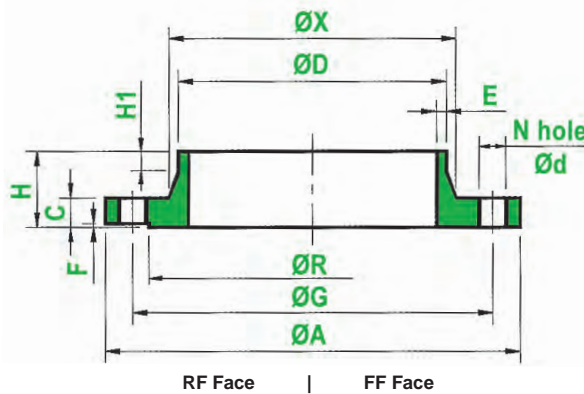


# Solid Welding Neck Flanges

PN 10

PN 16



Material : CuNi 90/10 | CuNi 70/30

Outside Diameter of Pipe - ØD		DIN 2632											
		PN 10											
Nominal (Inch)	Actual (mm)	ØA (mm)	H (mm)	C (mm)	ØX (mm)	ØR (mm)	F (mm)	E (mm)	Y (mm)	Drilling			kg /pc
										ØG (mm)	N Bolt Holes	Ød (mm)	
ND 1/2 to 7 Welding Neck Flanges as per DIN 2633, NP 16 are to be used													
8	219.1	340	62	24	235	268	3	To be specified by purchaser	16	295	8	22	12.84
10	267	395	68	26	285	320	3		16	350	12	22	16.70
12	323.9	445	68	26	344	370	4		16	400	12	22	19.77
14	368	505	68	26	385	430	4		16	460	16	22	26.81
16	419.1	565	72	26	440	482	4		16	515	16	26	32.49
20	508	670	75	28	542	585	4		16	620	20	26	43.28
24	610	780	80	28	642	685	5		18	725	20	30	50.67

Outside Diameter of Pipe - ØD		DIN 2633											
		PN 16											
Nominal (Inch)	Actual (mm)	ØA (mm)	H (mm)	C (mm)	ØX (mm)	ØR (mm)	F (mm)	E (mm)	H1 (mm)	Drilling			kg /pc
										ØG (mm)	N Bolt Holes	Ød (mm)	
1/2	20	95	35	14	30	45	2	To be specified by purchaser	6	65	4	14	0.74
3/4	25	105	38	16	38	58	2		6	75	4	14	1.08
1	30	115	38	16	42	68	2		6	85	4	14	1.30
1¼	38	140	40	16	52	78	2		6	100	4	18	1.92
1½	44.5	150	42	16	60	88	3		7	110	4	18	2.11
2	57	165	45	18	72	102	3		8	125	4	18	2.88
2½	76.1	185	45	18	90	122	3		10	145	4	18	3.48
3	88.9	200	50	20	105	138	3		10	160	8	18	4.20
4	108	220	52	20	125	158	3		12	180	8	18	5.25
5	133	250	55	22	150	188	3		12	210	8	18	7.15
6	159	285	55	22	175	212	3		12	240	8	22	8.80
7	193.7	315	60	24	210	242	3		12	270	8	22	11.19
8	219.1	340	62	24	235	268	3		16	295	12	22	12.50
10	267	405	70	26	285	320	3		16	355	12	26	17.72
12	323.9	460	78	28	344	378	4		16	410	12	26	25.00
14	368	520	82	30	390	438	4		16	470	16	26	35.45
16	419.1	580	85	32	445	490	4		16	525	16	30	45.21
20	508	715	90	34	548	610	4		16	650	20	33	69.30
24	610	840	95	36	652	725	5		18	770	20	36	85.65



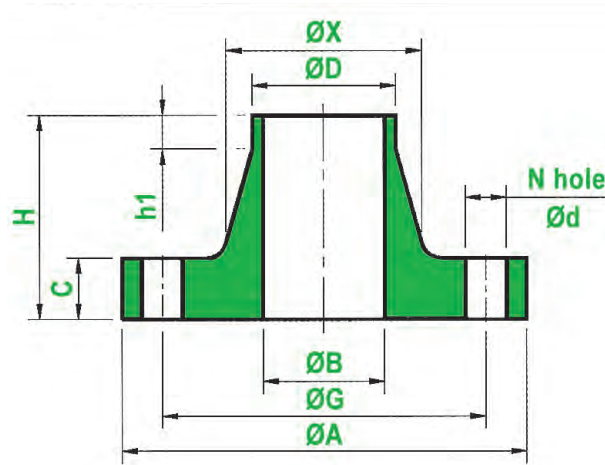
**Athical Engineering Pte Ltd**

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# Solid Welding Neck Flanges

16 Bar



Material : CuNi 90/10 | CuNi 70/30

Outside Diameter of Pipe - ØD		EEMUA 145									
		16 Bar									
Nominal (Inch)	Actual (mm)	ØA (mm)	H (mm)	C (mm)	ØX (mm)	ØB (mm)	h1 (mm)	Drilling			kg /pc
								ØG (mm)	N Bolt Holes	Ød (mm)	
1/2	16	89	48	14	23	12.00	8	60.3	4	15.9	0.74
3/4	25	98	52	16	32	21.00	7	69.8	4	15.9	1.04
1	30	108	56	16	42	25.00	8	79.4	4	15.9	1.36
1¼	38	117	57	17	51	33.03	8	88.9	4	15.9	1.70
1½	44.5	127	62	20	61	39.53	7	98.4	4	15.9	2.38
2	57	152	64	25	73	52.16	9	120.6	4	19	3.93
2½	76.1	178	70	27	91	71.23	8	139.7	4	19	5.62
3	88.9	190	70	27	105	84.08	8	152.4	4	19	6.27
4	108	229	76	27	135	102.13	8	190.5	8	19	9.53
6	159	279	89	27	192	153.75	8	241.3	8	22.2	13.65
8	219.1	343	98	31	246	211.10	8	298.4	8	22.2	21.19
10	267	406	98	31	305	257.97	8	362	12	25.4	29.52
12	323.9	483	98	35	365	312.83	8	431.8	12	25.4	44.77
14	368	533	99	41	400	354.22	8	476.2	12	28.6	57.27
16	419.1	597	106	43	457	404.17	8	539.8	16	28.6	74.40
18	457.2	635	113	45	505	441.50	8	577.8	16	31.8	88.16
20	508	698	118	45	559	490.50	8	635.0	20	31.8	106.20
24	610	813	137	49	664	589.50	8	749.3	20	34.9	153.15
28	711	927	145	72	748	687.50	8	684.0	28	34.9	255.28
32	813	1060	160	72	876	786.50	8	978.0	28	41.1	291.45
36	914	1168	175	72	984	883.50	8	1086.0	32	41.1	356.45



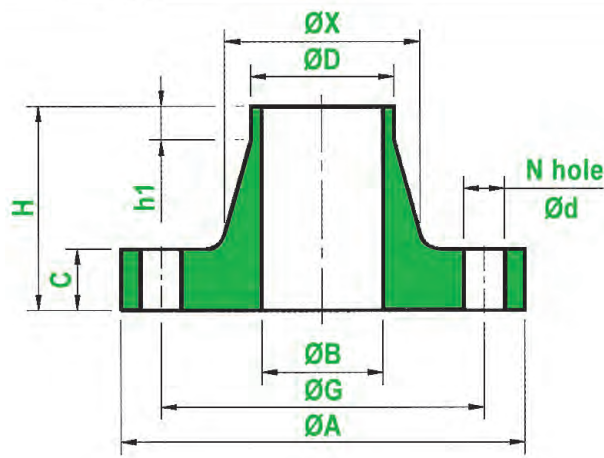
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# Solid Welding Neck Flanges

20 Bar



Material : CuNi 90/10 | CuNi 70/30

Outside Diameter of Pipe - ØD		EEMUA 145									
		20 Bar									
Nominal (Inch)	Actual (mm)	ØA (mm)	H (mm)	C (mm)	ØX (mm)	ØB (mm)	h1 (mm)	Drilling			kg /pc
								ØG (mm)	N Bolt Holes	Ød (mm)	
1/2	16	89	48	14	23	12.00	8	60.3	4	15.9	0.74
3/4	25	98	52	16	32	21.00	7	69.8	4	15.9	1.04
1	30	108	56	16	42	25.00	8	79.4	4	15.9	1.36
1¼	38	117	57	17	51	33.03	8	88.9	4	15.9	1.70
1½	44.5	127	62	20	61	39.53	7	98.4	4	15.9	2.38
2	57	152	64	25	73	52.16	9	120.6	4	19	3.93
2½	76.1	178	70	27	91	71.23	8	139.7	4	19	5.62
3	88.9	190	70	27	105	84.08	8	152.4	4	19	6.27
4	108	229	76	27	135	102.13	8	190.5	8	19	9.53
6	159	279	89	27	192	152.38	8	241.3	8	22.2	13.99
8	219.1	343	98	31	246	210.10	8	298.4	8	22.2	21.57
10	267	406	98	31	305	255.93	8	362.0	12	25.4	30.47
12	323.9	483	98	35	365	309.74	8	431.8	12	25.4	46.56
14	368	533	99	41	400	351.00	8	476.2	12	28.6	59.49
16	419.1	597	106	43	457	399.84	8	539.8	16	28.6	78.03
18	457.2	635	113	45	505	438.50	8	577.8	16	31.8	91.08
20	508	698	118	45	559	486.50	8	635.0	20	31.8	110.65
24	610	813	137	49	664	584.50	8	749.3	20	34.9	160.79
28	711	927	145	72	748	681.50	8	864.0	28	34.9	249.09
32	813	1060	160	72	876	779.50	8	978.0	28	41.1	303.95
36	914	1168	175	72	984	876.50	8	1086.0	32	41.1	371.80



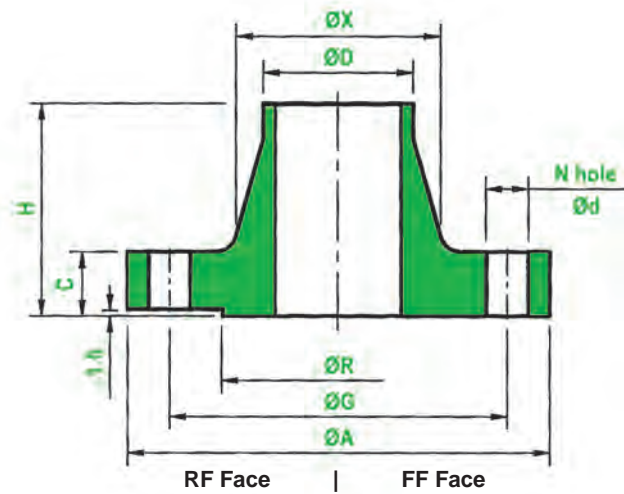
**Athical Engineering Pte Ltd**

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# Solid Welding Neck Flanges

150 Lbs



Material : CuNi 90/10 | CuNi 70/30

Outside Diameter of Pipe - ØD		ANSI B 16.5								
		150 Lbs								
Nominal (Inch)	Actual (mm)	ØA (mm)	H (mm)	C (mm)	ØX (mm)	ØR (mm)	Drilling			kg /pc
							ØG (mm)	N Bolt Holes	Ød (mm)	
1/2	20	88.9	47.6	11.1	30.2	34.9	60.3	4	15.9	0.68
3/4	25	98.4	52.4	12.7	38.1	42.9	69.8	4	15.9	0.91
1	30	107.9	55.6	14.3	49.2	50.8	79.4	4	15.9	1.25
1¼	38	117.5	57.1	15.9	58.7	63.5	88.9	4	15.9	1.58
1½	44.5	127.0	61.9	17.5	65.1	73.0	98.4	4	15.9	2.05
2	57	152.4	63.5	19.1	77.8	92.10	120.6	4	19	3.05
2½	76.1	177.8	69.8	22.2	90.5	104.8	139.7	4	19	5.10
3	88.9	190.5	69.8	23.8	107.9	127.0	152.4	4	19	5.20
4	108	228.6	76.2	23.8	134.9	157.2	190.5	8	19	7.90
5	133	254.0	88.9	23.8	163.5	185.7	215.9	8	22.2	10.10
6	159	279.4	88.9	25.4	192.1	215.9	241.3	8	22.2	12.20
8	219.1	342.9	101.6	28.6	246.1	269.9	298.4	8	22.2	20.00
10	267	406.4	101.6	30.2	304.8	323.8	361.9	12	25.4	27.00
12	323.9	482.6	114.3	31.8	365.1	381.0	431.8	12	25.4	42.00
14	368	533.4	127	34.9	400.0	425.1	476.2	12	28.6	53.00
16	419.1	596.9	127	36.5	457.2	482.6	539.7	16	28.6	66.00
18	457.2	635.0	139.7	39.7	504.8	533.4	577.8	16	31.7	72.00
20	508	698.5	144.5	42.9	558.8	584.2	635.0	20	31.7	87.00
24	610	812.8	152.4	47.6	663.6	692.1	749.3	20	34.9	134.00

\* ØD Dimensions to imperial measurements on request.



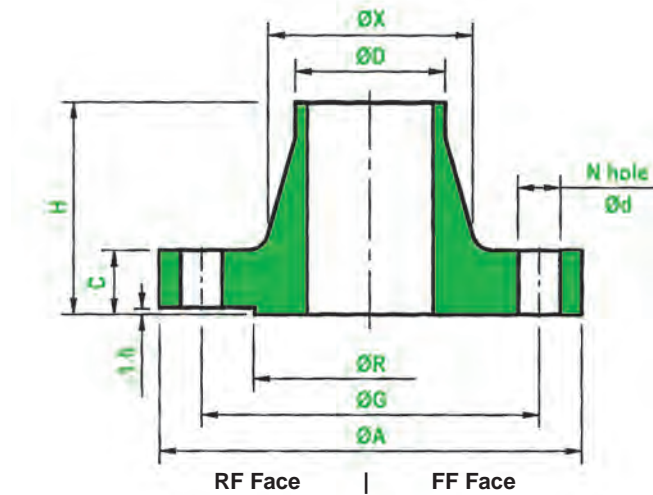
**Athical Engineering Pte Ltd**

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# Solid Welding Neck Flanges

300 Lbs



Material : CuNi 90/10 | CuNi 70/30

Outside Diameter of Pipe - ØD		ANSI B 16.5								
		300 Lbs								
Nominal (Inch)	Actual (mm)	ØA (mm)	H (mm)	C (mm)	ØX (mm)	ØR (mm)	Drilling			kg /pc
							ØG (mm)	N Bolt Holes	Ød (mm)	
1/2	20	95.2	52.4	14.3	38.1	34.9	66.7	4	15.9	1.72
3/4	25	117.5	57.1	15.9	47.6	42.9	82.5	4	19	2.06
1	30	123.8	61.9	17.5	54.0	50.8	88.9	4	19	2.29
1¼	38	133.3	65.1	19.0	63.5	63.5	98.4	4	19	2.86
1½	44.5	155.6	68.3	20.6	69.8	73.0	114.3	4	22.2	4.01
2	57	165.1	69.8	22.2	84.1	92.1	127.0	8	19	4.58
2½	76.1	190.5	76.2	25.4	100.0	104.8	149.2	8	22.2	5.73
3	88.9	209.5	79.4	28.6	117.5	127.0	168.3	8	22.2	8.02
4	108	254.0	85.7	31.8	146.1	157.2	200.0	8	22.2	12.60
5	133	279.4	98.4	34.9	177.8	185.7	234.9	8	22.2	17.90
6	159	317.5	98.4	36.5	206.4	215.9	269.9	12	22.2	21.76
8	219.1	381.0	111.1	41.3	260.4	269.9	330.2	12	25.4	34.35
10	267	444.5	117.5	47.6	320.7	323.8	387.3	16	28.6	46.95
12	323.9	520.7	130.2	50.8	374.6	381.0	450.8	16	31.7	70.99
14	368	584.2	142.9	54.0	425.4	425.1	514.3	20	31.7	96.18
16	419.1	647.7	146.1	57.2	482.6	482.6	571.5	20	34.9	127.10
18	457.2	711.2	158.7	60.3	533.3	533.4	628.6	24	34.9	158.01
20	508	774.7	161.9	63.5	587.4	584.2	685.8	24	34.9	195.80
24	610	914.4	168.3	69.8	701.7	692.1	812.8	24	41.3	283.00

\* ØD Dimensions to imperial measurements on request.



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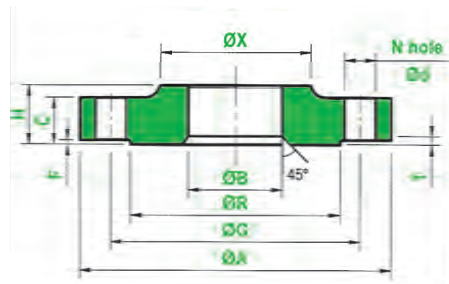


# Solid Slip On Flanges

PN 10

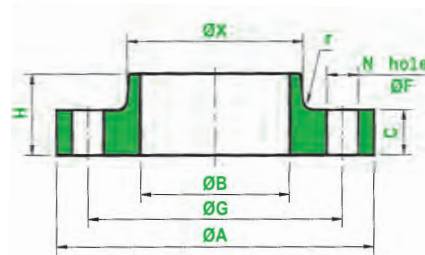
16 Bar

20 Bar



Material : CuNi 90/10 | CuNi 70/30

Outside Diameter of Pipe - ØD		DIN 86033												
		PN 10												
Nominal (Inch)	Actual (mm)	ØA (mm)	H (mm)	C (mm)	ØX (mm)	ØR (mm)	ØB (mm)	F (mm)	T (mm)	Drilling			kg /pc	
										ØG (mm)	N Bolt Holes	Ød (mm)		
3/8	16	90	18	12	26	40	16.20	2	Not Applicable	60	4	14	0.52	
1/2	20	95	18	12	30	45	20.20	2		65	4	14	0.57	
3/4	25	105	18	12	35	58	25.20	2		75	4	14	0.71	
1	30	115	18	12	40	68	30.20	2		85	4	14	0.86	
1¼	38	140	20	14	49	78	38.25	2		100	4	18	1.47	
1½	44.5	150	20	14	56	88	44.75	3		110	4	18	1.60	
2	57	165	22	16	69	102	57.30	3		125	4	18	2.20	
2½	76.1	185	22	16	88	122	76.30	3		145	4	18	2.66	
3	88.9	200	24	18	101	138	89.40	3		160	8	18	3.32	
4	108	220	28	20	120	158	108.40	5		180	8	18	4.31	
5	133	250	28	20	146	188	133.65	5		7	210	8	18	5.37
6	159	285	30	22	172	212	159.65	5		7	240	8	23	6.37
7	193.7	315	32	22	209	242	195.00	5		7	270	8	23	7.22
8	219.1	340	32	24	234	268	220.00	5		7	295	8	23	9.12
10	267	395	34	26	284	320	268.20	6	7	350	12	23	12.10	
12	323.9	445	36	26	343	370	325.35	6	7	400	12	23	13.70	
14	368	505	38	28	389	430	369.35	6	7	460	16	23	19.30	
16	419.1	565	40	28	442	482	420.50	6	7	515	16	27	23.20	
18	457.2	615	42	28	482	530	458.50	6	7	565	20	27	27.90	
20	508	670	47	31	535	585	509.50	7	8	620	20	27	35.00	
24	610	780	49	31	640	685	612.00	8	8	725	20	30	42.90	



Material : CuNi 90/10 | CuNi 70/30

Outside Diameter of Pipe - ØD		EMMUA 145									
		16 & 20 Bar									
Nominal (Inch)	Actual (mm)	ØA (mm)	H (mm)	C (mm)	ØX (mm)	ØB (mm)	r (mm)	Drilling			kg /pc
								ØG (mm)	N Bolt Holes	Ød (mm)	
1/2	16	89	20	14	23	16.07	4	60.3	4	15.9	1.15
3/4	25	98	24	16	32	25.08	4	69.8	4	15.9	1.20
1	30	108	24	16	47	30.08	4	79.4	4	15.9	1.30
1¼	38	117	26	17	51	38.10	6	88.9	4	15.9	1.70
1½	44.5	127	26	20	61	44.60	6	98.4	4	15.9	1.80
2	57	152	28	25	73	57.23	6	120.6	4	19	2.90
2½	76.1	178	32	27	91	76.33	6	139.7	4	19	4.30
3	88.9	190	34	27	105	89.18	6	152.4	4	19	4.40
4	108	229	40	27	135	108.38	8	190.5	8	19	7.30

\* ØB Dimensions to imperial measurements on request.



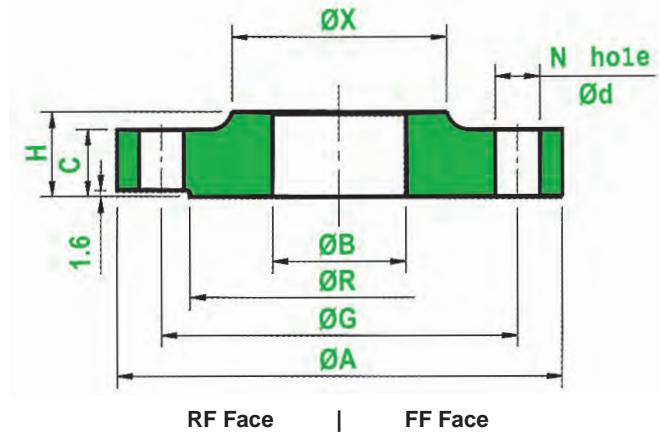
**Athical Engineering Pte Ltd**

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# Solid Slip On Flanges

150 Lbs



Material : CuNi 90/10 | CuNi 70/30

Outside Diameter of Pipe - ØD		ANSI B 16.5									
		150 Lbs									
Nominal (Inch)	Actual (mm)	ØA (mm)	H (mm)	C (mm)	ØX (mm)	ØR (mm)	ØB (mm)	Drilling			kg /pc
								ØG (mm)	N Bolt Holes	Ød (mm)	
1/2	20	88.9	15.9	11.1	30.2	34.9	20.2	60.3	4	15.9	0.90
3/4	25	98.4	15.9	12.7	38.1	42.9	25.2	69.8	4	15.9	1.10
1	30	107.9	17.5	14.3	49.2	50.8	30.2	79.4	4	15.9	1.20
1¼	38	117.5	20.6	15.9	58.7	63.5	38.3	88.9	4	15.9	1.50
1½	44.5	127.0	22.2	17.5	65.1	73.0	44.8	98.4	4	15.9	1.60
2	57	152.4	25.4	19.1	77.8	92.1	57.4	120.6	4	19.0	2.70
2½	76.1	177.8	28.6	22.2	90.5	104.8	76.5	139.7	4	19.0	4.10
3	88.9	190.5	30.2	23.8	107.9	127.0	89.4	152.4	4	19.0	4.10
4	108	228.6	33.3	23.8	134.9	157.2	108.5	190.5	8	19.0	7.00
5	133	254.0	36.5	23.8	163.5	185.7	133.8	215.9	8	22.2	8.00
6	159	279.4	39.7	25.4	192.1	215.9	159.8	241.3	8	22.2	9.90
8	219.1	342.9	44.4	28.6	246.1	269.9	220.3	298.4	8	22.2	15.70
10	267	406.4	49.2	30.2	304.8	323.8	268.4	361.9	12	25.4	22.80
12	323.9	482.6	55.6	31.8	365.1	381.0	325.4	431.8	12	25.4	33.90
14	368	533.4	57.1	34.9	400.0	425.1	369.5	476.2	12	28.6	45.00
16	419.1	596.9	63.5	36.5	457.2	482.6	420.5	539.7	16	28.6	49.00
18	457.2	635.0	68.3	39.7	504.8	533.4	458.7	577.8	16	31.7	63.00
20	508	698.5	73.0	42.9	558.8	584.2	509.5	635.0	20	31.7	81.50
24	610	812.8	82.5	47.6	663.6	692.1	611.5	749.3	20	34.9	105.55

\* ØB Dimensions to imperial measurements on request.



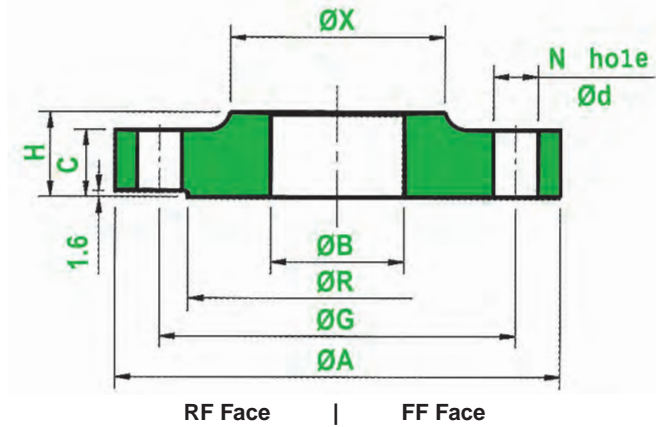
**Athical Engineering Pte Ltd**

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# Solid Slip On Flanges

300 Lbs



Material : CuNi 90/10 | CuNi 70/30

Outside Diameter of Pipe - ØD		ANSI B 16.5									
		300 Lbs									
Nominal (Inch)	Actual (mm)	ØA (mm)	H (mm)	C (mm)	ØX (mm)	ØR (mm)	ØB (mm)	Drilling			kg /pc
								ØG (mm)	N Bolt Holes	Ød (mm)	
1/2	20	95.2	22.2	14.3	38.1	34.9	20.2	66.7	4	15.9	0.90
3/4	25	117.5	25.4	15.9	47.6	42.9	25.2	82.5	4	19	1.40
1	30	123.8	27.0	17.5	54.0	50.8	30.2	88.9	4	19	1.70
1¼	38	133.3	27.0	19.0	63.5	63.5	38.3	98.4	4	19	2.00
1½	44.5	155.6	30.2	20.6	69.8	73.0	44.8	114.3	4	22.2	3.00
2	57	165.1	33.3	22.2	84.1	92.1	57.4	127.0	8	19	3.40
2½	76.1	190.5	38.1	25.4	100.0	104.8	76.5	149.2	8	22.2	5.10
3	88.9	209.5	42.9	28.6	117.5	127.0	89.4	168.3	8	22.2	6.80
4	108	254.0	47.6	31.8	146.0	157.2	108.5	200.0	8	22.2	11.30
5	133	279.4	50.8	34.9	177.8	185.7	133.8	234.9	8	22.2	14.20
6	159	317.5	52.4	36.5	206.4	215.9	159.8	269.9	12	22.2	18.30
8	219.1	381.0	61.9	41.3	260.3	269.9	220.3	330.2	12	25.4	28.20
10	267	444.5	66.7	47.6	320.7	323.8	268.4	387.3	16	28.6	39.50
12	323.9	520.7	73.0	50.8	374.6	381.0	325.4	450.8	16	31.7	57.70
14	368	584.2	76.2	54.0	425.4	425.1	369.5	514.3	20	31.7	80.60
16	419.1	647.7	82.5	57.2	482.6	482.6	420.5	571.5	20	34.9	102.10
18	457.2	711.2	88.9	60.3	533.4	533.4	458.7	628.5	24	34.9	125.20
20	508	774.7	95.2	63.5	587.4	584.2	509.5	685.8	24	34.9	154.70
24	610	914.4	106.4	69.8	701.7	692.1	611.5	812.8	24	41.3	240.65

\* ØB Dimensions to imperial measurements on request.



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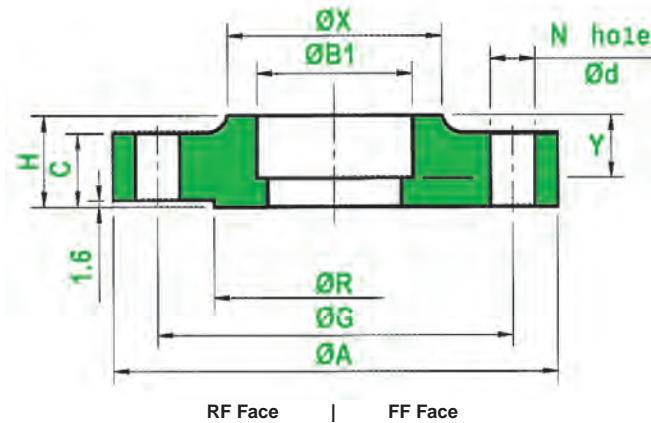




# Solid Socket Welding Flanges

150 Lbs

300 Lbs



Material : CuNi 90/10 | CuNi 70/30

Outside Diameter of Pipe - ØD		ANSI B 16.5										
		150 Lbs										
Nominal (Inch)	Actual (mm)	ØA (mm)	H (mm)	C (mm)	ØX (mm)	ØR (mm)	ØB1 (mm)	Y (mm)	Drilling			kg /pc
									ØG (mm)	N Bolt Holes	Ød (mm)	
1/2	20	88.9	15.9	11.1	30.2	34.9	20.2	9.5	60.3	4	15.9	0.80
3/4	25	98.4	15.9	12.7	38.1	42.9	25.2	11.1	69.8	4	15.9	1.10
1	30	107.9	17.5	14.3	49.2	50.8	30.2	12.7	79.4	4	15.9	1.20
1¼	38	117.5	20.6	15.9	58.7	63.5	38.3	14.3	88.9	4	15.9	1.50
1½	44.5	127.0	22.2	17.5	65.1	73.0	44.8	15.9	98.4	4	15.9	1.60
2	57	152.4	25.5	19.1	77.8	92.1	57.4	17.5	120.6	4	19	2.70
2½	76.1	177.8	28.6	22.2	90.5	104.8	76.5	19.0	139.7	4	19	4.10
3	88.9	190.5	30.2	23.8	107.9	127.0	89.4	20.6	152.4	4	19	4.10
4	108	228.6	33.3	23.8	134.9	157.2	108.5	23.8	190.5	8	19	7.00
		300 Lbs										
1/2	20	95.2	22.2	14.3	38.1	34.9	20.2	9.5	66.7	4	15.9	0.90
3/4	25	117.5	25.4	15.9	47.6	42.9	25.2	11.1	82.5	4	19	1.40
1	30	123.8	27.0	17.5	54.0	50.8	30.2	12.7	88.9	4	19	1.70
1¼	38	133.3	27.0	19.0	63.5	63.5	38.3	14.3	98.4	4	19	2.00
1½	44.5	155.6	30.2	20.6	69.8	73.0	44.8	15.9	114.3	4	22.2	3.00
2	57	165.1	33.3	22.2	84.1	92.1	57.4	17.5	127.0	8	19	3.40
2½	76.1	190.5	38.1	25.4	100.0	104.8	76.5	19.0	149.2	8	22.2	5.10
3	88.9	209.5	42.9	28.6	117.5	127.0	89.4	20.6	168.3	8	22.2	6.80
4	108	254.0	47.6	31.8	146.0	157.2	108.5	23.8	200.0	8	22.2	11.30

\* ØB Dimensions to imperial measurements on request.



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