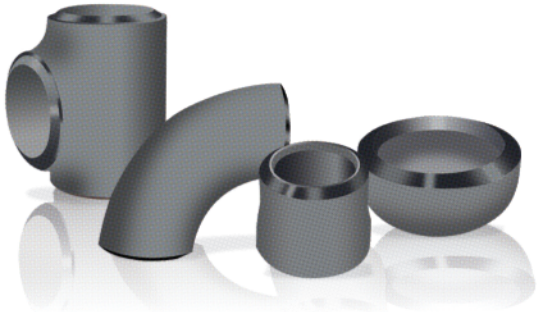


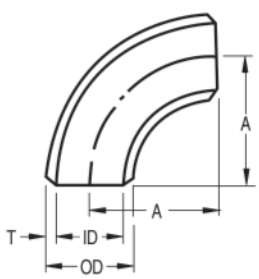
KS/JIS

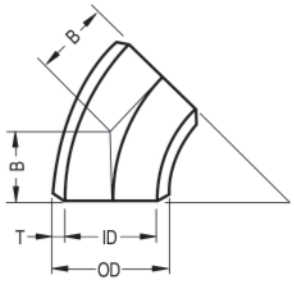
- Steel Butt-Weld Pipe Fittings __ P61~P72
- Steel Plate Butt-Weld Fittings __ P73~P77
- Stainless Steel Butt-Weld Fittings __ P78~P84

TK corporation

90° Elbows(Long, Short)
45° Elbows(Long, Short)

SPP . SGP





KS B1522, JIS B2311

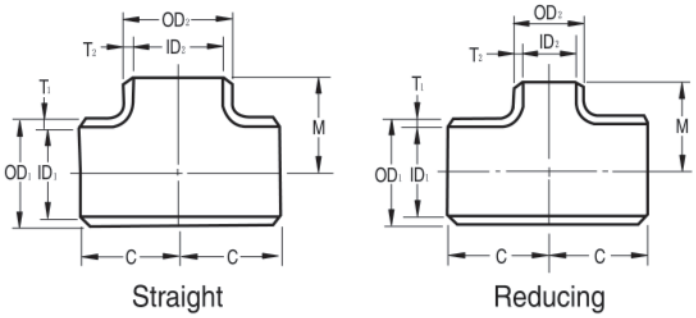
(in millimeters)

Nominal Pipe Size	Outside Diameter OD	Inside Diameter ID	Wall Thickness T	Long		Short	
				A	B	A	B
½	21.7	16.1	2.8	38.1	15.8	–	–
¾	27.2	21.6	2.8	38.1	15.8	–	–
1	34.0	27.6	3.2	38.1	15.8	25.4	–
1¼	42.7	35.7	3.5	47.6	19.7	31.8	13.2
1½	48.6	41.6	3.5	57.2	23.7	38.1	15.8
2	60.5	52.9	38.	76.2	31.6	50.8	21.0
2½	76.3	67.9	4.2	95.3	39.5	63.5	26.3
3	89.1	80.7	4.2	114.3	47.3	76.2	31.6
3½	101.6	93.2	4.2	133.4	55.3	88.9	36.8
4	114.3	105.3	4.5	152.4	63.1	101.6	42.1
5	139.8	130.8	4.5	190.5	78.9	127.0	52.6
6	165.2	155.2	5.0	228.6	94.7	152.4	63.1
8	216.3	204.7	5.8	304.8	126.2	203.2	84.2
10	267.4	254.2	6.6	381.0	157.8	254.0	105.2
12	318.5	304.7	6.9	457.2	189.4	304.8	126.2
14	355.6	339.8	7.9	533.4	220.9	355.6	147.3
16	406.4	390.6	7.9	609.6	252.5	406.4	168.3
18	457.2	441.4	7.9	685.8	284.1	457.2	189.4
20	508.0	492.2	7.9	762.0	315.6	508.0	210.4

- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116
- For Approx Weight See Page 122

Tees

SPP . SGP



KS B1522, JIS B2311

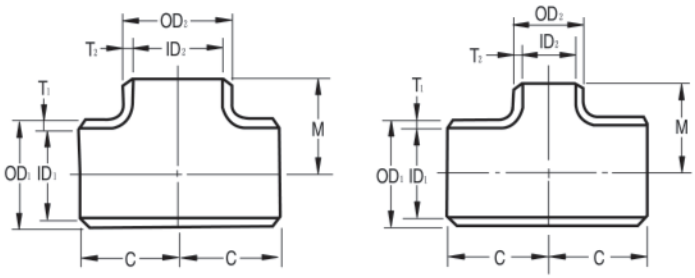
(in millimeters)

Nominal Pipe Size	Run			Outlet			C	M
	Outside Diameter OD_1	Inside Diameter ID_1	Wall Thickness T_1	Outside Diameter OD_2	Inside Diameter ID_2	Wall Thickness T_2		
½	21,7	16.1	2.8	21.7	16.1	2.8	25.4	25.4
¾	27,2	21.6	2.8	21.2	21.6	2.8	28.6	28.6
¾ × ¾ × ½	27,2	21.6	2.8	21.7	16.1	2.8	28.6	28.6
1	34.0	27.6	3.2	34.0	27.6	3.2	38.1	38.1
1 × 1 × ¾	34.0	27.6	3.2	27.2	21.6	2.8	38.1	38.1
1 × 1 × ½	34.0	27.6	3.2	21.7	16.1	2.8	38.1	38.1
1¼	42.7	35.7	3.5	42.7	35.7	3.5	47.6	47.6
1¼ × 1¼ × 1	42.7	35.7	3.5	34.0	27.6	3.2	47.6	47.6
1¼ × 1¼ × ¾	42.7	35.7	3.5	27.2	21.6	2.8	47.6	47.6
1½	48.6	41.6	3.5	48.6	41.6	3.5	57.2	57.2
1½ × 1½ × 1¼	48.6	41.6	3.5	42.7	35.7	3.5	57.2	57.2
1½ × 1½ × 1	48.6	41.6	3.5	34.0	27.6	3.2	57.2	57.2
1½ × 1½ × ¾	48.6	41.6	3.5	27.2	21.6	2.8	57.2	57.2
2	60.5	52.9	3.8	60.5	52.9	3.8	63.5	63.5
2 × 2 × 1½	60.5	52.9	3.8	48.6	41.6	3.5	63.5	60.3
2 × 2 × 1¼	60.5	52.9	3.8	42.7	35.7	3.5	63.5	57.2
2 × 2 × 1	60.5	52.9	3.8	34.0	27.6	3.2	63.5	50.8
2½	76.3	67.9	4.2	76.3	67.9	4.2	76.2	76.2
2½ × 2½ × 2	76.3	67.9	4.2	60.5	52.9	3.8	76.2	69.9
2½ × 2½ × 1½	76.3	67.9	4.2	48.6	41.6	3.5	76.2	66.7
2½ × 2½ × 1¼	76.3	67.9	4.2	42.7	35.7	3.5	76.2	63.5
3	89.1	80.7	4.2	89.1	80.7	4.2	85.7	85.7
3 × 3 × 2½	89.1	80.7	4.2	76.3	67.9	4.2	85.7	82.6
3 × 3 × 2	89.1	80.7	4.2	60.5	52.9	3.8	85.7	76.2
3 × 3 × 1½	89.1	80.7	4.2	48.6	41.6	3.5	85.7	73.0
3½	101.6	93.2	4.2	101.6	93.2	4.2	95.3	95.3
3½ × 3½ × 3	101.6	93.2	4.2	89.1	80.7	4.2	95.3	92.1
3½ × 3½ × 2½	101.6	93.2	4.2	76.3	67.9	4.2	95.3	88.9
3½ × 3½ × 2	101.6	93.2	4.2	60.5	52.9	3.8	95.3	82.6
3½ × 3½ × 1½	101.6	93.2	4.2	48.6	41.6	3.5	95.3	79.4
4	114.3	105.3	4.5	114.3	105.3	4.5	104.8	104.8
4 × 4 × 3½	114.3	105.3	4.5	101.6	93.2	4.2	104.8	101.6
4 × 4 × 3	114.3	105.3	4.5	89.1	80.7	4.2	104.8	98.4
4 × 4 × 2½	114.3	105.3	4.5	76.3	67.9	4.2	104.8	95.3
4 × 4 × 2	114.3	105.3	4.5	60.5	52.9	3.8	104.8	88.9

- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116
- For Approx Weight See Page 124

Tees

SPP . SGP



Straight Reducing

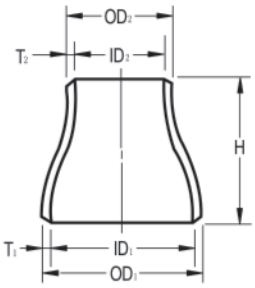
KS B1522, JIS B2311 (in millimeters)

Nominal Pipe Size	Run			Outlet			C	M
	Outside Diameter OD_1	Inside Diameter ID_1	Wall Thickness T_1	Outside Diameter OD_2	Inside Diameter ID_2	Wall Thickness T_2		
5	139.8	130.8	4.5	139.8	130.8	4.5	123.8	123.8
5× 5× 4	139.8	130.8	4.5	114.3	105.3	4.5	123.8	117.5
5× 5× 3½	139.8	130.8	4.5	101.6	93.2	4.2	123.8	114.3
5× 5× 3	139.8	130.8	4.5	89.1	80.7	4.2	123.8	111.1
5× 5× 2½	139.8	130.8	4.5	76.3	67.9	4.2	123.8	108.0
5× 5× 2	139.8	130.8	4.5	60.5	52.9	3.8	123.8	104.8
6	165.2	155,2	5.0	165.2	155.2	5.0	142.9	142.9
6× 6× 5	165.2	155,2	5.0	139.8	130.8	4.5	142.9	136.5
6× 6× 4	165.2	155,2	5.0	114.3	105.3	4.5	142.9	130.2
6× 6× 3½	165.2	155,2	5.0	101.6	93.2	4.2	142.9	127.0
6× 6× 3	165.2	155,2	5.0	89.1	80.7	4.2	142.9	123.8
6× 6× 2½	165.2	155,2	5.0	76.3	67.9	4.2	142.9	120.7
8	216.3	204.7	5.8	216.3	204.7	5.8	177.8	177.8
8× 8× 6	216.3	204.7	5.8	165.2	155.2	5.0	177.8	168.3
8× 8× 5	216.3	204.7	5.8	139.8	130.8	4.5	177.8	161.9
8× 8× 4	216.3	204.7	5.8	114.3	105.3	4.5	177.8	155.6
10	267.4	254.2	6.6	267.4	254.2	6.6	215.9	215.9
10×10× 8	267.4	254.2	6.6	216.3	204.7	5.8	215.9	203.2
10×10× 6	267.4	254.2	6.6	165.2	155.2	5.0	215.9	193.7
10×10× 5	267.4	254.2	6.6	139.8	130.8	4.5	215.9	190.5
12	318.5	304.7	6.9	318.5	304.7	6.9	254.0	254.0
12×12×10	318.5	304.7	6.9	267.4	254.2	6.6	254.0	241.3
12×12× 8	318.5	304.7	6.9	216.3	204.7	5.8	254.0	228.6
12×12× 6	318.5	304.7	6.9	165.2	155.2	5.0	254.0	219.1
14	355.6	339.8	7.9	355.6	339.8	7.9	279.4	279.4
14×14×12	355.6	339.8	7.9	318.5	304.7	6.9	279.4	269.9
14×14×10	355.6	339.8	7.9	267.4	254.2	6.6	279.4	257.2
14×14× 8	355.6	339.8	7.9	216.3	204.7	5.8	279.4	247.7
16	406.4	390.6	7.9	406.4	390.6	7.9	304.8	304.8
16×16×14	406.4	390.6	7.9	355.6	339.8	7.9	304.8	304.8
16×16×14	406.4	390.6	7.9	318.5	304.7	6.9	304.8	295.3
16×16×10	406.4	390.6	7.9	267.4	254.2	6.6	304.8	282.6
18	457.2	441.4	7.9	457.2	441.4	7.9	342.9	342.9
18×18×16	457.2	441.4	7.9	406.4	390.6	7.9	342.9	330.2
18×18×14	457.2	441.4	7.9	355.6	339.8	7.9	342.9	330.2
18×18×12	457.2	441.4	7.9	318.5	304.7	6.9	342.9	320.7
20	508.0	492.2	7.9	508.0	492.2	7.9	381.0	381.0
20×20×18	508.0	492.2	7.9	457.2	441.4	7.9	381.0	368.0
20×20×16	508.0	492.2	7.9	406.4	390.6	7.9	381.0	355.6
20×20×14	508.0	492.2	7.9	355.6	339.8	7.9	381.0	355.6

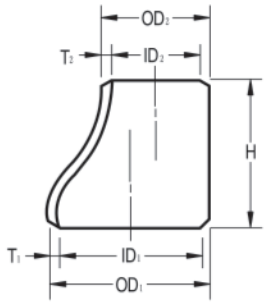
- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116
- For Approx Weight See Page 124

Reducers

SGP



Concentric



Eccentric

KS B1522, JIS B2311

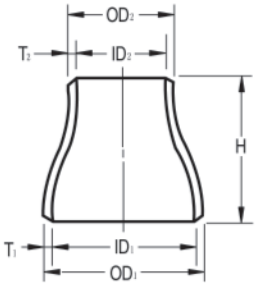
(in millimeters)

Nominal Pipe Size	Large End			Small End			H
	Outside Diameter OD_1	Inside Diameter ID_1	Wall Thickness T_1	Outside Diameter OD_2	Inside Diameter ID_2	Wall Thickness T_2	
¾ × ½	27.2	21.6	2.8	21.7	16.1	2.8	38.1
1 × ¾	34.0	27.6	3.2	27.2	21.6	2.8	50.8
1 × ½	34.0	27.6	3.2	21.7	16.1	2.8	50.8
1¼ × 1	42.7	35.7	3.5	34.0	27.6	3.2	50.8
1¼ × ¾	42.7	35.7	3.5	27.2	21.6	2.8	50.8
1¼ × ½	42.7	35.7	3.5	21.7	16.1	2.8	50.8
1½ × 1¼	48.6	41.6	3.5	42.7	35.7	3.5	63.5
1½ × 1	48.6	41.6	3.5	34.0	27.6	3.2	63.5
1½ × ¾	48.6	41.6	3.5	27.2	21.6	2.8	63.5
2 × 1½	60.5	52.9	3.8	48.6	41.6	3.5	76.2
2 × 1¼	60.5	52.9	3.8	42.7	35.7	3.5	76.2
2 × 1	60.5	52.9	3.8	34.0	27.6	3.2	76.2
2 × ¾	60.5	52.9	3.8	27.2	21.6	2.8	76.2
2½ × 2	76.3	67.9	4.2	60.5	52.9	3.8	88.9
2½ × 1½	76.3	67.9	4.2	48.6	41.6	3.5	88.9
2½ × 1¼	76.3	67.9	4.2	42.7	35.7	3.5	88.9
2½ × 1	76.3	67.9	4.2	34.0	27.6	3.2	88.9
3 × 2½	89.1	80.7	4.2	76.3	67.9	4.2	88.9
3 × 2	89.1	80.7	4.2	60.5	52.9	3.8	88.9
3 × 1½	89.1	80.7	4.2	48.6	41.6	3.5	88.9
3 × 1¼	89.1	80.7	4.2	42.7	35.7	3.5	88.9
3½ × 3	101.6	93.2	4.2	89.1	80.7	4.2	101.6
3½ × 2½	101.6	93.2	4.2	76.3	67.9	4.2	101.6
3½ × 2	101.6	93.2	4.2	60.5	52.9	3.8	101.6
3½ × 1½	101.6	93.2	4.2	48.6	41.6	3.5	101.6
4 × 3½	114.3	105.3	4.5	101.6	93.2	4.2	101.6
4 × 3	114.3	105.3	4.5	89.1	80.7	4.2	101.6
4 × 2½	114.3	105.3	4.5	76.3	67.9	4.2	101.6
4 × 2	114.3	105.3	4.5	60.5	52.9	3.8	101.6
5 × 4	139.8	130.8	4.5	114.3	105.3	4.5	127.0
5 × 3½	139.8	130.8	4.5	101.6	93.2	4.2	127.0
5 × 3	139.8	130.8	4.5	89.1	80.7	4.2	127.0
5 × 2½	139.8	130.8	4.5	76.3	67.9	4.2	127.0

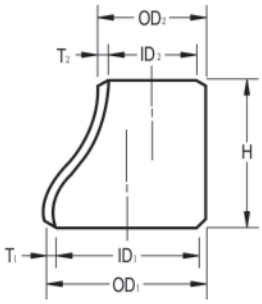
- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116
- For Approx Weight See Page 125

Reducers

SPP . SGP



Concentric



Eccentric

KS B1522, JIS B2311

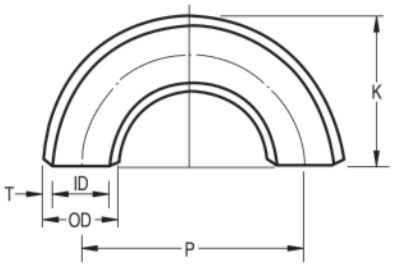
(in millimeters)

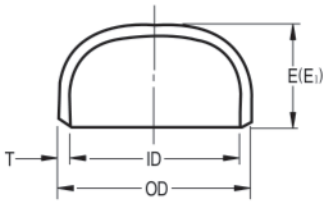
Nominal Pipe Size	Large End			Small End			H
	Outside Diameter OD_1	Inside Diameter ID_1	Wall Thickness T_1	Outside Diameter OD_2	Inside Diameter ID_2	Wall Thickness T_2	
6× 5	165.2	155.2	5.0	139.8	130.8	4.5	139.7
6× 4	165.2	155.2	5.0	114.3	105.3	4.5	139.7
6× 3½	165.2	155.2	5.0	101.6	93.2	4.2	139.7
6× 3	165.2	155.2	5.0	89.1	80.7	4.2	139.7
6× 2½	165.2	155.2	5.0	76.3	67.9	4.2	139.7
8× 6	216.3	204.7	5.8	165.2	155.2	5.0	152.4
8× 5	216.3	204.7	5.8	139.8	130.8	4.5	152.4
8× 4	216.3	204.7	5.8	114.3	105.3	4.5	152.4
8× 3½	216.3	204.7	5.8	101.6	93.2	4.2	152.4
10× 8	267.4	254.2	6.6	216.3	204.7	5.8	177.8
10× 6	267.4	254.2	6.6	165.2	155.2	5.0	177.8
10× 5	267.4	254.2	6.6	139.8	130.8	4.5	177.8
12×10	318.5	304.7	6.9	267.4	254.2	6.6	203.2
12× 8	318.5	304.7	6.9	216.3	204.7	5.8	203.2
12× 6	318.5	304.7	6.9	165.2	155.2	5.0	203.2
12× 5	318.5	304.7	6.9	139.8	130.8	4.5	203.2
14×12	355.6	339.8	7.9	318.5	304.7	6.9	330.2
14×10	355.6	339.8	7.9	267.4	254.2	6.6	330.2
14× 8	355.6	339.8	7.9	216.3	204.7	5.8	330.2
16×14	406.4	390.6	7.9	355.6	339.8	7.9	355.6
16×12	406.4	390.6	7.9	318.5	304.7	6.9	355.6
16×10	406.4	390.6	7.9	267.4	254.2	6.6	355.6
18×16	457.2	441.4	7.9	406.4	390.6	7.9	381.0
18×14	457.2	441.4	7.9	355.6	339.8	7.9	381.0
18×12	457.2	441.4	7.9	318.5	304.7	7.9	381.0
20×18	508.0	492.2	7.9	457.2	441.4	7.9	508.0
20×16	508.0	492.2	7.9	406.4	390.6	7.9	508.0
20×14	508.0	492.2	7.9	355.6	339.8	7.9	508.0

- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116
- For Approx Weight See Page 125

180° Elbows(Long, Short) Caps

SPP . SGP





KS B1522, JIS B2311

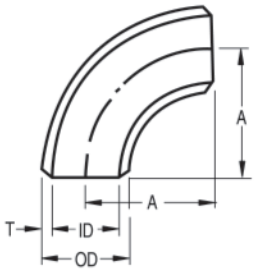
(in millimeters)

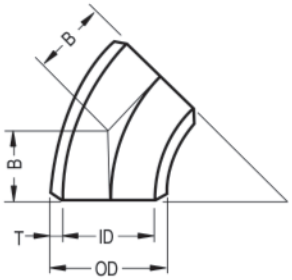
Nominal Pipe Size	Outside Diameter OD	Inside Diameter ID	Wall Thickness T	E	Long		Short	
					P	K	P	K
½	21.7	16.1	2.8	–	76.2	49.0	–	–
¾	27.2	21.6	2.8	–	76.2	51.7	–	–
1	34.0	27.6	3.2	38.1	76.2	55.1	50.8	42.4
1¼	42.7	35.7	3.5	38.1	95.2	69.0	63.6	53.2
1½	48.6	41.6	3.5	38.1	114.4	81.5	76.2	62.4
2	60.5	52.9	3.8	38.1	152.4	106.5	101.6	81.1
2½	76.3	67.9	4.2	38.1	190.6	133.5	127.0	101.7
3	89.1	80.7	4.2	50.8	228.6	158.9	152.4	120.8
3½	101.6	93.2	4.2	63.5	266.8	184.2	177.8	139.7
4	114.3	105.3	4.5	63.5	304.8	209.6	203.2	158.8
5	139.8	130.8	4.5	76.2	381.0	260.4	254.0	196.9
6	165.2	155.2	5.0	88.9	457.2	311.2	304.8	235.0
8	216.3	204.7	5.8	101.6	609.6	413.0	406.4	311.4
10	267.4	254.2	6.6	127.0	762.0	514.7	508.0	387.7
12	318.5	304.7	6.9	152.4	914.4	616.5	609.6	464.0
14	355.6	339.8	7.9	165.1	1066.8	711.2	711.2	533.4
16	406.4	390.6	7.9	177.8	1219.2	812.8	812.8	609.6
18	457.2	441.4	7.9	203.2	–	–	–	–
20	508.0	492.2	7.9	228.6	–	–	–	–

- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116
- For Approx Weight See Page 122

90° Elbows(Long, Short)
45° Elbows(Long, Short)

Sch 40,80,120,160





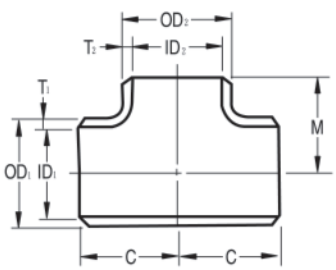
KS B1541, JIS B2312 (in millimeters)

Nominal Pipe Size	Outside Diameter OD	Sch 40		Sch 80		Sch 120		Sch 160		Long		Short	
		ID	T	ID	T	ID	T	ID	T	A	B	A	B
½	21.7	16.1	2.8	14.3	3.7	–	–	–	–	38.1	15.8	–	–
¾	27.2	21.4	2.9	19.4	3.9	–	–	–	–	38.1	15.8	–	–
1	34.0	27.2	3.4	25.0	4.5	–	–	–	–	38.1	15.8	25.4	–
1¼	42.7	35.5	3.6	32.9	4.9	–	–	–	–	47.6	19.7	31.8	13.2
1½	48.6	41.2	3.7	38.4	5.1	–	–	34.4	7.1	57.2	23.7	38.1	15.8
2	60.5	52.7	3.9	49.5	5.5	–	–	43.1	8.7	76.2	31.6	50.8	21.0
2½	76.3	65.9	5.2	62.3	7.0	–	–	57.3	9.5	95.3	39.5	63.5	26.3
3	89.1	78.1	5.5	73.9	7.6	–	–	66.9	11.1	114.3	47.3	76.2	31.6
3½	101.6	90.2	5.7	85.4	8.1	–	–	76.2	12.7	133.4	55.3	88.9	36.8
4	114.3	102.3	6.0	97.1	8.6	92.1	11.1	87.3	13.5	152.4	63.1	101.6	42.1
5	139.8	126.6	6.6	120.8	9.5	114.4	12.7	108.0	15.9	190.5	78.9	127.0	52.6
6	165.2	151.0	7.1	143.2	11.0	136.6	14.3	128.8	18.2	228.6	94.7	152.4	63.1
8	216.3	199.9	8.2	190.9	12.7	179.9	18.2	170.3	23.0	304.8	126.2	203.2	84.2
10	267.4	248.8	9.3	237.2	15.1	224.6	21.4	210.2	28.6	381.0	157.8	254.0	105.2
12	318.5	297.9	10.3	283.7	17.4	267.7	25.4	251.9	33.3	457.2	189.4	304.8	126.2
14	355.6	333.4	11.1	317.6	19.0	300.0	27.8	284.2	35.7	533.4	220.9	355.6	147.3
16	406.4	381.0	12.7	363.6	21.4	344.6	30.9	325.4	40.5	609.6	252.5	406.4	168.3
18	457.2	428.6	14.3	409.6	23.8	387.4	34.9	–	–	685.8	284.1	457.2	189.4
20	508.0	477.8	15.1	455.6	26.2	431.8	38.1	–	–	762.0	315.6	508.0	210.4

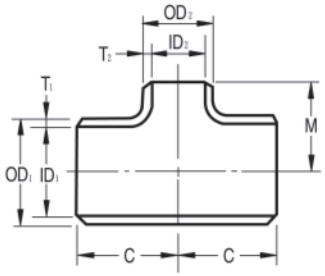
- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116
- For Approx Weight See Page 122

Tees

Sch 40,80,120,160



Straight



Reducing

KS B1541, JIS B2312

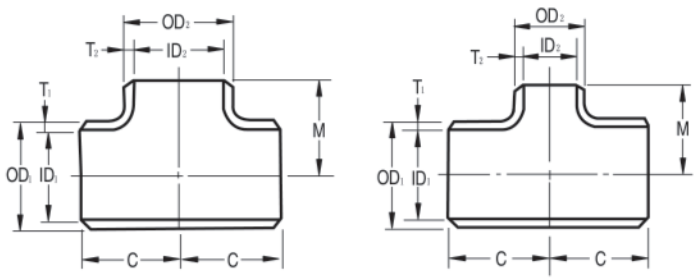
(in millimeters)

Nominal Pipe Size	Outside Diameter		Wall Thickness T						C	M
			Sch 40		Sch 80		Sch 160			
	OD_1	OD_2	T_1	T_2	T_1	T_2	T_1	T_2		
½	21.7	21.7	2.8	2.8	3.7	3.7	–	–	25.4	25.4
¾	27.2	27.2	2.9	2.9	3.9	3.9	–	–	28.6	28.6
¾ × ¾ × ½	27.2	21.7	2.9	2.8	3.9	3.7	–	–	28.6	28.6
1	34.0	34.0	3.4	3.4	4.5	4.5	–	–	38.1	38.1
1 × 1 × ¾	34.0	27.2	3.4	2.9	4.5	3.9	–	–	38.1	38.1
1 × 1 × ½	34.0	21.7	3.4	2.8	4.5	3.7	–	–	38.1	38.1
1¼	42.7	42.7	3.6	3.6	4.9	4.9	–	–	47.6	47.6
1¼ × 1¼ × 1	42.7	34.0	3.6	3.4	4.9	4.5	–	–	47.6	47.6
1¼ × 1¼ × ¾	42.7	27.2	3.6	2.9	4.9	3.9	–	–	47.6	47.6
1½	48.6	48.6	3.7	3.7	5.1	5.1	7.1	7.1	57.2	57.2
1½ × 1½ × 1¼	48.6	42.7	3.7	3.6	5.1	4.9	–	–	57.2	57.2
1½ × 1½ × 1	48.6	34.0	3.7	3.4	5.1	4.5	–	–	57.2	57.2
1½ × 1½ × ¾	48.6	27.2	3.7	2.9	5.1	3.9	–	–	57.2	57.2
2	60.5	60.5	3.9	3.9	5.5	5.5	8.7	8.7	63.5	63.5
2 × 2 × 1½	60.5	48.6	3.9	3.7	5.5	5.1	8.7	7.1	63.5	60.3
2 × 2 × 1¼	60.5	42.7	3.9	3.6	5.5	4.9	–	–	63.5	57.2
2 × 2 × 1	60.5	34.0	3.9	3.4	5.5	4.5	–	–	63.5	50.8
2½	76.3	76.3	5.5	5.2	7.0	7.0	9.5	9.5	76.2	76.2
2½ × 2½ × 2	76.3	60.5	5.2	3.9	7.0	5.5	9.5	8.7	76.2	69.6
2½ × 2½ × 1½	76.3	48.6	5.2	3.7	7.0	5.1	9.5	7.1	76.2	66.7
2½ × 2½ × 1¼	76.3	42.7	5.2	3.6	7.0	4.9	–	–	76.2	63.5
3	89.1	89.1	5.5	5.5	7.6	7.6	11.1	11.1	85.7	85.7
3 × 3 × 2½	89.1	76.3	5.5	5.2	7.6	7.0	11.1	9.5	85.7	82.6
3 × 3 × 2	89.1	60.5	5.5	3.9	7.6	5.5	11.1	8.7	85.7	76.2
3 × 3 × 1½	89.1	48.6	5.5	3.7	7.6	5.1	11.1	7.1	85.7	73.0
3½	101.6	101.6	5.7	5.7	8.1	8.1	12.7	12.7	95.3	95.3
3½ × 3½ × 3	101.6	89.1	5.7	5.5	8.1	7.6	12.7	11.1	95.3	92.1
3½ × 3½ × 2½	101.6	76.3	5.7	5.2	8.1	7.0	12.7	9.5	95.3	88.9
3½ × 3½ × 2	101.6	60.5	5.7	3.9	8.1	5.5	12.7	8.7	95.3	82.6
3½ × 3½ × 1½	101.6	48.6	5.7	3.7	8.1	5.1	12.7	7.1	95.3	79.4
4	114.3	114.3	6.0	6.0	8.6	8.6	13.5	13.5	104.8	104.8
4 × 4 × 3½	114.3	101.6	6.0	5.7	8.6	8.1	13.5	12.7	104.8	101.6
4 × 4 × 3	114.3	89.1	6.0	5.5	8.6	7.6	13.5	11.1	104.8	98.4
4 × 4 × 2½	114.3	76.3	6.0	5.2	8.6	7.0	13.5	9.5	104.8	95.3
4 × 4 × 2	114.3	60.5	6.0	3.9	8.6	5.5	13.5	8.7	104.8	88.9

- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116
- For Approx Weight See Page 124

Tees

Sch 40,80,120,160



Straight Reducing

KS B1541, JIS B2312

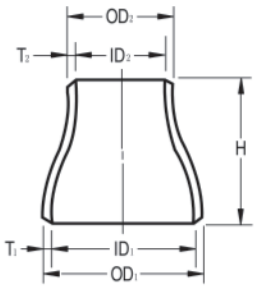
(in millimeters)

Nominal Pipe Size	Outside Diameter		Wall Thickness T								C	M
			Sch 40		Sch 80		Sch 120		Sch 160			
	OD_1	OD_2	T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2		
5	139.8	139.8	6.6	6.6	9.5	9.5	12.7	12.7	15.9	15.9	123.8	123.8
5× 5× 4	139.8	114.3	6.6	6.0	9.5	8.6	12.7	11.1	15.9	13.5	123.8	117.5
5× 5× 3½	139.8	101.6	6.6	5.7	9.5	8.1	–	–	15.9	12.7	123.8	114.3
5× 5× 3	139.8	89.1	6.6	5.5	9.5	7.6	–	–	15.9	11.1	123.8	111.1
5× 5× 2½	139.8	76.3	6.6	5.2	9.5	7.0	–	–	15.9	9.5	123.8	108.0
6	165.2	165.2	7.1	7.1	11.0	11.0	14.3	14.3	18.2	18.2	142.9	142.9
6× 6× 5	165.2	139.8	7.1	6.6	11.0	9.5	14.3	12.7	18.2	15.9	142.9	136.5
6× 6× 4	165.2	114.3	7.1	6.0	11.0	8.6	14.3	11.1	18.2	13.5	142.9	130.2
6× 6× 3½	165.2	101.6	7.1	5.7	11.0	8.1	–	–	18.2	12.7	142.9	127.0
6× 6× 3	165.2	89.1	7.1	5.5	11.0	7.6	–	–	18.2	11.1	142.9	123.8
8	216.3	216.3	8.2	8.2	12.7	12.7	18.2	18.2	23.0	23.0	177.8	177.8
8× 8× 6	216.3	165.2	8.2	7.1	12.7	11.0	18.2	14.3	23.0	18.2	177.8	168.3
8× 8× 5	216.3	139.8	8.2	6.6	12.7	9.5	18.2	12.7	23.0	15.9	177.8	161.9
8× 8× 4	216.3	114.3	8.2	6.0	12.7	8.6	18.2	11.1	23.0	13.5	177.8	155.6
10	267.4	267.4	9.3	9.3	15.1	15.1	21.4	21.4	28.6	28.6	215.9	215.9
10×10× 8	267.4	216.3	9.3	8.2	15.1	12.7	21.4	18.2	28.6	23.0	215.9	203.2
10×10× 6	267.4	165.2	9.3	7.1	15.1	11.0	21.4	14.3	28.6	18.2	215.9	193.7
10×10× 5	267.4	139.8	9.3	6.6	15.1	9.5	21.4	12.7	28.6	15.9	215.9	190.5
12	318.5	318.5	10.3	10.3	17.4	17.4	25.4	25.4	33.3	33.3	254.0	254.0
12×12×10	318.5	267.4	10.3	9.3	17.4	15.1	25.4	21.4	33.3	28.6	254.0	241.3
12×12× 8	318.5	216.3	10.3	8.2	17.4	12.7	25.4	18.2	33.3	23.0	254.0	228.6
12×12× 6	318.5	165.2	10.3	7.1	17.4	11.0	25.4	14.3	33.3	18.2	254.0	219.1
14	355.6	355.6	11.1	11.1	19.0	19.0	27.8	27.8	35.7	35.7	279.4	279.4
14×14×12	355.6	318.5	11.1	10.3	19.0	17.4	27.8	25.4	35.7	33.3	279.4	269.9
14×14×10	355.6	267.4	11.1	9.3	19.0	15.1	27.8	21.4	35.7	28.6	279.4	257.2
14×14× 8	355.6	216.3	11.1	8.2	19.0	12.7	27.8	18.2	35.7	23.0	279.4	247.7
16	406.4	406.3	12.7	12.7	21.4	21.4	30.9	30.9	40.5	40.5	304.8	304.8
16×16×14	406.4	355.6	12.7	10.3	21.4	19.0	30.9	27.8	40.5	35.7	304.8	304.8
16×16×12	406.4	318.5	12.7	10.3	21.4	17.4	30.9	25.4	40.5	33.3	304.8	295.3
16×16×10	406.4	267.4	12.7	9.3	21.4	15.1	30.9	21.4	40.5	28.6	304.8	282.6
18	457.2	457.2	14.3	14.3	23.8	23.8	34.9	34.9	–	–	342.9	342.9
18×18×16	457.2	406.4	14.3	12.7	23.8	21.4	34.9	30.9	–	–	342.9	330.2
18×18×14	457.2	355.6	14.3	11.1	23.8	19.0	34.9	27.8	–	–	342.9	330.2
18×18×12	457.2	318.5	14.3	10.3	23.8	17.4	34.9	25.4	–	–	342.9	320.7
20	508.0	508.0	15.1	15.1	26.2	26.2	38.1	38.1	–	–	381.0	381.0
20×20×18	508.0	457.2	15.1	14.3	26.2	23.8	38.1	34.9	–	–	381.0	368.0
20×20×16	508.0	406.4	15.1	12.7	26.2	21.4	38.1	30.9	–	–	381.0	355.6
20×20×14	508.0	355.6	15.1	11.1	26.2	19.0	38.1	27.8	–	–	381.0	355.6

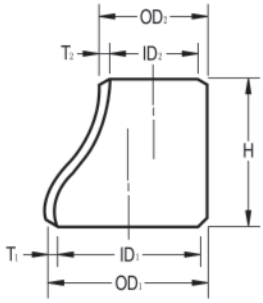
- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116
- For Approx Weight See Page 124

Reducers

Sch 40,80,160



Concentric



Eccentric

KS B1541, JIS B2312

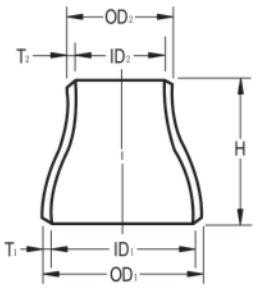
(in millimeters)

Nominal Pipe Size	Outside Diameter		Wall Thickness T						H
			Sch 40		Sch 80		Sch 160		
	OD_1	OD_2	T_1	T_2	T_1	T_2	T_1	T_2	
¾×½	27.2	21.7	2.9	2.8	3.9	3.7	–	–	38.1
1×¾	34.0	27.2	3.4	2.9	4.5	3.9	–	–	50.8
1×½	34.0	21.7	3.4	2.9	4.5	3.7	–	–	50.8
1¼×1	42.7	34.0	3.6	3.4	4.9	4.5	–	–	50.8
1¼× ¾	42.7	27.2	3.6	2.9	4.9	3.9	–	–	50.8
1¼× ½	42.7	21.7	3.6	2.8	4.9	3.7	–	–	50.8
1½×1¼	48.6	42.7	3.7	3.6	5.1	4.9	–	–	63.5
1½×1	48.6	34.0	3.7	3.4	5.1	4.5	–	–	63.5
1½× ¾	48.6	27.2	3.7	2.9	5.1	3.9	–	–	63.5
2 ×1½	60.5	48.6	3.9	3.7	5.5	5.1	8.7	7.1	76.2
2 ×1¼	60.5	42.7	3.9	3.6	5.5	4.9	–	–	76.2
2 ×1	60.5	34.0	3.9	3.4	5.5	4.5	–	–	76.2
2 × ¾	60.5	27.2	3.9	2.9	5.5	3.9	–	–	76.2
2½×2	76.3	60.5	5.2	3.9	7.0	5.5	9.5	8.7	88.9
2½×1½	76.3	48.6	5.2	3.7	7.0	5.1	9.5	7.1	88.9
2½×1¼	76.3	42.7	5.2	3.6	7.0	4.9	–	–	88.9
2½×1	76.3	34.0	5.2	3.4	7.0	4.5	–	–	88.9
3 ×2½	89.1	76.3	5.5	5.2	7.6	7.0	11.1	9.5	88.9
3 ×2	89.1	60.5	5.5	3.9	7.6	5.5	11.1	8.7	88.9
3 ×1½	89.1	48.6	5.5	3.7	7.6	5.1	11.1	7.1	88.9
3 ×1¼	89.1	42.7	5.5	3.6	7.6	4.9	–	–	88.9
3½×3	101.6	89.1	5.7	5.5	8.1	7.6	12.7	11.1	101.6
3½×2½	101.6	76.3	5.7	5.2	8.1	7.0	12.7	9.5	101.6
3½×2	101.6	60.5	5.7	3.9	8.1	5.5	12.7	8.7	101.6
3½×1½	101.6	48.6	5.7	3.7	8.1	5.1	12.7	7.1	101.6
4 ×3½	114.3	101.6	6.0	5.7	8.6	8.1	13.5	12.7	101.6
4 ×3	114.3	89.1	6.0	5.5	8.6	7.6	13.5	11.1	101.6
4 ×2½	114.3	76.3	6.0	5.2	8.6	7.0	13.5	9.5	101.6
4 ×2	114.3	60.5	6.0	3.9	8.6	5.5	13.5	8.7	101.6
4 ×1½	114.3	48.6	6.0	3.7	8.6	5.1	13.5	7.1	101.6

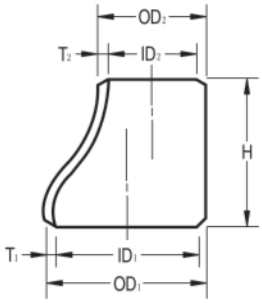
- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116
- For Approx Weight See Page 125

Reducers

Sch 40,80,120,160



Concentric



Eccentric

KS B1541, JIS B2312

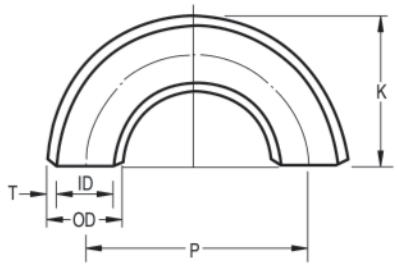
(in millimeters)

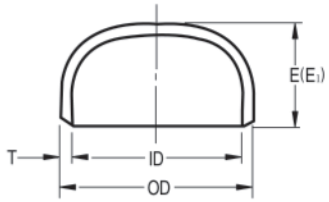
Nominal Pipe Size	Outside Diameter		Wall Thickness T								H
			Sch 40		Sch 80		Sch 120		Sch 160		
	OD_1	OD_2	T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2	
5× 4	139.8	114.3	6.6	6.0	9.5	8.6	12.7	11.1	15.9	13.5	127.0
5× 3	139.8	101.6	6.6	5.7	9.5	8.1	–	–	15.9	12.7	127.0
5× 3	139.8	89.1	6.6	5.5	9.5	7.6	–	–	15.9	11.1	127.0
5× 2	139.8	76.3	6.6	5.2	9.5	7.0	–	–	15.9	9.5	127.0
6× 5	165.2	139.8	7.1	6.6	11.0	9.5	14.3	12.7	18.2	15.9	139.7
6× 4	165.2	114.3	7.1	6.0	11.0	8.6	14.3	11.1	18.2	13.5	139.7
6× 3	165.2	101.6	7.1	5.7	11.0	8.1	–	–	18.2	12.7	139.7
6× 3	165.2	89.1	7.1	5.5	11.0	7.6	–	–	18.2	11.1	139.7
6× 2	165.2	76.3	7.1	5.2	11.0	7.0	–	–	18.2	9.5	139.7
8× 6	216.3	165.2	8.2	7.1	12.7	11.0	18.2	14.3	23.0	18.2	152.4
8× 5	216.3	139.8	8.2	6.6	12.7	9.5	18.2	12.7	23.0	15.9	152.4
8× 4	216.3	114.3	8.2	6.0	12.7	8.6	18.2	11.1	23.0	13.5	152.4
8× 3	216.3	101.6	8.2	5.7	12.7	8.1	–	–	23.0	12.7	152.4
10× 8	267.4	216.3	9.3	8.2	15.1	12.7	21.4	18.2	28.6	23.0	177.8
10× 6	267.4	165.2	9.3	7.1	15.1	11.0	21.4	14.3	28.6	18.2	177.8
10× 5	267.4	139.7	9.3	6.6	15.1	9.5	21.4	12.7	28.6	15.9	177.8
10× 4	267.4	114.3	9.3	6.0	15.1	8.6	–	–	28.6	13.5	177.8
12×10	318.5	267.4	10.3	9.3	17.4	15.1	25.4	21.4	33.3	28.6	203.2
12× 8	318.5	216.3	10.3	8.2	17.4	12.7	25.4	18.2	33.3	23.0	203.2
12× 6	318.5	165.2	10.3	7.1	17.4	11.0	25.4	14.3	33.3	18.2	203.2
12× 5	318.5	139.7	10.3	6.6	17.4	9.5	25.4	12.7	33.3	15.9	203.2
14×12	355.6	318.5	11.1	10.3	19.0	17.4	27.8	25.4	35.7	33.3	330.2
14×10	355.6	267.4	11.1	9.3	19.0	15.1	27.8	21.4	35.7	28.6	330.2
14× 8	355.6	216.3	11.1	8.2	19.0	12.7	27.8	18.2	35.7	23.0	330.2
16×14	406.4	355.6	12.7	11.1	21.4	19.0	30.9	27.8	40.5	35.7	355.6
16×12	406.4	318.5	12.7	10.3	21.4	17.4	30.9	25.4	40.5	33.3	355.6
16×10	406.4	267.4	12.7	9.3	21.4	15.1	30.9	21.4	40.5	28.6	355.6
18×16	457.2	406.4	14.3	12.7	23.8	21.4	34.9	30.9	–	–	381.0
18×14	457.2	355.6	14.3	11.1	23.8	19.0	34.9	27.8	–	–	381.0
18×12	457.2	318.5	14.3	10.3	23.8	17.4	34.9	25.4	–	–	381.0
20×18	508.0	457.2	15.1	14.3	26.2	23.8	38.1	34.9	–	–	508.0
20×16	508.0	406.4	15.1	12.7	26.2	21.4	38.1	30.9	–	–	508.0
20×14	508.0	355.6	15.1	11.1	26.2	19.0	38.1	27.8	–	–	508.0

- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116
- For Approx Weight See Page 125

180° Elbows(Long, Short) Caps

Sch 40,80,120,160





KS B1541, JIS B2312

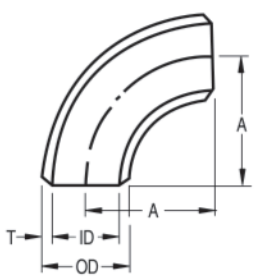
(in millimeters)

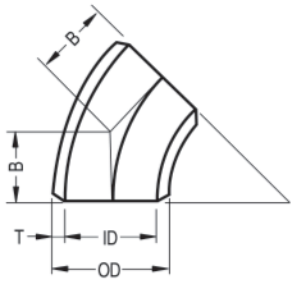
Nominal Pipe Size	Outside Diameter OD	Wall Thickness T				E	E_1	Limited Wall thickness	Long		Short	
		Sch 40	Sch 80	Sch 120	Sch 160				P	K	P	K
½	21.7	2.8	3.7	–	–	25.4	–	–	76.2	49.0	–	–
¾	27.2	2.9	3.9	–	–	25.4	–	–	76.2	51.7	–	–
1	34.0	3.4	4.5	–	–	38.1	–	–	76.2	55.1	50.8	42.4
1¼	42.7	3.6	4.9	–	–	38.1	–	–	95.2	69.0	63.6	53.2
1½	48.6	3.7	5.1	–	7.1	38.1	38.1	5.1	114.4	81.5	76.2	62.4
2	60.5	3.9	5.5	–	8.7	38.1	44.5	5.5	152.4	106.5	101.6	81.1
2½	76.3	5.2	7.0	–	9.5	38.1	50.8	7.0	190.6	133.5	127.0	101.7
3	89.1	5.5	7.6	–	11.1	50.8	63.5	7.6	228.6	158.9	152.4	120.8
3½	101.6	5.7	8.1	–	12.7	63.5	76.2	8.1	266.8	184.2	177.8	139.7
4	114.3	6.0	8.6	11.1	13.5	63.5	76.2	8.6	304.8	209.6	203.2	158.8
5	139.8	6.6	9.5	12.7	15.9	76.2	88.9	9.5	381.0	260.4	254.0	196.9
6	165.2	7.1	11.0	14.3	18.2	88.9	101.6	11.0	457.2	311.2	304.8	235.0
8	216.3	8.2	12.7	18.2	23.0	101.6	127.0	12.7	609.6	413.0	406.4	311.4
10	267.4	9.3	15.1	21.4	28.6	127.0	152.4	12.7	762.0	514.7	508.0	387.7
12	318.5	10.3	17.4	25.4	33.3	152.4	177.8	12.7	914.4	616.5	609.6	464.1
14	355.6	11.1	19.0	27.8	35.7	165.1	190.5	12.7	1066.8	711.2	711.2	533.4
16	406.4	12.7	21.4	30.9	40.5	177.8	203.2	12.7	1219.2	812.8	812.8	609.6
18	457.2	14.3	23.8	34.9	45.2	203.2	228.6	12.7	1371.6	914.4	914.4	685.8
20	508.0	15.1	26.2	38.1	50.0	228.6	254.0	12.7	1524.0	1016.0	1016.0	762.0

- The Back-To-Face Dimension of Cap Shall Be E, If The Basic Wall Thickness is Not More Than The "Limited Wall Thickness" And E_1 If It Exceeds The "Limited Wall Thickness"
- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116
- For Approx Weight See Page 122

90° Elbows(Long, Short)
45° Elbows(Long, Short)

7.9T, STD, XS





KS B1522/43, JIS B2311/3

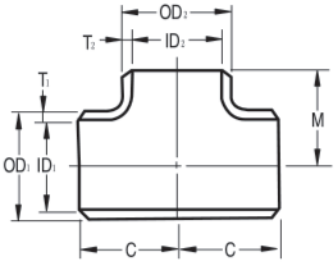
(in millimeters)

Nominal Pipe Size	Outside Diameter OD	Wall Thickness T						Center to Center			
		7.9T		STD		XS		Long		Short	
		ID	T	ID	T	ID	T	A	B	A	B
14	355.6	339.8	7.9	336.6	9.5	330.2	12.7	533.4	220.9	355.6	147.3
16	406.4	390.6	7.9	387.4	9.5	381.0	12.7	609.6	252.5	406.4	168.3
18	457.2	441.4	7.9	438.2	9.5	431.8	12.7	685.8	284.1	457.2	189.4
20	508.0	492.2	7.9	489.0	9.5	482.6	12.7	762.0	315.6	508.0	210.4
22	558.8	543.0	7.9	539.8	9.5	533.4	12.7	838.2	347.2	558.8	231.5
24	609.6	593.8	7.9	590.6	9.5	584.2	12.7	914.4	378.7	609.6	252.5
26	660.4	644.6	7.9	641.4	9.5	635.0	12.7	990.6	410.3	660.4	273.5
28	711.2	695.4	7.9	692.2	9.5	685.8	12.7	1066.8	441.9	711.2	294.6
30	762.0	746.2	7.9	743.0	9.5	736.6	12.7	1143.0	473.4	762.0	315.6
32	812.8	797.0	7.9	793.8	9.5	787.4	12.7	1219.2	505.0	812.8	336.7
34	863.6	847.8	7.9	844.6	9.5	838.2	12.7	1295.4	536.6	863.6	357.7
36	914.4	898.6	7.9	895.4	9.5	889.0	12.7	1371.6	568.1	914.4	378.7
38	965.2	949.4	7.9	946.2	9.5	939.8	12.7	1447.8	599.7	965.2	–
40	1016.0	1000.2	7.9	997.0	9.5	990.6	12.7	1524.0	631.2	1016.0	420.8
42	1066.8	1051.0	7.9	1047.8	9.5	1041.4	12.7	1600.2	662.8	1066.8	–
44	1117.6	1101.8	7.9	1098.6	9.5	1092.2	12.7	1676.4	694.4	1117.6	462.9
46	1168.4	1152.6	7.9	1149.4	9.5	1143.0	12.7	1752.6	725.9	1168.4	–
48	1219.2	1203.4	7.9	1200.2	9.5	1193.8	12.7	1828.8	757.5	1219.2	505.0

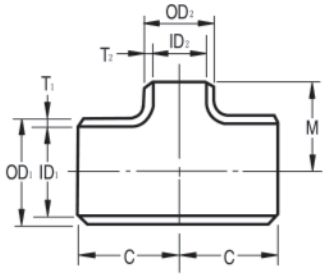
- For Bevel Details See Page 119
- For Dimensional Tolerances See Page 117
- For Approx Weight See Page 122

Tees

7.9T, STD, XS



Straight



Reducing

KS B1522/43, JIS B2311/3

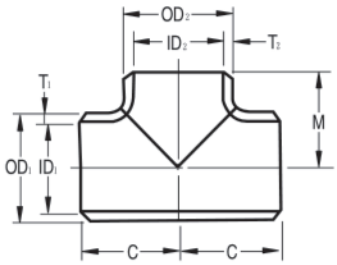
(in millimeters)

Nominal Pipe Size	Outside Diameter OD_1	Outside Diameter OD_2	Wall Thickness T			C	M
			7.9T	STD	XS		
16	406.4	406.4	7.9	9.5	12.7	304.8	304.8
16×16×14	406.4	355.6	7.9	9.5	12.7	304.8	304.8
16×16×12	406.4	318.5	7.9	9.5	12.7	304.8	295.3
16×16×10	406.4	267.4	7.9	9.5	12.7	304.8	282.6
18	457.2	457.2	7.9	9.5	12.7	342.9	342.9
18×18×16	457.2	406.4	7.9	9.5	12.7	342.9	330.2
18×18×14	457.2	355.6	7.9	9.5	12.7	342.9	330.2
18×18×12	457.2	318.5	7.9	9.5	12.7	342.9	330.2
20	508.0	508.0	7.9	9.5	12.7	381.0	381.0
20×20×18	508.0	457.2	7.9	9.5	12.7	381.0	368.0
20×20×16	508.0	406.4	7.9	9.5	12.7	381.0	355.6
20×20×14	508.0	355.6	7.9	9.5	12.7	381.0	355.6
22	558.8	558.8	7.9	9.5	12.7	419.1	419.1
22×22×20	558.8	508.0	7.9	9.5	12.7	419.1	406.4
22×22×18	558.8	457.2	7.9	9.5	12.7	419.1	393.7
22×22×16	558.8	406.4	7.9	9.5	12.7	419.1	381.0
24	609.6	609.6	7.9	9.5	12.7	431.8	431.8
24×24×22	609.6	558.8	7.9	9.5	12.7	431.8	431.8
24×24×20	609.6	508.0	7.9	9.5	12.7	431.8	431.8
24×24×18	609.6	457.2	7.9	9.5	12.7	431.8	419.1
26	660.4	660.4	7.9	9.5	12.7	495.3	495.3
26×26×24	660.4	609.6	7.9	9.5	12.7	495.3	482.6
26×26×22	660.4	558.8	7.9	9.5	12.7	495.3	469.9
26×26×20	660.4	508.0	7.9	9.5	12.7	495.3	457.2
28	711.2	711.2	7.9	9.5	12.7	520.7	520.7
28×28×26	711.2	660.4	7.9	9.5	12.7	520.7	520.7
28×28×24	711.2	609.6	7.9	9.5	12.7	520.7	508.0
28×28×22	711.2	558.8	7.9	9.5	12.7	520.7	495.3
30	762.0	762.0	7.9	9.5	12.7	558.8	558.8
30×30×28	762.0	711.2	7.9	9.5	12.7	558.8	546.1
30×30×26	762.0	660.4	7.9	9.5	12.7	558.8	546.1
30×30×24	762.0	609.6	7.9	9.5	12.7	558.8	533.4

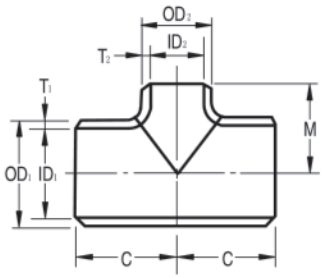
- For Bevel Details See Page 119
- For Dimensional Tolerances See Page 117
- For Approx Weight See Page 124

Tees

7.9T, STD, XS



Straight



Reducing

KS B1522/43, JIS B2311/3

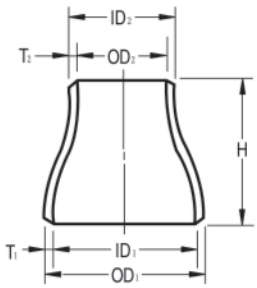
(in millimeters)

Nominal Pipe Size	Outside Diameter OD_1	Outside Diameter OD_2	Wall Thickness T			C	M
			7.9T	STD	XS		
32	812.8	812.8	7.9	9.5	12.7	596.9	596.9
32×32×30	812.8	762.0	7.9	9.5	12.7	596.9	584.2
32×32×28	812.8	711.2	7.9	9.5	12.7	596.9	571.5
32×32×26	812.8	660.4	7.9	9.5	12.7	596.9	571.5
34	863.6	863.6	7.9	9.5	12.7	635.0	635.0
34×34×32	863.6	812.8	7.9	9.5	12.7	635.0	622.3
34×34×30	863.6	762.0	7.9	9.5	12.7	635.0	609.6
34×34×28	863.6	711.2	7.9	9.5	12.7	635.0	596.9
36	914.4	914.4	7.9	9.5	12.7	673.1	673.1
36×36×34	914.4	863.6	7.9	9.5	12.7	673.1	660.4
36×36×32	914.4	812.8	7.9	9.5	12.7	673.1	647.7
36×36×30	914.4	762.0	7.9	9.5	12.7	673.1	635.0
38	965.2	965.2	7.9	9.5	12.7	711.2	711.2
38×38×36	965.2	914.4	7.9	9.5	12.7	711.2	711.2
38×38×34	965.2	863.6	7.9	9.5	12.7	711.2	698.5
38×38×32	965.2	812.8	7.9	9.5	12.7	711.2	685.8
40	1016.0	1016.0	7.9	9.5	12.7	749.3	749.3
40×40×38	1016.0	965.2	7.9	9.5	12.7	749.3	749.3
40×40×36	1016.0	914.4	7.9	9.5	12.7	749.3	736.6
40×40×34	1016.0	863.6	7.9	9.5	12.7	749.3	723.9
42	1066.8	1066.8	7.9	9.5	12.7	762.0	711.2
42×42×40	1066.9	1016.0	7.9	9.5	12.7	762.0	711.2
42×42×38	1066.8	965.2	7.9	9.5	12.7	762.0	711.2
42×42×36	1066.8	914.4	7.9	9.5	12.7	762.0	711.2
44	1117.6	1117.6	7.9	9.5	12.7	812.8	762.0
44×44×42	1117.6	1066.8	7.9	9.5	12.7	812.8	762.0
44×44×40	1117.6	1016.0	7.9	9.5	12.7	812.8	749.3
44×44×38	1117.6	965.2	7.9	9.5	12.7	812.8	736.6
46	1168.4	1168.4	7.9	9.5	12.7	850.9	800.1
46×46×44	1168.4	1117.6	7.9	9.5	12.7	850.9	800.1
46×46×42	1168.4	1066.8	7.9	9.5	12.7	850.9	787.4
46×46×40	1168.4	1016.0	7.9	9.5	12.7	850.9	774.8
48	1219.2	1219.2	7.9	9.5	12.7	889.0	838.2
48×48×46	1219.2	1168.4	7.9	9.5	12.7	889.0	838.2
48×48×44	1219.2	1117.6	7.9	9.5	12.7	889.0	838.2
48×48×42	1219.2	1066.8	7.9	9.5	12.7	889.0	812.8

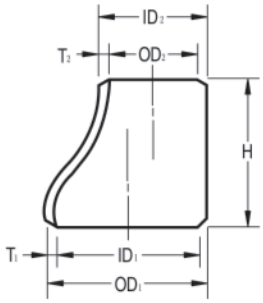
- For Bevel Details See Page 119
- For Dimensional Tolerances See Page 117
- For Approx Weight See Page 124

Reducers

7.9T, STD, XS



Concentric



Eccentric

KS B1522/43, JIS B2311/3

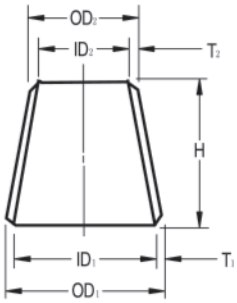
(in millimeters)

Nominal Pipe Size	Outside Diameter		Wall Thickness T			H
	OD_1	OD_2	7.9T	STD	XS	
16×14	406.4	355.6	7.9	9.5	12.7	355.6
16×12	406.4	318.5	7.9	9.5	12.7	355.6
16×10	406.4	267.4	7.9	9.5	12.7	355.6
16× 8	406.4	216.3	7.9	9.5	12.7	355.6
18×16	457.2	406.4	7.9	9.5	12.7	381.0
18×14	457.2	355.6	7.9	9.5	12.7	381.0
18×12	457.2	318.5	7.9	9.5	12.7	381.0
18×10	457.2	267.4	7.9	9.5	12.7	381.0
20×18	508.0	457.2	7.9	9.5	12.7	508.0
20×16	508.0	406.4	7.9	9.5	12.7	508.0
20×14	508.0	355.6	7.9	9.5	12.7	508.0
20×12	508.0	318.5	7.9	9.5	12.7	508.0
22×20	558.8	508.0	7.9	9.5	12.7	508.0
22×18	558.8	457.2	7.9	9.5	12.7	508.0
22×16	558.8	406.4	7.9	9.5	12.7	508.0
22×14	558.8	355.6	7.9	9.5	12.7	508.0
24×22	609.6	558.8	7.9	9.5	12.7	508.0
24×20	609.6	508.0	7.9	9.5	12.7	508.0
24×18	609.6	457.2	7.9	9.5	12.7	508.0
24×16	609.6	406.4	7.9	9.5	12.7	508.0
26×24	660.4	609.6	7.9	9.5	12.7	609.6
26×22	660.4	558.8	7.9	9.5	12.7	609.6
26×20	660.4	508.0	7.9	9.5	12.7	609.6
26×18	660.4	457.2	7.9	9.5	12.7	609.6
28×26	711.2	660.4	7.9	9.5	12.7	609.6
28×24	711.2	609.6	7.9	9.5	12.7	609.6
28×22	711.2	558.8	7.9	9.5	12.7	609.6
28×20	711.2	508.0	7.9	9.5	12.7	609.6
30×28	762.0	711.2	7.9	9.5	12.7	609.6
30×26	762.0	660.4	7.9	9.5	12.7	609.6
30×24	762.0	609.6	7.9	9.5	12.7	609.6
30×22	762.0	558.8	7.9	9.5	12.7	609.6

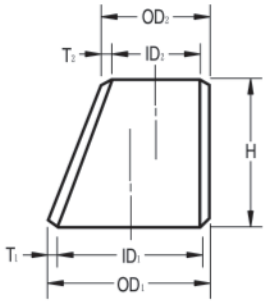
- For Bevel Details See Page 119
- For Dimensional Tolerances See Page 117
- For Approx Weight See Page 125

Reducers

7.9T, STD, XS



Concentric



Eccentric

KS B1522/43, JIS B2311/3

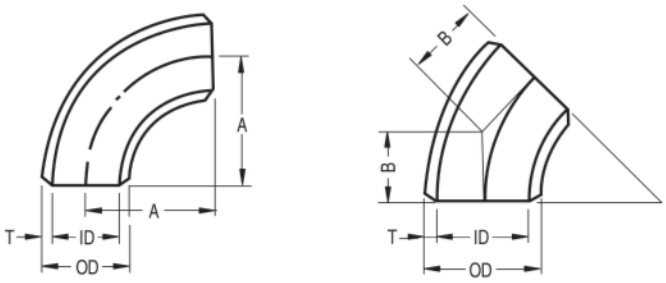
(in millimeters)

Nominal Pipe Size	Outside Diameter		Wall Thickness T			H
	OD_1	OD_2	7.9T	STD	XS	
32×30	812.8	762.0	7.9	9.5	12.7	609.6
32×28	812.8	711.2	7.9	9.5	12.7	609.6
32×26	812.8	660.4	7.9	9.5	12.7	609.6
32×24	812.8	609.6	7.9	9.5	12.7	609.6
34×32	863.6	812.8	7.9	9.5	12.7	609.6
34×30	863.6	762.0	7.9	9.5	12.7	609.6
34×28	863.6	711.2	7.9	9.5	12.7	609.6
34×26	863.6	660.4	7.9	9.5	12.7	609.6
36×34	914.4	863.6	7.9	9.5	12.7	609.6
36×32	914.4	812.8	7.9	9.5	12.7	609.6
36×30	914.4	762.0	7.9	9.5	12.7	609.6
36×28	914.4	711.2	7.9	9.5	12.7	609.6
38×36	965.2	914.4	7.9	9.5	12.7	609.6
38×34	965.2	863.6	7.9	9.5	12.7	609.6
38×32	965.2	812.8	7.9	9.5	12.7	609.6
38×30	965.2	762.0	7.9	9.5	12.7	609.6
40×38	1016.0	965.2	7.9	9.5	12.7	609.6
40×36	1016.0	914.4	7.9	9.5	12.7	609.6
40×34	1016.0	863.6	7.9	9.5	12.7	609.6
40×32	1016.0	812.8	7.9	9.5	12.7	609.6
42×40	1066.8	1016.0	7.9	9.5	12.7	609.6
42×38	1066.8	965.2	7.9	9.5	12.7	609.6
42×36	1066.8	914.4	7.9	9.5	12.7	609.6
42×34	1066.8	863.6	7.9	9.5	12.7	609.6
44×42	1117.6	1066.8	7.9	9.5	12.7	609.6
44×40	1117.6	1016.0	7.9	9.5	12.7	609.6
44×38	1117.6	965.2	7.9	9.5	12.7	609.6
44×36	1117.6	914.4	7.9	9.5	12.7	609.6
46×44	1168.4	1117.6	7.9	9.5	12.7	711.2
46×42	1168.4	1066.8	7.9	9.5	12.7	711.2
46×40	1168.4	1016.0	7.9	9.5	12.7	711.2
46×38	1168.4	965.2	7.9	9.5	12.7	711.2
48×46	1219.2	1168.4	7.9	9.5	12.7	711.2
48×44	1219.2	1117.6	7.9	9.5	12.7	711.2
48×42	1219.2	1066.8	7.9	9.5	12.7	711.2
48×40	1219.2	1016.0	7.9	9.5	12.7	711.2

- For Bevel Details See Page 119
- For Dimensional Tolerances See Page 117
- For Approx Weight See Page 125

90° Elbows(Long, Short)
45° Elbows(Long, Short)

Sch 5S, 10S, 20S



KS B1541/3, JIS B2312/3

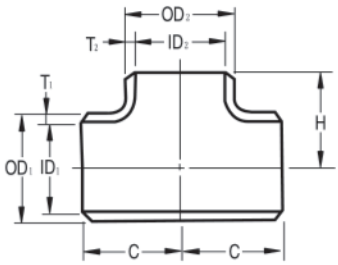
(in millimeters)

Nominal Pipe Size	Outside Diameter	Sch 5S		Sch 10S		Sch 20S		Long		Short	
		ID	T	ID	T	ID	T	A	B	A	B
½	21.7	18.4	1.65	17.5	2.1	16.7	2.5	38.1	15.8	–	–
¾	27.2	23.9	1.65	23.0	2.1	22.2	2.5	38.1	15.8	–	–
1	34.0	30.7	1.65	28.4	2.8	28.0	3.0	38.1	15.8	25.4	–
1¼	42.7	39.4	1.65	37.1	2.8	36.7	3.0	47.6	19.7	31.8	13.2
1½	48.6	45.3	1.65	43.0	2.8	42.6	3.0	57.2	23.7	38.1	15.8
2	60.5	57.2	1.65	54.9	2.8	53.5	3.5	76.2	31.6	50.8	21.0
2½	76.3	72.1	2.10	70.3	3.0	69.3	3.5	95.3	39.5	63.5	26.3
3	89.1	84.9	2.10	83.1	3.0	81.1	4.0	114.3	47.3	76.2	31.6
3½	101.6	97.4	2.10	95.6	3.0	93.6	4.0	133.4	55.3	88.9	36.8
4	114.3	110.1	2.10	108.3	3.0	106.3	4.0	152.4	63.1	101.6	42.1
5	139.8	134.2	2.80	133.0	3.4	129.8	5.0	190.5	78.9	127.0	52.6
6	165.2	159.6	2.80	158.4	3.4	155.2	5.0	228.6	94.7	152.4	63.1
8	216.3	210.7	2.80	208.3	4.0	203.3	6.5	304.8	126.2	203.2	84.2
10	267.4	260.6	3.40	259.4	4.0	254.4	6.5	381.0	157.8	254.0	105.2
12	318.5	310.5	4.00	309.5	4.5	305.5	6.5	457.2	189.4	304.8	126.2
14	355.6	347.6	4.00	346.0	4.8	339.8	7.9	533.4	220.9	355.6	147.3
16	406.4	398.0	4.20	396.8	4.8	390.6	7.9	609.6	252.5	406.4	168.3
18	457.2	448.8	4.20	447.6	4.8	441.4	7.9	685.8	284.1	457.2	189.4
20	508.0	498.4	4.80	497.0	5.5	492.2	7.9	762.0	315.6	508.0	210.4
22	558.8	549.2	4.80	547.8	5.5	–	–	838.2	347.2	558.8	231.5
24	609.6	598.6	5.50	596.8	6.4	–	–	914.4	378.7	609.6	252.5
30	762.0	749.2	6.40	746.2	7.9	–	–	1143.0	473.4	762.0	315.6

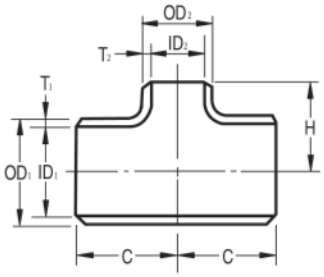
- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116

Tees

Sch 5S, 10S, 20S



Straight



Reducing

KS B1541/3, JIS B2312/3

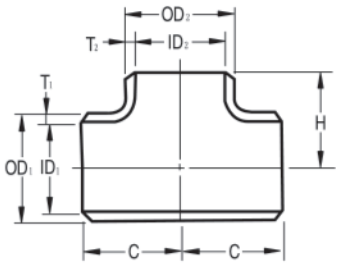
(in millimeters)

Nominal Pipe Size	Outside Diameter		Wall Thickness T						C	M
			5S		10S		20S			
	OD_1	OD_2	T_1	T_2	T_1	T_2	T_1	T_2		
½	21.7	21.7	1.65	1.65	2.1	2.1	2.5	2.5	25.4	25.4
¾	27.2	27.2	1.65	1.65	2.1	2.1	2.5	2.5	28.6	28.6
1	34.0	34.0	1.65	1.65	2.8	2.8	3.0	3.0	38.1	38.1
1¼	42.7	42.7	1.65	1.65	2.8	2.8	3.0	3.0	47.6	47.6
1¼× 1¼×1	42.7	34.0	1.65	1.65	2.8	2.8	3.0	3.0	47.6	47.6
1½	48.6	48.6	1.65	1.65	2.8	2.8	3.0	3.0	57.2	57.2
1½× 1½×1¼	48.6	42.7	1.65	1.65	2.8	2.8	3.0	3.0	57.2	57.2
1½× 1½×1	48.6	34.0	1.65	1.65	2.8	2.8	3.0	3.0	57.2	57.2
2	60.5	60.5	1.65	1.65	2.8	2.8	3.5	3.5	63.5	63.5
2 × 2 ×1½	60.5	48.6	1.65	1.65	2.8	2.8	3.5	3.0	63.5	60.3
2 × 2 ×1¼	60.5	42.7	1.65	1.65	2.8	2.8	3.5	3.0	63.5	57.2
2½	76.3	76.3	2.10	2.10	3.0	3.0	3.5	3.5	76.2	76.2
2½× 2½×2	76.3	60.5	2.10	1.65	3.0	2.8	3.5	3.5	76.2	69.9
2½× 2½×1½	76.3	48.6	2.10	1.65	3.0	2.8	3.5	3.0	76.2	66.7
3	89.1	89.1	2.10	2.10	3.0	3.0	4.0	4.0	85.7	85.7
3 × 3 ×2½	89.1	76.3	2.10	2.10	3.0	3.0	4.0	3.5	85.7	82.6
3 × 3 ×2	89.1	60.5	2.10	1.65	3.0	2.8	4.0	3.5	85.7	76.2
3½	101.6	101.6	2.10	2.10	3.0	3.0	4.0	4.0	95.3	95.3
3½× 3½×3	101.6	89.1	2.10	2.10	3.0	3.0	4.0	4.0	95.3	92.1
3½× 3½×2½	101.6	76.3	2.10	2.10	3.0	3.0	4.0	3.5	95.3	88.9
4	114.3	114.3	2.10	2.10	3.0	3.0	4.0	4.0	104.8	104.8
4 × 4 ×3½	114.3	101.6	2.10	2.10	3.0	3.0	4.0	4.0	104.8	101.6
4 × 4 ×3	114.3	89.1	2.10	2.10	3.0	3.0	4.0	4.0	104.8	98.4
4 × 4 ×2½	114.3	76.3	2.10	2.10	3.0	3.0	4.0	3.5	104.8	95.3
5	139.8	139.8	2.80	2.80	3.4	3.4	5.0	5.0	123.8	123.8
5 × 5 ×4	139.8	114.3	2.80	2.10	3.4	3.0	5.0	4.0	123.8	117.5
5 × 5 ×3½	139.8	101.6	2.80	2.10	3.4	3.0	5.0	4.0	123.8	114.3
5 × 5 ×3	139.8	89.1	2.80	2.10	3.4	3.0	5.0	4.0	123.8	111.1
6	165.2	165.2	2.80	2.80	3.4	3.4	5.0	5.0	142.9	142.9
6 × 6 ×5	165.2	139.8	2.80	2.80	3.4	3.4	5.0	5.0	142.9	136.5
6 × 6 ×4	165.2	114.3	2.80	2.10	3.4	3.0	5.0	4.0	142.9	130.2
8	216.3	216.3	2.80	2.80	4.0	4.0	6.5	6.5	177.8	177.8
8 × 8 ×6	216.3	165.2	2.80	2.80	4.0	3.4	6.5	5.0	177.8	168.3
8 × 8 ×5	216.3	139.8	2.80	2.80	4.0	3.4	6.5	5.0	177.8	161.9
10	267.4	267.4	3.40	3.40	4.0	4.0	6.5	6.5	215.9	215.9
10 ×10 × 8	267.4	216.3	3.40	2.80	4.0	4.0	6.5	6.5	215.9	203.2
10 ×10 × 6	267.4	165.2	3.40	2.80	4.0	3.4	6.5	5.0	215.9	193.7
12	318.5	318.5	4.00	4.00	4.5	4.5	6.5	6.5	254.0	254.0
12 ×12 × 10	318.5	267.4	4.00	3.40	4.5	4.0	6.5	6.5	254.0	241.3
12 ×12 × 8	318.5	216.3	4.00	2.80	4.5	4.0	6.5	6.5	254.0	228.6

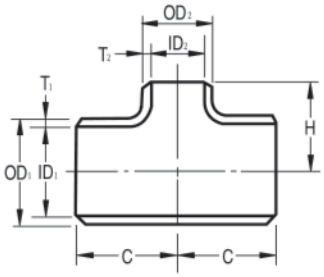
- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116

Tees

Sch 5S, 10S, 20S



Straight



Reducing

KS B1541/3, JIS B2312/3

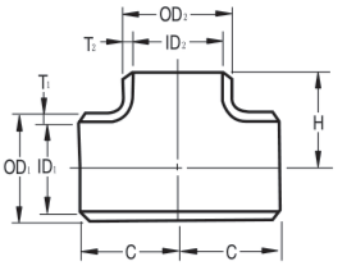
(in millimeters)

Nominal Pipe Size	Outside Diameter		Wall Thickness T						C	M
			5S		10S		20S			
	OD_1	OD_2	T_1	T_2	T_1	T_2	T_1	T_2		
½	21.7	21.7	1.65	1.65	2.1	2.1	2.5	2.5	25.4	25.4
¾	27.2	27.2	1.65	1.65	2.1	2.1	2.5	2.5	28.6	28.6
1	34.0	34.0	1.65	1.65	2.8	2.8	3.0	3.0	38.1	38.1
1¼	42.7	42.7	1.65	1.65	2.8	2.8	3.0	3.0	47.6	47.6
1¼× 1¼×1	42.7	34.0	1.65	1.65	2.8	2.8	3.0	3.0	47.6	47.6
1½	48.6	48.6	1.65	1.65	2.8	2.8	3.0	3.0	57.2	57.2
1½× 1½×1¼	48.6	42.7	1.65	1.65	2.8	2.8	3.0	3.0	57.2	57.2
1½× 1½×1	48.6	34.0	1.65	1.65	2.8	2.8	3.0	3.0	57.2	57.2
2	60.5	60.5	1.65	1.65	2.8	2.8	3.5	3.5	63.5	63.5
2 × 2 ×1½	60.5	48.6	1.65	1.65	2.8	2.8	3.5	3.0	63.5	60.3
2 × 2 ×1¼	60.5	42.7	1.65	1.65	2.8	2.8	3.5	3.0	63.5	57.2
2½	76.3	76.3	2.10	2.10	3.0	3.0	3.5	3.5	76.2	76.2
2½× 2½×2	76.3	60.5	2.10	1.65	3.0	2.8	3.5	3.5	76.2	69.9
2½× 2½×1½	76.3	48.6	2.10	1.65	3.0	2.8	3.5	3.0	76.2	66.7
3	89.1	89.1	2.10	2.10	3.0	3.0	4.0	4.0	85.7	85.7
3 × 3 ×2½	89.1	76.3	2.10	2.10	3.0	3.0	4.0	3.5	85.7	82.6
3 × 3 ×2	89.1	60.5	2.10	1.65	3.0	2.8	4.0	3.5	85.7	76.2
3½	101.6	101.6	2.10	2.10	3.0	3.0	4.0	4.0	95.3	95.3
3½× 3½×3	101.6	89.1	2.10	2.10	3.0	3.0	4.0	4.0	95.3	92.1
3½× 3½×2½	101.6	76.3	2.10	2.10	3.0	3.0	4.0	3.5	95.3	88.9
4	114.3	114.3	2.10	2.10	3.0	3.0	4.0	4.0	104.8	104.8
4 × 4 ×3½	114.3	101.6	2.10	2.10	3.0	3.0	4.0	4.0	104.8	101.6
4 × 4 ×3	114.3	89.1	2.10	2.10	3.0	3.0	4.0	4.0	104.8	98.4
4 × 4 ×2½	114.3	76.3	2.10	2.10	3.0	3.0	4.0	3.5	104.8	95.3
5	139.8	139.8	2.80	2.80	3.4	3.4	5.0	5.0	123.8	123.8
5 × 5 ×4	139.8	114.3	2.80	2.10	3.4	3.0	5.0	4.0	123.8	117.5
5 × 5 ×3½	139.8	101.6	2.80	2.10	3.4	3.0	5.0	4.0	123.8	114.3
5 × 5 ×3	139.8	89.1	2.80	2.10	3.4	3.0	5.0	4.0	123.8	111.1
6	165.2	165.2	2.80	2.80	3.4	3.4	5.0	5.0	142.9	142.9
6 × 6 ×5	165.2	139.8	2.80	2.80	3.4	3.4	5.0	5.0	142.9	136.5
6 × 6 ×4	165.2	114.3	2.80	2.10	3.4	3.0	5.0	4.0	142.9	130.2
8	216.3	216.3	2.80	2.80	4.0	4.0	6.5	6.5	177.8	177.8
8 × 8 ×6	216.3	165.2	2.80	2.80	4.0	3.4	6.5	5.0	177.8	168.3
8 × 8 ×5	216.3	139.8	2.80	2.80	4.0	3.4	6.5	5.0	177.8	161.9
10	267.4	267.4	3.40	3.40	4.0	4.0	6.5	6.5	215.9	215.9
10 ×10 × 8	267.4	216.3	3.40	2.80	4.0	4.0	6.5	6.5	215.9	203.2
10 ×10 × 6	267.4	165.2	3.40	2.80	4.0	3.4	6.5	5.0	215.9	193.7
12	318.5	318.5	4.00	4.00	4.5	4.5	6.5	6.5	254.0	254.0
12 ×12 × 10	318.5	267.4	4.00	3.40	4.5	4.0	6.5	6.5	254.0	241.3
12 ×12 × 8	318.5	216.3	4.00	2.80	4.5	4.0	6.5	6.5	254.0	228.6

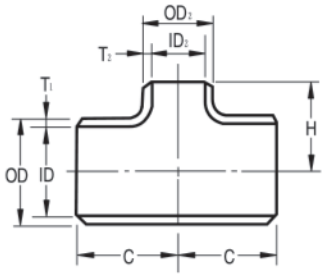
- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116

Tees

Sch 5S, 10S, 20S



Straight



Reducing

KS B1541/3, JIS B2312/3

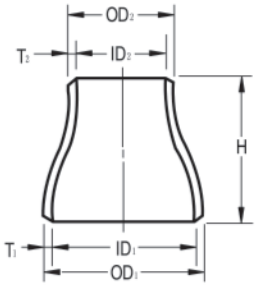
(in millimeters)

Nominal Pipe Size	Outside Diameter		Wall Thickness T						C	M
			5S		10S		20S			
	OD_1	OD_2	T_1	T_2	T_1	T_2	T_1	T_2		
14	355.6	355.6	4.0	4.0	4.8	4.8	7.9	7.9	279.4	279.4
14×14×12	355.6	318.5	4.0	4.0	4.8	4.5	7.9	6.5	279.4	269.9
14×14×10	355.6	267.4	4.0	3.4	4.8	4.0	7.9	6.5	279.4	257.2
14×14× 8	355.6	216.3	4.0	2.8	4.8	4.0	7.9	6.5	279.4	247.7
16	406.4	406.4	4.2	4.2	4.8	4.8	7.9	7.9	304.8	304.8
16×16×14	406.4	355.6	4.2	4.0	4.8	4.8	7.9	7.9	304.8	304.8
16×16×12	406.4	318.5	4.2	4.0	4.8	4.5	7.9	6.5	304.8	295.3
16×16×10	406.4	267.4	4.2	3.4	4.8	4.0	7.9	6.5	304.8	282.6
18	457.2	457.2	4.2	4.2	4.8	4.8	7.9	7.9	342.9	342.9
18×18×16	457.2	406.4	4.2	4.2	4.8	4.8	7.9	7.9	342.9	330.2
18×18×14	457.2	355.6	4.2	4.0	4.8	4.8	7.9	7.9	342.9	330.2
18×18×12	457.2	318.5	4.2	4.0	4.8	4.5	7.9	6.5	342.9	320.7
20	508.0	508.0	4.8	4.8	5.5	5.5	7.9	7.9	381.0	381.0
20×20×18	508.0	457.2	4.8	4.2	5.5	4.8	7.9	7.9	381.0	368.3
20×20×16	508.0	406.4	4.8	4.2	5.5	4.8	7.9	7.9	381.0	355.6
20×20×14	508.0	355.6	4.8	4.0	5.5	4.8	7.9	7.9	381.0	355.6
22	558.8	558.8	4.8	4.8	5.5	5.5	–	–	419.1	419.1
22×22×20	558.8	508.0	4.8	4.8	5.5	5.5	–	–	419.1	406.4
22×22×18	558.8	457.2	4.8	4.2	5.5	4.8	–	–	419.1	393.7
22×22×16	558.8	406.4	4.8	4.2	5.5	4.8	–	–	419.1	381
24	609.6	609.6	5.5	5.5	6.4	6.4	–	–	431.8	431.8
24×24×22	609.6	558.8	5.5	4.8	6.4	5.5	–	–	431.8	431.8
24×24×20	609.6	508.0	5.5	4.8	6.4	5.5	–	–	431.8	431.8
24×24×18	609.6	457.2	5.5	4.2	6.4	4.8	–	–	431.8	419.1
30	762.0	762.0	6.4	6.4	7.9	7.9	–	–	558.8	558.8
30×30×24	762.0	609.6	6.4	5.5	7.9	6.4	–	–	558.8	533.4

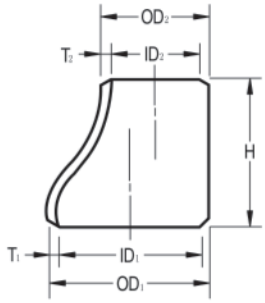
- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116

Reducers

Sch 5S, 10S, 20S



Concentric



Eccentric

KS B1541/3, JIS B2312/3

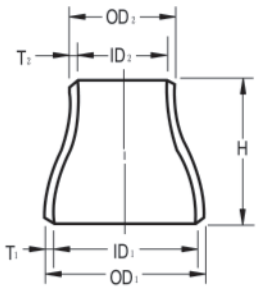
(in millimeters)

Nominal Pipe Size	Outside Diameter		Wall Thickness T						H
			5S		10S		20S		
	OD_1	OD_2	T_1	T_2	T_1	T_2	T_1	T_2	
1×¾	34.0	27.2	1.65	1.65	2.8	2.1	3.0	2.5	50.8
1×½	34.0	21.7	1.65	1.65	2.8	2.1	3.0	2.5	50.8
1¼×1	42.7	34.0	1.65	1.65	2.8	2.8	3.0	3.0	50.8
1¼× ¾	42.7	27.2	1.65	1.65	2.8	2.1	3.0	2.5	50.8
1½×1¼	48.6	42.7	1.65	1.65	2.8	2.8	3.0	3.0	63.5
1½×1	48.6	34.0	1.65	1.65	2.8	2.8	3.0	3.0	63.5
1½× ¾	48.6	27.0	1.65	1.65	2.8	2.1	3.0	2.5	63.5
2 ×1½	60.5	48.6	1.65	1.65	2.8	2.8	3.5	3.0	76.2
2 ×1¼	60.5	42.7	1.65	1.65	2.8	2.8	3.5	3.0	76.2
2 ×1	60.5	34.0	1.65	1.65	2.8	2.8	3.5	3.0	76.2
2½×2	76.3	60.5	2.10	1.65	3.0	2.8	3.5	3.5	88.9
2½×1½	76.3	48.6	2.10	1.65	3.0	2.8	3.5	3.0	88.9
2½×1¼	76.3	42.7	2.10	1.65	3.0	2.8	3.5	3.0	88.9
3 ×2½	89.1	76.3	2.10	2.10	3.0	3.0	4.0	3.5	88.9
3 ×2	89.1	60.5	2.10	1.65	3.0	2.8	4.0	3.5	88.9
3 ×1½	89.1	48.6	2.10	1.65	3.0	2.8	4.0	3.0	88.9
3½×3	101.6	89.1	2.10	2.10	3.0	3.0	4.0	4.0	101.6
3½×2½	101.6	76.3	2.10	2.10	3.0	3.0	4.0	3.5	101.6
3½×2	101.6	60.5	2.10	1.65	3.0	2.8	4.0	3.5	101.6
4 ×3½	114.3	101.6	2.10	2.10	3.0	3.0	4.0	4.0	101.6
4 ×3	114.3	89.1	2.10	2.10	3.0	3.0	4.0	4.0	101.6
4 ×2½	114.3	76.3	2.10	2.10	3.0	3.0	4.0	3.5	101.6
4 2	114.3	60.5	2.10	1.65	3.0	2.8	4.0	3.5	101.6
5 ×4	139.8	114.3	2.80	2.10	3.4	3.0	5.0	4.0	127.0
5 ×3½	139.8	101.6	2.80	2.10	3.4	3.0	5.0	4.0	127.0
5 ×3	139.8	89.1	2.80	2.10	3.4	3.0	5.0	4.0	127.0
5 ×2½	139.8	76.3	2.80	2.10	3.4	3.0	5.0	3.5	127.0
6 ×5	165.2	139.8	2.80	2.80	3.4	3.4	5.0	5.0	139.7
6 ×4	165.2	114.3	2.80	2.10	3.4	3.0	5.0	4.0	139.7
6 ×5½	165.2	101.6	2.80	2.10	3.4	3.0	5.0	4.0	139.7
6 ×3	165.2	89.1	2.80	2.10	3.4	3.0	5.0	4.0	139.7
8 ×6	216.3	165.2	2.80	2.80	4.0	3.4	6.5	5.0	152.4
8 ×5	216.3	139.8	2.80	2.80	4.0	3.4	6.5	5.0	152.4
8 ×4	216.3	114.3	2.80	2.10	4.0	3.0	6.5	4.0	152.4

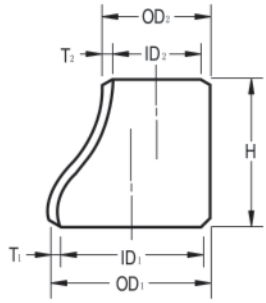
- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116

Reducers

Sch 5S, 10S, 20S



Concentric



Eccentric

KS B1541/3, JIS B2312/3

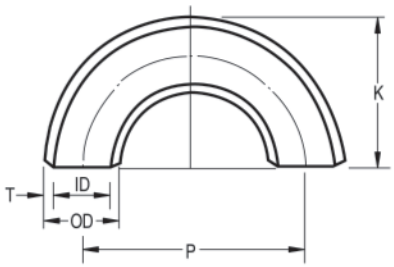
(in millimeters)

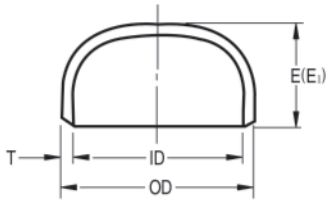
Nominal Pipe Size	Outside Diameter		Wall Thickness T						H
			5S		10S		20S		
	OD_1	OD_2	T_1	T_2	T_1	T_2	T_1	T_2	
10× 8	267.4	216.3	3.4	2.8	4.0	4.0	6.5	6.5	177.8
10× 6	267.4	165.2	3.4	2.8	4.0	3.4	6.5	5.0	177.8
12×10	318.5	267.4	4.0	3.4	4.5	4.0	6.5	6.5	203.2
12× 8	318.5	216.3	4.0	2.8	4.5	4.0	6.5	6.5	203.2
12× 6	318.5	165.2	4.0	2.8	4.5	3.4	6.5	5.0	203.2
14×12	355.6	318.5	4.0	4.0	4.8	4.5	7.9	6.5	330.2
14×10	355.6	267.4	4.0	3.4	4.8	4.0	7.9	6.5	330.2
14× 8	355.6	216.3	4.0	2.8	4.8	4.0	7.9	6.5	330.2
16×14	406.4	355.6	4.2	4.0	4.8	4.8	7.9	7.9	355.6
16×12	406.4	318.5	4.2	4.0	4.8	4.5	7.9	6.5	355.6
16×10	406.4	267.4	4.2	3.4	4.8	4.0	7.9	6.5	355.6
18×16	457.2	406.4	4.2	4.2	4.8	4.8	7.9	7.9	381.0
18×14	457.2	355.6	4.2	4.0	4.8	4.8	7.9	7.9	381.0
18×12	457.2	318.5	4.2	4.0	4.8	4.5	7.9	6.5	381.0
20×18	508.0	457.2	4.8	4.2	5.5	4.8	7.9	7.9	508.0
20×16	508.0	406.4	4.8	4.2	5.5	4.8	7.9	7.9	508.0
20×14	508.0	355.6	4.8	4.0	5.5	4.8	7.9	7.9	508.0
22×20	558.8	508.0	4.8	4.8	5.5	5.5	–	–	508.0
22×18	558.8	457.2	4.8	4.2	5.5	4.8	–	–	508.0
22×16	558.8	406.4	4.8	4.2	5.5	4.8	–	–	508.0
24×22	609.6	558.8	5.5	4.8	6.4	5.5	–	–	508.0
24×20	609.6	508.0	5.5	4.8	6.4	5.5	–	–	508.0
24×18	609.6	457.2	5.5	4.2	6.4	4.8	–	–	508.0
30×24	762.0	609.0	6.4	5.5	7.9	6.4	–	–	609.0

- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116

180° Elbows(Long, Short) Caps

Sch 5S, 10S, 20S





KS B1541, JIS B2312

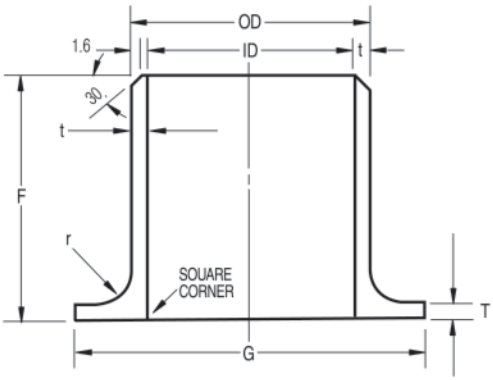
(in millimeters)

Nominal Pipe Size	Outside Diameter OD	Wall Thickness T			E	E_1	Limited Wall thickness	Long		Short	
		5S	10S	20S				P	K	P	K
½	21.7	1.65	2.1	2.5	25.4	–	–	76.2	49.0	–	–
¾	27.2	1.65	2.1	2.5	25.4	–	–	76.2	51.7	–	–
1	34.0	1.65	2.8	3.0	38.1	–	–	76.2	55.1	50.8	42.4
1¼	42.7	1.65	2.8	3.0	38.1	–	–	95.2	69.0	63.6	53.2
1½	48.6	1.65	2.8	3.0	38.1	38.1	5.1	114.4	81.5	76.2	62.4
2	60.5	1.65	2.8	3.5	38.1	44.5	5.5	152.4	106.5	101.6	81.1
2½	76.3	2.10	3.0	3.5	38.1	50.8	7.0	190.6	133.5	127.0	101.7
3	89.1	2.10	3.0	4.0	50.8	63.5	7.6	228.6	158.9	152.4	120.8
3½	101.6	2.10	3.0	4.0	63.5	76.2	8.1	266.8	184.2	177.8	139.7
4	114.3	2.10	3.0	4.0	63.5	76.2	8.6	304.8	209.6	203.2	158.8
5	139.8	2.80	3.4	5.0	76.2	88.9	9.5	381.0	260.4	254.0	196.9
6	165.2	2.80	3.4	5.0	88.9	101.6	11.0	457.2	311.2	304.8	235.0
8	216.3	2.80	4.0	6.5	101.6	127.0	12.7	609.6	413.0	406.4	311.4
10	267.4	3.40	4.0	6.5	127.0	152.4	12.7	762.0	514.7	508.0	387.7
12	318.5	4.00	4.5	6.5	152.4	177.8	12.7	914.4	616.5	609.6	464.1
14	355.6	4.00	4.8	7.9	165.1	190.5	12.7	1066.8	711.2	711.2	533.4
16	406.4	4.20	4.8	7.9	177.8	203.2	12.7	1219.2	812.8	812.8	609.6
18	457.2	4.20	4.8	7.9	203.2	228.6	12.7	1371.6	914.4	914.4	685.8
20	508.0	4.80	5.5	7.9	228.6	254.0	12.7	1524.0	1016.0	1016.0	762.0

- The Back-To-Face Dimension of Cap Shall Be E, If The Basic Wall Thickness is Not More Than The "Limited Wall Thickness" And E_1 If It Exceeds The "Limited Wall Thickness"
- For Bevel Details See Page 118
- For Dimensional Tolerances See Page 116

Lap Joint(Stub Ends)

Sch 5S, 10S, 20S



JPI - 7S - I5 - 84

(in millimeters)

Nominal Pipe Size	Outside Diameter OD	Sch 5s		Sch 10s		Sch 20s		Sch 40s		F	G	r_2
		ID	t	ID	t	ID	t	ID	t			
½	21.7	18.4	1.65	17.5	2.1	16.7	2.5	16.1	2.8	50	35	3.2
¾	27.2	23.9	1.65	23.0	2.1	22.2	2.5	21.4	2.9	50	43	3.2
1	34.0	30.7	1.65	28.4	2.8	28.0	3.0	27.2	3.4	50	51	3.2
1¼	42.7	39.4	1.65	37.1	2.8	36.7	3.0	35.5	3.6	50	64	4.8
1½	48.6	45.3	1.65	43.0	2.8	42.6	3.0	41.2	3.7	50	73	6.4
2	60.5	57.2	1.65	54.9	2.8	53.5	3.5	52.7	3.9	65	92	7.9
2½	76.3	72.1	2.10	70.3	3.0	69.3	3.5	65.9	5.2	65	105	7.9
3	89.1	84.9	2.10	83.1	3.0	81.1	4.0	78.1	5.5	65	127	9.5
3½	101.6	97.4	2.10	95.6	3.0	93.6	4.0	90.2	5.7	75	140	9.5
4	114.3	110.1	2.10	108.3	3.0	106.3	4.0	102.3	6.0	75	157	11.1
5	139.8	134.2	2.80	133.0	3.4	129.8	5.0	126.6	6.6	75	186	11.1
6	165.2	159.6	2.80	158.4	3.4	155.2	5.0	151.0	7.1	90	216	12.7
8	216.3	210.7	2.80	208.3	3.8	203.3	6.4	199.9	8.2	100	270	12.7
10	267.4	260.6	3.40	259.4	4.2	254.4	6.4	248.8	9.3	125	324	12.7
12	318.5	310.5	4.00	309.5	4.6	305.5	6.4	297.9	9.5	150	381	12.7

- Minimum Lap Thickness "T" Shall not be less than Wall Thickness "t"

Nominal Pipe Size	O.D	Sch 10s		Sch 20s		Sch 40s		F	G	Approx Weight		
		ID	t	ID	t	ID	t			10s	20s	40s
½	21.7	17.5	2.1	16.7	2.5	16.1	2.8	30	51	0.059	0.070	0.078
¾	27.2	23.0	2.1	22.2	2.5	21.4	2.9	30	56	0.073	0.086	0.099
1	34.0	28.4	2.8	28.0	3.0	27.2	3.4	50	67	0.172	0.184	0.207
1¼	42.7	37.1	2.8	36.7	3.0	35.5	3.6	50	76	0.217	0.231	0.275
1½	48.6	43.0	2.8	42.6	3.0	41.2	3.7	50	81	0.242	0.258	0.316
2	60.5	54.9	2.8	53.5	3.5	52.7	3.9	50	96	0.308	0.383	0.424
2½	76.3	70.3	3.0	69.3	3.5	65.9	5.2	50	116	0.430	0.499	0.731
3	89.1	83.1	3.0	81.1	4.0	78.1	5.5	50	126	0.484	0.640	0.870
3½	101.6	95.6	3.0	93.6	4.0	90.2	5.7	50	136	0.536	0.710	1.00
4	114.3	108.3	3.0	106.3	4.0	102.3	6.0	50	151	0.614	0.814	1.21
5	139.8	133.0	3.4	129.8	5.0	126.6	6.6	50	182	0.879	1.28	1.68
6	165.2	158.4	3.4	155.2	5.0	151.0	7.1	50	212	1.07	1.57	2.21
8	216.3	208.3	4.0	203.3	6.5	199.9	8.2	65	262	1.94	3.12	3.92
10	267.4	259.4	4.0	254.4	6.5	248.8	9.3	65	324	2.53	4.08	5.80
12	318.5	309.5	4.5	305.5	6.5	297.9	10.3	65	368	3.25	4.67	7.34

- Dimensions Conform to TK Standards.
- This specification used for JIS 10K Flanges.