
C. The inside diameter at the end and nominal wall thickness are decided by the purchasers.
D. Except purchaser's special request, the tolerance apply to the case of nominal inside diameter equalling to outside minus twice nominal wall thickness.
A. 圆度为正值偏差绝对值之和。
B. 但需要不得不增加管壁厚以承受抗内压需求时，该公差可能不适用于成型管件的局部区域。
C. 端部内径和公称壁厚由采购方指定。
D. 除非采购方另有规定这些差适用于公称外径减去两倍公称壁厚的场合。

公称尺寸 Nominal size		形位公差 Geometric tolerance mm	
DN	NPS	Q	P
15~100	1/2~4	1	2
125~200	5~8	2	4
250~300	10~12	3	5
350~400	14~16	4	6
450~600	18~24	5	10
650~750	26~30	5	10
800~1050	32~42	5	13
1100~1200	44~48	5	19
1300~1600	52~64	6	22
1700~3400	68~136	10	25

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对焊支管座 WELDOLET



主管公称尺寸 Run pipe nominal size		支管公称尺寸 Branch Nominal size		长度 Lengths			本体直径 Dia. of fitting			开孔直径 Hole dia		
DN	NPS	DN	NPS	A			D2min			d1nom		
				STD	XS	Sch160	STD	XS	Sch160	STD	XS	Sch160
8-900	1/4-36	6	1/8	16	16	-	24	42	-	16	16	-
10-900	3/8-36	8	1/4	16	16	-	26	26	-	16	16	-
15-900	1/2-36	10	3/8	19	19	-	30	30	-	19	19	-
20-900	3/4-36	15	1/2	19	19	28	36	36	36	24	24	14
25-900	1-36	20	3/4	22	22	32	43	43	46	30	30	19
32-900	1 1/4-36	25	1	27	27	38	55	55	51	36	36	25
40-900	1 1/2-36	32	1 1/4	32	32	44	66	66	63	45	45	33
50-900	2-36	40	1 1/2	33	33	51	74	74	71	51	51	38
65-900	2 1/2-36	50	2	38	38	55	90	90	82	65	65	43
80-900	3-36	65	2 1/2	41	41	62	104	104	98	76	76	54
90-900	3 1/2-36	80	3	44	44	73	124	124	122	93	93	73
100-900	4-36	90	3 1/2	48	48	-	138	138	-	113	113	-
125-900	5-36	100	4	51	51	84	154	154	154	120	120	98
150-900	6-36	125	5	57	57	94	187	187	188	141	141	122
200-900	8-36	150	6	60	78	105	213	227	222	170	170	146
250-900	10-36	200	8	70	99	-	265	292	-	220	220	-
300-900	12-36	250	10	78	94	-	323	325	-	275	265	-
350-900	14-36	300	12	86	103	-	379	381	-	325	317	-
400-900	16-36	350	14	89	100	-	411	416	-	357	351	-
450-900	18-36	400	16	94	106	-	465	468	-	408	403	-
500-900	20-36	450	18	97	111	-	522	525	-	459	455	-
550-900	22-36	500	20	102	119	-	573	584	-	508	509	-
650-900	26-36	600	24	116	140	-	690	708	-	614	612	-

注释Note:

D2与支管接管外径相等, D4与支管接管内径相等, T与支管接管壁厚相等。

Dimension D2 is equal to the outside diameter of the branch pipe, and D4 is equal to the inside diameter of the branch pipe, and T is equal to the wall thickness of the branch pipe.

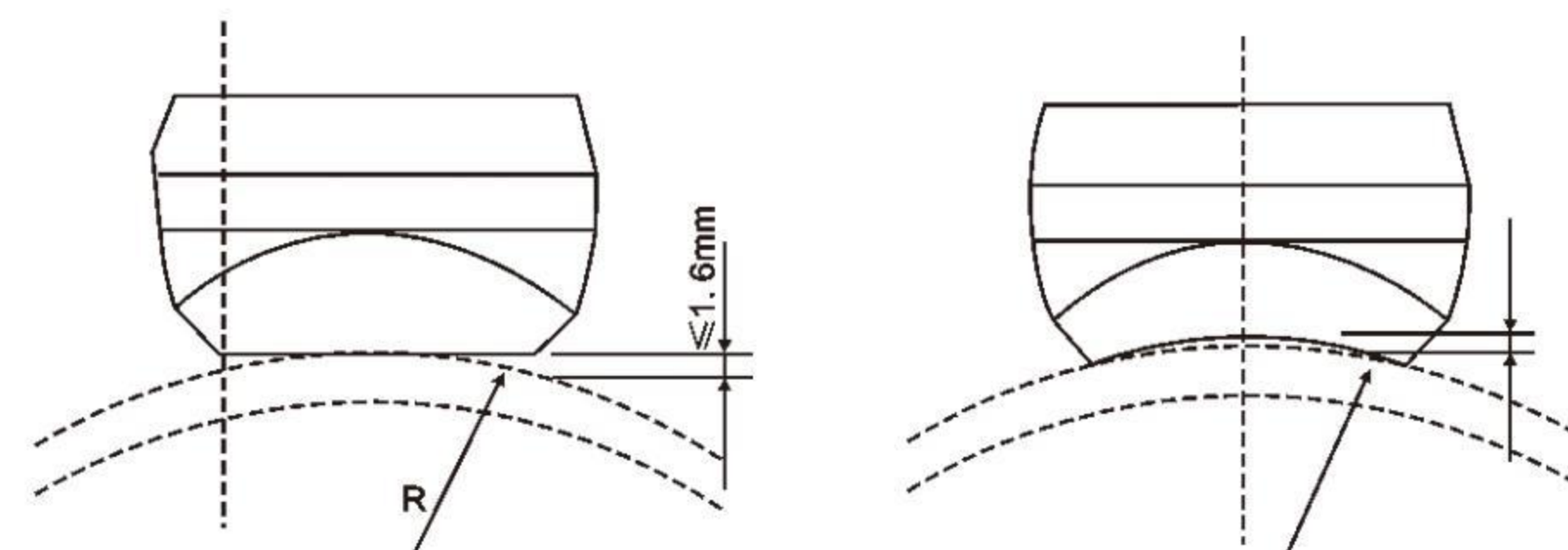
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支管座的公差 TOLERANCES OF OUTLETS

支管公称尺寸 Branch nominal size		螺纹对焊 Threadolet	承插焊 Socketlet	对焊 Weldolet	
DN	NPS	A	B	D	D2 d4
6-40	1/8-1 1/2	±0.8	+0.4 0	+1.5 0	+0.8 -0.4 ±0.4
65-100	2 1/2-4	±1.6	+0.5 0	+1.5 0	+0.8 -0.4 ±0.4
125-300	5-12	±3.2	-	-	+1.6 -0.8 ±0.8
350-600	14-24	±4.8	-	-	+1.6 -0.8 ±0.8

支管座于主管之间的间隙允许偏差如下图

The following figures show the allowable spacing tolerances between outlet and the running pipe.



支管座的级别与壁厚的关系

CLASS OF OUTLETS VS SCHEDULE OF THE CONNECTING RUN PIPE

支管公称尺寸 Branch nominal size		连接形式 Type	支管座的级别 Class of outlet	使用的主管壁厚 Schedule of the connecting run pipe
DN	NPS			
6-100	1/8-4	承插焊、螺纹 Socket welding&threaded	3000	XS
15-50	1/2-2	承插焊、螺纹 Socket welding&threaded	6000	SCH160
6-600	1/8-24	对焊 Butt-welding	STD	STD
6-600	1/8-24	对焊 Butt-welding	XS	XS
15-150	1/2-6	对焊 Butt-welding	SCH160	SCH160

注释Note:

当支管或主管的厚度超出本表规定时, 经制造商和采购方协商, 支管座可以制成特殊的厚度、尺寸和形状。

When the thickness (schedule) of the branch or running pipe exceed the range indicated in the above table, the outlet can be fabricated to special thickness, dimension and shape against the agreement between the purchaser and manufacturer.

专业精神 专业制造 专业服务

Professional sprit
Professional manufacture
Professionalservice

SH/T 3406-2022



规格范围: " 1/2"-48

标准范围: ASME B16.9、ASME B16.5、ASME B16.11、MSS SP-43、GB/T 12459、GB/T 14383、GB/T 19326、GB/T 10752、GB/T 9124、HG/T 20592、HG/T 20615、SH/T 3408、SH/T 3406、JIS B 2309、JIS B 2220、JIS B 2311、JIS B 2312、JIS B 2313、JIS B 2316、EN 1092-1、EN 10253-2、ISO 5251、BS EN 10253-3

材质范围:

S30408 (06Cr19Ni10) 304, S30403 (022Cr19Ni10) 304L, S31008 (06Cr25Ni20) 310S, S31603 (022Cr17Ni12Mo2) 316 L, S31608 (06Cr17Ni12Mo2) 316, S31668 (06Cr17Ni12Mo2Ti) 316Ti, S32168 (06Cr18Ni11Ti) 321, S22053 (022Cr23Ni5Mo3N) 2205, S39042 (015Cr21Ni26Mo5Cu2) 904L, S25073 (022Cr25Ni7Mo4N) 2507,

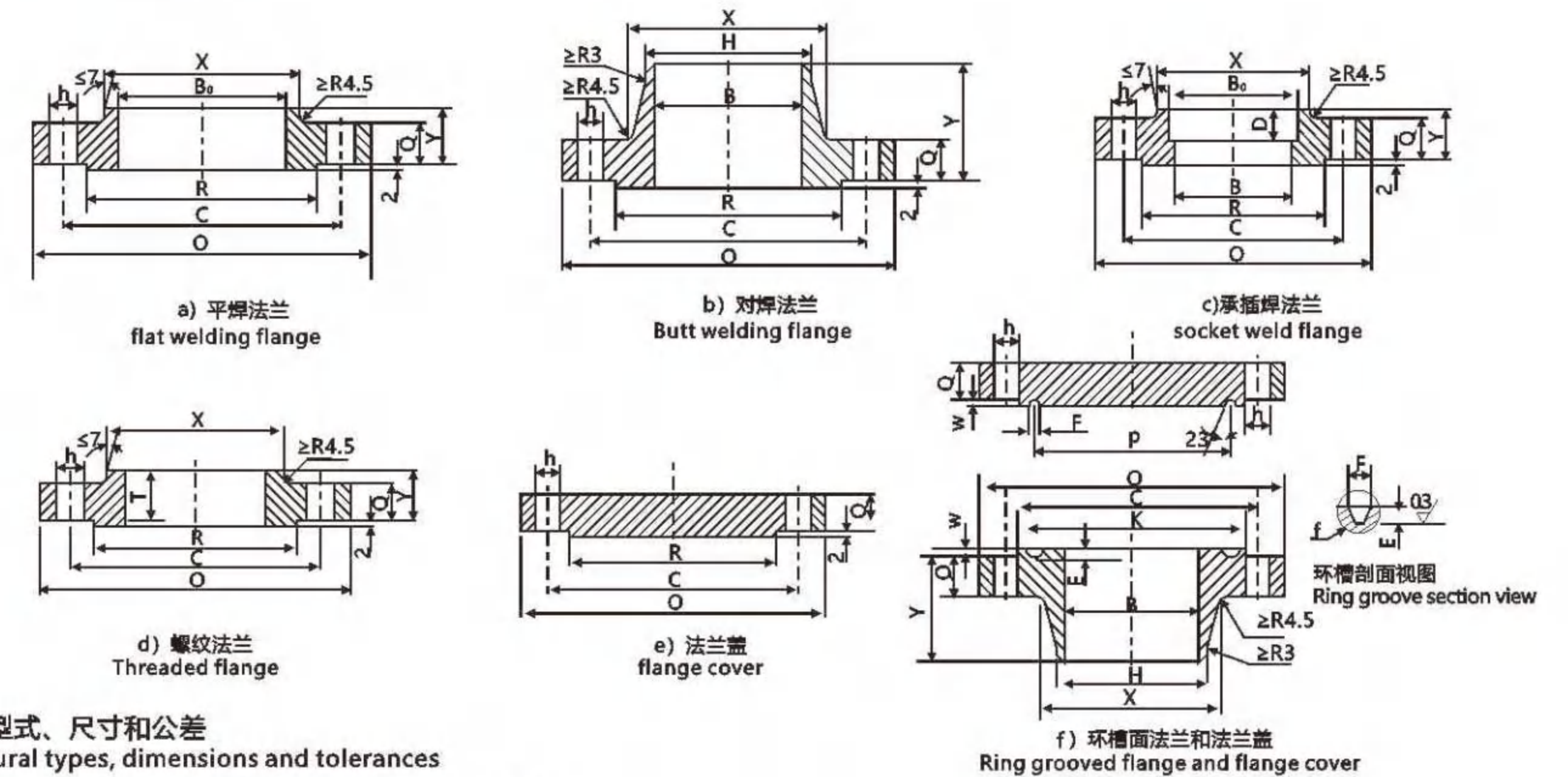
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4 结构型式、尺寸和公差

4 Structural types, dimensions and tolerances

4.1 公布直控小于或等于DN600的法兰结构型式和尺寸

4.1 Publish the flange structure type and size of direct control less than or equal to Dn600

4.1.1 Class150法兰结构型式见图4.1.1, 送单尺寸及质量应符合表4.1.1的规定。

4.1.1 The structure type of Class150 flange is shown in Figure 4.1.1. The size and quality of the delivered flange should comply with the requirements of Table 4.1.1.

表4.1.1 Class150法兰尺寸及质量

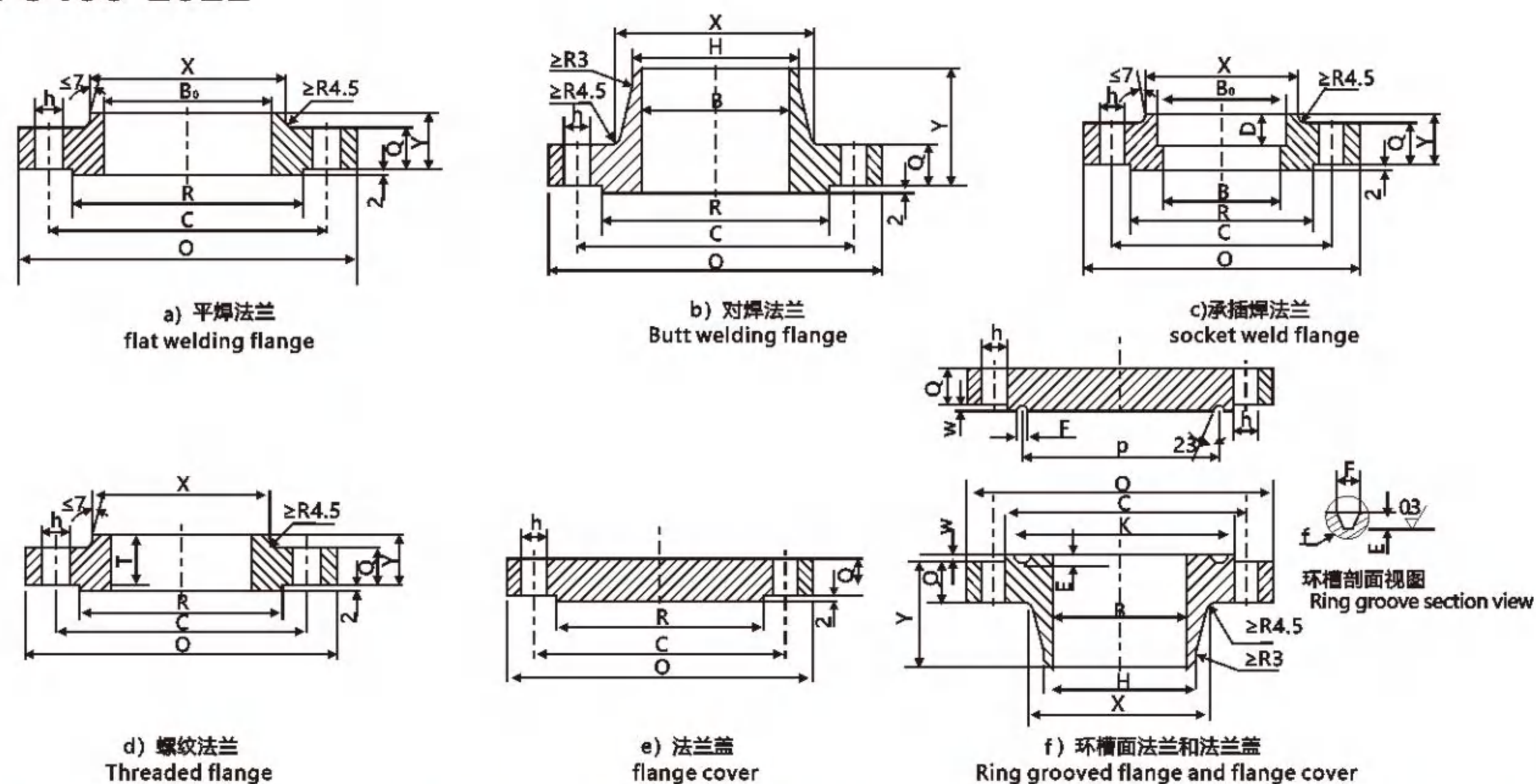
Table 4.1.1 Class150 flange dimensions and quality

公称直径 Nominal diameter DN	法兰外径 Flange outer diameter O mm	管子插入孔 Tube insertion hole B0 mm	法兰内径 Flange inner diameter B ² mm	法兰颈部尺寸 Flange neck size mm		密封面 外径 Seal surface outer diameter R mm	法兰厚度 Range thickness Q mm	最小螺纹长度 Minimum thread length T mm	法兰高度 Flange height Y mm		承插深度 socket depth D mm	螺栓、螺柱 Bolts, studs				环号及环槽面尺寸 Ring number and ring groove surface dimensions							法兰近似质量 Flange approximate mass kg			
				X	H				对焊型 Butt welding type	其余 the remaining		中心圆直径 Center circle diameter C mm	孔径 Aperture h mm	螺纹 Thread	孔数 (个) Number of holes (number)	金属环垫号 Metal ring pad number	环槽面尺寸 Ring groove surface size mm					两法兰近似尺寸 Approximate dimension S between two flanges mm	对焊法兰 Butt welding flange	平焊法兰 flat welding flange	承插焊法兰 socket weld flange	法兰盖 flange cover
																	P	E.W	F	r	K					
15	90	22.2	15.8	30	21.3	34.9	96	16	46	14	10	60.3	16	M14	4	—	—	—	—	—	—	—	0.9	0.4	0.5	0.9
20	100	27.7	20.9	38	26.7	42.9	11.2	16	51	14	11	69.9	16	M14	4	—	—	—	—	—	—	—	0.9	0.6	0.6	0.9
25	110	34.5	26.6	49	33.4	50.8	12.7	17	54	16	13	79.4	16	M14	4	R15	47.63	6.35	8.74	0.8	63.5	4.0	1.1	0.9	0.8	0.9
32	115	43.2	35.1	59	42.2	63.5	14.3	21	56	19	14	88.9	16	M14	4	R17	57.15	6.35	8.74	0.8	73.0	4.0	1.4	1.1	1.1	1.4
40	125	49.5	40.9	65	48.3	73.0	15.9	22	60	21	16	98.4	16	M14	4	R19	65.07	6.35	8.74	0.8	82.5	4.0	1.9	1.4	1.4	1.8
50	150	61.9	52.5	78	60.3	92.1	17.5	25	62	24	17	120.7	18	M16	4	R22	82.55	6.35	8.74	0.8	102.0	4.0	2.8	2.1	2.3	2.3
65	180	74.6	62.7	90	73.0	104.8	20.7	29	68	27	19	139.7	18	M16	4	R25	101.60	6.35	8.74	0.8	121.0	4.0	4.5	3.5	3.2	3.2
80	190	90.7	77.9	108	88.9	127.0	22.3	30	68	29	21	152.4	18	M16	4	R29	114.30	6.35	8.74	0.8	133.0	4.0	5.2	4.0	3.9	4.1
100	230	116.1	102.3	135	114.3	157.2	22.3	33	75	32	—	190.5	18	M16	8	R36	149.23	6.35	8.74	0.8	171.0	4.0	7.5	5.6	—	7.7
125	255	143.8	128.2	164	141.3	185.7	22.3	36	87	35	—	215.9	22	M20	8	R40	171.45	6.35	8.74	0.8	194.0	4.0	9.6	6.7	—	9.1
150	280	170.7	154.1	192	168.3	215.9	23.9	40	87	38	—	241.3	22	M20	8	R43	193.68	6.35	8.74	0.8	219.0	4.0	12.1	7.9	—	12.3
200	345	221.5	202.7	246	219.1	269.9	27.0	—	100	43	—	298.5	22	M20	8	R48	247.65	6.35	8.74	0.8	273.0	4.0	20.1	12.9	—	21.3
250	405	276.2	254.6	305	273.1	323.8	28.6	—	100	48	—	362.0	26	M24	12	R52	304.80	6.35	8.74	0.8	330.0	4.0	28.3	17.5	—	31.8
300	485	327.0	—	365	323.9	381.0	30.2	—	113	54	—	431.8	26	M24	12	R56	381.00	6.35	8.74	0.8	406.0	4.0	43.0	27.7	—	49.9
350	535	359.2	—	400	355.6	412.8	33.4	—	125	56	—	476.3	30	M27	12	R59	396.88	6.35	8.74	0.8	425.0	3.0	56.2	37.7	—	63.5
400	595	410.5	—	457	406.4	469.9	35.0	—	125	62	—	539.8	30	M27	16	R64	454.03	6.35	8.74	0.8	483.0	3.0	73.2	48.1	—	84.9
450	635	461.8	—	505	457.0	533.4	38.1	—	138	67	—	577.9	33	M30	16	R68	517.53	6.35	8.74	0.8	546.0	3.0	86.1	51.9	—	99.8
500	700	513.1	—	559	508.0	584.2	41.3	—	143	71	—	635.0	33	M30	20	R72	558.80	6.35	8.74	0.8	597.0	3.0	109.7	67.2	—	129.3
550	750	564.4	—	610	559.0	641.4	44.5	—	148	78	—	692.2	36	M33	20	R80	615.95	6.35	8.74	0.8	648.0	3.0	127.4	73.0	—	150.7
600	815	616.0	—	663	610.0	692.2	46.1	—	151	81	—	749.3	36	M33	20	R76	673.10	6.35	8.74	0.8	711.0	3.0	157.5	92.6	—	195.0

^a 法兰内径应根据相连钢管的壁厚确定，表中所列法兰内径B是根据相连钢管壁厚为SCH40时计算的内径。

^a 法兰内径应根据相连钢管的壁厚确定, 表中所示法兰内径B是根据相连钢管壁厚为SCH40时计算的内径。

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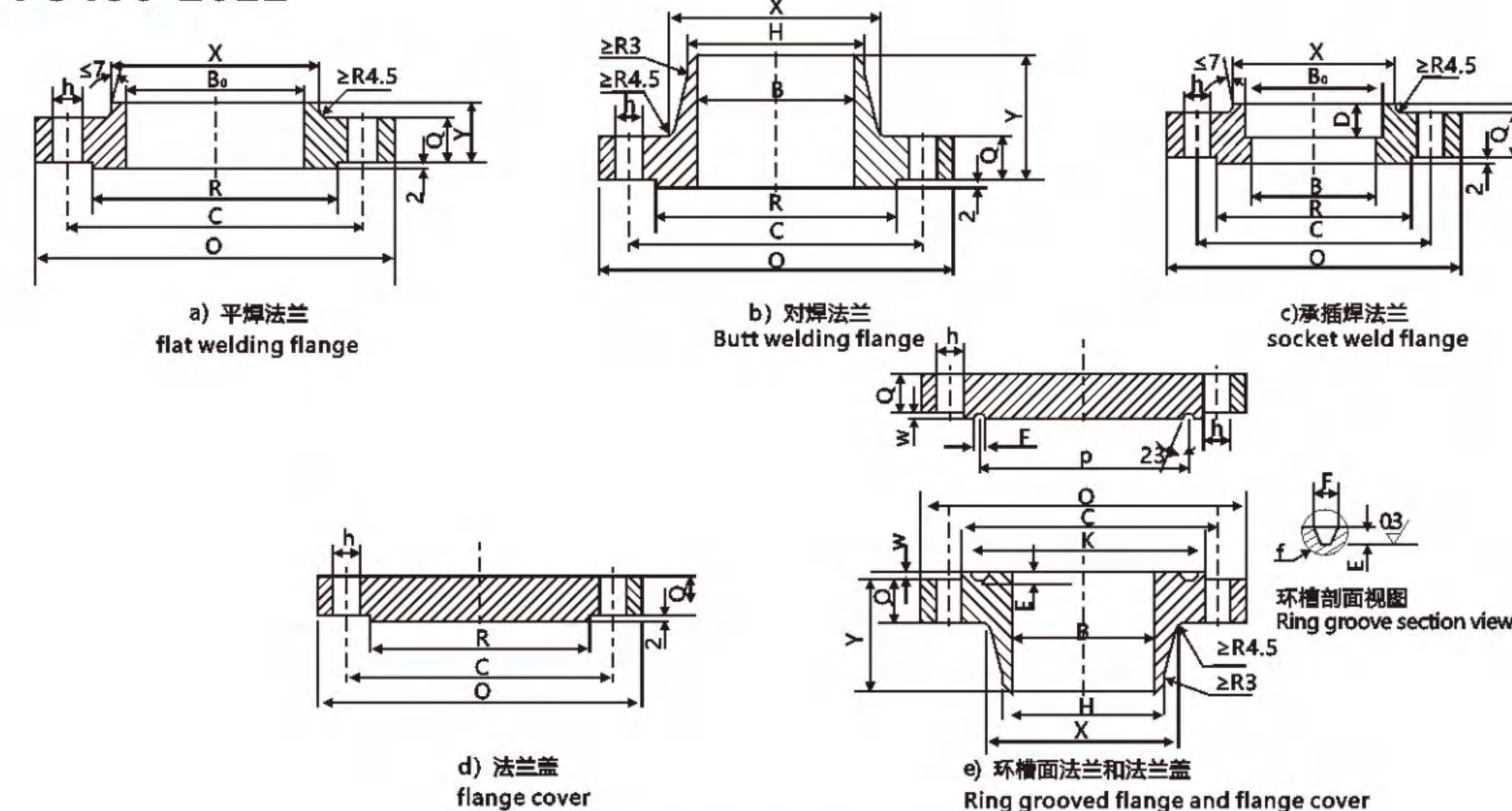


图4.1.3 Class400法兰结构型式
Figure 4.1.3 Class400 flange structure type

公称 直径 Nominal diameter DN	法兰 外径 Flange outer diameter O mm	管子 插入孔 Tube insertion hole B0 mm	法兰 内径 Flange inner diameter B2 mm	法兰颈部 尺寸 Flange neck size mm		密封面 外径 Seal surface outer diameter R mm	法兰 厚度 Flange thickness Q mm	最小 螺纹 长度 Minimum thread length T mm	最小 螺纹 沉孔 直径 Minimum thread counterbore diameter V mm	法兰高度 Flange height Y mm		承插 深度 socket depth D mm	螺栓、螺母 Bolts, studs				环号及环槽面尺寸 Ring number and ring groove surface dimensions										法兰近似质量 Flange approximate mass kg			
				X	H					对焊 型 Butt welding type	其余 the remaining		中心 圆 直径 Center circle diameter C mm	孔径 Aperture h mm	螺纹 Thread	孔数 (个) Number of holes (number)	金属 环垫 号 Metal ring pad number	环槽面尺寸 Ring groove surface size mm					两法 兰间 近似 尺寸 Approximate dimension S between flange mm	对焊 法兰 Butt welding flange	平焊 法兰 flat welding flange	承插 焊法 兰 socket weld flange	法兰 盖 flange cover			
																		P	E.W	F	r	K								
15	95	22.2	15.8	38	21.3	34.9	12.7	16	23.6	51	21	10	66.7	16	M14	4	R11	34.14	5.54	7.14	0.8	51.0	3.0	0.9	0.7	1.4	0.9			
20	115	27.7	20.9	48	26.7	42.9	14.3	16	29.0	56	24	11	82.6	18	M16	4	R13	42.88	6.35	8.74	0.8	63.5	4.0	1.4	1.1	1.4	1.4			
25	125	34.5	26.6	54	33.4	50.8	15.9	18	35.8	60	25	13	88.9	18	M16	4	R16	50.80	6.35	8.74	0.8	70.0	4.0	1.8	1.4	1.4	1.8			
32	135	43.2	35.1	64	42.2	63.5	17.5	21	44.4	64	25	14	98.4	18	M16	4	R18	60.33	6.35	8.74	0.8	79.5	4.0	2.3	2.0	2.0	2.7			
40	155	49.5	40.9	70	48.3	73.0	19.1	23	50.3	67	29	16	114.3	22	M20	4	R20	68.27	6.35	8.74	0.8	90.5	4.0	3.2	3.0	2.7	3.2			
50	165	61.9	52.5	84	60.3	92.1	20.7	29	63.5	68	32	17	127.0	18	M16	8	R23	82.55	7.92	11.91	0.8	108.0	6.0	3.6	3.18	3.2	3.6			
65	190	74.6	62.7	100	73.0	104.8	23.9	32	76.2	75	37	19	149.2	22	M20	8	R26	101.60	7.92	11.91	0.8	127.0	6.0	5.4	4.5	4.5	5.4			
80	210	90.7	77.9	117	88.9	127.0	27.0	32	92.2	78	41	21	168.3	22	M20	8	R31	123.83	7.92	11.91	0.8	146.0	6.0	8.2	5.9	5.9	7.3			
100	255	116.1	102.3	146	114.3	157.2	30.2	37	117.6	8	46	—	200.0	22	M20	8	R37	149.23	7.92	11.91	0.8	175.0	6.0	12.1	10.7	—	12.7			
125	280	143.8	128.2	178	141.3	185.7	33.4	43	144.4	97	49	—	235.0	22	M20	8	R41	180.98	7.92	11.91	0.8	210.0	6.0	16.4	13.2	—	17.1			
150	320	170.7	154.1	206	168.3	215.9	35.0	47	171.4	97	51	—	269.9	22	M20	12	R45	211.12	7.92	11.91	0.8	241.0	6.0	20.8	16.3	—	22.7			
200	380	221.5	202.7	260	219.1	269.9	39.7	—	—	110	60	—	330.2	26	M24	12	R49	269.88	7.92	11.91	0.8	302.0	6.0	32.2	25.4	—	36.7			
250	445	276.2	254.6	321	273.1	323.8	46.1	—	—	116	65	—	387.4	30	M27	16	R53	323.85	7.92	11.91	0.8	356.0	6.0	46.6	35.7	—	56.7			
300	520	327.0	—	375	323.9	318.0	49.3	—	—	129	71	—	450.8	33	M30	16	R57	381.00	7.92	11.91	0.8	413.0	6.0	69.0	51.6	—	83.9			
350	585	359.2	—	425	355.6	412.8	52.4	—	—	141	75	—	514.4	33	M30	20	R61	419.10	7.92	11.91	0.8	457.0	6.0	93.4	72.2	—	113.4			
400	650	410.5	—	483	406.4	469.9	55.6	—	—	144	81	—	571.5	36	M33	20	R65	469.90	7.92	11.91	0.8	508.0	6.0	119.6	95.3	—	143.1			
450	710	461.8	—	533	457.0	533.4	58.8	—	—	157	87	—	628.6	36	M33	24	R69	533.40	7.92	11.91	0.8	575.0	6.0	150.5	114.9	—	188.0			
500	775	513.1	—	587	508.0	584.2	62.0	—	—	160	94	—	685.8	36	M33	24	R73	584.20	9.53	13.49	1.5	635.0	6.0	184.4	139.4	—	233.8			
550	840	564.4	—	640	559.0	641.4	65.1	—	—	164	100	—	743.0	42	M39	24	R81	635.00	11.13	15.09	1.5	686.0	6.0	214.4	160.8	—	277.0			
600	915	616.0	—	702	610.0	692.2	68.3	—	—	167	105	—	812.8	42	M39	24	R77	692.15	11.13	16.66	1.5	749.0	6.0	274.7	222.5	—	363.2			
a 法兰内径应根据相连钢管的壁厚确定，表中所列法兰内径B是根据相连钢管壁厚为SCH40时计算的内径。																														

^a法兰内径应根据相连钢管的壁厚确定,表中所示法兰内径B是根据相连钢管壁厚为SCH40时计算的内径。

公称 直径	法兰 外径	管子 插入 孔	法兰 内径	法兰颈部尺寸		密封 面外径	法兰 厚度	法兰高度		承插 深度	螺栓、螺母				环号及环槽面尺寸										法兰近似质量			
				Flange neck size				对焊 型	其余		中心 圆 直径	孔径	螺纹	孔数 (个)	金属 环垫 号	环槽面尺寸					两法 兰间 近似 尺寸S	对焊 法兰	平焊 法兰	承插 焊法 兰	法兰 盖			
				mm	mm											mm	mm	mm	mm	mm						mm	mm	mm
DN	O mm	B0 mm	B² mm	X	H	R mm	Q mm	对焊 型 Butt welding type	其余 the remaining	D mm	C mm	h mm	Thread	Number of holes (number)	Metal ring pad number	P	E.W	F	r	K	Approximate dimension S between flanges mm	Butt welding flange	flat welding flange	socket weld flange	flange cover			
15	95	22.2	与接 管内 径一 致 Same as the inner diameter of the nozzle	38	21.3	34.9	14.3	52	22	10	66.7	16	M14	4	R11	34.14	5.54	7.14	0.8	51.0	3.0	1.4	1.3	0.8	1.0			
20	115	27.7		48	26.7	42.9	15.9	57	25	11	82.6	18	M16	4	R13	42.88	6.35	8.74	0.8	63.5	4.0	1.8	1.4	1.3	1.4			
25	125	34.5		54	33.4	50.8	17.5	62	27	13	88.9	18	M16	4	R16	50.8	6.35	8.74	0.8	70.0	4.0	2.3	1.8	1.6	1.8			
32	135	43.2		64	42.2	63.5	20.7	67	29	14	98.4	18	M16	4	R18	60.33	6.35	8.74	0.8	79.5	4.0	3.2	2.7	2.1	2.7			
40	155	49.5		70	48.3	73.0	22.3	70	32	16	114.3	22	M20	4	R20	68.27	6.35	8.74	0.8	90.5	4.0	4.5	3.2	3.1	3.6			
50	165	61.9		84	60.3	92.1	25.4	73	37	17	127.0	18	M16	8	R23	82.55	7.92	11.91	0.8	108.0	5.0	5.4	4.1	3.8	4.5			
65	190	74.6		100	73.0	104.8	28.6	79	41	19	149.2	22	M20	8	R26	101.60	7.92	11.91	0.8	127.0	5.0	8.2	5.9	5.6	6.8			
80	210	90.7		117	88.9	127.0	31.8	83	46	21	168.3	22	M20	8	R31	123.83	7.92	11.91	0.8	146.0	5.0	10.4	7.3	7.6	9.1			
100	255	116.1		146	114.3	157.2	35.0	89	51	—	200.0	26	M24	8	R37	149.23	7.92	11.91	0.8	175.0	6.0	15.9	11.8	—	15.0			
125	280	143.8		178	141.3	185.7	38.1	102	54	—	235.0	26	M24	8	R41	180.98	7.92	11.91	0.8	210.0	6.0	19.3	14.1	—	20.0			
150	320	170.7		206	168.3	215.9	41.3	103	57	—	269.9	26	M24	12	R45	211.12	7.92	11.91	0.8	241.0	6.0	25.9	20.1	—	27.7			
200	380	221.5		260	219.1	269.9	47.7	117	68	—	330.0	30	M27	12	R49	269.88	7.92	11.91	0.8	302.0	6.0	40.4	30.4	—	45.0			
250	445	276.2		321	273.1	323.8	54.0	124	73	—	387.4	33	M30	16	R53	323.85	7.92	11.91	0.8	356.0	6.0	57.0	41.3	—	70.0			
300	520	327.0		375	323.9	381.0	57.2	137	79	—	450.8	36	M33	16	R57	381.00	7.92	11.91	0.8	413.0	6.0	80.0	59.0	—	103.0			
350	585	359.2		425	355.6	412.8	60.4	149	84	—	514.4	36	M33	20	R61	419.10	7.92	11.91	0.8	457.0	6.0	106.0	87.0	—	141.0			
400	650	410.5		483	406.4	469.9	63.5	152	94	—	571.5	39	M36	20	R65	469.90	7.92	11.91	0.8	508.0	6.0	133.0	115.0	—	181.0			
450	710	461.8		533	457.0	533.4	66.7	165	98	—	628.6	39	M36	24	R69	533.40	7.92	11.91	0.8	575.0	6.0	163.0	141.0	—	225.0			
500	775	513.1		587	508.0	584.2	69.9	168	102	—	685.8	42	M39	24	R73	584.20	9.53	13.49	1.5	635.0	6.0	202.0	172.0	—	268.0			
550	840	564.4		640	559.0	641.4	73.1	171	801	—	743.0	45	M42	24	R81	635.00	11.13	15.09	1.5	686.0	6.0	235	208	—	325			
600	915	616.0		702	610.0	692.2	76.2	175	114	—	812.8	48	M45	24	R77	692.15	11.13	16.66	1.5	749.0	6.0	290.0	254.0	—	425.0			

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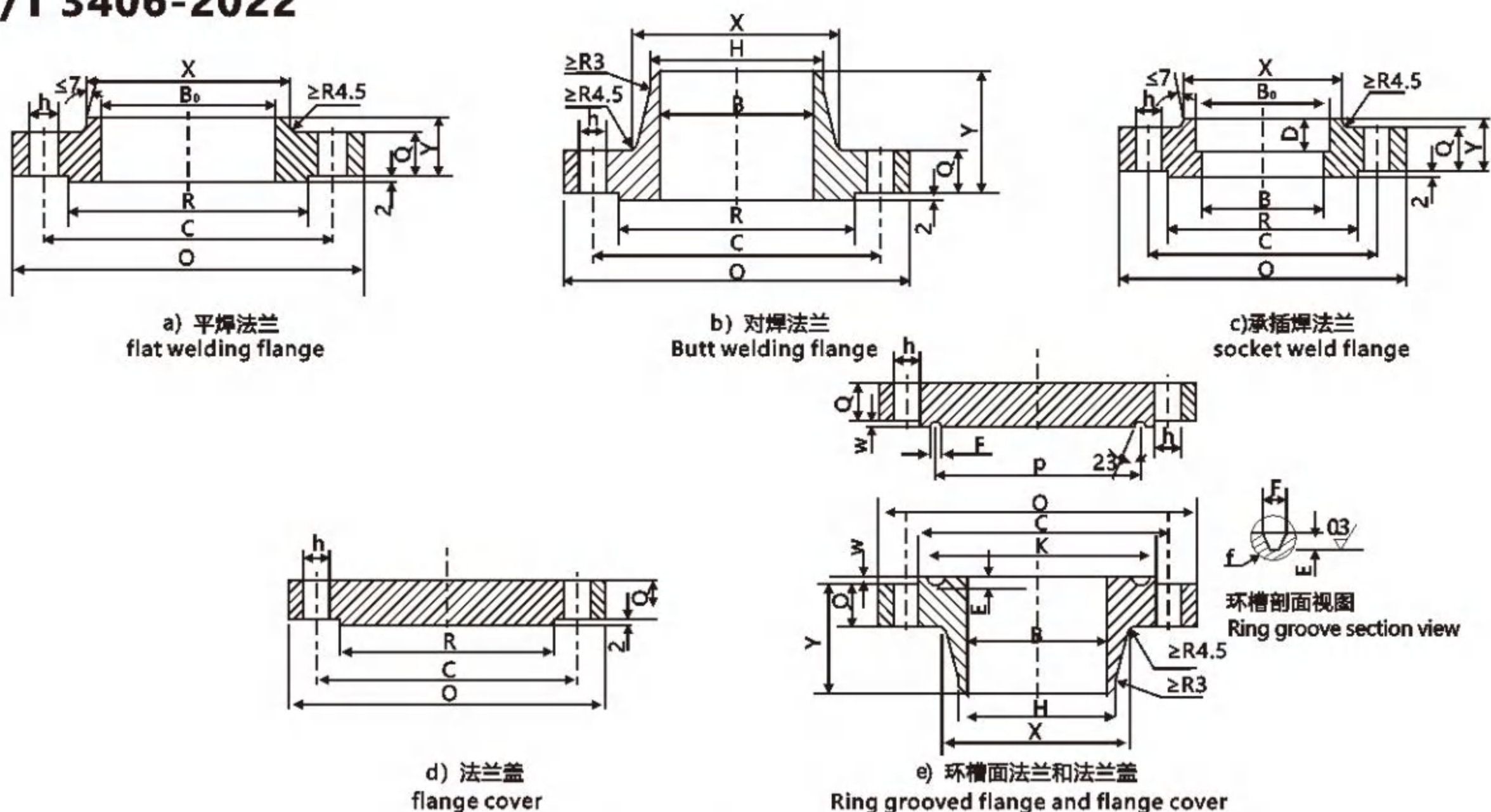


图4.1.4 Class400法兰结构型式
Figure 4.1.4 Class400 flange structure type

公称 直径	法兰 外径	管子 插入 孔	法兰 内径	法兰颈部 尺寸 Flange neck size mm		密封 面外径 Seal surface outer diameter	法兰 厚度	法兰高度 Flange height Y mm		承插 深度	螺栓、螺母 Bolts, studs				环号及环槽面尺寸 Ring number and ring groove surface dimensions										法兰近似质量 Flange approximate mass kg				
				中心 圆 直径 Center circle diameter C mm	孔径 Aperture h mm			螺纹 Thread	孔数 (个) Number of holes (number)		金属 环垫 号 Metal ring pad number	环槽面尺寸 Ring groove surface size mm					两法 兰间 近似 尺寸 Approximate dimension taken between flanges mm	对焊 法兰 Butt welding flange	平焊 法兰 flat welding flange	承插 焊法 兰 socket weld flange	法兰 盖 flange cover								
												X	H	R mm	Q mm	对焊 型 Butt welding type						其余 the remaining	D mm	P	E.W	F	r	K	
DN	O mm	B0 mm	B ² mm	X	H	R mm	Q mm	对焊 型 Butt welding type	其余 the remaining	D mm	中 心 圆 直 径 C mm	孔 径 h mm	螺 纹 Thread	孔 数 (个) Number of holes (number)	金 属 环 垫 号 Metal ring pad number	P	E.W	F	r	K	两 法 兰 间 近 似 尺 寸 Approximate dimension taken between flanges mm	对 焊 法 兰 Butt welding flange	平 焊 法 兰 flat welding flange	承 插 焊 法 兰 socket weld flange	法 兰 盖 flange cover				
15	95	22.2	与接 管内 径一 致	38	21.3	34.9	14.3	52	22	10	66.7	16	M14	4	R11	34.14	5.54	7.14	0.8	51.0	3.0	1.4	1.3	1.0					
20	115	27.7		48	26.7	42.9	15.9	57	25	11	82.6	18	M16	4	R13	42.88	6.35	8.74	0.8	63.5	4.0	1.8	1.4	1.4					
25	125	34.5		54	33.4	50.8	17.5	62	27	13	88.9	18	M16	4	R16	50.80	6.35	8.74	0.8	70.0	4.0	2.3	1.8	1.8					
32	135	43.2		64	42.2	63.5	20.7	67	29	14	98.4	18	M16	4	R18	60.33	6.35	8.74	0.8	79.5	4.0	3.2	2.7	2.7					
40	155	49.5		70	48.3	73.0	22.3	70	32	16	114.3	22	M20	4	R20	68.27	6.35	8.74	0.8	90.5	4.0	4.5	3.2	3.2	3.6				
50	165	61.9		84	60.3	92.1	25.4	73	37	17	127.0	18	M16	8	R23	82.55	7.92	11.91	0.8	108.0	5.0	5.4	4.1	4.1	4.5				
65	190	74.6		100	73.0	104.8	28.6	79	41	19	149.2	22	M20	8	R26	101.60	7.92	11.91	0.8	127.0	5.0	8.2	5.9	5.9	6.8				
80	210	90.7		117	88.9	127.0	31.8	83	46	21	168.3	22	M20	8	R31	123.83	7.92	11.91	0.8	146.0	5.0	10.4	7.3	7.3	9.1				
100	275	116.1		152	114.3	157.2	38.1	102	54	—	215.9	26	M24	8	R37	149.23	7.92	11.91	0.8	175.0	5.0	19.1	16.8	—	18.6				
125	330	143.8		189	141.3	185.7	44.5	114	60	—	266.7	30	M27	8	R41	180.98	7.92	11.91	0.8	210.0	5.0	30.9	28.6	—	30.9				
150	355	170.7	Same as the inner diameter of the nozzle	222	168.3	215.9	47.7	117	67	—	292.1	30	M27	12	R45	211.12	7.92	11.91	0.8	241.0	5.0	37.0	36.0	—	39.0				
200	420	221.5		273	219.1	269.9	55.6	133	76	—	349.2	30	M30	12	R49	269.88	7.92	11.91	0.8	302.0	5.0	53.0	52.0	—	63.0				
250	510	276.2		343	273.1	323.8	63.5	152	86	—	431.8	36	M33	16	R53	323.85	7.92	11.91	0.8	356.0	5.0	86.0	80.0	—	105.0				
300	560	327.0		400	323.9	318.0	66.7	156	92	—	489.0	36	M33	20	R57	381.00	7.92	11.91	0.8	413.0	5.0	103.0	98.0	—	134.0				
350	605	359.2		432	355.6	412.8	69.9	165	94	—	527.0	39	M36	20	R61	419.10	7.92	11.91	0.8	457.0	5.0	158.0	118.0	—	172.0				
400	685	410.5		495	406.4	469.9	76.2	178	106	—	603.2	42	M39	20	R65	469.90	7.92	11.91	0.8	508.0	5.0	218.0	166.0	—	239.0				
450	745	461.8		546	457.0	533.4	82.6	184	117	—	654.0	45	M42	20	R69	533.40	7.92	11.91	0.8	575.0	5.0	252.0	216.0	—	302.0				
500	815	513.1		610	508.0	584.2	88.9	190	127	—	723.9	45	M42	24	R73	584.20	9.53	13.49	1.5	635.0	5.0	313.0	278.0	—	388.0				
550	870	564.4		663	559.0	641.4	95.2	197	133	—	777.7	48	M45	24	R81	635.00	11.13	15.09	1.5	686.0	6.0	373.0	304	—	458.0				
600	940	616.0		718	610.0	692.2	101.6	203	140	—	838.2	51	M48	24	R77	692.15	11.13	16.66	1.5	749.0	6.0	444.0	398.0	—	533.0				

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4.6公差

4.6.1 公称直径小于或等于DN600法兰结构尺寸允许偏差应符合表4.6.1的规定。

4.6.1 The allowable deviation in structural dimensions of flanges with a nominal diameter less than or equal to DN600 shall comply with the provisions of Table 4.6.1.

表4.6.1公称直径小于或等于DN600法兰尺寸允许偏差

Table 4.6.1 Allowable deviation of flange size with nominal diameter less than or equal to Dn600

单位为毫米

法兰尺寸 Flange size				允许偏差 Allowable deviation
法兰外径 Flange outer diameter	O	≤610		±1.5
		>610		±3.0
法兰内径 Flange inner diameter	B	对焊法兰 Butt welding flange	DN≤250	±1.0
			DN350~450	±1.5
			DN≥500	+3.0 -1.5
		松套法兰 Loose flange	DN≤250	+1.0 0
			DN≥300	+1.5 0
法兰插入孔 Flange insertion hole	B0	平焊法兰 flat welding flange	DN≤250	+1.0 0
			DN≥300	+1.5 0
		承插焊法兰 flat welding flange		DN≤80
法兰颈部尺寸 Flange neck size	X	对焊法兰 Butt welding flange	X≤610	±1.5
			X>610	±3.0
		平焊法兰、松套法兰、 螺纹法兰、承插焊法兰 Flat welding flange, loose sleeve flange, Threaded flange, socket welding flange	DN≤300	+1.5 -1.0
			DN≥350	+3.0 -1.5
对焊端部外径 Butt weld end outer diameter	H	DN≤125		+2.0 -1.0
		DN≥150		+4.0 -1.0
密封面外径 Seal surface outer diameter	R	突台高度为2mm时	When the height of the boss is 2mm	±1.0
		突台高度为7mm时	When the height of the boss is 7mm	±0.5
突台高度 Projection height		突台高度为2mm时	When the height of the boss is 2mm	±0.5
		突台高度为7mm时	When the height of the boss is 7mm	±2
环槽面法兰突台高度 Ring groove surface flange boss height	W	所有型式 All styles		+0.4
凹凸面榫槽面 尺寸 Concave and convex surface tongue and groove surface dimensions	K	凹面、槽面突台外径 Concave surface, groove surface boss outer diameter	所有公称直径 All nominal diameters	±0.5
	g、u、Z、w	凹凸面、榫槽面直径 Concave and convex surface, tongue and groove surface diameter		±0.5
	d1	凹面、槽面深度 Concave and groove depth		0 -0.4
	h1	凸面、榫面高度 Convex surface and tenon surface height		+0.4 0

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表4.6.1 公称直径小于或等于DN600法兰尺寸允许偏差 (续)

Table 4.6.1 Allowable deviation of flange size with nominal diameter less than or equal to DN600 (continued)
单位为毫米

法兰尺寸 Flange size			允许偏差 Allowable deviation
法兰厚度 Flange thickness	Q	DN≤450	+3.0 0
		DN≥500	+5.0 0
法兰高度 Flange height	Y	对焊法兰 Butt welding flange	DN≤250 ±1.6 DN≥300 ±3.2
		平焊法兰、松套法兰、螺纹法兰、 承插焊法兰 Flat welding flange, loose sleeve flange, threaded flange, socket welding flange	DN≤450 +3.2 -0.8 DN≥500 +4.8 -1.6
		螺栓孔中心圆直径 Bolt hole center circle diameter	所有公称直径 All nominal diameters ±1.5
		相邻螺栓孔间距	±0.8
螺栓孔 Bolt hole	C	螺栓孔直径	±0.5
	h	螺栓孔直径	±0.5
法兰密封面和法兰孔的垂直度 Verticality of flange sealing surface and flange hole			DN≤125 <1° DN≥150 <0.5°
螺栓孔中心圆对密封面中心圆的同轴度 Coaxiality of the center circle of the bolt hole to the center circle of the sealing surface			DN≤65 <0.8 DN≥80 <1.5
螺纹法兰沉孔直径 Threaded flange counterbore diameter	V	DN≤150	+1.0 0

4.6.2 松套法兰用翻边短节尺寸允许偏差应符合表4.6.2的规定。

松套法兰用翻边短节尺寸允许偏差
Allowable dimensional deviation of flange nipple for loose sleeve flange
单位为毫米

法兰尺寸 Flange size			允许偏差 Allowable deviation
对焊端部外径 Butt weld end outer diameter	H	DN15~DN65	+1.6 -0.8
		DN80~DN100	+1.6 -1.6
		DN125~DN200	+2.4 -1.6
		DN≥250	+4.0 -3.2
短节内径a Puppet inner diameter a	B	DN15~DN65	±0.8
		DN80~DN200	±1.6
		DN≥250	±3.2

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表4.6.2松套法兰用翻边短节尺寸允许偏差 (续)

Table 4.6.2 Allowable dimensional deviations of flange nipples for loose sleeve flanges (continued)
单位为毫米

法兰尺寸 Flange size			允许偏差 Allowable deviation
短节长度 pup length	L	所有公称直径 All nominal diameters	±2
短节密封面外径 Outer diameter of pup joint sealing surface	R	DN15~DN200	0 -1.0
		DN≥250	0 -2.0
圆角半径 corner radius	r ₂	DN15~DN90	0 -1.0
		DN≥100	0 -2.0
翻边或槽底厚度 Flange or groove bottom thickness	T	DN15~DN200	+1.6 0
		DN250~DN600	+3.2 0
a短节厚度负偏差不应超过名义厚度的12.5%。 aThe negative deviation of the pup joint thickness shall not exceed 12.5% of the nominal thickness.			

4.6.3 环槽密封面尺寸允许偏差应符合表4.6.3的规定。

表4.6.3 环槽密封面尺寸允许偏差
Table 4.6.3 Allowable deviation of ring groove sealing surface dimensions
单位为毫米

环槽尺寸 Ring groove size	允许偏差 Allowable deviation
环槽深度 Ring groove depth	E +0.4 0
环槽顶宽 Ring groove top width	F ±0.2
环槽中心圆直径	P ±0.13
环槽角度 Ring groove center circle diameter	23° ±0.5°
环槽圆角 Ring groove fillet	r≤2 +0.8 0
	r>2 ±0.8
密封面外径 Seal surface outer diameter	K +0.5 0

4.6.4 公称直径大于DN600法兰的尺寸允许偏差应符合表4.6.4的规定。

表4.6.4 公称直径大于DN600法兰尺寸允许偏差
Table 4.6.4 Allowable deviations in flange size for nominal diameters greater than Dn600
单位为毫米

法兰尺寸 Flange size		允许偏差 Allowable deviation
法兰外径 Flange outer diameter	O	±4.0
法兰内径 Flange inner diameter	B	+3.0 -2.0
法兰厚度 Flange thickness	Q	+5.0 0
密封面外径 Seal surface outer diameter	R	±2

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表4.6.4 公称直径大于DN600法兰尺寸允许偏差 (续)

Table 4.6.4 Allowable deviation of flange size with nominal diameter larger than DN600 (continued)

单位为毫米

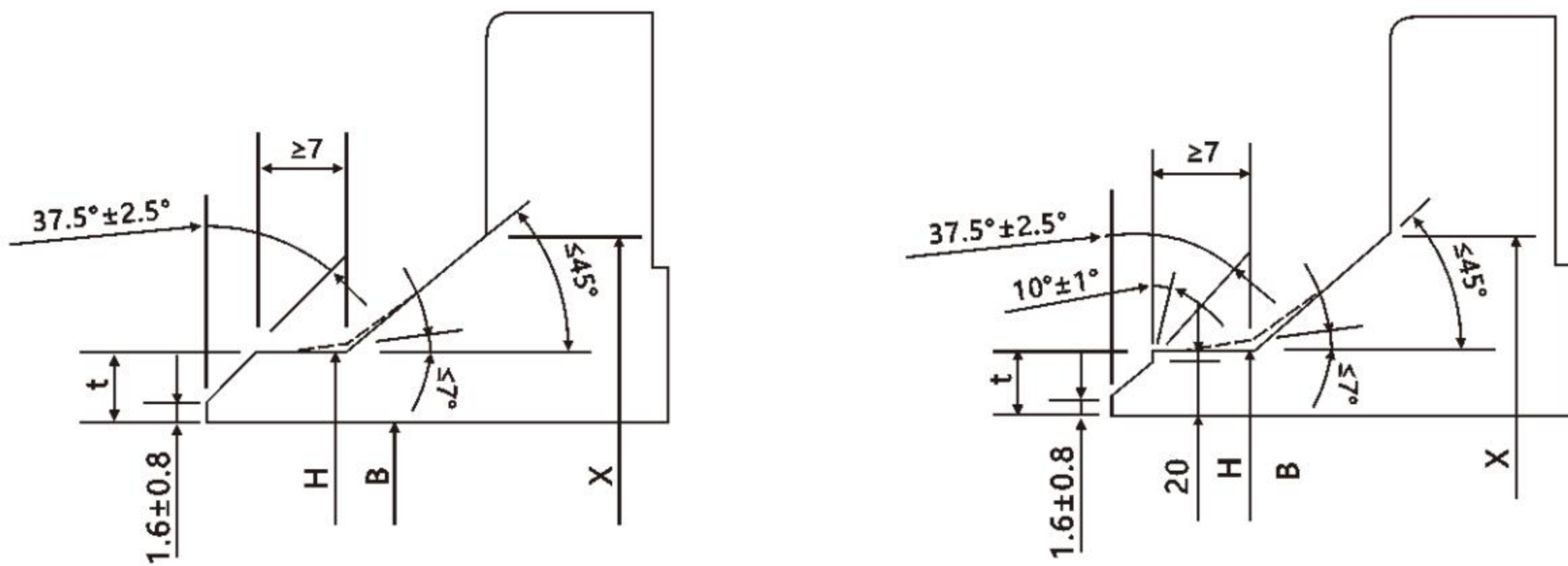
法兰尺寸 Flange size	允许偏差 Allowable deviation	允许偏差 Allowable deviation
法兰高度 Flange height	Y	+3.0 -5.0
突台高度 Projection height	高度为2mm时	±0.5
	高度为7mm时	±2
环槽面法兰突台高度 Ring groove surface flange boss height	W	+0.4 0
法兰颈部尺寸 Flange neck size	X	±4.0
对焊端部外径 Butt weld end outer diameter	H	+5.0 -2.0
螺栓孔中心圆直径 Bolt hole center circle diameter	C	±1.5
相邻螺栓孔间距 Spacing between adjacent bolt holes	—	±0.8
螺栓孔直径 Bolt hole diameter	h	±0.5
法兰密封面和法兰孔的垂直度		<0.5°
螺栓孔中心圆对密封面中心圆的同轴度		<1.5

4.7 法兰与接管焊接部结构尺寸

4.7 Structural dimensions of the welding part of the flange and the nozzle

4.7.1 公称直径小于或等于DN600对焊法兰颈部及焊接端坡口尺寸见图 4.7.1。

4.7.1 The dimensions of the neck and welding end grooves of butt welding flanges with a nominal diameter less than or equal to DN600 are shown in Figure 4.7.1.



a) 法兰对焊端厚度t为5mm至22mm
a) The thickness t of the flange butt welding end is 5mm to 22mm
b) 法兰对焊端厚度t大于22mm
b) The thickness t of the flange butt welding end is greater than 22mm

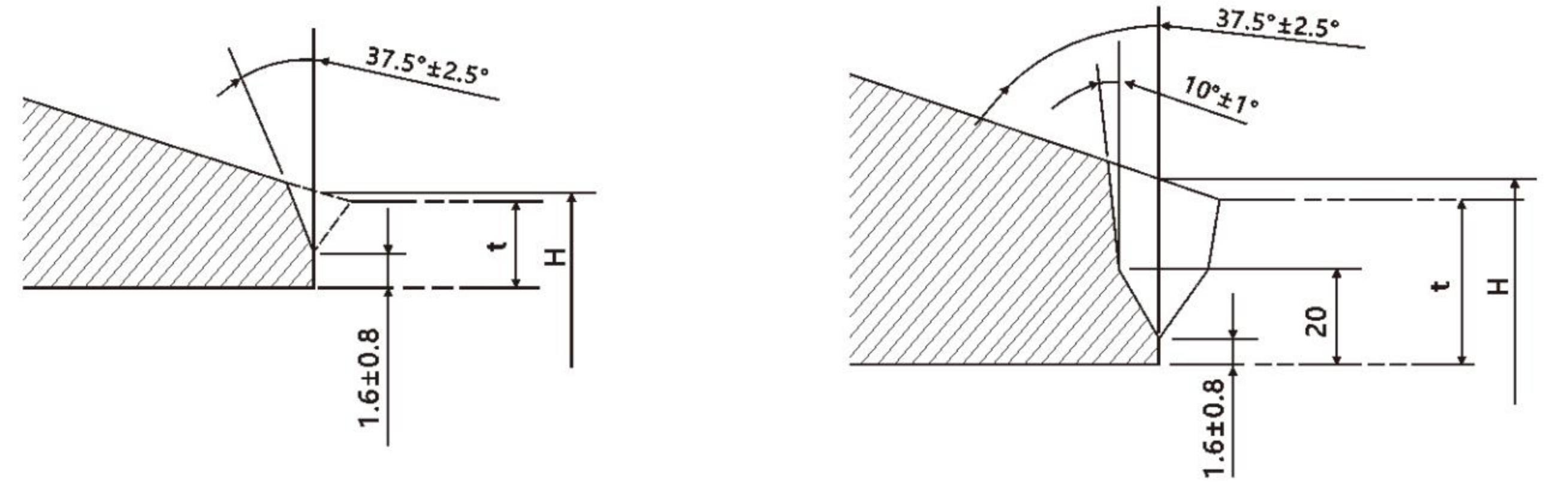
图4.7.1 公称直径DN≤600mm对焊法兰颈部及焊接端坡口

Figure 4.7.1 Nominal diameter DN≤600mm butt welding flange neck and welding end groove

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4.7.2 公称直径大于 DN600 对焊法兰焊接端坡口尺寸见图4.7.2。

4.7.2 For nominal diameters greater than DN600, the welding end groove dimensions of butt welding flanges are shown in Figure 4.7.2.



a) 法兰对焊端厚度t为5mm至22mm
a) The thickness t of the flange butt welding end is 5mm to 22mm
b) 法兰对焊端厚度t大于22mm
b) The thickness t of the flange butt welding end is greater than 22mm

图4.7.2 公称直径 DN>600mm 对焊法兰焊接端坡口

Figure 4.7.2 Nominal diameter DN>600mm butt welding flange welding end groove

5 材料 Material

5.1 一般规定 General provisions

5.1.1 钢制管法兰用材料宜按表5.1.1的规定选用。

The materials used for steel pipe flanges should be selected according to the provisions of Table 5.1.1.

表5.1.1 钢制管法兰用材料

Table 5.1.1 Materials for steel pipe flanges

组别号 Group number	类别 category	钢板 steel plate		锻件 Forgings		
		材料牌号 Material grade	标准编号 Standard number		材料牌号 Material grade	标准编号 Standard number
1.0	碳素钢 carbon steel	Q235A, Q235B	GB/T 3274	—	20	NB/T 47008
		20	GB/T 711	—		
		Q245R	GB/T 713	—		
1.1	碳素钢 carbon steel	—	—	—	A105	ASTM A105/A105M
1.2	碳素钢 carbon steel	Q345R	GB/T 713	—	16Mn	NB/T 47008
		16MnDR	GB/T 3531	—	16MnD	NB/T 47009
1.4	碳素钢 carbon steel	09MnNiDR	GB/T 3531	—	09MnNiD	NB/T 47009
1.9	铬钼钢 (1.25Cr-0.5Mo)	14Cr1MoR	GB/T 713	—	14Cr1Mo	NB/T 47008
1.10	铬钼钢 (2.25Cr-1Mo)	12Cr2Mo1R	GB/T 713	—	12Cr2Mo1	NB/T 47008
1.13	铬钼钢 (5Cr-0.5Mo)	—	—	—	12Cr5Mo	NB/T 47008
1.16	铬钼钢 (1Cr-0.3Mo-V)	12Cr1MoVR	GB/T 713	—	12Cr1MoV	NB/T 47008
1.17	铬钼钢 (1Cr-0.5Mo)	15CrMoR	GB/T 713	—	15CrMo	NB/T 47008

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Mechanical properties of forgings

统一数字代号 Unified digital code	材料牌号 Material grade	公称厚度 Nominal thickness mm	热处理状态℃ Heat treatment status℃	拉伸性能 Tensile properties			硬度 hardness HBW
				Rm/MPa	Rp0.2/MPa	A/%	
				不小于 no less than			
S11306	06Cr13	≤150	A(800~900缓冷)	410	205	20	110~163
S11348	06Cr13A1	≤150	A(800~900缓冷)	415	170	20	110~160
S30408	06Cr19Ni10	≤150	S(1010~1150快冷)	520	220	35	139~192
		>150~300		500	220	35	131~192
S30403	022Cr19Ni10	≤150	S(1010~1150快冷)	480	210	35	128~187
		>150~300		460	210	35	121~187
S30409	07Cr19Ni10	≤150	S(1010~1150快冷)	520	220	35	≤180°
		>150~300		500	220	40	-
S30453	022Cr19Ni10N	≤150	S(1010~1150快冷)	520	205	30	≤201
S30458	06Cr19Ni10N	≤150	S(1010~1150快冷)	550	240	35	≤201
S32168	06Cr18Ni11Ti	≤150	S(920~1150快冷)	520	205	35	139~187
		>150~300		500	205	40	131~187
S32169	07Cr19Ni11Ti	≤150	S(1010~1150快冷)	520	205	40	≤187°
S34778	06Cr18Ni11Nb	≤150	S(1010~1180快冷)	520	205	35	≤201
S34779	07Cr18Ni11Nb	≤150	S(1010~1180快冷)	520	205	35	≤187°
		>150~300		500	205	40	-
S31608	06Cr17Ni12Mo2	≤150	S(1010~1150快冷)	520	220	40	139~187
		>150~300		500	220	35	131~187
S31603	022Cr17Ni12Mo2	S150	S(1010~1150快冷)	480	210	35	128~187
		>150~300		460	210	35	121~187
S31609	07Cr17Ni12Mo2	S150	S(1010~1150快冷)	520	220	35	139~187
		>150~300		500	220	35	131~187
S31653	022Cr17Ni12Mo2N	S150	S(1010~1150快冷)	520	210	35	≤217
S31658	06Cr17Ni12Mo2	≤150	S(1010~1150快冷)	550	240	35	≤217
S31668	N06Cr17Ni12Mo2Ti	S150	S(1010~1150快冷)	520	210	35	139~187
		>150~300		500	210	35	131~187
S31703	022Cr19Ni13Mo3	<150	S(1010~1150快冷)	480	195	35	128~187
		>150~300		460	195	35	121~187
S31008	06Cr25Ni20	S150	S(1010~1180快冷)	520	205	35	-
		>150~300		500	205	35	-
S39042	015Cr21Ni26Mo5Cu2	≤300	S(1010~1180快冷)	490	220	35	-
S31252	015Cr20Ni18Mo6CuN	≤300	S(1150)以上快冷)	650	300	35	-

GB/T 13401-2017
锻件力学性能

Mechanical properties of forgings

统一数字代号 Unified digital code	材料牌号 Material grade	公称厚度 Nominal thickness mm	热处理状态℃ Heat treatment status℃	拉伸性能 Tensile properties			硬度 hardness HBW
				Rm/MPa	Rp0.2/MPa	A/%	
				不小于 no less than			
S21953	022C19Ni5M03Si2N	≤150	S(950~1050快冷)	590	390	25	-
S22253	022Cr22Ni5MO3N	≤150	S(1020~1100快冷)	620	450	25	-
S22053	022Cr23Ni5Mo3N	≤150	S(1020~1100快冷)	620	450	25	-
S23043	022Cr23Ni4MoCuN	≤150	S(1020~1100快冷)	600	400	25	-
S25073	022Cr25Ni7Mo4N	≤150	S(1020~1100快冷)	800	550	25	-
S25554	03Cr25Ni6Mo3Cu2N	≤150	S(1020~1100快冷)	760	550	15	-
S51740	05Cr17Ni4Cu4Nb	≤200	S(1020~1060快冷) +Ag(620快冷)	930	725	15	≤277
锅炉受压元件用各级别锻件硬度值(HNW, 逐渐检验)应符合上述规定 The hardness values (HNW, gradually inspected) of various levels of forgings used for boiler pressure components should comply with the above regulations.							

锻件级别、检验项目和检验数量

Forging level, inspection items and inspection quantity

锻件级别 Forging grade	检验项目 Inspection items	检验数量 Inspection quantity
I	硬度(HBW) hardness	逐渐检验 Test gradually
II	拉伸(Rm、Rp0.2、A) stretch	同冶炼炉号、同炉热处理, 锻造工艺、锻造比和公称厚度相近的锻件组成 每批抽检公称厚度最大的一件 Forgings with the same smelting furnace number, heat treatment in the same furnace, forging process, forging ratio and nominal thickness are the one with the largest nominal thickness in each batch.
III	拉伸(Rm、Rp0.2、A) stretch	
	超声检测 Ultrasonic testing	逐渐检验 Test gradually
IV	拉伸(Rm、Rp0.2、A) stretch	逐渐检验 Test gradually
	超声检测 Ultrasonic testing	逐渐检验 Test gradually

参考重量表

Referenced Weight Lists

对焊90°长半径弯头
BW 90°LR ELBOW

kg

公称尺寸 Nominal Size		Sch10S	Sch20	Sch30	STD	Sch40	Sch60	XS	Sch80	Sch100	Sch120	Sch140	Sch160	XXS
DN	NPS													
15	1/2	0.06	-	0.07	0.08	0.08	-	0.11	0.11	-	-	-	0.13	0.17
20	3/4	0.08	-	0.09	0.11	0.11	-	0.14	0.14	-	-	-	0.19	0.24
25	1	0.13	-	0.14	0.16	0.16	-	0.12	0.12	-	-	-	0.28	0.36
32	1 1/4	0.20	-	0.24	0.28	0.28	-	0.24	0.24	-	-	-	0.47	0.64
40	1 1/2	0.28	-	0.35	0.40	0.40	-	0.53	0.53	-	-	-	0.71	0.94
50	2	0.47	-	0.59	0.71	0.71	-	0.98	0.98	-	-	-	1.46	1.76
65	2 1/2	0.79	-	1.32	1.42	1.42	-	1.87	1.87	-	-	-	2.45	3.35
80	3	1.17	-	1.95	2.22	2.22	-	3.01	3.01	-	-	-	4.20	5.45
90	3 1/2	1.56	-	2.62	3.12	3.12	-	4.28	4.28	-	-	-	-	-
100	4	2.01	-	3.39	4.22	4.22	-	5.86	5.86	-	7.44	-	8.81	10.8
125	5	3.47	-	-	7.15	7.15	-	10.2	10.2	-	13.2	-	16.1	18.9
150	6	5.01	-	-	11.2	11.2	-	16.8	16.8	-	21.4	-	26.7	31.3
200	8	9.63	17.6	19.4	22.4	22.4	28.0	34.1	34.1	40.0	47.7	53.2	58.6	56.9
250	10	16.74	27.5	33.6	39.7	39.7	53.7	63.2	63.2	75.5	87.6	102	113	102
300	12	26.01	39.3	51.5	58.3	62.9	86.0	76.9	104	126	148	164	188	148
350	14	34.86	62.5	74.9	74.9	87.1	117	98.9	146	180	207	234	259	-
400	16	45.67	82.0	98.3	98.3	130	169	130	215	259	302	351	385	-
450	18	57.86	104	145	125	185	244	165	302	367	431	484	545	-
500	20	82.72	154	204	154	242	326	204	410	502	581	669	744	-
550	22	100.21	187	248	187	-	426	248	541	654	763	870	974	-
600	24	136.64	223	331	223	403	561	295	698	865	1011	1137	1277	-
650	26	-	347	-	262	-	-	347	-	-	-	-	-	-
700	28	-	403	478	304	-	-	403	-	-	-	-	-	-
750	30	-	464	577	349	-	-	464	-	-	-	-	-	-
800	32	-	528	658	398	722	-	528	-	-	-	-	-	-
850	34	-	597	743	449	817	-	597	-	-	-	-	-	-
900	36	-	669	834	504	997	-	669	-	-	-	-	-	-
950	38	-	-	-	562	-	-	746	-	-	-	-	-	-
1000	40	-	-	-	623	-	-	828	-	-	-	-	-	-
1050	42	-	-	-	687	-	-	913	-	-	-	-	-	-
1100	44	-	-	-	754	-	-	1003	-	-	-	-	-	-
1150	46	-	-	-	825	-	-	1096	-	-	-	-	-	-
1200	48	-	-	-	898	-	-	1194	-	-	-	-	-	-
1300	52	-	-	-	1107	-	-	-	-	-	-	-	-	-
1400	56	-	-	-	1284	-	-	-	-	-	-	-	-	-
1500	60	-	-	-	1475	-	-	-	-	-	-	-	-	-
1600	64	-	-	-	1679	-	-	-	-	-	-	-	-	-
1700	68	-	-	-	1869	-	-	-	-	-	-	-	-	-
1800	72	-	-	-	2126	-	-	-	-	-	-	-	-	-
1900	76	-	-	-	2372	-	-	-	-	-	-	-	-	-
2000	80	-	-	-	2626	-	-	-	-	-	-	-	-	-

注释:
大于DN1200(NPS48)的STD重量为按公称壁厚9.53mm计算的重量。

Note:
The weight for the size more than DN1200(NPS48) is calculated on the basis of thickness 9.53mm.

参考重量表

Referenced Weight Lists

对焊90°短半径弯头 BW 90°SR Elbow

kg

公称尺寸 Nominal Size		Sch10S	Sch20	Sch30	STD	Sch40	Sch60	XS	Sch80	Sch100	Sch120	Sch140	Sch160	XXS
DN	NPS													
25	1	0.8	-	0.09	0.11	0.11	-	0.14	0.14	-	-	-	0.18	0.24
32	1 1/4	0.14	-	0.16	0.19	0.19	-	0.25	0.25	-	-	-	0.31	0.43
40	1 1/2	0.19	-	0.23	0.27	0.27	-	0.36	0.36	-	-	-	0.48	0.63
50	2	0.32	-	0.39	0.48	0.48	-	0.66	0.66	-	-	-	0.98	1.18
65	2 1/2	0.53	-	0.89	0.95	0.95	-	1.26	1.26	-	-	-	1.65	2.26
80	3	0.78	-	1.30	1.48	1.48	-	2.01	2.01	-	-	-	2.80	3.64
90	3 1/2	1.04	-	1.76	2.09	2.09	-	2.87	2.87	-	-	-	-	-
100	4	1.35	-	2.28	2.83	2.83	-	3.93	3.93	-	4.99	-	5.91	7.23
125	5	2.32	-	-	4.78	4.78	-	6.80	6.80	-	8.84	-	10.8	12.6
150	6	3.32	-	-	7.42	7.42	-	11.2	11.2	-	14.2	-	17.7	20.8
200	8	6.41	11.7	12.9	14.9	14.9	18.6	22.7	22.7	26.6	31.7	35.4	39.0	37.9
250	10	11.16	18.3	22.4	26.5	26.5	35.8	35.8	42.1	50.3	58.4	68.1	75.6	68.1
300	12	17.36	26.2	34.4	38.9	42.0	57.4	51.4	69.6	84.3	98.5	110	126	98.5
350	14	23.28	41.8	50.0	50.0	58.2	78.0	66.1	97.3	120	138	156	173	-
400	16	30.40	54.6	65.4	65.4	86.5	112	86.5	143	172	201	234	256	-
450	18	38.54	69.3	96.6	83.0	123	162	110	201	245	287	322	363	-
500	20	55.15	103	136	103	161	218	136	273	335	388	466	496	-
550	22	66.85	125	165	125	-	284	165	361	436	509	580	649	-
600	24	91.2	149	221	149	269	374	197	466	577	675	759	852	-
650	26	-	231	-	174	-	-	231	-	-	-	-	-	-
700	28	-	269	334	203	-	-	269	-	-	-	-	-	-
750	30	177.49	309	385	233	-	-	309	-	-	-	-	-	-
800	32	-	352	439	265	482	-	352	-	-	-	-	-	-
850	34	-	398	496	300	545	-	398	-	-	-	-	-	-
900	36	-	446	555	336	664	-	446	-	-	-	-	-	-
950	38	-	-	-	374	-	-	497	-	-	-	-	-	-
1000	40	-	-	-	415	-	-	552	-	-	-	-	-	-
1050	42	-	-	-	458	-	-	609	-	-	-	-	-	-
1100	44	-	-	-	503	-	-	669	-	-	-	-	-	-
1150	46	-	-	-	550	-	-	730	-	-	-	-	-	-
1200	48	-	-	-	599	-	-	796	-	-	-	-	-	-
1300	52	-	-	-	738	-	-	-	-	-	-	-	-	-
1400	56	-	-	-	854	-	-	-	-	-	-	-	-	-
1500	60	-	-	-	983	-	-	-	-	-	-	-	-	-
1600	64	-	-	-	1116	-	-	-	-	-	-	-	-	-
1700	68	-	-	-	1264	-	-	-	-	-	-	-	-	-
1800	72	-	-	-	1418	-	-	-	-	-	-	-	-	-
1900	76	-	-	-	1581	-	-	-	-	-	-	-	-	-
2000	80	-	-	-	1751	-	-	-	-	-	-	-	-	-

注释:
于DN1200(NPS48)的STD重量为按公称壁厚9.53mm计算的重量。

Note:
The weight for the size more than DN1200(NPS48) is calculated on the basis of thickness 9.53mm.

参考重量表
Referenced Weight Lists

对焊90°3D弯头 BW 90°3D Elbow

kg

公称尺寸 Nominal Size		Sch20	Sch30	STD	Sch40	Sch60	XS	Sch80	Sch100	Sch120	Sch140	Sch160	XXS
DN	NPS												
20	3/4	-	0.14	0.17	0.17	-	0.22	0.22	-	-	-	0.29	0.36
25	1	-	0.29	0.33	0.33	-	0.43	0.43	-	-	-	0.56	0.72
32	1 1/4	-	0.47	0.56	0.56	-	0.48	0.73	-	-	-	0.92	1.28
40	1 1/2	-	0.70	0.80	0.80	-	1.07	1.07	-	-	-	1.43	1.88
50	2	-	1.18	1.43	1.43	-	1.97	1.97	-	-	-	2.92	3.53
65	2 1/2	-	2.64	2.83	2.83	-	3.75	3.75	-	-	-	4.90	6.70
80	3	-	3.92	4.47	4.47	-	6.04	6.04	-	-	-	8.45	11.0
90	3 1/2	-	5.27	6.26	6.26	-	8.60	8.60	-	-	-	-	-
100	4	-	6.80	8.47	8.47	-	11.8	11.8	-	14.9	-	17.7	21.6
125	5	-	-	14.3	14.3	-	20.4	20.4	-	26.5	-	32.3	37.8
150	6	-	-	22.3	22.3	-	33.6	33.6	-	42.8	-	53.4	62.6
200	8	35.1	38.8	44.8	44.8	56.0	68.1	68.1	80.0	95.3	106	117	114
250	10	55.0	67.2	79.4	79.4	107	107	126	151	175	204	227	204
300	12	78.5	103	117	126	172	154	209	252	295	329	377	295
350	14	125	150	150	174	234	198	292	359	414	468	519	-
400	16	164	196	196	260	337	260	429	517	604	702	770	-
450	18	208	290	249	369	488	330	604	734	862	968	1089	-
500	20	309	409	309	483	653	409	819	1005	1163	1338	1487	-
550	22	374	496	374	-	852	496	1083	1307	1526	1740	1947	-
600	24	446	663	446	807	1123	591	1397	1731	2023	2276	2556	-
650	26	694	-	523	-	-	694	-	-	-	-	-	-
700	28	806	1004	608	-	-	806	-	-	-	-	-	-
750	30	927	1154	699	-	-	927	-	-	-	-	-	-
800	32	1056	1315	796	1445	-	1056	-	-	-	-	-	-
850	34	1194	1487	899	1634	-	1194	-	-	-	-	-	-
900	36	1338	1667	1008	1993	-	1338	-	-	-	-	-	-
950	38	-	-	1124	-	-	1493	-	-	-	-	-	-
1000	40	-	-	1246	-	-	1655	-	-	-	-	-	-
1050	42	-	-	1374	-	-	1826	-	-	-	-	-	-
1100	44	-	-	1509	-	-	2006	-	-	-	-	-	-
1150	46	-	-	1649	-	-	2191	-	-	-	-	-	-
1200	48	-	-	1797	-	-	2388	-	-	-	-	-	-

参考重量表
Referenced Weight Lists

对焊等径三通 BW Equal Tee

kg

公称尺寸 Nominal Size		Sch10S	Sch20	Sch30	STD	Sch40	Sch60	XS	Sch80	Sch100	Sch120	Sch140	Sch160	XXS
DN	NPS													
15	1/2	0.10	-	0.15	0.16	0.16	-	0.20	0.20	-	-	-	0.25	0.35
20	3/4	0.11	-	0.18	0.20	0.20	-	0.30	0.30	-	-	-	0.35	0.45
25	1	0.20	-	0.27	0.28	0.28	-	0.45	0.45	-	-	-	0.54	0.77
32	1 1/4	0.39	-	0.46	0.55	0.55	-	0.70	0.70	-	-	-	0.91	1.26
40	1 1/2	0.69	-	0.68	0.78	0.78	-	1.25	1.25	-	-	-	1.39	1.83
50	2	1.05	-	0.96	1.17	1.17	-	1.61	1.61	-	-	-	2.39	2.89
65	2 1/2	1.25	-	2.06	2.21	2.21	-	2.92	2.92	-	-	-	3.81	5.21
80	3	1.68	-	2.87	3.23	3.23	-	4.42	4.42	-	-	-	6.17	8.01
90	3 1/2	1.92	-	3.65	4.33	4.33	-	5.95	5.95	-	-	-	-	-
100	4	2.54	-	4.56	5.68	5.68	-	7.88	7.88	-	10.0	-	11.8	14.5
125	5	4.14	-	-	9.08	9.08	-	12.9	12.9	-	16.8	-	20.5	24.0
150	6	5.31	-	-	13.6	13.6	-	20.5	20.5	-	26.1	-	32.5	38.1
200	8	10.4	17.5	22.0	25.5	25.5	31.8	38.7	38.7	45.5	54.1	60.4	66.6	64.6
250	10	18.04	28.0	37.1	44.8	44.8	59.2	59.2	69.7	83.3	96.6	113	125	113
300	12	24.8	42.6	55.7	63.1	68.1	93.0	83.2	112	137	160	178	204	160
350	14	31.1	64.5	76.3	76.3	88.7	119	101	148	183	211	238	264	-
400	16	36.7	78.2	95.7	95.7	126	164	126	191	257	294	342	375	-
450	18	45.5	102	141	121	179	237	160	269	357	419	471	529	-
500	20	65.3	168	198	150	235	317	190	365	489	566	651	724	-
550	22	85.2	185	241	182	-	414	241	482	636	743	846	947	-
600	24	107	222	305	205	340	516	272	589	796	930	1046	1174	-
650	26	-	340	-	254	-	-	337	-	-	-	-	-	-
700	28	-	390	478	289	-	-	383	-	-	-	-	-	-
750	30	-	420	549	332	-	-	441	-	-	-	-	-	-
800	32	-	480	627	379	631	-	503	-	-	-	-	-	-
850	34	-	540	709	429	714	-	569	-	-	-	-	-	-
900	36	-	610	796	481	872	-	639	-	-	-	-	-	-
950	38	-	-	-	537	-	-	713	-	-	-	-	-	-
1000	40	-	-	-	598	-	-	791	-	-	-	-	-	-
1050	42	-	-	-	636	-	-	846	-	-	-	-	-	-
1100	44	-	-	-	712	-	-	946	-	-	-	-	-	-
1150	46	-	-	-	779	-	-	995	-	-	-	-	-	-
1200	48	-	-	-	850	-	-	1080	-	-	-	-	-	-
1300	52	-	-	-	917	-	-	-	-	-	-	-	-	-
1400	56	-	-	-	1065	-	-	-	-	-	-	-	-	-
1500	60	-	-	-	1226	-	-	-	-	-	-	-	-	-
1600	64	-	-	-	1398	-	-	-	-	-	-	-	-	-
1700	68	-	-	-	1580	-	-	-	-	-	-	-	-	-
1800	72	-	-	-	1740	-	-	-	-	-	-	-	-	-
1900	76	-	-	-	1980	-	-	-	-	-	-	-	-	-
2000	80	-	-	-	2290	-	-	-	-	-	-	-	-	-

注释:
于DN1200(NPS48)的STD重量为按公称壁厚9.53mm计算的重量。

Note:
The weight for the size more than DN1200(NPS48) is calculated on the basis of thickness 9.53mm.

参考重量表
Referenced Weight Lists

对焊等径三通 BW Equal Tee

kg

公称尺寸 Nominal Size		Sch10S	Sch20	Sch30	STD	Sch40	Sch60	XS	Sch80	Sch100	Sch120	Sch140	Sch160	XXS
DN	NPS													
20	3/4	-	-	0.06	0.07	0.07	-	0.09	0.09	-	-	-	0.12	0.15
25	1	-	-	0.12	0.14	0.14	-	0.18	0.18	-	-	-	0.24	0.31
32	1 1/4	-	-	0.16	0.19	0.19	-	0.25	0.25	-	-	-	0.32	0.45
40	1 1/2	-	-	0.25	0.29	0.29	-	0.38	0.38	-	-	-	0.51	0.70
50	2	0.27	-	0.37	0.46	0.46	-	0.63	0.63	-	-	-	0.93	1.20
65	2 1/2	0.43	-	0.79	0.85	0.85	-	1.12	1.12	-	-	-	1.46	2.00
80	3	0.53	-	0.97	1.11	1.11	-	1.50	1.50	-	-	-	2.09	2.71
90	3 1/2	-	-	1.28	1.52	1.52	-	2.09	2.09	-	-	-	-	-
100	4	0.82	-	1.45	1.81	1.81	-	2.51	2.51	-	3.18	-	3.76	4.60
125	5	1.35	-	-	3.04	3.04	-	4.33	4.33	-	5.63	-	6.86	8.02
150	6	1.81	-	-	4.35	4.35	-	6.55	6.55	-	8.35	-	10.4	12.2
200	8	2.75	5.57	6.16	7.12	7.12	8.88	10.8	10.8	12.7	15.1	16.9	18.6	18.0
250	10	4.21	8.18	9.99	11.8	11.8	16.0	16.0	18.8	22.5	26.0	30.4	33.7	30.4
300	12	6.88	11.1	14.6	16.5	17.8	24.3	21.8	29.5	35.7	41.7	46.5	53.3	41.7
350	14	13.2	24.6	29.5	29.6	34.3	46.0	39.0	57.4	70.8	81.5	92.0	102	-
400	16	16.1	30.5	36.5	36.6	48.3	62.7	48.3	79.7	96.2	112	130	143	-
450	18	19.5	36.8	51.3	44.1	65.3	86.2	58.3	107	130	152	171	193	-
500	20	-	65.5	86.7	65.5	102	138	86.7	174	213	247	284	316	-
550	22	-	72.2	95.6	72.2	-	164	95.6	209	252	294	336	376	-
600	24	-	78.9	117	78.9	143	199	105	247	306	358	402	452	-
650	26	-	136	-	103	-	-	136	-	-	-	-	-	-
700	28	-	147	183	111	-	-	147	-	-	-	-	-	-
750	30	-	157	196	119	-	-	158	-	-	-	-	-	-
800	32	-	168	209	127	230	-	168	-	-	-	-	-	-
850	34	-	179	223	135	245	-	179	-	-	-	-	-	-
900	36	-	189	236	143	282	-	190	-	-	-	-	-	-
950	38	-	-	-	151	-	-	200	-	-	-	-	-	-
1000	40	-	-	-	159	-	-	211	-	-	-	-	-	-
1050	42	-	-	-	167	-	-	222	-	-	-	-	-	-
1100	44	-	-	-	175	-	-	232	-	-	-	-	-	-
1150	46	-	-	-	213	-	-	283	-	-	-	-	-	-
1200	48	-	-	-	222	-	-	296	-	-	-	-	-	-
1300	52	-	-	-	241	-	-	-	-	-	-	-	-	-
1400	56	-	-	-	259	-	-	-	-	-	-	-	-	-
1500	60	-	-	-	278	-	-	-	-	-	-	-	-	-

注释:
大于DN1200(NPS48)的STD重量是按公称壁厚9.53mm计算的重量。

Note:
The weight for the size more than DN1200(NPS48) is calculated on the basis of thickness 9.53mm.

参考重量表
Referenced Weight Lists

对焊管帽 BW Cap

kg

公称尺寸 Nominal Size		Sch10S	Sch20	Sch30	STD	Sch40	Sch60	XS	Sch80	Sch100	Sch120	Sch140	Sch160	XXS
DN	NPS													
15	1/2	0.028	-	0.04	0.04	0.04	-	0.06	0.06	-	-	-	0.08	0.11
20	3/4	0.035	-	0.05	0.05	0.05	-	0.07	0.07	-	-	-	0.11	0.15
25	1	0.087	-	0.10	0.12	0.12	-	0.16	0.16	-	-	-	0.22	0.32
32	1 1/4	0.11	-	0.13	0.16	0.16	-	0.22	0.22	-	-	-	0.28	0.43
40	1 1/2	0.127	-	0.16	0.19	0.19	-	0.26	0.26	-	-	-	0.36	0.52
50	2	0.17	-	0.21	0.26	0.26	-	0.36	0.36	-	-	-	0.57	0.73
65	2 1/2	0.23	-	0.40	0.44	0.44	-	0.59	0.59	-	-	-	0.80	1.18
80	3	0.37	-	0.65	0.73	0.73	-	1.08	1.08	-	-	-	1.48	2.02
90	3 1/2	0.51	-	0.90	1.07	1.07	-	1.51	1.51	-	-	-	-	-
100	4	0.59	-	1.04	1.30	1.30	-	1.85	1.85	-	2.40	-	2.91	3.69
125	5	0.99	-	-	2.10	2.10	-	3.06	3.06	-	4.07	-	5.09	6.10
150	6	1.39	-	-	3.19	3.19	-	4.93	4.93	-	6.41	-	8.20	9.86
200	8	2.38	4.45	4.92	5.72	5.72	7.21	8.88	8.88	10.6	12.8	14.5	16.1	15.6
250	10	4.14	6.89	8.46	10.1	10.1	13.9	13.8	16.4	19.8	23.3	27.6	31.0	27.6
300	12	6.15	9.75	12.9	14.6	15.9	21.9	19.5	26.9	32.9	39.0	43.9	51.2	39.0
350	14	8.02	14.6	17.6	17.5	20.5	27.7	23.3	35.0	43.8	51.1	58.4	65.7	-
400	16	10.1	18.3	22.1	22.1	29.4	38.6	29.4	49.7	60.7	71.7	84.6	93.8	-
450	18	12.9	23.4	32.9	28.2	42.2	56.3	37.5	70.4	86.8	103	117	134	-
500	20	18.4	35.1	46.8	35.1	55.6	76.0	46.8	96.5	120	141	164	184	-
550	22	22.5	42.7	56.9	42.7	-	99.7	57.0	128	157	185	214	242	-
600	24	30.9	49.7	74.5	49.7	91.2	129	66.3	162	203	240	273	311	-
650	26	-	74.0	-	55.6	-	-	74.1	-	-	-	-	-	-
700	28	-	82.4	103	61.8	-	-	82.4	-	-	-	-	-	-
750	30	51.6	91.2	114	68.5	-	-	91.2	-	-	-	-	-	-
800	32	-	101	126	75.4	138	-	101	-	-	-	-	-	-
850	34	-	110	138	82.7	152	-	110	-	-	-	-	-	-
900	36	-	120	150	90.2	180	-	120	-	-	-	-	-	-
950	38	-	-	-	104	-	-	139	-	-	-	-	-	-
1000	40	-	-	-	113	-	-	150	-	-	-	-	-	-
1050	42	-	-	-	122	-	-	162	-	-	-	-	-	-
1100	44	-	-	-	138	-	-	184	-	-	-	-	-	-
1150	46	-	-	-	148	-	-	197	-	-	-	-	-	-
1200	48	-	-	-	158	-	-	210	-	-	-	-	-	-

注释: 表中为按管帽高度E值计算的重量。
Note: the weight for the above listed caps is calculated on the basis of E height.

参考重量表
Referenced Weight Lists

对焊等径45°斜三通 BW Straight 45° Lateral Tee

kg

公称尺寸 Nominal Size		Sch10S	Sch20	Sch30	STD	Sch40	Sch60	XS	Sch80	Sch100	Sch120	Sch140	Sch160	XXS
DN	NPS													
15	1/2	0.25	-	0.28	0.32	0.32	-	0.41	0.41	-	-	-	0.49	0.64
20	3/4	0.37	-	0.42	0.49	0.49	-	0.64	0.64	-	-	-	0.85	1.07
25	1	0.73	-	0.76	0.87	0.87	-	1.13	1.13	-	-	-	1.47	1.89
32	1 1/4	1.26	-	1.34	1.59	1.59	-	2.09	2.09	-	-	-	2.62	3.63
40	1 1/2	1.7	-	1.93	2.21	2.21	-	2.95	2.95	-	-	-	3.95	5.21
50	2	2.27	-	2.58	3.13	3.13	-	4.31	4.31	-	-	-	6.41	7.75
65	2 1/2	3.46	-	5.29	5.68	5.68	-	7.50	7.50	-	-	-	9.81	13.4
80	3	4.52	-	6.94	7.9	7.9	-	10.7	10.7	-	-	-	14.9	19.4
90	3 1/2	5.38	-	8.29	9.85	9.85	-	13.5	13.5	-	-	-	-	-
100	4	7.01	-	10.8	13.5	13.5	-	18.7	18.7	-	23.7	-	28.1	31.4
125	5	10.8	-	-	20.4	20.4	-	29.0	29.0	-	37.8	-	46.0	53.8
150	6	15.1	-	-	80.8	30.8	-	46.4	46.4	-	59.2	-	73.7	86.5
200	8	25.6	42.8	47.3	54.6	54.6	68.2	83.0	83.0	97.5	116	130	143	139
250	10	41.6	62.5	76.3	90.2	90.2	122	122	144	172	199	232	258	232
300	12	61.4	84.9	111	126	136	186	166	225	273	319	355	408	319
350	14	105	130	156	156	181	242	205	302	373	460	485	539	-
400	16	133	165	198	198	262	340	262	432	521	609	707	776	-
450	18	164	204	284	244	361	477	323	591	718	844	947	1066	-
500	20	197	293	388	293	459	620	388	778	954	1105	1271	1413	-
550	22	234	348	462	348	-	794	462	1009	1218	1422	1621	1814	-
600	24	277	414	615	414	750	1043	549	1298	1608	1879	2114	2372	-
650	26	404	643	-	485	-	-	643	-	-	-	-	-	-
700	28	473	753	937	568	-	-	753	-	-	-	-	-	-
750	30	542	864	1076	651	-	-	864	-	-	-	-	-	-
800	32	616	982	1224	740	1344	-	982	-	-	-	-	-	-
850	34	696	1110	1383	836	1519	-	1110	-	-	-	-	-	-
900	36	780	1245	1551	937	1854	-	1245	-	-	-	-	-	-
950	38	-	-	-	1073	-	-	1425	-	-	-	-	-	-
1000	40	-	-	-	1190	-	-	1580	-	-	-	-	-	-
1050	42	-	-	-	1313	-	-	1744	-	-	-	-	-	-
1100	44	-	-	-	1141	-	-	1915	-	-	-	-	-	-
1150	46	-	-	-	1575	-	-	2093	-	-	-	-	-	-
1200	48	-	-	-	1716	-	-	2280	-	-	-	-	-	-

参考重量表
Referenced Weight Lists

翻边短节 Lap Joint Stub End

kg

公称尺寸 Nominal Size		Sch10s		Sch40s		Sch80s	
DN	NPS	短型 Short Pattern	长型 Long Pattern	短型 Short Pattern	长型 Long Pattern	短型 Short Pattern	长型 Long Pattern
15	1/2	0.07	0.09	0.09	0.12	0.12	0.16
20	3/4	0.09	0.12	0.12	0.16	0.15	0.21
25	1	0.15	0.25	0.18	0.32	0.24	0.43
32	1 1/4	0.19	0.34	0.25	0.43	0.33	0.57
40	1 1/2	0.22	0.60	0.31	0.52	0.43	0.75
50	2	0.35	0.71	0.52	1.02	0.73	1.49
65	2 1/2	0.46	0.95	0.81	1.60	1.10	2.22
80	3	0.62	1.22	1.10	2.11	1.50	2.98
90	3 1/2	0.70	1.36	1.52	2.55	2.09	3.65
100	4	0.94	1.59	1.80	3.05	2.58	4.44
125	5	1.30	2.80	2.25	5.42	3.60	7.86
150	6	1.75	3.30	3.59	7.02	5.76	11.3
200	8	2.90	4.95	5.98	10.6	9.18	16.2
250	10	4.79	8.50	10.2	18.4	13.7	24.9
300	12	7.20	10.9	14.9	22.8	19.5	30.2
350	14	7.95	15.0	15.8	28.7	21.6	38.6
400	16	9.50	17.3	18.9	33.1	25.2	44.5
450	18	11.1	19.8	22.0	38.0	29.3	51.1
500	20	14.1	25.9	24.3	42.3	32.6	56.8
550	22	16.5	28.2	-	-	-	-
600	24	19.8	35.0	29.6	51.2	39.7	68.8

异径短节 Swaged Nipple

kg

大端公称尺寸 Large End Nominal Size		Sch10	Sch20	Sch30	STD	Sch40	Sch60	XS	Sch80	Sch100	Sch120	Sch140	Sch160	XX
DN	NPS													
8	1/4	0.03	-	0.03	0.03	0.03	-	0.04	0.04	-	-	-	-	-
10	3/8	0.04	-	0.04	0.05	0.05	-	0.07	0.07	-	-	-	-	-
15	1/2	0.07	-	0.08	0.09	0.09	-	0.11	0.11	-	-	-	0.13	0.17
20	3/4	0.09	-	0.11	0.12	0.12	-	0.16	0.16	-	-	-	0.21	0.27
25	1	0.18	-	0.19	0.21	0.21	-	0.28	0.28	-	-	-	0.36	0.47
32	1 1/4	0.27	-	0.28	0.33	0.33	-	0.44	0.44	-	-	-	0.55	0.76
40	1 1/2	0.35	-	0.39	0.44	0.44	-	0.59	0.59	-	-	-	0.79	1.05
50	2	0.62	-	0.71	0.86	0.86	-	1.19	1.19	-	-	-	1.76	2.13
65	2 1/2	0.90	-	1.37	1.48	1.48	-	1.95	1.95	-	-	-	2.55	3.48
80	3	1.26	-	1.93	2.2	2.2	-	2.98	2.98	-	-	-	4.16	5.39
90	3 1/2	1.45	-	2.22	2.64	2.64	-	3.63	3.63	-	-	-	-	-
100	4	1.84	-	2.84	3.53	3.53	-	4.91	4.91	-	6.23	-	7.37	9.02
125	5	3.10	-	-	5.83	5.83	-	8.29	8.29	-	10.8	-	13.2	15.4
150	6	4.04	-	-	8.25	8.25	-	12.4	12.4	-	15.8	-	19.7	23.1
200	8	6.35	10.6	11.7	13.5	13.5	16.8	20.5	20.5	24.1	28.7	32.0	35.2	34.2
250	10	10.2	15.3	18.7	22.1	22.1	29.8	29.8	35.1	42.0	48.6	56.7	63.0	56.7
300	12	14.0	19.4	25.4	28.8	31.1	42.5	38.0	51.5	62.3	72.8	81.1	93.0	72.8

参考重量表
Referenced Weight Lists
承插焊90°弯头和45°弯头 SW90°Elbow&45°Elbow

kg

公称尺寸 Nominal Size		承插焊90°弯头 SW90°Elbow			承插焊45°弯头 SW45°Elbow		
DN	NPS	3000	6000	9000	3000	6000	9000
6	1/8	0.09	0.15	-	0.08	0.16	-
8	1/4	0.09	0.15	-	0.08	0.16	-
10	3/8	0.12	0.32	-	0.12	0.28	-
15	1/2	0.26	0.40	0.85	0.22	0.30	0.78
20	3/4	0.35	0.65	1.48	0.28	0.72	1.25
25	1	0.52	1.25	2.20	0.55	0.90	1.85
32	1 1/4	0.85	1.40	2.90	0.71	1.15	2.62
40	1 1/2	1.05	2.35	3.50	0.89	1.90	3.45
50	2	1.75	2.96	4.35	1.30	2.95	5.80
65	2 1/2	2.80	-	-	2.68	-	-
80	3	4.60	-	-	4.90	-	-
100	4	9.60	-	-	8.80	-	-

承插焊三通和四通 SWTee&Cross

kg

公称尺寸 Nominal Size		承插焊三通 SW Tee			承插焊四通 SW Cross		
DW	NPS	3000	6000	9000	3000	6000	9000
6	1/8	0.13	0.22	-	0.15	0.21	-
8	1/4	0.13	0.22	-	0.15	0.25	-
10	3/8	0.16	0.45	-	0.19	0.54	-
15	1/2	0.35	0.55	1.15	0.46	0.64	1.32
20	3/4	0.48	0.90	1.80	0.59	1.09	2.25
25	1	0.66	1.46	2.25	0.81	1.97	2.69
32	1 1/4	1.00	1.90	3.95	1.19	2.34	4.68
40	1 1/2	1.40	2.80	4.87	1.67	3.90	7.84
50	2	2.00	3.70	8.89	2.59	6.15	10.5
65	2 1/2	4.10	-	-	4.95	-	-
80	3	5.55	-	-	7.25	-	-
100	4	15.6	-	-	18.8	-	-

承插焊管箍和管帽 SWCoupling&Cap

kg

公称尺寸 Nominal Size		承插焊管箍 sWCoupling			承插焊管帽 sWCap		
DN	NPS	3000	6000	9000	3000	6000	9000
6	1/8	0.05	0.06	-	0.03	0.04	-
8	1/4	0.06	0.07	-	0.04	0.05	-
10	3/8	0.08	0.10	-	0.05	0.07	-
15	1/2	0.13	0.16	0.29	0.08	0.13	0.23
20	3/4	0.20	0.28	0.47	0.15	0.22	0.35
25	1	0.28	0.48	0.68	0.22	0.34	0.52
32	1 1/4	0.48	0.65	1.08	0.35	0.47	0.71
40	1 1/2	0.52	0.94	1.12	0.42	0.63	0.95
50	2	0.95	1.65	1.95	0.72	1.14	1.55
65	2 1/2	1.52	-	-	1.25	-	-
80	3	1.75	-	-	2.05	-	-
100	4	2.80	-	-	3.28	-	-

参考重量表
Referenced Weight Lists
螺纹90°弯头和45°弯头 THRD 90°Elbow & 45°Elbow

kg

公称尺寸 Nominal Size		螺纹90°弯头 THRD90°Elbow			螺纹45°弯头 THRD45°Elbow		
DN	NPS	2000	3000	6000	2000	3000	6000
6	1/8	0.08	0.10	0.18	0.08	0.08	0.14
8	1/4	0.08	0.15	0.33	0.08	0.12	0.27
10	3/8	0.13	0.30	0.48	0.11	0.26	0.49
15	1/2	0.22	0.45	0.72	0.23	0.42	0.69
20	3/4	0.32	0.70	1.29	0.29	0.59	1.12
25	1	0.50	1.21	1.65	0.43	0.96	1.47
32	1 1/4	0.80	1.47	2.70	0.67	1.15	2.65
40	1 1/2	0.93	2.60	3.90	0.82	2.02	3.60
50	2	1.60	3.05	6.05	1.32	2.50	4.60
65	2 1/2	2.95	5.80	9.88	3.30	3.81	7.81
80	3	5.60	8.85	16.4	5.40	6.30	13.1
100	4	10.60	14.9	23.5	9.00	9.80	17.0

螺纹三通和四通 THRD Tee & Cross

kg

公称尺寸 Nominal Size		螺纹三通 THRD Tee			螺纹四通 THRD Cross		
DN	NPS	2000	3000	6000	2000	3000	6000
6	1/8	0.13	0.22	0.35	0.16	0.26	0.42
8	1/4	0.13	0.22	0.57	0.16	0.26	0.68
10	3/8	0.16	0.40	0.66	0.20	0.48	0.79
15	1/2	0.35	0.58	1.15	0.42	0.70	1.38
20	3/4	0.45	0.90	1.80	0.54	1.08	2.16
25	1	0.66	1.46	2.25	0.79	1.75	2.70
32	1 1/4	1.00	1.90	3.95	1.20	2.28	4.74
40	1 1/2	1.40	3.40	4.87	1.68	4.08	5.85
50	2	2.20	3.80	8.89	2.64	4.66	10.7
65	2 1/2	4.20	7.20	12.8	5.05	8.64	15.4
80	3	6.15	10.7	21.6	7.38	12.8	26.5
100	4	14.7	174.9	29.5	17.6	21.5	35.4

螺纹双接口管箍和管帽 THRD Coupling & Cap

kg

公称尺寸 Nominal Size		螺纹双接口管箍 THRD Coupling		螺纹管帽 THRD Cap	
DN	NPS	3000	6000	3000	6000
6	1/8	0.06	0.09	0.03	-
8	1/4	0.08	0.13	0.05	0.11
10	3/8	0.11	0.24	0.07	0.17
15	1/2	0.22	0.40	0.14	0.29
20	3/4	0.30	0.52	0.24	0.42
25	1	0.55	1.06	0.41	0.76
32	1 1/4	0.86	1.32	0.71	0.96
40	1 1/2	1.26	2.20	0.88	1.42
50	2	1.65	3.37	1.25	2.24
65	2 1/2	3.00	4.81	2.29	3.80
80	3	4.25	7.25	3.29	5.43
100	4	7.80	12.0	5.65	9.26

参考重量表

Referenced Weight Lists

支管座 outlet

kg

支管公称尺寸 Branch Nominal Size		对焊支管座 BW Outlet			承插焊支管座 SW Outlet		螺纹支管座 THRD Outlet	
DN	NPS	STD	XS	Sch160	3000	6000	3000	6000
6	1/8	0.04	0.05	-	0.05	-	0.05	-
8	1/4	0.04	0.05	-	0.05	-	0.05	-
10	3/8	0.06	0.07	-	0.09	-	0.09	-
15	1/2	0.11	0.13	0.18	0.16	0.35	0.17	0.32
20	3/4	0.16	0.18	0.20	0.20	0.47	0.22	0.47
25	1	0.32	0.34	0.40	0.42	0.68	0.43	0.65
32	1 1/4	0.38	0.42	0.50	0.59	1.10	0.61	0.96
40	1 1/2	0.57	0.60	0.70	0.70	1.30	0.69	1.28
50	2	0.85	0.90	1.10	1.10	2.45	1.10	2.15
65	2 1/2	1.28	1.35	2.00	1.40	-	1.52	-
80	3	1.88	2.00	3.20	2.30	-	2.50	-
90	3 1/2	2.20	2.40	-	-	-	-	-
100	4	2.80	3.20	6.00	4.20	-	4.10	-
125	5	5.70	6.80	9.80	-	-	-	-
150	6	7.20	11.0	16.0	-	-	-	-
200	8	10.8	19.2	31.0	-	-	-	-
250	10	17.0	19.5	-	-	-	-	-
300	12	25.6	29.6	-	-	-	-	-
350	14	27.0	32.0	-	-	-	-	-
400	16	36.0	41.7	-	-	-	-	-
450	18	48.2	55.8	-	-	-	-	-
500	20	58.5	76.0	-	-	-	-	-
600	24	149	152	-	-	-	-	-

法兰的参考重量

Reference weight of flange

法兰的参考重量见表F.1~表F.9。

The reference weight of the flange is shown in Table F.1~Table F.9.

表F.1 PN2.5法兰的参考重量

Table F1 Reference weight of PN2.5 flange

单位为千克

公称尺寸 DN	对焊 法兰	带颈 平焊 法兰	板式 平焊 法兰	B型对焊环板式 松套法兰		平焊环板式 松套法兰		翻边环板式 松套法兰		翻边短节板式 松套法兰		法兰盖
				B型对焊环 B type butt welding ring	板式松套法兰 Plate loose flange	平焊环 Flat welding ring	板式松套法兰 Plate loose flange	翻边环 flange ring	板式松套法兰 Plate loose flange	翻边短节 flanged nipple	板式松套法兰 Plate loose flange	
10	0.353	0.326	0.356	0.08	0.345	0.056	0.345	0.02	0.345	0.05	0.345	0.380
15	0.408	0.373	0.402	0.09	0.388	0.069	0.388	0.03	0.388	0.06	0.388	0.438
20	0.621	0.584	0.592	0.17	0.568	0.108	0.568	0.06	0.568	0.10	0.568	0.657
25	0.762	0.729	0.719	0.26	0.688	0.149	0.688	0.08	0.688	0.15	0.688	0.821
32	1.11	1.04	1.16	0.36	1.12	0.185	1.12	0.10	1.12	0.26	1.12	1.18
40	1.26	1.20	1.35	0.45	1.29	0.244	1.29	0.13	1.29	0.31	1.29	1.39
50	1.43	1.34	1.48	0.53	1.42	0.319	1.42	0.18	1.42	0.36	1.42	1.62
65	1.77	1.83	1.86	0.70	1.76	0.451	1.76	0.24	1.76	0.47	1.76	2.14
80	2.88	2.75	2.95	1.0	2.84	0.606	2.84	0.42	2.84	0.57	2.84	3.43
100	3.41	3.01	3.26	1.3	3.10	0.709	3.10	0.49	3.10	0.73	3.10	4.22
125	4.65	4.30	4.31	1.9	4.12	1.00	4.12	0.62	4.12	1.20	4.12	6.10
150	5.50	4.63	4.76	2.4	4.53	1.01	4.53	0.71	4.53	1.40	4.53	7.51
200	8.60	6.97	6.88	3.9	6.51	1.73	6.51	1.10	6.51	2.03	6.51	12.3
250	11.7	9.13	8.92	5.8	8.32	2.32	8.32	-	-	2.65	8.32	18.5
300	15.3	12.4	11.9	6.8	11.1	2.88	11.1	-	-	3.12	11.1	25.5
350	20.3	-	16.8	9.5	15.9	4.77	15.9	-	-	4.00	15.9	31.8
400	23.1	-	19.8	11.6	18.8	5.83	18.8	-	-	4.73	18.8	38.5
450	27.0	-	24.6	15.0	23.3	7.02	23.3	-	-	5.30	23.3	51.2
500	30.8	-	26.4	15.9	24.9	8.30	24.9	-	-	6.10	24.9	60.1
600	44.0	-	34.8	23.0	33.0	9.34	33.0	-	-	-	-	103
700	53.7	-	-	30.9	-	-	-	-	-	-	-	178
800	64.4	-	-	41.5	-	-	-	-	-	-	-	252
900	79.2	-	-	50.0	-	-	-	-	-	-	-	336
1000	98.6	-	-	58.9	-	-	-	-	-	-	-	435
1200	104	-	-	56.3	-	-	-	-	-	-	-	574
1400	133	-	-	-	-	-	-	-	-	-	-	-

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表F.1 (续)

Table F.1 (continued)

单位为千克

公称尺寸 DN Nominal size DN	对焊法兰 Butt welding flange	带颈平焊法兰 Flat welding flange with neck	板式平焊法兰 Plate flat welding flange	B型对焊环板式松套法兰 B type butt welding ringplate loose sleeve flange		平焊环板式松套法兰 Flat welding ring plate loose sleeve flange		翻边环板式松套法兰 Flange ring plate loose sleeve flange		翻边短节板式松套法兰 Flanged stub plate type loose sleeve flange		法兰盖 flange cover
				B型对焊环 B type butt welding ring	板式松套法兰 Plate loose flange	平焊环 Flat welding ring	板式松套法兰 Plate loose flange	翻边环 flange ring	板式松套法兰 Plate loose flange	翻边短节 flanged nipple	板式松套法兰 Plate loose flange	
1600	188	-	-	-	-	-	-	-	-	-	-	-
1800	215	-	-	-	-	-	-	-	-	-	-	-
2000	260	-	-	-	-	-	-	-	-	-	-	-
2200	332	-	-	-	-	-	-	-	-	-	-	-
2400	392	-	-	-	-	-	-	-	-	-	-	-
2600	497	-	-	-	-	-	-	-	-	-	-	-
2800	668	-	-	-	-	-	-	-	-	-	-	-
3000	772	-	-	-	-	-	-	-	-	-	-	-
3200	869	-	-	-	-	-	-	-	-	-	-	-
3400	988	-	-	-	-	-	-	-	-	-	-	-
3600	1156	-	-	-	-	-	-	-	-	-	-	-
3800	1309	-	-	-	-	-	-	-	-	-	-	-
4000	1441	-	-	-	-	-	-	-	-	-	-	-

表F.2 PN6法兰的参考重量

Table F.2 Reference weight of PN6 flange

单位为千克

公称尺寸 DN Nominal size DN	对焊法兰 Butt welding flange	带颈平焊法兰 Flat welding flange with neck	板式平焊法兰 Plate flat welding flange	B型对焊环板式松套法兰 B type butt welding ringplate loose sleeve flange		平焊环板式松套法兰 Flat welding ring plate loose sleeve flange		翻边环板式松套法兰 Flange ring plate loose sleeve flange		翻边短节板式松套法兰 Flanged stub plate type loose sleeve flange		法兰盖 flange cover
				B型对焊环 B type butt welding ring	板式松套法兰 Plate loose flange	平焊环 Flat welding ring	板式松套法兰 Plate loose flange	翻边环 flange ring	板式松套法兰 Plate loose flange	翻边短节 flanged nipple	板式松套法兰 Plate loose flange	
10	0.353	0.326	0.356	0.08	0.345	0.056	0.345	0.02	0.345	0.05	0.345	0.380
15	0.408	0.373	0.402	0.09	0.388	0.069	0.388	0.03	0.388	0.06	8800	0.438
20	0.621	0.584	0.592	0.17	0.568	0.108	0.568	0.06	0.568	0.10	0.568	0.657
25	0.762	0.729	0.719	0.26	0.688	0.149	0.688	0.08	0.688	0.15	0.688	0.821
32	1.11	1.04	1.16	0.36	1.12	0.185	1.12	0.10	1.12	0.26	1.12	1.18
40	1.26	1.20	1.35	0.45	1.29	0.244	1.29	0.13	1.29	0.31	1.29	1.39
50	1.43	1.34	1.48	0.53	1.42	0.319	1.42	0.18	1.42	0.36	1.42	1.62
65	1.77	1.83	1.86	0.70	1.76	0.451	1.76	0.24	1.76	0.47	1.76	2.14
80	2.88	2.75	2.95	1.0	2.84	0.606	2.84	0.42	2.84	0.57	2.84	3.43
100	3.41	3.01	3.26	1.3	3.10	0.709	3.10	0.49	3.10	0.73	3.10	4.22
125	4.65	4.30	4.31	1.9	4.12	1.00	4.12	0.62	4.12	1.20	4.12	6.10
150	5.50	4.63	4.76	2.4	4.53	1.01	4.53	0.71	4.53	1.40	4.53	7.51

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表F.2 (续)

Table F.2 (continued)

单位为千克

公称尺寸 DN Nominal size DN	对焊法兰 Butt welding flange	带颈平焊法兰 Flat welding flange with neck	板式平焊法兰 Plate flat welding flange	B型对焊环板式松套法兰 B type butt welding ringplate loose sleeve flange		平焊环板式松套法兰 Flat welding ring plate loose sleeve flange		翻边环板式松套法兰 Flange ring plate loose sleeve flange		翻边短节板式松套法兰 Flanged stub plate type loose sleeve flange		法兰盖 flange cover
				B型对焊环 B type butt welding ring	板式松套法兰 Plate loose flange	平焊环 Flat welding ring	板式松套法兰 Plate loose flange	翻边环 flange ring	板式松套法兰 Plate loose flange	翻边短节 flanged nipple	板式松套法兰 Plate loose flange	
200	8.60	6.97	6.88	3.9	6.51	1.73	6.51	1.10	6.51	2.03	6.51	12.3
250	11.7	9.13	8.92	5.8	8.32	2.32	8.32	-	-	2.65	8.32	18.5
300	15.3	12.4	11.9	6.8	11.1	2.88	11.1	-	-	3.12	11.1	25.5
350	20.3	-	16.8	9.5	15.9	4.77	15.9	-	-	4.00	15.9	31.8
400	23.1	-	19.8	11.6	18.8	5.83	18.8	-	-	4.73	18.8	38.5
450	27.0	-	24.6	15.0	23.3	7.02	23.3	-	-	5.30	23.3	51.2
500	30.8	-	26.4	15.9	24.9	8.30	24.9	-	-	6.10	24.9	60.1
600	44.0	-	34.8	23.0	33.0	9.34	33.0	-	-	-	-	103
700	53.7	-	-	30.9	-	-	-	-	-	-	-	178
800	64.4	-	-	41.5	-	-	-	-	-	-	-	252
900	79.2	-	-	50.0	-	-	-	-	-	-	-	336
1000	98.6	-	-	58.9	-	-	-	-	-	-	-	435
1200	152	-	-	93.2	-	-	-	-	-	-	-	717
1400	246	-	-	-	-	-	-	-	-	-	-	1094
1600	309	-	-	-	-	-	-	-	-	-	-	1 545
1800	400	-	-	-	-	-	-	-	-	-	-	2131
2000	516	-	-	-	-	-	-	-	-	-	-	2862
2200	645	-	-	-	-	-	-	-	-	-	-	-
2400	786	-	-	-	-	-	-	-	-	-	-	-
2600	1021	-	-	-	-	-	-	-	-	-	-	-
2800	1256	-	-	-	-	-	-	-	-	-	-	-
3000	1404	-	-	-	-	-	-	-	-	-	-	-
3200	1617	-	-	-	-	-	-	-	-	-	-	-
3400	1877	-	-	-	-	-	-	-	-	-	-	-
3600	2366	-	-	-	-	-	-	-	-	-	-	-

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表F.3 PN10法兰的参考重量

Table F.3 Reference weight of PN10 flange

单位为千克

公称尺寸 DN	对焊 法兰	带颈 平焊 法兰	板式 平焊 法兰	A型对焊环板 式松套法兰		B型对焊环板 式松套法兰		平焊环板 式松套法兰		翻边环板 式松套法兰		翻边短节板 式松套法兰		法兰盖
				Type A butt welding ring plate loose sleeve flange	Type B butt welding ring plate loose sleeve flange	Type A butt welding ring plate loose sleeve flange	Type B butt welding ring plate loose sleeve flange	Flat welding ring plate loose sleeve flange	Flat welding ring plate loose sleeve flange	Flange ring plate loose sleeve flange	Flange ring plate loose sleeve flange	Flanged stub plate type loose sleeve flange	Flanged stub plate type loose sleeve flange	
Nominal size DN	Butt welding flange	Flat welding flange with neck	Plate flat welding flange	A型对 焊环 A type butt welding ring	板式松 套法兰 Plate loose flange	B型对 焊环 B type butt welding ring	板式松 套法兰 Plate loose flange	平焊环 Flat welding ring	板式松 套法兰 Plate loose flange	翻边环 flange ring	板式松 套法兰 Plate loose flange	翻边 短节 flanged nipple	板式松 套法兰 Plate loose flange	flange cover
10	0.678	0.646	0.604	0.148	0.549	0.08	0.591	0.094	0.591	0.02	0.591	0.05	0.591	0.722
15	0.768	0.722	0.670	0.189	0.606	0.09	0.654	0.114	0.654	0.03	0.654	0.06	0.654	0.813
20	1.09	1.04	0.936	0.340	0.836	0.17	0.909	0.225	0.909	0.06	0.909	0.10	0.909	1.14
25	1.30	1.25	1.11	0.444	0.990	0.26	1.08	0.296	1.08	0.08	1.08	0.15	1.08	1.38
32	1.91	1.81	1.82	0.572	1.65	0.36	1.77	0.362	1.77	0.10	1.77	0.26	1.77	2.03
40	2.15	2.06	2.08	0.734	1.85	0.45	2.02	0.457	2.02	0.13	2.02	0.31	2.02	2.35
50	2.53	2.39	2.73	0.974	2.34	0.53	2.52	0.653	2.52	0.18	2.52	0.36	2.52	2.88
65	3.03	2.97	3.16	1.29	2.76	0.70	3.05	0.876	3.05	0.24	3.05	0.47	3.05	3.51
80	3.92	3.78	3.60	1.67	3.17	1.0	3.48	1.07	3.48	0.42	3.48	0.57	3.48	4.61
100	4.62	4.38	4.39	2.12	3.78	1.3	4.20	1.28	4.20	0.49	4.20	0.73	4.20	5.65
125	6.30	6.07	5.41	2.88	4.57	1.9	5.21	1.70	5.21	0.62	5.21	1.20	5.21	8.13
150	7.81	7.24	7.14	3.46	6.22	2.4	6.89	1.96	6.89	0.71	6.89	1.40	6.89	10.5
200	11.6	10.1	9.27	5.49	7.90	3.9	8.87	2.81	8.87	1.10	8.87	2.03	8.87	16.5
250	15.8	12.8	11.8	7.53	9.99	5.8	11.2	3.52	11.2	-	-	2.65	11.2	24.1
300	18.3	14.5	13.6	9.11	11.1	6.8	12.8	4.02	12.8	-	-	3.12	12.8	30.8
350	25.3	22.7	20.4	14.1	14.7	9.5	19.4	7.55	19.4	-	-	4.00	19.4	39.6
400	30.6	28.0	27.5	17.8	20.5	11.6	26.4	9.38	26.4	-	-	4.73	26.4	49.4
450	35.1	32.3	33.6	19.6	25.5	15.0	32.2	10.3	32.2	-	-	-	-	63.0
500	40.5	38.7	40.2	23.7	30.7	15.9	38.5	12.6	38.5	-	-	-	-	75.2
600	52.9	48.9	54.5	28.9	43.0	23.0	52.2	14.3	52.2	-	-	-	-	124
700	75.8	-	-	-	-	30.9	79.4	-	-	-	-	-	-	183
800	102	-	-	-	-	41.5	112	-	-	-	-	-	-	297
900	121	-	-	-	-	50.0	135	-	-	-	-	-	-	374
1000	161	-	-	-	-	58.9	180	-	-	-	-	-	-	492
1200	258	-	-	-	-	93.2	278	-	-	-	-	-	-	842
1400	371	-	-	-	-	-	-	-	-	-	-	-	-	-
1600	547	-	-	-	-	-	-	-	-	-	-	-	-	-
1800	691	-	-	-	-	-	-	-	-	-	-	-	-	-
2000	830	-	-	-	-	-	-	-	-	-	-	-	-	-
2200	1073	-	-	-	-	-	-	-	-	-	-	-	-	-
2400	1329	-	-	-	-	-	-	-	-	-	-	-	-	-
2600	1574	-	-	-	-	-	-	-	-	-	-	-	-	-
2800	1987	-	-	-	-	-	-	-	-	-	-	-	-	-
3000	2476	-	-	-	-	-	-	-	-	-	-	-	-	-

GB/T 9124.1—2019

表F.4 PN16法兰的参考重量

Table F.4 Reference weight of PN16 flange

单位为千克

公称尺寸 DN	对焊 法兰	带颈 平焊 法兰	板式 平焊 法兰	A型对焊环板 式松套法兰		B型对焊环板 式松套法兰		平焊环板 式松套法兰		翻边环板 式松套法兰		翻边短节板 式松套法兰		法兰盖
				Type A butt welding ring plate loose sleeve flange	Type B butt welding ring plate loose sleeve flange	Type A butt welding ring plate loose sleeve flange	Type B butt welding ring plate loose sleeve flange	Flat welding ring plate loose sleeve flange	Flat welding ring plate loose sleeve flange	Flange ring plate loose sleeve flange	Flange ring plate loose sleeve flange	Flanged stub plate type loose sleeve flange	Flanged stub plate type loose sleeve flange	
Nominal size DN	Butt welding flange	Flat welding flange with neck	Plate flat welding flange	A型对 焊环 A type butt welding ring	板式松 套法兰 Plate loose flange	B型对 焊环 B type butt welding ring	板式松 套法兰 Plate loose flange	平焊环 Flat welding ring	板式松 套法兰 Plate loose flange	翻边环 flange ring	板式松 套法兰 Plate loose flange	翻边 短节 flanged nipple	板式松 套法兰 Plate loose flange	flange cover
10	0.678	0.646	0.604	0.148	0.549	0.08	0.591	0.094	0.591	0.02	0.591	0.05	0.591	0.722
15	0.768	0.722	0.670	0.189	0.606	0.09	0.654	0.114	0.654	0.03	0.654	0.06	0.654	0.813
20	1.09	1.04	0.936	0.340	0.836	0.17	0.909	0.225	0.909	0.06	0.909	0.10	0.909	1.14
25	1.30	1.25	1.11	0.444	0.990	0.26	1.08	0.296	1.08	0.08	1.08	0.15	1.08	1.38
32	1.91	1.81	1.82	0.572	1.65	0.36	1.77	0.362	1.77	0.10	1.77	0.26	1.77	2.03
40	2.15	2.06	2.08	0.734	1.85	0.45	2.02	0.457	2.02	0.13	2.02	0.31	2.02	2.35
50	2.53	2.39	2.73	0.974	2.34	0.53	2.52	0.653	2.52	0.18	2.52	0.36	2.52	2.88
65	3.03	2.97	3.16	1.29	2.76	0.70	3.05	0.876	3.05	0.24	3.05	0.47	3.05	3.51
80	3.92	3.78	3.60	1.67	3.17	1.0	3.48	1.07	3.48	0.42	3.48	0.57	3.48	4.61
100	4.62	4.38	4.39	2.12	3.78	1.3	4.20	1.28	4.20	0.49	4.20	0.73	4.20	5.65
125	6.30	6.07	5.41	2.88	4.57	1.9	5.21	1.70	5.21	0.62	5.21	1.20	5.21	8.13
150	7.81	7.24	7.14	3.46	6.22	2.4	6.89	1.96	6.89	0.71	6.89	1.40	6.89	10.5
200	11.5	9.80	9.73	5.55	8.37	3.9	9.31	2.81	9.31	1.10	9.31	2.03	9.31	16.2
250	16.7	13.6	14.2	7.71	12.4	5.8	13.5	3.52	13.5	-	-	-	-	25.0
300	22.1	17.2	19.0	11.4	16.3	9.5	18.0	5.27	18.0	-	-	-	-	35.1
350	32.8	27.9	28.2	19.2	21.5	15.2	27.0	10.1	27.0	-	-	-	-	48.0
400	41.1	35.7	35.9	23.7	27.1	18.7	34.6	12.3	34.6	-	-	-	-	63.5
450	50.6	45.0	46.1	28.2	36.7	24.4	44.6	16.5	44.6	-	-	-	-	96.6
500	66.2	60.4	64.0	35.5	51.1	29.1	62.0	21.4	62.0	-	-	-	-	133
600	104	94.0	102	47.9	78.3	40.3	98.8	28.7	98.8	-	-	-	-	226
700	96.5	-	-	-	-	45.2	107	-	-	-	-	-	-	285
800	122	-	-	-	-	59.9	152	-	-	-	-	-	-	388
900	155	-	-	-	-	75.6	184	-	-	-	-	-	-	483
1000	233	-	-	-	-	106	257	-	-	-	-	-	-	640
1200	390	-	-	-	-	-	-	-	-	-	-	-	-	-
1400	495	-	-	-	-	-	-	-	-	-	-	-	-	-
1600	760	-	-	-	-	-	-	-	-	-	-	-	-	-
1800	929	-	-	-	-	-	-	-	-	-	-	-	-	-
2000	1185	-	-	-	-	-	-	-	-	-	-	-	-	-

GB/T 9124.1—2019
表F.5 PN25法兰的参考重量

Table F.5 Reference weight of PN25 flange

单位为千克

公称尺寸 DN Nominal size DN	对焊 法兰 Butt welding flange	带颈 平焊 法兰 Flat welding flange with neck	板式 平焊 法兰 Plate flat welding flange	A型对焊环板 式松套法兰 Type A butt welding ring plate loose sleeve flange		B型对焊环板 式松套法兰 B type butt welding ringplate loose sleeve flange		平焊环板式 松套法兰 Flat welding ring plate loose sleeve flange		法兰盖 flange cover
				A型对 焊环 A type butt welding ring	板式松 套法兰 Plate loose flange	B型对 焊环 B type butt welding ring	板式松 套法兰 Plate loose flange	平焊环 Flat welding ring	板式松 套法兰 Plate loose flange	
10	0.678	0.646	0.604	0.148	0.549	0.08	0.591	0.094	0.591	0.722
15	0.768	0.722	0.670	0.189	0.606	0.09	0.654	0.114	0.654	0.813
20	1.09	1.04	0.936	0.340	0.836	0.17	0.909	0.225	0.909	1.14
25	1.30	1.25	1.11	0.444	0.990	0.26	1.08	0.296	1.08	1.38
32	1.91	1.81	1.82	0.572	1.65	0.36	1.77	0.362	1.77	2.03
40	2.15	2.06	2.08	0.734	1.85	0.45	2.02	0.457	2.02	2.35
50	2.85	2.74	2.73	1.02	2.47	0.69	2.65	0.653	2.65	3.20
65	3.68	3.65	3.48	1.36	3.04	1.1	3.36	0.876	3.36	4.29
80	4.78	4.59	4.32	1.90	3.61	1.6	4.18	1.20	4.18	5.54
100	6.46	6.10	6.07	2.77	5.18	2.4	5.87	1.58	5.87	7.60
125	8.86	8.22	8.19	3.78	6.89	3.2	7.95	2.08	7.95	10.8
150	11.7	10.6	10.3	5.25	8.69	4.6	9.97	2.73	9.97	14.6
200	17.1	14.9	14.3	9.07	11.6	6.6	13.8	4.52	-	22.5
250	24.3	20.9	20.1	12.7	17.0	10.0	19.4	5.73	-	33.5
300	31.8	27.3	26.6	18.0	22.0	15.3	25.5	8.42	-	46.3
350	48.8	45.1	41.8	27.8	32.1	20.8	40.5	14.5	-	68.1
400	63.3	57.7	57.6	36.3	44.5	28.6	56.1	18.0	-	89.7
450	76.0	69.6	69.8	40.9	54.2	34.4	67.8	21.0	-	130
500	97.0	87.0	87.0	55.7	65.9	45.8	84.6	26.8	-	159
600	121	111	127	70.5	98.4	61.0	124	34.1	-	278
700	155	-	-	-	-	-	-	-	-	-
800	205	-	-	-	-	-	-	-	-	-
900	249	-	-	-	-	-	-	-	-	-
1000	888	-	-	-	-	-	-	-	-	-

GB/T 9124.1—2019
表F.6 PN40法兰的参考重量

Table F.6 Reference weight of Pn40 flange

单位为千克

公称尺寸 DN Nominal size DN	对焊 法兰 Butt welding flange	带颈 平焊 法兰 Flat welding flange with neck	板式 平焊 法兰 Plate flat welding flange	A型对焊环板 式松套法兰 Type A butt welding ring plate loose sleeve flange		B型对焊环板 式松套法兰 B type butt welding ringplate loose sleeve flange		平焊环板式 松套法兰 Flat welding ring plate loose sleeve flange		法兰盖 flange cover
				A型对 焊环 A type butt welding ring	板式松 套法兰 Plate loose flange	B型对 焊环 B type butt welding ring	板式松 套法兰 Plate loose flange	平焊环 Flat welding ring	板式松 套法兰 Plate loose flange	
10	0.678	0.646	0.604	0.148	0.549	0.08	0.591	0.094	0.591	0.722
15	0.768	0.722	0.670	0.189	0.606	0.09	0.654	0.114	0.654	0.813
20	1.09	1.04	0.936	0.340	0.836	0.17	0.909	0.225	0.909	1.14
25	1.30	1.25	1.11	0.444	0.660	0.26	1.08	0.296	1.08	1.38
32	1.91	1.81	1.82	0.572	1.65	0.36	1.77	0.362	1.77	2.03
40	2.15	2.06	2.08	0.734	1.85	0.45	2.02	0.457	2.02	2.35
50	2.85	2.74	2.73	1.02	2.47	0.69	2.65	0.653	2.65	3.20
65	3.68	3.65	3.48	1.36	3.04	1.1	3.36	0.876	3.36	4.29
80	4.78	4.59	4.32	1.90	3.61	1.6	4.18	1.20	4.18	5.54
100	6.46	6.10	6.07	2.77	5.18	2.4	5.87	1.58	5.87	7.60
125	8.86	8.22	8.19	3.78	6.89	3.2	7.95	2.08	7.95	10.8
150	11.7	10.6	10.3	5.25	8.69	4.6	9.97	2.73	9.97	14.6
200	21.0	18.3	17.9	10.2	14.9	8.8	17.4	5.55	17.4	28.8
250	34.2	28.3	29.3	16.4	23.8	14.4	28.4	7.87	28.4	44.4
300	47.6	40.4	45.1	25.4	36.0	20.7	43.6	12.8	43.6	64.2
350	69.3	58.8	66.7	37.8	50.4	30.7	64.9	19.3	64.9	89.5
400	98.0	82.1	97.1	56.4	75.5	45.4	95.1	30.4	95.1	127
450	105	86.2	-	56.4	-	-	-	28.4	-	154
500	130	105	-	72.9	-	-	-	35.3	-	188
600	209	172	-	106	-	-	-	53.3	-	331

表F.7 PN63法兰的参考重量

Table F.7 Reference weight of PN63 flange

单位为千克

公称尺寸DN Nominal size DN	对焊法兰 Butt welding flange	带颈平焊法兰 Flat welding flange with neck	板式平焊法兰 Plate flat welding flange	法兰盖 flange cover
10	1.09	1.07	1.00	1.04
15	1.20	1.17	1.10	1.16
20	2.02	1.96	1.86	1.97
25	2.63	2.49	2.37	2.54
32	3.20	2.95	2.79	3.07
40	4.07	3.80	3.58	3.97
50	4.51	4.20	4.99	4.52
65	5.58	5.30	4.73	5.69
80	6.68	6.25	5.90	6.89
100	9.27	8.81	8.05	10.0
125	14.5	13.6	11.7	15.9
150	21.4	19.5	16.9	23.3
200	34.1	-	30.5	39.2
250	48.3	-	42.1	56.7
300	67.5	-	59.1	81.2
350	97.8	-	88.7	113
400	129	-	121	152

GB/T 9124.1—2019

表F.8 PN100法兰的参考重量

Table F.8 Reference weight of PN100 flange

单位为千克

公称尺寸DN Nominal size DN	对焊法兰 Butt welding flange	带颈平焊法兰 Flat welding flange with neck	板式平焊法兰 Plate flat welding flange	法兰盖 flange cover
10	1.09	1.07	1.00	1.04
15	1.20	1.17	1.10	1.16
20	2.02	1.96	1.86	1.97
25	2.63	2.49	2.37	2.54
32	3.20	2.95	2.79	3.07
40	4.07	3.80	3.58	3.97
50	5.82	5.28	4.99	5.64
65	7.57	6.84	6.33	7.44
80	8.82	7.94	7.72	8.85
100	13.1	11.5	10.3	13.3
125	21.0	17.9	17.2	21.3
150	28.3	23.8	23.6	29.4
200	50.2	-	42.9	52.7
250	81.4	-	69.0	85.4
300	118	-	104	128
350	169	-	150	175

表F.9 PN160、PN250、PN320、PN400法兰的参考重量

Table F.9 Reference weight of PN160, PN250, PN320 and PN400 flanges

单位为千克

公称尺寸DN Nominal size DN	PN160		PN250		PN320		PN400	
	对焊法兰 Butt welding flange	法兰盖 flange cover	对焊法兰 Butt welding flange	法兰盖 flange cover	对焊法兰 Butt welding flange	法兰盖 flange cover	对焊法兰 Butt welding flange	法兰盖 flange cover
10	1.10	1.04	-	2.13	2.14	2.13	2.55	2.32
15	1.20	1.16	2.51	2.33	2.53	2.52	3.62	3.32
25	2.64	2.54	3.58	3.35	5.18	5.10	7.45	6.65
40	4.42	4.30	6.72	6.17	8.65	8.33	14.1	12.6
50	6.38	6.07	8.22	7.66	10.7	10.7	16.7	14.7
65	8.75	8.49	12.8	11.7	19.5	19.4	31.6	28.6
80	10.3	10.0	16.5	15.7	25.2	24.4	38.4	34.1
100	15.3	14.9	27.2	26.0	42.5	43.2	67.3	59.7
125	24.4	23.5	39.0	36.7	63.6	64.0	94.5	85.1
150	34.4	33.6	59.6	55.6	91.5	90.2	145	129
200	60.7	61.0	110	109	172	169	270	241
250	97.6	106	190	192	312	307	-	-
300	140	158	-	-	-	-	-	-

GB/T 28708—2012

管子外径系列 Pipe outer diameter series

管子外径分为系列 I 和系列 II。系列 I 是通用系列，属推荐选用系列；系列 II 是非通用系列；钢管的公称尺寸和外径见表 1。

The outer diameter of the pipe is divided into series I and series II. Series I is a general-purpose series and is a recommended series; Series II is a non-universal series. The nominal dimensions and outer diameter of steel pipes are shown in Table 1.

钢管的公称尺寸和外径 Nominal size and outer diameter of steel pipe

公称尺寸 Nominal size		钢管外径/mm Steel pipe outer diameter	
DN	NPS	系列 I	系列 II
6	1/8	10.2	—
8	1/4	13.5	—
10	3/8	17.2	14
15	1/2	21.3	18
20	3/4	26.9	25
25	1	33.7	32
32	1¼	42.4	38
40	1½	48.3	45
50	2	60.3	57
65	2½	73.0	76
80	3	88.9	89
90	3½	101.6	—
100	4	114.3	108
125	5	141.3	133
150	6	168.3	159
200	8	219.1	219
250	10	273.0	273
300	12	323.9	325
350	14	355.6	377
400	16	406.4	426
450	18	457	480
500	20	508	530
550	22	559	—
600	24	610	630
650	26	660	—
700	28	711	720
750	30	762	—
800	32	813	820
850	34	864	—

公称尺寸 Nominal size		钢管外径/mm Steel pipe outer diameter	
DN	NPS	系列 I	系列 II
900	36	914	920
950	38	965	—
1000	40	1016	1020
1050	42	1067	—
1100	44	1118	1120
1150	46	1168	—
1200	48	1 219	1220
1300	52	1321	1320
1400	56	1422	1420
1500	60	1524	1520
1600	64	1626	1620
1700	68	1727	1720
1800	72	1829	1820
1900	76	1930	1920
2000	80	2032	2020
2100	84	2134	2120
2200	88	2235	2 220
2300	92	2337	2320
2400	96	2438	2420
2500	100	2540	2520
2600	104	2642	2620
2700	108	2743	2720
2800	112	2845	2820
2900	116	2946	2920
3000	120	3048	3020
3200	128	3251	3 220
3400	136	3454	3420
3600	144	3658	3620
3800	152	3861	3820
4000	160	4064	4020

ASME B36.10、B36.19

外径尺寸及壁厚表
OUTSIDE DIAMETER AND WALL THICKNESS
ASME B36.10M ASME B36.19M

公称直径 Nominal Diameter			Wall thickness T																
Mm	In	Mm	SCH5S	SCH10S	SCH10	SCH20	SCH30	SCH40S	STD	SCH40	SCH60	SCH80S	XS	SCH80	SCH100	SCH120	SCH140	SCH160	XXS
6	1/8	10.3		1.24				1.73	1.73	1.73		2.41	2.41	2.41					
8	1/4	13.7		1.65				2.24	2.24	2.24		3.02	3.02	3.02					
10	3/8	17.1		1.65				2.31	2.31	2.31		3.2	3.2	3.2					
15	1/2	21.3	1.65	2.11				2.77	2.77	2.77		3.73	3.73	3.73				4.78	7.47
20	3/4	26.7	1.65	2.11				2.87	2.87	2.87		3.91	3.91	3.91				5.56	7.82
25	1	33.4	1.65	2.77				3.38	3.38	3.38		4.55	4.55	4.55				6.35	9.09
32	1 1/4	42.2	1.65	2.77				3.56	3.56	3.56		4.85	4.85	4.85				6.35	9.70
40	1 1/2	48.3	1.65	2.77				3.68	3.68	3.68		5.08	5.08	5.08				7.14	10.15
50	2	60.3	1.65	2.77				3.91	3.91	3.91		5.54	5.54	5.54				8.74	11.07
65	2 1/2	73.0	2.11	3.05				5.16	5.16	5.16		7.01	7.01	7.01				9.53	14.02
80	3	88.9	2.11	3.05				5.49	5.49	5.49		7.62	7.62	7.62				11.13	15.24
90	3 1/2	101.6	2.11	3.05				5.74	5.74	5.74		8.08	8.08	8.08					
100	4	114.3	2.11	3.05				6.02	6.02	6.02		8.56	8.56	8.56		11.13		13.49	17.12
125	5	141.3	2.77	3.40				6.55	6.55	6.55		9.53	9.53	9.53		12.70		15.88	19.05
150	6	168.3	2.77	3.40				7.11	7.11	7.11		10.97	10.97	10.97		14.27		18.26	21.95
200	8	219.1	2.77	3.76		6.35	7.04	8.18	8.18	8.18	10.31	12.70	12.70	12.70	15.09	18.26	20.62	23.01	22.23
250	10	273.1	3.40	4.19		6.35	7.80	9.27	9.27	9.27	12.70	*12.70	12.70	15.09	18.26	21.44	25.40	28.58	25.40
300	12	323.9	3.96	*4.57		6.35	8.38	*9.53	9.53	10.31	14.27	*12.70	12.70	17.48	21.44	25.40	28.58	33.32	25.40
350	14	355.6	3.96	*4.78	6.35	7.92	9.53		9.53	11.13	15.09		12.70	19.05	23.83	27.79	31.75	35.71	
400	16	406.4	4.19	*4.78	6.35	7.92	9.53		9.53	12.70	16.66		12.70	21.44	26.19	30.96	36.53	40.49	
450	18	457.0	4.19	*4.78	6.35	7.92	11.13		9.53	14.27	19.05		12.70	23.83	29.36	34.93	39.67	45.24	
500	20	508.0	4.78	*5.54	6.35	9.53	12.70		9.53	15.09	20.62		12.70	26.19	32.54	38.10	44.45	50.01	
550	22	559.0	4.78	*5.54	6.35	9.53	12.70		9.53		22.23		12.70	28.58	34.93	41.28	47.63	53.98	
600	24	610.0	5.54	6.35	6.35	9.53	14.27		9.53	17.48	24.61		12.70	30.96	38.89	46.02	52.37	59.54	
650	26	660.0		7.92		12.70			9.53			12.70							
700	28	711.0		7.92		12.70	15.88		9.53			12.70							
750	30	762.0		7.92		12.70	15.88		9.53			12.70							
800	32	813.0		7.92		12.70	15.88		9.53	17.48		12.70							
850	34	864.0		7.92		12.70	15.88		9.53	17.48		12.70							
900	36	914.0		7.92		12.70	15.88		9.53	19.05		12.70							
950	38	965.0							9.53			12.70							
1000	40	1016.0							9.53			12.70							
1050	42	1067.0							9.53			12.70							
1100	44	1118.0							9.53			12.70							
1150	46	1168.0							9.53			12.70							
1200	48	1219.0							9.53			12.70							

注1: Sch数字后带“S”者为ASME B36.19M标准中规定的厚度;不带“S”者为ASME B36.10M标准中规定的厚度。
注2: 带“*”号的壁厚数据,在ASME B36.19M标准中注明与ASME B36.10M不同。
注3: “STD”为标准壁厚系列代号,“XS”为加强管壁厚系列代号,“XXS”为特加强管壁厚系列代号

SH/T 3405

管外径和壁厚表
OUTSIDE DIAMETER AND WALL THICKNESS
SH/T3408、SH/T3409

公称 通径 Nominal Pipe Size	外径 Outside Diameter	公称壁厚 T Nominal Wall Thickness																
		DN	D	SCH 5s	SCH 10s	SCH 20s	SCH 40s	SCH 80s	SCH 20	SCH 30	SCH 40	SCH 60	SCH 80	SCH 100	SCH 120	SCH 140	SCH 160	XXS
10	17	1.2	1.6	2.0	2.5	3.2	--	--	2.5	--	3.5	--	--	--	--	--	--	--
15	22	1.6	2.0	2.5	3.0	4.0	--	--	3.0	--	4.0	--	--	--	--	5.0	7.5	7.5
20	27	1.6	2.0	2.5	3.0	4.0	--	--	3.0	--	4.0	--	--	--	--	5.5	8.0	8.0
25	34	1.6	2.8	3.0	3.5	4.5	--	--	3.5	--	4.5	--	--	--	--	6.5	9.0	9.0
32	42	1.6	2.8	3.0	3.5	5.0	--	--	3.5	--	5.0	--	--	--	--	6.5	10.0	10.0
40	48	1.6	2.8	3.0	4.0	5.0	--	--	4.0	--	5.0	--	--	--	--	7.0	10.0	10.0
50	60	1.6	2.8	3.5	4.0	5.5	3.5	--	4.0	5.0	5.5	--	7.0	--	8.5	11.0	11.0	11.0
65	76	2.0	3.0	3.5	5.0	7.0	4.5	--	5.0	5.0	7.0	--	8.0	--	9.5	14.0	14.0	14.0
80	89	2.0	3.0	4.0	5.5	7.5	4.5	--	5.5	6.5	7.5	--	9.0	--	11.0	15.0	15.0	15.0
100	114	2.0	3.0	4.0	6.0	8.5	5.0	--	6.0	7.0	8.5	--	11.0	--	14.0	17.0	17.0	17.0
125	140	2.8	3.5	5.0	6.5	9.5	5.0	--	6.5	8.0	9.5	--	13.0	--	16.0	19.0	19.0	19.0
150	168	2.8	3.5	5.0	7.0	11.0	5.5	6.5	7.0	9.5	11.0	--	14.0	--	18.0	22.0	22.0	22.0
200	219	2.8	4.0	6.5	8.0	13.0	6.5	7.0	8.0	10.0	13.0	15.0	18.0	20.0	24.0	23.0	23.0	23.0
250	273	3.5	4.0	6.5	9.5	15.0	6.5	7.0	9.5	13.0	15.0	18.0	22.0	25.0	28.0	25.0	25.0	25.0
300	325	4.0	4.5	6.5	9.5	17.0	6.5	8.5	10.0	14.0	17.0	22.0	25.0	28.0	34.0	26.0	26.0	26.0
350	356	4.0	5.0	--	--	--	8.0	9.5	11.0	15.0	19.0	24.0	28.0	32.0	36.0	--	--	--
400	406	4.5	5.0	--	--	--	8.0	9.5	13.0	17.0	22.0	26.0	32.0	36.0	40.0	--	--	--
450	457	--	--	--	--	--	8.0	11.0	14.0	19.0	24.0	30.0	35.0	40.0	45.0	--	--	--
500	508	--	--	--	--	--	9.5	13.0	15.0	20.0	26.0	32.0	38.0	45.0	50.0	--	--	--
550	559	--	--	--	--	--	9.5	13.0	17.0	22.0	28.0	35.0	42.0	48.0	54.0	--	--	--
600	610	--	--	--	--	--	9.5	14.0	18.0	25.0	32.0	38.0	45.0	52.0	60.0	--	--	--
650	660	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
700	711	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
750	762	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
800	813	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
850	864	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
900	914	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
950	965	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1000	1016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1050	1067	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1100	1118	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1150	1168	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1200	1220	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

壁厚表后带S者仅适用于奥氏体不锈钢管。

此表是SH3408标准中无缝管件的公称壁厚;SH3408标准中钢板制管件的壁厚直接用毫米给出。

Schedule with the suffix "s" only applies for Austenitic stainless steel fittings.
This list applies for the nominal schedule of seamless steel fittings for SH3408 standard;the schedule of wrought steel fittings for SH3408 standard uses the millimeter system.

ASME B36.10、B36.19

外径尺寸及壁厚表
OUTSIDE DIAMETER AND WALL THICKNESS
JIS B2311、B2312、B2313

公称通径 Nominal Diameter	外径 Outside Diameter	壁厚 Nominal Wall Thickness T																	
DN	NPS	D	Sch5S	Sch10S	Sch10	Sch20S	Sch30	Sch40S	Std	Sch40	Sch60	Sch80S	XS	Sch80	Sch100	Sch120	Sch140	Sch160	XXS
15	1/2	21.7	1.7	2.1	--	2.5	--	2.8	2.8	2.8	--	3.7	3.7	3.7	--	--	--	4.8	7.5
20	3/4	27.2	1.7	2.1	--	2.5	--	2.9	2.9	2.9	--	3.9	3.9	3.9	--	--	--	5.6	7.8
25	1	34.0	1.7	2.8	--	3.0	--	3.4	3.4	3.4	--	4.5	4.5	4.5	--	--	--	6.4	9.1
32	1 1/4	42.7	1.7	2.8	--	3.0	--	3.6	3.6	3.6	--	4.9	4.9	4.9	--	--	--	6.4	9.7
40	1 1/2	48.6	1.7	2.8	--	3.0	--	3.7	3.7	3.7	--	5.1	5.1	5.1	--	--	--	7.1	10.2
50	2	60.5	1.7	2.8	--	3.5	--	3.9	3.9	3.9	--	5.5	5.5	5.5	--	--	--	8.7	11.1
65	2 1/2	76.3	2.1	3.0	--	3.5	--	5.2	5.2	5.2	--	7.0	7.0	7.0	--	--	--	9.5	14.0
80	3	89.1	2.1	3.0	--	4.0	--	5.5	5.5	5.5	--	7.6	7.6	7.6	--	--	--	11.1	15.2
90	3 1/2	101.6	2.1	3.0	--	4.0	--	5.7	5.7	5.7	--	8.1	8.1	8.1	--	--	--	--	--
100	4	114.3	2.1	3.0	--	4.0	--	6.0	6.0	6.0	--	8.6	8.6	8.6	--	11.1	--	13.5	17.1
125	5	139.8	2.8	3.4	--	5.0	--	6.6	6.6	6.6	--	9.5	9.5	9.5	--	12.7	--	15.9	19.0
150	6	165.2	2.8	3.4	--	5.0	--	7.1	7.1	7.1	--	11.0	11.0	11.0	--	14.3	--	18.2	21.9
200	8	216.3	2.8	4.0	--	6.5	7.0	8.2	8.2	8.2	10.3	12.7	12.7	12.7	15.1	18.2	20.6	23.0	22.2
250	10	267.4	3.4	4.0	--	6.5	7.8	9.3	9.3	9.3	12.7	12.7	12.7	15.1	18.3	21.4	25.4	28.6	25.4
300	12	318.5	4.0	4.5	--	6.5	8.4	9.5	9.5	10.3	14.3	12.7	12.7	17.4	21.4	25.4	28.6	33.3	25.4
350	14	355.6	4.0	5.0	6.4	8.0	9.5	9.5	9.5	11.1	15.1	--	12.7	19.0	23.8	27.8	31.8	35.7	--
400	16	406.4	4.5	5.0	6.4	8.0	9.5	9.5	9.5	12.1	16.7	--	12.7	21.4	26.2	30.9	36.5	40.5	--
450	18	457.2	4.5	5.0	6.4	8.0	11.1	9.5	9.5	14.3	19.0	--	12.7	23.8	29.4	34.9	39.7	45.2	--
500	20	508.0	5.0	5.5	6.4	9.5	12.7	9.5	9.5	15.1	20.6	--	12.7	26.2	32.5	38.1	44.4	50.0	--
550	22	558.0	5.0	5.5	6.4	9.5	12.7	9.5	9.5	15.9	22.2	--	12.7	28.6	34.9	41.3	47.6	54.0	--
600	24	609.6	5.5	6.5	6.4	9.5	14.3	9.5	9.5	17.5	24.6	--	12.7	31.0	38.9	46.0	52.4	59.5	--
650	26	660.4	5.5	8.0	7.9	12.7	--	--	9.5	--	--	--	12.7	34.0	--	--	--	--	--
700	28	711.2	5.5	8.0	7.9	12.7	15.9	--	9.5	17.5	--	--	12.7	--	--	--	--	--	--
750	30	762.0	6.5	8.0	7.9	12.7	15.9	9.5	9.5	17.5	--	--	12.7	--	--	--	--	--	--
800	32	812.8	--	8.0	7.9	12.7	15.9	--	9.5	17.5	--	--	12.7	--	--	--	--	--	--
850	34	863.6	--	8.0	7.9	12.7	15.9	--	9.5	17.5	--	--	12.7	--	--	--	--	--	--
900	36	914.4	--	8.0	7.9	12.7	15.9	--	9.5	19.1	--	--	12.7	--	--	--	--	--	--
950	38	965.2	--	--	--	--	--	--	9.5	--	--	--	12.7	--	--	--	--	--	--
1000	40	1016.0	--	9.5	--	14.3	--	--	9.5	26.2	--	--	12.7	--	--	--	--	--	--
1050	42	1066.8	--	--	--	--	--	--	9.5	--	--	--	12.7	--	--	--	--	--	--
1100	44	1117.6	--	--	--	--	--	--	9.5	--	--	--	12.7	--	--	--	--	--	--
1150	46	1168.4	--	--	--	--	--	--	9.5	--	--	--	12.7	--	--	--	--	--	--
1200	48	1219.2	--	--	--	--	--	--	9.5	--	--	--	12.7	--	--	--	--	--	--

各国标准不锈钢标号近似对照表

STAINLESS STEEL-COMPARISON OF GRADE SPECIFICATION

No.	中国 GB	美国 UNS		日本 JIS	加拿大 CSA	英国 UK	欧标 EN	
1	0Cr18Ni9	304	S30408	SUS304	304	304S15	1. 4301	X5CrNi18-10
2	00Cr19Ni10 00Cr19Ni11	304L	S30403	SUS304L	304L	304S12	1. 4306	X2CrNi19-11
3	0Cr19Ni19N	304N	S30451	SUS304N1	-			
4	00Cr18Ni10N	XM21	S30452	SUS304N2	-			
5	(00Cr18Ni10)	304LN	S30453	SUS304LN	-		1. 4315	
6	1Cr18Ni12Ti (1Cr18Ni12Ti)	305	S30500	SUS305	305	304S62	1. 4303	
7	0Cr23Ni20	309S	S30908	SUS309S	310S	305S19	1. 4833	
8	(1Cr25Ni20Si2) 0Cr17Ni12Mo2	310S	S31008	SUS310S	310S		1. 4845	X12CrNi23-12
9	0Cr18Ni12Mo2Ti	316	S31600	SUS316	316	316S16	1. 4401	X12CrMo17-12-2
10	00Cr17Ni14Mo2	316Ti	S31635	SUS316Ti	-		1. 4571	X6CrNiMoTi17-12-2
11	0Cr17Ni14Mo2N	316L	S31603	SUS316L	316L	316S12	1. 1104	
12	00Cr17Ni13Mo2N	316N	S31651	SUS316N	-	316S61	1. 4429	
13	0Cr18Ni12Mo2Gu2	316LN	S31653	SUS316LN	-			
14	0Cr18Ni14Mo2Gu2	-	-	SUS317	-			
15	0Cr19Ni13Mo3	-	-	SUS316JIL	-			
16	1Cr18Ni12Mo3	317	S31700	SUS317	317	317S16		
17	1Cr18Ni12Mo3Ti	-	-	-	-			
18	0Cr18Ni12Mo3Ti	-	-	-	-			
19	00Cr19Ni13Mo3 (00Cr17Ni14Mo3)	317L	S31703	SUS317L	317L	317S12	1. 4438	X2CrNiMo19-14-4
20	0Cr18Ni10Ti	321	S32168	SUS321	321		1. 4541	X6CrNi18-10
21	00Cr22Ni5MoN	-	S31803	DP8			1. 4462	X2CrNiMoN22-5-3
22	00Cr18Ni5Mo3Si2	-	S31500	DP1			1. 4417	
23	00Cr25Ni6Mo3CuN	-	S32550	329J1L1R-4		Ferrallium 255	1. 4507	
24	00Cr25Ni6Mo2N 00Cr22Ni5Mo3N	-	S31200					
25	00Cr22Ni5Mo3Wcun	-	S31260	DP3(SU 329J2L)		Zeron 100	1. 4501	
26		-	S32304	DP11			1. 4362	
27		-	S32750				1. 4410	X2CrNiMoN25-7-4
28	00Cr26Ni5Mo2	-	S32900	DP6(SUS 329J1)			1. 4460	
29	00Cr20Ni25Mo4.5Cu	904L	N08904	SUS890L			1. 4539	

常用材料的化学成分和力学性能

Chemical Composition
and Mechanical
Properties of Material

化学成份对照表
A403 and A815 Chemical Requirements

Composition, %											
Grade											
Grade WP	Grade CR	美标牌号	C	Mn	P	S	Si	NI	Cr	Mo	Others
WP304	CR304	S30400	0.08	2.00	0.045	0.030	1.00	8.0-11.0	18.0-20.0		
WP304L	CR304L	S30403	0.03	2.00	0.045	0.030	1.00	8.0-12.0	18.0-20.0		
WP304H	CR304H	S30409	0.04-0.10	2.00	0.045	0.030	1.00	8.0-11.0	18.0-20.0		
WP309	CR309	S30900	0.20	2.00	0.045	0.030	1.00	12.0-15.0	18.0-24.0		
WP310S	CR310S	S31008	0.08	2.00	0.045	0.030	1.00	19.0-22.0	24.0-26.0		
WP31254	Cr31254	S31254	0.02	1.00	0.030	0.010	0.08	17.5-18.5	19.5-20.5	6.0-6.5	Cu0.50-1.00 Ni0.18-0.22
WP316	CR316	S31600	0.08	2.00	0.045	0.030	1.00	10.0-14.0	16.0-18.0	2.00-3.00	
WP316L	CR316L	S31603	0.03	2.00	0.045	0.030	1.00	10.0-14.0	16.0-18.0	2.00-3.00	
WP316H	Cr316H	S31609	0.04-0.10	2.00	0.045	0.030	1.00	10.0-14.0	16.0-18.0	2.00-3.00	
WP317	CR317	S31700	0.08	2.00	0.045	0.030	1.00	11.0-15.0	18.0-20.0	3.00-4.00	
WP317L	CR317L	S31703	0.03	2.00	0.045	0.030	1.00	11.0-15.0	18.0-20.0	3.00-4.00	
WP31726	Cr31726	S31726	0.03	2.00	0.045	0.030	1.00	13.5-17.5	17.0-20.0	4.0-5.0	NO.10-0.20
WP321	CR321	S32100	0.08	2.00	0.045	0.030	1.00	9.0-12.0	17.0-19.0		Ti5 (C+N) -0.7
WP321H	CR321H	S32109	0.04-0.10	2.00	0.045	0.030	1.00	9.0-12.0	17.0-19.0		Ti4 (C+N) -0.7
WP347	CR347	S34700	0.08	2.00	0.045	0.030	1.00	9.0-12.0	17.0-19.0		
WP347H	CR347H	S34709	0.04-0.10	2.00	0.045	0.030	1.00	9.0-12.0	17.0-19.0		
WP316TI	CR316TI	316TI	0.08	2.00	0.045	0.030	0.75	10.0-14.0	16.0-18.0	2.0-3.0	Ti5 (C+N) -0.7
WP904L	CR904L	904L	0.02	2.00	0.045	0.035	1.00	23.0-28.0	19.0-23.0		Cu1.0-2.0
WPS31803	CRS31803	S31803	0.03	2.00	0.030	0.020	1.00	4.5-6.5	21.0-23.0	2.5-3.5	
WPS32205	CRS32205	S32205	0.03	2.00	0.030	0.020	1.00	4.5-6.5	22.0-23.0	3.0-3.5	
WPS32750	CRS32750	S32750	0.03	1.20	0.035	0.020	0.08	6.0-8.0	24.0-26.0	3.0-5.0	
WPS32760	CRS32760	S32760	0.03	1.00	0.030	0.010	1.00	6.0-8.0	24.0-26.0	3.0-4.0	W0.50-1.00
NO4400(WP NC)			0.30	2.00		0.024	0.50	63.0			Cu28.0-34.0 Fe2.50
NO6600(WP NCI)			0.15	1.00		0.015	0.50	72.0	14.0-17.0		Cu0.50 Fe6.0-10.0
NO8800(WP NIC)			0.10	1.50		0.015	1.00	30.0	35.0		Cu0.75Fe39.5 Ti0.60Al0.15

★ 生产流程

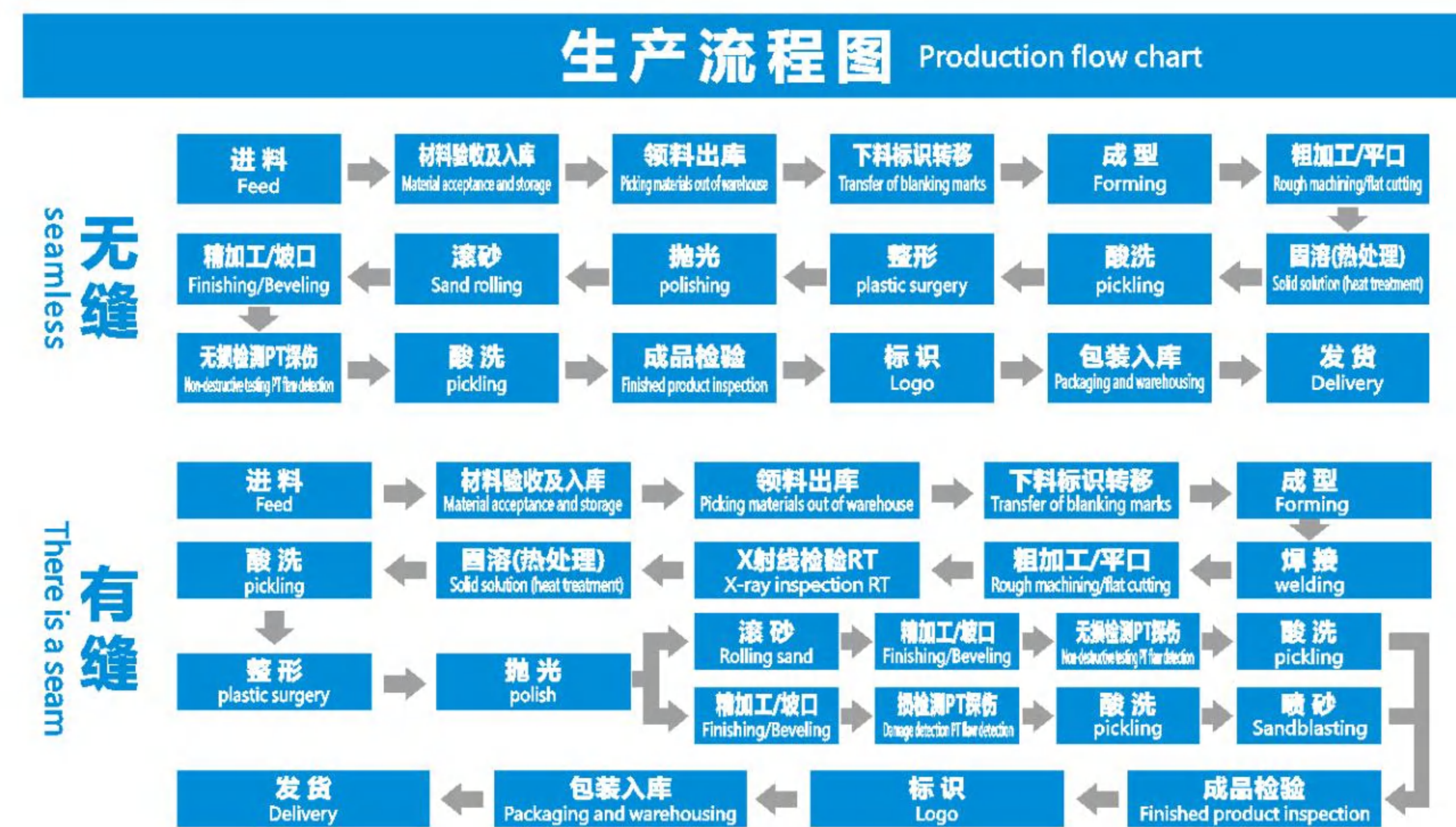
PROCESSFLOW

无缝/有缝对焊管件

Seamless and Welded Butt Welding Fittings

PROCESS FLOW & QUALITY CONTROL

CHART OF BUTT WELDING FITTINGS



检验流程 Inspection process

材料采购 Material procurement	检验要求: 检验几何尺寸、外观、材质(打光谱/理化) Inspection requirements: Full inspection of geometric dimensions, appearance, and materials (spectroscopy/physical and chemical)
材料入库 Material storage	检验要求: 全检几何尺寸、外观、材质(打光谱/理化) Inspection requirements: Full inspection of geometric dimensions, appearance, and materials (spectroscopy/physical and chemical)
成型 Forming	检验要求: 检验口径尺寸、测量壁厚、检查外观 Inspection requirements: Inspect caliber size, measure back thickness, and inspect appearance
整形 plastic surgery	检验要求: 检验口径尺寸、检查外观 Inspection requirements: Inspect caliber size, inspect appearance
抛光喷砂 Polished and sandblasted	检验要求: 检查外观、表面光滑无丝路 Inspection requirements: Check the appearance, the surface is smooth and there are no silk lines
精加工/坡口 Finishing/Beveling	检验要求: 检验几何尺寸(高度、角度、坡口角度、端部内外径)、检查外观 Inspection requirements: Inspect geometric dimensions (height, angle, bevel angle, inner and outer diameter of end), inspect appearance
无损检测 Non-destructive testing	检验要求: 检验产品有无缺陷(X射线以外报告为准) Inspection requirements: Inspect the product for defects (X-rays are subject to external reports)
成品检验 Finished product inspection	检验要求: 全检产品几何尺寸、打标、外观、材质(打光谱/理化) Inspection requirements: Full inspection of product geometric dimensions, marking, appearance, and materials (light harmonic/physical and chemical)
包装入库 Packaging and warehousing	检验要求: 区分产品等级, 按要求入库并做好产品标识分类 Inspection requirements: distinguish product grades, put them into storage as required and do a good job of labeling and classifying products