

BUTT WELD FITTINGS AND FLANGES



Buttweld pipe fittings comprise of long radius elbow, concentric reducer, eccentric reducers and Tees. They are an important part of industrial piping systems to change direction, branch off or to mechanically join equipment to the system. Buttweld fittings are sold in nominal pipe sizes with specified pipe schedule. BW fitting's dimensions and tolerances are defined as per ASME standard B16.9.

Butt Weld fittings are also called Welded Pipe fittings. These welded fittings in carbon steel offer many advantages compared to threaded and socketweld fittings. The latter are only available up to 4-inch nominal size whereas butt weld fittings are available in sizes from ½" to 24". Some of the benefits of Buttweld fittings are;

Types of Butt Weld Pipe Fittings

Welded pipe fittings in carbon steel and stainless steel are the joining components that make possible the assembly of valves, pipes and equipment onto the piping system. Welded fittings compliment pipe flanges in any piping system and allows;

- Change direction of flow in a piping system

- Connect or joint pipes and equipment

- Provide branches, access and takeoffs for auxiliary equipment

A common example using welded pipe fitting is a pipe reduced by concentric reducer, welded to a weld neck flange and connected to an equipment. Figure below represent complete collection of butt welded pipe fitting

NACE MR 01-75 is a Materials Standard issued by the National Association of Corrosion Engineers. It intended to assess the suitability of materials for oilfield equipment where sulphide (sulfide) stress corrosion cracking may be a risk in hydrogen sulphide (sour) environments. This standard specifies the types of corrosion resistant materials including stainless steels that can be used in specific oilfield environments and places limits on the hardness of the material.

NACE MR01-75 gives requirements and recommendations for the selection and qualification of carbon and low-alloy steels, corrosion-resistant alloys, and other alloys for service in equipment used in oil and natural gas production and natural gas treatment plants in H₂S-containing environments, whose failure could pose a risk to the health and safety of the public and personnel or to the equipment itself.

We can supply the ASME A234 WPB ELBOWS, TEE, REDUCER, A234 WPB PIPE FITTINGS, comply with the NACE MR 01-75 requirement.

Fittings Manufacturing Process

You can see here below the different process routes followed for manufacturing of each product: Elbows, Tees and Reducers.

ELBOW



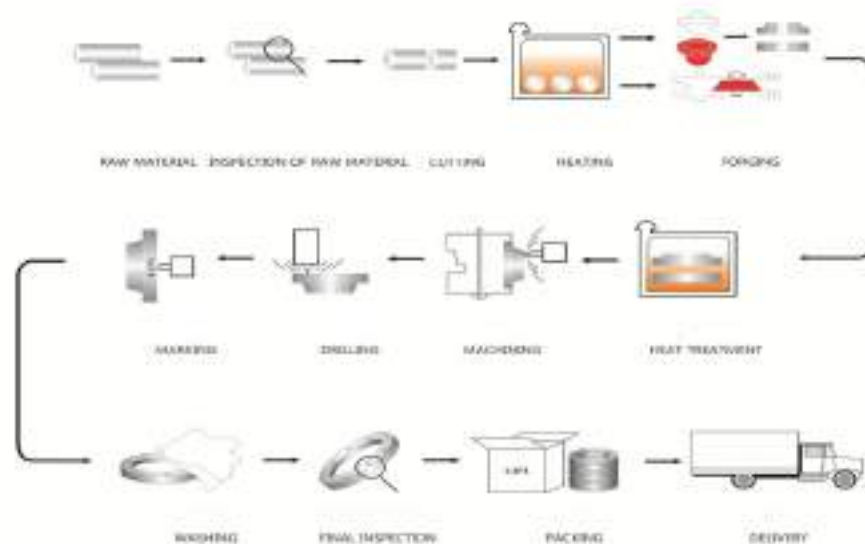
TEE



REDUCER



Flanges Manufacturing Process



Specifications

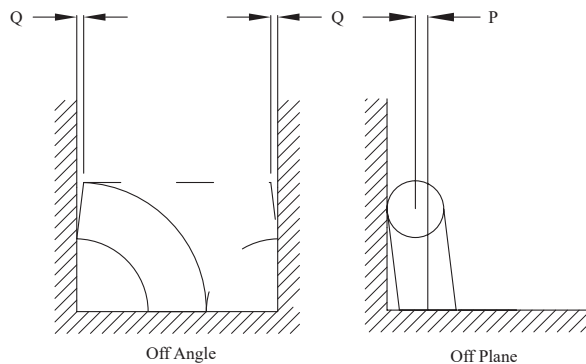
Wingrou stocks Butt Weld fittings made from high quality carbon alloy steel to ASTM A234 which can be used in various piping systems. The advantages of Butt Weld include:

- Welding a fitting to the pipe means that it is permanently leak proof.
- The continuous metal structure formed between the pipe and fitting adds strength to the system.
- Smoother inner surface and gradual direction changed reduce the pressure losses and turbulence and minimises the action of corrosion and abrasion.
- A welded system utilises minimal space.
- Materials According to : ANSI B 16.9
- Welding Bevel According to ANSI B 16.25
- Steels According ASTM A 234WPB
ASTM A 420 WPL6

Butt Weld Fittings Specifications Standard Weight

Dimensional Tolerance

Buttweld STD ASTM A234 WPB ANSI B16.9 Dimensional Tolerance							
ALL FITTINGS				90° & 45° ELBOWS	TEES	REDUCERS	CAPS
NOMINAL PIPE SIZE (NPS)	OUTSIDE DIAMETER AT BEVEL	INSIDE DIAMETER AT END	WALL THICKNESS	CENTRE TO END	CENTRE TO END	OVERALL LENGTH	OVERALL LENGTH
1/2" – 2 1/2"	+1.5MM -0.7MM	+0.8MM -0.8MM	NOT LESS THAN 87.50% OF NOMINAL WALL THICKNESS	+2.0MM -2.0MM	+2.0MM -2.0MM	+2.0MM -2.0MM	+3.0MM – 3.0MM
3" - 4"	+1.5MM -1.5MM	+1.5MM -1.5MM					
5" – 8"	+2.2MM -1.5MM						
10" – 12"	+4.0MM -3.0MM	+3.2MM -3.2MM					+6.3MM -6.3MM
20" – 24"	+6.4MM -4.8MM	+4.8MM -4.8MM					



ANGULARITY		
NOMINAL PIPE SIZE (NPS)	OFF ANGLE (Q)	OFF PLANE (P)
1/2" – 2 1/2"	1.0MM	2.0MM
3" – 3 1/2"	2.0MM	4.0MM
4"	3.0MM	5.0MM
5" – 8"		6.0MM
10" – 18"	4.0MM	10.0MM
20" – 24"	5.0MM	

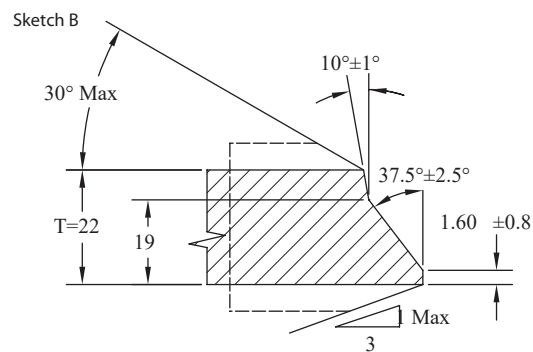
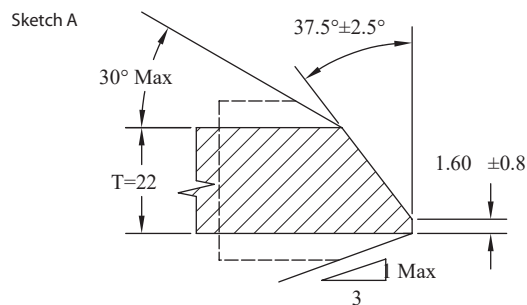
Butt Weld Fittings Specifications Light Weight

Dimensional Tolerance

SGP JIS B 2311 Dimensional Tolerance						
ALL FITTINGS				90° & 45° ELBOWS	TEES	REDUCERS
NOMINAL PIPE SIZE (NPS)	OUTSIDE DIAMETER AT BEVEL	INSIDE DIAMETER AT END	WALL THICKNESS	CENTRE TO END	CENTRE TO END	OVERALL LENGTH
2" – 2 1/2"	+2.0MM -2.0MM	+2.0MM -2.0MM	+NOT SPECIFIED -15.00%	+2.0MM -2.0MM	+2.0MM -2.0MM	+2.0MM -2.0MM
3" – 4"	+2.5MM -2.5MM	+2.5MM -2.5MM				
5" – 8"	+3.5MM -3.5MM	+3.5MM -3.5MM		+3.5MM -3.5MM	+3.2MM -3.2MM	+3.2MM -3.2MM

Welding End Preparation Selection

Butt Weld STD ASTM A234 ANSI B16.9 Welding End Preparation To ANSI B16.25	
WALL THICKNESS	WELDING END PREPARATION
LESS THAN T (*)	CUT SQUARE OR SLIGHTLY CHAMFERED AT MANUFACTURER'S OPTION.
T (*) TO 22 INCLUDED	PLAIN BEVEL AS SKETCH (A)
MORE THAN 22	COMPOUND BEVEL AS SKETCH (B)
NOTE :- (*)	T = 5MM FOR CARBON, FERRITIC ALLOY STEEL OR WROUGHT IRON;
	T = 4MM FOR AUSTENITIC ALLOY STEEL

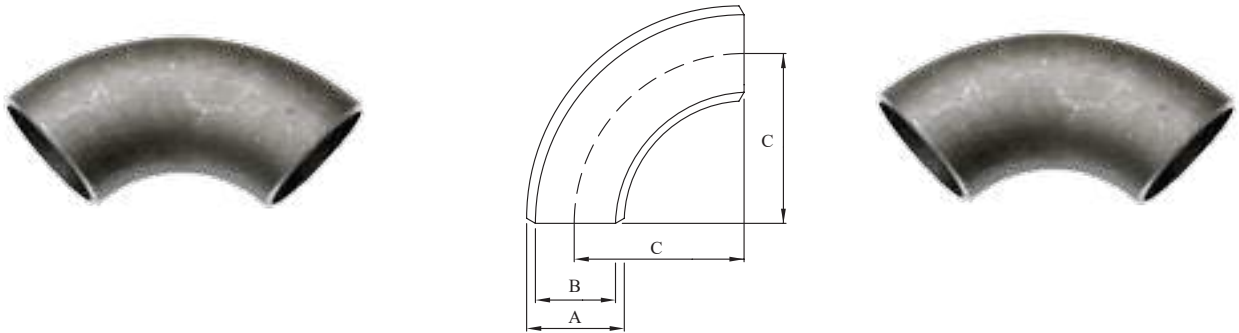


Material Specifications

Pressure / Temperature Ratings											
Seamless Carbon Steel Pipe Grade B											
NOMINAL SIZE DN INCH	TEMP C			-29 TO 38	205	260	350	370	400	430	450
	WALL THICKNESS			MAXIMUM ALLOWABLE PRESSURE / TEMPERATURE RATINGS IN KPA (TO ANSI/ASME B31.3A)							
		SCHED NO.	MM								
1/2"	STD	40	2.77	34416	34416	32528	29255	28910	22372	18589	14972
	XS	80	3.73	48092	48092	45446	40878	40396	31260	25969	20918
3/4"	STD	40	2.87	28070	28070	26526	23860	23578	18245	15158	12209
	XS	80	3.91	39418	39418	37247	33506	33106	25617	21283	17142
1"	STD	40	3.38	26251	26251	24804	22310	22048	17060	14173	11417
	XS	80	4.55	36283	36283	34285	38040	30474	23584	19595	15785
1 1/4"	STD	40	3.56	21614	21614	20421	18369	18155	14049	11672	9404
	XS	80	4.85	30178	30178	28518	25651	25348	19616	16295	13125
1 1/2"	STD	40	3.68	19444	19444	18375	16529	16329	12636	10500	8454
	XS	80	5.08	27404	27402	25900	23295	23019	17811	14800	11919
2"	STD	40	3.91	16378	16378	15468	13925	13759	10645	8847	7124
	XS	80	5.54	23653	23653	22351	20105	19871	15378	12774	10287
2 1/2"	STD	40	5.16	17914	17914	16929	15227	15048	11644	9674	7793
	XS	80	7.01	24818	24818	23447	21097	20849	16129	13401	10797
3"	STD	40	5.49	15558	15558	14696	13222	13063	10108	8399	6766
	XS	80	7.62	21986	21986	20780	18693	18472	14290	11871	9563
4"	STD	40	6.02	13187	13187	12464	11210	11079	8571	7124	5739
	XS	80	8.56	19058	19058	18010	16198	16012	12388	12094	8289
5"	STD	40	6.55	11561	11561	10921	9825	9708	7517	6243	5038
	XS	80	9.53	17060	17060	16122	14503	14331	11093	9212	7421
6"	STD	40	7.11	10500	10500	9928	8924	8819	6828	5670	4568
	XS	80	10.97	16474	16474	15571	14007	13842	10707	8895	7165
8"	STD	40	8.18	9246	9246	8737	7855	7765	6008	4995	4024
	XS	80	12.7	14572	14572	13766	12388	12237	9474	7868	6338
10"	STD	40	9.27	8385	8385	7923	7131	7048	5450	4527	3652
	XS		12.7	11595	11595	10955	9853	9736	7538	6263	5043
12"	STD	60	9.53	7241	7241	6842	6153	6084	4706	3914	3149
	XS		12.7	9722	9722	9191	8268	8165	6318	5250	4230
14"	STD	30	9.53	6580	6580	6222	5595	5533	4279	3555	2866
	XS		12.7	8833	8833	8351	7510	7421	5739	4768	3845
16"	STD	30	9.53	5746	5746	5429	4885	4830	3734	3100	2501
	XS	40	12.7	7703	7703	7283	6545	6470	5009	4162	3349
18"	STD		9.53	5099	5099	4816	4334	4286	3314	2756	2219
	XS		12.7	6835	6835	6456	5808	5739	4437	3686	2969
20"	STD	20	9.53	4582	4582	4327	3893	3852	2976	2474	1991
	XS	30	12.7	6139	6139	5801	5216	5154	3989	3314	2666
24"	STD	20	9.53	3810	3810	3603	3238	3197	2474	2060	1660
	XS		12.7	5097	5097	4816	4334	4286	3314	2756	2219

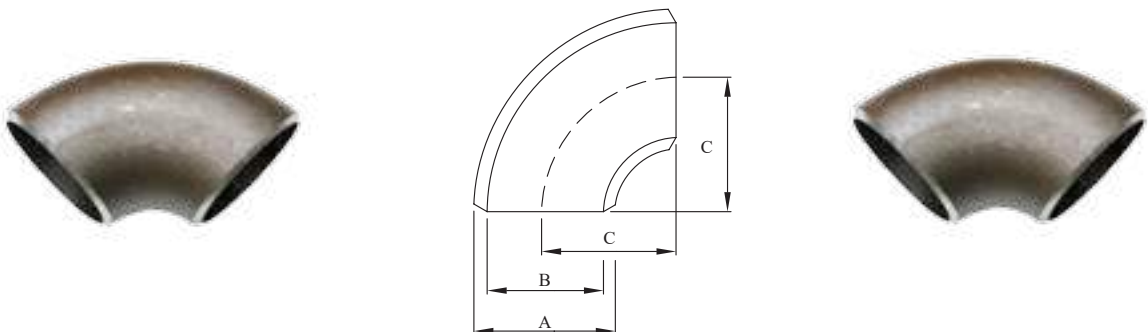
Butt Weld Long Radius Elbow 90 Degree Lightweight

Long Radius Elbow 90 Degree LIGHTWEIGHT JIS B 2311						
CODE	size	A	B	C	WALL THICKNESS	APPROX KG/PC
BWWGE90100	1"	33.5	30.3	38.1	3.2	0.15
BWWGE90125	1 1/4"	42.2	38.7	47.8	3.5	0.25
BWWGE90150	1 1/2"	48.3	44.8	57.2	3.5	0.35
BWWGE90200	2"	60.5	52.9	76.2	3.8	0.61
BWWGE90250	2 1/2"	76.3	67.9	95.3	4.2	1.08
BWWGE90300	3"	89.1	80.7	114.3	4.2	1.66
BWWGE90400	4"	114.3	105.3	152.4	4.5	2.87
BWWGE90500	5"	139.8	130.8	190.5	4.5	4.31
BWWGE90600	6"	165.2	155.2	228.6	5.0	6.57
BWWGE90800	8"	216.3	204.7	304.8	5.8	13.47



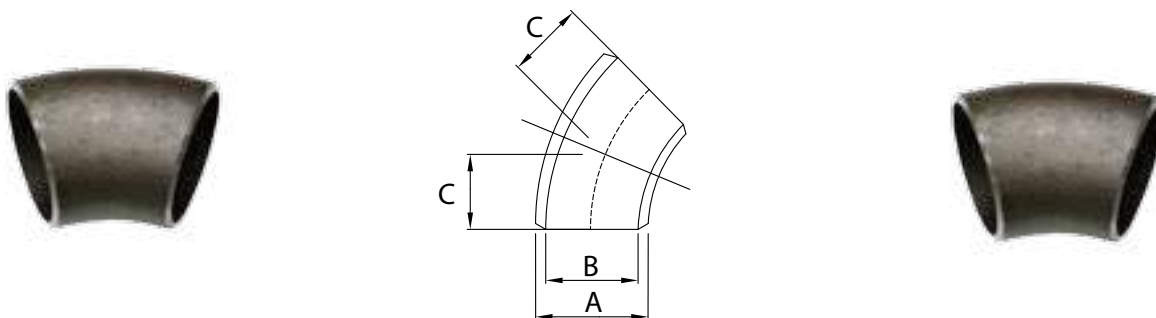
Butt Weld Short Radius Elbow 90 Degree Lightweight

Short Radius Elbow 90 Degree LIGHTWEIGHT JIS B 2311						
CODE	SIZE	A	B	C	WALL THICKNESS	APPROX KG/PC
BWWGE90L250	2 1/2"	76.3	67.9	63.5	4.2	0.8
BWWGE90L300	3"	89.1	80.7	76.2	4.2	1.1
BWWGE90L400	4"	114.3	105.3	101.6	4.5	1.9
BWWGE90L800	8"	216.3	204.7	203.2	5.8	9.8



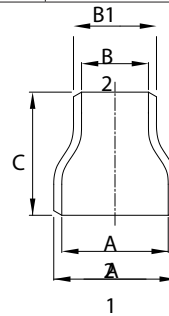
Butt Weld Long Radius Elbow 45 Degree Lightweight

Long Radius Elbow 45 Degree LIGHTWEIGHT JIS B 2311						
CODE	SIZE	A	B	C	WALL THICKNESS	APPROX KG/PC
BWWG45L200	2"	60.5	52.9	31.6	3.8	0.3
BWWG45L250	2 1/2"	76.3	67.9	69.5	4.2	0.5
BWWG45L300	3"	89.1	80.7	47.3	4.2	0.7
BWWG45L400	4"	114.3	105.3	63.1	4.5	1.3
BWWG45L500	5"	139.8	130.8	78.9	4.5	2.0
BWWG45L600	6"	165.2	155.2	94.7	5.0	3.4



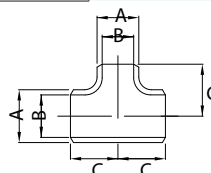
Butt Weld Concentric Reducer Lightweight

Concentric Reducer LIGHTWEIGHT JIS B 2311								
CODE	SIZE	LARGER DIAMETER		SMALLER DIAMETER		END TO END	WALL THICKNESS	APPROX KG/PC
		A1	A2	B1	B2	C		
BWWGCRL250200	21/2" x 2"	76.3	67.9	60.5	52.9	88.9	4.2	0.59
BWWGCRL300200	3" x 2"	89.1	80.7	60.5	52.9	88.9	4.2	0.66
BWWGCRL300250	3" x 2 1/2"	89.1	80.7	76.3	67.9	88.9	4.2	0.73
BWWGCRL400200	4" x 2"	114.3	105.3	60.5	52.9	101.6	4.5	0.97
BWWGCRL400250	4" x 2 1/2"	114.3	105.3	76.3	67.9	101.6	4.5	1.04
BWWGCRL400300	4" x 3"	114.3	105.3	89.1	80.7	101.6	4.5	1.10
BWWGCRL500250	5" x 2 1/2"	139.8	130.8	76.3	67.9	127.0	4.5	1.50
BWWGCRL500300	5" x 3"	139.8	130.8	89.1	80.7	127.0	4.5	1.58
BWWGCRL500400	5" x 4"	139.8	130.8	114.3	105.3	127.0	4.5	1.74
BWWGCRL600250	6" x 2 1/2"	165.2	155.2	76.3	67.9	139.7	5.0	2.09
BWWGCRL600400	6" x 4"	165.2	155.2	114.3	105.3	139.7	5.0	2.36
BWWGCRL600500	6" x 5"	165.2	155.2	139.8	130.8	139.7	5.0	2.55
BWWGCRL800400	8" x 4"	216.3	204.7	114.3	105.3	152.4	5.8	3.67
BWWGCRL800500	8" x 5"	216.3	204.7	139.8	130.8	152.4	5.8	3.87
BWWGCRL800600	8" x 6"	216.3	204.7	165.2	155.2	152.4	5.8	4.17
BWWGCRL910600	10" x 6"	267.4	254.2	165.2	155.2	177.8	5.0	6.32
BWWGCRL910800	10" x 8"	267.4	254.2	216.3	204.7	177.8	6.6	6.87
BWWGCRL912800	12" x 8"	318.5	304.7	216.3	204.7	203.2	6.9	9.29
BWWGCRL912910	12" x 10"	318.5	304.7	267.4	254.2	203.2	6.9	9.97



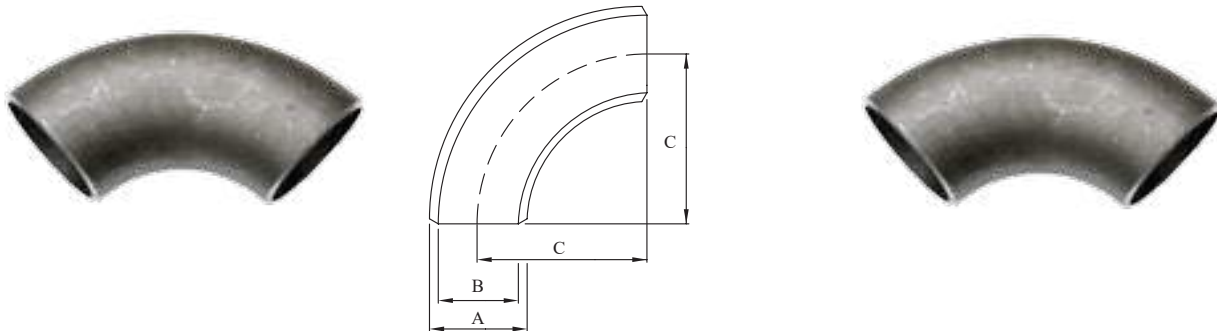
Butt Weld Equal Tee Lightweight

Equal Tee LIGHTWEIGHT JIS B 2311						
CODE	SIZE	A	B	C	WALL THICKNESS	APPROX KG/PC
BWWGETL250	21/2"	76.3	67.9	76.2	4.2	1.7
BWWGETL300	3"	89.1	80.7	85.7	4.2	2.0
BWWGETL400	4"	114.3	105.3	104.8	4.5	3.4
BWWGETL600	6"	165.2	155.2	142.9	5	11.4
BWWGETL800	8"	219.1	204.7	177.8	5.8	17.9
BWWGETL910	10"	267.4	254.2	215.9	6.6	21.8



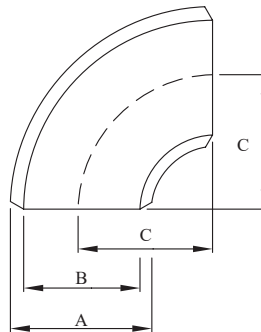
Butt Weld Long Radius Elbow 90 Degree STD

Long Radius Elbow 90 Degree STD ASTM A234 WPB ANSI B16.9						
CODE	SIZE	A	B	C	WALL THICKNESS	APPROX KG/PC
BWWGE90LS50	1/2"	21.3	15.8	38.1	2.8	0.07
BWWGE90LS75	3/4"	26.7	20.9	38.1	2.9	0.08
BWWGE90LS100	1"	33.5	26.6	38.1	3.4	0.18
BWWGE90LS125	1 1/4"	42.2	35.1	47.8	3.6	0.25
BWWGE90LS150	1 1/2"	48.3	40.9	57.2	3.7	0.36
BWWGE90LS200	2"	60.2	52.6	76.2	3.9	0.73
BWWGE90LS250	2 1/2"	73.2	62.7	95.3	5.2	1.45
BWWGE90LS300	3"	88.9	78.0	114.3	5.5	2.18
BWWGE90LS400	4"	114.3	102.4	152.4	6.0	4.05
BWWGE90LS500	5"	141.2	128.3	190.5	6.6	6.86
BWWGE90LS600	6"	168.4	154.2	228.6	7.1	10.91
BWWGE90LS800	8"	219.2	202.7	304.8	8.2	21.73
BWWGE90LS910	10"	273.1	254.5	381.0	9.3	37.91
BWWGE90LS912	12"	323.9	304.8	457.2	9.5	55.91
BWWGE90LS914	14"	355.6	336.6	533.4	9.5	70.45
BWWGE90LS916	16"	406.4	387.4	609.6	9.5	93.64
BWWGE90LS918	18"	457.2	438.2	685.8	9.5	119.09
BWWGE90LS920	20"	508.0	489.0	762.0	9.5	147.27
BWWGE90LS924	24"	609.6	590.6	914.4	9.5	211.82



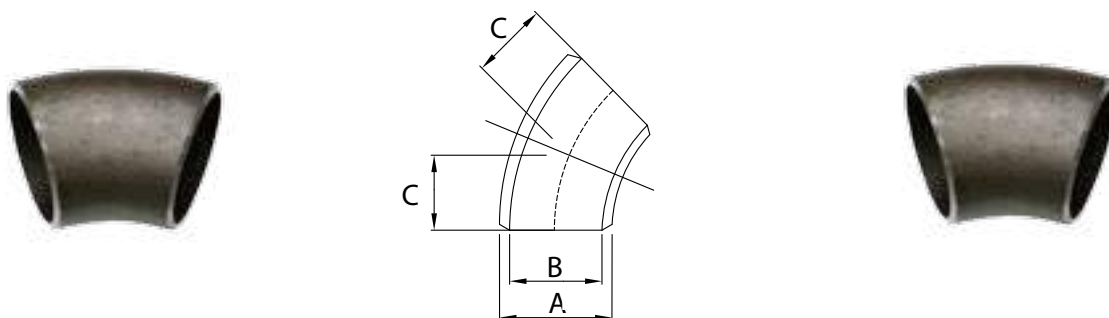
Butt Weld Short Radius Elbow 90 Degree STD

Short Radius Elbow 90 Degree STD ASTM A234 WPB ANSI B16.9						
CODE	SIZE	A	B	C	WALL THICKNESS	APPROX KG/PC
BWWG90SS75	3/4"	26.6	20.86	-	2.87	0.07
BWWG90SS100	1"	33.5	26.7	25.4	3.4	0.11
BWWG90SS125	1 1/4"	42.2	35.1	31.8	3.6	0.18
BWWG90SS150	1 1/2"	48.3	40.9	38.1	3.7	0.24
BWWG90SS200	2"	60.5	52.6	50.8	3.9	0.44
BWWG90SS250	2 1/2"	73.2	62.7	63.5	5.2	0.91
BWWG90SS300	3"	88.9	78.0	76.2	5.5	1.36
BWWG90SS350	3 1/2"	101.6	90.2	88.9	5.7	1.95
BWWG90SS400	4"	114.3	102.4	101.6	6.0	2.77
BWWG90SS500	5"	141.2	128.3	127.0	6.6	4.41
BWWG90SS600	6"	168.4	154.2	152.4	7.1	7.59
BWWG90SS800	8"	219.2	202.7	203.2	8.2	14.73
BWWG90SS910	10"	273.1	254.5	254.0	9.3	25.59
BWWG90SS912	12"	323.9	304.8	304.8	9.5	36.09



Butt Weld Long Radius Elbow 45 Degree STD

Long Radius Elbow 45 Degree STD ASTM A234 WPB ANSI B16.9						
CODE	SIZE	A	B	C	WALL THICKNESS	APPROX KG/PC
BWWG45LS50	1/2"	21.3	15.8	15.7	2.8	0.04
BWWG45LS75	3/4"	26.7	20.9	19.1	2.9	0.05
BWWG45LS100	1"	33.5	26.7	22.4	3.4	0.10
BWWG45LS125	1 1/4"	42.2	35.1	25.4	3.6	0.15
BWWG45LS150	1 1/2"	48.3	40.9	28.4	3.7	0.20
BWWG45LS200	2"	60.5	52.6	35.1	3.9	0.39
BWWG45LS250	2 1/2"	73.2	62.7	44.5	5.2	0.77
BWWG45LS300	3"	88.9	78.0	50.8	5.5	1.14
BWWG45LS400	4"	114.3	102.4	63.5	6.0	2.05
BWWG45LS500	5"	141.2	128.3	79.2	6.6	3.41
BWWG45LS600	6"	168.1	153.9	95.3	7.1	5.32
BWWG45LS800	8"	218.9	202.7	127.0	8.2	10.59
BWWG45LS910	10"	273.1	254.5	158.8	9.3	18.59
BWWG45LS912	12"	323.9	304.8	190.5	9.5	27.91
BWWG45LS914	14"	355.6	336.6	222.3	9.5	35.50
BWWG45LS916	16"	406.4	387.4	254.0	9.5	45.91

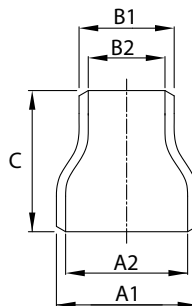


Butt Weld Concentric Reducer STD

Concentric Reducer STD ASTM A234 WPB ANSI B16.9								
CODE	SIZE	LARGER DIAMETER		SMALLER DIAMETER		END TO END	WALL THICKNESS	APPROX KG/PC
		A1	A2	B1	B2	C		
BWWGCR7550	3/4" x 1/2"	26.7	20.9	21.3	15.8	38.1	2.9	0.06
BWWGCR10050	1" x 1/2"	33.4	26.6	21.3	15.8	50.8	3.4	0.11
BWWGCR10075	1" x 3/4"	33.4	26.6	26.7	20.9	50.8	3.4	0.12
BWWGCR12550	1 1/4" x 1 1/2"	42.2	35.1	21.3	15.8	50.8	3.6	0.13
BWWGCR12575	1 1/4" x 3/4"	42.2	35.1	26.7	20.9	50.8	3.6	0.14
BWWGCR125100	1 1/4" x 1"	42.2	35.1	33.4	26.6	50.8	3.6	0.16
BWWGCR10550	1 1/2" x 1/2"	48.3	40.9	21.3	15.7	63.5	3.7	0.20
BWWGCR15075	1 1/2" x 3/4"	48.3	40.9	26.7	20.9	63.5	3.7	0.20
BWWGCR15050	1 1/2" x 1"	48.3	40.9	33.4	26.6	63.5	3.7	0.22
BWWGCR150125	1 1/2" x 1 1/4"	48.3	40.9	42.2	35.1	63.5	3.7	0.24
BWWGCR20050	2" x 1/2"	60.3	52.5	21.3	15.8	76.2	3.9	0.30
BWWGCR20075	2" x 3/4"	60.3	52.5	26.7	20.9	76.2	3.9	0.30
BWWGCR200100	2" x 1"	60.3	52.5	33.4	26.6	76.2	3.9	0.32
BWWGCR200125	2" x 1 1/4"	60.3	52.5	42.2	35.1	76.2	3.9	0.35
BWWGCR200150	2" x 1 1/2"	60.3	52.5	48.3	40.6	76.2	3.9	0.37
BWWGCR25050	2 1/2" x 1"	73.0	62.7	33.4	26.6	88.9	5.2	0.59
BWWGCR250125	2 1/2" x 1 1/4"	73.0	62.7	42.2	35.1	88.9	5.2	0.63
BWWGCR250150	2 1/2" x 1 1/2"	73.0	62.7	48.3	40.9	88.9	5.2	0.66
BWWGCR250200	2 1/2" x 2"	73.0	62.7	60.3	52.5	88.9	5.2	0.72
BWWGCR30050	3" x 1"	88.9	78.7	33.4	26.6	88.9	5.5	0.73
BWWGCR300125	3" x 1 1/4"	88.9	77.9	42.2	35.1	88.9	5.5	0.75
BWWGCR300150	3" x 1 1/2"	88.9	77.9	48.3	40.9	88.9	5.5	0.78
BWWGCR300200	3" x 2"	88.9	77.9	60.3	52.5	88.9	5.5	0.85
BWWGCR300250	3" x 2 1/2"	88.9	77.9	73.0	62.7	88.9	5.5	0.93
BWWGCR400150	4" x 1 1/2"	114.3	101.6	48.3	40.9	101.6	6.0	0.00
BWWGCR400200	4" x 2"	114.3	101.6	60.3	52.5	101.6	6.0	1.27
BWWGCR400250	4" x 2 1/2"	114.3	102.3	73.0	62.7	101.6	6.0	1.37
BWWGCR400300	4" x 3"	114.3	102.3	88.9	77.9	101.6	6.0	1.45
BWWGCR500250	5" x 2 1/2"	141.3	128.2	73.0	62.7	127.0	6.6	2.16
BWWGCR500300	5" x 3"	141.3	128.2	88.9	77.9	127.0	6.6	2.27
BWWGCR500400	5" x 4"	141.3	128.2	114.3	102.3	127.0	6.6	2.50
BWWGCR600200	6" x 2"	168.3	154.1	60.3	52.5	139.7	7.1	2.92
BWWGCR600250	6" x 2 1/2"	168.3	154.1	73.0	62.7	139.7	7.1	2.92
BWWGCR600300	6" x 3"	168.3	154.1	88.9	77.9	139.7	7.1	3.04
BWWGCR600400	6" x 4"	168.3	154.1	114.3	102.3	139.7	7.1	3.30
BWWGCR600500	6" x 5"	168.3	154.1	141.3	128.2	139.7	7.1	3.57

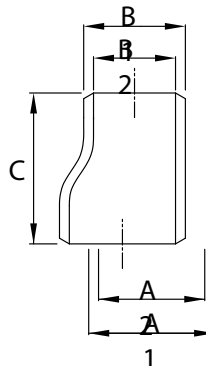
Butt Weld Concentric Reducer STD (cont)

Concentric Reducer STD ASTM A234 WPB ANSI B16.9								
CODE	SIZE	LARGER DIAMETER		SMALLER DIAMETER		END TO END	WALL THICKNESS	APPROX KG/PC
		A1	A2	B1	B2	C		
BWWGCR800300	8" x 3"	219.1	202.7	88.9	77.9	152.4	8.2	5.10
BWWGCR800400	8" x 4"	219.1	202.7	114.3	102.3	152.4	8.2	5.10
BWWGCR800500	8" x 5"	219.1	202.7	141.3	128.2	152.4	8.2	5.40
BWWGCR800600	8" x 6"	219.1	202.7	168.3	154.1	152.4	8.2	5.71
BWWGCR910400	10" x 4"	273.1	254.5	114.3	102.3	177.8	9.3	8.06
BWWGCR910600	10" x 6"	273.1	254.5	168.3	154.1	177.8	9.3	8.78
BWWGCR910800	10" x 8"	273.1	254.5	219.1	202.7	177.8	9.3	9.58
BWWGCR912600	12" x 6"	323.9	304.8	168.3	154.1	203.2	9.5	11.80
BWWGCR912800	12" x 8"	323.9	304.8	219.1	202.7	203.2	9.5	12.70
BWWGCR912910	12" x 10"	323.9	304.8	273.1	254.5	203.2	9.5	13.60
BWWGCR914800	14" x 8"	355.6	336.6	219.1	202.7	330.2	9.5	21.80
BWWGCR914910	14" x 10"	355.6	336.6	273.1	254.5	330.2	9.5	23.60
BWWGCR914912	14" x 12"	355.6	336.6	323.9	304.8	330.2	9.5	25.40
BWWGCR916800	16" x 8"	406.4	387.4	219.1	202.7	355.6	9.5	27.80
BWWGCR916910	16" x 10"	406.4	387.4	273.1	254.5	355.6	9.5	27.80
BWWGCR916912	16" x 12"	406.4	387.4	323.9	304.8	355.6	9.5	29.60
BWWGCR916914	16" x 14"	406.4	387.4	355.6	336.6	355.6	9.5	31.00
BWWGCR918910	18" x 10"	457.2	438.2	273.1	254.5	381.0	9.5	34.30
BWWGCR918912	18" x 12"	457.2	438.2	323.9	304.8	381.0	9.5	34.30
BWWGCR918914	18" x 14"	457.2	438.2	355.6	336.6	381.0	9.5	35.70
BWWGCR918916	18" x 16"	457.2	438.2	406.4	387.4	381.0	9.5	37.80



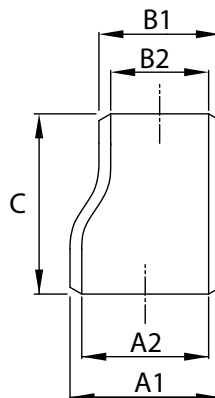
Butt Weld Eccentric Reducer STD

Eccentric Reducer STD ASTM A234 WPB ANSI B16.9								
CODE	NB	LARGER DIAMETER		SMALLER DIAMETER		END TO END C	WALL THICKNESS	APPROX KG/PC
		A1	A2	B1	B2			
BWWGER7550	3/4" x 1/2"	26.7	20.9	21.3	15.7	38.1	2.8	0.05
BWWGER10050	1" x 1/2"	33.7	25.9	21.3	15.7	50.8	3.4	0.10
BWWGER10075	1" x 3/4"	33.7	25.9	26.7	20.9	50.8	3.4	0.10
BWWGER12550	1 1/4" x 1/2"	42.2	35.0	21.3	15.7	50.8	3.6	0.13
BWWGER12575	1 1/4" x 3/4"	42.2	35.0	26.7	20.9	50.8	3.6	0.14
BWWGER125100	1 1/4" x 1"	42.2	35.0	33.7	25.9	50.8	3.6	0.20
BWWGER15050	1 1/2" x 1/2"	48.3	40.9	21.3	15.7	63.5	3.7	0.30
BWWGER15075	1 1/2" x 3/4"	48.3	40.9	26.7	20.9	63.5	3.7	0.20
BWWGER150100	1 1/2" x 1"	48.3	40.9	33.7	25.9	63.5	3.7	0.22
BWWGER150125	1 1/2" x 1 1/4"	48.3	40.9	42.2	35.0	63.5	3.7	0.24
BWWGER20075	2" x 3/4"	60.3	52.5	26.7	20.9	76.2	3.9	0.30
BWWGER200100	2" x 1"	60.3	52.5	33.7	25.9	76.2	3.9	0.32
BWWGER200125	2" x 1 1/4"	60.3	52.5	42.2	35.0	76.2	3.9	0.35
BWWGER200150	2" x 1 1/2"	60.3	52.5	48.3	40.9	76.2	3.9	0.72
BWWGER250100	2 1/2" x 1"	73.0	62.6	33.7	25.9	88.9	5.2	0.59
BWWGER250125	2 1/2" x 1 1/4"	73.0	62.6	42.2	35.0	88.9	5.2	0.63
BWWGER250150	2 1/2" x 1 1/2"	73.0	62.6	48.3	40.9	88.9	5.2	0.66
BWWGER250200	2 1/2" x 2"	73.0	62.6	60.3	52.5	88.9	5.2	0.72
BWWGER300100	3" x 1"	88.9	77.9	33.7	25.9	88.9	5.5	0.75
BWWGER300125	3" x 1 1/4"	88.9	77.9	42.2	35.0	88.9	5.5	0.75
BWWGER300150	3" x 1 1/2"	88.9	77.9	48.3	40.9	88.9	5.5	0.78
BWWGER300200	3" x 2"	88.9	77.9	60.3	52.5	88.9	5.5	0.85
BWWGER300250	3" x 2 1/2"	88.9	77.9	73.0	62.6	88.9	5.5	0.93
BWWGER400150	4" x 1 1/2"	114.3	102.3	48.3	40.9	101.6	6.1	1.27
BWWGER400200	4" x 2"	114.3	102.3	60.3	52.5	101.6	6.1	1.27
BWWGER400250	4" x 2 1/2"	114.3	102.3	73.0	62.6	101.6	6.1	1.37
BWWGER400300	4" x 3"	114.3	102.3	88.9	77.9	101.6	6.1	1.45
BWWGER500300	5" x 3"	141.3	128.1	88.9	77.9	127.0	6.6	2.27
BWWGER500400	5" x 4"	141.3	128.1	114.3	102.3	127.0	6.6	2.50
BWWGER600300	6" x 3"	168.3	154.1	88.9	77.9	139.7	7.1	3.04
BWWGER600400	6" x 4"	168.3	154.1	114.3	102.3	139.7	7.1	3.30
BWWGER600500	6" x 5"	168.3	154.1	141.3	128.1	139.7	7.1	3.57



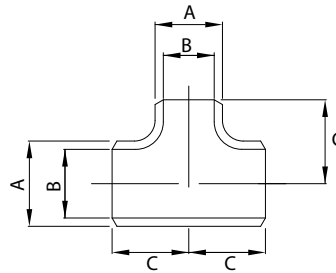
Butt Weld Eccentric Reducer STD (cont)

Eccentric Reducer STD ASTM A234 WPB ANSI B16.9								
CODE	SIZE	LARGER DIAMETER		SMALLER DIAMETER		END TO END	WALL THICKNESS	APPROX KG/PC
		A1	A2	B1	B2	C		
BWWGER800400	8" x 4"	219.1	202.7	114.3	102.3	152.4	8.2	5.10
BWWGER800500	8" x 5"	219.1	202.7	141.3	128.1	152.4	8.2	5.40
BWWGER800600	8" x 6"	219.1	202.7	168.3	154.1	152.4	8.2	5.71
BWWGER910600	10" x 6"	273.1	254.5	168.3	154.1	177.8	9.3	8.78
BWWGER910800	10" x 8"	273.1	254.5	219.1	202.7	177.8	9.3	9.58
BWWGER912600	12" x 6"	323.9	304.9	168.3	154.1	203.2	9.5	12.80
BWWGER912800	12" x 8"	323.9	304.9	219.1	202.7	203.2	9.5	13.70
BWWGER912910	12" x 10"	323.9	304.9	273.1	254.5	203.2	9.5	14.70
BWWGER914800	14" x 8"	355.6	336.5	219.1	202.7	330.2	9.5	21.80
BWWGER914910	14" x 10"	355.6	336.5	273.1	254.5	330.2	9.5	23.60
BWWGER914912	14" x 12"	355.6	336.5	323.9	304.9	330.2	9.5	25.40
BWWGER916910	16" x 10"	406.4	387.4	273.1	254.5	355.6	9.5	27.80
BWWGER916914	16" x 14"	406.4	387.4	355.6	336.5	355.6	9.5	31.00



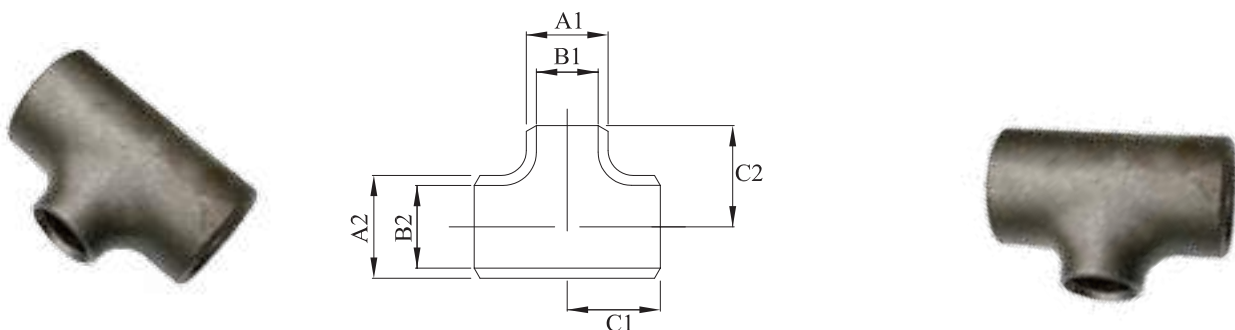
Butt Weld Equal Tee STD

Equal Tee STD ASTM A234 WPB ANSI B16.9						
CODE	SIZE	A	B	C	WALL THICKNESS	APPROX KG/PC
BWWGET50	1/2"	22.0	15.7	38.1	2.9	0.10
BWWGET75	3/4"	26.7	20.9	28.4	2.9	0.17
BWWGET100	1"	33.4	26.6	38.1	3.4	0.35
BWWGET125	1 1/4"	42.2	35.0	47.8	3.6	0.58
BWWGET150	1 1/2"	48.3	40.9	57.2	3.7	0.76
BWWGET200	2"	60.3	52.5	63.5	3.9	1.14
BWWGET250	2 1/2"	73.0	62.6	76.2	5.2	2.03
BWWGET300	3"	88.9	77.9	85.9	5.5	2.94
BWWGET400	4"	114.3	102.3	104.6	6.1	4.67
BWWGET500	5"	141.3	128.1	124.0	6.6	7.48
BWWGET600	6"	168.3	154.1	142.7	7.1	11.35
BWWGET800	8"	219.1	202.7	177.8	8.2	18.21
BWWGET910	10"	273.1	254.5	215.9	9.3	34.71
BWWGET912	12"	323.9	304.9	254.0	9.5	46.82
BWWGET914	14"	355.6	336.5	279.0	9.5	73.00
BWWGET916	16"	406.4	387.3	305.0	9.5	91.00
BWWGET918	18"	457.0	437.9	343.0	9.5	135.00
BWWGET924	24"	508.0	489.0	762.0	9.5	173.00



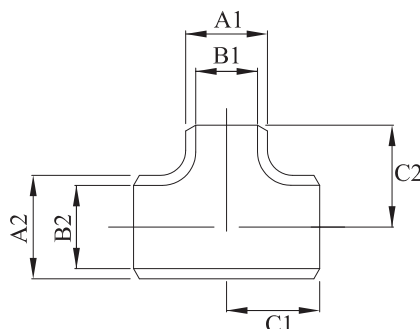
Butt Weld Reducing Tee STD

Reducing Tee STD ASTM A234 WPB ANSI B16.9									
CODE	SIZE	LARGER DIAMETER		SMALLER DIAMETER		END TO END		WALL THICKNESS	APPROX KG/PC
		A1	A2	B1	B2	C1	C2		
BWWGRT7550	3/4" x 1/2"	26.7	20.9	21.3	15.8	28.4	28.4	2.9	0.12
BWWGRT10050	1" x 1/2"	33.4	26.6	21.3	15.8	38.1	38.1	3.4	0.22
BWWGRT10075	1" x 3/4"	33.4	26.6	26.7	20.9	38.1	38.1	3.4	0.23
BWWGRT12550	1 1/4" x 1/2"	42.2	35.1	21.3	15.8	47.5	47.5	3.6	0.37
BWWGRT12575	1 1/4" x 3/4"	42.2	35.1	26.7	20.9	47.5	47.5	3.6	0.37
BWWGRT125100	1 1/4" x 1"	42.2	35.1	33.4	26.6	47.5	47.5	3.6	0.39
BWWGRT15050	1 1/2" x 1/2"	48.3	40.9	21.3	15.8	57.2	57.2	3.7	0.52
BWWGRT15075	1 1/2" x 3/4"	48.3	40.9	26.7	20.9	57.2	57.2	3.7	0.52
BWWGRT150100	1 1/2" x 1"	48.3	40.9	33.4	26.6	57.2	57.2	3.7	0.55
BWWGRT150125	1 1/2" x 1 1/4"	48.3	40.9	42.2	35.1	57.2	57.2	3.7	0.68
BWWGRT20075	2" x 3/4"	60.3	52.5	26.7	20.9	63.5	50.8	3.9	0.74
BWWGRT200100	2" x 1"	60.3	52.5	33.4	26.6	63.5	50.8	3.9	0.74
BWWGRT200125	2" x 1 1/4"	60.3	52.5	42.2	35.1	63.5	57.2	3.9	0.89
BWWGRT200150	2" x 1 1/2"	60.3	52.5	48.3	40.9	63.5	60.2	3.9	0.93
BWWGRT250100	2 1/2" x 1"	73.0	62.7	33.4	26.6	76.2	63.5	5.2	1.56
BWWGRT250125	2 1/2" x 1 1/4"	73.0	62.7	42.2	35.1	76.2	63.5	5.2	1.56
BWWGRT250150	2 1/2" x 1 1/2"	73.0	62.7	48.3	40.9	76.2	66.5	5.2	1.47
BWWGRT250200	2 1/2" x 2"	73.0	62.7	60.3	52.5	76.2	69.9	5.2	1.53
BWWGRT300100	3" x 1"	88.9	77.9	33.4	26.6	85.6	72.9	5.5	2.08
BWWGRT300125	3" x 1 1/4"	88.9	77.9	48.3	40.9	85.6	72.9	5.5	2.08
BWWGRT300150	3" x 1 1/2"	88.9	77.9	48.3	40.9	85.6	72.9	5.3	2.08
BWWGRT300200	3" x 2"	88.9	77.9	60.3	52.5	96.0	76.2	5.5	2.14
BWWGRT300250	3" x 2 1/2"	88.9	77.9	73.0	62.7	96.0	82.6	5.5	2.27
BWWGRT400150	4" x 1 1/2"	114.3	102.3	48.3	40.9	104.6	88.9	6.0	3.55
BWWGRT400200	4" x 2"	114.3	102.3	60.3	52.5	104.6	88.9	6.0	3.55
BWWGRT400250	4" x 2 1/2"	114.3	102.3	73.0	62.7	104.6	95.3	6.0	3.69
BWWGRT400300	4" x 3"	114.3	102.3	88.9	77.9	104.6	98.3	6.0	3.82
BWWGRT500300	5" x 3"	141.3	128.2	88.9	77.9	123.7	120.7	6.6	8.10
BWWGRT500400	5" x 4"	141.3	128.2	114.3	102.3	123.7	117.3	6.6	6.18
BWWGRT600250	6" x 2 1/2"	168.3	154.1	73.0	62.7	142.7	123.7	7.1	8.52
BWWGRT600300	6" x 3"	168.3	154.1	88.9	77.9	142.7	123.7	7.1	8.52
BWWGRT600400	6" x 4"	168.3	154.1	114.3	102.3	142.7	130.0	7.1	8.81
BWWGRT600500	6" x 5"	168.3	154.1	141.3	128.2	142.7	146.1	7.1	9.22



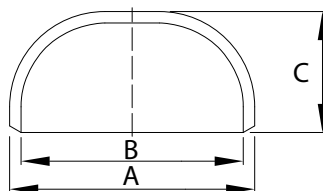
Butt Weld Reducing Tee STD (cont)

Reducing Tee STD ASTM A234 WPB ANSI B16.9									
CODE	SIZE	LARGER DIAMETER		SMALLER DIAMETER		END TO END		WALL THICKNESS	APPROX KG/PC
		A1	A2	B1	B2	C1	C2		
BWWGRT800300	8" x 3"	219.1	202.7	88.9	77.9	177.8	155.4	8.2	18.00
BWWGRT800400	8" x 4"	219.1	202.7	114.3	102.3	177.8	155.4	8.2	18.00
BWWGRT800500	8" x 5"	219.1	202.7	141.3	128.2	177.8	161.8	8.2	18.40
BWWGRT800600	8" x 6"	219.1	202.7	168.3	154.1	177.8	168.1	8.2	18.80
BWWGRT910400	10" x 4"	273.1	254.5	114.3	102.3	215.9	190.5	9.3	30.10
BWWGRT910500	10" x 5"	273.1	254.5	141.3	128.2	215.9	190.5	9.3	30.10
BWWGRT910600	10" x 6"	273.1	254.5	168.3	154.1	215.9	193.5	9.3	30.50
BWWGRT910800	10" x 8"	273.1	254.5	219.1	202.7	215.9	203.2	9.3	32.40
BWWGRT912600	12" x 6"	323.9	304.8	168.3	154.1	254.0	218.9	9.5	51.20
BWWGRT912800	12" x 8"	323.9	304.8	219.1	202.7	254.0	228.6	9.5	53.10
BWWGRT912910	12" x 10"	323.9	304.8	273.1	254.5	254.0	241.3	9.5	55.20



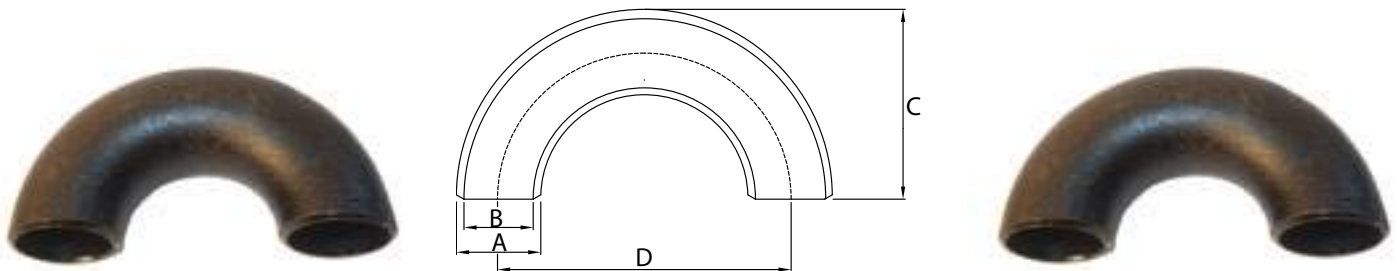
Butt Weld Cap STD

Cap STD ASTM A234 WPB ANSI B16.9						
CODE	NB	A	B	C	WALL THICKNESS	APPROX KG/PC
WGBWC100	1"	33.4	26.6	38.1	3.4	0.11
WGBWC125	1 1/4"	42.2	35.1	38.1	3.6	0.14
WGBWC150	1 1/2"	48.3	40.9	38.1	3.7	0.17
WGBWC200	2"	60.3	52.5	38.1	3.9	0.23
WGBWC250	2 1/2"	73.0	62.7	38.1	5.2	0.39
WGBWC300	3"	88.9	77.9	50.8	5.5	0.66
WGBWC400	4"	114.3	102.3	63.5	6.0	1.17
WGBWC500	5"	141.3	128.2	76.2	6.6	1.91
WGBWC600	6"	168.3	154.1	88.9	7.1	2.90
WGBWC800	8"	219.1	202.7	101.6	8.2	5.19
WGBWC910	10"	273.1	254.5	127.0	9.3	9.15
WGBWC912	12"	323.9	304.8	152.4	9.5	13.30
WGBWC914	14"	355.6	336.6	165.1	9.5	15.90
WGBWC916	16"	406.4	387.4	177.8	9.5	20.00
WGBWC918	18"	457.2	438.2	203.2	9.5	25.60
WGBWC920	20"	508.0	489.0	228.6	9.5	34.4
WGBWC924	24"	609.6	590.6	267.0	9.5	45.9



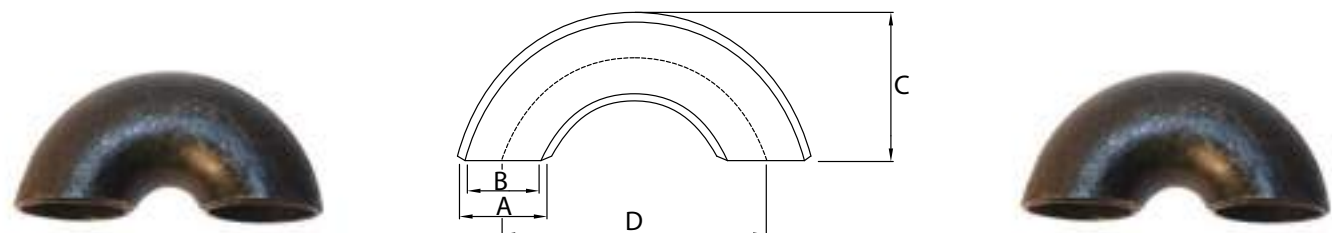
Butt Weld Long Radius Elbow 180 Degree STD

Long Radius Elbow STD ASTM A234 WPB ANSI B16.9							
CODE	SIZE	A	B	C	D	WALL THICKNESS	APPROX KG/PC
WGBWE180100	1"	33.4	26.6	55.4	76.2	3.4	0.30
WGBWE180125	1 1/4"	42.2	35.1	69.9	95.3	3.6	0.51
WGBWE180150	1 1/2"	48.3	40.9	82.6	114.3	3.7	0.73
WGBWE180200	2"	60.3	52.5	106.2	152.4	3.9	1.30
WGBWE180250	2 1/2"	73.0	62.7	131.6	190.5	5.2	2.58
WGBWE180300	3"	88.9	77.9	158.8	228.6	5.5	4.04
WGBWE180400	4"	114.3	102.3	209.6	304.8	6.0	7.68
WGBWE180500	5"	141.3	128.2	261.9	381.0	6.6	13.00
WGBWE180600	6"	168.3	154.1	312.7	457.2	7.1	20.20
WGBWE180800	8"	219.1	202.7	414.3	609.6	8.2	40.60



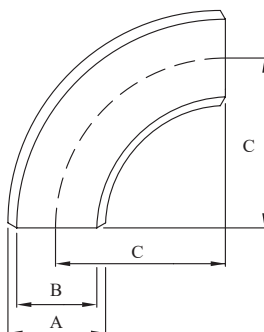
Butt Weld Short Radius Elbow 180 Degree STD

Short Radius Elbow 180 Degree STD ASTM A234 WPB ANSI B16.9							
CODE	SIZE	A	B	C	D	WALL THICKNESS	APPROX KG/PC
WGBWES180100	1"	33.4	26.6	41.1	50.8	3.4	0.2
WGBWES180125	1 1/4"	42.2	35.1	52.3	63.5	3.6	0.34
WGBWES180150	1 1/2"	48.3	40.9	61.7	76.2	3.7	0.48
WGBWES180200	2"	60.3	52.5	80.8	101.6	3.9	0.87
WGBWES180250	2 1/2"	73.0	62.7	99.8	127.0	5.2	1.72
WGBWES180300	3"	88.9	77.9	120.7	152.4	5.5	2.70
WGBWES180400	4"	114.3	102.3	158.8	203.2	6.0	5.12
WGBWES180600	6"	168.2	154.1	236.5	304.8	7.1	13.5



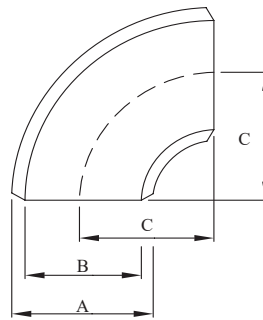
Butt Weld Long Radius Elbow 90 Degree XS

Long Radius Elbow 90 Degree XS ASTM A234 WPB ANSI B16.9						
CODE	NB	A	B	C	WALL THICKNESS	APPROX KG/PC
WGBWEX90015	15	21.3	13.8	38.1	3.7	0.10
WGBWEX90020	20	26.7	18.9	28.4	3.9	0.11
WGBWEX90025	25	33.4	24.3	38.1	4.6	0.21
WGBWEX90032	32	42.2	32.5	47.8	4.9	0.39
WGBWEX90040	40	48.3	38.1	57.2	5.1	0.50
WGBWEX90050	50	60.3	49.2	76.2	5.5	1.00
WGBWEX90065	65	73.0	59.0	95.2	7.0	1.82
WGBWEX90080	80	88.9	73.7	114.3	7.6	2.86
WGBWEX90100	100	114.3	97.2	152.4	8.6	5.70
WGBWEX90125	125	139.8	126.6	190.5	6.6	6.48
WGBWEX90150	150	168.3	146.4	228.6	11.0	16.30
WGBWEX90200	200	219.1	193.7	304.8	12.7	31.30
WGBWEX90250	250	273.1	247.7	381.0	12.7	49.40
WGBWEX90300	300	323.9	298.5	457.2	12.7	71.20



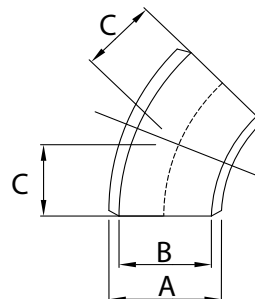
Butt Weld Short Radius Elbow 90 Degree XS

Short Radius Elbow 90 Degree XS ASTM A234 WPB ANSI B16.28						
CODE	NB	A	B	C	WALL THICKNESS	APPROX KG/PC
WGBWESX032	32	42.7	32.9	31.8	4.9	0.34
WGBWESX040	40	48.3	38.1	38.1	5.1	0.35
WGBWESX050	50	60.3	49.2	50.8	5.5	0.65
WGBWESX065	65	73.0	59.0	63.5	7.0	1.45
WGBWESX080	80	88.9	73.7	76.2	7.6	1.79
WGBWESX100	100	114.3	97.2	101.6	8.6	3.72
WGBWESX150	150	168.3	146.4	152.4	11.0	10.35
WGBWESX200	200	219.1	190.9	203.2	12.7	23.60



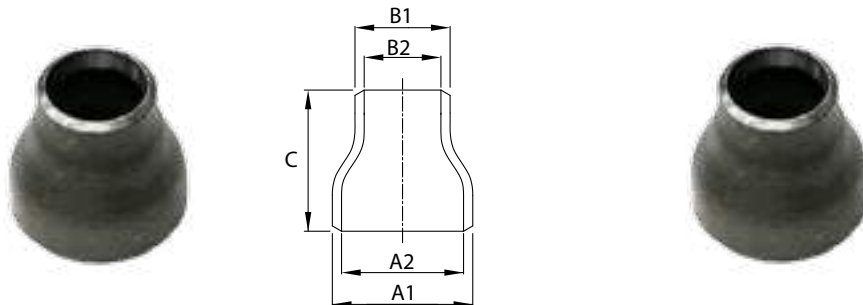
Butt Weld Long Radius Elbow 45 Degree XS

Long Radius Elbow 45 Degree XS ASTM A234 WPB ANSI B16.9						
CODE	NB	A	B	C	WALL THICKNESS	APPROX KG/PC
WGBWE45X015	15	21.7	14.3	15.8	3.7	0.49
WGBWE45X020	20	26.7	18.9	11.2	3.9	0.06
WGBWE45X025	25	33.4	24.3	22.4	4.6	0.14
WGBWE45X032	32	42.2	32.5	25.4	4.9	0.26
WGBWE45X040	40	48.3	38.1	28.4	5.1	0.29
WGBWE45X050	50	60.3	49.2	35.1	5.5	0.57
WGBWE45X065	65	73.0	59.0	44.4	7.0	1.06
WGBWE45X080	80	88.9	73.7	50.8	7.6	1.43
WGBWE45X100	100	114.3	97.2	63.5	8.6	2.52
WGBWE45X150	150	168.3	146.4	95.2	11.0	8.30
WGBWE45X200	200	219.1	190.9	126.2	12.7	15.30



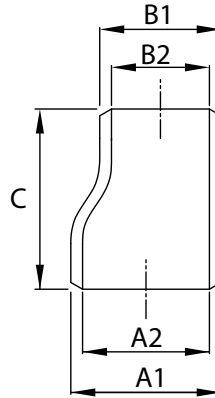
Butt Weld Concentric Reducer XS

Concentric Reducer XS ASTM A234 WPB ANSI B16.9								
CODE	NB	LARGER DIAMETER		SMALLER DIAMETER		END TO END	WALL THICKNESS	APPROX KG/PC
		A1	A2	B1	B2	C		
WGBWRCX020015	20 x 15	26.7	18.9	21.3	12.2	38.1	3.9	0.08
WGBWRCX025015	25 x 15	33.4	24.3	21.3	12.2	50.8	4.6	0.18
WGBWRCX025020	25 x 20	33.4	24.3	26.7	17.6	50.8	4.6	0.18
WGBWRCX032015	32 x 15	42.2	32.5	21.3	12.2	50.8	4.9	0.18
WGBWRCX032020	32 x 20	42.2	32.5	26.7	17.0	50.8	4.9	0.23
WGBWRCX032025	32 x 25	42.2	32.5	33.4	23.7	50.8	4.9	0.23
WGBWRCX040015	40 x 15	48.3	38.1	21.3	12.2	63.5	5.1	0.27
WGBWRCX040020	40 x 20	48.3	38.1	26.7	16.5	63.5	5.1	0.32
WGBWRCX040025	40 x 25	48.3	38.1	33.4	23.2	63.5	5.1	0.32
WGBWRCX040032	40 x 32	48.3	38.1	42.2	32.0	63.5	5.1	0.32
WGBWRCX050025	50 x 25	60.3	49.2	33.4	22.3	76.2	5.5	0.54
WGBWRCX050032	50 x 32	60.3	49.2	42.2	31.1	76.2	5.5	0.54
WGBWRCX050040	50 x 40	60.3	49.2	48.3	37.2	76.2	5.5	0.54
WGBWRCX065025	65 x 25	73.0	59.0	33.4	22.3	88.9	7.0	0.76
WGBWRCX065050	65 x 50	73.0	59.0	60.3	46.3	88.9	7.0	0.91
WGBWRCX080040	80 x 40	88.9	73.7	48.3	33.1	88.9	7.6	1.27
WGBWRCX080050	80 x 50	88.9	73.7	60.3	45.1	88.9	7.6	1.27
WGBWRCX080065	80 x 65	88.9	73.7	73.0	57.8	88.9	7.6	1.27
WGBWRCX100050	100 x 50	114.3	97.2	60.3	43.2	101.6	8.6	2.18
WGBWRCX100065	100 x 65	114.3	97.2	73.0	55.9	101.6	8.6	2.18
WGBWRCX100080	100 x 80	114.3	97.2	88.9	71.8	101.6	8.6	2.18
WGBWRCX150080	150 x 80	168.3	146.4	88.9	67.0	139.7	11.0	5.40
WGBWRCX150100	150 x 100	168.3	146.4	114.3	92.4	139.7	11.0	5.40
WGBWRCX200100	200 x 100	219.1	193.7	114.3	97.2	152.4	12.7	7.68
WGBWRCX200150	200 x 150	219.1	193.7	168.3	146.3	152.4	12.7	8.63
WGBWRCX250150	250 x 150	273.1	247.7	168.3	146.3	177.8	12.7	11.80
WGBWRCX250200	250 x 200	273.1	247.7	219.1	193.7	177.8	12.7	12.90



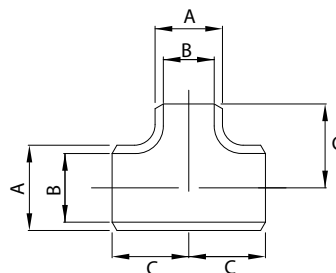
Butt Weld Eccentric Reducer XS

Eccentric Reducer XS ASTM A234 WPB ANSI B16.9								
CODE	NB	LARGER DIAMETER		SMALLER DIAMETER		END TO END	WALL THICKNESS	APPROX KG/PC
		A1	A2	B1	B2	C		
WGBWREX050040	50 x 40	60.3	49.3	48.3	38.1	76.2	5.5	0.51
WGBWREX065050	65 x 50	73.0	59.0	60.3	49.3	88.9	7.0	0.92
WGBWREX080065	80 x 65	88.9	73.7	73.0	59.0	88.9	7.6	1.23
WGBWREX100065	100 x 65	114.3	97.2	73.0	59.0	101.6	8.6	1.86
WGBWREX150080	150 x 80	168.3	146.3	88.9	73.7	139.7	11.0	4.56



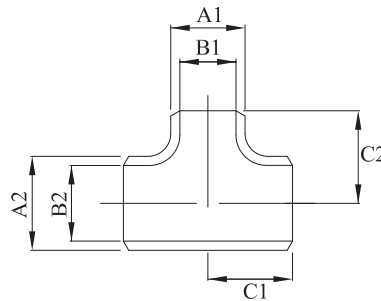
Butt Weld Equal Tee XS

Equal Tee XS ASTM A234 WPB ANSI B16.9						
CODE	NB	A	B	C	WALL THICKNESS	APPROX KG/PC
WGBWTX015	15	21.3	13.8	38.1	3.7	0.2
WGBWTX020	20	26.7	18.9	28.4	3.9	0.3
WGBWTX025	25	33.4	24.3	38.1	4.6	0.4
WGBWTX032	32	42.2	32.5	47.8	4.9	0.8
WGBWTX040	40	48.3	38.1	57.2	5.1	1.1
WGBWTX050	50	60.3	49.2	63.5	5.5	1.7
WGBWTX065	65	73.0	59.0	76.2	7.0	3.0
WGBWTX080	80	88.9	73.7	85.9	7.6	4.3
WGBWTX100	100	114.3	97.2	104.6	8.6	7.3
WGBWTX150	150	168.3	146.4	142.7	11.0	19.0
WGBWTX200	200	219.1	193.7	177.8	12.7	30.3



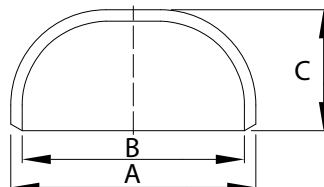
Butt Weld Reducing Tee XS

Reducing Tee XS ASTM A234 WPB ANSI B16.9									
CODE	NB	LARGER DIAMETER		SMALLER DIAMETER		END TO END		WALL THICKNESS	APPROX KG/PC
		A1	A2	B1	B2	C1	C2		
WGBWTRX050025	50 x 25	60.3	49.3	33.4	24.3	63.5	50.8	5.5	1.02
WGBWTRX080050	80 x 50	88.9	73.7	60.3	49.3	85.6	76.2	7.6	2.85
WGBWTRX100050	100 x 50	114.3	97.2	60.3	49.3	104.6	88.9	8.6	4.94
WGBWTRX100080	100 x 80	114.3	97.2	88.9	73.7	104.6	98.3	8.6	5.33
WGBWTRX150100	150 x 100	168.3	146.3	114.3	97.2	142.7	130.0	11.0	13.50



Butt Weld Cap XS

Cap XS ASTM A234 WPB ANSI B16.9						
CODE	NB	A	B	C	WALL THICKNESS	APPROX KG/PC
WGBWCX050	50	60.3	49.2	38.1	5.5	0.33
WGBWCX065	65	73.0	59.0	38.1	7.0	0.49
WGBWCX080	80	88.9	73.7	50.8	7.6	0.90
WGBWCX100	100	114.3	97.2	63.5	8.6	1.48
WGBWCX125	125	141.3	122.3	76.2	9.5	2.78
WGBWCX150	150	168.3	146.4	88.9	11.0	4.47
WGBWCX200	200	219.1	193.6	101.6	12.7	8.05
WGBWCX250	250	355.6	273.1	127.0	12.7	12.50
WGBWCX300	300	323.9	298.5	152.4	12.7	17.70

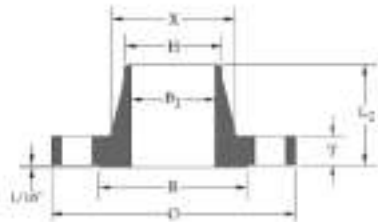


FLANGES & PIPE FITTINGS

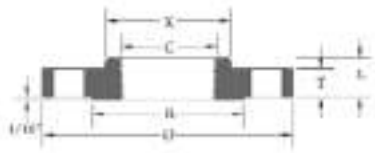


Product Catalogue

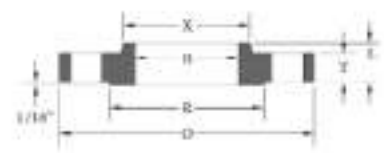




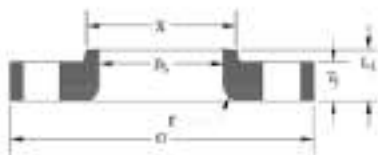
WELD NECK FLANGE



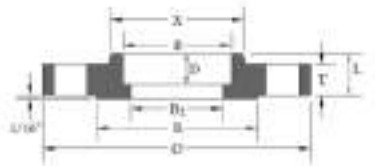
THREADED FLANGE



SLIP ON FLANGE



LAP JOINT FLANGE



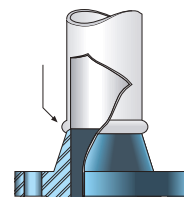
SOCKET WELD FLANGE



BLIND FLANGE

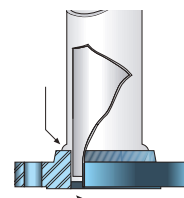
WELDING NECK FLANGES

They are connected to the pipe by means of a Butt weld connection. They are used when X-ray testing is required or if the torque over unions are maximum. Its long tapered neck optimizes the stress distribution.



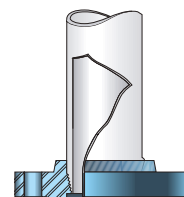
SLIP-ON FLANGES

This kind of flanges are installed with two weld bead, sliding the pipe inside. Thus installation costs are lower, so less accuracy is required for pipe cutting.



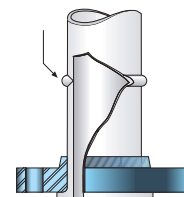
THREADED FLANGES

They are usually installed with the pipe previously threaded, in places where welding can not be done. We do not recommend to install if there are high pressure variations in the system.



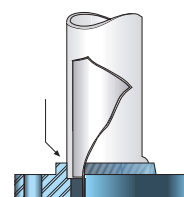
LAP JOINT FLANGES

They slide on an overlapped gasket. They are commonly used where it is necessary to dismantle in order to be cleaned or repaired. Dismantling cost decreases due to the ease of flange turning and drilling alignment.



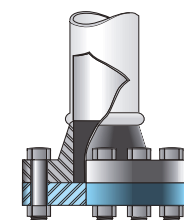
SOCKET WELD FLANGES

This kind of flange is especially designed for lower small diameters and high pressures. The pipe is inserted into the flange up to the seat and then is fillet welded against the cube.

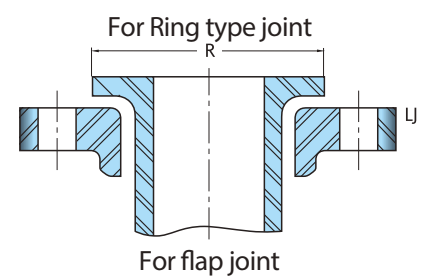
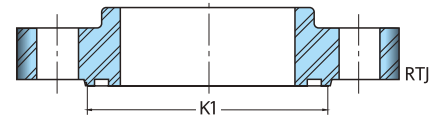
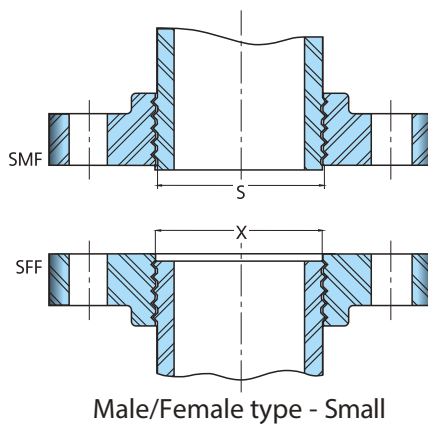
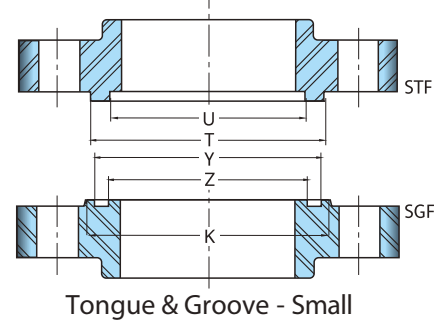
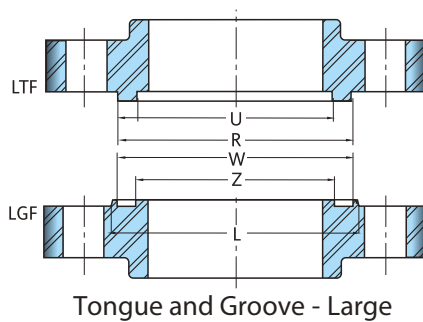
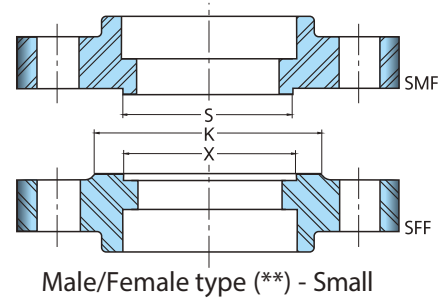
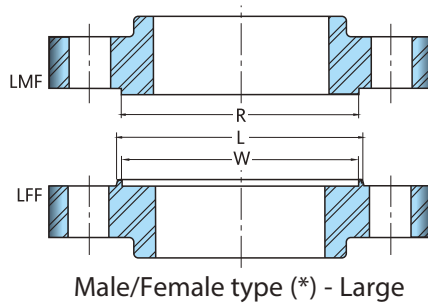
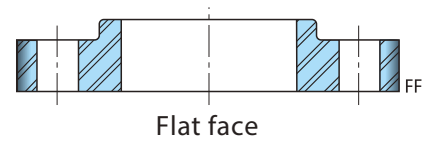
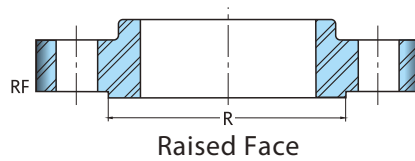


BLIND FLANGES

Blind flanges are utilized for pipe ends, and they bolted to any of the above flange types.



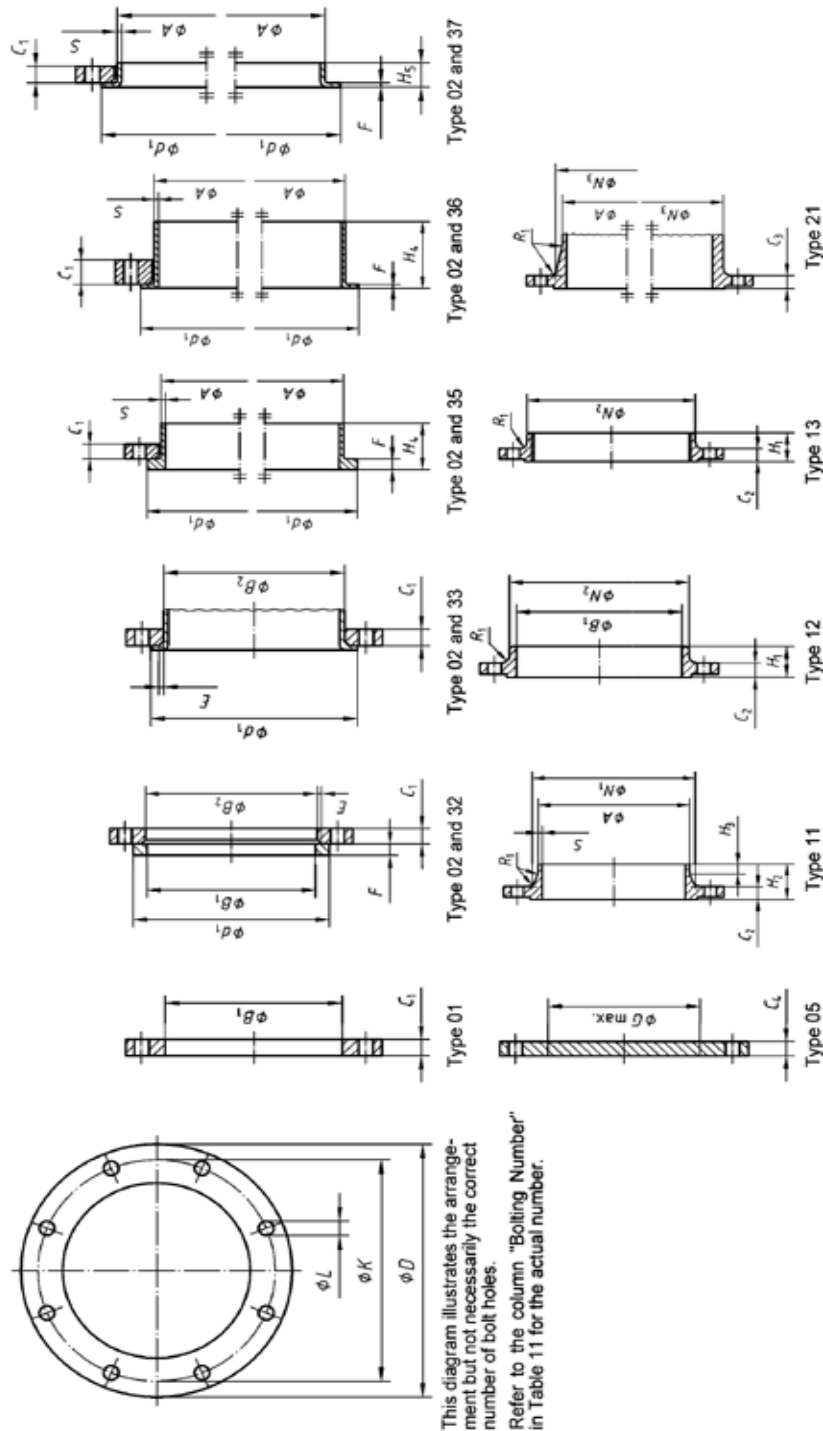
TOLERANCES/FACES



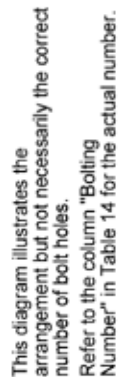
Raising Height		
Face type	Series	mm
RF	300 and lower ⁽¹⁾	2.0
	400 and upper	7.0
LMF / SMF LTF / STF	150 and upper ⁽¹⁾	7.0

Groove depth		
Face type	Series	mm
LMF / SFF LGF / SGF	150 and upper	5.0

DIMENSIONS OF FLANGES PN PN 16



DIMENSIONS OF FLANGES PN 25 - PN 40



NOTE 1 Dimensions N_1 , N_2 and N_3 are measured at the intersection of the hub draft angle and the back face of the flange.

NOTE 2 For dimension d_1 , see Table 8.

DN	Connection Dimensions				Out. Neck Diam.	Bore Diameter				Flange Thickness				Cham-fer	Collar Thickness				Diam. of Should.	Length					Neck Diameter			Corner Radius	Wall Thickness		
	Out. Diam.	Bolt Circle Diam.	Bolt Hole Diam.	Bolting		A	B ₁	B ₂	B ₃	C ₁	C ₂	C ₃	C ₄		E	F	G max	H ₁		H ₂	H ₃	H ₄	H ₅	N ₁	N ₂	N ₃	R ₁			S	
Flange Type																															
01, 02, 04, 05, 11, 12, 13, 21																															
10	90	60	14	4	M12	11, 21 ^a , 34 ^c , 35-37	17.2	18.0	21	31	14	16	16	16	3	12	5	2	2.5	-	22	35	6	35	35	7	28	30	28	4	1.8
15	95	65	14	4	M12		21.3	22.0	25	35	14	16	16	16	3	12	5	2	2.5	-	22	38	6	38	38	7	32	35	32	4	2.0
20	105	75	14	4	M12		26.9	27.5	31	42	16	18	18	18	4	14	6	2.5	3	-	26	40	6	40	40	8	40	45	40	4	2.3
25	115	85	14	4	M12		33.7	34.5	38	49	16	18	18	18	4	14	7	2.5	3	-	28	40	6	40	40	10	46	52	50	4	2.6
32	140	100	18	4	M16		42.4	43.5	47	59	18	18	18	18	5	14	8	3	3	-	30	42	6	42	42	12	56	60	60	6	2.6
40	150	110	18	4	M16		48.3	49.5	53	67	18	18	18	18	5	14	8	3	3	-	32	45	7	45	45	15	64	70	70	6	2.6
50	165	125	18	4	M16		60.3	61.5	65	77	20	18	18	18	5	16	8	3	4	-	28	45	8	45	45	20	74	84	84	6	2.9
65	185	145	18	8	M16		76.1	77.5	81	96	20	18	18	18	6	16	8	3	4	55	32	45	10	45	45	20	92	104	104	6	2.9
80	200	160	18	8	M16		88.9	90.5	94	108	20	20	20	20	6	16	10	3	4	70	34	50	10	50	50	25	105	118	120	6	3.2
100	220	180	18	8	M16		114.3	116.0	120	134	22	20	20	20	6	18	10	4	4	90	40	52	12	52	52	25	131	140	140	8	3.6
125	250	210	18	8	M16		139.7	141.5	145	162	22	22	22	22	6	18	10	4	4	115	44	55	12	55	55	25	156	168	170	8	4.0
150	285	240	22	8	M20		168.3	170.5	174	188	24	22	22	22	6	20	10	4	4	140	44	55	12	55	55	25	184	195	190	10	4.5
200	340	295	22	8	M20		219.1	221.5	226	240	24	24	24	24	6	20	11	5	4	190	44	62	16	62	62	30	234	246	246	10	6.3
250	395	350	22	12	M20		273.0	276.5	281	294	26	26	26	26	8	22	12	8	-	235	46	68	16	68	68	-	292	298	298	12	6.3
300	445	400	22	12	M20		323.9	327.5	333	348	26	26	26	26	8	22	12	8	-	285	46	68	16	68	68	-	342	350	348	12	7.1
350	505	460	22	16	M20		355.6	359.5	365	400	30	26	26	26	8	22	13	8	-	330	53	68	16	68	68	-	385	400	408	12	7.1
400	565	515	26	16	M24		406.4	411.0	416	450	32	26	26	26	8	24	14	8	-	380	57	72	16	72	72	-	440	456	456	12	7.1
450	615	565	26	20	M24		457.0	462.0	467	498	36	28	28	28	8	24	15	-	-	425	63	72	16	72	-	-	488	502	502	12	7.1
500	670	620	26	20	M24		508.0	513.5	519	550	38	28	28	28	8	26	16	-	-	475	67	75	16	75	-	-	542	559	559	12	7.1
600	780	725	30	20	M27		610.0	616.5	622	650	42	30	34	34	8	26	18	-	-	575	75	82	18	80	-	-	642	658	658	12	-
700	895	840	30	24	M27		711.0		721	-	50	35			38	8	-	20	-	670	-	85	18	80	-	-	746	-	772	12	-
800	1015	950	33	24	M30		813.0		824	-	56	38			48	8	-	20	-	770	-	96	18	90	-	-	850	-	879	12	-
900	1115	1050	33	28	M30		914.0	b	926	-	62	38			50	8	-	22	-	860	-	99	20	95	-	-	950	-	976	12	-
1000	1230	1160	36	28	M33		1016.0		1028	-	70	44			54	8	-	24	-	960	-	105	20	95	-	-	1052	-	1080	16	-
1200	1455	1380	39	32	M36		1219.0		1234	-	83	55			66	8	-	26	-	1160	-	132	25	115	-	-	1256	-	1292	16	-
1400	1675	1590	42	36	M39		1422.0	-	-	-		65			-	-	-	-	-	-	-	143	25	-	-	-	1460	-	1496	16	-
1600	1915	1820	48	40	M45		1626.0	-	-	-		75			-	-	-	-	-	-	-	159	25	-	-	-	1666	-	1712	16	-
1800	2115	2020	48	44	M45		1829.0	-	-	-		85			-	-	-	-	-	-	-	175	30	-	-	-	1868	-	1910	16	-

^a For flanges type 21 the outside hub diameter approximately corresponds to the outside pipe diameter
^b To be specified by the purchaser
^c Use is limited up to DN 600

^a For flanges type 21 the outside hub diameter approximately corresponds to the outside pipe diameter

^b To be specified by the purchaser

^c Use is limited up to DN 600

FLANGES EN 1092-1 - DIMENSION TABLES FLANGES PN 16

DN	Connection				Out. Neck Diam.	Bore Diameter				Flange Thickness Cham-				for	Collar Thickness				Diam. of Should.	Length					Neck Diameter Corner Radius			Wall Thickness		
	Diagonals		Bolt Hole Diam.	Bolting		A	B ₁	B ₂	B ₃	C ₁	C ₂	C ₃	C ₄		E	F	G max	H ₁		H ₂	H ₃	H ₄	H ₅	N ₁	N ₂	N ₃	R ₁		S	
	Out. Diam.	Circle Hole Diam.																												
D	K	L	N°	Size	A	B ₁	B ₂	B ₃	C ₁	C ₂	C ₃	C ₄	E	F	G max	H ₁	H ₂	H ₃	H ₄	H ₅	N ₁	N ₂	N ₃	R ₁	S					
01, 02, 04, 05, 11, 12, 13, 21					11, 21 ^a , 34 ^c , 35-37	01, 12, 32	02, 04	04	01, 02, 04	11, 12, 13	21	05	02, 04	32, 34	35, 36	37	05, 13	11, 34 ^c	11, 34 ^c , 35	36	37	11, 34 ^c	12, 13	21, 34	11, 12, 13	11, 34, 35-37				
10	90	80	14	4	M12	17.2	18.0	21	31	14	16	16	16	3	12	5	2	2.5	-	22	35	6	35	7	28	30	28	4	1.8	
15	95	65	14	4	M12	21.3	22.0	25	35	14	16	16	16	3	12	5	2	2.5	-	22	38	6	38	7	32	35	32	4	2.0	
20	105	75	14	4	M12	26.9	27.5	31	42	16	18	18	18	4	14	6	2.5	3	-	26	40	6	40	8	40	45	40	4	2.3	
25	115	85	14	4	M12	33.7	34.5	38	49	16	18	18	18	4	14	7	2.5	3	-	28	40	6	40	10	46	52	50	4	2.6	
32	140	100	18	4	M16	42.4	43.5	47	59	18	18	18	18	5	14	8	3	3	-	30	42	6	42	12	56	60	60	6	2.6	
40	150	110	18	4	M16	48.3	49.5	53	67	18	18	18	18	5	14	8	3	3	-	32	45	7	45	15	64	70	70	6	2.6	
50	165	125	18	4	M16	60.3	61.5	65	77	20	18	18	18	5	16	8	3	4	-	28	45	8	45	20	74	84	84	6	2.9	
65	185	145	18	8 ^b	M16	76.1	77.5	81	96	20	18	18	18	6	16	8	3	4	55	32	45	10	45	20	92	104	104	6	2.9	
80	200	160	18	8	M16	88.9	90.5	94	108	20	20	20	20	6	16	10	3	4	70	34	50	10	50	25	105	118	120	6	3.2	
100	220	180	18	8	M16	114.3	116.0	120	134	22	20	20	20	6	18	10	4	4	90	40	52	12	52	25	131	140	140	8	3.6	
125	250	210	18	8	M16	139.7	141.5	145	162	22	22	22	22	6	18	10	4	4	115	44	55	12	55	25	156	168	170	8	4.0	
150	285	240	22	8	M20	168.3	170.5	174	188	24	22	22	22	6	20	10	5	5	140	44	55	12	55	25	184	195	190	10	4.5	
200	340	295	22	12	M20	219.1	221.5	226	240	26	24	24	24	6	20	11	6	6	190	44	62	16	62	30	235	246	246	10	6.3	
250	405	355	26	12	M24	273.0	276.5	281	294	29	26	26	26	8	22	12	10	-	235	46	70	16	70	68	-	292	298	296	12	6.3
300	460	410	26	12	M24	323.9	327.5	333	348	32	28	28	28	8	24	14	10	-	285	46	78	16	78	68	-	344	350	350	12	7.1
350	520	470	26	16	M24	355.6	359.0	365	400	35	30	30	30	8	26	18	10	-	330	57	82	16	82	68	-	390	400	410	12	8.0

^a For flanges type 21 the outside hub diameter approximately corresponds to the outside pipe diameter

^b According to EN 1092-2 (Cast Iron flanges) and EN 1092-3 (Copper alloy flanges), the flanges in this DN and PN may be supplied with 4 holes. When steel flanges are required with 4 holes, these may be suggested by the manufacturer and purchaser. ^c To be specified by the purchaser

^d Use is limited up to DN 600

^a For flanges type 21 the outside hub diameter approximately corresponds to the outside pipe diameter

^b According to EN 1092-2 (Cast Iron flanges) and EN 1092-3 (Copper alloy flanges), the flanges in this DN and PN may be supplied with 4 holes. When steel flanges are required with 4 holes, these may be

^c To be specified by the purchaser

^d Use is limited up to DN 600

FLANGES EN 1092-1 - DIMENSION TABLES FLANGES PN 25

DN	Connection Dimensions				Out. Neck Diam.	Bore Diameter			Flange Thickness				Chamfer	Collar Thickness	Diam. of Should.	Length				Neck Diameter			Corner Radius	Wall Thickness																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	Out. Diam.	Bolt Circle Diam.	Bolt Hole Diam.	Bolting		A	B ₁	B ₂	B ₃	C ₁	C ₂	C ₃				C ₄	E	F	G max	H ₁	H ₂	H ₃			H ₄	N ₁	N ₂	N ₃	R ₁	S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
																															D	K	L	N°	Size																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Flange Type																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
01, 02, 04, 05, 11, 12, 13, 21						11	01	02	04	01	11	02	05	02	32	35	05	12	11	11	35	11	12	21	11	11	11	34	11	12	13	21	34	21	34	11	34	11	35	35																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
10	90	60	14	4	M12	17.2	18.0	21	31	14	16	16	16	3	12	5	-	22	35	6	35	28	30	28	4	1.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

^a For flanges type 21 the outside hub diameter approximately corresponds to the outside pipe diameter

^b To be specified by the purchaser.

^c Use is limited up to DN 600

^d Only mating dimensions fixed. See Annex J

SLIP ON FLANGES 150 CARBON LBS



SO FLANGE

Rating: 150LBS

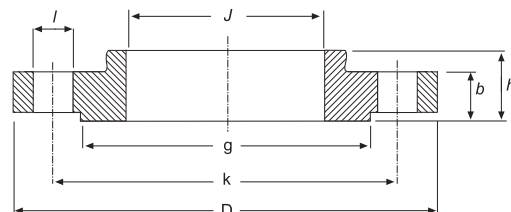
Specifications

Material Standard

Carbon Steel **ASTM A105**
NACE MR 0175

Notes

RTJ flanges and other specialties, available on request
For flanges Class 600 to 2500 and acc. to Standard API 605, BS 3293 or MS SP-44, please contact with our Technical Dept.

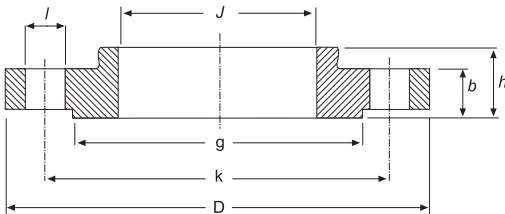


SO FLANGE 150LBS

Article Number	DN	D	b	g	M	J	h	k	No. holes	I	Weight (kg.)
WGSOF150-50	1/2"	88,9	11,1	34,9	30,2	22,3	15,9	60,3	4	15,9	0,400
WGSOF150-75	3/4"	98,4	12,7	42,9	38,1	27,7	15,9	69,8	4	15,9	0,700
WGSOF150-100	1"	107,9	14,3	50,8	49,2	34,5	17,5	79,4	4	15,9	0,800
-	1.1/4"	117,5	15,9	63,5	58,8	43,2	20,6	88,9	4	15,9	1,100
WGSOF150-125	1.1/2"	127,0	17,5	73,0	65,1	49,5	22,2	98,4	4	15,9	1,400
WGSOF150-200	2"	152,4	19,0	92,1	77,8	62,0	25,4	120,6	4	19,0	2,200
WGSOF150-250	2.1/2"	177,8	22,2	104,8	90,5	74,7	28,6	139,7	4	19,0	3,600
WGSOF150-300	3"	190,5	23,8	127,0	107,9	90,7	30,2	152,4	4	19,0	4,100
-	3.1/2"	215,9	23,8	139,7	122,2	103,4	31,7	177,8	8	19,0	5,200
WGSOF150-400	4"	228,6	23,8	157,2	134,9	116,1	33,3	190,5	8	19,0	5,600
-	5"	254,0	23,8	185,7	163,5	143,8	36,5	215,9	8	22,2	6,300
WGSOF150-600	6"	279,4	25,4	215,9	192,1	170,7	39,7	241,3	8	22,2	7,500
WGSOF150-800	8"	342,9	28,6	269,9	246,1	221,5	44,4	298,4	8	22,2	12,600
WGSOF150-910	10"	406,4	30,2	323,8	304,8	276,3	49,2	361,9	12	25,4	18,500
WGSOF150-912	12"	482,6	31,7	381,0	365,1	327,1	55,6	431,8	12	25,5	28,000
WGSOF150-914	14"	533,4	34,9	412,7	400,0	359,1	57,1	476,2	12	28,6	36,000
WGSOF150-916	16"	596,9	36,5	469,9	457,2	410,5	63,5	539,7	16	28,6	46,000
WGSOF150-918	18"	635,0	39,7	533,4	504,8	461,8	68,3	577,8	16	31,7	50,000
WGSOF150-920	20"	698,5	42,9	584,2	558,8	513,1	73,0	635,0	20	31,7	64,000
-	22"	749,3	46,0	641,2	609,6	564,4	79,4	692,1	20	34,9	72,000
WGSOF150-924	24"	812,8	47,6	692,1	663,6	615,9	82,5	749,3	20	34,9	89,000

SLIP ON FLANGES 300LBS CARBON

SO FLANGE		Rating: 300LBS
Specifications		
Material	Carbon Steel ASTM A105	
Standard	NACE MR 0175	
Notes		
RTJ flanges and other specialties, available on request		
For flanges Class 600 to 2500 and acc. to Standard API 605, BS 3293 or MS SP-44, please contact with our Technical Dept.		



SO FLANGE 300LBS

Article	Number	DN	D	b	g	J	h	k	No. holes	l	Weight (kg.)
WGSO	F300-50	1/2"	95,6	14,3	34,9	22,3	22,2	66,7	4	15,9	0,700
WGSO	F300-75	3/4"	117,5	15,9	42,9	27,7	25,4	82,5	4	19,0	1,100
WGSO	F300-100	1"	123,8	17,5	50,8	34,5	27,0	88,9	4	19,0	1,400
WGSO	F300-125	1.1/4"	133,3	19,0	63,5	43,2	27,0	98,4	4	19,0	1,800
WGSO	F300-150	1.1/2"	155,6	20,6	73,0	49,5	30,2	114,3	4	22,2	2,600
WGSO	F300-200	2"	165,1	22,2	92,1	62,0	33,3	127,0	8	19,0	3,400
WGSO	F300-250	2.1/2"	190,5	25,4	104,8	74,7	38,1	149,2	8	22,2	4,400
WGSO	F300-300	3"	209,5	28,6	127,0	90,7	42,9	168,3	8	22,2	6,100
-		3.1/2"	228,6	30,2	139,7	103,4	44,4	184,1	8	22,2	7,500
WGSO	F300-400	4"	254,0	31,7	157,2	116,1	47,6	200,0	8	22,2	10,100
WGSO	F300-500	5"	279,4	34,9	185,7	143,8	50,8	234,9	8	22,2	12,500
WGSO	F300-600	6"	317,5	36,5	215,9	170,7	52,4	269,9	12	22,2	14,100
WGSO	F300-800	8"	381,2	41,3	269,9	221,5	61,9	330,2	12	25,4	24,800
WGSO	F300-910	10"	444,5	47,6	323,8	276,3	66,7	387,3	16	28,6	37,100
WGSO	F300-912	12"	520,7	50,8	381,0	327,1	73,0	450,8	16	31,7	50,000
WGSO	F300-914	14"	584,2	54,0	412,7	359,1	76,2	514,3	20	31,7	70,000
WGSO	F300-916	16"	647,7	57,1	469,9	410,5	82,5	571,5	20	34,9	90,000
WGSO	F300-918	18"	711,2	60,3	533,4	461,8	88,9	628,6	24	34,9	112,000
WGSO	F300-920	20"	774,7	63,5	584,2	513,1	95,2	685,8	24	34,9	133,000
-		22"	838,2	66,7	641,2	564,4	101,6	742,9	24	41,3	197,000
WGSO	F300-924	24"	914,4	69,8	692,1	615,9	106,4	812,8	24	41,3	208,000

BLIND FLANGES 150LBS CARBON



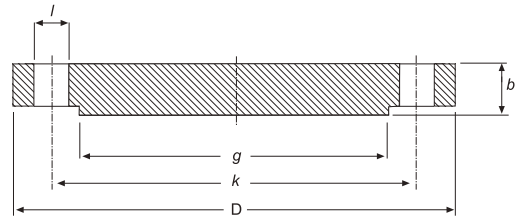
BL FLANGE Rating: 150LBS

Specifications

Material Carbon Steel **ASTM A105**
Standard NACE MR 0175

Notes

RTJ flanges and other specialties, available on request
 For flanges Class 600 to 2500 and acc. to Standard API 605, BS 3293 or MS SP-44, please contact with our Technical Dept.

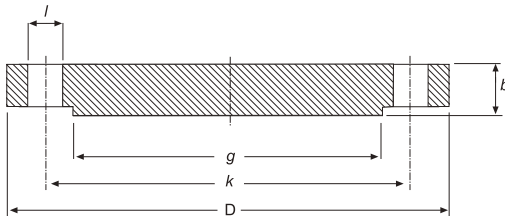


BL FLANGE 150LBS

Article Number	DN	D	b	g	k	No. holes	l	Weight (kg.)
WGBF150-50	1/2"	88,9	11,1	34,9	60,3	4	15,9	0,400
WGBF150-75	3/4"	98,4	12,7	42,9	69,8	4	15,9	0,700
WGBF150-100	1"	107,9	14,3	50,8	79,4	4	15,9	0,900
WGBF150-125	1.1/4"	117,5	15,9	63,5	88,9	4	15,9	1,300
WGBF150-150	1.1/2"	127,0	17,5	73,0	98,4	4	15,9	1,600
WGBF150-200	2"	152,4	19,0	92,1	120,6	4	19,0	2,600
WGBF150-250	2.1/2"	177,8	22,2	104,8	139,4	4	19,0	4,100
WGBF150-300	3"	190,5	23,8	127,0	152,4	4	19,0	5,000
-	3.1/2"	215,9	23,8	139,7	177,8	8	19,0	6,400
WGBF150-400	4"	228,6	23,8	157,2	190,5	8	19,0	7,100
WGBF150-500	5"	254,0	23,8	185,7	215,9	8	22,2	9,000
WGBF150-600	6"	279,4	25,4	215,9	241,3	8	22,2	11,800
WGBF150-800	8"	342,9	28,6	269,9	298,4	8	22,2	21,000
WGBF150-910	10"	406,4	30,2	323,8	361,9	12	25,4	30,000
WGBF150-912	12"	482,6	31,7	381,0	431,8	12	25,4	45,000
OWGBF150-914	14"	533,4	34,9	412,7	476,2	12	28,6	59,000
WGBF150-916	16"	596,9	36,5	469,9	539,9	16	28,6	79,000
WGBF150-918	18"	635,0	39,7	533,4	577,8	16	31,7	97,000
WGBF150-920	20"	698,5	42,9	584,2	635,0	20	31,7	124,000
-	22"	749,3	46,0	641,2	692,1	20	34,9	151,000
WGBF150-924	24"	812,8	47,6	692,1	749,3	20	34,9	188,000

BLIND FLANGES 300LBS CARBON

BL FLANGE		Rating: 300LBS
Specifications		
Material Standard	Carbon Steel ASTM A105 NACE MR 0175	
Notes		
RTJ flanges and other specialties, available on request For flanges Class 600 to 2500 and acc. to Standard API 605, BS 3293 or MS SP-44, please contact with our Technical Dept.		

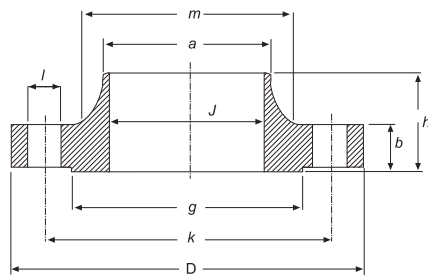


BL FLANGE 300LBS

Article Number	DN	D	b	g	k	No. holes	l	Weight (kg.)
WGBF300-50	1/2"	95,2	14,3	34,9	66,7	4	15,9	0,700
WGBF300-75	3/4"	117,5	15,9	42,9	82,5	4	19,0	1,200
WGBF300-100	1"	123,8	17,5	50,8	88,9	4	19,0	1,500
WGBF300-125	1.1/4"	133,3	19,0	63,5	98,4	4	19,0	2,000
WGBF300-150	1.1/2"	155,6	20,6	73,0	114,3	4	22,2	2,900
WGBF300-200	2"	165,1	22,2	92,1	127,0	8	19,0	3,400
WGBF300-250	2.1/2"	190,5	25,4	104,8	149,2	8	22,2	5,100
WGBF300-300	3"	209,5	28,6	127,0	168,3	8	22,2	7,000
-	3.1/2"	228,6	30,2	139,7	184,1	8	22,2	8,900
WGBF300-400	4"	254,0	31,7	157,2	200,0	8	22,2	11,800
WGBF300-500	5"	279,4	34,9	185,7	234,9	8	22,2	15,500
WGBF300-600	6"	317,5	36,5	215,9	269,9	12	22,2	21,300
WGBF300-800	8"	381,0	41,6	269,9	330,2	12	25,4	35,200
WGBF300-910	10"	444,5	47,6	323,8	387,3	16	28,6	57,000
WGBF300-912	12"	520,7	50,8	381,0	450,8	16	31,7	82,000
WGBF300-914	14"	584,2	54,0	412,7	514,3	20	31,7	106,000
WGBF300-916	16"	647,7	57,1	469,9	571,5	20	34,9	140,000
WGBF300-918	18"	711,2	60,3	533,4	628,6	24	34,9	178,000
WGBF300-920	20"	774,7	63,5	584,2	685,8	24	34,9	223,000
-	22"	838,2	66,7	641,2	742,9	24	41,3	270,000
WGBF300-924	24"	914,4	69,8	692,1	812,8	24	41,3	345,000

WELDING NECK FLANGES 150LBS CARBON STEEL

WN FLANGE		Rating: 150LBS
Specifications		
Material	Carbon Steel ASTM A105	
Standard	NACE MR 0175	
Notes		
Other schedules different from STD and XS, and other surface finishes different from RTJ and other specialties, to be requested. For flanges Class 600 to 2500 and acc. to Standard API 605, BS 3293 or MS SP-44, please contact with our Technical Dept.		



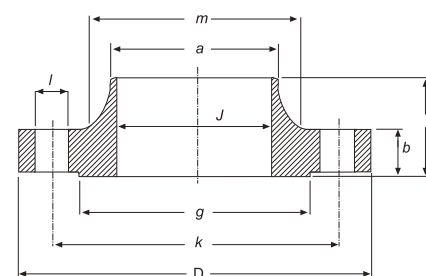
WN FLANGE 150LBS SCH. STD

Article Number	DN	D	b	g	m	a	J*	h	k	No. holes	l	Weight (kg.)
WGWNF150-50	1/2"	88,9	11,1	34,9	30,2	21,3	15,7	46,6	60,3	4	15,9	0,500
WGWNF150-75	3/4"	98,4	12,7	42,9	38,1	26,7	20,8	52,4	69,8	4	15,9	0,700
WGWNF150-100	1"	107,9	14,3	50,8	49,2	33,5	26,7	55,6	79,4	4	15,9	1,100
WGWNF150-125	1.1/4"	117,5	15,9	63,5	58,8	42,2	35,1	57,1	88,9	4	15,9	1,500
WGWNF150-150	1.1/2"	127,0	17,5	73,0	65,1	48,3	40,9	61,9	98,4	4	15,9	1,800
WGWNF150-200	2"	152,4	19,0	92,1	77,8	60,3	52,6	63,5	120,6	4	19,0	2,700
WGWNF150-250	2.1/2"	177,8	22,2	104,8	90,5	73,1	62,7	69,8	139,7	4	19,0	4,400
WGWNF150-300	3"	190,5	23,8	127,0	107,9	88,9	78,0	69,8	152,4	4	19,0	5,200
WGWNF150-350	3.1/2"	215,9	23,8	139,7	122,2	101,6	90,2	71,4	177,8	8	19,0	6,400
WGWNF150-400	4"	228,6	23,8	157,2	134,9	114,3	102,4	76,2	190,5	8	19,0	7,500
WGWNF150-500	5"	254,0	23,8	185,7	163,5	141,2	128,3	88,9	215,9	8	22,2	9,200
WGWNF150-600	6"	279,4	25,4	215,9	192,1	168,4	154,2	88,9	241,3	8	22,2	11,000
WGWNF150-800	8"	342,9	28,6	269,9	246,1	219,1	202,7	101,6	298,4	8	22,2	18,300
WGWNF150-910	10"	406,4	30,2	323,8	304,8	273,0	254,5	101,6	361,9	12	25,4	25,000
WGWNF150-912	12"	482,6	31,7	381,0	365,1	323,8	304,8	114,3	431,8	12	25,4	39,000
WGWNF150-914	14"	533,4	34,9	412,7	400,00	355,6	336,5	127,0	476,2	12	28,6	51,000
WGWNF150-916	16"	596,9	36,5	469,9	457,2	406,4	387,3	127,0	539,7	16	28,6	60,000
WGWNF150-918	18"	635,0	3,7	533,4	504,8	457,2	438,1	139,7	577,8	16	31,7	71,000
WGWNF150-920	20"	698,5	42,9	584,2	558,8	508,0	488,9	144,5	635,0	20	31,7	88,000
-	22"	749,3	46,0	461,2	609,6	558,8	539,7	149,2	692,1	20	34,9	102,000
WGWNF150-924	24"	812,8	47,6	692,1	663,6	609,6	590,5	152,4	749,3	20	34,9	119,000

WELDING NECK FLANGES 300LBS CARBON STEEL



WN FLANGE		Rating: 300LBS
Specifications		
Material Standard	Carbon Steel ASTM A105 NACE MR 0175	
Notes		
Other schedules different from STD and XS, and other surface finishes different from RTJ and other specialties, to be requested. For flanges Class 600 to 2500 and acc. to Standard API 605, BS 3293 or MS SP-44, please contact with our Technical Dept.		

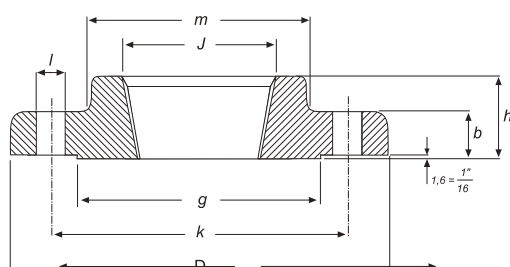


WN FLANGE 300LBS SCH. STD

Article Number	DN	D	b	g	m	a	J*	h	k	No. holes	l	Weight (kg.)
WGWNF300-50	1/2"	95,2	14,3	34,9	38,1	21,3	15,7	52,4	66,7	4	15,9	0,900
WGWNF300-75	3/4"	117,5	15,9	42,9	47,6	26,7	20,8	57,1	82,5	4	19,0	1,500
WGWNF300-100	1"	123,8	17,5	50,8	54,0	33,5	26,7	61,9	88,9	4	19,0	1,900
WGWNF300-125	1.1/4"	133,3	19,0	63,5	63,5	42,2	35,1	65,1	98,4	4	19,0	2,600
WGWNF300-150	1.1/2"	155,6	20,6	73,0	69,8	48,3	40,9	68,3	114,3	4	22,2	3,300
WGWNF300-200	2"	165,1	22,2	92,1	84,1	60,3	52,6	69,8	127,7	8	19,0	3,600
WGWNF300-250	2.1/2"	190,5	25,4	104,8	100,0	73,1	62,7	76,2	149,2	8	22,2	5,400
WGWNF300-300	3"	209,5	28,6	127,0	117,5	88,9	78,0	79,4	168,3	8	22,2	7,400
WGWNF300-350	3.1/2"	228,6	30,2	139,7	133,3	101,6	90,2	81,0	184,1	8	22,2	8,900
WGWNF300-400	4"	254,0	31,7	157,2	146,0	114,3	102,4	85,7	200,0	8	22,2	11,900
WGWNF300-500	5"	279,4	34,9	185,7	177,8	141,2	128,3	98,4	234,9	8	22,2	16,000
WGWNF300-600	6"	317,5	36,5	215,9	206,4	168,4	154,2	98,4	269,9	12	22,2	20,200
WGWNF300-800	8"	381,0	41,3	269,9	260,3	219,1	202,7	111,1	330,2	12	25,4	31,000
WGWNF300-910	10"	444,5	47,6	323,8	320,7	273,0	254,5	117,5	387,3	16	28,6	44,300
WGWNF300-912	12"	520,7	50,8	381,0	374,6	323,8	304,8	130,2	450,8	16	31,7	64,000
WGWNF300-914	14"	584,2	54,0	412,7	425,4	355,6	336,5	142,9	514,3	20	31,7	88,000
WGWNF300-916	16"	647,7	57,1	469,9	482,6	406,4	387,3	146,0	571,5	20	34,9	113,000
WGWNF300-918	18"	711,2	60,3	533,4	533,4	457,2	438,1	158,7	628,6	24	34,9	134,000
WGWNF300-920	20"	774,7	63,5	584,2	587,4	508,0	488,9	161,9	685,8	24	34,9	171,000
-	22"	838,2	66,7	641,2	641,2	558,8	539,7	165,1	742,9	24	41,3	195,000
WGWNF300-924	24"	914,4	69,8	692,1	701,7	609,6	590,5	168,3	812,8	24	41,3	238,000

THREADED FLANGES 150LBS CARBON STEEL

TH FLANGE		Rating: 150LBS
Specifications		
Material	Carbon Steel ASTM A105	
Standard	NACE MR 0175	
Notes		
RTJ flanges and other specialties, available on request		
For flanges Class 600 to 2500 and acc. to Standard API 605, BS 3293 or MS SP-44, please contact with our Technical Dept.		



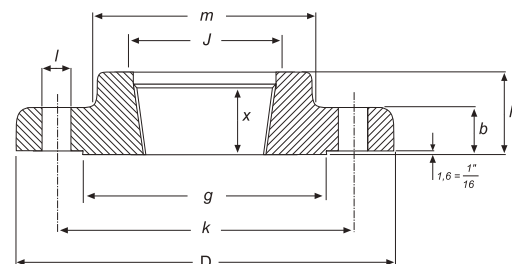
THREADED FLANGE 150LBS

Article Number	DN	D	J	b	g	m	h	k	No. holes	l	Weight (kg.)
-	1/2"	88,9	THREADED FLANGES 150LBS don not need counterbore	11,1	34,9	30,2	15,9	60,3	4	15,9	0,5
-	3/4"	98,4		12,7	42,9	38,1	15,9	69,8	4	15,9	0,9
-	1"	107,9		14,3	50,8	49,2	17,5	79,4	4	15,9	0,9
-	1.1/4"	117,5		15,9	63,5	58,7	20,6	88,9	4	15,9	1,4
-	1.1/2"	127,0		17,5	73,0	65,1	22,2	98,4	4	15,9	1,5
-	2"	152,4		19,1	92,1	77,8	25,4	120,6	4	19,0	2,3
-	2.1/2"	177,8		22,3	104,8	90,5	28,6	139,7	4	19,0	3,7
-	3"	190,5		23,8	127,0	107,9	30,2	152,4	4	19,0	4,2
-	3.1/2"	215,9		23,8	139,7	122,2	31,7	177,8	8	19,0	5,3
-	4"	228,6		23,8	157,2	134,9	33,3	190,5	8	19,0	5,9
-	5"	254,0		23,8	185,7	163,5	36,5	215,9	8	22,2	7,0
-	6"	279,4		25,4	215,9	192,1	39,7	241,3	8	22,2	8,4
-	8"	342,9		28,6	269,9	246,1	44,4	298,4	8	22,2	13,0
-	10"	406,4		30,2	323,8	304,8	49,2	361,9	12	25,4	19,5
-	12"	482,6		31,8	381,0	365,1	55,6	431,8	12	25,4	29,5
-	14"	533,4		34,9	412,7	400,0	57,1	476,2	12	28,6	41,0
-	16"	596,9		36,5	469,9	457,2	63,5	539,7	16	28,6	47,0
-	18"	635,0		39,7	533,4	504,8	68,3	577,8	16	31,7	59,0
-	20"	698,5		42,9	584,2	558,8	73,0	635,0	20	31,7	75,0
-	24"	812,8		47,6	692,1	663,6	82,5	749,3	20	34,9	100,0

THREADED FLANGES 300LBS CARBON STEEL



TH FLANGE		Rating: 300LBS
Specifications		
Material	Carbon Steel ASTM A105	
Standard	NACE MR 0175	
Notes		
RTJ flanges and other specialties, available on request		
For flanges Class 600 to 2500 and acc. to Standard API 605, BS 3293 or MS SP-44, please contact with our Technical Dept.		



THREADED FLANGE 300LBS

Article Number	DN	D	J	b	h	x	m	g	No. holes	l	k	Weight (kg.)
-	1/2"	95,2	23,6	14,3	22,2	15,9	38,1	34,9	4	15,9	66,7	0,9
-	3/4"	117,5	28,95	15,9	25,4	15,9	47,6	42,9	4	19,05	82,5	1,4
-	1"	123,8	35,8	17,5	27,0	17,5	54,0	50,8	4	19,05	88,9	1,4
-	1.1/4"	133,35	44,45	19,05	27,0	20,6	63,5	63,5	4	19,05	98,4	1,9
-	1.1/2"	155,6	50,5	20,6	30,2	22,2	69,8	73,0	4	22,2	114,3	2,8
-	2"	165,1	63,5	22,2	33,3	28,6	84,1	92,1	8	19,05	127,0	3,3
-	2.1/2"	190,5	76,2	25,4	38,1	31,7	100,0	104,8	8	22,2	149,2	4,6
-	3"	209,55	92,2	28,6	42,9	31,7	117,5	127,0	8	22,2	168,3	6,3
-	3.1/2"	228,6	104,9	30,2	44,4	36,5	133,35	139,7	8	22,2	184,15	7,8
-	4"	254,0	117,6	31,8	47,6	36,5	146,05	157,2	8	22,2	200,0	10,2
-	5"	279,4	144,5	34,9	50,8	42,9	177,8	185,7	8	22,2	234,95	12,9
-	6"	317,5	171,45	36,5	52,4	46,0	206,4	215,9	12	22,2	269,9	17,7
-	8"	381,0	222,25	41,3	61,9	50,8	260,35	269,9	12	25,4	330,2	26,0
-	10"	444,5	276,35	47,6	66,7	55,6	320,7	323,8	16	28,6	387,3	37,5
-	12"	520,7	328,7	50,8	73,0	60,3	374,6	381,0	16	31,7	450,8	52,0
-	14"	584,2	360,4	54,0	76,2	63,5	425,4	412,7	20	31,7	514,3	74,8
-	16"	647,7	411,2	57,2	82,5	68,3	482,6	469,9	20	34,9	571,5	86,2
-	18"	711,2	462,0	60,3	88,9	69,8	533,4	533,4	24	34,9	628,6	113,0
-	20"	774,7	512,8	63,5	95,2	73,0	587,4	584,2	24	34,9	685,8	143,0
-	24"	914,4	614,4	69,9	106,4	82,5	701,7	692,1	24	41,3	812,8	215,0

Notes

FLANGES & PIPE FITTINGS

Product Catalogue



For more info, please contact us at:

Wingrou Pipe Technology Co.

No.6 Stromaway, Nuneaton CV 10
7LR, Warwickshire, United Kingdom

Email: info@wingrou.co.uk / info@wingrou.com

Web: www.wingrou.com