

فورجینگ

شیرآلات صنعتی و اتصالات فولادی

FORGING
VALVES & FITTINGS



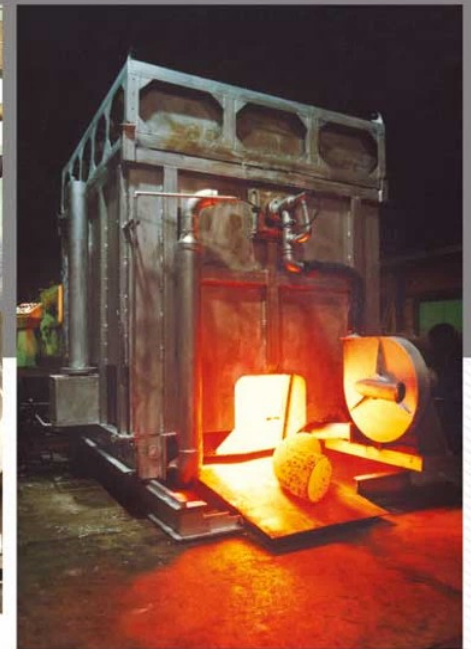
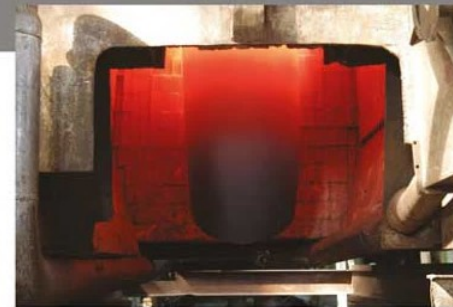
Manufacturing Sequence of Butt-Welding Fittings



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FORGING will do its best to satisfy its customer's demand by supplying top quality products and services, we appreciate your continued support and cooperation with **FORGING**, which is devoted to service to its customers and friends throughout the world.



Quality Assurance by **FORGING** Co.
Quality Control System

FORGING Co. produces butt welding fitting of high-grades and high quality to be used for various piping services such as: General piping, High and low temperature piping, High Test Piping, Based on quality control system strictly controlled and backed-up by long experience and superior Manufacturing technology in all processes from subordering of raw material to final inspection. Further, excellent quality control facilities and skilled inspectors support Quality Assurance of all the **FORGING** Co. Products.

FORGING 'S high quality pipe fittings will meet the ever - increasing demand for them at power generation plants, pipeline transmission, all water and waste water system and other industrial plants.

Forming	Elbows	Hot Mandrel Method
	Tees	Hot Press Forming Cold Bulge Forming
Stress Relief	Reducers and Caps	Hot Press Forming
		For Cold Forming only

TEST & INSPECTION



Charpy Impact Testing Machine



Non Destructive Testing



Radiographic Examination

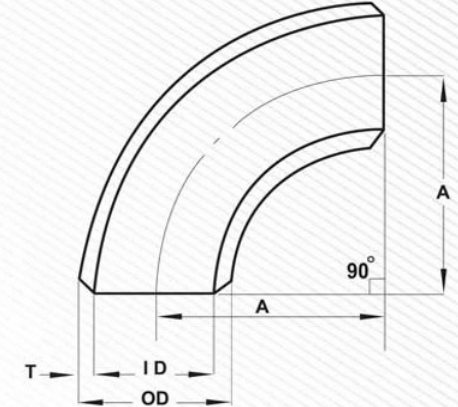
Standard **FORGING** butt - welding fittings are confirmed x-ray test on and quality controlled by performing and the welded portion.

Ultrasonic and magnetic Particle Examination

Ultrasonic and magnetic particle examinations are performed on **FORGING** butt welding fittings to determine the presence of internal defects.

**Wrought Steel
Butt-Welding Fittings**

90° Long Radius Elbows
STD (Sch 40) - xs (Sch 80)
ANSI B16.9
ASTM A234



Unit: Inch

Standard Weight (STD) Sch 40				
Nominal Pipe Size inch mm	OD	ID	T	Center to End A
1/2 * 15	0.840	0.622	0.109	1.50
3/4 * 20	1.050	0.824	0.113	1.12
1 * 25	1.315	1.049	0.133	1.50
1 1/4 * 32	1.660	1.380	0.140	1.88
1 1/2 * 40	1.900	1.610	0.145	2.25
2 * 50	2.375	2.067	0.154	3.00
2 1/2 * 65	2.875	2.469	0.203	3.75
3 * 80	3.500	3.068	0.216	4.50
4 * 100	4.500	4.026	0.237	6.00
5 * 125	5.563	5.047	0.258	7.50
6 * 150	6.625	6.065	0.280	9.00
8 * 200	8.625	7.981	0.322	12.00
10 * 250	10.750	10.020	0.365	15.00
12 300	12.750	12.000	0.375	18.00
14 350	14.000	13.250	0.375	21.00
16 400	16.000	15.250	0.375	24.00
18 450	18.000	17.250	0.375	27.00
20 500	20.000	19.250	0.375	30.00
22 550	22.000	21.250	0.375	33.00
24 600	24.000	23.250	0.375	36.00
26 650	26.000	25.250	0.375	39.00
28 700	28.000	27.250	0.375	42.00
30 750	30.000	29.250	0.375	45.00
32 800	32.000	31.250	0.375	48.00
36 900	36.000	35.250	0.375	54.00

Extra Strong (XS) Sch 80				
Nominal Pipe Size inch mm	OD	ID	T	Center to End A
1/2 □ 15	0.840	0.546	0.147	1.50
3/4 □ 20	1.050	0.742	0.154	1.12
1 □ 25	1.315	0.957	0.179	1.50
1 1/4 □ 32	1.660	1.278	0.191	1.88
1 1/2 □ 40	1.900	1.500	0.200	2.25
2 □ 50	2.375	1.939	0.218	3.00
2 1/2 □ 65	2.875	2.323	0.276	3.75
3 □ 80	3.500	2.900	0.300	4.50
4 □ 100	4.500	3.826	0.337	6.00
5 □ 125	5.563	4.813	0.375	7.50
6 □ 150	6.625	5.761	0.432	9.00
8 □ 200	8.625	7.625	0.500	12.00
10 250	10.750	9.750	0.500	15.00
12 300	12.750	11.750	0.500	18.00
14 350	14.000	13.000	0.500	21.00
16 400	16.000	15.000	0.500	24.00
18 450	18.000	17.000	0.500	27.00
20 500	20.000	19.000	0.500	30.00
22 550	22.000	21.000	0.500	33.00
24 600	24.000	23.000	0.500	36.00
26 650	26.000	25.000	0.500	39.00
28 700	28.000	27.000	0.500	42.00
30 750	30.000	29.000	0.500	45.00
32 800	32.000	31.000	0.500	48.00
36 900	36.000	35.000	0.500	54.00

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

16" NPS and smaller fittings are made from seamless pipes

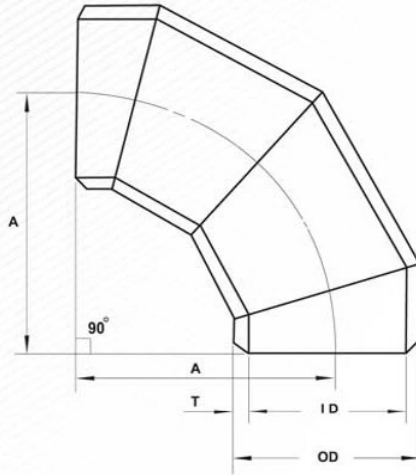
18" up to 36" NPS fitting are made from pipe with one seam

(*) denote Sch40

(□) denote Sch80

Large Diameter Wrought Steel Butt-Welding Fittings

Fabricated 90° Elbows
STD (Sch 40) Long Radius



ANSI /AWWA C208

Unit: Inch

Nominal Pipe Size		Outside Diameter OD	Inside Diameter ID	Wall Thickness T	Center to End A	Approx. Weight (kg)
inch	mm					
26	650	26.000	25.250	0.375	39	237
28	700	28.000	27.250	0.375	42	275
30	750	30.000	29.250	0.375	45	316
32	800	32.000	31.250	0.375	48	360
*32	800	32.000	30.624	0.688	48	656
34	850	34.000	33.250	0.375	51	407
*34	850	34.000	32.624	0.688	51	741
36	900	36.000	35.250	0.375	54	457
*36	900	36.000	34.500	0.750	54	905
38	950	38.000	37.250	0.375	57	509
40	1000	40.000	39.250	0.375	60	564
42	1050	42.000	41.250	0.375	63	622
44	1100	44.000	43.250	0.375	66	683
46	1150	46.000	45.250	0.375	69	748
48	1200	48.000	47.250	0.375	72	814
52	1300	52.000	51.250	0.375	78	957
54	1350	54.000	53.250	0.375	81	1033
56	1400	56.000	55.250	0.375	84	1111
60	1500	60.000	59.250	0.375	90	1276
64	1600	64.000	63.250	0.375	96	1452
68	1700	68.000	67.250	0.375	102	1642
72	1800	72.000	71.250	0.375	108	1840
76	1900	76.000	75.250	0.375	114	2050
80	2000	80.000	79.250	0.375	120	2272

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For dimensional tolerances and bevel details see pages 30 and 31

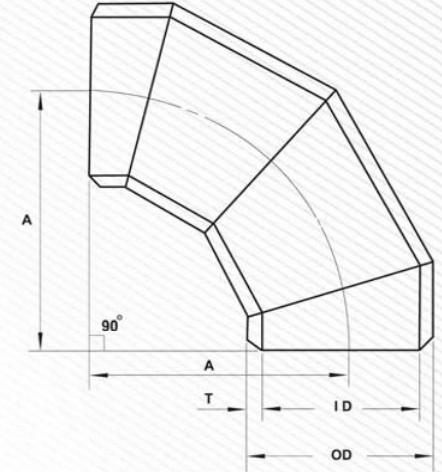
Wall thicknesses 36" and smaller conform to ANSI B 36.10 specifications; Wall thicknesses 38" and larger are indicated by STD Specifications for wall thicknesses of 36"

All fittings have 3 round seams

(*) denote Sch40

Large Diameter Wrought Steel Butt-Welding Fittings

Fabricated 90° Elbows
STD (Sch 80) Long Radius



ANSI /AWWA C208

Unit: Inch

Nominal Pipe Size		Outside Diameter OD	Inside Diameter ID	Wall Thickness T	Center to End A	Approx. Weight (kg)
inch	mm					
26	650	26.000	25.000	0.500	39	315
28	700	28.000	27.000	0.500	42	366
30	750	30.000	29.000	0.500	45	421
32	800	32.000	31.000	0.500	48	480
34	850	34.000	33.000	0.500	51	542
36	900	36.000	35.000	0.500	54	608
38	950	38.000	37.000	0.500	57	678
40	1000	40.000	39.000	0.500	60	752
42	1050	42.000	41.000	0.500	63	828
44	1100	44.000	43.000	0.500	66	911
46	1150	46.000	45.000	0.500	69	996
48	1200	48.000	47.000	0.500	72	1085
52	1300	52.000	51.000	0.500	78	1274
54	1350	54.000	53.000	0.500	81	1374
56	1400	56.000	55.000	0.500	84	1478
60	1500	60.000	59.000	0.500	90	1698
64	1600	64.000	63.000	0.500	96	1933
68	1700	68.000	67.000	0.500	102	2183
72	1800	72.000	71.000	0.500	108	2449
76	1900	76.000	75.000	0.500	114	2729
80	2000	80.000	79.000	0.500	120	3025

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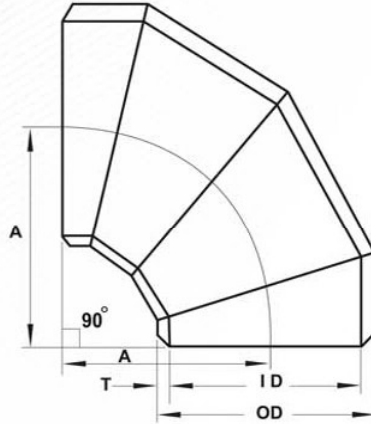
For dimensional tolerances and bevel details see pages 30 and 31

Wall thicknesses 36" and smaller conform to ANSI B 36.10 specifications; Wall thicknesses 38" and larger are indicated by XS Specifications for wall thicknesses of 36"

All fittings have 3 round seams

Large Diameter Wrought Steel Butt-Welding Fittings

Fabricated 90° Elbows
STD (Sch 40) Short Radius



ANSI /AWWA C208

Unit: Inch

Nominal Pipe Size		Outside Diameter OD	Inside Diameter ID	Wall Thickness T	Center to End A	Approx. Weight (kg)
inch	mm					
22	550	22.000	21.250	0.375	22	113
24	600	24.000	23.250	0.375	24	135
*24	600	24.000	22.624	0.688	24	244
26	650	26.000	25.250	0.375	26	158
28	700	28.000	27.250	0.375	28	184
30	750	30.000	28.250	0.375	30	211
32	800	32.000	31.250	0.375	32	240
*32	800	32.000	30.624	0.688	32	437
34	850	34.000	33.250	0.375	34	271
*34	850	34.000	32.624	0.688	34	494
36	900	36.000	35.250	0.375	36	304
*36	900	36.000	34.500	0.750	36	603
38	950	38.000	37.250	0.375	38	340
40	1000	40.000	39.250	0.375	40	376
42	1050	42.000	41.250	0.375	42	416
44	1100	44.000	43.250	0.375	44	456
46	1150	46.000	45.250	0.375	46	499
48	1200	48.000	47.250	0.375	48	543

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For dimensional tolerances and bevel details see pages 30 and 31

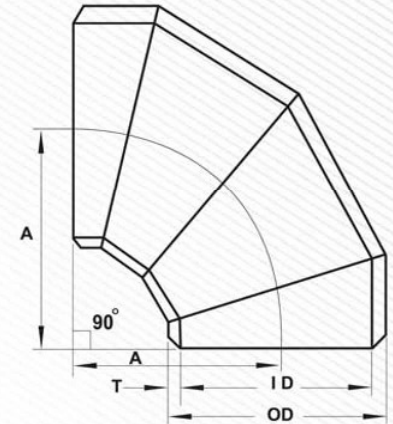
Wall thicknesses 36" and smaller conform to ANSI B 36.10 specifications; Wall thicknesses 38" and larger are indicated by STD and Sch 40 Specifications for wall thicknesses of 36"

All fittings have 3 round seams

(*) denote Sch40

Large Diameter Wrought Steel Butt-Welding Fittings

Fabricated 90° Elbows
XS (Sch 80) Short Radius



ANSI /AWWA C208

Unit: Inch

Nominal Pipe Size		Outside Diameter OD	Inside Diameter ID	Wall Thickness T	Center to End A	Approx. Weight (kg)
inch	mm					
22	550	22.000	21.000	0.500	22	150
*22	550	22.000	19.750	1.125	22	328
24	600	24.000	23.000	0.500	24	179
*24	600	24.000	21.562	1.219	24	422
26	650	26.000	25.000	0.500	26	210
28	700	28.000	27.000	0.500	28	244
30	750	30.000	29.000	0.500	30	281
32	800	32.000	31.000	0.500	32	320
34	850	34.000	33.000	0.500	34	361
36	900	36.000	35.000	0.500	36	405
38	950	38.000	37.000	0.500	38	452
40	1000	40.000	39.000	0.500	40	501
42	1050	42.000	41.000	0.500	42	553
44	1100	44.000	43.000	0.500	44	607
46	1150	46.000	45.000	0.500	46	664
48	1200	48.000	47.000	0.500	48	723

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

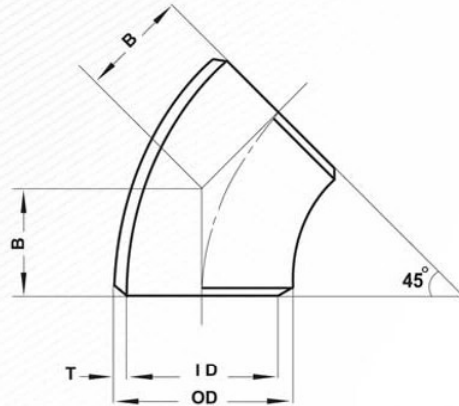
Wall thicknesses 36" and smaller conform to ANSI B 36.10 specifications; Wall thicknesses 38" and larger are indicated by XS Specifications for wall thicknesses of 36"

All fittings have 3 round seams

(*) denote Sch80

Wrought Steel Butt-Welding Fittings

45° Long Radius Elbows
STD (Sch 40) - xs (Sch 80)
ANSI B16.9
ASTM A234



Unit: Inch

Standard Weight (STD) Sch 40				
Nominal Pipe Size	OD	ID	T	Center to End A
inch mm				
1/2* 15	0.840	0.622	0.109	0.62
3/4* 20	1.050	0.824	0.113	0.44
1 * 25	1.315	1.049	0.133	0.88
1 1/4* 32	1.660	1.380	0.140	1.00
1 1/2* 40	1.900	1.610	0.145	1.12
2 * 50	2.375	2.067	0.154	1.38
2 1/2* 65	2.875	2.469	0.203	1.75
3 * 80	3.500	3.068	0.216	2.00
4 * 100	4.500	4.026	0.237	2.50
5 * 125	5.563	5.047	0.258	3.12
6 * 150	6.625	6.065	0.280	3.75
8 * 200	8.625	7.981	0.322	5.00
10 * 250	10.750	10.020	0.365	6.25
12 300	12.750	12.000	0.375	7.50
14 350	14.000	13.250	0.375	8.75
16 400	16.000	15.250	0.375	10.00
18 450	18.000	17.250	0.375	11.25
20 500	20.000	19.250	0.375	12.50
22 550	22.000	21.250	0.375	13.50
24 600	24.000	23.250	0.375	15.00
26 650	26.000	25.250	0.375	16.00
28 700	28.000	27.250	0.375	17.25
30 750	30.000	29.250	0.375	18.50
32 800	32.000	31.250	0.375	19.75
36 900	36.000	35.250	0.375	22.25

Extra Strong (XS) Sch 80				
Nominal Pipe Size	OD	ID	T	Center to End A
inch mm				
1/2□ 15	0.840	0.546	0.147	0.62
3/4□ 20	1.050	0.742	0.154	0.44
1 □ 25	1.315	0.957	0.179	0.88
1 1/4□ 32	1.660	1.278	0.191	1.00
1 1/2□ 40	1.900	1.500	0.200	1.12
2 □ 50	2.375	1.939	0.218	1.38
2 1/2□ 65	2.875	2.323	0.276	1.75
3 □ 80	3.500	2.900	0.300	2.00
4 □ 100	4.500	3.826	0.337	2.50
5 □ 125	5.563	4.813	0.375	3.12
6 □ 150	6.625	5.761	0.432	3.75
8 □ 200	8.625	7.625	0.500	5.00
10 250	10.750	9.750	0.500	6.25
12 300	12.750	11.750	0.500	7.50
14 350	14.000	13.000	0.500	8.75
16 400	16.000	15.000	0.500	10.00
18 450	18.000	17.000	0.500	11.25
20 500	20.000	19.000	0.500	12.50
22 550	22.000	21.000	0.500	13.50
24 600	24.000	23.000	0.500	15.00
26 650	26.000	25.000	0.500	16.00
28 700	28.000	27.000	0.500	17.25
30 750	30.000	29.000	0.500	18.50
32 800	32.000	31.000	0.500	19.75
36 900	36.000	35.000	0.500	22.25

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

16" NPS and smaller fittings are made from seamless pipes

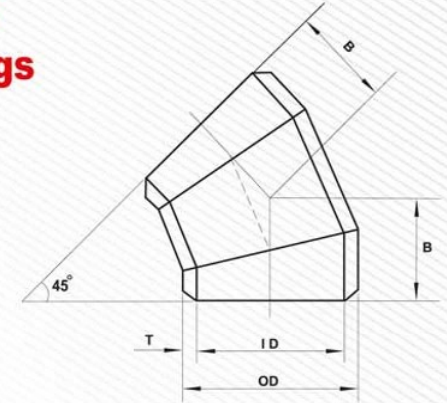
18" up to 36" NPS fitting are made from pipe with one seam

(*) denote Sch40

(□) denote Sch80

Large Diameter Wrought Steel Butt-Welding Fittings

Fabricated 45° Elbows
STD (Sch 40) Long Radius



Unit: Inch

ANSI /AWWA C208

Nominal Pipe Size		Outside Diameter OD	Inside Diameter ID	Wall Thickness T	Center to End A	Approx. Weight (kg)
inch	mm					
26	650	26.000	25.250	0.375	16	119
28	700	28.000	27.250	0.375	17 1/4	138
30	750	30.000	29.250	0.375	18 1/2	158
32	800	32.000	31.250	0.375	19 3/4	180
*32	800	32.000	30.624	0.688	19 3/4	328
34	850	34.000	33.250	0.375	21	204
*34	850	34.000	32.624	0.688	21	371
36	900	36.000	35.250	0.375	22 1/4	229
*36	900	36.000	34.500	0.750	22 1/4	453
38	950	38.000	37.250	0.375	23 5/8	255
40	1000	40.000	39.250	0.375	24 7/8	282
42	1050	42.000	41.250	0.375	26	311
44	1100	44.000	43.250	0.375	27 3/8	342
46	1150	46.000	45.250	0.375	28 5/8	374
48	1200	48.000	47.250	0.375	29 7/8	407
52	1300	52.000	51.250	0.375	32 5/16	479
54	1350	54.000	53.250	0.375	33 9/16	517
56	1400	56.000	55.250	0.375	34 25/32	556
60	1500	60.000	59.250	0.375	37 9/32	638
64	1600	64.000	63.250	0.375	39 3/4	727
68	1700	68.000	67.250	0.375	42 1/4	820
72	1800	72.000	71.250	0.375	44 3/4	920
76	1900	76.000	75.250	0.375	47 7/32	1025
80	2000	80.000	79.250	0.375	49 23/32	1136

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

Wall thicknesses 36" and smaller conform to ANSI B 36.10

specifications; Wall thicknesses 38" and larger are indicated by

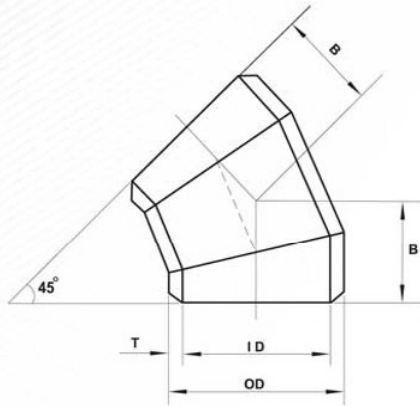
STD Specifications for wall thicknesses of 36"

All fittings have 3 round seams

(*) denote Sch40

Large Diameter Wrought Steel Butt-Welding Fittings

Fabricated 45° Elbows
XS Long Radius



ANSI /AWWA C208

Unit: Inch

Nominal Pipe Size		Outside Diameter OD	Inside Diameter ID	Wall Thickness T	Center to End A	Approx. Weight (kg)
inch	mm					
26	650	26.000	25.000	0.500	16	158
28	700	28.000	27.000	0.500	17 1/4	183
30	750	30.000	29.000	0.500	18 1/2	211
32	800	32.000	31.000	0.500	19 3/4	240
34	850	34.000	33.000	0.500	21	271
36	900	36.000	35.000	0.500	22 1/4	304
38	950	38.000	37.000	0.500	23 5/8	339
40	1000	40.000	39.000	0.500	24 7/8	379
42	1050	42.000	41.000	0.500	26	414
44	1100	44.000	43.000	0.500	27 3/8	456
46	1150	46.000	45.000	0.500	28 5/8	498
48	1200	48.000	47.000	0.500	29 7/8	543
52	1300	52.000	51.000	0.500	32 5/16	637
54	1350	54.000	53.000	0.500	33 9/16	687
56	1400	56.000	55.000	0.500	34 25/32	739
60	1500	60.000	59.000	0.500	37 9/32	849
64	1600	64.000	63.000	0.500	39 3/4	967
68	1700	68.000	67.000	0.500	42 1/4	1092
72	1800	72.000	71.000	0.500	44 3/4	1225
76	1900	76.000	75.000	0.500	47 7/32	1365
80	2000	80.000	79.000	0.500	49 23/32	1513

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

Wall thicknesses 36" and smaller conform to ANSI B 36.10

specifications; Wall thicknesses 38" and larger are indicated by

STD Specifications for wall thicknesses of 36"

All fittings have 3 round seams

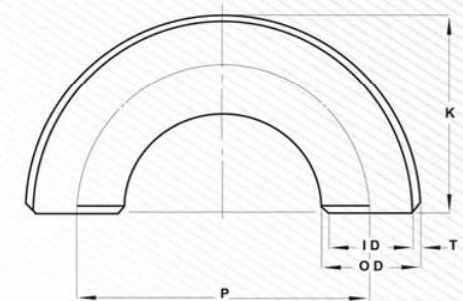
Wrought Steel Butt-Welding Fittings

Long Radius Returns (180° Elbows)

STD (Sch 40) - xs (Sch 80)

ANSI B16.9

ASTM A234



Unit: Inch

Standard Weight (STD) Sch 40						
Nominal Pipe Size		OD	ID	T	Center to Center P	Back to Face K
inch	mm					
1/2*	15	0.840	0.622	0.109	3.00	1.88
3/4*	20	1.050	0.824	0.113	2.25	1.69
1*	25	1.315	1.049	0.133	3.00	2.19
1 1/4*	32	1.660	1.380	0.140	3.75	2.75
1 1/2*	40	1.900	1.610	0.145	4.50	3.25
2*	50	2.375	2.067	0.154	6.00	4.19
2 1/2*	65	2.875	2.469	0.203	7.50	5.19
3*	80	3.500	3.068	0.216	9.00	6.25
4*	100	4.500	4.026	0.237	12.00	8.25
5*	125	5.563	5.047	0.258	15.00	10.31
6*	150	6.625	6.065	0.280	18.00	12.31
8*	200	8.625	7.981	0.322	24.00	16.31
10*	250	10.750	10.020	0.365	30.00	20.38
12	300	12.750	12.000	0.375	36.00	24.38

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

16" NPS and smaller fittings are made from seamless pipes

18" up to 36" NPS fitting are made from pipe with one seam

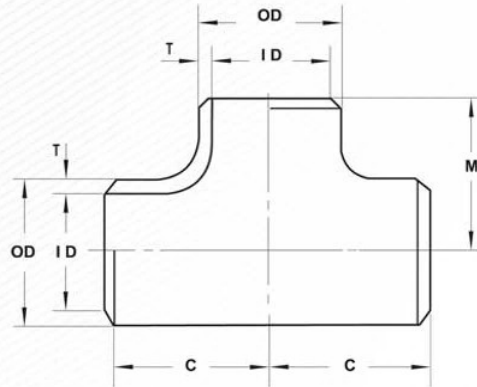
(*) denote Sch40

(□) denote Sch80

Extra Strong (XS) Sch 80						
Nominal Pipe Size		OD	ID	T	Center to Center P	Back to Face K
inch	mm					
□ 1/2	15	0.840	0.546	0.147	3.00	1.88
□ 3/4	20	1.050	0.742	0.154	2.25	1.69
□ 1	25	1.315	0.957	0.179	3.00	2.19
□ 1 1/4	32	1.660	1.278	0.191	3.75	2.75
□ 1 1/2	40	1.900	1.500	0.200	4.50	3.25
□ 2	50	2.375	1.939	0.218	6.00	4.19
□ 2 1/2	65	2.875	2.323	0.276	7.50	5.19
□ 3	80	3.500	2.900	0.300	9.00	6.25
□ 4	100	4.500	3.826	0.337	12.00	8.25
□ 5	125	5.563	4.813	0.375	15.00	10.31
□ 6	150	6.625	5.761	0.432	18.00	12.31
□ 8	200	8.625	7.625	0.500	24.00	16.31
□ 10	250	10.750	9.750	0.500	30.00	20.38
□ 12	300	12.750	11.750	0.500	36.00	24.38

Wrought Steel Butt-Welding Fittings

Straight Tees
STD (Sch 40)
ANSI B16.9
ASTM A234



Unit: Inch

Nominal Pipe Size		Outside Diameter OD	Inside Diameter ID	Wall Thicknesses T	Center to End		Approx Weight (kg)
Inch	mm				Run C	Outlet M	
* 1/2	15	0.840	0.622	0.109	1	1	0.083
* 3/4	20	1.050	0.824	0.113	1 1/8	1 1/8	0.111
* 1	25	1.315	1.049	0.133	1 1/2	1 1/2	0.244
* 1 1/4	30	1.660	1.380	0.140	1 7/8	1 7/8	0.457
* 1 1/2	40	1.900	1.610	0.145	2 1/4	2 1/4	0.714
* 2	50	2.375	2.067	0.154	2 1/2	2 1/2	0.992
* 2 1/2	65	2.875	2.469	0.203	3	3	1.90
* 3	80	3.500	3.068	0.216	3 3/8	3 3/8	2.85
* 4	100	4.500	4.026	0.237	4 1/8	4 1/8	4.83
* 5	125	5.563	5.047	0.258	4 7/8	4 7/8	8.00
* 6	150	6.625	6.065	0.280	5 5/8	5 5/8	10.2
* 8	200	8.625	7.981	0.322	7	7	22.9
* 10	250	10.750	10.020	0.365	8 1/2	8 1/2	36.6
12	300	12.750	12.000	0.375	10	10	39
* 12	300	12.750	11.938	0.406	10	10	58.4
14	350	14.000	13.250	0.375	11	11	54
* 14	350	14.000	13.124	0.438	11	11	83.2
16	400	16.000	15.250	0.375	12	12	96.3
* 16	400	16.000	15.000	0.500	12	12	110
18	450	18.000	17.250	0.375	13 1/2	13 1/2	131
* 18	450	18.000	16.876	0.562	13 1/2	13 1/2	156
20	500	20.000	19.250	0.375	15	15	118
* 20	500	20.000	18.812	0.594	15	15	204
22	550	22.000	21.250	0.375	16 1/2	16 1/2	235
24	600	24.000	23.250	0.375	17	17	169
* 24	600	24.000	22.624	0.688	17	17	299

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

Wall thicknesses conform to ANSI B36.10 Specifications for STD and Sch 40 wall pipe

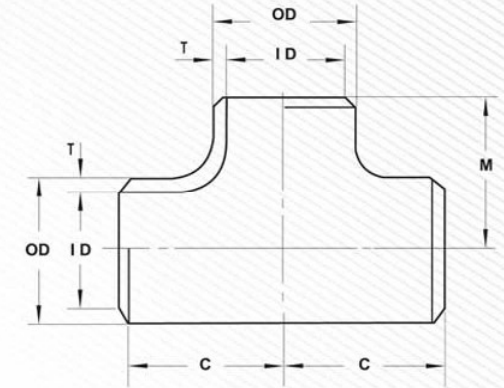
16" and smaller Nominal pipe size Butt-Welding Fitting are made from seamless pipes

16" and larger Nominal pipe size Butt-Welding Fitting have one seam in branch and one longitudinal seam in run

(*) denote Sch 40

Large Diameter Wrought Steel Butt-Welding Fittings

Straight Tees
STD (Sch 40)



Unit: Inch

ANSI /AWWA C208

Nominal Pipe Size		Outside Diameter OD	Inside Diameter ID	Wall Thicknesses T	Center to End		Approx Weight (kg)
Inch	mm				Run C	Outlet M	
26	650	26.000	25.250	0.375	19 1/2	19 1/2	348
28	700	28.000	27.250	0.375	20 1/2	20 1/2	392
30	750	30.000	29.250	0.375	22	22	451
32	800	32.000	31.250	0.375	23 1/2	23 1/2	516
*32	800	32.000	30.624	0.688	23 1/2	23 1/2	928
34	850	34.000	33.250	0.375	25	25	584
*34	850	34.000	32.624	0.688	25	25	1052
36	900	36.000	35.250	0.375	26 1/2	26 1/2	657
*36	900	36.000	34.500	0.750	26 1/2	26 1/2	1286
38	950	38.000	37.250	0.375	28	28	734
40	1000	40.000	39.250	0.375	29 1/2	29 1/2	814
42	1050	42.000	41.250	0.375	30	28	837
44	1100	44.000	43.250	0.375	32	30	943
46	1150	46.000	45.250	0.375	33 1/2	31 1/2	1053
48	1200	48.000	47.250	0.375	35	33	1131
52	1300	52.000	51.250	0.375	38	36	1335
56	1400	56.000	55.250	0.375	41	38	1540
60	1500	60.000	59.250	0.375	44	40	1759
64	1600	64.000	63.250	0.375	47	44	1950

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

Wall thicknesses 36" and smaller conform to ANSI B36.10 Specifications

Wall thicknesses 38" and larger are indicated by

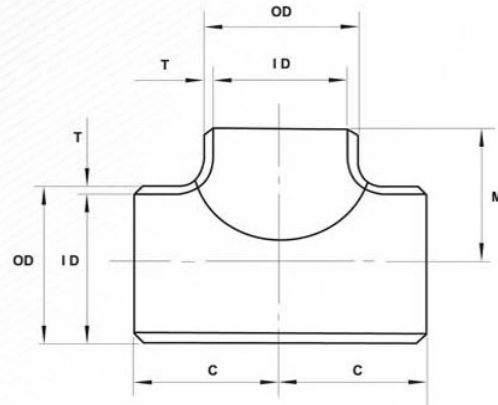
STD and Sch 40 Specifications for wall thicknesses of 36"

All fittings have one seam in branch

(*) denote Sch 40

Large Diameter Wrought Steel Butt-Welding Fittings

Straigh Tees
XS



ANSI /AWWA C208

Unit: Inch

Nominal Pipe Size		Outside Diameter OD	Inside Diameter ID	Wall Thicknesses T	Center to End		Approx Weight (kg)
inch	mm				Run C	Outlet M	
26	650	26.000	25.000	0.500	19 1/2	19 1/2	460
28	700	28.000	27.000	0.500	20 1/2	20 1/2	518
30	750	30.000	29.000	0.500	22	22	597
32	800	32.000	31.000	0.500	23 1/2	23 1/2	682
34	850	34.000	33.000	0.500	25	25	773
36	900	36.000	35.000	0.500	26 1/2	26 1/2	896
38	950	38.000	37.000	0.500	28	28	971
40	1000	40.000	39.000	0.500	29 1/2	29 1/2	1079
42	1050	42.000	41.000	0.500	30	28	1110
44	1100	44.000	43.000	0.500	32	30	1250
46	1150	46.000	45.000	0.500	33 1/2	31 1/2	1372
48	1200	48.000	47.000	0.500	35	33	1500
52	1300	52.000	51.000	0.500	38	36	1772
56	1400	56.000	55.000	0.500	41	38	2044
60	1500	60.000	59.000	0.500	44	40	2335
64	1600	64.000	63.000	0.500	47	44	2560

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

Wall thicknesses 36" and smaller conform to ANSI B36.10 Specifications

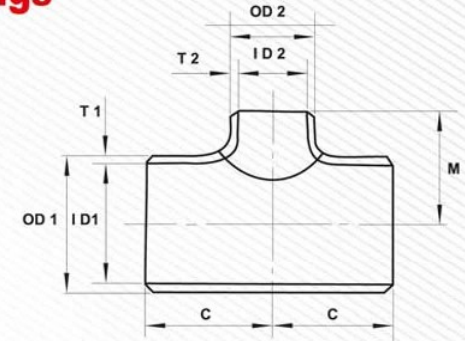
Wall thicknesses 38" and larger are indicated by

STD and Sch 40 Specifications for wall thicknesses of 36"

All fittings have one seam in branch

Large Diameter Wrought Steel Butt-Welding Fittings

Reducing outlet Tees
STD (SCH 40)



ANSI /AWWA C208

Unit: Inch

Nominal Pipe Size	Run			Outlet			Center to End		Approx. Weight (kg)
	Outside Diameter OD 1	Inside Diameter ID 1	Wall Thickness T 1	Outside Diameter OD 2	Inside Diameter ID 2	Wall Thickness T 2	Run C	Outlet M	
26 x 26 x 22	26.000	25.250	0.375	22.000	21.250	0.375	19 1/2	18 1/2	318
26 x 26 x 18	26.000	25.250	0.375	18.000	17.250	0.375	19 1/2	17 1/2	311
26 x 26 x 16	26.000	25.250	0.375	16.000	15.250	0.375	19 1/2	17	308
28 x 28 x 24	28.000	27.250	0.375	24.000	23.250	0.375	20 1/2	20	361
28 x 28 x 20	28.000	27.250	0.375	20.000	19.250	0.375	20 1/2	19	354
28 x 28 x 18	28.000	24.250	0.375	18.000	17.250	0.375	20 1/2	18 1/2	351
30 x 30 x 26	30.000	29.250	0.375	26.000	25.250	0.375	22	21 1/2	417
30 x 30 x 22	30.000	29.250	0.375	22.000	21.250	0.375	22	20 1/2	409
30 x 30 x 20	30.000	29.250	0.375	20.000	19.250	0.375	22	20	406
32 x 32 x 28	32.000	31.250	0.375	28.000	27.250	0.375	23 1/2	22 1/2	474
32 x 32 x 24	32.000	31.250	0.375	24.000	23.250	0.375	23 1/2	22	468
32 x 32 x 22	32.000	31.250	0.375	22.000	21.250	0.375	23 1/2	21 1/2	464
*32 x 32 x 24	32.000	30.624	0.688	24.000	22.624	0.688	23 1/2	22	840
34 x 34 x 30	34.000	33.250	0.375	30.000	29.250	0.375	25	24	537
34 x 34 x 26	34.000	33.250	0.375	26.000	25.250	0.375	25	23 1/2	531
34 x 34 x 22	34.000	33.250	0.375	22.000	21.250	0.375	25	22 1/2	523
36 x 36 x 32	36.000	35.250	0.375	32.000	31.250	0.375	26 1/2	25 1/2	604
36 x 36 x 28	36.000	35.250	0.375	28.000	27.250	0.375	26 1/2	24 1/2	595
36 x 36 x 24	36.000	35.250	0.375	24.000	23.250	0.375	26 1/2	24	589
*36 x 36 x 32	36.000	34.500	0.750	32.000	30.624	0.688	26 1/2	25 1/2	1086
*36 x 36 x 24	36.000	34.500	0.750	24.000	32.624	0.688	26 1/2	24	1059
38 x 38 x 34	38.000	37.250	0.375	34.000	33.250	0.375	28	27 1/2	678
38 x 38 x 30	38.000	37.250	0.375	30.000	29.250	0.375	28	26 1/2	668
38 x 38 x 26	38.000	37.250	0.375	26.000	25.250	0.375	28	25 1/2	659

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

Wall thicknesses 36" and smaller conform to ANSI B36.10 Specifications

Wall thicknesses 38" and larger are indicated by

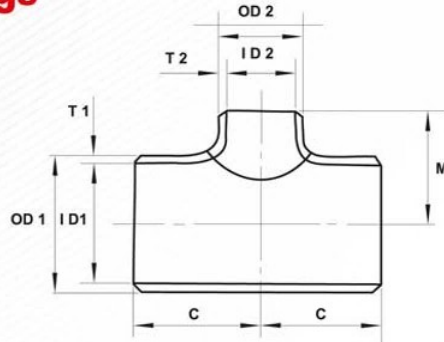
STD and Sch 40 Specifications for wall thicknesses of 36"

All fittings have one seam in branch

(*) denote Sch40

Large Diameter Wrought Steel Butt-Welding Fittings

Reducing outlet Tees
STD



ANSI /AWWA C208

Unit: Inch

Nominal Pipe Size	Run			Outlet			Center to End		Approx. Weight (kg)
	Outside Diameter OD 1	Inside Diameter ID 1	Wall Thickness T 1	Outside Diameter OD 2	Inside Diameter ID 2	Wall Thickness T 2	Run C	Outlet M	
40 x 40 x 36	40.000	39.250	0.375	36.000	35.250	0.375	29 ½	29	753
40 x 40 x 32	40.000	39.250	0.375	32.000	31.250	0.375	29 ½	28	742
40 x 40 x 28	40.000	39.250	0.375	28.000	27.250	0.375	29 ½	26 ½	731
42 x 42 x 38	42.000	41.250	0.375	38.000	37.250	0.375	30	28	792
42 x 42 x 34	42.000	41.250	0.375	34.000	33.250	0.375	30	28	789
42 x 42 x 30	42.000	41.250	0.375	30.000	29.250	0.375	30	28	783
44 x 44 x 40	44.000	43.250	0.375	40.000	39.250	0.375	32	29 ½	887
44 x 44 x 36	44.000	43.250	0.375	36.000	35.250	0.375	32	28 ½	876
44 x 44 x 32	44.000	43.250	0.375	32.000	31.250	0.375	32	28	869
46 x 46 x 42	46.000	45.250	0.375	42.000	41.250	0.375	33 ½	31	972
46 x 46 x 38	46.000	45.250	0.375	38.000	37.250	0.375	33 ½	30	961
46 x 46 x 34	46.000	45.250	0.375	34.000	33.250	0.375	33 ½	29 ½	954
48 x 48 x 44	48.000	47.250	0.375	44.000	43.250	0.375	35	33	1065
48 x 48 x 40	48.000	47.250	0.375	40.000	39.250	0.375	35	32	1053
48 x 48 x 36	48.000	47.250	0.375	36.000	35.250	0.375	35	31	1042
52 x 52 x 48	52.000	51.250	0.375	48.000	47.250	0.375	38	34	1241
52 x 52 x 44	52.000	51.250	0.375	44.000	43.250	0.375	38	32	1222
52 x 52 x 40	52.000	51.250	0.375	40.000	39.250	0.375	38	30	1206
56 x 56 x 52	56.000	55.250	0.375	52.000	51.250	0.375	41	36	1439
56 x 56 x 48	56.000	55.250	0.370	48.000	47.250	0.375	41	34	1419
56 x 56 x 44	56.000	55.250	0.370	44.000	43.250	0.375	41	32	1401
60 x 60 x 56	60.000	59.250	0.375	56.000	55.250	0.375	44	38	1651
60 x 60 x 52	60.000	59.250	0.375	52.000	51.250	0.375	44	36	1630
60 x 60 x 48	60.000	59.250	0.375	48.000	47.250	0.375	44	34	1610

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

Wall thicknesses 36" and smaller conform to ANSI B36.10 Specifications

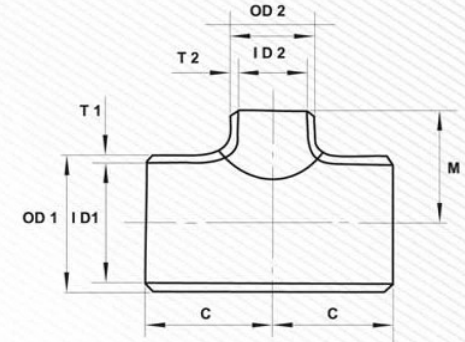
Wall thicknesses 38" and larger are indicated by

STD and Sch 40 Specifications for wall thicknesses of 36"

All fittings have one seam in branch

Large Diameter Wrought Steel Butt-Welding Fittings

Reducing outlet Tees
XS



ANSI /AWWA C208

Unit: Inch

Nominal Pipe Size	Run			Outlet			Center to End		Approx. Weight (kg)
	Outside Diameter OD 1	Inside Diameter ID 1	Wall Thickness T 1	Outside Diameter OD 2	Inside Diameter ID 2	Wall Thickness T 2	Run C	Outlet M	
26 x 26 x 22	26.000	25.000	0.500	22.000	21.000	0.500	19 ½	18 ½	420
26 x 26 x 18	26.000	25.000	0.500	18.000	17.000	0.500	19 ½	17 ½	411
26 x 26 x 16	26.000	25.000	0.500	16.000	15.000	0.500	19 ½	17	408
28 x 28 x 24	28.000	27.000	0.500	24.000	23.000	0.500	20 ½	20	478
28 x 28 x 20	28.000	27.000	0.500	20.000	19.000	0.500	20 ½	19	469
28 x 28 x 18	28.000	27.000	0.500	18.000	17.000	0.500	20 ½	18 ½	465
30 x 30 x 26	30.000	29.000	0.500	26.000	25.000	0.500	22	21 ½	552
30 x 30 x 22	30.000	29.000	0.500	22.000	21.000	0.500	22	20 ½	542
30 x 30 x 20	30.000	29.000	0.500	20.000	19.000	0.500	22	20	537
32 x 32 x 28	32.000	31.000	0.500	28.000	27.000	0.500	23 ½	22 ½	628
32 x 32 x 24	32.000	31.000	0.500	24.000	23.000	0.500	23 ½	22	620
32 x 32 x 22	32.000	31.000	0.500	22.000	21.000	0.500	23 ½	21 ½	615
34 x 34 x 30	34.000	33.000	0.500	30.000	29.000	0.500	25	24	712
34 x 34 x 26	34.000	33.000	0.500	26.000	25.000	0.500	25	23 ½	703
34 x 34 x 22	34.000	33.000	0.500	22.000	21.000	0.500	25	22 ½	693
36 x 36 x 32	36.000	35.000	0.500	32.000	31.000	0.500	26 ½	25 ½	802
36 x 36 x 28	36.000	35.000	0.500	28.000	27.000	0.500	26 ½	24 ½	789
36 x 36 x 24	36.000	35.000	0.500	24.000	23.000	0.500	26 ½	24	781
38 x 38 x 34	38.000	37.000	0.500	34.000	33.000	0.500	28	27 ½	900
38 x 38 x 30	38.000	37.000	0.500	30.000	29.000	0.500	28	26 ½	886
38 x 38 x 26	38.000	37.000	0.500	26.000	25.000	0.500	28	25 ½	874

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

Wall thicknesses 36" and smaller conform to ANSI B36.10 Specifications

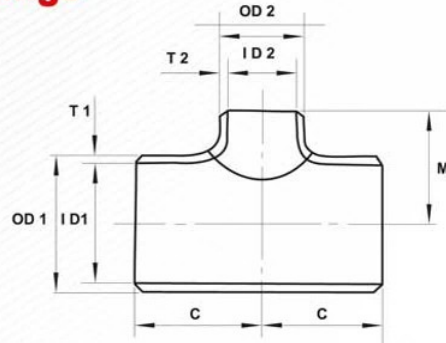
Wall thicknesses 38" and larger are indicated by

STD and Sch 40 Specifications for wall thicknesses of 36"

All fittings have one seam in branch

Large Diameter Wrought Steel Butt-Welding Fittings

Reducing outlet Tees
XS



Unit: Inch

ANSI /AWWA C208

Nominal Pipe Size	Run			Outlet			Center to End		Approx. Weight (kg)
	Outside Diameter OD 1	Inside Diameter ID 1	Wall Thickness T 1	Outside Diameter OD 2	Inside Diameter ID 2	Wall Thickness T 2	Run C	Outlet M	
40 x 40 x 36	40.000	39.000	0.500	36.000	35.000	0.500	29 1/2	29	1000
40 x 40 x 32	40.000	39.000	0.500	32.000	31.000	0.500	29 1/2	28	985
40 x 40 x 28	40.000	39.000	0.500	28.000	27.000	0.500	29 1/2	26 1/2	969
42 x 42 x 38	42.000	41.000	0.500	38.000	37.000	0.500	30	28	1052
42 x 42 x 34	42.000	41.000	0.500	34.000	33.000	0.500	30	28	1046
42 x 42 x 30	42.000	41.000	0.500	30.000	29.000	0.500	30	28	1039
44 x 44 x 40	44.000	43.000	0.500	40.000	39.000	0.500	32	29 1/2	1177
44 x 44 x 36	44.000	43.000	0.500	36.000	35.000	0.500	32	28 1/2	1163
44 x 44 x 32	44.000	43.000	0.500	32.000	31.000	0.500	32	28	1154
46 x 46 x 42	46.000	45.000	0.500	42.000	41.000	0.500	33 1/2	31	1292
46 x 46 x 38	46.000	45.000	0.500	38.000	37.000	0.500	33 1/2	30	1276
46 x 46 x 34	46.000	45.000	0.500	34.000	33.000	0.500	33 1/2	29 1/2	1266
48 x 48 x 44	48.000	47.000	0.500	44.000	43.000	0.500	35	33	1416
48 x 48 x 40	48.000	47.000	0.500	40.000	39.000	0.500	35	32	1399
48 x 48 x 36	48.000	47.000	0.500	36.000	35.000	0.500	35	31	1384
52 x 52 x 48	52.000	51.000	0.500	48.000	47.000	0.500	38	34	1650
52 x 52 x 44	52.000	51.000	0.500	44.000	43.000	0.500	38	32	1626
52 x 52 x 40	52.000	51.000	0.500	40.000	39.000	0.500	38	30	1601
56 x 56 x 52	56.000	55.000	0.500	52.000	51.000	0.500	41	36	1913
56 x 56 x 48	56.000	55.000	0.500	48.000	47.000	0.500	41	34	1885
56 x 56 x 44	56.000	55.000	0.500	44.000	43.000	0.500	41	32	1860
60 x 60 x 56	60.000	59.000	0.500	56.000	55.000	0.500	44	38	2196
60 x 60 x 52	60.000	59.000	0.500	52.000	51.000	0.500	44	36	2166
60 x 60 x 48	60.000	59.000	0.500	48.000	47.000	0.500	44	34	2139

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

Wall thicknesses 36" and smaller conform to ANSI B36.10 Specifications

Wall thicknesses 38" and larger are indicated by

STD and Sch 40 Specifications for wall thicknesses of 36"

All fittings have one seam in branch

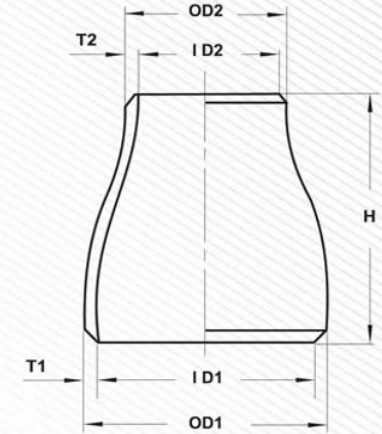
Wrought Steel Butt-Welding Fittings

Shaped Concentric Reducers

STD (Sch 40)

ANSI B16.9

ASTM A234



Unit: Inch

Nominal Pipe Size	Standard Weight (STD) - Sch 40							
	Large End			Small End			End to End	
	OD1	ID1	T1	OD2	ID2	T2	H	
3/4 x 1/2	1.050	0.842	0.113	0.109	0.622	0.109	1.500	
1 x 3/4	1.315	1.049	0.113	1.050	0.824	0.113	2.000	
1 x 1/2	1.315	1.049	0.133	0.840	0.622	0.109	2.000	
1 1/4 x 1	1.660	1.380	0.140	1.315	1.049	0.133	2.000	
1 1/4 x 3/4	1.660	1.380	0.140	1.050	0.824	0.113	2.000	
1 1/4 x 1/2	1.660	1.380	0.140	0.840	0.622	0.109	2.000	
1 1/2 x 1 1/4	1.900	1.610	0.145	1.660	1.380	0.140	2.500	
1 1/2 x 1	1.900	1.610	0.145	1.315	1.049	0.133	2.500	
1 1/2 x 3/4	1.900	1.610	0.145	1.050	0.824	0.113	2.500	
2 x 1 1/2	2.375	2.067	0.154	1.900	1.610	0.145	3.000	
2 x 1 1/4	2.375	2.067	0.154	1.660	1.380	0.140	3.000	
2 x 1	2.375	2.067	0.154	1.315	1.049	0.133	3.000	
2 x 3/4	2.375	2.067	0.154	1.050	0.824	0.113	3.000	
2 1/2 x 2	2.875	2.469	0.203	2.375	2.067	0.154	3.500	
2 1/2 x 1 1/2	2.875	2.469	0.203	1.900	1.610	0.145	3.500	
2 1/2 x 1 1/4	2.875	2.469	0.203	1.660	1.380	0.140	3.500	
3 x 2 1/2	3.500	3.068	0.216	2.875	2.469	0.203	3.500	
3 x 2	3.500	3.068	0.216	2.375	2.067	0.154	3.500	
3 x 1 1/2	3.500	3.068	0.216	1.900	1.610	0.145	3.500	
3 x 1 1/4	3.500	3.068	0.216	1.660	1.380	0.140	3.500	
3 1/2 x 3	4.000	3.548	0.226	3.500	3.068	0.216	4.000	
3 1/2 x 2 1/2	4.000	3.548	0.226	2.870	2.469	0.203	4.000	
3 1/2 x 2	4.000	3.548	0.226	2.375	2.067	0.154	4.000	
4 x 3 1/2	4.500	4.026	0.237	4.000	3.548	0.226	4.000	
4 x 3	4.500	4.026	0.237	3.500	3.068	0.216	4.000	
4 x 2 1/2	4.500	4.026	0.237	2.875	2.469	0.203	4.000	
4 x 2	4.500	4.026	0.237	2.375	2.067	0.154	4.000	

FORGING reserve the right to introduce modification in the interests of technical progress.

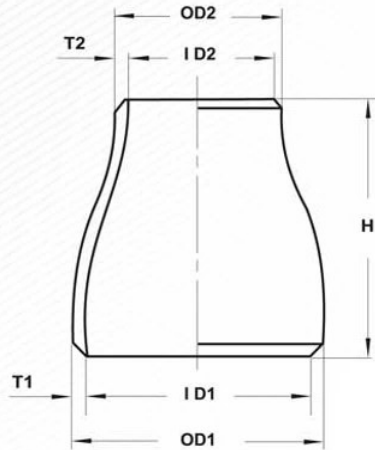
For dimensional tolerances and bevel details see pages 30 and 31

16" Nps and smaller fittings are made from seamless pipes

18" Nps and larger fittings are made from welded pipes

Wrought Steel Butt-Welding Fittings

Shaped Concentric Reducers
STD (Sch 40)
ANSI B16.9
ASTM A234



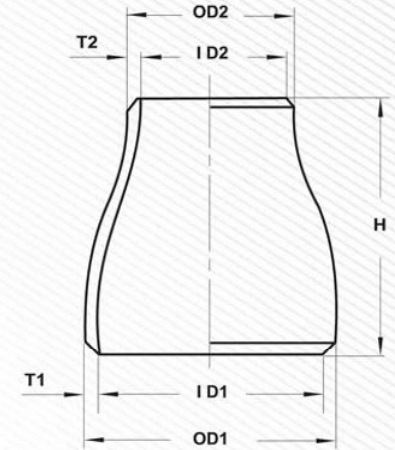
Unit: Inch

Standard Weight (STD) - Sch 40							
Nominal Pipe Size	Large End			Small End			End to End
	OD1	ID1	T1	OD2	ID2	T2	
* 5 x 4	5.563	5.047	0.258	4.500	4.026	0.237	5.000
* 5 x 3 1/2	5.563	5.047	0.258	4.500	3.548	0.226	5.000
* 5 x 3	5.563	5.047	0.258	3.500	3.068	0.216	5.000
* 5 x 2 1/2	5.563	5.047	0.258	2.875	2.469	0.203	5.000
* 6 x 5	6.625	6.065	0.280	5.563	5.047	0.258	5.500
* 6 x 4	6.625	6.065	0.280	4.500	4.026	0.237	5.500
* 6 x 3 1/2	6.625	6.065	0.280	4.500	3.548	0.226	5.500
* 6 x 3	6.625	6.065	0.280	3.500	3.068	0.216	5.500
* 8 x 6	8.625	7.981	0.322	6.625	6.065	0.280	6.000
* 8 x 5	8.625	7.981	0.322	5.563	5.047	0.258	6.000
* 8 x 4	8.625	7.981	0.322	4.500	4.026	0.237	6.000
* 10 x 8	10.750	10.020	0.365	8.625	7.981	0.322	7.000
* 10 x 6	10.750	10.020	0.365	6.625	6.065	0.280	7.000
* 10 x 5	10.750	10.020	0.365	5.563	5.047	0.258	7.000
12 x 10	12.750	12.000	0.375	10.750	10.020	0.365	8.000
12 x 8	12.750	12.000	0.375	8.625	7.981	0.322	8.000
12 x 6	12.750	12.000	0.375	6.625	6.065	0.280	8.000
14 x 12	14.000	13.250	0.375	12.750	12.000	0.375	13.000
14 x 10	14.000	13.250	0.375	10.750	10.020	0.365	13.000
14 x 8	14.000	13.250	0.375	8.625	7.981	0.322	13.000
16 x 14	16.000	15.250	0.375	14.000	13.250	0.375	14.000
16 x 12	16.000	15.250	0.375	12.750	12.000	0.375	14.000
16 x 10	16.000	15.250	0.375	10.750	10.020	0.365	14.000
16 x 8	16.000	15.250	0.375	8.625	7.981	0.322	14.000
18 x 16	18.000	17.250	0.375	16.000	15.250	0.375	15.000
18 x 14	18.000	17.250	0.375	14.000	13.250	0.375	15.000
18 x 12	18.000	17.250	0.375	12.750	12.000	0.375	15.000

FORGING reserve the right to introduce modification in the interests of technical progress.
For dimensional tolerances and bevel details see pages 30 and 31
16" Nps and smaller fitting are made from seamless pipes
18" Nps and larger fitting are made from welded pipes
(*) denote Sch 40

Wrought Steel Butt-Welding Fittings

Shaped Concentric Reducers
STD (Sch 40)
ANSI B16.9
ASTM A234



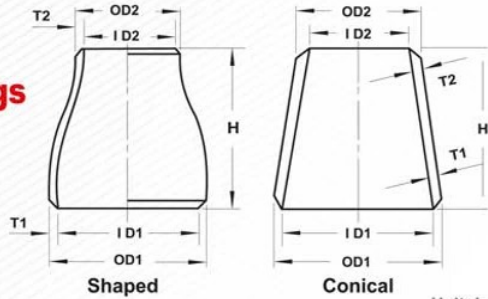
Unit: Inch

Standard Weight (STD) - Sch 40							
Nominal Pipe Size	Large End			Small End			End to End
	OD1	ID1	T1	OD2	ID2	T2	
20 x 18	20.000	19.250	0.375	18.000	17.250	0.375	20.000
20 x 16	20.000	19.250	0.375	16.000	15.250	0.375	20.000
20 x 14	20.000	19.250	0.375	14.000	13.250	0.375	20.000
22 x 20	22.000	21.250	0.375	20.000	19.250	0.375	20.000
22 x 18	22.000	21.250	0.375	18.000	17.250	0.375	20.000
22 x 16	22.000	21.250	0.375	16.000	15.250	0.375	20.000
24 x 22	24.000	23.250	0.375	22.000	21.250	0.375	20.000
24 x 20	24.000	23.250	0.375	20.000	19.250	0.375	20.000
24 x 18	24.000	23.250	0.375	18.000	17.250	0.375	20.000
26 x 24	26.000	25.250	0.375	24.000	23.250	0.375	24.000
26 x 22	26.000	25.250	0.375	22.000	21.250	0.375	24.000
26 x 20	26.000	25.250	0.375	20.000	19.250	0.375	24.000
28 x 26	28.000	27.250	0.375	26.000	25.250	0.375	24.000
28 x 24	28.000	27.250	0.375	24.000	23.250	0.375	24.000
28 x 20	28.000	27.250	0.375	20.000	19.250	0.375	24.000
30 x 28	30.000	29.250	0.375	28.000	27.250	0.375	24.000
30 x 26	30.000	29.250	0.375	26.000	25.250	0.375	24.000
30 x 24	30.000	29.250	0.375	24.000	23.250	0.375	24.000
32 x 30	32.000	31.250	0.375	30.000	29.250	0.375	24.000
32 x 28	32.000	31.250	0.375	28.000	27.250	0.375	24.000
32 x 26	32.000	31.250	0.375	26.000	25.250	0.375	24.000
34 x 32	34.000	33.250	0.375	32.000	31.250	0.375	24.000
34 x 30	34.000	33.250	0.375	30.000	29.250	0.375	24.000
34 x 26	34.000	33.250	0.375	26.000	25.250	0.375	24.000
36 x 34	36.000	35.250	0.375	34.000	33.250	0.375	24.000
36 x 32	36.000	35.250	0.375	32.000	31.250	0.375	24.000
36 x 30	36.000	35.250	0.375	30.000	29.250	0.375	24.000

FORGING reserve the right to introduce modification in the interests of technical progress.
For dimensional tolerances and bevel details see pages 30 and 31
16" Nps and smaller fitting are made from seamless pipes
18" Nps and larger fitting are made from welded pipes

Large Diameter Wrought Steel Butt-Welding Fittings

Shaped Concentric Reducers
Concentric & Eccentric
STD (Sch 40)



ANSI /AWWA C208

Nominal Pipe Size	Larger End			Small End			End to End H	Approx. Weight (kg)
	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 x 18	20.000	19.250	0.375	18.000	17.250	0.375	20	56.4
20 x 16	20.000	19.250	0.375	16.000	15.250	0.375	20	53.5
20 x 14	20.000	19.250	0.375	14.000	13.250	0.375	20	50.8
*20 x 18	20.000	18.812	0.594	18.000	16.876	0.562	20	88.4
*20 x 16	20.000	18.812	0.594	16.000	15.000	0.500	20	83.9
*20 x 14	20.000	18.812	0.594	14.000	13.124	0.438	20	79.6
22 x 20	22.000	21.250	0.375	20.000	19.250	0.375	20	62.6
22 x 18	22.000	21.250	0.375	18.000	17.250	0.375	20	59.7
22 x 16	22.000	21.250	0.375	16.000	15.250	0.375	20	57.1
24 x 22	24.000	23.250	0.375	22.000	21.250	0.375	20	68.6
24 x 20	24.000	23.250	0.375	20.000	19.250	0.375	20	65.7
24 x 18	24.000	23.250	0.375	18.000	17.250	0.375	20	63
24 x 16	24.000	23.250	0.375	16.000	15.250	0.375	20	62
*24 x 20	24.000	22.624	0.688	20.000	18.812	0.594	20	119
*24 x 18	24.000	22.624	0.688	18.000	16.876	0.562	20	114
26 x 22	26.000	25.250	0.375	22.000	21.250	0.375	24	79
26 x 18	26.000	25.250	0.375	18.000	17.250	0.375	24	78
26 x 16	26.000	25.250	0.375	16.000	15.250	0.375	24	78
28 x 24	28.000	27.250	0.375	24.000	23.250	0.375	24	86
28 x 20	28.000	27.250	0.375	20.000	19.250	0.375	24	85
28 x 18	28.000	27.250	0.375	18.000	17.250	0.375	24	85
30 x 26	30.000	29.250	0.375	26.000	25.250	0.375	24	101
30 x 22	30.000	29.250	0.375	22.000	21.250	0.375	24	101
30 x 20	30.000	29.250	0.375	20.000	19.250	0.375	24	100
32 x 28	32.000	31.250	0.375	28.000	27.250	0.375	24	108
32 x 24	32.000	31.250	0.375	24.000	23.250	0.375	24	102
32 x 22	32.000	31.250	0.375	22.000	21.250	0.375	24	186
*32 x 24	32.000	30.624	0.688	24.000	22.624	0.688	24	186
34 x 30	34.000	33.250	0.375	30.000	29.250	0.375	24	115
34 x 26	34.000	33.250	0.375	26.000	25.250	0.375	24	109
34 x 22	34.000	33.250	0.375	22.000	21.250	0.375	24	103

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

Wall thicknesses 36" and smaller conform to ANSI B 36.10 specifications

Wall thicknesses 38" and larger are indicated by

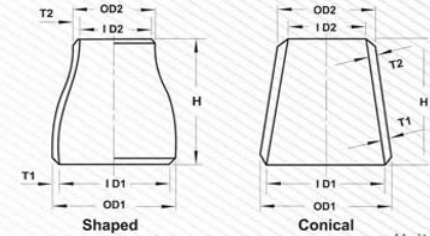
STD and Sch 40 Specifications for wall thicknesses of 36"

All fittings have one Longitudinal seam

(*) denote Sch40

Large Diameter Wrought Steel Butt-Welding Fittings

Shaped Concentric Reducers
Concentric & Eccentric
STD (Sch 40)



ANSI /AWWA C208

Nominal Pipe Size	Larger End			Small End			End to End H	Approx. Weight (kg)
	Outside Diameter OD 1	Inside Diameter ID 1	Wall Thickness T 1	Outside Diameter OD 2	Inside Diameter ID 2	Wall Thickness T 2		
36 x 32	36.000	35.250	0.375	32.000	31.250	0.375	24	123
36 x 28	36.000	35.250	0.375	28.000	27.250	0.375	24	116
36 x 24	36.000	35.250	0.375	24.000	23.250	0.375	24	111
*36 x 32	36.000	34.500	0.750	32.000	30.624	0.688	24	243
*36 x 24	36.000	34.500	0.750	24.000	22.624	0.688	24	219
38 x 34	38.000	37.250	0.375	34.000	33.250	0.375	24	130
38 x 30	38.000	37.250	0.375	30.000	29.250	0.375	24	124
38 x 26	38.000	37.250	0.375	26.000	25.250	0.375	24	118
40 x 36	40.000	39.250	0.375	26.000	25.250	0.375	24	137
40 x 32	40.000	39.250	0.375	32.000	31.250	0.375	24	131
40 x 28	40.000	39.250	0.375	28.000	27.250	0.375	24	126
42 x 38	42.000	41.250	0.375	38.000	37.250	0.375	24	144
42 x 34	42.000	41.250	0.375	34.000	33.250	0.375	24	139
42 x 30	42.000	41.250	0.375	30.000	29.250	0.375	24	134
44 x 40	44.000	43.250	0.375	40.000	39.250	0.375	24	152
44 x 36	44.000	43.250	0.375	36.000	34.250	0.375	24	146
44 x 32	44.000	43.250	0.375	32.000	31.250	0.375	24	141
46 x 42	46.000	45.250	0.375	42.000	41.250	0.375	28	185
46 x 38	46.000	45.250	0.375	38.000	37.250	0.375	28	178
46 x 34	46.000	45.250	0.375	34.000	33.250	0.375	28	172
48 x 44	48.000	47.250	0.375	44.000	43.250	0.375	28	194
48 x 40	48.000	47.250	0.375	40.000	39.250	0.375	28	187
48 x 36	48.000	47.250	0.375	36.000	35.250	0.375	28	180
52 x 48	52.000	51.250	0.375	48.000	47.250	0.375	28	211
52 x 44	52.000	51.250	0.375	44.000	43.250	0.375	28	204
52 x 40	52.000	51.250	0.375	40.000	39.250	0.375	28	198
56 x 52	56.000	55.250	0.375	52.000	51.250	0.375	28	228
56 x 48	56.000	55.250	0.375	48.000	47.250	0.375	28	221
56 x 44	56.000	55.250	0.375	44.000	43.250	0.375	28	215
56 x 40	56.000	55.250	0.375	40.000	39.250	0.375	28	210
60 x 56	60.000	59.250	0.375	56.000	55.250	0.375	28	245
60 x 52	60.000	59.250	0.375	52.000	51.250	0.375	28	238
60 x 48	60.000	59.250	0.375	48.000	47.250	0.375	28	232
64 x 56	64.000	63.250	0.375	56.000	55.250	0.375	28	275
64 x 48	64.000	63.250	0.375	48.000	47.250	0.375	28	272
72 x 64	72.000	71.250	0.375	64.000	63.250	0.375	28	345
72 x 56	72.000	71.250	0.375	56.000	55.250	0.375	28	340
80 x 72	80.000	79.250	0.375	72.000	71.250	0.375	28	446
80 x 64	80.000	79.250	0.375	64.000	63.250	0.375	28	442
80 x 56	80.000	79.250	0.375	56.000	55.250	0.375	28	440

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

Wall thicknesses 36" and smaller conform to ANSI B 36.10 specifications

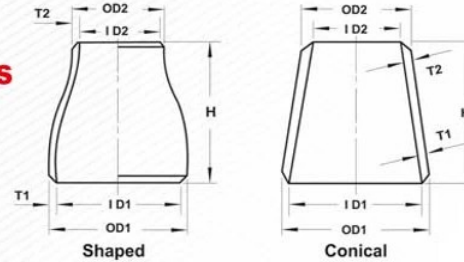
Wall thicknesses 38" and larger are indicated by STD and Sch 40 Specifications for wall thicknesses of 36"

All fittings have one Longitudinal seam

(*) denote Sch40

Large Diameter Wrought Steel Butt-Welding Fittings

Shaped Concentric Reducers
Concentric & Eccentric
STD (Sch 80)



ANSI /AWWA C208

Nominal Pipe Size	Larger End			Small End			End to End H	Approx. Weight (kg)
	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 x 18	20.000	19.000	0.500	18.000	17.000	0.500	20	74.9
20 x 16	20.000	19.000	0.500	16.000	15.000	0.500	20	71.1
20 x 14	20.000	19.000	0.500	14.000	13.000	0.500	20	67.4
* 20 x 18	20.000	17.938	1.031	18.000	14.124	0.938	20	150
* 20 x 16	20.000	17.938	1.031	16.000	14.312	0.844	20	145
* 20 x 14	20.000	17.938	1.031	14.000	12.500	0.750	20	142
22 x 20	22.000	21.000	0.500	20.000	19.000	0.500	20	82.9
22 x 18	22.000	21.000	0.500	18.000	17.000	0.500	20	79.2
22 x 16	22.000	21.000	0.500	16.000	15.000	0.500	20	75.6
* 22 x 20	22.000	19.750	1.125	20.000	19.938	1.031	20	181
* 22 x 18	22.000	19.750	1.125	18.000	16.124	0.938	20	172
* 22 x 16	22.000	19.750	1.125	16.000	14.312	0.844	20	164
24 x 22	24.000	23.000	0.500	22.000	21.000	0.500	20	91.0
24 x 20	24.000	23.000	0.500	20.000	19.000	0.500	20	87.3
24 x 18	24.000	23.000	0.500	18.000	17.000	0.500	20	83.7
* 24 x 22	24.000	21.000	1.216	22.000	19.750	1.125	20	215
* 24 x 20	24.000	21.562	1.219	20.000	17.938	1.031	20	206
* 24 x 18	24.000	21.562	1.219	18.000	16.124	0.938	20	197
26 x 22	26.000	25.000	0.500	22.000	21.000	0.500	24	114
26 x 18	26.000	25.000	0.500	18.000	17.000	0.500	24	106
26 x 16	26.000	25.000	0.500	16.000	15.000	0.500	24	101
28 x 24	28.000	27.000	0.500	24.000	23.000	0.500	24	124
28 x 20	28.000	27.000	0.500	20.000	19.000	0.500	24	115
30 x 18	28.000	27.000	0.500	18.000	17.000	0.500	24	111
30 x 26	30.000	29.000	0.500	26.000	25.000	0.500	24	134
30 x 22	30.000	29.000	0.500	22.000	21.000	0.500	24	125
32 x 20	30.000	29.000	0.500	20.000	19.000	0.500	24	121
32 x 28	32.000	31.000	0.500	28.000	27.000	0.500	24	143
32 x 24	32.000	31.000	0.500	24.000	23.000	0.500	24	135
32 x 22	32.000	31.000	0.500	22.000	21.000	0.500	24	131

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

Wall thicknesses 36" and smaller conform to ANSI B 36.10 specifications

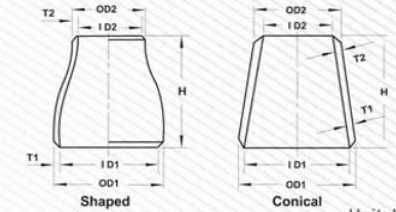
Wall thicknesses 38" and larger are indicated by STD and Sch 40 Specifications for wall thicknesses of 36"

All fittings have one Longitudinal seam

(*) denote Sch80

Large Diameter Wrought Steel Butt-Welding Fittings

Shaped Concentric Reducers
Concentric & Eccentric
XS



ANSI /AWWA C208

Nominal Pipe Size	Larger End			Small End			End to End H	Approx. Weight (kg)
	Outside Diameter OD 1	Inside Diameter ID 1	Wall Thickness T 1	Outside Diameter OD 2	Inside Diameter ID 2	Wall Thickness T 2		
34 x 30	34.000	33.000	0.500	30.000	29.000	0.500	24	153
34 x 26	34.000	33.000	0.500	26.000	25.000	0.500	24	145
34 x 22	34.000	33.000	0.500	22.000	21.000	0.500	24	137
36 x 32	36.000	35.000	0.500	32.000	31.000	0.500	24	163
36 x 28	36.000	35.000	0.500	28.000	27.000	0.500	24	155
36 x 24	36.000	35.000	0.500	24.000	23.000	0.500	24	147
38 x 34	38.000	37.000	0.500	34.000	33.000	0.500	24	173
38 x 30	38.000	37.000	0.500	30.000	29.000	0.500	24	165
38 x 26	38.000	37.000	0.500	26.000	25.000	0.500	24	157
40 x 36	40.000	39.000	0.500	36.000	35.000	0.500	24	182
40 x 32	40.000	39.000	0.500	32.000	31.000	0.500	24	174
40 x 28	40.000	39.000	0.500	28.000	27.000	0.500	24	167
42 x 38	42.000	41.000	0.500	38.000	37.000	0.500	24	192
42 x 34	42.000	41.000	0.500	34.000	33.000	0.500	24	184
42 x 30	42.000	41.000	0.500	30.000	29.000	0.500	24	177
44 x 40	44.000	43.000	0.500	40.000	39.000	0.500	24	202
44 x 36	44.000	43.000	0.500	36.000	35.000	0.500	24	197
44 x 32	44.000	43.000	0.500	32.000	31.000	0.500	24	187
46 x 42	46.000	45.000	0.500	42.000	41.000	0.500	28	247
46 x 38	46.000	45.000	0.500	38.000	37.000	0.500	28	237
46 x 34	46.000	45.000	0.500	34.000	33.000	0.500	28	228
48 x 44	48.000	47.000	0.500	44.000	43.000	0.500	28	258
48 x 40	48.000	47.000	0.500	40.000	39.000	0.500	28	243
48 x 36	48.000	47.000	0.500	36.000	35.000	0.500	28	240
42 x 48	52.000	51.000	0.500	48.000	47.000	0.500	28	281
52 x 44	52.000	51.000	0.500	44.000	43.000	0.500	28	271
52 x 40	52.000	51.000	0.500	40.000	39.000	0.500	28	263
56 x 52	56.000	55.000	0.500	52.000	51.000	0.500	28	303
46 x 48	56.000	55.000	0.500	48.000	47.000	0.500	28	294
56 x 44	56.000	55.000	0.500	44.000	43.000	0.500	28	286
60 x 56	60.000	59.000	0.500	56.000	55.000	0.500	28	326
60 x 52	60.000	59.000	0.500	52.000	51.000	0.500	28	317
60 x 48	60.000	59.000	0.500	48.000	47.000	0.500	28	309
64 x 56	64.000	63.000	0.500	56.000	55.000	0.500	28	359
64 x 48	64.000	63.000	0.500	48.000	47.000	0.500	28	357
72 x 64	72.000	71.000	0.500	64.000	63.000	0.500	28	440
72 x 56	72.000	71.000	0.500	56.000	55.000	0.500	28	438
80 x 72	80.000	79.000	0.500	72.000	71.000	0.500	28	520
80 x 64	80.000	79.000	0.500	64.000	63.000	0.500	28	516
80 x 56	80.000	79.000	0.500	56.000	55.000	0.500	28	516

FORGING reserve the right to introduce modification in the interests of technical progress.

For dimensional tolerances and bevel details see pages 30 and 31

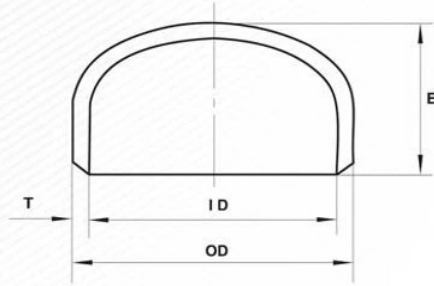
Wall thicknesses 36" and smaller conform to ANSI B 36.10 specifications

Wall thicknesses 38" and larger are indicated by XS and Sch 40 Specifications for wall thicknesses of 36"

All fittings have one Longitudinal seam

Wrought Steel Butt-Welding Fittings

Caps
STD (Sch 40)
ANSI B16.9
ASTM A234



Unit: Inch

Nominal Pipe Size	Outside Diameter OD	Inside Diameter ID	Wall Thickness T	Length E	Approx. Weight (kg)
* 2	2.375	2.067	0.154	1 1/2	0.234
* 2 1/2	2.875	2.469	0.203	1 1/2	0.393
* 3	3.500	3.068	0.216	2	0.660
* 4	4.500	4.026	0.237	2 1/2	1.17
* 5	5.563	5.047	0.258	3	1.91
* 6	6.625	6.065	0.280	3 1/2	2.90
* 8	8.625	7.981	0.322	4	5.19
* 10	10.750	10.020	0.365	5	9.15
12	12.750	12.000	0.375	6	13.3
* 12	12.750	11.938	0.406	6	14.3
14	14.000	13.250	0.375	6 1/2	15.9
* 14	14.000	13.124	0.438	6 1/2	18.8
16	16.000	15.250	0.375	7	20.0
* 16	16.000	15.000	0.500	7	26.7
18	18.000	17.250	0.375	8	25.6
* 18	18.000	16.867	0.562	9	41.4
20	20.000	19.250	0.375	9	31.9
* 20	20.000	18.812	0.594	10	54.0
22	22.000	21.250	0.375	10	38.8
24	24.000	23.250	0.375	10 1/2	45.1
* 24	24.000	22.624	0.688	12	90.1
26	26.000	22.250	0.375	10 1/2	50.5
28	28.000	27.250	0.375	10 1/2	56.2
30	30.000	29.250	0.375	10 1/2	62.1
32	32.000	31.250	0.375	10 1/2	68.4
* 32	32.000	30.624	0.688	10 1/2	126
34	34.000	33.250	0.375	10 1/2	75.0
* 34	34.000	32.624	0.688	10 1/2	138
36	36.000	35.250	0.375	10 1/2	81.9
* 36	36.000	34.500	0.750	10 1/2	164
40	40.000	39.250	0.375	12	102
42	42.000	41.250	0.375	12	110
44	44.000	43.250	0.375	13 1/2	126
46	46.000	45.250	0.375	13 1/2	134
48	48.000	47.250	0.375	13 1/2	143

FORGING reserve the right to introduce modification in the interests of technical progress.
For dimensional tolerances and bevel details see pages 30 and 31
Wall thicknesses for caps up to and including 36" conform to ANSI B 36.10 specifications
(*) denote Sch40

Dimensions of Welded & Seamless Pipe

Carbon and Alloy Steel Pipe

ANSI B36.10

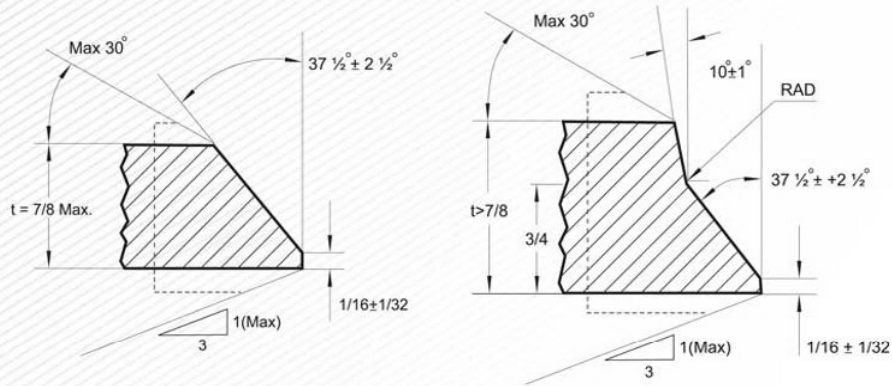
Unit: mm

Nominal pipe size (inch)	Outside Dia- meter	Wall Thickness														Nominal pipe size (inch)
		Sch. 10	Sch. 20	Sch. 30	Std. Wall	Sch. 40	Sch. 60	Extra Strong	Sch. 80	Sch. 100	Sch. 120	Sch. 140	Sch. 160	xx Strong		
1/8	10.3	1.24	-	1.45	1.73	1.73	-	2.41	2.41	-	-	-	-	-	-	1/8
1/4	13.7	1.65	-	1.85	2.24	2.24	-	3.02	3.02	-	-	-	-	-	-	1/4
3/8	17.1	1.65	-	1.85	2.31	2.31	-	3.20	3.20	-	-	-	-	-	-	3/8
1/2	21.3	2.11	-	2.41	2.77	2.77	-	3.73	3.73	-	-	-	-	4.78	7.47	1/2
3/4	26.7	2.11	-	2.41	2.87	2.87	-	3.91	3.91	-	-	-	-	5.56	7.82	3/4
1	33.4	2.77	-	2.90	3.38	3.38	-	4.55	4.55	-	-	-	-	6.35	9.09	1
1 1/4	42.2	2.77	-	2.97	3.56	3.56	-	4.85	4.85	-	-	-	-	6.35	9.70	1 1/4
1 1/2	48.3	2.77	-	3.18	3.68	3.68	-	5.08	5.08	-	-	-	-	7.41	10.15	1 1/2
2	60.3	2.77	-	3.18	3.91	3.91	-	5.54	5.54	-	-	-	-	8.74	11.07	2
2 1/2	73.0	3.05	-	4.78	5.16	5.16	-	7.01	7.01	-	-	-	-	9.53	14.02	2 1/2
3	88.9	3.05	-	4.78	5.49	5.49	-	7.62	7.62	-	-	-	-	11.13	15.24	3
3 1/2	101.6	3.05	-	4.78	5.74	5.74	-	8.08	8.08	-	-	-	-	-	-	3 1/2
4	114.3	3.05	-	4.78	6.02	6.02	-	8.56	8.56	-	11.13	-	13.49	17.12	4	
5	141.3	3.40	-	-	6.55	6.55	-	9.53	9.53	-	12.70	-	15.88	19.05	5	
6	168.3	3.40	-	-	7.11	7.11	-	10.97	10.97	-	14.27	-	18.26	21.95	6	
8	219.1	3.76	6.35	7.04	8.18	8.18	10.31	12.70	12.70	15.09	18.26	20.62	23.01	22.23	8	
10	273.1	4.19	6.35	7.80	9.27	9.27	12.70	12.70	15.09	18.26	21.44	25.40	28.58	25.40	10	
12	323.9	4.57	6.35	8.38	9.53	9.53	10.31	14.27	12.70	17.48	21.44	25.40	28.58	33.32	25.40	12
14	355.6	6.35	7.92	9.53	9.53	11.13	15.09	12.70	19.05	23.83	27.79	31.75	35.71	-	14	
16	406.4	6.35	7.92	9.53	9.53	12.70	16.66	12.70	21.44	26.19	30.96	36.53	40.49	-	16	
18	457.2	6.35	7.92	11.13	9.53	14.27	19.05	12.70	23.83	29.36	34.93	39.67	45.24	-	18	
20	508.0	6.35	9.53	12.70	9.53	15.09	20.62	12.70	26.19	32.54	38.10	44.45	50.01	-	20	
22	558.8	6.35	9.53	12.70	9.53	-	22.23	12.70	28.58	34.93	41.28	47.63	53.98	-	22	
24	609.6	6.35	9.53	14.27	9.53	17.48	24.61	12.70	30.96	38.89	46.02	52.37	59.54	-	24	
26	660.4	7.92	12.70	-	9.53	-	-	12.70	-	-	-	-	-	-	26	
28	711.2	7.92	12.70	15.88	9.53	-	-	12.70	-	-	-	-	-	-	28	
30	762.0	7.92	12.70	15.88	9.53	-	-	12.70	-	-	-	-	-	-	30	
32	812.8	7.92	12.70	15.88	9.53	17.48	-	12.70	-	-	-	-	-	-	32	
34	863.6	7.92	12.70	15.88	9.53	17.48	-	12.70	-	-	-	-	-	-	34	
36	914.4	7.92	12.70	15.88	9.53	19.05	-	12.70	-	-	-	-	-	-	36	

FORGING reserve the right to introduce modification in the interests of technical progress.

Welding End Preparation

ANSI B16.9



(a) Plain bevel

(b) Compound bevel

Nominal pipe wall thickness (t)	End preparation
Less than x*	Cut square or slightly chamfer, at mfr.'s option
X* to 1/8 incl.	Plain bevel as in sketch "a" above
More than 7/8	Plain bevel as in sketch "b" above
X*=3/16 for carbon steel, ferritic alloy steel or wrought iron; 1/8 for austenitic alloy steel	

- Notes:** 1. End preparation are in accordance with ANSI B 16.25 paragraph 4.2
2. End preparation conforming to customer specification will be specially manufactured upon consultation.

HYDROSTATIC TEST

FORGING Butt-Welding fitting can withstand a hydrostatic pressure test determined by the following equation:

$$p = \frac{2St}{D}$$

where,

p = Hydrostatic test pressure, psi

S = 60% of the specified minimum yield strength for carbon and alloy steel, psi or

50% of the specified minimum yield strength for austenitic stainless steel, psi

t = Nominal wall thickness, inch.

D = Outside diameter at bevel, inch.

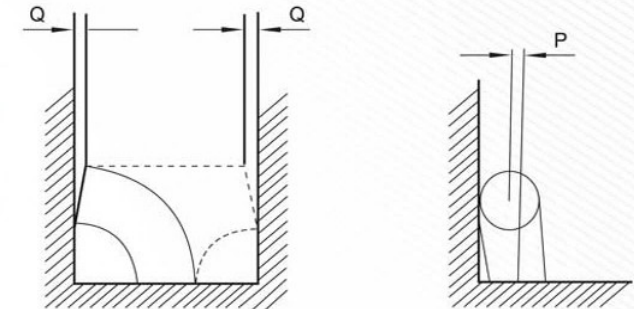
Dimensional Tolerances

ANSI B16.9, B16.28

Unit: Inch

Nominal pipe size	All Fittings			90° and 45° Elbows	Tees	Reducers	Caps	180 Returns	Alignment of Ends U
	Outside diameter at bevel OD	Inside diameter at end ID	Wall thickness T	Center to End Dimension A, B	Center to End Dimension C, M	Overall Length H	Overall Length E	Center to Center Dimension P	
½ - 2 ½	+1/16 -1/32		Not less than 87 ½% of nominal thickness				±1/8		
3 - 4	±1/16			±1/16	±1/16	±1/16		±1/4	
5 - 8	+3/32 -1/16	±1/16							±1/4
10 - 18	+5/32 -1/8	±1/8		±3/32	±3/32	±3/32		±1/4	
20 - 24								±3/8	
26 - 36	+1/4 -3/16	±3/16		±1/8	±1/8		±3/16	±3/8	
32 - 48				±3/16	±3/16				
*50 - 60	+3/8 -1/4	±1/4		±3/8	±3/8	±3/8		—	—
*62 - 70	+1/2 -3/8	±3/8		±1/2				—	—
*72 - 80	+5/8 -15/32	±15/32		±5/8					

Nominal pipe size	Angularity Tolerance	
	off Angle Q	off Plane P
½ - 4	1/32	1/16
5 - 8	1/16	1/8
10 - 12	3/32	3/16
14 - 16		1/4
18 - 24	1/8	3/8
26 - 30		
32 - 42	3/16	½
44 - 48		3/4
* 50 - 60	1/4	
* 62 - 70	3/8	
* 72 - 80	15/32	



*Dimensional tolerances for nominal pipe size 50" and larger conform to FORGING Standard as no internationally recognized standards have been set for larger size wall thicknesses and dimensions.

NOTE:



FORGING

دفتر مرکزی و کارخانه: تهران / ابتدای جاده قدیم قم
بعد از کارخانه ایران ترانسفو / انتهای خیابان آسیاب قرمز
تلفن: ۴-۵۵۲۰۱۸۷۱ (۰۲۱) / ۴-۵۵۲۲۸۲۲۱ (۰۲۱)
فاکس: ۵۵۲۲۸۲۲۵ (۰۲۱)
forgingforging@gmail.com

HEAD OFFICE & FACTORY: End of Asiab
Ghermez St. / Old Qom Road / Tehran / IRAN
TEL: (+98)21 55228221-4 / 55201871-4
FAX: (+98)21 55228225
@ forging_co
www.FORGING co.ir