

KS/JIS, BS

STEEL BUTT WELDING PIPE FITTINGS



DY BEND VINA CO., LTD.

APPLICABLE SPECIFICATIONS

KS : KOREAN INDUSTRIAL STANDARDS

- KS B1522 Steel Butt-Welding Pipe Fittings for Ordinary use.
- KS B1541 Steel Butt-Welding Pipe Fittings.
- KS B1542 Steel Socket-Welding Pipe Fittings.
- KS B1543 Steel Plate Butt-Welding Pipe Fittings.

JIS : JAPANESE INDUSTRIAL STANDARDS

- JIS B 2311 Steel Butt-Welding Pipe Fittings for Ordinary use.
- JIS B 2312 Steel Butt-Welding Pipe Fittings.
- JIS B 2313 Steel Plate Butt-Welding Pipe Fittings.
- JIS B 2314 Steel Socket-Welding Pipe Fittings.

ANSI : AMERICAN NATIONAL STANDARDS INSTITUTE

- ANSI B 16.5 Pipe Flanges and Flanged Fittings.
- ANSI B 16.9 Factory Made Wrought Steel Butt-Welding Fittings.
- ANSI B 16.25 Butt-Welding Ends.
- ANSI B 16.28 Wrought Steel Butt-Welding Short Radius Elbow and Returns.
- ANSI B 36.10 Welded and Seamless Wrought Steel Pipe.
- ANSI B 36.19 Staninless Steel Pipe.



90° BEND VINA

ASTM : AMERICAN SOCIETY FOR TESTING AND MATERIALS

- ASTM A 105 Carbon steel forgings for piping Applications.
- ASTM A 234 Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature service.
- ASTM A 403 Wrought Austenitic Stainless Steel Piping Fittings.
- ASTM A 420 Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service.
- ASTM A 815 Wrought Ferritic, Ferritic/Austenitic, and Martensitic Stainless Piping Fittings.

MSS : MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY

- MSS SP-43 Wrought Stainless Steel Butt-Welding Fittings.
- MSS SP-75 Specification for High Test Wrought Butt-Welding Fittings.
- MSS SP-79 Socket-Welding Reducer Inserts

BS : BRITISH STANDARDS

- BS 1640 Steel Butt-Welding Pipe Fittings for the Petroleum Industry Part 1. Carbon and Ferritic Alloy Steel Fittings
- BS 1965 Butt-Welding Pipe Fittings for Pressure Purposes. Part1. Carbon Steel & Part2. Austenitic Stainless Steel.

API : AMERICAN PETROLEUM INSTITUTE

- API 5L Seamless and Welded Steel Line-Pipe
- API 5LX Seamless and Welded High-Test Line Pipes

DI BEND VINA



STEEL BUTT-WELDING FITTINGS

KS/JIS

• 90°, 45° Elbow (SPP/SGP, 7.9T, STD, X-S)	6
• 90°, 45° Elbow (Sch40, Sch80, Sch120, Sch160)	7
• 180° Elbow, Cap (SPP/SGP)	8
• 180° Elbow, Cap (Sch40, Sch80, Sch120, Sch160)	9
• Tee (SPP/SGP)	10
• Tee (7.9T, SDT, X-S)	12
• Tee (Sch40, Sch80, Sch120, Sch160)	14
• Reducer (SPP/SGP)	16
• Reducer (7.9T, SDT,X-S)	18
• Reducer (Sch40, Sch80, Sch120, Sch160)	20

STEEL BUTT-WELDING PIPE FITTINGS

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

SPP/SGP, 7.9T, STD, X-S

KS B 1522, JIS B 2311

Unit : mm

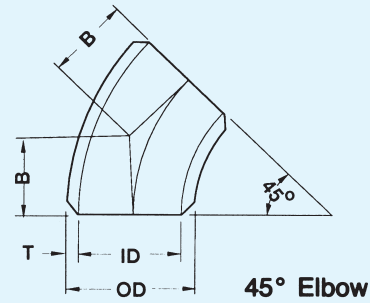
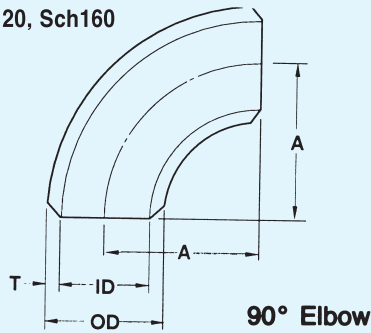
Nominal Pipe Size	Outside Diameter OD	Inside Diameter ID	Wall Thickness T	Long		Short
				90°	45°	90°
				A	B	A
15	21.7	16.1	2.8	38.1	15.8	-
20	27.2	21.6	2.8	38.1	15.8	-
25	34.0	27.6	3.2	38.1	15.8	25.4
32	42.7	35.7	3.5	47.6	19.7	31.8
40	48.6	41.6	3.5	57.2	23.7	38.1
50	60.5	52.9	3.8	76.2	31.6	50.8
65	76.3	67.9	4.2	95.3	39.5	63.5
80	89.1	80.7	4.2	114.3	47.3	76.2
90	101.6	93.2	4.2	133.4	55.3	88.9
100	114.3	105.3	4.5	152.4	63.1	101.6
125	139.8	130.8	4.5	190.5	78.9	127.0
150	165.2	155.2	5.0	228.6	94.7	152.4
200	216.3	204.7	5.8	304.8	126.3	203.2
250	267.4	254.2	6.6	381.0	157.8	254.0
300	318.5	304.7	6.9	457.2	189.4	304.8
350	355.6	339.8	7.9	533.4	220.9	355.6
400	406.4	390.6	7.9	609.6	252.5	406.4
450	457.2	441.4	7.9	685.8	284.1	457.2
500	508.0	492.2	7.9	762.0	315.6	508.0

KS B 1543, JIS B 2313

Unit : mm

Nominal Pipe Size	Outside Diameter OD	7.9T		STD		X-S		Center to End		
		ID	T	ID	T	ID	T	Long		Short
								A (90°)	B (45°)	A (90°)
350	355.6	339.8	7.9	336.6	9.5	330.2	12.7	533.4	220.9	355.6
400	406.4	390.6	7.9	387.4	9.5	381.0	12.7	609.6	252.5	406.4
450	457.2	441.4	7.9	438.2	9.5	431.8	12.7	685.8	284.1	457.2
500	508.0	492.2	7.9	489.0	9.5	482.6	12.7	762.0	315.6	508.0
550	558.8	543.0	7.9	539.8	9.5	533.4	12.7	838.2	347.2	558.8
600	609.6	593.8	7.9	590.6	9.5	584.2	12.7	914.4	378.7	609.6
650	660.4	644.6	7.9	641.4	9.5	635.0	12.7	990.6	410.3	660.4
700	711.2	695.4	7.9	692.2	9.5	685.8	12.7	1066.8	441.9	711.2
750	762.0	746.2	7.9	743.0	9.5	736.6	12.7	1143.0	473.4	762.0
800	812.8	797.0	7.9	793.8	9.5	787.4	12.7	1219.2	505.0	812.8
850	863.6	847.8	7.9	844.6	9.5	838.2	12.7	1295.4	536.6	863.6
900	914.4	898.6	7.9	895.4	9.5	889.0	12.7	1371.6	568.1	914.4
950	965.2	949.4	7.9	946.2	9.5	939.8	12.7	1447.8	599.7	965.2
1000	1016.0	1000.2	7.9	997.0	9.5	990.6	12.7	1524.0	631.2	1016.0

Sch40, Sch80, Sch120, Sch160



KS B 1541/43, JIS B 2312/13

Unit : mm

Nominal Pipe Size	Outside Diameter OD	Sch 40		Sch 80		Sch 120		Sch 160		Center to End		
		ID	T	ID	T	ID	T	ID	T	Long		Short
										A (90°)	B (45°)	A (90°)
15	21.7	16.1	2.8	14.3	3.7	-	-	-	-	38.1	15.8	-
20	27.2	21.4	2.9	19.4	3.9	-	-	-	-	38.1	15.8	-
25	34.0	27.2	3.4	25.0	4.5	-	-	-	-	38.1	15.8	25.4
32	42.7	35.5	3.6	32.9	4.9	-	-	-	-	47.6	19.7	31.8
40	48.6	41.2	3.7	38.4	5.1	-	-	34.4	7.1	57.2	23.7	38.1
50	60.5	52.7	3.9	49.5	5.5	-	-	43.1	8.7	76.2	31.6	50.8
65	76.3	65.9	5.2	62.3	7.0	-	-	57.3	9.5	95.3	39.5	63.5
80	89.1	78.1	5.5	73.9	7.6	-	-	66.9	11.1	114.3	47.3	76.2
90	101.6	90.2	5.7	85.4	8.1	-	-	76.2	12.7	133.4	55.3	88.9
100	114.3	102.3	6.0	97.1	8.6	92.1	11.1	87.3	13.5	152.4	63.1	101.6
125	139.8	126.6	6.6	120.8	9.5	114.4	12.7	108.0	15.9	190.5	78.9	127.0
150	165.2	151.0	7.1	143.2	11.0	136.6	14.3	128.8	18.2	228.6	94.7	152.4
200	216.3	199.9	8.2	190.9	12.7	179.9	18.2	170.3	23.0	304.8	126.3	203.2
250	267.4	248.8	9.3	237.2	15.1	224.6	21.4	210.2	28.6	381.0	157.8	254.0
300	318.5	297.9	10.3	283.7	17.4	267.7	25.4	251.9	33.3	457.2	189.4	304.8
350	355.6	333.4	11.1	317.6	19.0	300.0	27.8	284.2	35.7	533.4	220.9	355.6
400	406.4	381.0	12.7	363.6	21.4	344.6	30.9	325.4	40.5	609.6	252.5	406.4
450	457.2	428.6	14.3	409.6	23.8	387.4	34.9	366.8	45.2	685.8	284.1	457.2
500	508.0	477.8	15.1	455.6	26.2	431.8	38.1	408.0	50.0	762.0	315.6	508.0
550	558.8	528.6	*15.1	501.6	28.6	-	-	-	-	838.2	347.2	558.8
600	609.6	574.8	17.4	547.6	31.0	-	-	-	-	914.4	378.7	609.6
650	660.4	625.6	*17.4	-	-	-	-	-	-	990.6	410.3	660.4
700	711.2	676.4	*17.4	-	-	-	-	-	-	1066.8	441.9	711.2
750	762.0	727.2	*17.4	-	-	-	-	-	-	1143.0	473.4	762.0
800	812.8	778.0	17.4	-	-	-	-	-	-	1219.2	505.0	812.8
850	863.6	828.8	17.4	-	-	-	-	-	-	1295.4	536.6	863.6
900	914.4	876.4	19.0	-	-	-	-	-	-	1371.6	568.1	914.4

* Asterisks(*) denote DY BEND VINA Standard.

STEEL BUTT-WELDING PIPE FITTINGS

180° Elbow(Long, Short) CAP

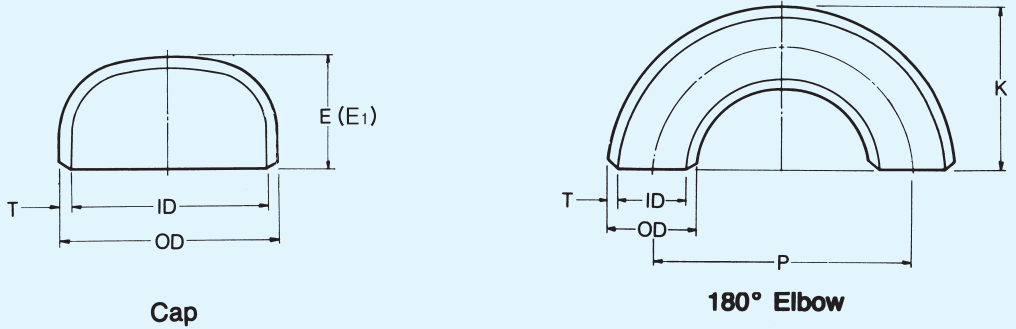
SPP/SGP

KS B 1522, JIS B 2311

Unit : mm

Nominal Pipe Size	Outside Diameter OD	Inside Diameter ID	Wall Thickness T	Cap	180° Elbow			
				E	Long		Short	
					P	K	P	K
15	21.7	16.1	2.8	-	76.2	49.0	-	-
20	27.2	21.6	2.8	-	76.2	51.7	-	-
25	34.0	27.6	3.2	38.1	76.2	55.1	50.8	42.4
32	42.7	35.7	3.5	38.1	95.2	69.0	63.6	53.2
40	48.6	41.6	3.5	38.1	114.4	81.5	76.2	62.4
50	60.5	52.9	3.8	38.1	152.4	106.5	101.6	81.1
65	76.3	67.9	4.2	38.1	190.6	133.5	127.0	101.7
80	89.1	80.7	4.2	50.8	228.6	158.9	152.4	120.8
90	101.6	93.2	4.2	63.5	266.8	184.2	177.8	139.7
100	114.3	105.3	4.5	63.5	304.8	209.6	203.2	158.8
125	139.8	130.8	4.5	76.2	381.0	260.4	254.0	196.9
150	165.2	155.2	5.0	88.9	457.2	311.2	304.8	235.0
200	216.3	204.7	5.8	101.6	609.6	413.0	406.4	311.4
250	267.4	254.2	6.6	127.0	762.0	514.7	508.0	387.7
300	318.5	304.7	6.9	152.4	914.4	616.5	609.6	464.1
350	355.6	339.8	7.9	165.1	1066.8	711.2	711.2	533.4
400	406.4	390.6	7.9	177.8	1219.2	812.8	812.8	609.6
450	457.2	441.4	7.9	203.2	-	-	-	-
500	508.0	492.2	7.9	228.6	-	-	-	-

Sch40, Sch80, Sch120, Sch160



KS B 1541, JIS B 2312

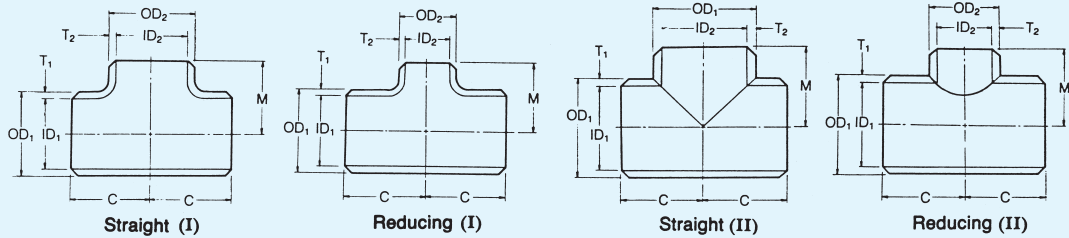
Unit : mm

Nominal Pipe Size	Outside Diameter OD	Wall Thickness T				Cap			180° Elbow			
		Sch 40	Sch 80	Sch 120	Sch 160	E	E ₁	Limited Wall Thickness for E	Long		Short	
									P	K	P	K
15	21.7	2.8	3.7	-	-	25.4	-	-	76.2	49.0	-	-
20	27.2	2.9	3.9	-	-	25.4	-	-	76.2	51.7	-	-
25	34.0	3.4	4.5	-	-	38.1	-	-	76.2	55.1	50.8	42.4
32	42.7	3.6	4.9	-	-	38.1	-	-	95.2	69.0	63.6	53.2
40	48.6	3.7	5.1	-	7.1	38.1	-	-	114.4	81.5	76.2	62.4
50	60.5	3.9	5.5	-	8.7	38.1	44.5	5.5	152.4	106.5	101.6	81.1
65	76.3	5.2	7.0	-	9.5	38.1	50.8	7.0	190.6	133.5	127.0	101.7
80	89.1	5.5	7.6	-	11.1	50.8	63.5	7.6	228.6	158.9	152.4	120.8
90	101.6	5.7	8.1	-	12.7	63.5	76.2	8.1	266.8	184.2	177.8	139.7
100	114.3	6.0	8.6	11.1	13.5	63.5	76.2	8.6	304.8	209.6	203.2	158.8
125	139.8	6.6	9.5	12.7	15.9	76.2	88.9	9.5	381.0	260.4	254.0	196.9
150	165.2	7.1	11.0	14.3	18.2	88.9	101.6	11.0	457.2	311.2	304.8	235.0
200	216.3	8.2	12.7	18.2	23.0	101.6	127.0	12.7	609.6	413.0	406.4	311.4
250	267.4	9.3	15.1	21.4	28.6	127.0	152.4	12.7	762.0	514.7	508.0	387.7
300	318.5	10.3	17.4	25.4	33.3	152.4	177.8	12.7	914.4	616.5	609.6	464.1
350	355.6	11.1	19.0	27.8	35.7	165.1	190.5	12.7	1066.8	711.2	711.2	533.4
400	406.4	12.7	21.4	30.9	40.5	177.8	203.2	12.7	1219.2	812.8	812.8	609.6
450	457.2	14.3	23.8	34.9	45.2	203.2	228.6	12.7	1371.6	914.4	914.4	685.8
500	508.0	15.1	26.2	38.1	50.0	228.6	254.0	12.7	1524.0	1016.0	1016.0	762.0

STEEL BUTT-WELDING PIPE FITTINGS

Tee

SPP/SGP



KS B 1522, JIS B 2311

Unit : mm

Nominal Pipe Size	Run			Outlet			Center To End	
	Outside Dia. OD ₁	Outside Dia. ID ₁	Wall Thick. T ₁	Outside Dia. OD ₁	Outside Dia. ID ₁	Wall Thick. T ₁	C	M
15	21.7	16.1	2.8	21.7	16.1	2.8	25.4	25.4
20	27.2	21.6	2.8	27.2	21.6	2.8	28.6	28.6
20 × 20 × 15	27.2	21.6	2.8	21.7	16.1	2.8	28.6	28.6
25	34.0	27.6	3.2	34.0	27.6	3.2	38.1	38.1
25 × 25 × 20	34.0	27.6	3.2	27.2	21.6	2.8	38.1	38.1
25 × 25 × 15	34.0	27.6	3.2	21.7	16.1	2.8	38.1	38.1
32	42.7	35.7	3.5	42.7	35.7	3.5	47.6	47.6
32 × 32 × 25	42.7	35.7	3.5	34.0	27.6	3.2	47.6	47.6
32 × 32 × 20	42.7	35.7	3.5	27.2	21.6	2.8	47.6	47.6
32 × 32 × 15	42.7	35.7	3.5	21.7	16.1	2.8	47.6	47.6
40	48.6	41.6	3.5	48.6	41.6	3.5	57.2	57.2
40 × 40 × 32	48.6	41.6	3.5	42.7	35.7	3.5	57.2	57.2
40 × 40 × 25	48.6	41.6	3.5	34.0	27.6	3.2	57.2	57.2
40 × 40 × 20	48.6	41.6	3.5	27.2	21.6	2.8	57.2	57.2
40 × 40 × 15	48.6	41.6	3.5	21.7	16.1	2.8	57.2	57.2
50	60.5	52.9	3.8	60.5	52.9	3.8	63.5	63.5
50 × 50 × 40	60.5	52.9	3.8	48.6	41.6	3.5	63.5	60.3
50 × 50 × 32	60.5	52.9	3.8	42.7	35.7	3.5	63.5	57.2
50 × 50 × 25	60.5	52.9	3.8	34.0	27.6	3.2	63.5	50.8
50 × 50 × 20	60.5	52.9	3.8	27.2	21.6	2.8	63.5	44.5
65	76.3	67.9	4.2	76.3	67.9	4.2	76.2	76.2
65 × 65 × 50	76.3	67.9	4.2	60.5	52.9	3.8	76.2	69.9
65 × 65 × 40	76.3	67.9	4.2	48.6	41.6	3.5	76.2	66.7
65 × 65 × 32	76.3	67.9	4.2	42.7	35.7	3.5	76.2	63.5
65 × 65 × 25	76.3	67.9	4.2	34.0	27.6	3.2	76.2	57.2
80	89.1	80.7	4.2	89.1	80.7	4.2	85.7	85.7
80 × 80 × 65	89.1	80.7	4.2	76.3	67.9	4.2	85.7	82.6
80 × 80 × 50	89.1	80.7	4.2	60.5	52.9	3.8	85.7	76.2
80 × 80 × 40	89.1	80.7	4.2	48.6	41.6	3.5	85.7	73.0
80 × 80 × 32	89.1	80.7	4.2	42.7	35.7	3.5	85.7	69.9
90	101.6	93.2	4.2	101.6	93.2	4.2	95.3	95.3
90 × 90 × 80	101.6	93.2	4.2	89.1	80.7	4.2	95.3	92.1
90 × 90 × 65	101.6	93.2	4.2	76.3	67.9	4.2	95.3	88.9
90 × 90 × 50	101.6	93.2	4.2	60.5	52.9	3.8	95.3	82.6
90 × 90 × 40	101.6	93.2	4.2	48.6	41.6	3.5	95.3	79.4
100	114.3	105.3	4.5	114.3	105.3	4.5	104.8	104.8
100 × 100 × 90	114.3	105.3	4.5	101.6	93.2	4.2	104.8	101.6
100 × 100 × 80	114.3	105.3	4.5	89.1	80.7	4.2	104.8	98.4
100 × 100 × 65	114.3	105.3	4.5	86.3	67.9	4.2	104.8	95.3
100 × 100 × 50	114.3	105.3	4.5	60.5	52.9	3.8	104.8	88.9
100 × 100 × 40	114.3	105.3	4.5	48.6	41.6	3.5	104.8	85.7

Nominal Pipe Size	Run			Outlet			Center To End	
	Outside Dia. OD ₁	Outside Dia. ID ₁	Wall Thick. T ₁	Outside Dia. OD ₁	Outside Dia. ID ₁	Wall Thick. T ₁	C	M
125	139.8	130.8	4.5	139.8	130.8	4.5	123.8	123.8
125 × 125 × 100	139.8	130.8	4.5	114.3	105.3	4.5	123.8	117.5
125 × 125 × 90	139.8	130.8	4.5	101.6	93.2	4.2	123.8	114.3
125 × 125 × 80	139.8	130.8	4.5	89.1	80.7	4.2	123.8	111.1
125 × 125 × 65	139.8	130.8	4.5	76.3	67.9	4.2	123.8	108.0
125 × 125 × 50	139.8	130.8	4.5	60.5	52.9	3.8	123.8	104.8
150	165.2	155.2	5.0	165.2	155.2	5.0	142.9	142.9
150 × 150 × 125	165.2	155.2	5.0	139.8	130.8	4.5	142.9	136.5
150 × 150 × 100	165.2	155.2	5.0	114.3	105.3	4.5	142.9	130.2
150 × 150 × 90	165.2	155.2	5.0	101.6	93.2	4.2	142.9	127.0
150 × 150 × 80	165.2	155.2	5.0	89.1	80.7	4.2	142.9	123.8
150 × 150 × 65	165.2	155.2	5.0	76.3	67.9	4.2	142.9	120.7
200	216.3	204.7	5.8	216.3	204.7	5.8	177.8	177.8
200 × 200 × 150	216.3	204.7	5.8	165.2	155.2	5.0	177.8	168.3
200 × 200 × 125	216.3	204.7	5.8	139.8	130.8	4.5	177.8	161.9
200 × 200 × 100	216.3	204.7	5.8	114.3	105.3	4.5	177.8	155.6
200 × 200 × 90	216.3	204.7	5.8	101.6	93.2	4.2	177.8	152.4
250	267.4	254.2	6.6	267.2	254.2	6.6	215.9	215.9
250 × 250 × 200	267.4	254.2	6.6	216.3	204.7	5.8	215.9	203.2
250 × 250 × 150	267.4	254.2	6.6	165.2	155.2	5.0	215.9	193.7
250 × 250 × 125	267.4	254.2	6.6	139.8	130.8	4.5	215.9	190.5
250 × 250 × 100	267.4	254.2	6.6	114.3	105.3	4.5	215.9	184.2
300	318.5	304.7	6.9	318.5	304.7	6.9	254.0	254.0
300 × 300 × 250	318.5	304.7	6.9	267.4	254.2	6.6	254.0	241.3
300 × 300 × 200	318.5	304.7	6.9	216.3	204.7	5.8	254.0	228.6
300 × 300 × 150	318.5	304.7	6.9	165.2	155.2	5.0	254.0	219.1
300 × 300 × 125	318.5	304.7	6.9	139.8	130.8	4.5	254.0	215.9
350	355.6	339.8	7.9	355.6	339.8	7.9	279.4	279.4
350 × 350 × 300	355.6	339.8	7.9	318.5	304.7	6.9	279.4	269.9
350 × 350 × 250	355.6	339.8	7.9	267.4	254.2	6.6	279.4	257.2
350 × 350 × 200	355.6	339.8	7.9	216.3	204.7	5.8	279.4	247.7
350 × 350 × 150	355.6	339.8	7.9	165.2	155.2	5.0	279.4	238.1
400	406.4	390.6	7.9	406.4	390.6	7.9	304.8	304.8
400 × 400 × 350	406.4	390.6	7.9	355.6	339.8	7.9	304.8	304.8
400 × 400 × 300	406.4	390.6	7.9	318.5	304.7	6.9	304.8	295.3
400 × 400 × 250	406.4	390.6	7.9	267.4	254.2	6.6	304.8	282.6
400 × 400 × 200	406.4	390.6	7.9	216.3	204.7	5.8	304.8	273.1
400 × 400 × 150	406.4	390.6	7.9	165.2	155.2	5.0	304.8	263.5
450	457.2	441.4	7.9	457.2	441.4	7.9	342.9	342.9
450 × 450 × 400	457.2	441.4	7.9	406.4	390.6	7.9	342.9	330.2
450 × 450 × 350	457.2	441.4	7.9	355.6	339.8	7.9	342.9	330.2
450 × 450 × 300	457.2	441.4	7.9	318.5	304.7	6.9	342.9	320.7
450 × 450 × 250	457.2	441.4	7.9	267.4	254.2	6.6	342.9	308.0
500	508.0	492.2	7.9	508.0	492.2	7.9	381.0	381.0
500 × 500 × 450	508.0	492.2	7.9	457.2	441.4	7.9	381.0	368.3
500 × 500 × 400	508.0	492.2	7.9	406.4	390.6	7.9	381.0	355.6
500 × 500 × 350	508.0	492.2	7.9	355.6	339.8	7.9	381.0	355.6
500 × 500 × 300	508.0	492.2	7.9	318.5	304.8	6.9	381.0	346.1
500 × 500 × 250	508.0	492.2	7.9	267.4	254.2	6.6	381.0	333.4
500 × 500 × 200	508.0	492.2	7.9	216.3	204.7	5.8	381.0	323.9

STEEL BUTT-WELDING PIPE FITTINGS

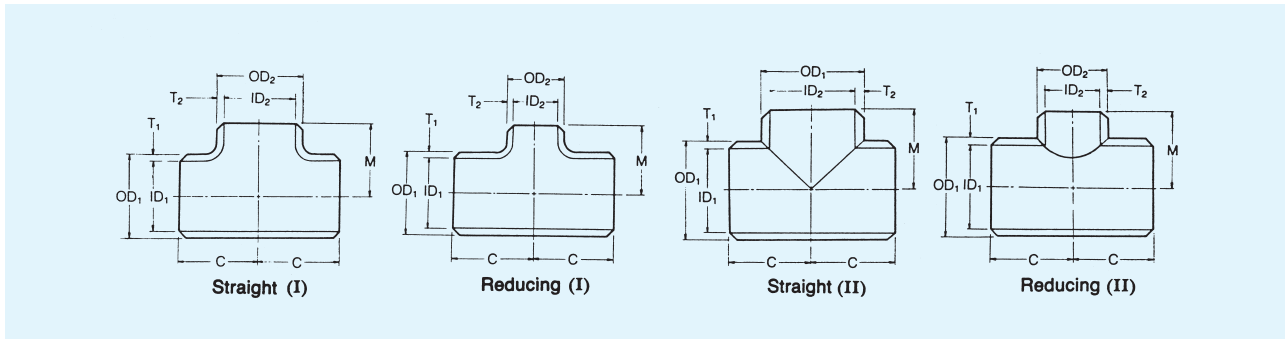
Tee

7.9T, STD, X-S

KS B 1543, JIS B 2311/3

Unit : mm

Nominal Pipe Size	Outside Diameter		Wall Thickness						Center to End	
	OD ₁	OD ₂	7.9T		STD		X-S		C	M
			T ₁	T ₂	T ₁	T ₂	T ₁	T ₂		
350	355.6	355.6	7.9	7.9	9.5	9.5	12.7	12.7	279.4	279.4
400	406.4	406.4	7.9	7.9	9.5	9.5	12.7	12.7	304.8	304.8
400 × 400 × 350	406.4	355.6	7.9	7.9	9.5	9.5	12.7	12.7	304.8	304.8
400 × 400 × 300	406.4	318.5	7.9	7.9	9.5	9.5	12.7	12.7	304.8	295.3
450	457.2	457.2	7.9	7.9	9.5	9.5	12.7	12.7	342.9	342.9
450 × 450 × 400	457.2	406.4	7.9	7.9	9.5	9.5	12.7	12.7	342.9	330.2
450 × 450 × 350	457.2	355.6	7.9	7.9	9.5	9.5	12.7	12.7	342.9	330.2
450 × 450 × 300	457.2	318.5	7.9	7.9	9.5	9.5	12.7	12.7	342.9	320.7
500	508.0	508.0	7.9	7.9	9.5	9.5	12.7	12.7	381.0	381.0
500 × 500 × 450	508.0	457.2	7.9	7.9	9.5	9.5	12.7	12.7	381.0	368.3
500 × 500 × 400	508.0	406.4	7.9	7.9	9.5	9.5	12.7	12.7	381.0	355.6
500 × 500 × 350	508.0	355.6	7.9	7.9	9.5	9.5	12.7	12.7	381.0	355.6
500 × 500 × 300	508.0	318.5	7.9	7.9	9.5	9.5	12.7	12.7	381.0	346.1
550	558.8	558.8	7.9	7.9	9.5	9.5	12.7	12.7	419.1	419.1
550 × 550 × 500	558.8	508.0	7.9	7.9	9.5	9.5	12.7	12.7	419.1	406.4
550 × 550 × 450	558.8	457.2	7.9	7.9	9.5	9.5	12.7	12.7	419.1	393.7
550 × 550 × 400	558.8	406.4	7.9	7.9	9.5	9.5	12.7	12.7	419.1	381.0
600	609.6	609.6	7.9	7.9	9.5	9.5	12.7	12.7	431.8	431.8
600 × 600 × 550	609.6	558.8	7.9	7.9	9.5	9.5	12.7	12.7	431.8	431.8
600 × 600 × 500	609.6	508.0	7.9	7.9	9.5	9.5	12.7	12.7	431.8	431.8
600 × 600 × 450	609.6	457.2	7.9	7.9	9.5	9.5	12.7	12.7	431.8	419.1
650	660.4	660.4	7.9	7.9	9.5	9.5	12.7	12.7	495.3	495.3
650 × 650 × 600	660.4	609.6	7.9	7.9	9.5	9.5	12.7	12.7	495.3	482.6
650 × 650 × 600	660.4	558.8	7.9	7.9	9.5	9.5	12.7	12.7	495.3	469.9
650 × 650 × 600	660.4	508.0	7.9	7.9	9.5	9.5	12.7	12.7	495.3	457.2
700	711.2	711.2	7.9	7.9	9.5	9.5	12.7	12.7	520.7	520.7
700 × 700 × 650	711.2	660.4	7.9	7.9	9.5	9.5	12.7	12.7	520.7	520.7
700 × 700 × 650	711.2	609.6	7.9	7.9	9.5	9.5	12.7	12.7	520.7	508.0
700 × 700 × 650	711.2	558.8	7.9	7.9	9.5	9.5	12.7	12.7	520.7	495.3
750	762.0	762.0	7.9	7.9	9.5	9.5	12.7	12.7	558.8	558.8
750 × 750 × 700	762.0	711.2	7.9	7.9	9.5	9.5	12.7	12.7	558.8	546.1
750 × 750 × 700	762.0	660.4	7.9	7.9	9.5	9.5	12.7	12.7	558.8	546.1
750 × 750 × 700	762.0	609.6	7.9	7.9	9.5	9.5	12.7	12.7	558.8	533.4



KS B 1543, JIS B 2311/3

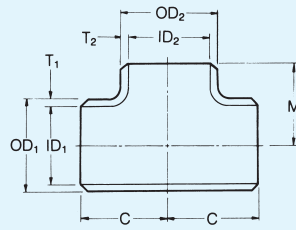
Unit : mm

Nominal Pipe Size	Outside Diameter		Wall Thickness						Center to End	
	OD ₁	OD ₂	7.9T		STD		X-S		C	M
			T ₁	T ₂	T ₁	T ₂	T ₁	T ₂		
800	812.8	812.8	7.9	7.9	9.5	9.5	12.7	12.7	596.9	596.9
800 × 800 × 750	812.8	762.0	7.9	7.9	9.5	9.5	12.7	12.7	596.9	857.2
800 × 800 × 700	812.8	711.2	7.9	7.9	9.5	9.5	12.7	12.7	596.9	571.5
800 × 800 × 650	812.8	660.4	7.9	7.9	9.5	9.5	12.7	12.7	596.9	571.5
850	863.6	863.6	7.9	7.9	9.5	9.5	12.7	12.7	635.0	635.0
850 × 850 × 800	863.6	812.8	7.9	7.9	9.5	9.5	12.7	12.7	635.0	622.3
850 × 850 × 750	863.6	762.0	7.9	7.9	9.5	9.5	12.7	12.7	635.0	609.6
850 × 850 × 700	863.6	711.2	7.9	7.9	9.5	9.5	12.7	12.7	635.0	596.9
900	914.4	914.4	7.9	7.9	9.5	9.5	12.7	12.7	673.1	673.1
900 × 900 × 850	914.4	863.6	7.9	7.9	9.5	9.5	12.7	12.7	673.1	660.4
900 × 900 × 800	914.4	812.8	7.9	7.9	9.5	9.5	12.7	12.7	673.1	647.7
900 × 900 × 750	914.4	762.0	7.9	7.9	9.5	9.5	12.7	12.7	673.1	635.0
950	965.2	965.2	7.9	7.9	9.5	9.5	12.7	12.7	711.2	711.2
950 × 950 × 900	965.2	914.4	7.9	7.9	9.5	9.5	12.7	12.7	711.2	711.2
950 × 950 × 850	965.2	863.6	7.9	7.9	9.5	9.5	12.7	12.7	711.2	698.5
950 × 950 × 800	965.2	812.8	7.9	7.9	9.5	9.5	12.7	12.7	711.2	685.8
1000	1016.0	1016.0	7.9	7.9	9.5	9.5	12.7	12.7	749.3	749.3
1000 × 1000 × 950	1016.0	965.2	7.9	7.9	9.5	9.5	12.7	12.7	749.3	749.3
1000 × 1000 × 900	1016.0	914.4	7.9	7.9	9.5	9.5	12.7	12.7	749.3	736.6
1000 × 1000 × 850	1016.0	863.6	7.9	7.9	9.5	9.5	12.7	12.7	749.3	723.9
1050	1066.8	1066.8	7.9	7.9	9.5	9.5	12.7	12.7	762.0	711.2
1050 × 1050 × 1000	1066.8	1016.0	7.9	7.9	9.5	9.5	12.7	12.7	762.0	711.2
1050 × 1050 × 950	1066.8	965.2	7.9	7.9	9.5	9.5	12.7	12.7	762.0	711.2
1050 × 1050 × 900	1066.8	914.4	7.9	7.9	9.5	9.5	12.7	12.7	762.0	711.2
1100	1117.6	1117.6	7.9	7.9	9.5	9.5	12.7	12.7	812.8	762.0
1100 × 1100 × 1050	1117.6	1066.8	7.9	7.9	9.5	9.5	12.7	12.7	812.8	762.0
1100 × 1100 × 1000	1117.6	1016.0	7.9	7.9	9.5	9.5	12.7	12.7	812.8	749.3
1100 × 1100 × 950	1117.6	965.2	7.9	7.9	9.5	9.5	12.7	12.7	812.8	736.6
1150	1168.4	1168.4	7.9	7.9	9.5	9.5	12.7	12.7	850.9	800.1
1150 × 1150 × 1100	1168.4	1117.6	7.9	7.9	9.5	9.5	12.7	12.7	850.9	800.1
1150 × 1150 × 1050	1168.4	1066.8	7.9	7.9	9.5	9.5	12.7	12.7	850.9	787.4
1150 × 1150 × 1000	1168.4	1016.0	7.9	7.9	9.5	9.5	12.7	12.7	850.9	774.7
1200	1219.2	1219.2	7.9	7.9	9.5	9.5	12.7	12.7	889.0	838.2
1200 × 1200 × 1150	1219.2	1168.4	7.9	7.9	9.5	9.5	12.7	12.7	889.0	838.2
1200 × 1200 × 1100	1219.2	1117.6	7.9	7.9	9.5	9.5	12.7	12.7	889.0	838.2
1200 × 1200 × 1050	1219.2	1066.8	7.9	7.9	9.5	9.5	12.7	12.7	889.0	812.8

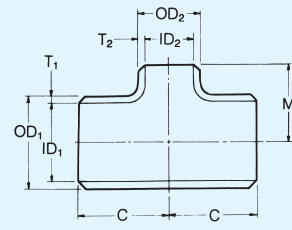
STEEL BUTT-WELDING PIPE FITTINGS

Tee

Sch40, Sch80, Sch120, Sch160



Straight



Reducing

KS B 1541, JIS B 2312

Unit : mm

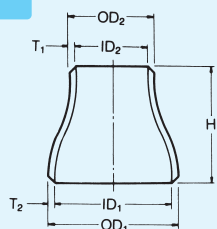
Nominal Pipe Size	Outside Diameter		Sch 40		Sch 80		Sch 120		Sch 160		Center To End	
	OD ₁	OD ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	C	M
15	21.7	21.7	2.8	2.8	3.7	3.7	-	-	-	-	25.4	25.4
20	27.2	27.2	2.9	2.9	3.9	3.9	-	-	-	-	28.6	28.6
20 × 20 × 15	27.2	21.7	2.9	2.8	3.9	3.7	-	-	-	-	28.6	28.6
25	34.0	34.0	3.4	3.4	4.5	4.5	-	-	-	-	38.1	38.1
25 × 25 × 20	34.0	27.2	3.4	2.9	4.5	3.9	-	-	-	-	38.1	38.1
25 × 25 × 15	34.0	21.7	3.4	2.8	4.5	3.7	-	-	-	-	38.1	38.1
32	42.7	42.7	3.6	3.6	4.9	4.9	-	-	-	-	47.6	47.6
32 × 32 × 25	42.7	34.0	3.6	3.4	4.9	4.5	-	-	-	-	47.6	47.6
32 × 32 × 20	42.7	27.2	3.6	2.9	4.9	3.9	-	-	-	-	47.6	47.6
32 × 32 × 15	42.7	21.7	3.6	2.8	4.9	3.7	-	-	-	-	47.6	47.6
40	48.6	48.6	3.7	3.7	5.1	5.1	-	-	7.1	7.1	57.2	57.2
40 × 40 × 32	48.6	42.7	3.7	3.6	5.1	4.9	-	-	-	-	57.2	57.2
40 × 40 × 25	48.6	34.0	3.7	3.4	5.1	4.5	-	-	-	-	57.2	57.2
40 × 40 × 20	48.6	27.2	3.7	2.9	5.1	3.9	-	-	-	-	57.2	57.2
40 × 40 × 15	48.6	21.7	3.7	2.8	5.1	3.7	-	-	-	-	57.2	57.2
50	60.5	60.5	3.9	3.9	5.5	5.5	-	-	8.7	8.7	63.5	63.5
50 × 50 × 40	60.5	48.6	3.9	3.7	5.5	5.1	-	-	8.7	7.1	63.5	60.3
50 × 50 × 32	60.5	42.7	3.9	3.6	5.5	4.9	-	-	-	-	63.5	57.2
50 × 50 × 25	60.5	34.0	3.9	3.4	5.5	4.5	-	-	-	-	63.5	50.8
50 × 50 × 20	60.5	27.2	3.9	2.9	5.5	3.9	-	-	-	-	63.5	44.5
65	76.3	76.3	5.2	5.2	7.0	7.0	-	-	9.5	9.5	76.2	76.2
65 × 65 × 50	76.3	60.5	5.2	3.9	7.0	5.5	-	-	9.5	8.7	76.2	69.9
65 × 65 × 40	76.3	48.6	5.2	3.7	7.0	5.1	-	-	9.5	7.1	76.2	66.7
65 × 65 × 32	76.3	42.7	5.2	3.6	7.0	4.9	-	-	-	-	76.2	63.5
65 × 65 × 25	76.3	34.0	5.2	3.4	7.0	4.5	-	-	-	-	76.2	57.2
80	89.1	89.1	5.5	5.5	7.6	7.6	-	-	11.1	11.1	85.7	85.7
80 × 80 × 65	89.1	76.3	5.5	5.2	7.6	7.0	-	-	11.1	9.5	85.7	82.6
80 × 80 × 50	89.1	60.5	5.5	3.9	7.6	5.5	-	-	11.1	8.7	85.7	76.2
80 × 80 × 40	89.1	48.6	5.5	3.7	7.6	5.1	-	-	11.1	7.1	85.7	73.0
80 × 80 × 32	89.1	42.7	5.5	3.6	7.6	4.9	-	-	-	-	85.7	69.9
90	101.6	101.6	5.7	5.7	8.1	8.1	-	-	12.7	12.7	95.3	95.3
90 × 90 × 80	101.6	89.1	5.7	5.5	8.1	7.6	-	-	12.7	11.1	95.3	92.1
90 × 90 × 65	101.6	76.3	5.7	5.2	8.1	7.0	-	-	12.7	9.5	95.3	88.9
90 × 90 × 50	101.6	60.5	5.7	3.9	8.1	5.5	-	-	12.7	8.7	95.3	82.6
90 × 90 × 40	101.6	48.6	5.7	3.7	8.1	5.1	-	-	12.7	7.1	95.3	79.4

Nominal Pipe Size	Outside Diameter		Sch 40		Sch 80		Sch 120		Sch 160		Center To End	
	OD ₁	OD ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	C	M
100	114.3	114.3	6.0	6.6	8.6	8.6	11.1	11.1	13.5	13.5	104.8	104.8
100 × 100 × 90	114.3	101.6	6.0	5.7	8.6	8.1	-	-	13.5	12.7	104.8	101.6
100 × 100 × 80	114.3	89.1	6.0	5.5	8.6	7.6	-	-	13.5	11.1	104.8	98.4
100 × 100 × 65	114.3	76.3	6.0	5.2	8.6	7.0	-	-	13.5	9.5	104.8	95.3
100 × 100 × 50	114.3	60.5	6.0	3.9	8.6	5.5	-	-	13.5	8.7	104.8	88.9
100 × 100 × 40	114.3	48.6	6.0	3.7	8.6	5.1	-	-	13.5	7.1	104.8	85.7
125	139.8	139.8	6.6	6.6	9.5	9.5	12.7	12.7	15.9	15.9	123.8	123.8
125 × 125 × 100	139.8	114.3	6.6	6.0	9.5	8.6	12.7	11.1	15.9	13.5	123.8	117.5
125 × 125 × 90	139.8	101.6	6.6	5.7	9.5	8.1	-	-	15.9	12.7	123.8	114.3
125 × 125 × 80	139.8	89.1	6.6	5.5	9.5	7.6	-	-	15.9	11.1	123.8	111.1
125 × 125 × 65	139.8	76.3	6.6	5.2	9.5	7.0	-	-	15.9	9.5	123.8	108.0
125 × 125 × 50	139.8	60.5	6.6	3.9	9.5	5.5	-	-	15.9	8.7	123.8	104.8
150	165.2	165.2	7.1	7.1	11.0	11.0	14.3	14.3	18.2	18.2	142.9	142.9
150 × 150 × 125	165.2	139.8	7.1	6.6	11.0	9.5	14.3	12.7	18.2	15.9	142.9	136.5
150 × 150 × 100	165.2	114.3	7.1	6.0	11.0	8.6	14.3	11.1	18.2	13.5	142.9	130.2
150 × 150 × 90	165.2	101.6	7.1	5.7	11.0	8.1	-	-	18.2	12.7	142.9	127.0
150 × 150 × 80	165.2	89.1	7.1	5.5	11.0	7.6	-	-	18.2	11.1	142.9	123.8
150 × 150 × 65	165.2	76.3	7.1	5.2	11.0	7.0	-	-	18.2	9.5	142.9	120.7
200	216.3	216.3	8.2	8.2	12.7	12.7	18.2	18.2	23.0	23.0	177.8	177.8
200 × 200 × 150	216.3	165.2	8.2	7.1	12.7	11.0	18.2	14.3	23.0	18.2	177.8	168.3
200 × 200 × 125	216.3	139.8	8.2	6.6	12.7	9.5	18.2	12.7	23.0	15.9	177.8	161.9
200 × 200 × 100	216.3	114.3	8.2	6.0	12.7	8.6	18.2	11.1	23.0	13.5	177.8	155.6
200 × 200 × 90	216.3	101.6	8.2	5.7	12.7	8.1	-	-	23.0	12.7	177.8	152.4
250	267.4	267.4	9.3	9.3	15.1	15.1	21.4	21.4	28.6	28.6	215.9	215.9
250 × 250 × 200	267.4	216.3	9.3	8.2	15.1	12.7	21.4	18.2	28.6	23.0	215.9	203.2
250 × 250 × 150	267.4	165.2	9.3	7.1	15.1	11.0	21.4	14.3	28.6	18.2	215.9	193.7
250 × 250 × 125	267.4	139.8	9.3	6.6	15.1	9.5	21.4	12.7	28.6	15.9	215.9	190.5
250 × 250 × 100	267.4	114.3	9.3	6.0	15.1	8.6	21.4	11.1	28.6	13.5	215.9	184.2
300	318.5	318.5	10.3	10.3	17.4	17.4	25.4	25.4	33.3	33.3	254.0	254.0
300 × 300 × 250	318.5	267.4	10.3	9.3	17.4	15.1	25.4	21.4	33.3	28.6	254.0	241.3
300 × 300 × 200	318.5	216.3	10.3	8.2	17.4	12.7	25.4	18.2	33.3	23.0	254.0	228.6
300 × 300 × 150	318.5	165.2	10.3	7.1	17.4	11.0	25.4	14.3	33.3	18.2	254.0	219.1
300 × 300 × 125	318.5	139.8	10.3	6.6	17.4	9.5	25.4	12.7	33.3	15.9	254.0	215.9
350	355.6	355.6	11.1	11.1	19.0	19.0	27.8	27.8	35.7	35.7	279.4	279.4
350 × 350 × 300	355.6	318.5	11.1	10.3	19.0	17.4	27.8	25.4	35.7	33.3	279.4	269.9
350 × 350 × 250	355.6	267.4	11.1	9.3	19.0	15.1	27.8	21.4	35.7	28.6	279.4	257.2
350 × 350 × 200	355.6	216.3	11.1	8.2	19.0	12.7	27.8	18.2	35.7	23.0	279.4	247.7
350 × 350 × 150	355.6	165.2	11.1	7.1	19.0	11.0	27.8	14.3	35.7	18.2	279.4	238.1
400	406.4	406.4	12.7	12.7	21.4	21.4	30.9	30.9	40.5	40.5	304.8	304.8
400 × 400 × 350	406.4	355.6	12.7	11.1	21.4	19.0	30.9	27.8	40.5	35.7	304.8	304.8
400 × 400 × 300	406.4	318.5	12.7	10.3	21.4	17.4	30.9	25.4	40.5	33.3	304.8	295.3
400 × 400 × 250	406.4	267.4	12.7	9.3	21.4	15.1	30.9	21.4	40.5	28.6	304.8	282.6
400 × 400 × 200	406.4	216.3	12.7	8.2	21.4	12.7	30.9	18.2	40.5	23.0	304.8	273.1
400 × 400 × 150	406.4	165.2	12.7	7.1	21.4	11.0	30.9	14.3	40.5	18.2	304.8	263.5
450	457.2	457.2	14.3	14.3	23.8	23.8	34.9	34.9	45.2	45.2	342.9	342.9
450 × 450 × 400	457.2	406.4	14.3	12.7	23.8	21.4	34.9	30.9	45.2	40.5	342.9	330.2
450 × 450 × 350	457.2	355.6	14.3	11.1	23.8	19.0	34.9	27.8	45.2	35.7	342.9	330.2
450 × 450 × 300	457.2	318.5	14.3	10.3	23.8	17.4	34.9	25.4	45.2	33.3	342.9	320.7

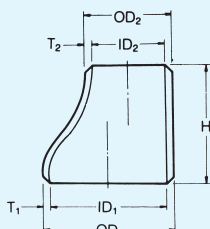
STEEL BUTT-WELDING PIPE FITTINGS

Reducer

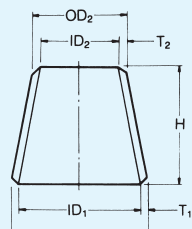
SPP/SGP



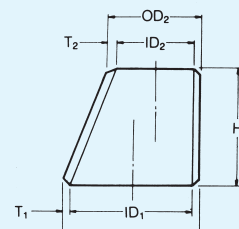
Concentric (I)



Eccentric (I)



Concentric (II)



Eccentric (II)

KS B 1522, JIS B 2311

Unit : mm

Nominal Pipe Size	Large End			Small End			End to 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	
20 × 15	27.2	21.6	2.8	21.7	16.1	2.8	38.1
25 × 20	34.0	27.6	3.2	27.2	21.6	2.8	50.8
25 × 25	34.0	27.6	3.2	21.7	16.1	2.8	50.8
32 × 25	42.7	35.7	3.5	34.0	27.6	3.2	50.8
32 × 20	42.7	35.7	3.5	37.2	21.6	2.8	50.8
32 × 15	42.7	35.7	3.5	21.7	16.1	2.8	50.8
40 × 32	48.6	41.6	3.5	42.7	35.7	3.5	63.5
40 × 25	48.6	41.6	3.5	34.0	27.6	3.2	63.5
40 × 20	48.6	41.6	3.5	27.2	21.6	2.8	63.5
40 × 15	48.6	41.6	3.5	21.7	16.1	2.8	63.5
50 × 40	60.5	52.9	3.8	48.6	41.6	3.5	76.2
50 × 32	60.5	52.9	3.8	42.7	35.7	3.5	76.2
50 × 25	60.5	52.9	3.8	34.0	27.6	3.2	76.2
50 × 20	60.5	52.9	3.8	27.2	21.6	2.8	76.2
65 × 50	76.3	67.9	4.2	60.5	52.9	3.8	88.9
65 × 40	76.3	67.9	4.2	48.6	41.6	3.5	88.9
65 × 32	76.3	67.9	4.2	42.7	35.7	3.5	88.9
65 × 25	76.3	67.9	4.2	34.0	27.6	3.2	88.9
80 × 65	89.1	80.7	4.2	76.3	67.9	4.2	88.9
80 × 50	89.1	80.7	4.2	60.5	52.9	3.8	88.9
80 × 40	89.1	80.7	4.2	48.6	41.6	3.5	88.9
80 × 32	89.1	80.7	4.2	42.7	35.7	3.5	88.9
90 × 80	101.6	93.2	4.2	89.1	80.7	4.2	101.6
90 × 65	101.6	93.2	4.2	76.3	67.9	4.2	101.6
90 × 50	101.6	93.2	4.2	60.5	52.9	3.8	101.6
90 × 40	101.6	93.2	4.2	48.6	41.6	3.5	101.6
90 × 32	101.6	93.2	4.2	42.7	35.7	3.5	101.6
100 × 90	114.3	105.3	4.5	101.6	93.2	4.2	101.6
100 × 80	114.3	105.3	4.5	89.1	80.7	4.2	101.6
100 × 65	114.3	105.3	4.5	76.3	67.9	4.2	101.6
100 × 50	114.3	105.3	4.5	60.5	52.9	3.8	101.6
100 × 40	114.3	105.3	4.5	48.6	41.6	3.5	101.6
125 × 100	139.8	130.8	4.5	114.3	105.3	4.5	127.0
125 × 90	139.8	130.8	4.5	101.6	93.2	4.2	127.0
125 × 80	139.8	130.8	4.5	89.1	80.7	4.2	127.0
125 × 65	139.8	130.8	4.5	76.3	67.9	4.2	127.0
125 × 50	139.8	130.8	4.5	60.5	52.9	3.8	127.0

KS B 1522, JIS B2311

Unit : mm

Nominal Pipe Size	Large End			Small End			End to 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	
150 × 125	165.2	155.2	5.0	139.8	130.8	4.5	139.7
150 × 100	165.2	155.2	5.0	114.3	105.3	4.5	139.7
150 × 90	165.2	155.2	5.0	101.6	93.2	4.2	139.7
150 × 80	165.2	155.2	5.0	89.1	80.7	4.2	139.7
150 × 65	165.2	155.2	5.0	76.3	67.9	4.2	139.7
200 × 150	216.3	204.7	5.8	165.2	155.2	5.0	152.4
200 × 125	216.3	204.7	5.8	139.8	130.8	4.5	152.4
200 × 100	216.3	204.7	5.8	114.3	105.3	4.5	152.4
200 × 90	216.3	204.7	5.8	101.6	93.2	4.2	152.4
250 × 200	267.4	254.2	6.6	216.3	204.7	5.8	177.8
250 × 150	267.4	254.2	6.6	165.2	155.2	5.0	177.8
250 × 125	267.4	254.2	6.6	139.8	130.8	4.5	177.8
250 × 100	267.4	254.2	6.6	114.3	105.3	4.5	177.8
300 × 250	318.5	304.7	6.9	267.4	254.2	6.6	203.2
300 × 200	318.5	304.7	6.9	216.3	204.7	5.8	203.2
300 × 150	318.5	304.7	6.9	165.2	155.2	5.0	203.2
300 × 125	318.5	304.7	6.9	139.8	130.8	4.5	203.2
350 × 300	355.6	339.8	7.9	318.5	304.7	6.9	330.2
350 × 250	355.6	339.8	7.9	267.4	254.2	6.6	330.2
350 × 200	355.6	339.8	7.9	216.3	204.7	5.8	330.2
350 × 150	355.6	339.8	7.9	165.2	155.2	5.0	330.2
400 × 350	406.4	390.6	7.9	355.6	339.8	7.9	355.6
400 × 300	406.4	390.6	7.9	318.5	304.7	6.9	355.6
400 × 250	406.4	390.6	7.9	267.4	254.2	6.6	355.6
400 × 200	406.4	390.6	7.9	216.3	204.7	5.8	355.6
450 × 400	457.2	441.4	7.9	406.4	390.6	7.9	381.0
450 × 350	457.2	441.4	7.9	355.6	339.8	7.9	381.0
450 × 300	457.2	441.4	7.9	318.5	304.7	6.9	381.0
450 × 250	457.2	441.4	7.9	267.4	254.2	6.6	381.0
500 × 450	508.0	492.2	7.9	457.2	441.4	7.9	508.0
500 × 400	508.0	492.2	7.9	406.4	390.6	7.9	508.0
500 × 350	508.0	492.2	7.9	355.6	339.8	7.9	508.0
500 × 300	508.0	492.2	7.9	318.5	304.7	6.9	508.0

STEEL BUTT-WELDING PIPE FITTINGS

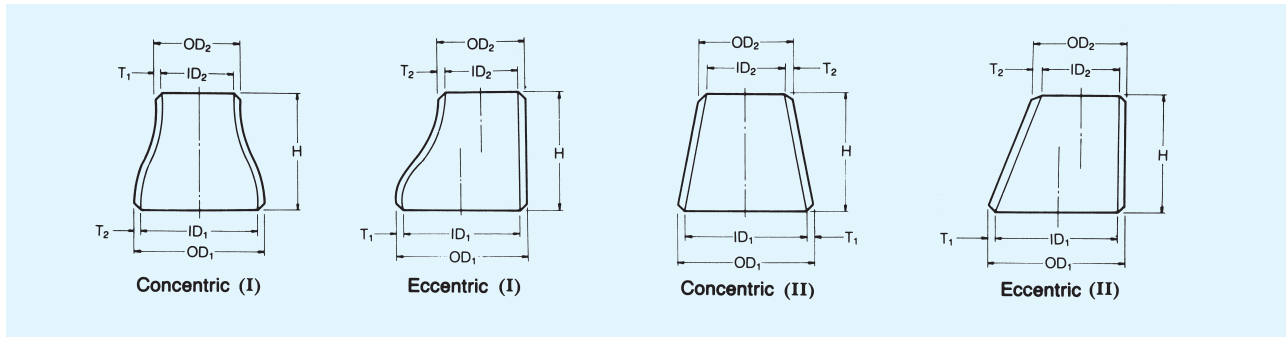
Reducer

7.9T, STD, X-S

KS B 1543, JIS B 2311/3

Unit : mm

Nominal Pipe Size	Outside Diameter		Wall Thickness T						End to End H
	OD ₁	OD ₂	7.9T		STD		X-S		
			T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	
400 × 350	406.4	355.6	7.9	7.9	9.5	9.5	12.7	12.7	355.6
450 × 400	457.2	406.4	7.9	7.9	9.5	9.5	12.7	12.7	381.0
450 × 350	457.2	355.6	7.9	7.9	9.5	9.5	12.7	12.7	381.0
500 × 450	508.0	457.2	7.9	7.9	9.5	9.5	12.7	12.7	508.0
500 × 400	508.0	406.4	7.9	7.9	9.5	9.5	12.7	12.7	508.0
500 × 350	508.0	355.6	7.9	7.9	9.5	9.5	12.7	12.7	508.0
550 × 500	558.8	508.0	7.9	7.9	9.5	9.5	12.7	12.7	508.0
550 × 450	558.8	457.2	7.9	7.9	9.5	9.5	12.7	12.7	508.0
550 × 400	558.8	406.4	7.9	7.9	9.5	9.5	12.7	12.7	508.0
550 × 350	558.8	355.6	7.9	7.9	9.5	9.5	12.7	12.7	508.0
600 × 550	609.6	558.8	7.9	7.9	9.5	9.5	12.7	12.7	508.0
600 × 500	609.6	508.0	7.9	7.9	9.5	9.5	12.7	12.7	508.0
600 × 450	609.6	457.2	7.9	7.9	9.5	9.5	12.7	12.7	508.0
600 × 400	609.6	406.4	7.9	7.9	9.5	9.5	12.7	12.7	508.0
650 × 600	660.4	609.6	7.9	7.9	9.5	9.5	12.7	12.7	609.6
650 × 650	660.4	558.8	7.9	7.9	9.5	9.5	12.7	12.7	609.6
650 × 500	660.4	508.0	7.9	7.9	9.5	9.5	12.7	12.7	609.6
650 × 450	660.4	457.2	7.9	7.9	9.5	9.5	12.7	12.7	609.6
700 × 650	711.2	660.4	7.9	7.9	9.5	9.5	12.7	12.7	609.6
700 × 600	711.2	609.6	7.9	7.9	9.5	9.5	12.7	12.7	609.6
700 × 550	711.2	558.8	7.9	7.9	9.5	9.5	12.7	12.7	609.6
700 × 500	711.2	508.0	7.9	7.9	9.5	9.5	12.7	12.7	609.6
750 × 700	762.0	711.2	7.9	7.9	9.5	9.5	12.7	12.7	609.6
750 × 650	762.0	660.4	7.9	7.9	9.5	9.5	12.7	12.7	609.6
750 × 600	762.0	609.6	7.9	7.9	9.5	9.5	12.7	12.7	609.6
750 × 550	762.0	558.8	7.9	7.9	9.5	9.5	12.7	12.7	609.6
800 × 750	812.8	760.0	7.9	7.9	9.5	9.5	12.7	12.7	609.6
800 × 700	812.8	711.2	7.9	7.9	9.5	9.5	12.7	12.7	609.6
800 × 650	812.8	660.4	7.9	7.9	9.5	9.5	12.7	12.7	609.6
800 × 600	812.8	609.6	7.9	7.9	9.5	9.5	12.7	12.7	609.6



KS B 1543, JIS B 2311/3

Unit : mm

Nominal Pipe Size	Outside Diameter		Wall Thickness T						End to End H
	OD ₁	OD ₂	7.9T		STD		X-S		
			T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	
850 × 800	863.6	812.87	7.9	7.9	9.5	9.5	12.7	12.7	609.6
850 × 750	863.6	62.0	7.9	7.9	9.5	9.5	12.7	12.7	609.6
850 × 700	863.6	711.2	7.9	7.9	9.5	9.5	12.7	12.7	609.6
850 × 650	863.6	660.4	7.9	7.9	9.5	9.5	12.7	12.7	609.6
900 × 850	914.4	863.6	7.9	7.9	9.5	9.5	12.7	12.7	609.6
900 × 800	914.4	812.8	7.9	7.9	9.5	9.5	12.7	12.7	609.6
900 × 750	914.4	762.0	7.9	7.9	9.5	9.5	12.7	12.7	609.6
900 × 700	914.4	711.2	7.9	7.9	9.5	9.5	12.7	12.7	609.6
950 × 900	965.2	914.4	7.9	7.9	9.5	9.5	12.7	12.7	609.6
950 × 850	965.2	863.6	7.9	7.9	9.5	9.5	12.7	12.7	609.6
950 × 800	965.2	812.8	7.9	7.9	9.5	9.5	12.7	12.7	609.6
950 × 750	965.2	762.0	7.9	7.9	9.5	9.5	12.7	12.7	609.6
1000 × 950	1016.0	965.2	7.9	7.9	9.5	9.5	12.7	12.7	609.6
1000 × 900	1016.0	914.4	7.9	7.9	9.5	9.5	12.7	12.7	609.6
1000 × 850	1016.0	863.6	7.9	7.9	9.5	9.5	12.7	12.7	609.6
1000 × 800	1016.0	812.8	7.9	7.9	9.5	9.5	12.7	12.7	609.6
1050 × 1000	1066.8	1016.0	7.9	7.9	9.5	9.5	12.7	12.7	609.6
1050 × 950	1066.8	965.2	7.9	7.9	9.5	9.5	12.7	12.7	609.6
1050 × 900	1066.8	914.4	7.9	7.9	9.5	9.5	12.7	12.7	609.6
1050 × 850	1066.8	863.6	7.9	7.9	9.5	9.5	12.7	12.7	609.6
1100 × 1050	1117.6	1066.8	7.9	7.9	9.5	9.5	12.7	12.7	609.6
1100 × 1000	1117.6	1016.0	7.9	7.9	9.5	9.5	12.7	12.7	609.6
1100 × 950	1117.6	965.2	7.9	7.9	9.5	9.5	12.7	12.7	609.6
1100 × 900	1117.6	914.4	7.9	7.9	9.5	9.5	12.7	12.7	609.6
1150 × 1100	1168.4	1117.6	7.9	7.9	9.5	9.5	12.7	12.7	711.2
1150 × 1050	1168.4	1066.8	7.9	7.9	9.5	9.5	12.7	12.7	711.2
1150 × 1000	1168.4	1016.0	7.9	7.9	9.5	9.5	12.7	12.7	711.2
1150 × 950	1168.4	965.2	7.9	7.9	9.5	9.5	12.7	12.7	711.2
1200 × 1150	1219.2	1168.4	7.9	7.9	9.5	9.5	12.7	12.7	711.2
1200 × 1100	1219.2	1117.6	7.9	7.9	9.5	9.5	12.7	12.7	711.2
1200 × 1050	1219.2	1066.8	7.9	7.9	9.5	9.5	12.7	12.7	711.2
1200 × 1000	1219.2	1016.0	7.9	7.9	9.5	9.5	12.7	12.7	711.2

STEEL BUTT-WELDING PIPE FITTINGS

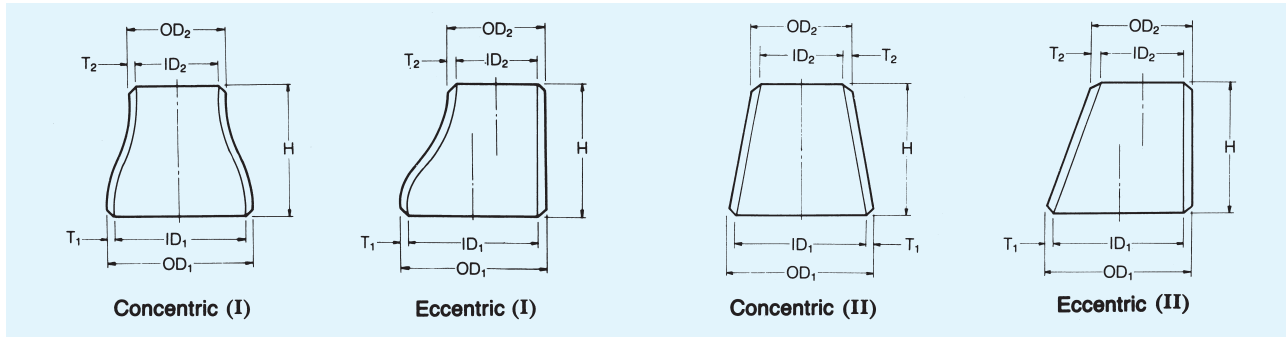
Reducer

Sch40, Sch80, Sch120, Sch160

KS B 1541, JIS B 2312

Unit : mm

Nominal Pipe Size	Outside Diameter		Wall Thickness T						End to End H
			Sch 40		Sch 80		Sch 160		
	OD ₁	OD ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	
20 × 15	27.2	21.7	2.9	2.8	3.9	3.7	-	-	38.1
25 × 20	34.0	27.2	3.4	2.9	4.5	3.9	-	-	50.8
25 × 15	34.0	21.7	3.4	2.8	4.5	3.7	-	-	50.8
32 × 25	42.7	34.0	3.6	3.4	4.9	4.5	-	-	50.8
32 × 20	42.7	27.2	3.6	2.9	4.9	3.9	-	-	50.8
32 × 15	42.7	21.7	3.6	2.8	4.9	3.7	-	-	50.8
40 × 32	48.6	42.7	3.7	3.6	5.1	4.9	-	-	63.5
40 × 25	48.6	34.0	3.7	3.4	5.1	4.5	-	-	63.5
40 × 20	48.6	27.2	3.7	2.9	5.1	3.9	-	-	63.5
40 × 15	48.6	21.7	3.7	2.8	5.1	3.7	-	-	63.5
50 × 40	60.5	48.6	3.9	3.7	5.5	5.1	8.7	7.1	76.2
50 × 32	60.5	42.7	3.9	3.6	5.5	4.9	-	-	76.2
50 × 25	60.5	34.0	3.9	3.4	5.5	4.5	-	-	76.2
50 × 20	60.5	27.2	3.9	2.9	5.5	3.9	-	-	76.2
65 × 50	76.3	60.5	5.2	3.9	7.0	5.5	9.5	8.7	88.9
65 × 40	76.3	48.6	5.2	3.7	7.0	5.1	9.5	7.1	88.9
65 × 32	76.3	42.7	5.2	3.6	7.0	4.9	-	-	88.9
65 × 25	76.3	34.0	5.2	3.4	7.0	4.5	-	-	88.9
80 × 65	89.1	76.3	5.5	5.2	7.6	7.0	11.1	9.5	88.9
80 × 50	89.1	60.5	5.5	3.9	7.6	5.5	11.1	8.7	88.9
80 × 40	89.1	48.6	5.5	3.7	7.6	5.1	11.1	7.1	88.9
80 × 32	89.1	42.7	5.5	3.6	7.6	4.9	-	-	88.9
90 × 80	101.6	89.1	5.7	5.5	8.1	7.6	12.7	11.1	101.6
90 × 65	101.6	76.3	5.7	5.2	8.1	7.0	12.7	9.5	101.6
90 × 50	101.6	60.5	5.7	3.9	8.1	5.5	12.7	8.7	101.6
90 × 40	101.6	48.6	5.7	3.7	8.1	5.1	12.7	7.1	101.6
90 × 32	101.6	42.7	5.7	3.6	8.1	4.9	-	-	101.6
100 × 90	114.3	101.6	6.0	5.7	8.6	8.1	13.5	12.7	101.6
100 × 80	114.3	89.1	6.0	5.5	8.6	7.6	13.5	11.1	101.6
100 × 65	114.3	76.3	6.0	5.2	8.6	7.0	13.5	9.5	101.6
100 × 50	114.3	60.5	6.0	3.9	8.6	5.5	13.5	8.7	101.6
100 × 40	114.3	48.6	6.0	3.7	8.6	5.1	13.5	7.1	101.6



KS B 1541/43, JIS B 2312/13

Unit : mm

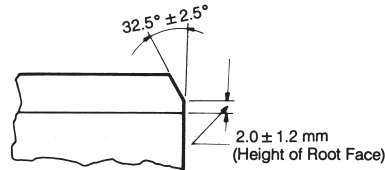
Nominal Pipe Size	Outside Diameter		Wall Thickness T								End to End H
	OD ₁	OD ₂	Sch 40		Sch 80		Sch 120		Sch 160		
			T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	T ₁	T ₂	
125 × 100	139.8	114.3	6.6	6.0	9.5	8.6	12.7	11.1	15.9	13.5	127.0
125 × 90	139.8	101.6	6.6	5.7	9.5	8.1	-	-	15.9	12.7	127.0
125 × 80	139.8	89.1	6.6	5.5	9.5	7.6	-	-	15.9	11.1	127.0
125 × 65	139.8	76.3	6.6	5.2	9.5	7.0	-	-	15.9	9.5	127.0
125 × 50	139.8	60.5	6.6	3.9	9.5	5.5	-	-	15.9	8.7	127.0
150 × 125	165.2	139.8	7.1	6.6	11.0	9.5	14.3	12.7	18.2	15.9	139.7
150 × 100	165.2	114.3	7.1	6.0	11.0	8.6	14.3	11.1	18.2	13.5	139.7
150 × 90	165.2	101.6	7.1	5.7	11.0	8.1	-	-	18.2	12.7	139.7
150 × 80	165.2	89.1	7.1	5.5	11.0	7.6	-	-	18.2	11.1	139.7
150 × 65	165.2	76.3	7.1	5.2	11.0	7.0	-	-	18.2	9.5	139.7
200 × 150	216.3	165.2	8.2	7.1	12.7	11.0	18.2	14.3	23.0	18.2	152.4
200 × 125	216.3	139.8	8.2	6.6	12.7	9.5	18.2	12.7	23.0	15.9	152.4
200 × 100	216.3	114.3	8.2	6.0	12.7	8.6	18.2	11.1	23.0	13.5	152.4
200 × 90	216.3	101.6	8.2	5.7	12.7	8.1	-	-	23.0	12.7	152.4
250 × 200	267.4	216.3	9.3	8.2	15.1	12.7	21.4	18.2	28.6	23.0	177.8
250 × 150	267.4	165.2	9.3	7.1	15.1	11.0	21.4	14.3	28.6	18.2	177.8
250 × 125	267.4	139.8	9.3	6.6	15.1	9.5	21.4	12.7	28.6	15.9	177.8
250 × 100	267.4	114.3	9.3	6.0	15.1	8.6	-	-	28.6	13.5	177.8
300 × 250	318.5	267.4	10.3	9.3	17.4	15.1	25.4	21.4	33.3	28.6	203.2
300 × 200	318.5	216.3	10.3	8.2	17.4	12.7	25.4	18.2	33.3	23.0	203.2
300 × 150	318.5	165.2	10.3	7.1	17.4	11.0	25.4	14.3	33.3	18.2	203.2
300 × 125	318.5	139.8	10.3	6.6	17.4	9.5	25.4	12.7	33.3	15.9	203.2
350 × 300	355.6	318.5	11.1	10.3	19.0	17.4	27.8	25.4	35.7	33.3	330.2
350 × 250	355.6	267.4	11.1	9.3	19.0	15.1	27.8	21.4	35.7	28.6	330.2
350 × 200	355.6	216.3	11.1	8.2	19.0	12.7	27.8	18.2	35.7	23.0	330.2
350 × 150	355.6	165.2	11.1	7.1	19.0	11.0	27.8	14.3	35.7	18.2	330.2
400 × 350	406.4	355.6	12.7	11.1	21.4	19.0	30.9	27.8	40.5	35.7	355.6
400 × 300	406.4	318.5	12.7	10.3	21.4	17.4	30.9	25.4	40.5	33.3	355.6
400 × 250	406.4	267.4	12.7	9.3	21.4	15.1	30.9	21.4	40.5	28.6	355.6
400 × 200	406.4	216.3	12.7	8.2	21.4	12.7	30.9	18.2	40.5	23.0	355.6
450 × 400	457.2	406.4	14.3	12.7	23.8	21.4	34.9	30.9	45.2	40.5	381.0
450 × 350	457.2	355.6	14.3	11.1	23.8	19.0	34.9	27.8	45.2	35.7	381.0
450 × 300	457.2	318.5	14.3	10.3	23.8	17.4	34.9	25.4	45.2	33.3	381.0
450 × 250	457.2	267.4	14.3	9.3	23.8	15.1	34.9	21.4	45.2	28.6	381.0
500 × 450	508.0	457.2	15.1	14.3	26.2	23.8	38.1	34.9	50.0	54.2	508.0
500 × 400	508.0	406.4	15.1	12.7	26.2	21.4	38.1	30.9	50.0	40.5	508.0
500 × 350	508.0	355.6	15.1	11.1	26.2	19.0	38.1	27.8	50.0	35.7	508.0
500 × 300	508.0	318.5	15.1	10.3	26.2	17.4	38.1	25.4	50.0	33.3	508.0

WELDING END PREPARATIONS

KS / JIS

1. Steel Butt-Welding Pipe Fittings for Ordinary Use.

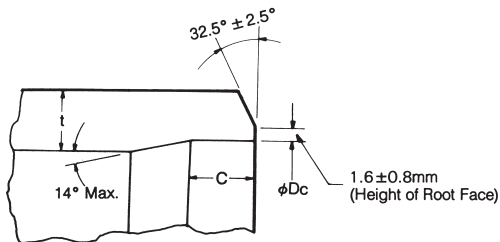
{ KS B1522 }
{ JIS B2311 }



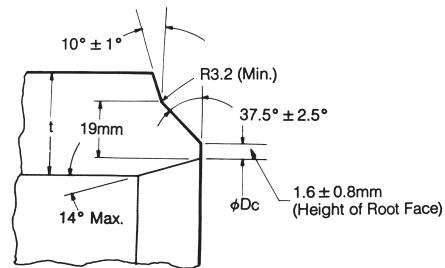
2. Steel Butt-Welding Pipe Fittings for Special Use.

{ KS B1541 }
{ JIS B2312 }

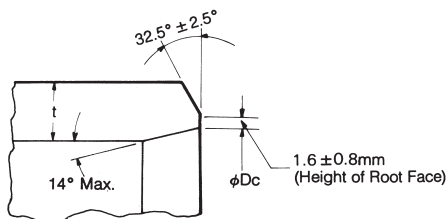
A: In the Case Where t is 19mm or Less



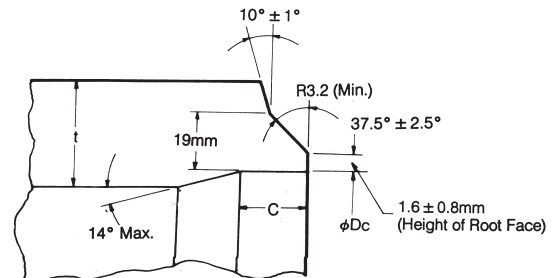
B: In the Case Where t is Over 19mm



C: In the Case Where t is 19mm or Less



D: In the Case Where t is Over 19mm

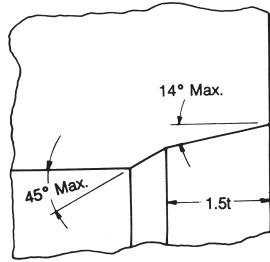


where t : nominal wall thickness
Dc : diameter of machine bore
C : length of machining bore

• Remarks

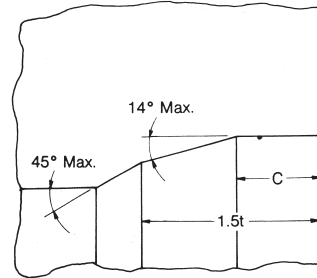
1. Diameter (Dc) and length (C) of machining bore and dimensional tolerances shall be as agreed between parties concerned.
2. Relieving of machining bore may be performed by providing an inclination of 14° or less from the end face to the limits of 1.5 times the wall thickness, or after cutting to the cylindrical surface to the length of machining bore, providing an inclination of 14° or less to the limits above-indicated, and beyond that portion machining with an inclination of 45° or less.

For Types A and B of Bevel Shape



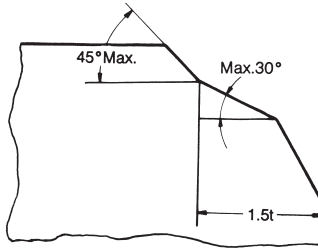
In the figure,
t: nominal wall thickness

For Types C and D of Bevel Shape



In the figure,
t: nominal wall thickness
c: length of machining bore

Relieving for outside diameter may be performed by providing an inclination of 30° or less from the end face to the limits of 1.5 times the wall thickness, and beyond that portion machining with an inclination of 45° or less.

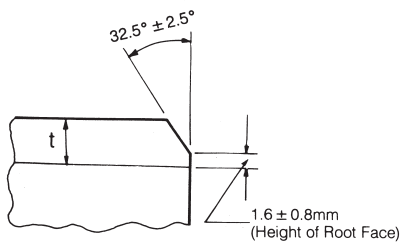


In the figure,
t: nominal wall thickness

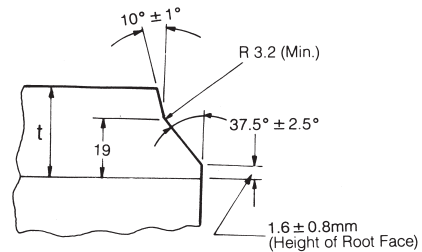
3. Steel Plate Butt-Welding Pipe Fittings

{ KS B1543 }
{ JIS B2313 }

Where . $t \leq 22.2\text{mm}$



Where . $t > 22.2\text{mm}$



- Remarks : The shape and dimensions of the special bevel ends are referred to the reference clause stated in KS B 1541, JIS B 2312

DIMENSIONAL TOLERANCES

KS / JIS

1. Steel Butt-Welding Pipe Fittings for Ordinary Use.

{ KS B 1522 }
{ JIS B 2311 }

Item	Type of Pipe Fitting	Nominal Diameter				
		½ - 2½	3 - 4	5 - 8	10 - 18	20
		Tolerance				
Outside Dia, at end face (OD)	All pipe Fitting	± 2	± 2.5	± 3.5	+5 -4.5	+6.4 -4.8
Inside Dia, at end face (ID)		± 2	± 2.5	± 3.5	± 4.5	± 4.8
Wall thickness (T)		+Not specified -15%				
Center-to-end dimension (A,B)	90° Elbow 45° Elbow	± 2.0		± 3.2		± 4.8
Center-to-center dimension (P)	180° Elbow	± 6.4		± 9.5		-
Back-to-face dimension (K)		± 6.4				-
Alignment of ends (Max.) (U)		1.6		3.2		-
End-to-end dimension (H)	Reducer	± 2.0		± 3.2		
Center-to-end dimension (C,M)	Tee	± 2.0		± 3.2		
Back-to-face dimension (E)	CAP	± 3.2		± 6.4		

2. Steel Butt-Welding Pipe Fittings for Special Use and Steel Plate Butt-Welding Pipe Fittings.

{ KS B 1541, JIS B 2312 }
{ KS B 1543, JIS B 2313 }

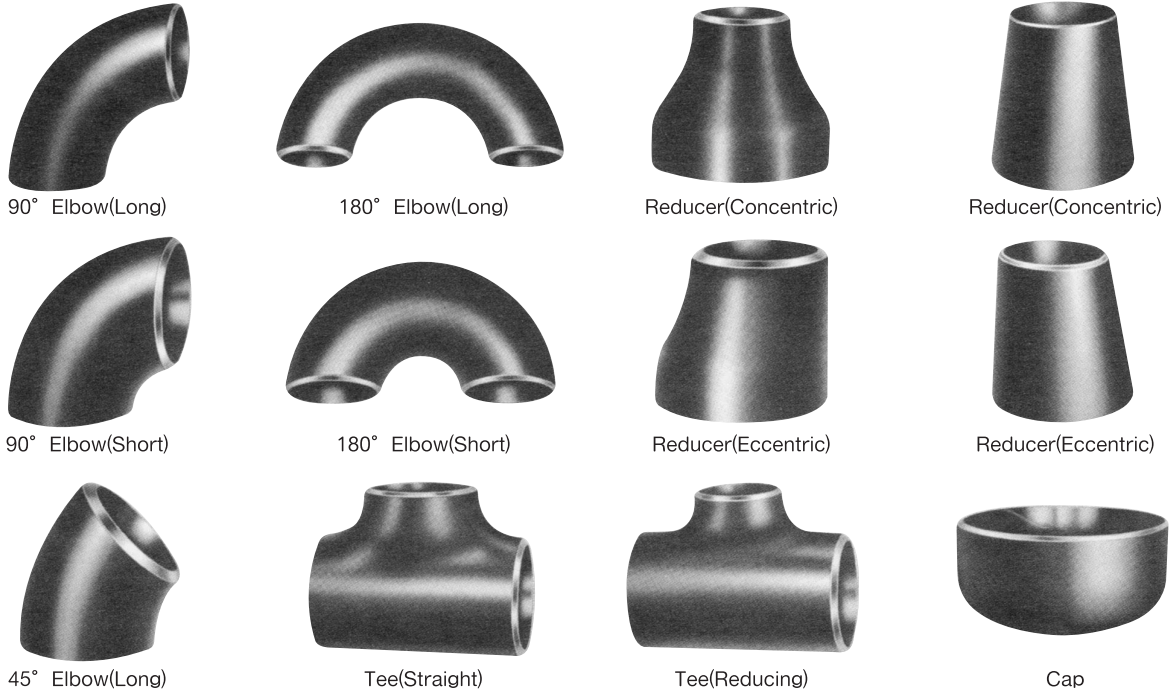
Item	Type of Pipe Fitting	Nominal Diameter						
		½ - 2½	3 - 4	5 - 8	10 - 18	20 - 24	26 - 30	32 - 36
		Tolerance						
Outside Dia, at end face (OD)	All pipe Fitting	+1.6 -0.8	± 1.6	+2.4 -1.6	+4 -3.2	+6.4 -4.8		
Inside Dia, at end face (ID)		± 0.8	± 1.6		± 3.2	± 4.8		
Thickness (T)		+Not specified -12.5%						
Center-to-end dimension (A,B)	90° Elbow 45° Elbow	± 1.6		± 2.4		± 3.2	± 4.8	
Center-to-center dimension (P)	180° Elbow	± 6.4		± 9.5				
Back-to-face dimension (K)		± 6.4						-
Alignment of ends (U)		· ± 0.8 ·· ± 1.6		· ± 1.6 ·· ± 3.2		-		
End-to-end dimension (H)	Reducer	± 1.6		± 2.4		± 4.8		
Center-to-end dimension (C,M)	Tee	± 1.6		± 2.4		± 3.2	± 4.8	
Back-to-face dimension (E)	CAP	± 3.2		± 6.4				
Outside of end Peripheral length	All Pipe Fitting						± 0.5	

· Application of KS B1541, JIS B2312

·· Application of KS B 1543, JIS B 2313

• Dimensions are in millimeters

Wrought Steel Butt-Welding Pipe Fittings (Carbon Steel)



Right Angle for shaft-center of Pipe Fittings

{ KS B 1522, JIS B 2311 }
 { KS B 1541, JIS B 2312 }
 { KS B 1543, JIS B 2313 }

Item	Type of Pipe Fitting	Nominal Diameter							
		½ - 4	5 - 8	10 - 12	14 - 16	18 - 24	26 - 30	32 - 42	44 - 48
		Tolerance							
Off Angle (X)	All pipe Fitting	0.8	1.6	2.4	3.2	4.8			
Off Plane (Y)		1.6	3.2	4.8	6.4	9.5	12.7	19.1	

• Dimensions are in millimeters.

