



BENTON

Piping Systems

PIPES - ERW & SEAMLESS

BUTTWELD FITTINGS

FLANGES - ANSI 150, 300, 600, 900, 1500 (A105N)

FLANGES - TABLE D, E, F, H

FLANGES - PN16, PN21, PN35

FLANGES - WATER CORPORATION SPECIFIC

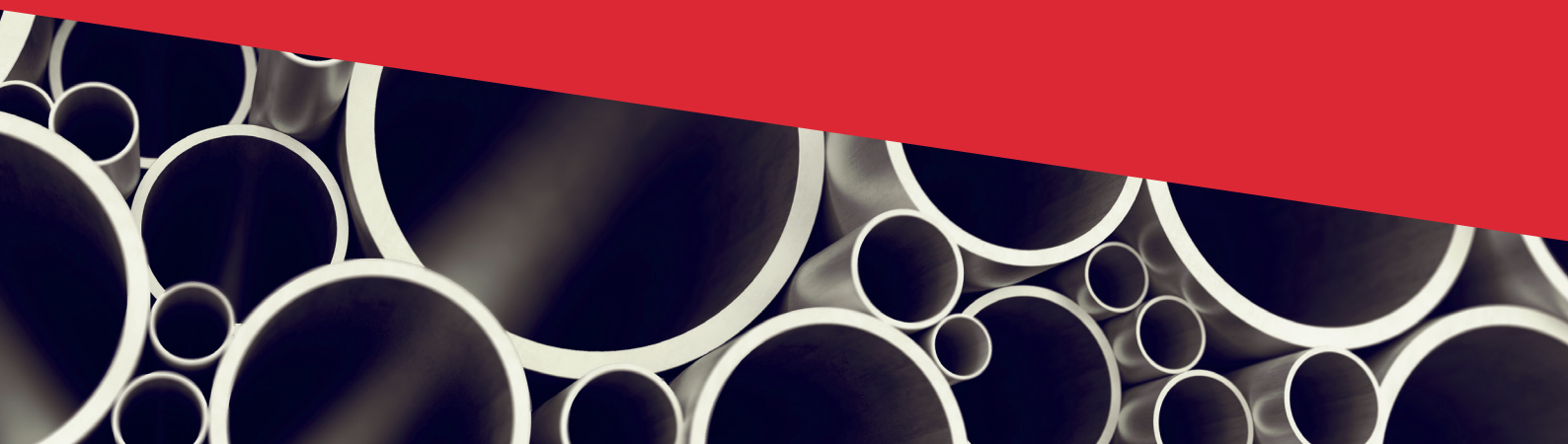
3D & 5D BENDS

HIGH PRESSURE FITTINGS | STUB ENDS

PIPE CUT TO SIZE SERVICE | VALVES

PIPE THREADING | PIPE NIPPLES

SWIVEL RINGS & LAP JOINT FLANGES



IT'S OUR SERVICE THAT MAKES A DIFFERENCE.

We have noticed a steep decline in quality customer service over the last five to ten years which prompted us to set ourselves above the rest and become leaders in this industry.

We want to ensure punctual and fast deliveries where possible, one to one service by offering committed fast and reliable service without any exceptions.

Service is the key to our success, we're here for the long term and look forward in developing continued long term business relationships now and well into the future.

PIPING

Carbon
Stainless
Duplex
Inconel
Exotics
Low Temp
Chrome Moly

FLANGES

ANSI & Table AS2129
Weld Neck
Slip-On
Flat Face
Lap Joint
Socket Weld
Blind
Threaded
BAE
PN
DIN
Weld Ring
Stub End
Swivel
Spectacle
Spade
Paddle

BUTTWELD

Elbows 45° and 90°
Equal Tee
Reducing Tee
Caps
Concentric Reducers
Ecentric Reducers
180° Return Bends

FITTINGS

Elbows
Reducers
Caps
High Pressure
Socket Weld
Pipe Nipples

VALVES

Gate
Ball
Globes
Check
Butterfly
Knife Gate

3D/5D BENDS

Buttweld & Induction
20nb to 1500nb



BENTON

Piping Systems

We stock large bore pipe and fittings up to 1500nb
Pipes, Flanges, Fittings, Buttweld, 3D & 5D Bends



3D & 5D pipe bends - Australia's largest supplier

Our team has the expertise to discuss your requirements. 3D and 5D bends have been used for decades in the Mining, Water, Refinery Oil & Gas and Petrochemical industries. We pride ourselves on customer service and satisfaction by including fabrication and custom cutting. Our 3D and 5D bends can be invaluable to any piping project requiring a reduction of turbulence within the pipe. We also offer set tangents to suit specific applications to minimise down time for faster deliveries. If your piping project requires a wider bend radius, or if you're just looking to increase fabrication efficiency while reducing costs, consider our 3D and 5D pipe bends. All our bends are end user ready to install.

FULL SIZE RANGE 15NB TO 1500NB

Benton Piping System is Australia's largest national and international distribution stockist for 3D & 5D Pipe Bends up to 1500NB.

We provide our customers pipe bends with green ends (tangents) to a variety of sizes in various schedules. In addition, we can also utilise our in house machining services to provide our customers with rolled or cut grooved ends.

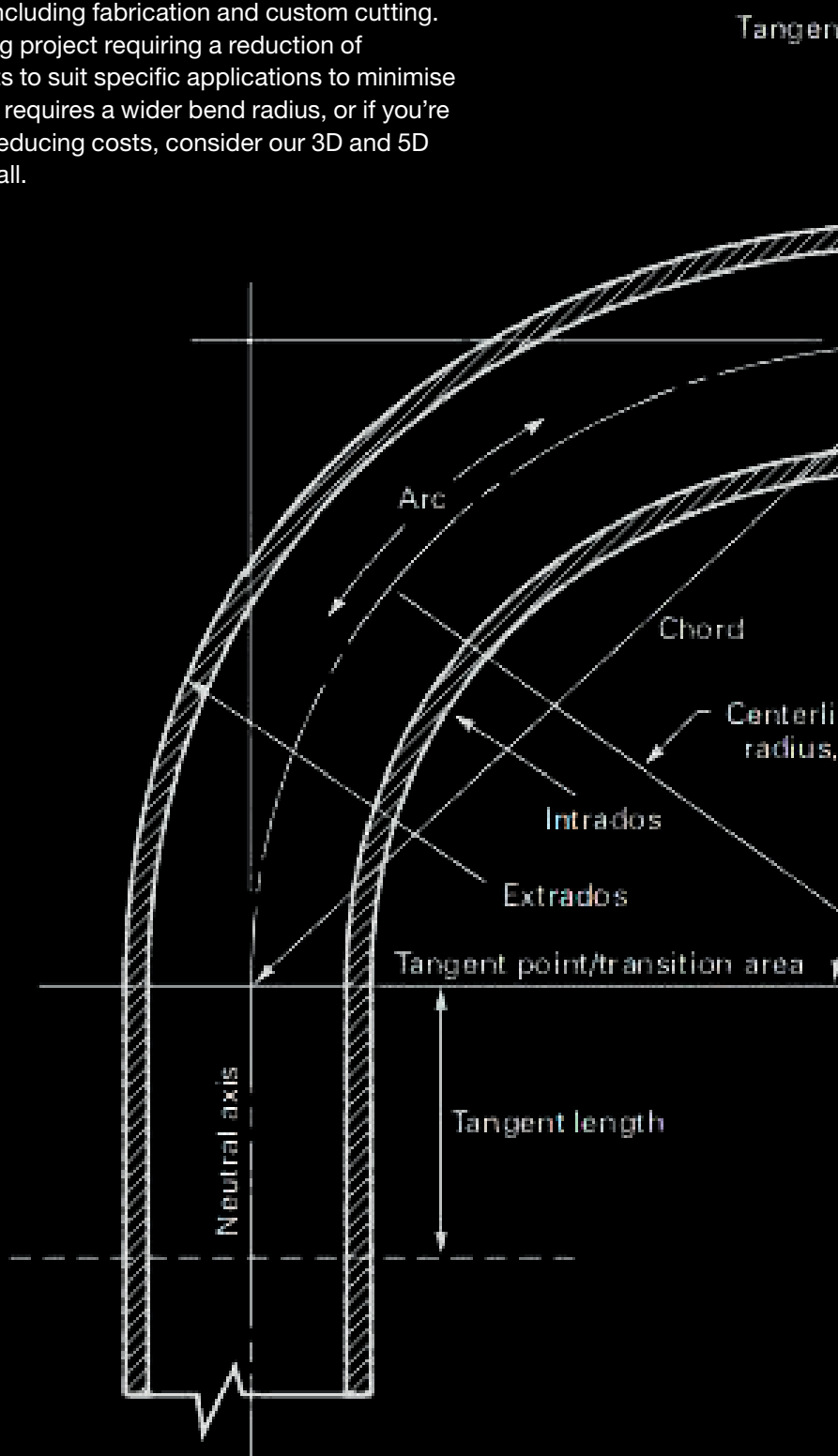
Although 1D and 1.5D bends are readily standard and available within the industry, these particular bend radii will not suit every need, thus 3D and 5D bends differ from the 1D or 1.5D industry standard.

The "D" represents the outside diameter of the pipe, measured in inches. The bend radius is then multiplied by the outside diameter to indicate the type of bend to be made. 3D and 5D Bends are significantly larger than the standard, resulting in larger radius to serve a variety of purposes.

WHY USE 3D & 5D PIPE BENDS

Larger radius bends allow the product to flow more smoothly through the pipe; whether it is water, slurry, oils, solids or other mediums the flow has less resistance compared to 1D or 1.5D. Less resistance thus increases flow efficiencies. In addition a longer bend radius allows the pipe to reduce turbulence when compared to standard fittings.

Consider whether the traditional 1D or 1.5D bends can handle the job you have engineered to perform; if there is any doubt, consider using either a 3D or 5D bend for your next piping project.



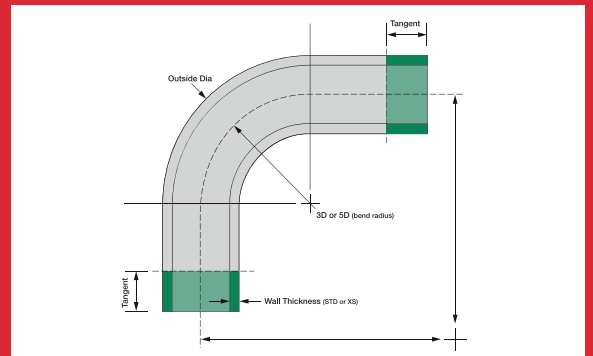
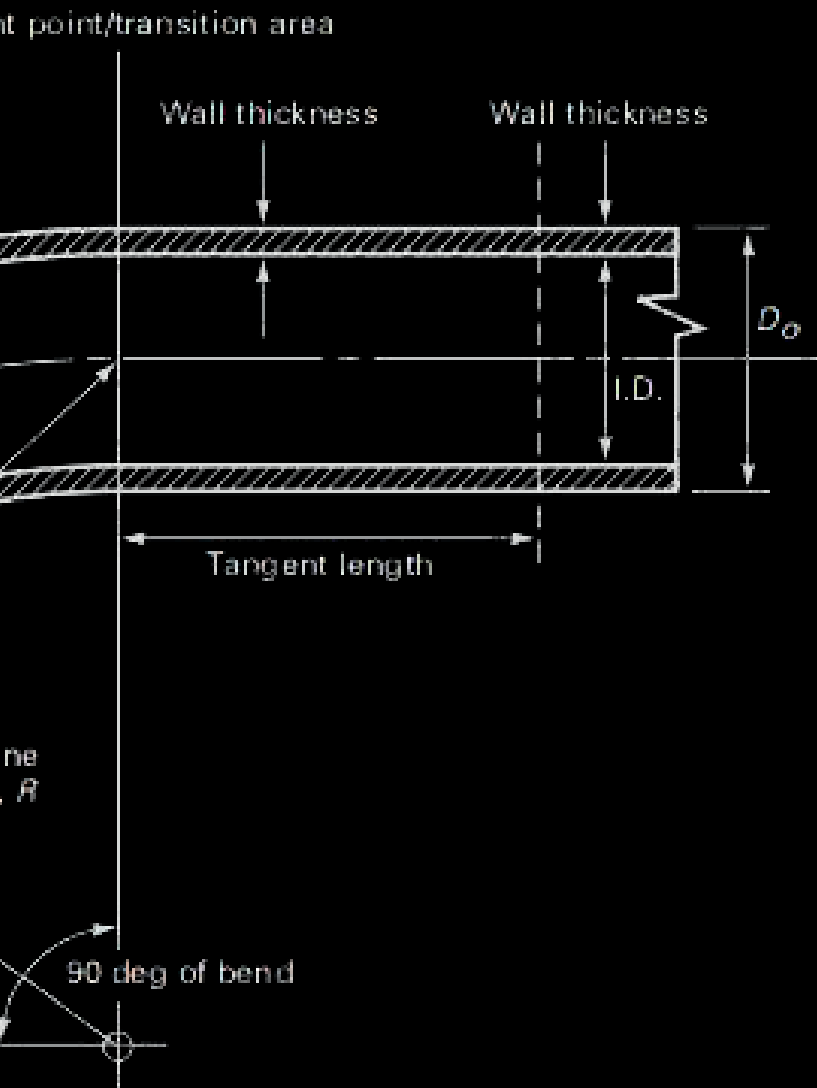
Call Benton Piping System for information

EXAMPLE COMPREHENSIVE CALCULATION FORMULA

DN	2D / 3D / 4D / 5D	Angle	Sch	Green (each end)								
600	3	90	STD	300								
DN	NPS	OD	A	'D' Rad	Angle	E	B	C	Sch	Wall	Green	Mass
600	24	610	1800	3	90	2545.6	1377.7	2827	STD	9.53	300	484.3
Manual Input for Angle, Wall and Green - blue cells only >>						Angle	E	B	C	Wall	Green	Mass
						45	1377.7	702.3	1414	9.53	0	199.8

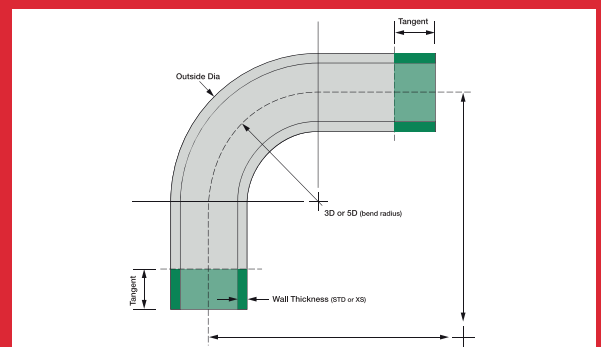
Dimensions of 3D and 5D Elbows

3D ELBOWS ASTM SA A234



NOMINAL SIZE	WALL THICKNESS (MM)		BEND RADIUS
	STD WT	XS	
50	3.91	5.54	150
60	5.16	7.01	195
80	5.49	7.62	240
90	5.74	8.08	270
100	6.02	8.56	300
125	6.55	9.53	375
150	7.11	10.97	450
200	8.18	12.70	600
250	9.27	12.70	750
300	9.53	12.70	900
350	9.53	12.70	1050
400	9.53	12.70	1200
450	9.53	12.70	1350
500	9.53	12.70	1500
600	9.53	12.70	1800

5D ELBOWS ASTM SA A234



NOMINAL SIZE	WALL THICKNESS (MM)		BEND RADIUS
	STD WT	XS	
50	3.91	5.54	250
60	5.16	7.01	325
80	5.49	7.62	400
90	5.74	8.08	450
100	6.02	8.56	500
125	6.55	9.53	625
150	7.11	10.97	750
200	8.18	12.70	1000
250	9.27	12.70	1250
300	9.53	12.70	1500
350	9.53	12.70	1750
400	9.53	12.70	2000
450	9.53	12.70	2250
500	9.53	12.70	2500
600	9.53	12.70	3000

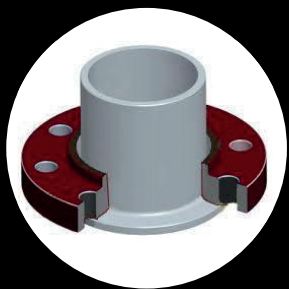
SUPPLY, FABRICATION & SURFACE TREATMENT

- Supply of 3D & 5D bends
- Specialised 3D & 5D bend spools with flanged ends
- Surface Treatment
- Rubber, Ceramic or Poly material lining
- Roll & Cut Grooved Piping

DELIVERY

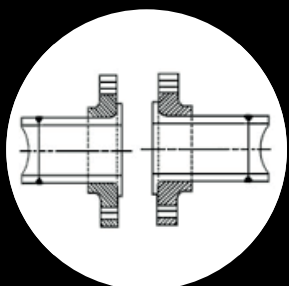
Benton Piping Systems supplies its 3D and 5D bends throughout Australia and regional areas. Starting with local metal distributors, wholesalers and international suppliers. We also support and supply our products to New Zealand, Papua New Guinea, The Middle East, and other countries.

IDEAL FITTINGS FOR 3D & 5D BENDS



Stub Ends & Swivel Flanges (Lap Joint)

The stub end is essentially a piece of pipe with one end flared outwards and the other prepared to be welded to a pipe of the same bore size (NPS = nominal pipe size), material and wall thickness. Stub Flanges are used to create a secure joint between two lengths of pipe with the use of backing rings.



Weld Rings & Swivel Flange (Lap Joint)

A backing ring is a circular metal ring, with holes around the perimeter, used in pairs to bolt two HDPE pipe spools together.

The combination of stub ends and backing flanges is an alternative way to join pipes compared to the use of standard flanges. This solution is used in these typical scenarios: Applications where rotating back flanges are preferred.

What is the BAE flange?

Benton Piping Systems has a new cost saving flanging solution to address key piping requirements, reduce expenditure for greenfield, brownfield projects and ongoing maintenance cost components for industry clients.

The BAE Flange upholds and conforms to all International manufacturing design standards with raised face or flat face finishes (e.g. ANSI, ASME, AWWA, B 16.5 AS 2129 and ISO 9001) and has been specifically designed to embody a number of advantages over the current existing flange designs.

ACHIEVABLE PROVEN BENEFITS

- Reduction of setup costs and fit up time by up to 70%
- Reduction of welding time for rubber lined and ceramic lined pipe spools by up to 50%
- Complete elimination of re-machining of gramophone flange face after welding
- Field Fit Welds (and in particular on elevated pipe racks) can be completed in effective time saving manner as the BAE flange is a perfect fit each time, every time
- Incorporating pre-determined offsets (standard set back limit and cut list measurement available upon request) removing the need for manual measurements with squares and difficult 90 degree (installation of flanges to pipe)
- Significantly improves the accuracy and time taken to calculate pipe cutting list thereby reducing calculation time and miscalculation errors
- Strategically placed welding grooves to reduce welding time and increase bond strength
- Improved life expectancy of the flange installation due to greater seal integrity
- No requirement to re-machine or re-gramophone flange face



TYPE OF FLANGES

- BAE A Q replaces ANSI 150 Slip On Raised Face for standard quick fit and weld up
- BAE A R for rubber lined slurry lines
- BAE A C for ceramic or poly lined or slurry lines
- BAE E Q replaces Table E AS 2129 Slip On Raised Face for standard quick fit and weld up
- BAE E R for rubber lined slurry lines

COST SAVING BENEFIT

Benton Piping Systems will cut your pipe to required size without charging you for an offcut



Pipe Cutting Cut to Size with no

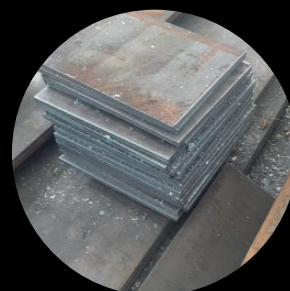
You can order the exact length of pipe in any size rather than purchase full 6 or 12 metre mill lengths. This reduces waste and cost and is ideal when contemplating maintenance or repair scopes requiring less than the stock length. We continually receive great feed-back from customers who continue to purchase this way.

Note: Having pipe cut to size provides a competitive advantage when quoting by eliminating the extra material cost that would have normally been factored in your submission.



Bisalloy Plate Full Sheet or Cut to Size

Benton Piping Systems stocks Bisalloy plate. It is a high tensile, abrasion resistant steel used for structural steel applications which is also quenched and tempered.



Spectacle, Spade and Paddle Blinds

Benton Piping Systems stock on shelf, manufacture and supplies spectacle blinds, spades, and paddle flanges. These are three different components that used in piping for positive isolation of the section of a line or equipment during maintenance and shutdown.



PIPE CHART CARBON AND STAINLESS STEEL

B36.10

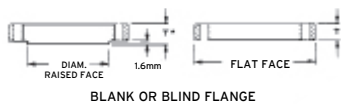
UPPER FIGURE = WALL THICKNESS

LOWER FIGURE = KGS/MTR

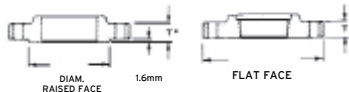
Inches	Nominal Pipe Size mm	OD mm	5S	10S	10	20	30	STD	40S	40	60	XS	80S	80	100	120	140	160	XXS
1/8	6	10.3		1.24 0.28				1.73 0.37	1.73 0.36	1.73 0.37		2.41 0.47	2.41 0.48	2.41 0.47					
1/4	8	13.7		1.65 0.51				2.24 0.63	2.24 0.64	2.24 0.63		3.02 0.80	3.02 0.82	3.02 0.80					
3/8	10	17.1		1.65 0.64				2.31 0.84	2.31 0.84	2.31 0.84		3.20 1.10	3.20 1.12	3.20 1.10					
1/2	15	21.3	1.65 0.82	2.11 1.01				2.77 1.27	2.77 1.30	2.77 1.27		3.73 1.62	3.73 1.65	3.73 1.62				4.78 1.95	7.47 2.55
3/4	20	26.7	1.65 1.04	2.11 1.31				2.87 1.69	2.87 1.71	2.87 1.69		3.91 2.20	3.91 2.24	3.91 2.20				5.56 2.90	7.82 3.64
1	25	33.4	1.65 1.33	2.77 2.13				3.38 2.50	3.38 2.55	3.38 2.50		4.55 3.24	4.55 3.29	4.55 3.24				6.35 4.24	9.09 5.45
1 1/4	32	42.2	1.65 1.68	2.77 2.76				3.56 3.39	3.56 3.46	3.56 3.39		4.85 4.47	4.85 4.56	4.85 4.47				6.35 5.61	9.70 7.77
1 1/2	40	48.3	1.65 1.95	2.77 3.17				3.68 4.05	3.68 4.13	3.68 4.05		5.08 5.41	5.08 5.51	5.08 5.41				7.14 7.25	10.15 9.56
2	50	60.3	1.65 2.44	2.77 4.01				3.91 5.44	3.91 5.54	3.91 5.44		5.54 7.48	5.54 7.63	5.54 7.48				8.74 11.11	11.07 13.44
2 1/2	65	73.0	2.11 3.77	3.05 5.36				5.16 8.63	5.16 8.81	5.16 8.63		7.01 11.41	7.01 11.64	7.01 11.41				9.53 14.92	14.02 20.39
3	80	88.9	2.11 4.60	3.05 6.59				5.49 11.29	5.49 11.52	5.49 11.29		7.62 15.27	7.62 15.59	7.62 15.27				11.13 21.35	15.24 27.68
3 1/2	90	101.6	2.11 5.29	3.05 7.55				5.74 13.57	5.74 13.84	5.74 13.57		8.08 18.63	8.08 19.01	8.08 18.63					
4	100	114.3	2.11 5.96	3.05 8.52				6.02 16.07	6.02 16.40	6.02 16.07		8.56 22.32	8.56 22.77	8.56 22.32		11.13 28.32		13.49 33.54	17.12 41.03
5	125	141.3	2.77 9.67	3.40 11.82				6.55 21.77	6.55 22.20	6.55 21.77		9.53 30.97	9.53 31.59	9.53 30.97		12.70 40.28		15.88 9.11	19.05 57.43
6	150	168.3	2.77 11.55	3.40 14.13				7.11 28.26	7.11 28.83	7.11 28.26		10.97 42.56	10.97 43.42	10.97 42.56		14.27 54.20		18.26 67.56	21.95 79.22
8	200	219.1	2.77 15.09	3.76 20.37	6.35 33.31	7.04 36.81	8.18 42.55	8.18 43.39	8.18 42.55	10.31 53.08	12.70 64.64	12.70 65.95	12.70 64.64	15.09 75.92	18.26 90.44	20.62 100.92	23.01 111.27	22.23 107.92	
10	250	273.1	3.40 23.08	4.19 28.34	6.35 41.77	7.80 51.03	9.27 60.31	9.27 61.52	9.27 60.31	12.70 81.55	12.70 81.55	12.70 83.19	15.09 96.01	18.26 114.75	21.44 133.06	25.40 155.15	28.58 172.33	25.40 155.15	
12	300	323.9	3.96 31.89	4.57 36.73	6.35 49.73	8.38 65.20	9.53 73.88	9.52 75.32	10.31 79.73	14.27 108.96	12.70 97.46	12.70 99.43	17.48 132.08	21.44 159.91	25.40 186.97	28.58 208.14	33.32 238.76	25.40 186.97	
14	350	355.6	3.96 35.06	4.78 42.14	6.35 54.69	7.92 67.90	9.53 81.33	9.53 81.33	11.13 94.55	15.09 126.71	12.70 107.39		19.05 158.10	23.83 194.96	27.79 224.65	31.75 253.56	35.71 281.70		
16	400	406.4	4.19 42.41	4.78 48.26	6.35 62.64	7.92 77.83	9.53 93.27	9.53 93.27	12.70 123.30	16.66 160.12	12.70 123.30		21.44 203.53	26.19 245.56	30.96 286.84	36.53 333.19	40.49 365.35		
18	450	457.2	4.19 47.77	4.78 54.36	6.35 70.57	7.92 87.71	11.13 122.38	9.53 105.16		14.27 155.80	19.05 205.74	12.70 139.15		23.88 254.55	29.36 309.62	34.93 363.56	39.67 408.26	45.24 459.37	
20	500	508.0	4.78 60.46	5.54 70.00	6.35 78.55	9.53 117.15	12.70 155.12	9.53 117.15		15.09 183.42	20.62 247.83	12.70 155.12		26.19 311.17	32.54 381.53	38.10 441.49	44.45 508.11	50.01 564.81	
22	550	558.8	4.78 66.57	5.54 77.06	6.35 86.54	9.53 129.13	12.70 171.09	9.53 129.13		22.23 294.25	12.70 171.09	373.83		28.58 451.42	34.93 527.02	41.28 600.63	47.63 672.26	53.98	
24	600	609.6	5.54 84.16	6.35 96.37	6.35 94.53	9.53 141.12	14.27 209.64	9.53 141.12		17.48 255.41	24.61 355.26	12.70 187.06		30.96 442.08	38.89 547.71	46.02 640.03	52.27 720.15	59.54 808.22	
26	650	660.04			7.92 127.36	12.70 202.72		9.53 152.87					12.70 202.72	WALL THICKNESS = MM WEIGHT = KG/M (PLAIN END MASS) 5 S, 10 S, 40 S, 80 S – ANSI B36.19 Formula to attain approximate mass in kilograms per metre (kg/m) for Steel Round Pipe and Tubing $M = (D-t) \times 0.02466$ Where: M = Mass to the nearest 0.01 kg/m D = Outside diameter in millimetres (To nearest 0.1mm for OD up to 406.4mm) (To nearest 1.0mm for OD 457mm and above) t = Wall thickness to nearest 0.01mm EXAMPLE: Nominal Size DN300 NPS12 OD = 323.9mm W.T. = 9.53mm Step 1. 323.9 – 9.53 = 314.37 Step 2. 314.37 x 9.53 = 2995.9461 Step 3. 2995.9461 x 0.02466 = 73.88kg/m					
28	700	711.2			7.92 137.32	12.70 218.69	15.88 271.21	9.53 164.85					12.70 218.69						
30	750	762.0	6.35 120.72	7.92 150.36	7.92 147.28	12.70 234.67	15.88 292.18	9.53 176.84					12.70 234.67						
32	800	812.8			7.92 157.24	12.70 250.64	15.88 312.15	9.53 188.82		17.48 342.91			12.70 250.64						
34	850	863.6			7.92 167.20	12.70 266.61	15.88 332.12	9.53 200.31		17.48 364.90			12.70 266.61						
36	900	914.4			7.92 176.96	12.70 282.27	15.88 351.70	9.53 212.56		19.05 420.42			12.70 282.27						
38	950	965.2						9.53 224.54					12.70 298.24						
40	1000	1016.0						9.53 236.63					12.70 314.22						
42	1050	1066.8						9.53 248.52					12.70 330.19						
44	1100	1117.6						9.53 260.50					12.70 346.16						
46	1150	1168.4						9.53 272.25					12.70 351.82						
48	1200	1219.2						9.53 284.24					12.70 377.79						

TABLE FLANGES TO AUSTRALIAN STANDARDS

AS2129



BLANK OR BLIND FLANGE



BOSS FLANGE - SLIP ON WELD OR SCR. B.S.P.

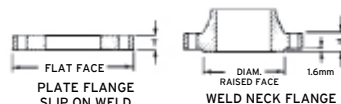


PLATE FLANGE
SLIP ON WELD

WELD NECK FLANGE

COPPER ALLOY

T.3 – Plate or Boss or Blank
T.10 – Plate or Boss
T.11 – Blank

FORGED OR PLATE STEEL

T.6 – Plate or Boss or Blank, or Weldneck (except for valves)
T.18 – Plate or Blank or Weldneck (except for valves)

Nominal Size DN	Table D						Table E						Table F						Nominal Size DN		
	Flange			Drilling			Flange			Drilling			Flange			Drilling					
	OD mm	Thickness		Bolt Circle Dia. mm	No. of Bolts	Dia. of Bolts mm	OD mm	T10 mm	T11 mm	**T6 mm	Bolt Circle Dia. mm	No. of Bolts	Dia. of Bolts mm	OD mm	T10 mm	T11 mm	**T6 mm	Bolt Circle Dia. mm		No. of Bolts	Dia. of Bolts mm
15	95	6	5	67	4	M12	95	6	6	6	67	4	M12	95	8	8	10	67	4	M12	15
20	100	6	5	73	4	M12	100	6	6	6	73	4	M12	100	8	8	10	73	4	M12	20
25	115	8	5	83	4	M12	115	8	8	7	83	4	M12	120	10	10	10	87	4	M16	25
32	120	8	6	87	4	M12	120	8	8	8	87	4	M12	135	10	10	13	98	4	M16	32
40	135	10	6	98	4	M12	135	10	10	9	98	4	M12	140	11	11	13	105	4	M16	40
50	150	10	8	114	4	M16	150	10	10	10	114	4	M16	165	11	12	16	127	4	M16	50
65	165	11	8	127	4	M16	165	11	11	10	127	4	M16	185	13	13	16	146	8	M16	65
80	185	13	10	146	4	M16	185	13	13	11	146	4	M16	205	14	15	16	165	8	M16	80
100	215	16	10	178	4	M16	215	16	16	13	178	8	M16	230	17	17	19	191	8	M16	100
125	255	17	13	210	8	M16	255	17	17	14	210	8	M16	280	19	20	22	235	8	M20	125
150	280	17	13	235	8	M16	280	17	17	17	235	8	M20	305	22	23	22	260	12	M20	150
200	335	19	13	292	8	M16	335	19	20	19	292	8	M20	370	25	28	25	324	12	M20	200
250	405	19	16	356	8	M20	405	22	25	22	356	12	M20	430	25	32	29	381	12	M24	250
300	455	22	19	406	12	M20	455	25	28	25	406	12	M24	490	29	37	32	438	16	M24	300
350	525	25	22	470	12	M24	525	25	32	29	470	12	M24	550	32	42	35	495	16	M27	350
400	580	25	22	521	12	M24	580	25	36	32	521	12	M24	610	32	47	41	552	20	M27	400
450	640	29	25	584	12	M24	640	29	41	35	584	16	M24	675	35	52	44	610	20	M30	450
500	705	32	29	641	16	M24	705	32	46	38	641	16	M24	735	38	57	51	673	24	M30	500
600	825	35	32	756	16	M27	825	38	-	48	756	16	M30	850	41	68	57	781	24	M33	600
700	910	-	35	845	20	M27	910	-	-	51	845	20	M30	935	-	-	60	857	24	M33	700
750	995	-	41	927	20	M30	995	-	-	54	927	20	M33	1015	-	-	67	940	28	M33	750
800	1060	-	41	984	20	M33	1060	-	-	54	984	20	M33	1060	-	-	68	984	28	M33	800
900	1175	-	48	1092	24	M33	1175	-	-	64	1092	24	M33	1185	-	-	76	1105	32	M36	900
1000	1255	-	51	1175	24	M33	1255	-	-	67	1175	24	M36	1275	-	-	83	1194	36	M36	1000
1200	1490	-	60	1410	32	M33	1490	-	-	79	1410	32	M36	1530	-	-	95	1441	40	M39	1200

Nominal Size DN	Table H								Table F					Table F					Nominal Size DN		
	Flange				Drilling				Flange		Drilling			Flange		Drilling					
	OD mm	T10 mm	T11 mm	*T6 mm	† Dia. R/F mm	Bolt Circle Dia. mm	No. of Bolts	Dia. of Bolts mm	OD mm	Thickness * T6 mm	Dia. R/F mm	Bolt Circle Dia. mm	No. of Bolts	Dia. of Bolts mm	OD mm	Thickness * T6 mm	Dia. R/F mm	Bolt Circle Dia. mm		No. of Bolts	Dia. of Bolts mm
15	115	10	11	13	57	83	4	M16	115	16	57	83	4	M16	115	19	64	83	4	M16	15
20	115	10	11	13	57	83	4	M16	115	16	57	83	4	M16	115	19	64	83	4	M16	20
25	120	11	12	14	64	87	4	M16	120	19	64	87	4	M16	125	22	76	95	4	M16	25
32	135	11	13	17	76	98	4	M16	135	19	76	98	4	M16	135	22	76	98	4	M16	32
40	140	13	14	17	83	105	4	M16	140	22	83	105	4	M16	150	25	89	114	4	M20	40
50	165	13	16	19	102	127	4	M16	165	25	102	127	4	M20	165	25	102	127	8	M16	50
65	185	14	17	19	114	146	8	M16	185	25	114	146	8	M20	185	29	114	146	8	M20	65
80	205	16	19	22	127	165	8	M16	205	32	127	165	8	M20	205	32	127	165	8	M20	80
100	230	19	23	25	152	191	8	M16	230	35	152	191	8	M20	240	35	152	197	8	M24	100
125	280	22	27	29	178	235	8	M20	280	38	178	235	8	M24	280	41	178	235	12	M24	125
150	305	25	30	29	210	260	12	M20	305	38	210	260	12	M24	305	44	210	260	12	M24	150
200	370	32	39	32	260	324	12	M20	370	41	260	324	12	M24	370	51	260	324	12	M27	200
250	430	35	45	35	311	381	12	M24	430	48	311	381	12	M27	430	60	311	387	16	M27	250
300	490	38	52	41	362	438	16	M24	490	51	362	438	16	M27	510	70	362	457	16	M30	300
350	550	41	58	48	419	495	16	M27	550	57	419	495	16	M30	585	79	419	527	16	M33	350
400	610	44	64	54	483	552	20	M27	610	64	483	552	20	M30	640	89	483	584	20	M33	400
450	675	48	71	60	533	610	20	M30	675	70	533	610	20	M33	735	98	572	673	20	M36	450
500	735	51	78	67	597	673	24	M30	735	79	597	673	24	M33	805	105	622	730	20	M39	500
600	850	57	92	76	699	781	24	M33	850	92	699	781	24	M36	-	-	-	-	-	-	-

NOTES:

- (1) All dimensions are in millimetres (mm).
- (2) Only metric preferred sizes listed, except for DN 750 which is a non-preferred size.
- ** (3) It is impractical to use flange thickness less than 12mm for Steel Plate Flanges.
- * (4) Thickness includes 1.6mm height for the Raised Face.
- † (5) The Raised Face is non-preferred for Table "H".
- (6) It is normal practice to supply Steel Flanges to Tables A, D, C, E, F and H. — Flat Faced.

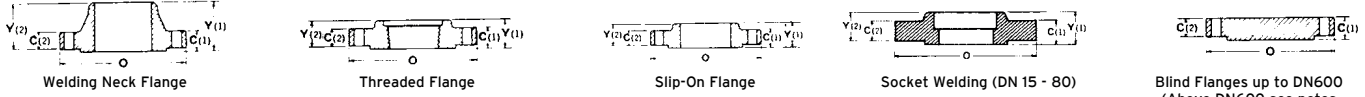
IMPORTANT:

For DN 65, DN 125 and DN 150 Flanges, the O.D. of pipe being used must be specified.

ANSI FLANGES TO AMERICAN STANDARDS

ANSI/ASME

DN 15 to 600 are to ASME B16.5 (BS 1560). DN 750 & 900 are to BS 3293 for Slip-On & Weldneck only.



Blind Flanges up to DN600 (Above DN600 see notes – below†)

NOMINAL SIZES SHOWN ARE **DN : SI METRIC TERM** **NPS : ASME TERM**

Nominal Flange Size DN		PN20 (Class 150)							PN50 (Class 300)							PN100 (Class 600)							Nominal Flange Size DN	
		Dia. of Fig. 0	Thick-ness of Fig. Min. C(1)*	Length Thru Hub		Dia. of Bolt Circle	Dia. of Bolt Holes	No. of Bolts	Dia. of Fig. 0	Thick-ness of Fig. Min. C(1)*	Length Thru Hub		Dia. of Bolt Circle	Dia. of Bolt Holes	No. of Bolts	Dia. of Fig. 0	Thick-ness of Fig. Min. C(2)†	Length Thru Hub		Dia. of Bolt Circle	Dia. of Bolt Holes	No. of Bolts		
DN	NPS			Thrd. Slip-On Soc/Weld Y(1)*	Weld Neck Y(1)*						Thrd. Slip-On Soc/Weld Y(1)*	Weld Neck Y(1)*					Thrd. Slip-On Soc/Weld Y(2)†	Weld Neck Y(2)†				DN	NPS	
15	½	90	11.5	16	48	60.5	16	4	95	14.5	22	52	66.5	16	4	95	14.5	22	52	66.5	16	4	15	½
20	¾	100	13.0	16	52	70.0	16	4	120	16.0	25	57	82.5	20	4	120	16.0	25	57	82.5	20	4	20	¾
25	1	110	14.5	17	56	79.5	16	4	125	17.5	27	62	89.0	20	4	125	17.5	27	62	89.0	20	4	25	1
32	1¼	120	16.0	21	57	89.0	16	4	135	19.5	27	65	98.5	20	4	135	21.0	29	67	98.5	20	4	32	1¼
40	1½	130	17.5	22	62	98.5	16	4	155	21.0	30	68	114.5	22	4	155	22.5	32	70	114.5	22	4	40	1½
50	2	150	19.5	25	64	120.5	20	4	165	22.5	33	70	127.0	20	8	165	26.5	37	73	127.0	20	8	50	2
65	2½	180	22.5	29	70	139.5	20	4	190	25.5	38	76	149.0	22	8	190	29.0	41	79	149.0	22	8	65	2½
80	3	190	24.0	30	70	152.5	20	4	210	29.0	43	79	168.5	22	8	210	32.0	46	83	168.5	22	8	80	3
90	3½	215	24.0	32	71	178.0	20	8	230	30.5	44	81	184.0	22	8	230	35.0	49	86	184.0	26	8	90	3½
100	4	230	24.0	33	76	190.5	20	8	255	32.0	48	86	200.0	22	8	275	38.5	54	102	216.0	26	8	100	4
125	5	255	24.0	36	89	216.0	22	8	280	35.0	51	98	235.0	22	8	330	44.5	60	114	267.0	30	8	125	5
150	6	280	25.5	40	89	241.5	22	8	320	37.0	52	98	270.0	22	12	355	48.0	67	117	292.0	30	12	150	6
200	8	345	29.0	44	102	298.5	22	8	380	41.5	62	111	330.0	26	12	420	55.5	76	133	349.0	33	12	200	8
250	10	405	30.5	49	102	362.0	26	12	445	48.0	67	117	387.5	30	16	510	63.5	86	152	432.0	36	16	250	10
300	12	485	32.0	56	114	432.0	26	12	520	51.0	73	130	451.0	33	16	560	66.5	92	156	489.0	36	20	300	12
350	14	535	35.0	57	127	476.0	30	12	585	54.0	76	143	514.5	33	20	605	70.0	94	165	527.0	39	20	350	14
400	16	600	37.0	64	127	540.0	30	16	650	57.5	83	146	571.5	36	20	685	76.5	106	178	603.0	42	20	400	16
450	18	635	40.0	68	140	578.0	33	16	710	60.5	89	159	628.5	36	24	745	83.0	117	184	654.0	45	20	450	18
500	20	700	43.0	73	145	635.0	33	20	775	63.5	95	162	686.0	36	24	815	89.0	127	190	724.0	45	24	500	20
600	24	815	48.0	83	152	749.5	36	20	915	70.0	106	168	813.0	42	24	940	102.0	140	203	838.0	52	24	600	24
750	30	985	54.0	89	130.2	914.0	35	28	1090	92.0	210	210	997.0	48	28	1130	114.0	248	248	1022	54	28	750	30
900	36	1170	60.3	95	136.5	1086	41	32	1270	105.0	241	241	1168.0	54	32	1315	124.0	283	283	1194	67	28	900	36

Nominal Flange Size DN		PN150 (Class 900)							PN250 (Class 1500)							PN420 (Class 2500)							Nominal Flange Size DN		
		Dia. of Fig. 0	Thick-ness of Fig. Min. C(2)†	Length Thru Hub		Dia. of Bolt Circle	Dia. of Bolt Holes	No. of Bolts	Dia. of Fig. 0	Thick-ness of Fig. Min. C(2)†	Length Thru Hub		Dia. of Bolt Circle	Dia. of Bolt Holes	No. of Bolts	Dia. of Fig. 0	Thick-ness of Fig. Min. C(2)†	Length Thru Hub		Dia. of Bolt Circle	Dia. of Bolt Holes	No. of Bolts			
DN	NPS			Thrd. Slip-On Soc/Weld Y(2)†	Weld Neck Y(2)†						Thrd. Slip-On Soc/Weld Y(2)†	Weld Neck Y(2)†					Thrd. Slip-On Soc/Weld Y(2)†	Weld Neck Y(2)†				DN	NPS		
15	½								120	22.5	32	60	82.5	22	4	135	30.5	40	73	89.0	22	4	15	½	
20	¾								130	25.5	35	70	89.0	22	4	140	32.0	43	79	95.0	22	4	20	¾	
25	1								150	29.0	41	73	101.5	26	4	160	35.0	48	89	108.0	26	4	25	1	
32	1¼								160	29.0	41	73	111.0	26	4	185	38.5	52	95	130.0	30	4	32	1¼	
40	1½								180	32.0	44	83	124.0	30	4	205	44.5	60	111	146.0	33	4	40	1½	
50	2								215	38.5	57	102	165.0	26	8	235	51.0	70	127	171.5	30	8	50	2	
65	2½								245	41.5	64	105	190.5	30	8	270	57.5	79	143	197.0	33	8	65	2½	
80	3	240	38.5	54	102	190.5	26	8	270	48.0	73	118	203.0	33	8	305	67.0	92	168	228.5	36	8	80	3	
100	4	295	44.5	70	114	235.0	32	8	310	54.0	90	124	241.5	36	8	355	76.5	108	190	273.0	42	8	100	4	
125	5	350	51.0	79	127	279.5	35	8	375	73.5	105	155	292.0	42	8	420	92.5	130	229	324.0	48	8	125	5	
150	6	380	56.0	86	140	317.5	32	12	395	83.0	119	171	317.5	39	12	485	108.0	152	273	368.5	56	8	150	6	
200	8	470	63.5	102	162	393.5	39	12	485	92.0	143	213	393.5	45	12	550	127.0	178	318	438.0	56	12	200	8	
250	10	545	70.0	108	184	470.0	39	16	585	108.0	159	254	482.5	52	12	675	165.5	229	419	539.5	68	12	250	10	
300	12	610	79.5	117	200	533.5	39	20	675	124.0	181	283	571.5	56	16	760	184.5	254	464	619.0	76	12	300	12	
350	14	640	86.0	130	213	559.0	42	20	750	133.5		298	635.0	60	16									350	14
400	16	705	89.0	133	216	616.0	45	20	825	146.5		311	705.0	68	16									400	16
450	18	785	102.0	152	229	686.0	52	20	915	162.0		327	774.5	76	16									450	18
500	20	855	108.0	159	248	749.5	54	20	985	178.0		356	832.0	80	16									500	20
600	24	1040	140.0	203	292	901.5	68	20	1170	203.5		406	990.5	94	16									600	24

NOTES:

- All dimensions are shown in millimetres - mm.
- * 1. The 2mm Raised Face is included in thickness C(1) and length through hub Y(1). This applies to PN20 and PN50 Pressure Ratings.
- ‡ 2. The 7mm Raised Face is not included in thickness C(2) and length through hub Y(2). PN100, 150, 250 and 420 Pressure Ratings are regularly furnished with 7mm Raised Face which is additional to the flange thickness C(2) and Y(2).
- 3. Always specify bore when ordering weldneck flanges. Bore dimensions shown opposite also provide inside pipe diameters.

LARGE DIAMETER FLANGES ABOVE DN 600

‡ For Blind Flanges refer to MSS SP44. BS 3293 covers Slip-On and Weldneck but excludes Blind Flanges. MSS SP44 covers Blind and Weldneck but excludes Slip-On Flanges. BS 3293 Weldneck PN20 flange thickness, C(1), is less than MSS SP44 equivalents. API - 605 Dimensions for Large Diameter Flanges vary considerably from both BS 3293 and MSS SP44 - Details on request.

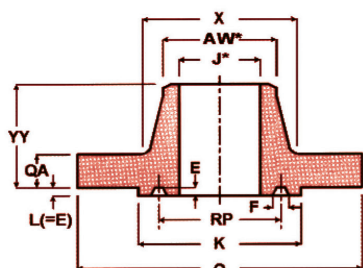
Raised Face Diam.	Nominal Size DN		O.D. of Pipe mm	Approximate Welding Neck Flange Bores - mm															
	All Press. Ratings mm	DN		NPS	SCH. 10	SCH. 20	SCH. 30	STD. WT.	SCH. 40	SCH. 60	EXT. STG.	SCH. 80	SCH. 100	SCH. 120	SCH. 140	SCH. 160	X.X STG.		
35	15	1/2	21.3				15.8				13.9					11.8	6.4		
43	20	3/4	26.7				20.9				18.9					15.5	11.0		
51	25	1	33.4				26.6				24.3					20.7	15.2		
64	32	1 1/4	42.2				35.1				32.5					29.5	22.8		
73	40	1 1/2	48.3				40.9				38.1					34.0	27.9		
92	50	2	60.3				52.5				49.2					42.9	38.2		
105	65	2 1/2	73.0				62.7				59.0					54.0	45.0		
127	80	3	88.9				77.9				73.7					66.7	58.4		
140	90	3 1/2	101.6				90.1				85.4					—	—		
157	100	4	114.3				102.3				97.2					87.3	80.1		
186	125	5	141.3				128.2				122.3					109.6	103.2		
216	150	6	168.3				154.1				146.3					131.8	124.4		
270	200	8	219.1				206.4	205.0	202.7		198.5	193.7				188.9	187.8	173.1	174.6
324	250	10	273.1				260.3	257.5	254.5		247.7	242.9	236.5	230.2	222.3	215.9	222.3		
381	300	12	323.9				311.1	307.1	304.8	303.2	295.3	298.5	288.9	281.0	273.1	266.7	257.2	273.1	
413	350	14	355.6				342.9	339.8	336.6	336.6	333.3	325.4	330.2	317.5	307.9	300.0	292.1	284.2	
470	400	16	406.4				393.7	390.6	387.4	387.4	381.0	373.1	381.0	363.5	354.0				

FORGED STEEL FLANGES

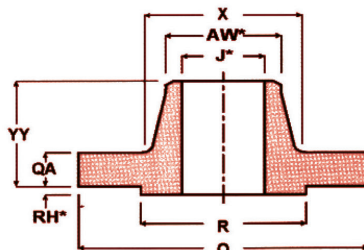
ASME B16.47-A (MSS-SP44)

LARGE DIAMETER FLANGES SPECIFICATIONS ASME B16.47-A (MSS-SP44)

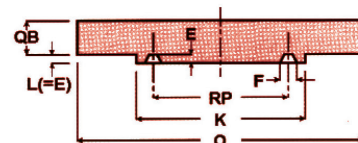
Rating	Nominal Pipe Size mm	OD Flange O	Flange Thickness Weld Neck QA	Flange Thickness Blind QB	Overall Height YY	Hub Diameter X	PCD P	Number of Holes N	Hole Diameter HD	RF Diameter R	RTJ/RF Diameter K	Ring/Pitch Diameter RP	Depth Groove E	Width Groove F	Ring Number RN
150	650	870.0	68.4	68.4	120.7	676.2	806.4	24	35.0	749.4					
	700	927.2	71.4	71.4	125.5	727.0	863.6	28	35.0	800.2					
	750	984.3	74.7	74.7	136.7	781.1	914.4	28	35.0	857.3					
	800	1060.5	80.8	80.8	144.6	831.9	977.9	28	41.1	914.5					
	850	1111.3	82.6	82.6	149.4	882.7	1028.7	32	41.1	965.3					
	900	1168.5	90.5	90.5	157.3	933.5	1085.8	32	41.1	1022.4					
	950	1238.3	87.4	87.4	157.3	990.7	1149.3	32	41.1	1073.2					
	1000	1289.1	90.5	90.5	163.6	1041.5	1200.1	36	41.1	1124.0					
300	650	971.6	79.3	84.1	184.2	720.9	876.3	28	44.4	749.4	809.7	749.3	12.7	19.8	93
	700	1035.1	85.9	90.5	196.9	774.8	939.8	28	44.4	800.2	860.5	800.1	12.7	19.8	94
	750	1092.3	92.0	95.3	209.6	827.1	996.9	28	47.7	857.3	917.4	857.2	12.7	19.8	95
	800	1149.4	98.6	100.1	222.3	881.2	1054.1	28	50.8	914.5	984.2	914.4	14.2	23.0	96
	850	1206.6	101.7	104.7	231.7	936.8	1104.9	28	50.8	965.3	1035.0	965.2	14.2	23.0	97
	900	1270.1	104.7	111.3	241.4	990.7	1168.4	32	53.8	1022.4	1092.2	1022.3	14.2	23.0	98
	950	1168.5	108.0	108.0	180.9	993.7	1092.2	32	41.1	1028.8					
	1000	1238.3	114.4	114.4	193.6	1047.8	1155.7	32	44.4	1085.9					
600	650	1016.1	108.0	125.5	222.3	747.8	914.4	28	50.8	749.4	809.7	749.3	12.7	19.8	93
	700	1073.2	111.3	131.9	235.0	803.2	965.2	28	53.8	800.2	860.5	800.1	12.7	19.8	94
	750	1130.4	114.4	139.8	247.7	862.1	1022.3	28	53.8	857.3	917.4	857.2	12.7	19.8	95
	800	1193.9	117.4	147.6	260.4	917.5	1079.5	28	60.4	914.5	984.2	914.4	14.2	23.0	96
	850	1244.7	120.7	154.0	269.8	973.1	1130.3	28	60.4	965.3	1035.0	965.2	14.2	23.0	97
	900	1314.5	124.0	162.1	282.5	1031.8	1193.8	28	66.5	1022.4	1092.2	1022.3	14.2	23.0	
	950	1270.1	152.5	155.5	254.1	1022.4	1162.0	28	60.4	1054.2					
	1000	1320.9	158.8	162.1	263.7	1073.2	1212.8	32	60.4	1111.3					
900	650	1085.9	139.8	160.3	285.8	774.8	952.5	20	73.1	749.4	831.8	749.3	17.4	30.1	
	700	1168.5	142.8	171.5	298.5	831.9	1022.3	20	79.2	800.2	889.0	800.1	17.4	33.3	
	750	1232.0	149.4	182.4	311.2	889.1	1085.8	20	79.2	857.3	946.1	857.2	17.4	33.3	
	800	1314.5	158.8	193.6	330.3	946.2	1155.7	20	85.8	914.5	1003.3	914.4	17.4	33.3	
	850	1397.1	165.2	204.8	349.3	1006.4	1225.5	20	91.9	965.3	1066.8	965.2	20.6	36.5	
	900	1460.6	171.5	214.4	362.0	1063.8	1289.0	20	91.9	1022.4	1123.9	1022.3	20.6	36.5	
	950	1460.6	190.6	216.0	352.6	1073.2	1289.0	20	91.9	1098.6					
	1000	1511.4	196.9	223.8	363.5	1127.3	1339.8	24	91.9	1162.1					



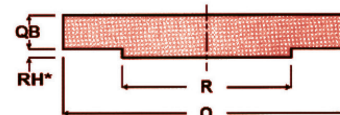
WELDING NECK with RING JOINT



WELDING NECK with RAISED FACE



BLIND with RING JOINT



BLIND with RAISED FACE

*RH SIZE: 150 & 300 rating 1.6mm included in QA, QB and YY dimension.
600 & 900 Rating 6.4mm not included in QA, QB and YY dimension.

*WN BORE J: to be specified by purchaser.

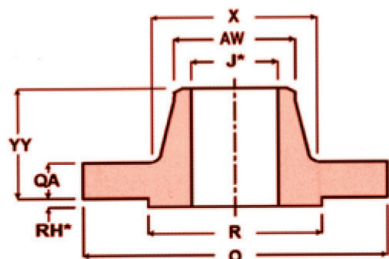
*AW DIAMETER OF NECK: to match pipe OD.

FORGED STEEL FLANGES

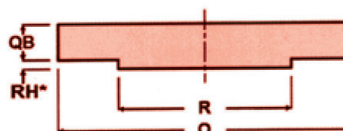
ASME B16.47-B (API-605)

LARGE DIAMETER FLANGES SPECIFICATIONS ASME B16.47-B (API-605)

Rating	Nominal Pipe Size mm	Od Flange O	Flange Thickness Weld Neck QA	Flange Thickness Blind QB	Overall Height YY	RF Diameter R	Hub Diameter X	Neck Diameter AW	PCD P	Number of Bolt Holes N	Hole Diameter HD
150	650	785.9	41.2	44.5	89.0	711.3	684.3	662.0	744.4	36	22.3
	700	836.7	44.5	47.8	95.3	762.1	735.1	712.8	795.2	40	22.3
	750	887.5	44.5	50.9	100.1	812.9	787.5	763.6	846.0	44	22.3
	800	941.4	46.0	53.9	108.0	863.7	839.8	814.4	900.1	48	22.3
	850	1004.9	49.3	57.2	110.3	920.8	892.1	865.2	957.3	40	25.4
	900	1057.2	52.4	58.7	117.4	971.6	944.7	916.0	1009.6	44	25.4
	950	1124.0	53.9	63.6	124.0	1022.4	993.7	968.3	1069.8	40	28.4
	1000	1174.8	55.7	66.6	128.6	1079.6	1049.3	1019.1	1120.6	44	28.4
	1050	1225.6	58.7	68.4	133.4	1130.4	1101.9	1069.9	1171.4	48	28.4
	1100	1276.4	60.5	71.4	136.7	1181.2	1152.7	1120.7	1222.2	52	28.4
	1150	1341.4	62.0	74.7	144.6	1235.0	1205.0	1171.5	284.2	40	31.7
	1200	1392.2	65.1	77.8	149.4	1289.1	1257.4	1222.3	1335.0	44	31.7
300	650	866.7	89.0	89.0	144.6	736.7	701.6	665.3	803.1	32	35.0
	700	920.8	89.0	89.0	149.4	787.5	755.7	716.1	857.2	36	35.0
	750	990.7	93.8	93.8	158.0	844.6	812.9	768.4	920.7	36	38.1
	800	1054.2	103.2	103.2	168.2	901.8	863.7	819.2	977.9	32	41.1
	850	1108.0	103.2	103.2	173.0	952.6	917.5	870.0	1031.7	36	41.1
	900	1171.5	103.2	103.2	180.9	1009.7	965.3	920.8	1089.1	32	44.4
	950	1222.3	111.3	111.3	192.1	1060.5	1016.1	971.6	1139.9	36	44.4
	1000	1273.1	115.9	115.9	198.4	1114.6	1066.9	1022.4	1190.7	40	44.4
	1050	1333.6	119.2	119.2	204.8	1168.5	1117.7	1074.7	1244.6	36	47.7
	1100	1384.4	127.1	127.1	214.4	1219.3	1173.3	1125.5	1295.4	40	47.7
	1150	1460.6	128.6	130.1	222.3	1270.1	1228.9	1176.3	1365.2	36	50.8
	1200	1511.4	128.6	134.9	223.8	1327.2	1277.9	1227.1	1416.0	40	50.8
600	650	889.1	111.3	111.3	180.9	727.0	698.6	660.5	806.4	28	44.4
	700	952.6	115.9	115.9	190.6	784.4	752.4	711.3	863.6	28	47.7
	750	1022.4	125.5	127.1	204.8	841.3	806.5	762.1	927.1	28	50.8
	800	1085.9	130.1	134.9	216.0	895.4	860.6	812.9	984.2	28	53.8
	850	1162.1	141.3	144.3	233.5	952.6	914.5	863.7	1054.1	24	60.4
	900	1212.9	146.4	150.9	242.9	1009.7	968.3	914.5	1104.9	28	60.4
900	650	1022.4	134.9	154.0	258.9	762.1	743.0	660.5	901.7	20	66.5
	700	1105.0	147.6	166.7	276.4	819.2	797.1	711.3	971.5	20	73.1
	750	1181.2	155.5	176.1	289.1	876.4	851.0	762.1	1035.0	20	79.2
	800	1238.3	160.3	185.7	303.3	927.2	908.1	812.9	1092.2	20	79.2
	850	1314.5	171.5	195.1	319.1	990.7	962.2	863.7	1155.7	20	85.8
	900	1346.3	173.0	201.7	325.4	1028.8	1016.1	914.5	1200.1	24	79.2



WELDING NECK



BLIND

*RH SIZE: 150 & 300 rating 1.6mm included in QA, QB and YY dimension.
600 & 900 Rating 6.4mm not included in QA, QB and YY dimension.

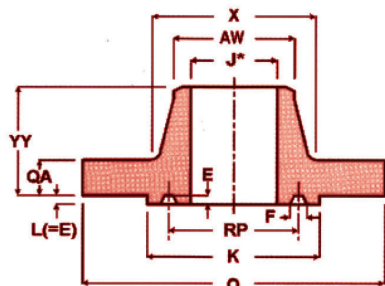
*WN BORE J: to be specified by purchaser.
*AW DIAMETER OF NECK: to match pipe OD.

FORGED STEEL FLANGES

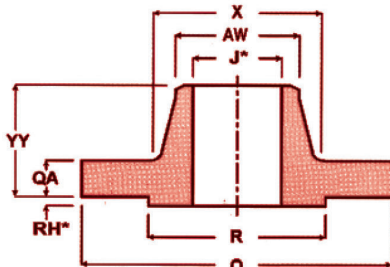
BS 3293

LARGE DIAMETER FLANGES SPECIFICATIONS BS 3293

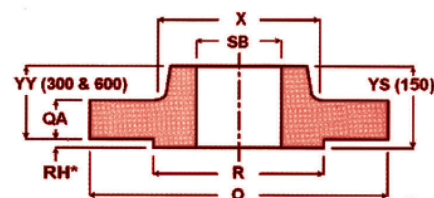
Rating	Nominal Pipe Size mm	Od Flange	Flange Thickness	Overall Height	Overall Height	Slip On Bore	Hub Diameter	Neck Diameter	Pcd	Number Holes	Hole Diameter	Rf Diameter	Rij Rj Diameter	Ring Pitch Diameter	Depth Groove	Width Groove	Ring Number	Length Of Stud Bolts	
		O	QA	YY	YS	SB	X	AW	P	N	HD	R	K	RP	E	F	RN	RF	RTJ
150	650	870.0	50.9	127.1	85.8	666.7	724.0	660.5	806.4	24	34.9	743.0						170	
	700	927.2	52.4	128.6	87.3	717.5	781.1	711.3	863.6	28	34.9	793.8						180	
	750	984.3	54.0	130.2	89.0	768.3	831.9	762.1	914.4	28	34.9	857.3						180	
	800	1060.5	57.2	133.4	92.1	819.1	889.1	812.9	977.9	28	41.2	908.1						200	
	850	1111.3	58.8	135.0	93.7	869.9	939.9	863.7	1028.7	32	41.2	958.9						205	
	900	1168.5	60.4	136.6	95.3	920.7	997.0	914.5	1085.8	32	41.2	1022.4						205	
	950	1238.3	60.4	136.6	95.3	971.5	1060.5	965.3	1149.3	32	41.2	1073.2						205	
	1000	1289.1	63.6	139.8	98.5	1022.3	1111.3	1016.1	1200.1	36	41.2	1124.0						210	
	1050	1346.3	66.7	142.9	101.7	1073.1	1168.5	1066.9	1257.3	36	41.2	1193.9						215	
	1100	1403.4	66.7	142.9	101.7	1123.9	1219.3	1117.7	1314.4	40	41.2	1244.7						215	
	1150	1454.2	68.3	144.5	103.2	1174.7	1270.1	1168.5	1365.2	40	41.2	1295.5						225	
1200	1511.4	69.9	146.1	104.8	1225.5	1327.2	1219.3	1422.4	44	41.2	1359.0						225		
300	650	971.6	79.4	184.2		666.7	720.8	666.8	876.3	28.0	44.4	749.4	809.6	749.3	12.7	19.8	93	250	280
	700	1035.1	85.8	196.9		717.5	774.8	717.6	939.8	28.0	44.4	800.2	860.4	800.1	12.7	19.8	94	260	295
	750	1092.3	92.1	209.6		768.3	827.1	768.4	996.9	28.0	47.6	857.3	917.5	857.2	12.7	19.8	95	280	315
	800	1149.4	98.5	222.3		819.1	881.1	819.2	1054.1	28.0	50.8	914.5	984.2	914.4	14.2	23.0	96	300	330
	850	1206.6	101.7	231.8		869.9	936.7	871.6	1104.9	28.0	50.8	965.3	1035.0	965.2	14.2	23.0	97	305	340
	900	1270.1	104.8	241.4		920.7	990.7	922.4	1168.4	32.0	53.9	1022.4	1092.2	1022.3	14.2	23.0	98	320	350
600	650	1016.1	108.0	222.3		666.7	747.7	671.5	914.4	28	50.8	749.4	809.6	749.3	12.7	19.8	93	330	365
	700	1073.2	111.2	235.0		717.5	803.3	724.0	965.2	28	53.9	800.2	860.4	800.1	12.7	19.8	94	345	375
	750	1130.4	114.4	247.7		768.3	862.1	774.8	1022.3	28	53.9	857.3	917.5	857.2	12.7	19.8	95	350	380
	800	1193.9	117.5	260.4		819.1	917.6	825.6	1079.5	28	60.3	914.5	984.2	914.4	14.2	23.0	96	370	410
	850	1244.7	120.7	269.9		869.9	973.2	877.9	1130.3	28	60.3	965.3	1035.0	965.2	14.2	23.0	97	375	415
	900	1314.5	123.9	282.6		920.7	1031.9	928.7	1193.8	28	66.6	1022.4	1092.2	1022.3	14.2	23.0	98	395	435



WELDING NECK with RING JOINT



WELDING NECK



SLIP-ON

*RH SIZE: 150 & 300 RATING 1.6mm INCLUDED IN QA, YY AND YS DIMENSION.

600 & 900 RATING 6.4mm NOT INCLUDED IN QA AND YY DIMENSION.

*WN BORE J: TO BE SPECIFIED BY PURCHASER.

ALL DIMENSIONS mm.

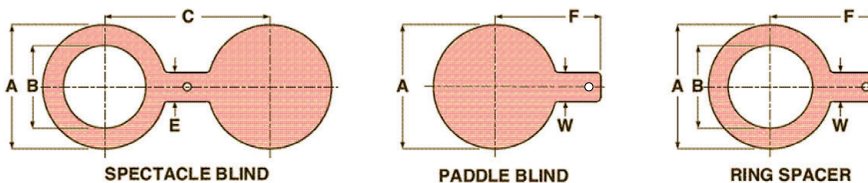
FLANGE IDENTIFICATION CHART

Size (mm)	Table / Class	Diam. of Flange	Bolt Circle Diam.	No. of Bolts	Diam. / Length Bolts / Studs Steel Flanges	Diam. Holes	Flange Thickness Cast / Forged Steel
15	Table D	95	67	4	M12 x 45	14	5*
	Table E	95	67	4	M12 x 45	14	6*
	Table H	115	83	4	M16 x 60	18	13
	ANSI 150	89	60.3	4	1/2 x 60	16	11.5
	ANSI 300	95	66.7	4	1/2 x 65	16	14.5
	ANSI 600	95	66.7	4	1/2 x 80	16	14.5
	PN 16	95	65	4	—	14	—
20	Table D	100	73	4	M12 x 45	14	5*
	Table E	100	73	4	M12 x 45	14	6*
	Table H	115	83	4	M16 x 60	18	13
	ANSI 150	98	69.8	4	1/2 x 65	16	14
	ANSI 300	117	82.5	4	5/8 x 75	20	16
	ANSI 600	117	82.5	4	5/8 x 90	20	16
	PN 16	105	75	4	—	14	—
25	Table D	115	83	4	M12 x 45	14	5*
	Table E	115	83	4	M12 x 45	14	7*
	Table H	120	87	4	M16 x 60	18	14
	ANSI 150	108	79.4	4	1/2 x 65	16	14
	ANSI 300	124	88.9	4	5/8 x 80	20	18
	ANSI 600	124	88.9	4	5/8 x 105	20	18
	PN 16	115	85	4	—	14	—
32	Table D	120	87	4	M12 x 50	14	6*
	Table E	120	87	4	M12 x 50	14	8*
	Table H	135	98	4	M16 x 65	18	17
	ANSI 150	117	88.9	4	1/2 x 70	16	16
	ANSI 300	133	98.4	4	5/8 x 80	20	22
	ANSI 600	133	98.4	4	5/8 x 100	20	22
	PN 16	140	100	4	—	18	—
40	Table D	135	98	4	M12 x 50	14	6*
	Table E	135	98	4	M12 x 50	14	9*
	Table H	140	105	4	M16 x 65	18	17
	ANSI 150	127	98.4	4	1/2 x 70	16	17
	ANSI 300	156	114.3	4	3/4 x 90	23	22
	ANSI 600	156	114.3	4	3/4 x 105	23	22
	PN 16	150	110	4	—	18	—
50	Table D	150	114	4	M16 x 60	18	8*
	Table E	150	114	4	M16 x 60	18	10*
	Table H	165	127	4	M16 x 75	18	19
	ANSI 150	152	120.6	4	5/8 x 80	20	20
	ANSI 300	165	127	8	5/8 x 90	20	22
	ANSI 600	165	127	8	5/8 x 105	20	26
	PN 16	165	125	4	—	16	—
65	Table D	165	127	4	M16 x 60	18	8*
	Table E	165	127	4	M16 x 60	18	10*
	Table H	185	146	8	M16 x 75	18	19
	ANSI 150	178	139.7	4	5/8 x 90	20	23
	ANSI 300	191	149.2	8	3/4 x 100	23	26
	ANSI 600	191	149.2	8	3/4 x 120	23	30
	PN 16	185	145	4	—	18	—
80	Table D	185	146	4	M16 x 60	18	10*
	Table E	185	146	4	M16 x 60	18	11*
	Table H	205	165	8	M16 x 75	18	22
	ANSI 150	191	152.4	4	5/8 x 90	20	24
	ANSI 300	210	168.3	8	3/4 x 110	23	32
	ANSI 600	210	168.3	8	3/4 x 125	23	32
	PN 16	200	160	8	—	18	—
100	Table D	215	178	4	M16 x 65	18	10*
	Table E	215	178	8	M16 x 65	18	13
	Table H	230	191	8	M16 x 85	18	25
	ANSI 150	229	190.5	8	5/8 x 90	20	24
	ANSI 300	254	200	8	3/4 x 110	23	32
	ANSI 600	273	215.9	8	7/8 x 145	26	38
	PN 16	220	180	8	—	18	—

FLANGE IDENTIFICATION CHART

Size (mm)	Table / Class	Diam. of Flange	Bolt Circle Diam.	No. of Bolts	Diam. / Length Bolts / Studs Steel Flanges	Diam. Holes	Flange Thickness Cast / Forged Steel
125	Table D	255	210	8	M16 x 65	18	22
	Table E	255	210	8	M16 x 65	18	14
	Table H	280	235	8	M20 x 95	22	29
	ANSI 150	254	215.9	8	3/4 x 90	23	24
	ANSI 300	279	234.9	8	3/4 x 120	23	35
	ANSI 600	330	266.7	8	1 x 165	29	45
	PN 16	250	210	8	—	18	—
150	Table D	280	235	8	M16 x 65	18	13
	Table E	280	235	8	M20x 65	22	17
	Table H	305	260	12	M20 x 95	22	29
	ANSI 150	279	241.3	8	3/4 x 100	23	26
	ANSI 300	318	269.9	12	3/4 x 125	23	37
	ANSI 600	356	292.1	12	1 x 170	29	48
	PN 16	285	240	8	—	22	—
200	Table D	335	292	8	M16 x 65	18	13
	Table E	335	292	8	M20 x 65	22	19
	Table H	370	324	12	M20 x 100	22	32
	ANSI 150	343	298.4	8	3/4 x 110	23	29
	ANSI 300	381	330.2	12	7/8 x 140	26	41
	ANSI 600	419	349.2	12	1 1/8 x 195	32	56
	PN 10	340	295	8	—	22	—
	PN 16	340	280	12	—	22	—
250	Table D	405	356	8	M20 x 75	22	—
	Table E	405	356	12	M20 x 75	22	22
	Table H	430	381	12	M24 x 120	26	35
	ANSI 150	406	361.9	12	7/8 x 115	29	30
	ANSI 600	510	431.8	16	1 1/4 x 215	35	64
	PN 10	395	350	8	—	22	—
	PN 16	405	350	12	—	22	—
300	Table D	455	406	12	M20 x 85	22	22
	Table E	455	406	12	M24 x 85	26	25
	Table H	490	438	16	M24 x 110	26	41
	ANSI 150	483	431.8	12	7/8 x 120	26	32
	ANSI 300	520	450.8	16	1 1/8 x 170	32	51
	PN 10	445	400	12	—	22	—
	PN 16	450	410	12	—	25	—
300	Table D	525	470	12	M24 x 95	26	25
	Table E	525	470	12	M24 x 95	26	29
	Table H	550	495	16	M27 x 130	30	48
	ANSI 150	535	476.2	12	1 x 130	29	35
	ANSI 300	585	514.3	20	1 1/8 x 175	32	54
375	Table D	550	495	12	M24 x 95	26	22
	Table E	550	495	12	M24 x 95	26	32
400	Table D	580	521	12	M24 x 95	26	22
	Table E	580	521	12	M24 x 100	26	32
	Table H	610	552	20	M27 x 140	30	54
	ANSI 150	597	539.7	16	1 x 130	29	37
	ANSI 300	650	571.5	20	1 1/4 x 190	35	57
450	Table D	640	584	12	M24 x 95	26	25
	Table E	640	584	16	M24 x 120	26	35
	Table H	675	610	20	M30 x 160	33	60
	ANSI 150	635	577.8	16	1 1/8 x 150	32	40
	ANSI 300	710	628.6	24	1 1/4 x 195	35	60
500	Table D	705	641	16	M24 x 110	26	29
	Table E	705	641	16	M24 x 110	26	38
	Table H	735	673	24	M30 x 170	33	67
	ANSI 150	700	635	20	1 1/8 x 160	32	43
	ANSI 300	775	685.8	24	1 1/4 x 205	35	64
600	Table D	825	756	16	M27 x 120	30	32
	Table E	825	756	16	M30 x 140	33	48
	Table H	850	781	24	M33 x 200	36	76
	ANSI 150	815	749.3	20	1 1/4 x 175	35	48
	ANSI 300	915	812.8	24	1 1/2 x 230	42	70

SPECTACLE BLIND, PADDLE BLIND AND RING SPACERS



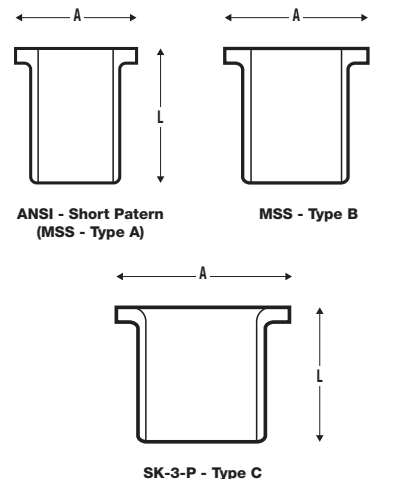
3.2 • 6.3 RA FINISH BOTH SIDES T = THICKNESS

Nominal Pipe Size mm	ASME 150							ASME 300						
	A	B	C	E	W	F	T	A	B	C	E	W	F	T
25	64	27	79	38	32	145	3	70	27	89	38	32	150	6
40	83	48	99	38	32	155	6	92	48	114	51	32	170	6
50	102	60	121	51	32	165	6	108	60	127	51	25	175	10
65	121	73	140	51	32	175	6	127	73	149	64	25	190	10
80	133	89	152	64	32	175	6	146	89	168	64	32	195	10
100	171	114	190	64	32	205	10	178	114	200	64	32	215	13
150	219	168	241	76	32	230	13	248	168	270	76	32	250	16
200	276	219	298	76	40	260	13	305	219	330	89	40	280	22
250	337	273	362	102	40	295	16	359	273	387	102	40	315	25
300	406	324	432	102	50	330	19	419	324	451	102	50	350	28
350	448	356	476	108	50	360	19	483	356	514	121	40	385	32
400	511	406	540	108	50	390	22	537	406	572	124	50	415	38
450	546	457	578	114	50	410	25	594	457	629	114	40	445	41
500	603	508	635	121	60	440	28	651	508	686	121	45	480	44
600	714	610	749	140	60	500	32	772	610	813	140	60	550	51

Nominal Pipe Size mm	ASME 600							ASME 900						
	A	B	C	E	W	F	T	A	B	C	E	W	F	T
25	70	27	89	57	32	150	6	76	27	102	57	32	164	6
40	92	43	114	67	32	170	10	95	43	124	67	32	179	10
50	108	55	127	57	32	175	10	140	55	165	57	32	198	13
65	127	67	149	67	32	190	13	162	67	190	67	32	205	13
80	146	83	168	67	32	195	13	165	83	190	67	32	210	16
100	191	108	216	76	32	225	16	203	108	235	76	32	235	19
150	264	162	292	86	32	267	22	286	162	318	86	32	280	25
200	318	212	349	95	40	300	28	356	212	394	95	40	325	35
250	397	265	432	105	40	345	35	432	265	470	105	40	363	41
300	454	315	489	105	38	370	41	495	315	533	105	40	395	48
350	489	346	527	114	40	393	44	518	346	559	114	40	410	54
400	562	397	603	124	50	432	51	572	397	616	124	50	443	60
450	610	448	654	133	50	463	54	635	448	686	133	50	485	67
500	679	497	724	133	45	500	64	695	497	749	133	60	520	73
600	787	597	838	152	50	560	73	835	597	902	152	60	615	89

STUB END

ANSI Stub End	Nom. Pipe Size mm	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
	ASA Overall Length L		101.6	101.6	101.6	152.4	152.4	152.4	152.4	203.2	203.2	203.2	254.0	254.0	304.8	304.8	304.8	304.8
MSS Overall Length L		50.8	50.8	50.8	63.5	63.5	63.5	76.2	76.2	88.9	101.6	127.0	152.4	152.4	152.4	152.4	152.4	152.4



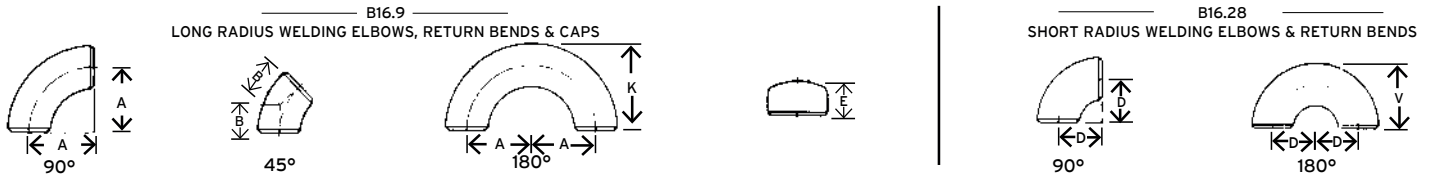
'SB' AND ALL OTHER DIMENSIONS FOR SOCKET WELD TYPE NOT SHOWN; REFER TO RELEVANT SIZES ON ASME B16.5 SPECIFICATIONS

'J' REFER TO 'ASME PIPE SCHEDULE' FOR SIZE

BUTTWELD FITTINGS

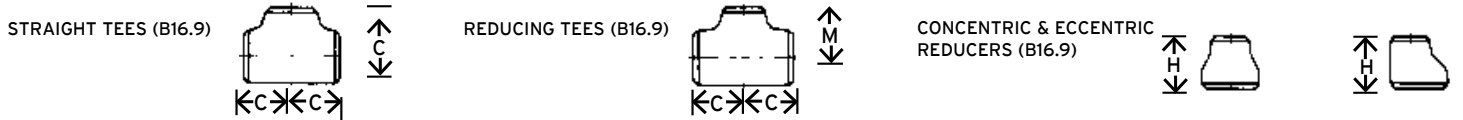
ASME B16.9, B16.28 & BS.1640

CARBON STEEL BUTTWELD FITTINGS



NOMINAL SIZES SHOWN ARE **DN : SI METRIC TERM** **NPS : ASME TERM**

Nom. Size DN		Pipe OD mm	Walk Thickness (mm)													A	B	K	D	V	E. Std. Wt. & Ex. Stg.	Nom. Size DN	
DN	NPS		Sch. 10	Sch. 20	Sch. 30	Std. Wt.	Sch. 40	Sch. 60	X Stg.	Sch. 80	Sch. 100	Sch. 120	Sch. 140	Sch. 160	X.X. Stg.							DN	NPS
15	½	21.3	—	—	—	2.77	—	—	3.73	—	—	—	4.78	7.47	38	16	47.5	—	—	25.4	15	½	
20	¾	26.7	—	—	—	2.87	—	—	3.91	—	—	—	5.56	7.82	38	19	43	19	33	25.4	20	¾	
25	1	33.4	—	—	—	3.38	—	—	4.55	—	—	—	6.35	9.09	38	22	55.5	25.4	41	38.1	25	1	
32	1¼	42.2	—	—	—	3.56	—	—	4.85	—	—	—	6.35	9.70	47.5	25.4	70	32	52	38.1	32	1¼	
40	1½	48.3	—	—	—	3.68	—	—	5.08	—	—	—	7.14	10.15	57	29	82.5	38	62	38.1	40	1½	
50	2	60.3	—	—	—	3.91	—	—	5.54	—	—	—	8.74	11.07	76	35	106	51	81	38.1	50	2	
65	2½	73	—	—	—	5.16	—	—	7.01	—	—	—	9.53	14.02	95	44.5	132	63.5	100	38.1	65	2½	
80	3	88.9	—	—	—	5.49	—	—	7.62	—	—	—	11.13	15.24	114	51	159	76	121	50.8	80	3	
90	3½	101.6	—	—	—	5.74	—	—	8.08	—	—	—	—	16.15	133	57	184	89	140	63.5	90	3½	
100	4	114.3	—	—	—	6.02	—	—	8.56	—	11.13	—	13.49	17.12	152	63.5	210	102	159	63.5	100	4	
125	5	141.3	—	—	—	6.55	—	—	9.53	—	12.70	—	15.88	19.05	190	79	262	127	197	76.2	125	5	
150	6	168.3	—	—	—	7.11	—	—	10.97	—	14.27	—	18.26	21.95	229	95	313	152	237	88.9	150	6	
200	8	219.1	—	6.35	7.04	8.18	—	10.31	12.70	—	15.09	18.26	20.62	23.01	22.23	305	127	414	203	313	102	200	8
250	10	273.1	—	6.35	7.80	9.27	—	12.70	12.70	5.09	18.26	21.44	25.40	28.58	25.40	381	159	517	254	390	127	250	10
300	12	323.9	—	6.35	8.38	9.53	10.31	14.27	12.70	17.48	21.44	25.4	28.58	33.32	25.40	457	190	619	305	467	152	300	12
350	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	—	533	222	711	356	533	165	350	14
400	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	—	610	254	813	406	610	178	400	16
450	18	457	6.35	7.92	11.13	9.53	14.27	19.05	12.70	23.83	29.36	34.93	39.67	45.24	—	686	286	914	457	686	203	450	18
500	20	508	6.35	9.53	12.70	9.53	15.09	20.62	12.70	26.19	32.54	38.10	44.45	50.01	—	762	318	1016	508	762	229	500	20
600	24	610	6.35	9.53	14.27	9.53	17.48	24.61	12.70	30.96	38.89	46.02	52.37	59.54	—	914	381	1219	610	914	267	600	24
750	30	762	7.92	12.70	15.88	9.53	—	—	12.70	—	—	—	—	—	—	1143	470	1524	762	1143	267	750	30
900	36	914	7.92	12.70	15.88	9.53	19.05	—	12.70	—	—	—	—	—	—	1372	565	—	914	1372	267	900	36



NOMINAL SIZES SHOWN ARE **DN : SI METRIC TERM** **NPS : ASME TERM**

Nom. Size DN					C	M	H
DN		NPS		C			
Large End	Small End	Large End	Small End		C	M	H
20	20	¾	¾	28.6	-	-	
15	15	¾	½	28.6	28.6	38.1	
25	25	1	1	38.1	-	-	
20	20	1	¾	38.1	38.1	50.8	
15	15	1	½	38.1	38.1	50.8	
32	32	1¼	1¼	47.6	-	-	
25	25	1¼	1	47.6	47.6	50.8	
20	20	1¼	¾	47.6	47.6	50.8	
15	15	1¼	½	47.6	47.6	50.8	
40	40	1½	1½	57.2	-	-	
32	32	1½	1¼	57.2	57.2	63.5	
25	25	1½	1	57.2	57.2	63.5	
20	20	1½	¾	57.2	57.2	63.5	
15	15	1½	½	57.2	57.2	63.5	
50	50	2	2	63.5	-	-	
40	40	2	1½	63.5	60.3	76.2	
32	32	2	1¼	63.5	57.2	76.2	
25	25	2	1	63.5	50.8	76.2	
20	20	2	¾	63.5	44.5	76.2	
65	65	2½	2½	76.2	-	-	
50	50	2½	2	76.2	69.9	88.9	
40	40	2½	1½	76.2	66.7	88.9	
32	32	2½	1¼	76.2	63.5	88.9	
25	25	2½	1	76.2	57.2	88.9	
80	80	3	3	85.7	-	-	
65	65	3	2½	85.7	82.6	88.9	
50	50	3	2	85.7	76.2	88.9	
40	40	3	1½	85.7	73.0	88.9	
32	32	3	1¼	85.7	69.9	88.9	
25	25	3	1	85.7	69.9	88.9	
90	90	3½	3½	95.3	-	-	
80	80	3½	3	95.3	92.1	102	
65	65	3½	2½	95.3	88.9	102	
50	50	3½	2	95.3	82.6	102	
40	40	3½	1½	95.3	79.4	102	

Nom. Size DN						C	M	H
DN		NPS		C	M			
Large End	Small End	Large End	Small End			C	M	H
100	100	4	4	105	-	-		
90	90	4	3½	105	102	102		
80	80	4	3	105	98.4	102		
65	65	4	2½	105	95.3	102		
50	50	4	2	105	88.9	102		
40	40	4	1½	105	85.7	102		
125	125	5	5	124	-	-		
100	100	5	4	124	117	127		
90	90	5	3½	124	114	127		
80	80	5	3	124	111	127		
65	65	5	2½	124	108	127		
50	50	5	2	124	105	127		
150	150	6	6	143	-	-		
125	125	6	5	143	137	140		
100	100	6	4	143	130	140		
90	90	6	3½	143	127	140		
80	80	6	3	143	124	140		
65	65	6	2½	143	121	140		
200	200	8	8	178	-	-		
150	150	8	6	178	168	152		
125	125	8	5	178	162	152		
100	100	8	4	178	155	152		
90	90	8	3	178	152	152		
250	250	10	10	216	-	-		
200	200	10	8	216	203	178		
150	150	10	6	216	194	178		
125	125	10	5	216	191	178		
100	100	10	4	216	184	178		
300	300	12	12	254	-	-		
250	250	12	10	254	241	203		
200	200	12	8	254	229	203		
150	150	12	6	254	219	203		
100	100	12	4	254	210	203		
350	350	14	14	279	-	-		
300	300	14	12	279	270	330		
250	250	14	10	279	257	330		
200	200	14	8	279	248	330		
150	150	14	6	279	238	330		

Nom. Size DN						C	M	H
DN		NPS		C	M			
Large End	Small End	Large End	Small End			C	M	H
400	400	16	16	305	-	-		
350	350	16	14	305	305	356		
300	300	16	12	305	295	356		
250	250	16	10	305	283	356		
200	200	16	8	305	273	356		
150	150	16	6	305	264	356		
450	450	18	18	343	-	-		
400	400	18	16	343	330	381		
350	350	18	14	343	330	381		
300	300	18	12	343	321	381		
250	250	18	10	343	308	381		
200	200	18	8	343	298	381		
500	500	20	20	381	-	-		
450	450	20	18	381	368	508		
400	400	20	16	381	356	508		
350	350	20	14	381	356	508		
300	300	20	12	381	346	508		
250	250	20	10	381	333	508		
200	200	20	8	381	324	508		
600	600	24	24	432	-	-		
500	500	24	20	432	432	508		
450	450	24	18	432	419	508		
400	400	24	16	432	406	508		
350	350	24	14	432	406	508		
300	300	24	12	432	397	508		
200	200	24	10	432	384	508		
750	750	30	30	559	-	-		
600	600	30	24	559	533	610		
500	500	30	20	559	508	610		
450	450	30	18	559	495	610		
400	400	30	16	559	483	610		
900	900	36	36	673	-	-		
750	750	36	30	673	635	610		
600	600	36	24	673	610	610		
500	500	36	20	673	584	610		
450	450	36	18	673	572	610		

HIGH PRESSURE FITTINGS

3000 LB & 6000 LB

SCREWED & SOCKET-WELD

The high pressure pipe fittings illustrated in the following pages are designed for use with American Standard Linepipe and are used extensively in the fabrication of screwed or socket-weld high pressure piping systems.

They are found throughout refinery, petrochemical and industrial plants, on pressure vessels, hydraulic lines, refrigeration plants and wherever high pressures and/or temperatures occur.

DIMENSIONAL SPECIFICATIONS

- ASME B16.11 — Forged Steel Fittings, Socket-Weld and Threaded.
- BS3799 — Forged Steel Pipe Fittings, screwed and socket-weld for the petroleum industry - based on ASME B16.11.

MATERIAL SPECIFICATIONS

- Carbon Steel — forgings to ASTM A105, or Barstock.
- Grade F11 (Chrome-Moly, for high temperatures), Grade F316L (Stainless Steel, for temperature and corrosion resistance).
- Stainless and Alloy Steels to ASTM A182 of the appropriate grades, including:— ASTM A350 Gr-LF1 (Carbon Steel for low temperatures).

Pipe/Fitting combinations are as follows:

Fitting Pressure Class	Corresponding Max. Pipe Schedule
Threaded Fittings	
3000 lbs	Sch. 80
6000 lbs	XXS
Socket-Weld Fittings	
3000 lbs	Sch. 80
6000 lbs	Sch. 160



90° ELBOW



UNION



CAP



45° ELBOW



HEXAGON HEAD PLUG



TEE



HEXAGON HEAD BUSHING



CROSS



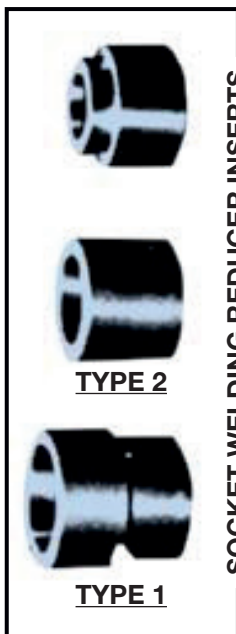
ROUND HEAD PLUG



COUPLING



SQUARE HEAD PLUG

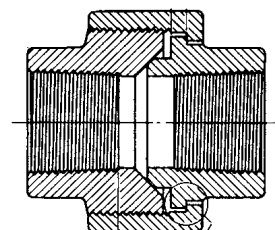


SOCKET WELDING REDUCER INSERTS

TYPE 2

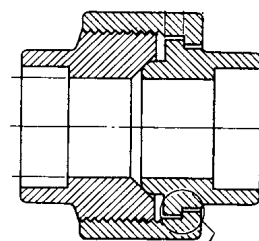
TYPE 1

SCREWED UNIONS



Alternative Collar

SOCKET-WELD UNIONS

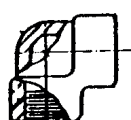


Alternative Collar

HIGH PRESSURE FITTINGS

Standard Range: SCREWED NPT, BSP, & BSPT

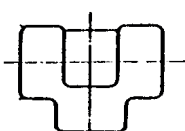
	3000 lb	6000 lb	Size Range	Normal Manufacture	Material Grade
90° Elbow	✓	✓	6-100mm	Forged	A105
45° Elbow	✓	✓	6-100mm	Forged	
Tee	✓	✓	6-100mm	Forged	
Coupling	✓	✓	6-100mm	Barstock	
Half Coupling	✓	✓	6-100mm	Barstock	
Cap	✓	✓	6-100mm	Barstock	
Cross	✓	✓	6-100mm	Forged	
Hexagonal Nipple	✓	✓			
	All conform to 6000 lb rating		6-100mm	Forged or Barstock	
Hexagonal Plug	✓	✓	6-100mm	Forged or Barstock	
Round Head Plug	✓	✓	6-100mm	Barstock	
Square Plug	✓	✓	6-100mm	Barstock	
Bush	✓	✓	6-100mm	Forged or Barstock	



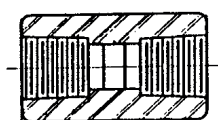
90° ELBOW



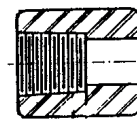
45° ELBOW



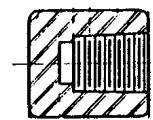
TEE



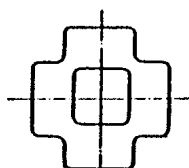
Coupling



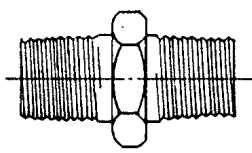
Half Coupling



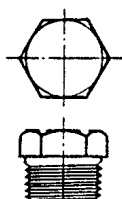
Cap



CROSS



Hexagonal Nipple



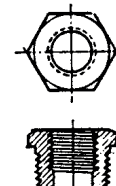
Hexagonal Plug



Round Head Plug



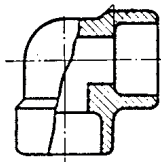
Square Plug



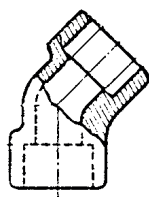
Bush

Standard Range: SOCKET-WELD

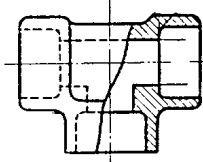
	3000 lb	6000 lb	Size Range	Normal Manufacture	Material Grade
90° Elbow	✓	✓	8-100mm	Forged	A105
45° Elbow	✓	✓	8-100mm	Forged	
Tee	✓	✓	8-100mm	Forged	
Coupling	✓	✓	8-100mm	Barstock	
Half Coupling	✓	✓	8-100mm	Barstock	
Cap	✓	✓	8-100mm	Barstock	
Cross	✓	✓	8-100mm	Forged	



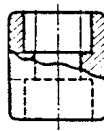
90° ELBOW



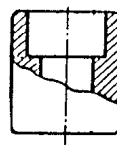
45° ELBOW



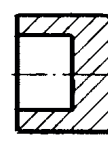
Tee - Equal & Reducing



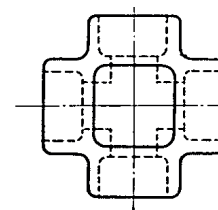
Coupling Equal & Reducing



Half Coupling



Cap



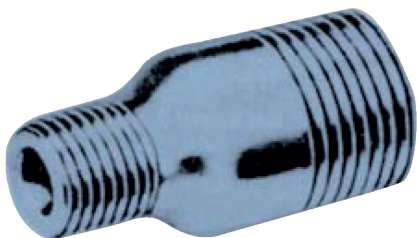
Cross

HIGH PRESSURE FITTINGS

PIPE NIPPLES

SWAGE NIPPLES

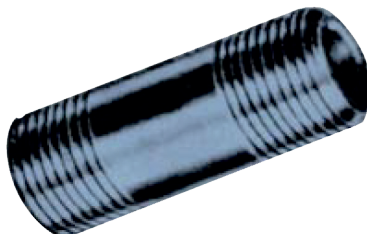
Ends Screwed, Plain or Bevelled for Welding, Concentric and Eccentric.



Swage Nipples as illustrated are manufactured from Seamless Steel Pipe to ASTM A106, Grade 'B'. They can also be machined from Barstock material.

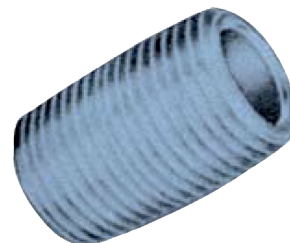
PIPE NIPPLES

Seamless Tubular, Ends Screwed, Plain or Bevelled.



CLOSE-TAPER NIPPLES

Seamless Tubular, Screwed.

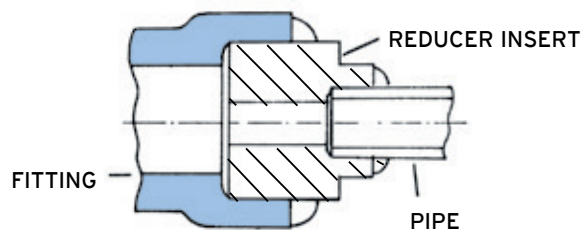


Swage and Pipe Nipples can also be supplied with non-standard end connections — e.g. One End Screwed, One End Bevelled, or One End Sch. 80, One End Sch. 40.

<p>BUTTWELD TYPE</p>	<p>SCREWED TYPE</p>	
<p>PLAIN END TYPE</p>	<p>PLAIN END BEVEL END</p>	<p>Benton Piping Systems offers a range of Swage and Pipe Nipples in a wide variety of diameters, lengths, wall thicknesses and materials. Please consult us for your custom requirements.</p>

SOCKET-WELD REDUCER INSERTS ASTM A105 FORGINGS

The purpose of socket-weld reducer inserts is to avoid the delays and extra costs that naturally occur in producing regular socket-weld fittings with reduced outlets. Designed for use with straight size fittings, reducer inserts serve the same purpose as threaded bushings used with screwed fittings. The drawing at right illustrates the simplicity of their application.



OLET FITTINGS

WELDOLETS

Used to make full size and reducing branch connections from 6 to 750mm from run pipes 10 to 900mm in order to:

- Facilitate header construction.
- Construct the joint to full pipe strength.
- Meet code design requirements for reinforced branch joints.
- Improve flow.
- Assure economical, clean and strong connections.

THREDOLETS AND SOCKOLETS

Used for making relatively small branch outlet connections.

Thredolets and Sockolets are “half couplings” that are bevelled for convenience, tapered for strength, flared for fluid flow and drop forged for the ultimate in strength and ruggedness.

ELBOLETS AND LATROLETS

Used for making threaded, socket-weld or butt-weld outlets tangentially to elbows or as 45° branch connections on straight pipe. The design provides for a full penetration weld. These fittings provide greatly improved flow conditions compared with 90° connections and are advantageous for many instrument connection applications.

WE ALSO STOCK:

Nipolets and Sweepolets

Size Selection Chart

Standard Weight and Extra Strong Weldolets, Sockolets and 3000# Thredolets

10 x 6	20 x 20	40 x 40	65 x 65	90 x 90
15 x 6	25 x 20	50 x 40	80 x 65	100 x 90
25 - 20 x 6	40 - 32 x 20	65 x 40	90 x 65	125 x 90
65 - 32 x 6	65 - 50 x 20	80 x 40	100 x 65	150 x 90
900 - 80 x 6	125 - 80 x 20	100 - 90 x 40	125 x 65	200 x 90
	300 - 150 x 20	150 - 125 x 40	150 x 65	250 x 90
10 x 8	900 - 350 x 20	300 - 200 x 40	200 x 65	350 - 300 x 90
15 x 8		600 - 350 x 40	300 - 250 x 65	500 - 400 x 90
25 - 20 x 8	25 x 25	900 - 650 x 40	450 - 350 x 65	900 - 600 x 90
65 - 32 x 8	32 x 25		900 - 500 x 65	
900 - 80 x 8	40 x 25	50 x 50		100 x 100
	50 x 25	65 x 50	80 x 80	125 x 100
15 x 10	65 x 25	80 x 50	90 x 80	150 x 100
25 - 20 x 10	90 - 80 x 25	90 x 50	100 x 80	200 x 100
65 - 32 x 10	125 - 100 x 25	100 x 50	125 x 80	250 x 100
900 - 80 x 10	250 - 150 x 25	125 x 50	150 x 80	350 - 300 x 100
	900 - 300 x 25	150 x 50	200 x 80	500 - 400 x 100
15 x 15		250 - 200 x 50	250 x 80	900 - 600 x 100
20 x 15	32 x 32	450 - 300 x 50	350 - 300 x 80	
25 x 15	40 x 32	900 - 500 x 50	500 - 400 x 80	
40 - 32 x 15	50 x 32		900 - 600 x 80	
65 - 50 x 15	65 x 32			
200 - 80 x 15	90 - 80 x 32			
900 - 250 x 15	125 - 100 x 32			
	200 - 150 x 32			
	900 - 500 x 32			

Outlet Sizes:
125, 150, 200, 250, 300, 350, 400, 450, 500, 600, 650, 750
Order to specific size combination.

6000# Thredolets, Schedule 160 and Double Extra Strong Sockolets

20 x 15	40 - 32 x 25	40 x 32	50 x 40	65 x 50
32 x 15	65 - 50 x 25	65 - 50 x 32	65 x 40	80 x 80
65 x 15	250 - 80 x 25	90 - 80 x 32	90 - 80 x 40	100 x 50
900 - 200 x 15	900 - 300 x 25	200 - 100 x 32	125 - 100 x 40	125 x 50
		500 - 250 x 32	200 - 150 x 40	150 x 50
25 x 20		900 - 600 x 32	450 - 250 x 40	250 - 200 x 50
65 - 32 x 20			900 - 500 x 40	500 - 300 x 50
250 - 80 x 20				900 - 600 x 50
900 - 300 x 20				

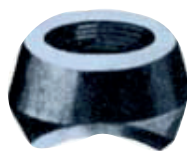
Schedule 160 and Double Extra Strong Weldolets

15 x 15	25 x 25	40 x 40	50 x 50
32 - 20 x 15	65 - 32 x 25	65 - 50 x 40	65 x 50
900 - 40 x 15	250 - 80 x 25	90 - 80 x 40	90 - 80 x 50
20 x 20	900 - 300 x 25	200 - 100 x 40	125 - 100 x 50
32 x 20		400 - 250 x 40	200 - 150 x 50
40 x 20	40 - 32 x 32	900 - 600 x 40	450 - 250 x 50
200 x 20	65 - 50 x 32		900 - 500 x 50
250 - 80 x 20	250 - 80 x 32		
900 - 300 x 20	900 - 300 x 32		

Outlet Sizes:
65, 80, 100,
125, 150, 200,
250, 300.
Order to
specific size
combination.



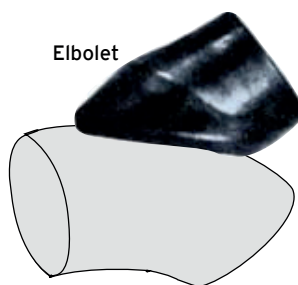
Weldolet



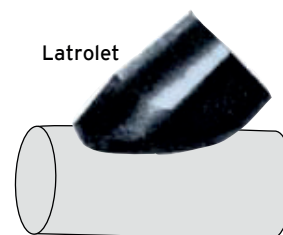
Thredolet



Sockolet



Elbolet



Latrolet

ABOUT BENTON PIPING SYSTEMS

Benton Piping System was established in 2005 and has become a sought-after supplier achieving excellence through its procurement, project supply, machining and processing service capabilities across all industries including oil, gas, petrochemicals, refineries, mining, power and water sectors. Benton Piping Systems also support other local, national, international suppliers and distributors of steel, pipe and piping related products.

Benton Piping Systems is 100% Australian owned and is based in Western Australia. We are a supplier of pipe, fittings, flanges, valves, 3D & 5D pipe bends, machine shop processing, roll & cut grooving, threading services with exceptional technical support and customer service.

PRODUCTS & SERVICES



PIPE

At Benton Piping Systems we can provide you with ASTM, ASME, ANSI and/or API standards in ERW and Seamless. We also supply custom orders for Heater Tubes and Drill Pipes as per your requirements including material certification. Our supply range consists of carbon, stainless, alloy's, chrome-moly and other specialty materials.



BUTTWELD

We carry a full range of Buttweld Pipe Fittings which is a recognised standard for leak-proof pipe fabrication in pipelines handling corrosive and hazardous fluids.

Buttweld fittings are made to the material specifications of ASTM A234 which correspond to the material specifications of seamless and ERW carbon steel pipes to ASTM and API Standards, which complements our pipe range.



HIGH PRESSURE FITTINGS

We are one of the largest national suppliers of #3000 – #9000 high pressure fittings for refineries, mining, petrochemical and industrial plants or wherever high pressure fittings are required for use.

Dimensional specification ASME B16.11 for socket weld and threads for both NTP and BSP standards.

We supply a full range in Carbon, Stainless, Chrome Moly and a selection of Exotic materials.



STUB ENDS & SWIVEL FLANGES

Benton piping Systems provides a large range of stub ends with swivel rings (backing lap joint flanges). The lap thickness of the stub end typically meets the thickness of the schedule pipe it accompanies while the base has a curved machine radius for the lap joint flange to mate flush over the stub end. A standard lap joint flange will typically have a longer hub length in comparison to a slip on flange, but this is often considered unnecessary for many applications.



FLANGES

We stock and distribute ANSI/ASME, Table Series (D, E & H), PN, BAE Flanges, API Flanges, Slip-On, Weld Neck, Socket Welds, Lap Joint, Galvanised Flanges, Threaded and Blind Flanges in various types of materials. We also have the ability to manufacture and re-machine to customers requirements and specifications.



3D & 5D PIPE BENDS

We are Australia's largest national stockist and distributor of 3D & 5D Pipe Bends up to 900NB and can provide our customers Pipe Bends with green ends to a variety of tangent sizes in various schedules. In addition, we can utilise our in-house machining services to provide our customers with Rolled or Cut grooved Pipe Bends.



THREADING, ROLL & CUT GROOVING

We provide our customers with a fast turn-around on Cutting, Threading, Grooving and Bevelling of Pipes, Pipe Nipples, Reducers, Flanges in both NPT, BSP Threads from 6mm – 300mm from our dedicated in-house machine shop and also provide Roll and Cut Grooved Piping Services for all industry sectors.



PIPE CUT TO SIZE PROCESSING

We can provide customised solutions for our clientele and offer in-house support for machining, manufacturing and processing of modified Pipe Fittings and Piping products and can deliver total package solutions including Surface Treatment.

MISSION & VALUES

Our mission is to operate a safe work environment for our employees, contractors and visitors. We also conduct our business in a sustainable manner to ensure the environment is not affected.

We believe our service is the key to provide fast and reliable turn-around solutions for our clients. Our focus is to achieve the highest level of customer satisfaction to improve and exceed our customer's expectations.

Processing and Additional Services

FULL MACHINE SHOP SERVICE

- Flange machining – modification and reductions
- Flat face, re-gramophone to custom requirements
- CS, SS, Duplex, Chrome-Moly, Inconel and other speciality materials

ROLL AND CUT GROOVED PIPING SPECIALIST

- In-house processing
 - 25NB to 900NB
 - Special Cut Groove
-

SPECIAL MATERIAL LINING & SURFACE TREATMENT

- Rubber
- Ceramic
- Polyurethane and Polyethylene
- Galvanising
- Painting

BAE FLANGE

- Cost saving fitting for all applications
- Quick fitting series
- Rubber lining flange
- Ceramic lining flange

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SALES

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BENTON
Piping Systems