



The RvA is a signatory to the IAF MLA



WSEME  
Micro, Small & Medium Enterprises

# Fine Industrial Corporation

**AN ISO 9001-2008 REGISTERED CO.**

**MANUFACTURERS OF : FORGED FLANGES, M. S. / S. S. FLANGES AS PER DRAWINGS,  
SUPPLIERS OF : PIPE FITTINGS, PROFILE CUTTING & MARINE ITEMS.**



एन एस आय सी



**AHTISAB N. KHAN**

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# FINE INDUSTRIAL CORPORATION

AN ISO 9001-2008 REGISTERED CO.

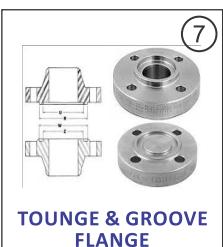
**MANUFACTURERS OF : FORGED FLANGES, M. S. / S. S. FLANGES AS PER DRAWINGS,  
SUPPLIERS OF : PIPE FITTINGS, PROFILE CUTTING & MARINE ITEMS.**



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Off. & Workshop: Plot No.100-101, RetiBunder, Near Manikant Godown, Darukhana, Reay Road, Mumbai-400010. • Workshop: 23732661 Tel.: 23742662 Telefax: 23713454  
Website: [www.fine-industries.com](http://www.fine-industries.com) E-mail: [info@fine-industries.com](mailto:info@fine-industries.com) / [msflange.fineindustries@gmail.com](mailto:msflange.fineindustries@gmail.com) / [fine.industries@rediffmail.com](mailto:fine.industries@rediffmail.com)

## OUR PRODUCTS NO.1 TO 18



WE SUPPLY PRODUCT NO.19 TO 30 AS PER ORDER

# **INTRODUCTION**

We introduce ourselves as **ISO 9001-2008** Certified by **DUTCH NARSKE VERITAS (DNV)**. The company (**Fine Industrial Corporation**) is established in 1995 to serve the Mechanical construction industries with highly qualified technical personals and talented work force. We are intended to serve our clients prompt and fast service at reasonable rates in stipulated time period. We manufacture the flanges and pipe fittings satisfying all international and Indian Standards in good Quality

**MANUFACTURERS OF :** Forged Flanges, M. S. / S. S. Flanges As Per Drawings,  
**SUPPLIERS OF :** Pipe Fittings, Profile Cutting & Marine Items.

We are serving to clients in India as well as abroad who range from government undertaking to multinational corporations.

## **We Serving to following industries.**

- Oil & Gas Industries.
- Pharmaceuticals, Fertilizers & Chemical Industries.
- Petrochemical Industries
- Sugar Mills / Paper Mills
- Cement Industries
- Food & Breweries Industries.
- Marine Equipments.
- Steel & Power Industries
- Engineering & Fabrication Industries.
- Water Treatment Plants.
- Solvent Extraction Industries.
- Government Organisations.

We used standard code for manufacturing of all items as per American National Standard (ANSI), British Standard (BS), Indian Standard (IS), Din Standard (DIN) and as well as standards specified by our esteem Clients, under the prefect quality supervision committed to technical excellence.

We assure our valued clients 100% Quality Standards for their valued orders if a change is given to serve them with our range of products. We look forward for a better co-operation from our valued customers to register our company as one of their esteemed suppliers and assure you for our best attentive service to your always.

We sure hope to received your valued inquiry at an early date & thanking you,

With Regards.

**AHTISAB N. KHAN  
PROPRIETOR**



# FINE INDUSTRIAL CORPORATION

AN ISO 9001-2008 REGISTERED CO.

MANUFACTURERS OF : FORGED FLANGES, M. S. / S. S. FLANGES AS PER DRAWINGS,  
SUPPLIERS OF : PIPE FITTINGS, PROFILE CUTTING & MARINE ITEMS.



The RvA is a signatory to the IAF MLA

Off. & Workshop: Plot No.100-101, RetiBunder, Near Manikant Godown, Darukhana, Reay Road, Mumbai-400010. • Workshop: 23732661 Tel.: 23742662 Telefax: 23713454  
Website: [www.fine-industries.com](http://www.fine-industries.com) E-mail: [info@fine-industries.com](mailto:info@fine-industries.com) / [msflange.fineindustries@gmail.com](mailto:msflange.fineindustries@gmail.com) / [fine.industries@rediffmail.com](mailto:fine.industries@rediffmail.com)

## QUALITY POLICY

WE AT FINE INDUSTRIAL CORPORATION ARE COMMITTED TO EXCEL IN OUR EFFORTS TO PROVIDE QUALITY SERVICES TO ALL OUR PRIVILEGED CUSTOMERS, IN THE FIELD OF MANUFACTURE AND SUPPLY OF MILD STEEL, CARBON STEEL & STAINLESS STEEL FLANGES, SUPPLY OF MILD STEEL CARBON STEEL & STAINLESS STEEL PIPES (SEAMLESS & ERW) & PIPE FITTINGS. WE WILL ENSURE THAT THESE SERVICES ARE PROVIDED OF BEST QUALITY AT COMPETITIVE PRICE, ENSURING VALUE FOR MONEY AND CUSTOMER SATISFACTIONS

WE ARE COMMITTED TO COMPLY WITH THE REQUIREMENTS AND CONTINUAL IMPROVEMENT OF THE EFFECTIVENESS OF THE QUALITY MANAGEMENT SYSTEM.

WE WILL REVIEW THE SUITABILITY OF QUALITY POLICY AND QUALITY OBJECTIVES PERIODICALLY AND WILL ENSURE THAT IT IS COMMUNICATED AND UNDERSTOOD WITHIN THE ORGANISATION.

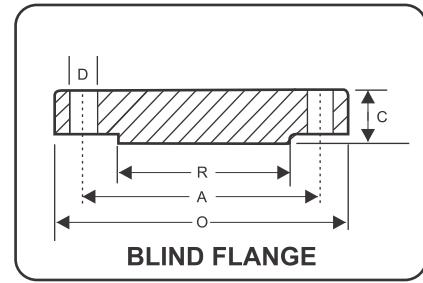
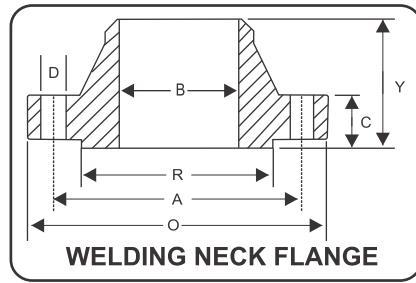
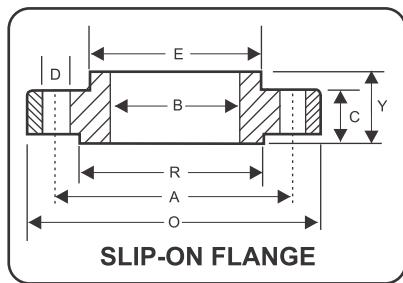
DATE : 30.11.2008

PLACE : MUMBAI

AHTISAB N. KHAN  
PROPRIETOR



**Fine Industrial Corporation**



### DIMENSIONS OF CLASS 150 FLANGES AS PER ANSI B 16.5

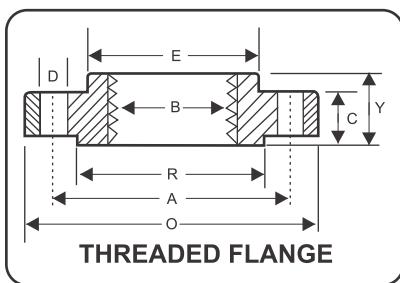
Nominal Pipe Size	Flange Dia.	Dia of Bolt Circle	Dia of Bolt Holes	No. of Holes	Thk. of Flange	Dia. of Hub	Length through Hub			Dia of Bore		Dia of R/F	Depth of Socket
							S/O & S/W	W/N	L/J	S/O & S/W	L/J		
O	A	D	C	E	Y	Y	Y	B	B	R	F		
15	88.9	60.3	15.9	4	11.1	30.2	15.9	47.6	15.9	22.3	22.9	34.9	9.5
20	98.4	69.8	15.9	4	12.7	38.1	15.9	52.4	15.9	27.7	28.2	42.9	11.1
25	107.9	79.4	15.9	4	14.3	49.2	17.5	55.6	17.5	34.5	35.0	50.8	12.7
32	117.5	88.9	15.9	4	15.9	58.7	20.6	57.1	20.6	43.2	43.7	63.5	14.3
40	127.0	98.4	15.9	4	17.5	65.1	22.2	61.9	22.2	49.5	50.0	73.0	15.9
50	152.4	120.6	19.0	4	19.0	77.8	25.4	63.5	25.4	62.0	62.5	92.1	17.5
65	177.8	139.7	19.0	4	22.2	90.5	28.6	69.8	28.6	74.7	75.4	104.8	19.0
80	190.5	152.4	19.0	4	23.8	107.9	30.2	69.8	30.2	90.7	91.4	127.0	20.6
100	228.6	190.5	19.0	8	23.8	134.9	33.3	76.2	33.3	116.1	116.8	157.2	23.8
125	254.0	215.9	22.2	8	23.8	163.5	36.5	88.9	36.5	143.8	144.5	185.7	23.8
150	279.4	241.3	22.2	8	25.4	192.1	39.7	88.9	39.7	170.7	171.4	215.9	27.0
200	342.9	298.4	22.2	8	28.6	246.1	44.4	101.6	44.4	221.5	222.2	269.9	31.7
250	406.4	361.9	25.4	12	30.2	304.8	49.2	101.6	49.2	276.3	277.4	323.8	33.3
300	482.6	431.8	25.4	12	31.8	365.1	55.6	114.3	55.6	327.1	328.2	381.0	39.7
350	533.4	476.2	28.6	12	34.9	400.0	57.1	127.0	79.4	359.1	360.2	412.7	41.3
400	596.9	539.7	28.6	16	36.5	457.2	63.5	127.0	87.3	410.5	411.2	469.9	44.4
450	635.0	577.8	31.7	16	39.7	504.8	68.3	139.7	96.8	461.8	462.3	533.4	49.2
500	698.5	635.0	31.7	20	42.9	558.8	73.0	144.5	103.2	513.1	514.3	584.2	54.0
600	812.8	749.3	34.9	20	47.6	663.6	82.5	152.4	111.1	615.9	615.9	692.1	63.5

### DIMENSIONS OF CLASS 300 FLANGES AS PER ANSI B 16.5

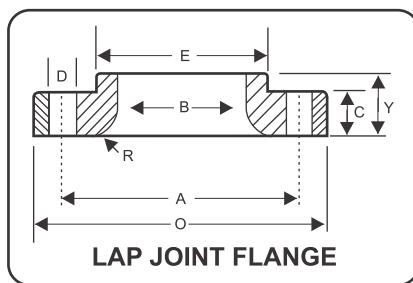
Nominal Pipe Size	Flange Dia.	Dia of Bolt Circle	Dia of Bolt Holes	No. of Holes	Thk. of Flange	Dia. of Hub	Length through Hub			Dia of Bore		Dia of R/F	Depth of Socket
							S/O & S/W	W/N	L/J	S/O & S/W	L/J		
O	A	D	C	E	Y	Y	Y	B	B	R	F		
15	95.2	66.7	15.9	4	14.3	38.1	22.2	52.4	22.2	22.3	22.9	34.9	9.5
20	117.5	82.5	19.0	4	15.9	47.6	25.4	57.1	25.4	27.7	28.2	42.9	11.1
25	123.8	88.9	19.0	4	17.5	54.0	27.0	61.9	27.0	34.5	35.0	50.8	12.7
32	133.3	98.4	19.0	4	19.0	63.5	27.0	65.1	27.0	43.2	43.7	63.5	14.3
40	155.6	114.3	22.2	4	20.6	69.8	30.2	68.3	30.2	49.5	50.0	73.0	15.9
50	165.1	127.0	19.0	8	22.2	84.1	33.3	69.8	33.3	62.0	62.5	92.1	17.5
65	190.5	149.2	22.2	8	25.4	100.0	38.1	76.2	38.1	74.7	75.4	104.8	19.0
80	209.5	168.3	22.2	8	28.6	117.5	42.9	79.4	42.9	90.7	91.4	127.0	20.6
100	254.0	200.0	22.2	8	31.8	146.0	47.6	85.7	47.6	116.1	116.8	157.2	23.8
125	279.4	234.9	22.2	8	34.9	177.8	50.8	98.4	50.8	143.8	144.5	185.7	--
150	317.5	269.9	22.2	12	36.5	206.4	52.4	98.4	52.4	170.7	171.4	215.9	--
200	381.0	330.2	25.4	12	41.3	260.3	61.9	111.1	61.9	221.5	222.2	269.9	--
250	444.5	387.3	28.6	16	47.6	320.7	66.7	117.5	95.2	276.3	277.4	323.8	--
300	520.7	450.8	31.7	16	50.8	374.6	73.0	130.2	101.6	327.1	328.2	381.0	--
350	584.2	514.3	31.7	20	54.0	425.4	76.2	142.9	111.1	359.1	360.2	412.7	--
400	647.7	571.5	34.9	20	57.2	482.6	82.5	146.0	120.6	410.5	411.2	469.9	--
450	711.2	628.5	34.9	24	60.3	533.4	88.9	158.7	130.2	461.8	462.3	533.4	--
500	774.7	685.8	34.9	24	63.5	587.4	95.2	161.9	139.7	513.1	514.3	584.2	--
600	914.4	812.8	41.3	24	69.8	701.7	106.4	168.3	152.4	615.9	615.9	692.1	--

1) All Dimensions are in Millimeters.

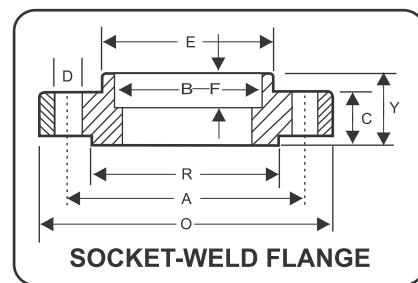
2) Flanges except Lap Joint will be furnished with (1.6) Raised Face, which is included in "Thickness (C)" and "Length through Hub (Y)".



THREADED FLANGE



LAP JOINT FLANGE



SOCKET-WELD FLANGE

## DIMENSIONS OF CLASS 600 FLANGES AS PER ANSI B 16.5

Nominal Pipe Size	Flange Dia.	Dia of Bolt Circle	Dia of Bolt Holes	No. of Holes	Thk. of Flange	Dia. of Hub	Length through Hub			Dia of Bore		Dia of R/F	Depth of Socket
							C	E	S/O & S/W	W/N	L/J		
O	A	D							Y	Y	Y	R	F
15	95.2	66.7	15.9	4	14.3	38.1	22.2	52.4	22.3	22.8	34.9	9.5	
20	117.5	82.5	19.0	4	15.9	47.6	25.4	57.1	25.4	27.7	28.1	11.1	
25	123.8	88.9	19.0	4	17.5	54.0	27.0	61.9	26.9	34.5	35.0	12.7	
32	133.3	98.4	19.0	4	20.6	63.5	28.6	66.7	28.4	43.2	43.6	14.2	
40	155.6	114.3	22.2	4	22.2	69.8	31.7	69.8	31.7	49.5	50.0	15.8	
50	165.1	127.0	19.0	8	25.4	84.1	36.5	73.0	36.5	62.0	62.4	17.4	
65	190.5	149.2	22.2	8	28.6	100.0	41.3	79.4	41.1	74.7	75.4	104.8	
80	209.5	168.3	22.2	8	31.8	117.5	46.0	82.5	45.9	90.7	91.4	127.0	
100	273.0	215.9	25.4	8	38.1	152.4	54.0	101.6	53.8	116.1	116.8	157.2	
125	330.2	266.7	28.6	8	44.4	188.9	60.3	114.3	60.4	143.8	141.5	185.7	
150	355.6	292.1	28.6	12	47.6	222.2	66.7	117.5	66.5	170.7	171.4	215.9	
200	419.1	349.2	31.7	12	55.6	273.0	76.2	133.3	76.2	221.5	222.2	269.9	
250	508.0	431.8	34.9	16	63.5	342.9	85.7	152.4	111.2	276.3	277.3	323.8	
300	558.8	488.9	34.9	20	66.7	400.0	92.1	155.6	117.3	327.1	328.1	381.0	
350	603.2	527.0	38.1	20	69.9	431.8	93.7	165.1	127.0	359.1	360.1	412.7	
400	685.8	603.2	41.3	20	76.2	495.3	106.4	177.8	139.7	410.5	411.2	469.9	
450	742.9	654.0	44.4	20	82.6	546.1	117.5	184.1	152.4	461.8	462.2	533.4	
500	812.8	723.9	44.4	24	88.9	609.6	127.0	190.5	165.1	513.1	514.3	584.2	
600	939.8	838.2	50.8	24	101.6	717.5	139.7	203.2	184.1	615.9	615.9	692.1	

## DIMENSIONS OF CLASS 900 FLANGES AS PER ANSI B 16.5

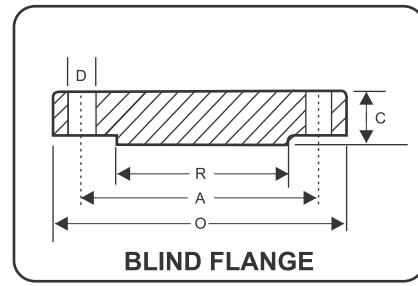
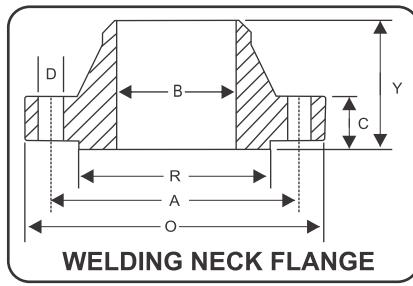
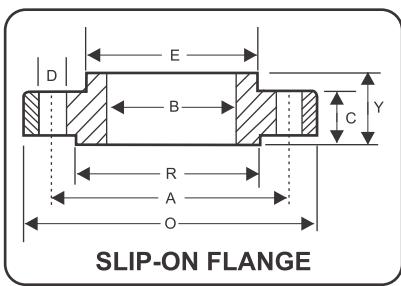
Nominal Pipe Size	Flange Dia.	Dia of Bolt Circle	Dia of Bolt Holes	No. of Holes	Thk. of Flange	Dia. of Hub	Length through Hub			Dia of Bore		Dia of R/F	Depth of Socket
							C	E	S/O & S/W	W/N	L/J		
O	A	D							Y	Y	Y	R	F
15	120.6	82.5	22.2	4	22.2	38.1	31.7	60.3	31.7	22.3	22.8	34.9	9.5
20	130.2	88.9	22.2	4	25.4	44.4	34.9	69.8	35.0	27.7	28.1	42.9	11.1
25	149.2	101.6	25.4	4	28.6	52.4	41.3	73.0	41.1	34.5	35.0	50.8	12.7
32	158.7	111.1	25.4	4	28.6	63.5	41.3	73.0	41.1	43.2	43.6	63.5	14.2
40	177.8	123.8	28.6	4	31.8	69.8	44.4	82.5	44.4	49.5	50.0	73.0	15.8
50	215.9	165.1	25.4	8	38.1	104.8	57.1	101.6	57.1	62.0	62.4	92.1	17.4
65	244.5	190.5	28.6	8	41.3	123.8	63.5	104.8	63.5	74.7	75.4	104.8	19.0
80	241.3	190.5	25.4	8	38.1	127.0	53.9	101.6	53.8	90.7	91.4	127.0	--
100	292.1	234.9	31.7	8	44.4	158.7	69.8	114.3	69.8	116.0	116.8	157.1	--
125	349.2	279.4	35.0	8	50.8	190.5	79.3	127.0	79.2	143.7	144.5	185.7	--
150	381.0	317.5	31.7	12	55.6	234.9	85.8	139.7	85.8	170.6	171.4	215.9	--
200	469.9	393.7	38.1	12	63.5	298.4	101.6	162.0	144.3	221.4	222.2	269.8	--
250	546.1	469.9	38.1	16	69.8	368.3	107.9	184.1	127.0	276.3	277.3	323.8	--
300	609.6	533.4	38.1	20	79.3	419.1	117.4	200.0	142.7	327.1	328.1	381.0	--

1) All Dimensions are in Millimeters.

2) Flanges except Lap Joint will be furnished with (6.35) Raised Face, which is not included in "Thickness (C)" and "Length through Hub (Y)".



**Fine Industrial Corporation**



### DIMENSIONS OF CLASS 1500 FLANGES AS PER ANSI B 16.5

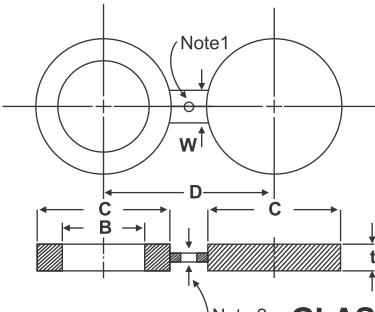
Nominal Pipe Size	Flange Dia.	Dia of Bolt Circle	Dia of Bolt Holes	No. of Holes	Thk. of Flange	Dia. of Hub	Length through Hub			Dia of Bore		Dia of R/F	Depth of Socket
							S/O & S/W	W/N	L/J	S/O & S/W	L/J		
O	A	D	C	E	Y	Y	Y	B	B	R	F		
15	120.6	82.5	22.2	4	22.2	38.1	31.7	60.3	31.7	22.3	22.8	34.9	9.5
20	130.2	88.9	22.2	4	25.4	44.4	34.9	69.8	34.9	27.7	28.1	42.9	11.1
25	149.2	101.6	25.4	4	28.6	52.4	41.3	73.0	41.3	34.5	35.0	50.8	12.7
32	158.7	111.1	25.4	4	28.6	63.5	41.3	73.0	41.3	43.2	43.6	63.5	14.2
40	177.8	123.8	28.6	4	31.8	69.8	44.4	82.5	44.4	49.5	50.0	73.0	15.8
50	215.9	165.1	25.4	8	38.1	104.8	57.1	101.6	57.1	62.0	62.0	92.1	17.4
65	244.5	190.5	28.6	8	41.3	123.8	63.5	104.8	63.5	74.7	75.4	104.8	19.0
80	266.7	203.2	31.7	8	47.6	133.3	73.0	117.5	73.0	90.7	91.4	127.0	--
100	311.1	241.3	34.9	8	54.0	161.9	90.5	123.0	90.4	116.1	116.8	157.2	--
125	374.6	292.1	41.3	8	73.0	196.8	104.8	155.6	104.8	143.8	144.5	185.7	--
150	393.7	317.5	38.1	12	82.6	228.6	119.1	171.4	119.1	170.7	171.4	215.9	--
200	482.6	393.7	44.4	12	92.1	292.1	142.9	212.7	142.8	221.5	222.2	269.9	--
250	584.2	482.6	50.8	12	107.9	368.3	158.7	254.0	177.8	276.3	277.3	323.8	--
300	673.1	571.5	54.0	16	123.8	450.8	181.0	282.5	218.9	327.1	328.1	381.0	--

### DIMENSIONS OF CLASS 2500 FLANGES AS PER ANSI B 16.5

Nominal Pipe Size	Flange Dia.	Dia of Bolt Circle	Dia of Bolt Holes	No. of Holes	Thk. of Flange	Dia. of Hub	Length through Hub			Dia of Bore		Dia of R/F	Depth of Socket
							S/O & S/W	W/N	L/J	S/O & S/W	L/J		
O	A	D	C	E	Y	Y	Y	B	B	R	F		
15	133.3	88.9	22.2	4	30.2	42.9	39.7	73.0	39.7	22.3	22.3	34.9	--
20	139.7	95.2	22.2	4	31.7	50.8	42.9	79.4	42.9	27.7	27.7	42.9	--
25	158.7	107.9	25.4	4	34.9	57.1	47.7	88.9	47.7	34.5	34.5	50.8	--
32	184.1	130.2	28.6	4	38.1	73.0	52.4	95.2	52.4	43.2	43.2	63.5	--
40	203.2	146.0	31.7	4	44.4	79.4	60.3	111.1	60.3	49.5	49.5	73.0	--
50	234.9	171.4	28.6	8	50.8	95.2	69.8	127.0	69.8	62.4	62.0	92.1	--
65	266.7	196.8	31.7	8	57.1	114.3	79.4	142.9	79.4	74.7	74.7	104.8	--
80	304.8	228.6	34.9	8	66.7	133.3	92.1	168.3	92.1	90.7	90.7	127.0	--
100	355.6	273.0	41.3	8	76.2	165.1	107.9	190.5	107.9	116.1	116.1	157.2	--
125	419.1	323.8	47.6	8	92.1	203.2	130.0	228.6	130.0	143.8	143.8	185.7	--
150	482.6	368.3	54.0	8	107.9	234.9	152.4	273.0	152.4	170.7	170.7	215.9	--
200	552.4	438.1	54.0	12	127.0	304.8	177.8	317.5	177.8	221.5	221.5	269.9	--
250	673.1	539.7	66.7	12	165.1	374.6	228.6	419.1	228.6	276.3	276.3	323.8	--
300	762.0	619.1	73.0	12	184.1	441.3	254.0	463.5	254.0	327.1	327.1	381.0	--

1) All Dimensions are in Millimeters.

2) Flanges except Lap Joint will be furnished with (6.35) Raised Face, which is not included in "Thickness (C)" and "Length through Hub (Y)".



**Fine Industrial Corporation**

**SPECTACLE BLINDS TO API 590  
ANSI CLASS, 150, 300 & 600**

**CLASS 150**

**CLASS 300**

**CLASS 600**

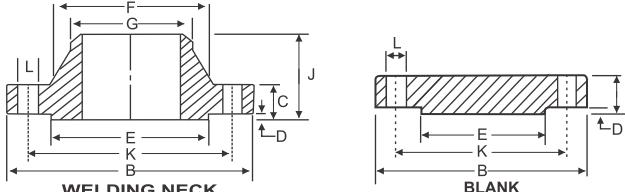
NOMINAL PIPE SIZE		OUTSIDE DIAMETER OF PIPE					INSIDE DIAMETER					OUTSIDE DIAMETER					INSIDE DIAMETER					NOMINAL PIPE SIZE
mm.	(in)	A	B	C	D	t	W	B	C	D	t	W	B	C	D	t	W	mm	(in)			
15 (1/2)	21.3	16	44	60	3	38	16	51	67	6	38	16	51	67	6	38	15	(1/2)				
20 (3/4)	26.7	21	54	70	3	38	21	64	83	6	38	21	64	83	6	38	20	(3/4)				
25 (1)	33.4	27	64	79	3	38	27	70	89	6	38	27	70	89	6	38	25	(1)				
32 (1 1/4)	42.2	42	73	89	6	38	42	79	99	6	38	37	79	99	10	57	32	(1 1/4)				
40 (1 1/2)	48.3	48	83	99	6	38	48	92	114	6	51	43	92	114	10	67	40	(1 1/2)				
50 (2)	60.3	60	102	121	6	51	60	108	127	10	51	55	108	127	10	57	50	(2)				
65 (2 1/2)	73	73	121	140	6	51	73	127	149	10	64	67	127	149	13	67	65	(2 1/2)				
80 (3)	88.9	89	133	152	6	64	89	146	168	10	64	83	146	168	13	67	80	(3)				
100 (4)	114.3	114	171	190	10	64	114	178	200	13	64	108	191	216	16	76	100	(4)				
125 (5)	141.3	141	194	216	10	76	141	213	235	16	76	135	238	267	19	86	125	(5)				
150 (6)	168.3	168	219	241	13	76	168	248	270	16	76	162	264	292	22	86	150	(6)				
200 (8)	219.1	219	276	298	13	76	219	305	330	22	89	212	318	349	28	95	200	(8)				
250 (10)	273.1	273	337	362	16	102	273	359	387	25	102	265	397	432	35	105	250	(10)				
300 (12)	323.8	324	406	432	19	102	324	419	451	28	102	315	454	489	41	105	300	(12)				
350 (14)	355.6	356	448	476	19	108	356	483	514	32	121	346	489	527	44	114	350	(14)				
400 (16)	406.4	406	511	540	22	108	406	537	572	38	124	397	562	603	51	124	400	(16)				
450 (18)	457	457	546	578	25	114	457	594	629	41	114	448	610	654	54	133	450	(18)				
500 (20)	508	508	603	635	28	121	508	651	686	44	121	497	679	724	64	133	500	(20)				
600 (24)	610	610	714	749	32	140	610	772	813	51	140	597	787	838	73	152	600	(24)				

NOTE : 1. HOLE SIZE SHALL BE THE SAME AS THE FLANGE BOLT HOLE. 2. THE THICKNESS WEB SHALL BE THE LEAST OF 'T' OR 6.4MM  
3. ALSO AVAILABLE IN LARGER SIZES & RING TYPE JOINT FACING.

**ASME B16.47 - 1996**

**Series A  
Class 150**

**CLASS 150**

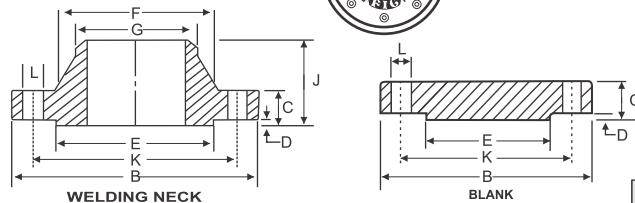


NOMINAL PIPE SIZE		OUTSIDE DIAMETER OF PIPE	FLANGE DIAMETER	THICKNESS OF FLANGE	THICKNESS OF FLANGE	RAISED FACE	RAISED FACE	HUB DIAMETER	HUB DIA.	LENGTH	BOLT CIRCLE DIAMETER	DIAMETER OF BOLT HOLES	NUMBER OF BOLTS	DRILLING DATA			NOMINAL PIPE SIZE	
mm.	(in)	A	B	C	C1	D	E	F	G	J	K	L	M	mm.	(in)			
650 (26)	660.4	870.0	68.3	68.3	1.6	749.3	676.1	660.4	120.7	806.5	35.1	24	650	(26)				
700 (28)	711.2	927.1	71.4	71.4	1.6	800.1	726.9	711.2	125.5	863.6	35.1	28	700	(28)				
750 (30)	762.0	984.3	74.7	74.7	1.6	857.3	781.1	762.0	136.7	914.4	35.1	28	750	(30)				
800 (32)	812.8	1060.5	81.0	81.0	1.6	914.4	831.9	812.9	144.5	977.9	41.1	28	800	(32)				
850 (34)	863.6	1111.3	82.6	82.6	1.6	965.2	882.7	863.6	149.4	1028.7	41.1	32	850	(34)				
900 (36)	914.4	1168.4	90.4	90.4	1.6	1022.4	933.5	914.4	157.2	1085.9	41.1	32	900	(36)				
950 (38)	965.2	1238.3	87.4	87.4	1.6	1073.2	990.6	965.2	157.2	1149.4	41.1	32	950	(38)				
1000 (40)	1016.0	1289.1	90.4	90.4	1.6	1124.0	1041.4	1016.0	163.6	1200.2	41.1	36	1000	(40)				
1050 (42)	1066.8	1346.2	96.8	96.8	1.6	1193.8	1092.2	1066.8	171.5	1257.3	41.1	36	1050	(42)				
1100 (44)	1117.6	1403.4	101.6	101.6	1.6	1244.6	1143.0	1117.6	177.8	1314.5	41.1	40	1100	(44)				
1150 (46)	1168.4	1454.2	103.1	103.1	1.6	1295.4	1196.8	1168.4	185.7	1365.3	41.1	40	1150	(46)				
1200 (48)	1219.2	1511.3	108.0	108.0	1.6	1358.9	1247.6	1219.2	192.0	1422.4	41.1	44	1200	(48)				
1250 (50)	1270.0	1568.5	111.3	111.3	1.6	1409.7	1301.8	1270.0	203.2	1479.6	47.8	44	1250	(50)				
1300 (52)	1320.8	1625.6	115.8	115.8	1.6	1460.5	1352.6	1320.8	209.6	1536.7	47.8	44	1300	(52)				
1350 (54)	1371.6	1682.8	120.7	120.7	1.6	1511.3	1403.4	1371.6	215.9	1593.9	47.8	44	1350	(54)				
1400 (56)	1422.4	1746.3	124.0	124.0	1.6	1574.8	1457.5	1422.4	228.6	1651.0	47.8	48	1400	(56)				
1450 (58)	1473.2	1803.4	128.5	128.5	1.6	1625.6	1508.3	1473.2	235.0	1708.2	47.8	48	1450	(58)				
1500 (60)	1524.0	1854.2	131.8	131.8	1.6	1676.4	1559.1	1524.0	239.8	1759.0	47.8	52	1500	(60)				

NOTE : 1. DIMENSIONS ARE IN MM 2. BORE IS TO BE SPECIFIED BY THE CUSTOMER TO SUIT PIPE. 3. RING TYPE JOINT ALSO AVAILABLE.



## CLASS 300

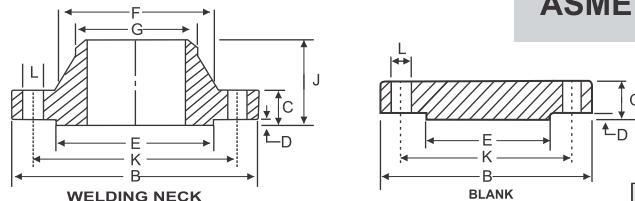


NOMINAL PIPE SIZE	OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE MIN	THICKNESS OF FLANGE BLIND C1	RAISED FACE MIN	RAISED FACE THICKNESS	HUB DIAMETER	HUB DIA. START OF CHAMFER	LENGTH THROUGH HUB	DRILLING DATA			NOMINAL PIPE SIZE	
										BOLT CIRCLE DIAMETER OF BOLT HOLE	NUMBER OF BOLTS	NOMINAL PIPE SIZE		
										mm.	(in)			
650	(26)	660.4	971.6	79.2	84.1	1.6	749.3	720.9	660.4	184.2	876.3	44.5	28	650 (26)
700	(28)	711.2	1035.1	85.9	90.4	1.6	800.1	774.7	711.2	196.9	939.8	44.5	28	700 (28)
750	(30)	762.0	1092.2	91.9	95.3	1.6	857.3	827.0	762.0	209.6	997.0	47.8	28	750 (30)
800	(32)	812.8	1149.4	98.6	100.1	1.6	914.4	881.1	812.8	222.3	1054.1	50.8	28	800 (32)
850	(34)	863.6	1206.5	101.6	104.6	1.6	965.2	936.8	863.6	231.6	1104.9	50.8	28	850 (34)
900	(36)	914.4	1270.0	104.6	111.3	1.6	1022.4	990.6	914.4	241.3	1168.4	53.8	32	900 (36)
950	(38)	965.2	1168.4	108.0	108.0	1.6	1028.7	993.6	965.2	180.8	1092.2	41.1	32	950 (38)
1000	(40)	1016.0	1238.3	114.3	114.3	1.6	1085.9	1047.8	1016.0	193.5	1155.7	44.5	32	1000 (40)
1050	(42)	1066.8	1289.1	119.1	119.1	1.6	1136.7	1098.6	1066.8	200.2	1206.5	44.5	32	1050 (42)
1100	(44)	1117.6	1352.6	124.0	124.0	1.6	1193.8	1149.4	1117.6	206.2	1263.7	47.8	32	1100 (44)
1150	(46)	1168.4	1416.1	128.5	128.5	1.6	1244.6	1203.5	1168.4	215.9	1320.8	50.8	28	1150 (46)
1200	(48)	1219.2	1466.9	133.4	133.4	1.6	1301.8	1254.3	1219.2	223.8	1371.6	50.8	32	1200 (48)
1250	(50)	1270.0	1530.4	139.7	139.7	1.6	1358.9	1305.1	1270.0	231.6	1428.8	53.8	32	1250 (50)
1300	(52)	1320.8	1581.2	144.5	144.5	1.6	1409.7	1355.9	1320.8	238.3	1479.6	53.8	32	1300 (52)
1350	(54)	1371.6	1657.4	152.4	152.4	1.6	1466.9	1409.7	1371.6	252.5	1549.4	60.5	28	1350 (54)
1400	(56)	1422.4	1708.2	153.9	153.9	1.6	1517.7	1463.5	1422.4	260.4	1600.2	60.5	28	1400 (56)
1450	(58)	1473.2	1759.0	158.8	158.8	1.6	1574.8	1514.3	1473.2	266.7	1651.0	60.5	32	1450 (58)
1500	(60)	1524.0	1809.8	163.6	163.6	1.6	1625.6	1565.1	1524.0	273.1	1701.8	60.5	32	1500 (60)

NOTE : 1. DIMENSIONS ARE IN MM. 2. BORE IS TO BE SPECIFIED BY THE CUSTOMER TO SUIT PIPE 3. RING TYPE JOINT ALSO AVAILABLE.

Previously MSS SP 44

## CLASS 600

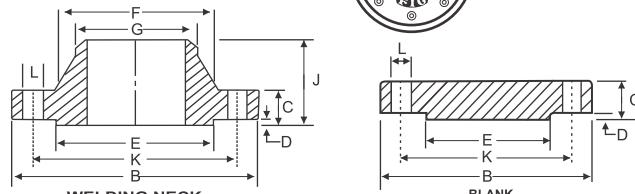


NOMINAL PIPE SIZE	OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE MIN	THICKNESS OF FLANGE BLIND C1	RAISED FACE MIN	RAISED FACE THICKNESS	HUB DIAMETER	HUB DIA. START OF CHAMFER	LENGTH THROUGH HUB	DRILLING DATA			NOMINAL PIPE SIZE	
										BOLT CIRCLE DIAMETER OF BOLT HOLE	NUMBER OF BOLTS	NOMINAL PIPE SIZE		
										mm.	(in)			
650	(26)	660.4	1016.0	108.0	125.5	6.4	749.3	747.8	660.4	222.3	914.4	50.8	28	650 (26)
700	(28)	711.2	1073.2	111.3	131.8	6.4	800.1	803.1	711.2	235.0	965.2	53.8	28	700 (28)
750	(30)	762.0	1130.3	114.3	139.7	6.4	857.3	862.1	762.0	247.7	1022.4	53.8	28	750 (30)
800	(32)	812.8	1193.8	117.3	147.6	6.4	914.4	917.4	812.9	260.4	1079.5	60.5	28	800 (32)
850	(34)	863.6	1244.6	120.7	153.9	6.4	965.2	973.1	863.6	269.7	1130.3	60.5	28	850 (34)
900	(36)	914.4	1314.5	124.0	162.1	6.4	1022.4	1031.7	914.4	282.4	1193.8	66.5	28	900 (36)
950	(38)	965.2	1270.0	152.4	155.4	6.4	1054.1	1022.4	965.2	254.0	1162.1	60.5	28	950 (38)
1000	(40)	1016.0	1320.8	158.8	162.1	6.4	1111.3	1073.2	1016.0	263.7	1212.9	60.5	32	1000 (40)
1050	(42)	1066.8	1403.4	168.1	171.5	6.4	1168.4	1127.3	1066.8	279.4	1282.7	66.5	28	1050 (42)
1100	(44)	1117.6	1454.2	173.0	177.8	6.4	1225.6	1181.1	1117.6	289.1	1333.5	66.5	32	1100 (44)
1150	(46)	1168.4	1511.3	179.3	185.7	6.4	1276.4	1234.9	1168.4	300.0	1390.7	66.5	32	1150 (46)
1200	(48)	1219.2	1593.9	189.0	195.3	6.4	1333.5	1289.1	1219.2	316.0	1460.5	73.2	32	1200 (48)
1250	(50)	1270.0	1670.1	196.9	203.2	6.4	1384.3	1343.2	1270.0	328.7	1524.0	79.2	28	1250 (50)
1300	(52)	1320.8	1720.9	203.2	209.6	6.4	1435.1	1394.0	1320.8	336.6	1574.8	79.2	32	1300 (52)
1350	(54)	1371.6	1778.0	209.6	217.4	6.4	1492.3	1447.8	1371.6	349.3	1632.0	79.2	32	1350 (54)
1400	(56)	1422.4	1854.2	217.4	225.6	6.4	1543.1	1501.6	1422.4	362.0	1695.5	85.9	32	1400 (56)
1450	(58)	1473.2	1905.0	222.3	231.6	6.4	1600.2	1552.4	1473.2	369.8	1746.3	85.9	32	1450 (58)
1500	(60)	1524.0	1993.9	233.4	242.8	6.4	1657.4	1609.9	1524.0	388.9	1822.5	91.9	28	1500 (60)

NOTE : 1. DIMENSIONS ARE IN MM. 2. BORE IS TO BE SPECIFIED BY THE CUSTOMER TO SUIT PIPE 3. RING TYPE JOINT ALSO AVAILABLE.



## CLASS 150

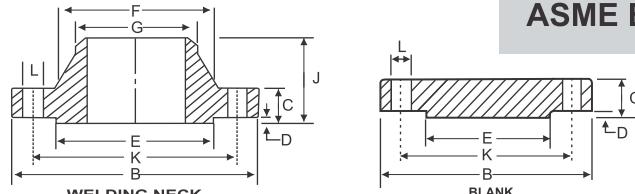


NOMINAL PIPE SIZE mm. (in)	OUTSIDE DIAMETER OF PIPE mm. (in)	FLANGE OUTSIDE DIAMETER mm. (in)	THICKNESS OF FLANGE W NECK MIN C1	THICKNESS OF FLANGE BLIND MIN	RAISED FACE THICKNESS D	RAISED FACE DIAMETER E	HUB DIAMETER F	HUB DIA. START OF CHAMFER G	LENGTH J	DRILLING DATA			NOMINAL PIPE SIZE mm. (in)
										BOLT CIRCLE DIAMETER K	DIAMETER OF BOLT L	NUMBER OF BOLTS M	
										C	D	J	
650 (26)	660.4	785.9	41.1	44.5	1.6	711.2	684.3	661.9	88.9	744.5	22.4	36	650 (26)
700 (28)	711.2	836.7	44.5	47.8	1.6	762.0	735.1	712.7	95.3	795.3	22.4	40	700 (28)
750 (30)	762.0	887.5	44.5	50.8	1.6	812.8	787.4	763.5	100.1	846.1	22.4	44	750 (30)
800 (32)	812.8	941.3	46.0	53.8	1.6	863.6	839.7	814.3	108.0	900.2	22.4	48	800 (32)
850 (34)	863.6	1004.8	49.3	57.2	1.6	920.8	892.0	865.1	110.2	957.3	25.4	40	850 (34)
900 (36)	914.4	1057.1	52.3	58.7	1.6	971.6	944.6	915.9	117.3	1009.7	25.4	44	900 (36)
950 (38)	965.2	1124.0	53.8	63.5	1.6	1022.4	997.0	968.2	124.0	1069.8	28.4	40	950 (38)
1000 (40)	1016.0	1174.8	55.6	66.5	1.6	1079.5	1049.3	1019.0	128.5	1120.6	28.4	44	1000 (40)
1050 (42)	1066.8	1225.6	58.7	68.3	1.6	1130.3	1101.9	1069.8	133.4	1171.4	28.4	48	1050 (42)
1100 (44)	1117.6	1276.4	60.5	71.4	1.6	1181.1	1152.7	1120.6	136.7	1222.2	28.4	52	1100 (44)
1150 (46)	1168.4	1341.4	62.0	74.7	1.6	1234.9	1205.0	1171.4	144.5	1284.2	31.8	40	1150 (46)
1200 (48)	1219.2	1392.2	65.0	77.7	1.6	1289.1	1257.3	1222.2	149.4	1335.0	31.8	44	1200 (48)
1250 (50)	1270.0	1443.0	68.3	80.8	1.6	1339.9	1308.1	1273.0	153.9	1385.8	31.8	48	1250 (50)
1300 (52)	1320.8	1493.8	69.9	84.1	1.6	1390.7	1360.4	1323.8	157.2	1436.6	31.8	52	1300 (52)
1350 (54)	1371.6	1549.4	71.4	87.4	1.6	1441.5	1412.7	1374.6	162.1	1492.3	31.8	56	1350 (54)
1400 (56)	1422.4	1600.2	73.2	90.4	1.6	1492.3	1465.3	1425.4	166.6	1543.1	31.8	60	1400 (56)
1450 (58)	1473.2	1674.9	74.7	93.5	1.6	1543.1	1516.1	1476.2	174.8	1611.4	35.1	48	1450 (58)
1500 (60)	1524.0	1725.7	76.2	96.8	1.6	1600.2	1570.0	1527.0	179.3	1662.2	35.1	52	1500 (60)

NOTE : 1. DIMENSIONS ARE IN MM. 2. BORE IS TO BE SPECIFIED BY THE CUSTOMER TO SUIT PIPE. 3. RING TYPE JOINT ALSO AVAILABLE.

Previously API 605

## CLASS 300



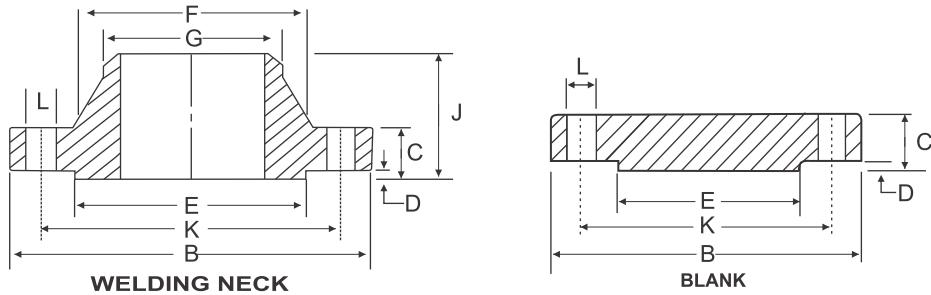
NOMINAL PIPE SIZE mm. (in)	OUTSIDE DIAMETER OF PIPE mm. (in)	FLANGE OUTSIDE DIAMETER mm. (in)	THICKNESS OF FLANGE W NECK MIN C1	THICKNESS OF FLANGE BLIND MIN	RAISED FACE THICKNESS D	RAISED FACE DIAMETER E	HUB DIAMETER F	HUB DIA. START OF CHAMFER G	LENGTH J	DRILLING DATA			NOMINAL PIPE SIZE mm. (in)
										BOLT CIRCLE DIAMETER K	DIAMETER OF BOLT L	NUMBER OF BOLTS M	
										C	D	J	
650 (26)	660.4	866.6	88.9	88.9	1.6	736.6	701.5	665.2	144.5	803.1	35.1	32	650 (26)
700 (28)	711.2	920.8	88.9	88.9	1.6	787.4	755.7	716.0	149.4	857.3	35.1	36	700 (28)
750 (30)	762.0	990.6	93.7	93.7	1.6	844.6	812.8	768.4	158.0	920.8	38.1	36	750 (30)
800 (32)	812.8	1054.1	103.1	103.1	1.6	901.7	863.6	819.2	168.1	977.9	41.1	32	800 (32)
850 (34)	863.6	1107.9	103.1	103.1	1.6	952.5	917.4	870.0	173.0	1031.7	41.1	36	850 (34)
900 (36)	914.4	1171.4	103.1	103.1	1.6	1009.7	965.2	920.8	180.8	1089.2	44.5	32	900 (36)
950 (38)	965.2	1222.2	111.3	111.3	1.6	1060.5	1016.0	971.6	192.0	1140.0	44.5	36	950 (38)
1000 (40)	1016.0	1273.0	115.8	115.8	1.6	1114.5	1066.8	1022.4	198.4	1190.8	44.5	40	1000 (40)
1050 (42)	1066.8	1333.5	119.1	119.1	1.6	1168.4	1117.6	1074.7	204.7	1244.6	47.8	36	1050 (42)
1100 (44)	1117.6	1384.3	127.0	127.0	1.6	1219.2	1173.2	1125.5	214.4	1295.4	47.8	40	1100 (44)
1150 (46)	1168.4	1460.5	128.5	130.0	1.6	1270.0	1228.9	1176.3	222.3	1365.3	50.8	36	1150 (46)
1200 (48)	1219.2	1511.3	128.5	134.9	1.6	1327.2	1277.9	1227.1	223.8	1416.1	50.8	40	1200 (48)
1250 (50)	1270.0	1562.1	138.2	139.7	1.6	1378.0	1330.5	1277.9	235.0	1466.9	50.8	44	1250 (50)
1300 (52)	1320.8	1612.9	142.7	144.3	1.6	1428.8	1382.8	1328.7	242.8	1517.7	50.8	48	1300 (52)
1350 (54)	1371.6	1673.4	136.7	149.4	1.6	1479.9	1435.1	1379.5	239.8	1577.8	50.8	48	1350 (54)
1400 (56)	1422.4	1765.3	153.9	157.0	1.6	1536.7	1493.8	1430.3	268.2	1651.0	60.5	36	1400 (56)
1450 (58)	1473.2	1827.3	153.9	162.1	1.6	1593.9	1547.9	1481.1	274.6	1713.0	60.5	40	1450 (58)
1500 (60)	1524.0	1878.1	150.9	166.6	1.6	1651.0	1598.7	1531.9	271.5	1763.8	60.5	40	1500 (60)

NOTE: 1. DIMENSIONS ARE IN MM. 2. BORE IS TO BE SPECIFIED BY THE CUSTOMER TO SUIT PIPE. 3. RING TYPE JOINT ALSO AVAILABLE.



**Fine Industrial Corporation**

**ASME B16.47-1996 Series B Class 600 & 900**



**CLASS 600**

NOMINAL PIPE SIZE		OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE MIN	THICKNESS OF FLANGE W NECK	RAISED FACE	RAISED FACE	HUB DIAMETER	HUB DIA. START OF CHAMFER	LENGTH THROUGH HUB	DRILLING DATA			NOMINAL PIPE SIZE	
mm.	(in)	A	B	C	C1	D	E	F	G	J	K	L	M	mm.	(in)
650	(26)	660.4	889.0	111.3	111.3	6.4	726.9	698.5	660.4	180.8	806.5	44.5	28	650	(26)
700	(28)	711.2	952.5	115.8	115.8	6.4	784.4	752.3	711.2	190.5	863.6	47.8	28	700	(28)
750	(30)	762.0	1022.4	125.5	127.0	6.4	841.2	806.5	762.0	204.7	927.1	50.8	28	750	(30)
800	(32)	812.8	1085.9	130.0	134.9	6.4	895.4	860.6	812.8	215.9	984.3	53.8	28	800	(32)
850	(34)	863.6	1162.1	141.2	144.3	6.4	952.5	914.4	863.6	233.4	1054.1	60.5	24	850	(34)
900	(36)	914.4	1212.9	146.1	150.9	6.4	1009.7	968.2	914.4	242.8	1104.9	60.5	28	900	(36)

**CLASS 900**

NOMINAL PIPE SIZE		OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE MIN	THICKNESS OF FLANGE W NECK	RAISED FACE	RAISED FACE	HUB DIAMETER	HUB DIA. START OF CHAMFER	LENGTH THROUGH HUB	DRILLING DATA			NOMINAL PIPE SIZE	
mm.	(in)	A	B	C	C1	D	E	F	G	J	K	L	M	mm.	(in)
650	(26)	660.4	1022.4	134.9	153.9	6.4	762.0	743.0	660.4	258.8	901.7	66.5	20	650	(26)
700	(28)	711.2	1104.9	147.6	166.6	6.4	819.2	797.1	711.2	276.4	971.6	73.2	20	700	(28)
750	(30)	762.0	1181.1	155.4	176.0	6.4	876.3	850.9	762.0	289.1	1035.1	79.2	20	750	(30)
800	(32)	812.8	1238.3	160.3	185.7	6.4	927.1	908.1	812.8	303.3	1092.2	79.2	20	800	(32)
850	(34)	863.6	1314.5	171.5	195.1	6.4	990.6	962.2	863.6	319.0	1155.7	85.9	20	850	(34)
900	(36)	914.4	1346.2	173.0	201.7	6.4	1028.7	1016.0	914.4	325.4	1200.2	79.2	24	900	(36)

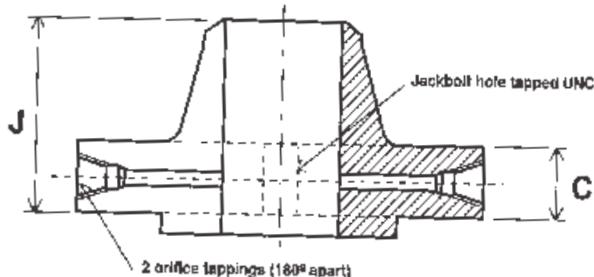
- NOTE :**
1. DIMENSIONS ARE IN MM
  2. BORE IS TO BE SPECIFIED BY THE CUSTOMER TO SUIT PIPE
  3. RING TYPE JOINT ALSO AVAILABLE.

Previously API 605



**Fine Industrial Corporation**

**ANSI B 16.36 - 1988 ORIFICE FLANGE**



Tapping Bore Size :  
100nb & over 12.7mm  
80nb 9.5mm, 65nb & Less : 6.3mm

Orifice flanges are supplied in sets comprising:  
2 flanges, jack bolts and  $\frac{1}{2}$ " npt hex head plugs in tapped hole.

Dimensions not shown here are shown in ANSI B 16.5A

CLASS 300		CLASS 600		CLASS 900		CLASS 1500		NOMINAL PIPE SIZE mm. (in)
NOMINAL PIPE SIZE mm.	THICKNESS C	LENGTH THRU NECK J	THICKNESS C	LENGTH THRU NECK J	THICKNESS C	LENGTH THRU NECK J	THICKNESS C	

NOMINAL PIPE SIZE mm. (in)	THICKNESS C	LENGTH THRU NECK J	THICKNESS C	LENGTH THRU NECK J	THICKNESS C	LENGTH THRU NECK J	THICKNESS C	THICKNESS C	LENGTH THRU NECK J	NOMINAL PIPE SIZE mm. (in)
25 (1)	38.1	82.6					38.1	82.6	25 (1)	
32 (1 1/4)	38.1	85.7	Use ANSI300 in this range	Use ANSI300 in this range	38.1	101.6	38.1	88.9	32 (1 1/4)	
40 (1 1/2)	38.1	85.7							40 (1 1/2)	
50 (2)	38.1	85.7					38.1	101.6	50 (2)	
65 (2 1/2)	38.1	88.9					41.1	104.6	65 (2 1/2)	
80 (3)	38.1	88.9					47.8	117.3	80 (3)	
100 (4)	38.1	92.1	38.1	101.6	44.5	114.3	53.8	124.0	100 (4)	
125 (5)	38.1	100.0	47.7	117.3	55.6	139.7	82.6	171.5	125 (5)	
150 (6)	38.1								150 (6)	
200 (8)	41.3	111.1	55.6	133.4	63.5	162.1	91.9	212.9	200 (8)	
250 (10)	47.7	117.5	63.6	152.4	69.9	184.2	108.0	254.0	250 (10)	
300 (12)	50.9	130.2	66.7	155.4	79.2	200.2	124.0	282.4	300 (12)	
350 (14)	54.0	142.9	69.9	165.1	85.9	212.9	133.4	298.5	350 (14)	
400 (16)	57.2	146.1	76.3	177.8	88.9	215.9	146.1	311.2	400 (16)	
450 (18)	60.4	158.8	82.6	184.2	101.6	228.6	162.1	327.2	450 (18)	
500 (20)	63.6	161.9	89.0	190.5	108.0	247.7	177.8	355.6	500 (20)	
600 (24)	69.9	168.3	101.7	203.2	139.7	292.1	203.2	406.4	600 (24)	

ALSO AVAILABLE IN LARGER SIZES AND RING JOINT FACING

NOTES : 1. WHERE RAISED RACE IS 1.6MM THEN THIS DIMENSION IS INCLUDED IN C, H & J

2. WHERE RAISED FACE IS 6.4MM THEN IT IS ADDITIONAL TO G, H & J

3. BORE IS TO BE SPECIFIED BY THE PURCHASER

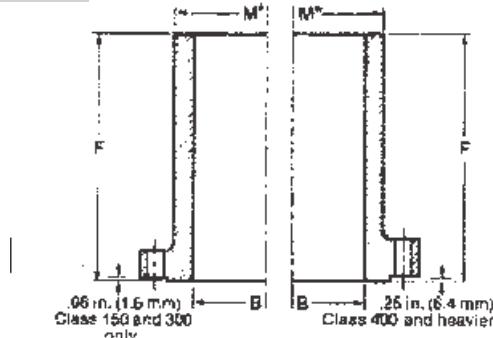
4. JACK BOLT HOLES CAN BE SUPPLIED WITH TAPPED HOLES OR MILLED NUT SLOT

5. SLIP ON FLANGES ALSO AVAILABLE.



# Fine Industrial Corporation

## LONG WELDING NECKS



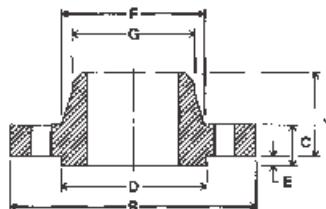
NOMINAL SIZE AND BORE	LENGTH THRU HUB		HUB DIAMETER CLASS150 PN 20					WEIGHT		CLASS 1500 PH 250	CLASS 2500 PH 400
	CLASS 150 THRU 600 PN	CLASS 900 THRU 2500 PN		CLASS 150 PN 20	CLASS 300 PN 50	CLASS 400 PH 64	CLASS 600 PN 100	CLASS 900 PN 160			
	20 THRU 100	160 THRU 400									
B	F	F	*M								
1.00	9	9	2.00	8	10	11	11	15	15	15	20
25.4	229	229	50.8	3.6	4.5	5	5	7	7	7	9
1.25	9	9	2.38	10	14	14	14	18	18	18	30
31.8	229	229	60.3	4.5	6.5	6.5	6.5	8	8	8	13.5
1.50	9	9	2.62	12	17	17	17	23	23	23	38
38.1	229	229	66.7	5.5	7.7	7.7	7.7	10.5	10.5	10.5	17
2	9	9	3.25	17	19	21	21	44	44	44	55
50.8	229	229	82.6	7.7	9	9.5	9.5	20	20	20	25
2.50	9	12	3.75	22	28	29	29	72	72	72	85
63.5	229	305	95.3	10	13	13	13	32.5	32.5	32.5	38.5
3	9	12	4.25	26	36	38	38	65	84	84	125
76.2	229	305	108.0	12	16.5	17.5	17.5	29.5	38	38	57
3.50	9	-	4.88	32	45	48	48	-	-	-	-
88.9	229	-	123.8	14.5	20.5	21.5	22	-	-	-	-
4.00	12	12	5.50	47	54	67	80	98	118	118	185
101.6	305	305	139.7	21.5	24.5	30	36.5	44	53	53	84
5.00	12	12	6.50	58	86	90	128	143	195	195	300
127.0	305	305	165.1	26.5	39	41	58	65	88	88	135
6.00	12	12	7.75	77	108	115	158	199	235	235	450
152.4	305	305	196.9	35	49	52	72	90	106	106	203
8.00	12	12	9.75	103	150	160	215	310	366	366	600
203.2	305	305	247.7	47	68	72	98	140	165	165	270
10.00	12	12	12.00	144	218	230	343	356	594	594	1045
254.0	305	305	304.8	66	99	104	156	161	268	268	471
12.00	12	12	14.38	207	289	301	409	541	872	872	1420
304.8	305	305	365.1	94	131	136	186	244	393	393	639
14.00	12	12	16.00	212	342	357	432	568	1030	-	-
355.6	305	305	406.4	96	155	161	196	256	464	464	-
16.00	12	12	18.00	250	426	443	564	670	1335	-	-
406.4	305	305	457.2	114	193	199	256	302	601	601	-
18.00	12	12	20.00	274	493	513	654	949	1750	-	-
457.2	305	305	508.0	125	224	231	297	427	788	788	-
20.00	12	12	22.00	314	575	602	840	1040	2130	-	-
508.0	305	305	558.8	143	261	271	381	468	959	959	-
24.00	12	12	26.25	426	823	856	1100	1775	3180	-	-
609.6	305	305	666.8	194	374	385	499	799	1431	-	-

SPECIFICATION : Long Welding Necks confirm ASTM specification A-105. Except as shown above, Long welding Necks Conform dimensionally to ASME/ANSI Standard B16.5

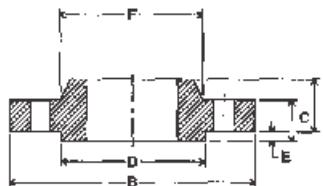
\*Dimension "M" is given here for class 150 Long Welding Necks Only. For Class 300 and higher pressure ratings, outside diameter of the neck is the same as dimension "M" of ANSI flanges of comparable pressure rating.

INCHES
MILIMETRES

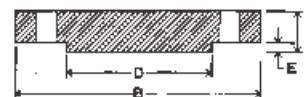
POUNDS
KILOGRAMS



WELDING NECK



SLIP-ON



BLANK

**Class 150**

NOMINAL PIPE SIZE	OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE MIN	RAISED FACE DIAMETER Note 4	RAISED FACE THICKNESS	HUB DIAMETER	NECK DIAMETER	DRILLING DATA			LENGTH THROUGH HUB		
								BOLT CIRCLE DIAMETER	NUMBER OF HOLES	DIAMETER OF HOLES	OVERALL THICKNESS (W. NECK)	OVERALL THICKNESS (BOSSED)	
mm (In)	A	B	C	D	E	F	G				J	K	MM IN
650 (26)	660.4	870.0	50.9	743.0	1.6	724.0	660.5	806.4	24	34.9	127.1	85.5	650 (26)
700 (28)	711.2	927.2	52.4	793.8	1.6	781.1	711.3	863.6	28	34.9	128.6	87.5	700 (28)
750 (30)	762.0	984.3	54.0	857.3	1.6	831.9	762.1	914.4	28	34.9	130.2	89.0	750 (30)
800 (32)	812.8	1060.5	57.2	908.1	1.6	889.1	812.9	977.9	28	41.2	133.4	92.0	800 (32)
850 (34)	863.6	1111.3	58.8	958.9	1.6	939.9	863.7	1028.7	32	41.2	135.0	93.5	850 (34)
900 (36)	914.4	1168.5	60.4	1022.4	1.6	997.0	914.5	1085.8	32	41.2	136.6	95.5	900 (36)
950 (38)	965.2	1238.3	60.4	1073.2	1.6	1060.5	965.3	1149.3	32	41.2	136.6	95.5	950 (38)
1000 (40)	1016.0	1289.1	63.8	1124.0	1.6	1111.3	1016.1	1200.1	36	41.2	139.8	98.5	1000 (40)
1050 (42)	1066.8	1346.3	66.7	1193.9	1.6	1168.5	1066.9	1257.3	36	41.2	142.9	101.5	1050 (42)
1100 (44)	1117.6	1403.4	66.7	1244.7	1.6	1219.3	1117.7	1314.4	40	41.2	142.9	101.5	1100 (44)
1150 (46)	1168.4	1454.2	68.3	1295.5	1.6	1270.1	1168.5	1365.2	40	41.2	144.5	103.0	1150 (46)
1200 (48)	1219.2	1511.4	69.9	1359.0	1.6	1327.2	1219.3	1422.4	44	41.2	146.1	105.0	1200 (48)

**Class 300**

NOMINAL PIPE SIZE	OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE MIN	RAISED FACE DIAMETER Note 4	RAISED FACE THICKNESS	HUB DIAMETER	NECK DIAMETER	DRILLING DATA			LENGTH THROUGH HUB		
								BOLT CIRCLE DIAMETER	NUMBER OF HOLES	DIAMETER OF HOLES	OVERALL THICKNESS (W. NECK)	OVERALL THICKNESS (BOSSED)	
mm (In)	A	B	C	D	E	F	G				J	K	MM IN
650 (26)	660.4	971.6	79.4	749.4	1.6	720.8	666.8	876.3	28	44.4	184.2	184.2	650 (26)
700 (28)	711.2	1035.1	85.8	800.2	1.6	774.8	717.6	939.8	28	44.4	196.9	196.9	700 (28)
750 (30)	762.0	1092.3	92.1	857.3	1.6	827.1	768.4	996.9	28	47.6	209.6	209.6	750 (30)
800 (32)	812.8	1149.4	98.5	914.5	1.6	881.1	819.2	1054.1	28	50.8	222.3	222.3	800 (32)
850 (34)	863.6	1206.8	101.7	965.3	1.6	936.9	871.6	1104.9	28	50.8	231.8	231.8	850 (34)
900 (36)	914.4	1270.1	104.8	1022.4	1.6	990.7	922.4	1168.4	32	53.9	241.4	241.4	900 (36)

**Class 600**

NOMINAL PIPE SIZE	OUTSIDE DIAMETER OF PIPE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE MIN	RAISED FACE DIAMETER Note 4	RAISED FACE THICKNESS	HUB DIAMETER	NECK DIAMETER	DRILLING DATA			LENGTH THROUGH HUB		
								BOLT CIRCLE DIAMETER	NUMBER OF HOLES	DIAMETER OF HOLES	OVERALL THICKNESS (W. NECK)	OVERALL THICKNESS (BOSSED)	
mm (In)	A	B	C	D	E	F	G				J	K	MM IN
650 (26)	660.4	1016.1	108.0	749.4	6.4	747.7	671.5	914.4	28	50.8	222.3	222.3	650 (26)
700 (28)	711.2	1073.2	111.2	800.2	6.4	803.3	724.0	965.2	28	53.9	235.0	235.0	700 (28)
750 (30)	762.0	1130.4	114.4	857.3	6.4	862.1	774.8	1022.3	28	53.9	247.7	247.7	750 (30)
800 (32)	812.8	1193.9	117.5	914.5	6.4	917.6	825.8	1079.5	28	60.3	260.4	260.4	800 (32)
850 (34)	863.6	1244.7	120.7	965.3	6.4	973.2	877.9	1130.3	28	60.3	269.9	269.9	850 (34)
900 (36)	914.4	1314.5	123.9	1022.4	6.4	1031.9	928.7	1193.8	28	66.9	282.8	282.8	900 (36)

NOTE : 1. DIMENSIONS ARE IN MM

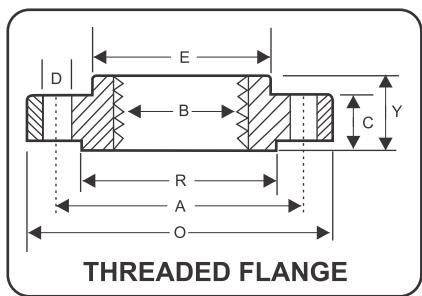
2. LARGER SIZES AVAILABLE ON REQUEST

3. AVAILABLE WITH OR WITHOUT RAISED FACE.

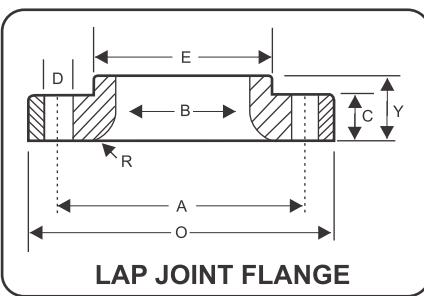
4. THICKNESS DIMENSIONS INCLUDE RAISED FACE WHEN 1.6MM  
THICKNESS DIMENSION DOES NOT INCLUDE RAISED FACE WHEN IT IS 6.4MM



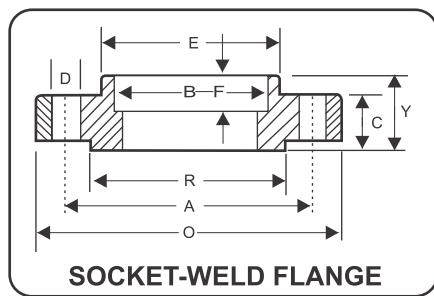
# Fine Industrial Corporation



THREADED FLANGE



LAP JOINT FLANGE



SOCKET-WELD FLANGE

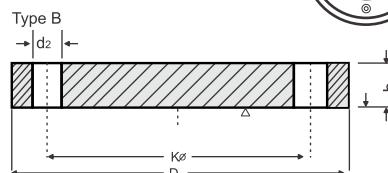
## DIN 2527

WELDING NECK FLANGE BORES (B)										
Nominal Pipe Size	Outside Diam	Sch. 20	Sch. 30	Std. Wall	Sch. 40	Extra Strong	Sch. 80	Sch. 120	Sch. 160	Double Extra Strong
15	21.33	—	—	15.7	15.7	13.8	13.8	—	11.7	6.4
20	26.67	—	—	20.8	20.8	18.8	18.8	—	15.5	11.0
25	33.40	—	—	26.6	25.4	24.3	24.3	—	20.7	15.2
32	42.16	—	—	35.0	35.0	32.4	32.4	—	29.4	22.7
40	48.26	—	—	40.8	40.8	38.1	38.1	—	33.7	27.9
50	60.31	—	—	52.3	52.3	49.2	49.2	—	42.8	38.1
65	73.02	—	—	62.4	62.4	59.0	59.0	—	53.9	44.9
80	88.90	—	—	77.9	77.9	73.6	73.6	—	66.6	58.4
100	114.30	—	—	102.2	102.2	97.1	97.1	92.0	87.3	80.0
125	141.30	—	—	128.1	128.1	122.2	122.2	115.9	109.5	103.2
150	168.27	—	—	154.0	154.0	146.3	146.3	139.7	131.7	124.3
200	219.07	206.2	204.9	202.7	202.7	193.6	193.6	182.5	173.0	174.6
250	273.05	260.3	257.4	254.5	254.5	247.6	242.8	230.1	215.9	222.2
300	323.85	311.1	307.0	304.8	303.2	298.4	288.8	273.0	257.2	273.0
350	355.60	337.8	336.5	336.5	333.3	330.2	317.5	300.0	284.1	—
400	406.40	390.3	387.3	387.3	381.0	381.0	363.5	344.5	325.4	—
450	457.20	441.1	434.9	438.1	428.6	431.8	409.5	387.3	366.7	—
500	508.00	488.9	482.6	488.9	477.8	482.6	455.6	431.8	407.9	—
600	609.60	590.5	581.0	590.5	574.6	584.2	547.6	517.5	490.5	—

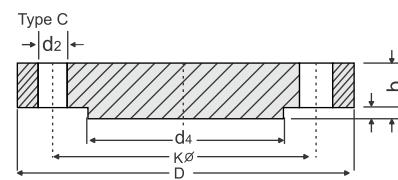
All dimensions are in Millimeters



# Fine Industrial Corporation



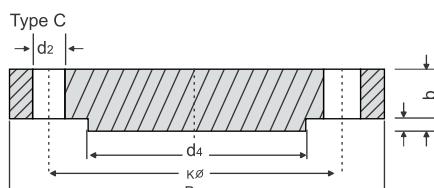
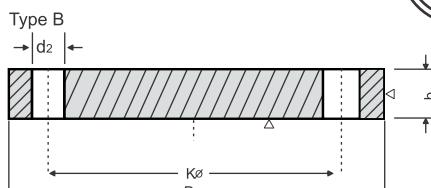
DIN 2527



	NW	D	b	k	d <sub>4</sub>	f	No.	Bolts		Dia of Bolt Hole	Weight of One Flange 7.85 Kg/dm <sup>3</sup> )	Type-B Kg.	Type-C Kg.
								d <sub>2</sub>					
ND - 6	10	75	12	50	35	2	4	M 10	—	11.5	0.38	0.33	
	15	80	12	55	40	2	4	M 10	—	11.5	0.44	0.38	
	20	90	14	65	50	2	4	M 10	—	11.5	0.65	0.59	
	25	100	14	75	60	2	4	M 10	—	11.5	0.82	0.74	
	32	120	14	90	70	2	4	M 12	(½")	14	1.17	1.07	
	40	130	14	100	80	3	4	M 12	(½")	14	1.39	1.21	
	50	140	14	110	90	3	4	M 12	(½")	14	1.62	1.43	
	65	160	14	130	110	3	4	M 12	(½")	14	2.44	2.21	
	80	190	16	150	128	3	4	M 16	(5/8")	18	3.43	3.09	
	100	210	16	170	148	3	4	M 16	(5/8")	18	4.76	4.37	
ND - 10	125	240	18	200	178	3	8	M 16	(5/8")	18	6.11	5.68	
	150	265	18	225	202	3	8	M 16	(5/8")	18	7.51	7.02	
	(175)	295	20	255	232	3	8	M 16	(5/8")	18	10.4	9.85	
	200	320	20	280	258	3	8	M 16	(5/8")	18	12.3	11.7	
	250	375	22	335	312	3	12	M 16	(5/8")	18	18.3	17.6	
	300	440	22	395	365	4	12	M 20	(3/4")	23	25.3	24.0	
	350	490	22	445	415	4	12	M 20	(3/4")	23	31.6	30.1	
	400	540	22	495	465	4	16	M 20	(3/4")	23	38.4	36.4	
	500	645	24	600	570	4	20	M 20	(3/4")	23	60.4	58.1	
	200	340	24	295	268	3	8	M 20	(3/4")	23	16.5	15.8	
ND - 16	250	395	26	350	320	3	12	M 20	(3/4")	23	24.0	23.1	
	300	445	26	400	370	4	12	M 20	(3/4")	23	30.9	29.4	
	350	505	26	460	430	4	16	M 20	(3/4")	23	40.6	38.0	
	400	565	26	515	482	4	16	M 24	(7/8")	27	49.4	47.5	
	500	670	28	620	585	4	20	M 24	(7/8")	27	75.0	72.7	
	10	90	14	60	40	2	4	M 12	(½")	14	0.63	0.56	
	15	95	14	65	45	2	4	M 12	(½")	14	0.72	0.64	
	20	105	16	75	58	2	4	M 12	(½")	14	1.01	0.93	
	25	115	16	85	68	2	4	M 12	(½")	14	1.23	1.13	
	32	140	16	100	78	2	4	M 16	(5/8")	18	1.80	1.66	
Note : for DIN 2575 ND 10-4 Holes	40	150	16	110	88	3	4	M 16	(5/8")	18	2.09	1.85	
	50	165	18	125	102	3	4	M 16	(5/8")	18	2.88	2.59	
	65	185	18	145	122	3	4	M 16	(5/8")	18	3.66	3.33	
	80	200	20	160	138	3	4/8	M 16	(5/8")	18	4.77	4.34	
	100	220	20	180	158	3	8	M 16	(5/8")	18	5.65	5.26	
	125	250	22	210	188	3	8	M 16	(5/8")	18	8.42	7.67	
	150	285	22	240	212	3	8	M 20	(3/4")	23	10.4	9.85	
	(175)	315	24	270	242	3	8	M 20	(3/4")	23	14.0	13.5	
	200	340	24	295	268	3	12	M 20	(3/4")	23	16.1	15.6	
	250	405	26	355	320	3	12	M 24	(7/8")	27	24.9	23.9	
Note from 10 mm to 175mm see ND - 16	300	460	28	410	378	4	12	M 24	(7/8")	27	35.1	33.6	
	350	520	30	470	438	4	16	M 24	(7/8")	27	47.8	46.2	
	400	580	32	525	490	4	16	M 27	(1")	30	63.5	61.5	
	500	715	34	650	610	4	20	M 30	(1 1/8")	33	102	99.5	



# Fine Industrial Corporation



**DIN 2527**

	NW	D	b	k	d <sub>4</sub>	f	No.	Bolts	d <sub>2</sub>	Dia of Bolt Hole	Weight of One Flange 7.85 Kg/dm <sup>3</sup> )	Type-B Kg.	Type-C Kg.
ND - 25 Note : From 10mm to 150 mm see ND - 40	(175)	330	28	280	248	3	12	M 24	(7/8")	27	17.3	16.5	
	200	360	30	310	278	3	12	M 24	(7/8")	27	22.3	21.5	
	250	425	32	370	335	3	12	M 27	(1")	30	33.5	32.5	
	300	485	34	430	395	4	16	M 27	(1")	30	46.3	44.7	
	350	555	38	490	450	4	16	M 30	(1 1/8")	33	68.0	65.9	
	400	620	40	550	505	4	16	M 33	(1 1/4")	36	89.7	87.0	
	500	730	44	660	615	4	20	M 33	(1 1/4")	36	138	134	
	10	90	16	60	40	2	4	M 12	(1/2")	14	0.72	0.62	
	15	95	16	65	45	2	4	M 12	(1/2")	14	0.81	0.74	
	20	105	18	75	58	2	4	M 12	(1/2")	14	1.24	1.05	
ND - 40	25	115	18	85	68	2	4	M 12	(1/2")	14	1.38	1.31	
	32	140	18	100	78	2	4	M 16	(5/8")	18	2.03	1.82	
	40	150	18	110	88	3	4	M 16	(5/8")	18	2.35	2.11	
	50	165	20	125	102	3	4	M 16	(5/8")	18	3.20	2.91	
	65	185	22	145	122	3	8	M 16	(5/8")	18	4.29	4.13	
	80	200	24	160	138	3	8	M 16	(5/8")	18	5.88	5.21	
	100	236	24	190	162	3	8	M 12	(3/4")	23	7.54	7.08	
	125	270	26	220	188	3	8	M 24	(7/8")	27	10.8	10.4	
	150	300	28	250	218	3	8	M 24	(7/8")	27	14.5	13.9	
	175	350	32	295	260	3	12	M 27	(1")	30	22.1	21.3	
	200	375	34	320	285	3	12	M 27	(1")	30	27.2	26.2	
	250	450	38	385	345	3	12	M 30	(1 1/8")	33	43.8	43.1	
	300	515	42	450	410	4	16	M 30	(1 1/8")	33	63.3	62.2	
	350	580	46	510	465	4	16	M 33	(1 1/4")	36	89.5	87.2	
	400	660	50	585	535	4	16	M 36	(1 3/8")	39	127	124	
	500	755	52	670	615	4	20	M 39	(1 1/2")	42	172	168	

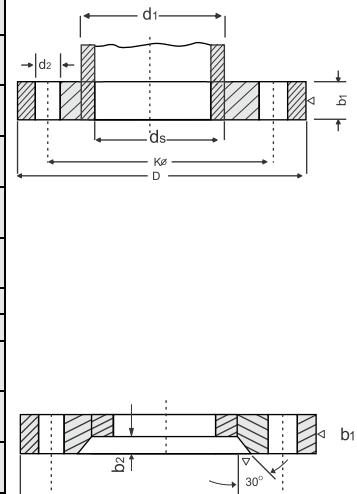
FLANGE FACINGS TONGUE AND GROOVE, NOMINAL PRESSURE 10 TO 100 ACCORDING TO DIN 2512	Nominal Pipe Size	Tongue			Groove			Nominal Pipe Size	Tongue			Groove		
		d <sub>42</sub> +0.5	d <sub>43</sub> -0.5	f <sub>1</sub> +0.5	d <sub>41</sub> -0.5	d <sub>44</sub> +0.5	f <sub>2</sub> -0.5		d <sub>42</sub> +0.5	d <sub>43</sub> -0.5	f <sub>1</sub> +0.5	d <sub>41</sub> -0.5	d <sub>44</sub> +0.5	f <sub>2</sub> -0.5
TONGUE	10	24	34	4	23	35	3	175	213	233	4.5	212	234	3.5
	15	29	39	4	28	40	3	200	239	259	4.5	238	260	3.5
	20	36	50	4	35	51	3	250	292	312	4.5	291	313	3.5
GROOVE	25	47	57	4	42	58	3	300	343	363	4.5	342	364	3.5
	32	51	65	4	50	66	3	350	395	421	5	394	422	4
	40	61	75	4	60	76	3	400	447	473	5	446	474	4
	50	73	87	4	72	88	3	500	549	575	5	548	576	4
	65	95	109	4	94	110	3	600	649	675	5	648	676	4
	80	106	120	4	105	121	3	700	751	777	5	750	778	4
	100	129	149	4.5	128	150	3.5	800	856	882	5	855	883	4
	125	155	175	4.5	154	176	3.5	900	961	987	5	960	988	4
	150	183	203	4.5	182	204	3.5	1000	1061	1091	6	1060	1092	5



## Din 2576

### Flanges, Slip-on Type for Brasing or Welding Nominal pressure 10

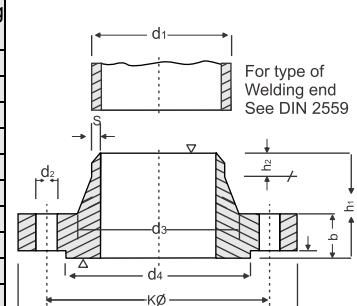
Pipe		Flange				Bolts				Weight of One Flange 7.85 Kg. (dm <sup>3</sup> ) Kg.
NW	d <sub>1</sub>	ds	D	b <sub>1</sub>	k	Number	Thread		d <sub>2</sub>	
10	14 17.2*)	14.5 17.7	90	14	60	4	M 12	(1/2")	14	0.613 0.605
15	20 21.3*)	20.5 21.8	95	14	65	4	M 12	(1/2")	14	0.675 0.669
20	25 26.9*)	25.5 27.4	105	16	75	4	M 12	(1/2")	14	0.947 0.936
25	30 33.7*)	30.5 34.2	115	16	85	4	M 12	(1/2")	14	1.14 1.11
32	38 42.4*)	38.5 42.9	140	16	100	4	M 16	(5/8")	18	1.66 1.62
40	44.5 48.3*)	45 48.8	150	16	110	4	M 16	(5/8")	18	1.89 1.86
50	57 60.3*)	57.5 60.8	165	18	125	4	M 16	(5/8")	18	2.51 2.47
65	76.1*)	76.6	185	18	145	4	M 16	(5/8")	18	3.00
80	88.9*)	89.4	200	20	160	4	M 16	(5/8")	18	3.79
100	108 114.3*)	108.5 114.8	220	20	180	8	M 16	(5/8")	18	4.20 4.03
125	133 139.7*)	133.5 140.2	250	22	210	8	M 16	(5/8")	18	5.71 5.46
150	159 168.3*)	159.5 168.8	285	22	240	8	M 20	(3/4")	23	6.72 6.57
175	191 193.7*)	192 194.7	315	24	270	8	M 20	(3/4")	23	8.60 8.45
200	216 219.1*)	217 220.1	340	24	295	8	M 20	(3/4")	23	9.50 9.31
250	267 273*)	268 274	395	26	350	12	M 20	(3/4")	23	12.5 11.9
300	318 323.9*)	319 324.9	445	26	400	12	M 20	(3/4")	23	14.4 13.8
350	355.6*) 368	356.6 369	505	28	460	18	M 20	(3/4")	23	20.6 19.0
400	406.4*) 419	407.4 420	565	32	515	16	M 24	(7/8")	27	27.9 25.9
500	508*) 521	509 522	670	38	620	20	M 24	(7/8")	27	37.9 41.1



## DIN 2632

### Welding Neck flanges for Nominal Pressure 10

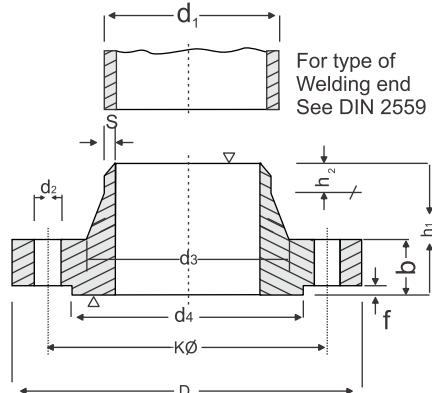
Pipe		Flange				Neck				Raised face	Bolts		d <sub>2</sub>	Weight of one flange 7.85 kg (dm <sup>3</sup> ) Kg
NW	d <sub>1</sub>	D	b	k	h <sub>1</sub>	d <sub>3</sub>	s	-s	h <sub>2</sub>	d <sub>4</sub>	F	No.	Thread	
200	216 219.1	340	24	295	62	232 235	5.9	10	16	268	3	8	(3/4")	11.3
	267 273					285 292								
300	318 323.9	445	26	400	68	335 344	7.1	12	16	370	4	12	M 20	14.7
	355.6 368					385								
350	406.4 419	505	26	460	68	440	7.1	12	16	430	4	16	(7/8")	17.6
	508 521					542								
400	508 521	565	26	515	72	585	7.1	12	16	482	4	16	M 24	21.4
	609.6 622					642								
500	508 521	670	28	620	75	685	7.1	12	16	585	4	20	(1")	26.1
	609.6 622					642								
600	609.6 622	780	28	725	80	685	7.1	12	18	685	5	20	M 27	34.7
	622					642								



Note : for Nominal Size 10 upto 175 See DIN - 2633.



# Fine Industrial Corporation



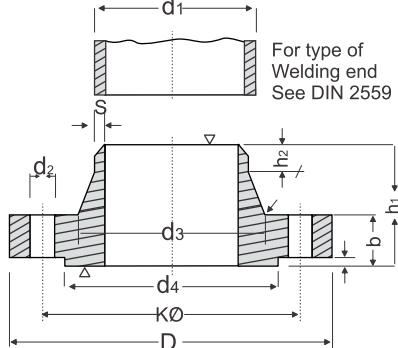
**DIN 2633**  
Welding Neck Flanges for Nominal pressure 16

Pipe		Flange				Neck				Raised face		Bolts			Weight of One Flange 7.85 Kg./dm <sup>3</sup> ) Kg.				
NW	d <sub>1</sub>	D	b	k	h <sub>1</sub>	d <sub>3</sub>	s	r	h <sub>2</sub>	d <sub>4</sub>	f	No.	Thread	d <sub>2</sub>					
10	14	90	14	60	35	25	1.8	4	6	40	2		M 12	(1/2")	14	0.580			
	17.2					28													
15	20	95	14	65	35	30	2	4	6	45	2					0.648			
	21.3					32													
20	25	105	16	75	38	38	2.3	4	6	58	2					0.952			
	26.9					40													
25	30	115	16	85	38	42	2.6	4	6	68	2					1.14			
	33.7					45													
32	38	140	16	100	40	52	2.6	6	6	78	2					1.69			
	42.4					56													
40	44.5	150	16	110	42	60	2.6	6	7	88	3					1.86			
	48.3					64													
50	57	165	18	125	45	72	2.9	6	8	102	3					2.53			
	60.3					75													
65	76.1	185	18	145	45	90	2.9	6	10	122	3					3.06			
80	88.9	200	20	160	50	105	3.2	8	10	138	3		M 16	(5/8")	18	3.70			
100	108	220	20	180	52	125	3.6	8	12	158	3					4.62			
	114.3					131													
125	133	250	22	210	55	150	4	8	12	188	3		8		6.30				
	139.7					156													
150	159	285	22	240	55	175	4.5	10	12	212	3		M 20	(3/4")	23	7.75			
	168.3					184													
175	191	315	24	270	60	208	5.4	10	12	242	3		M 20	(3/4")	23	10.0			
	193.7					210													
200	216	340	24	295	62	232	5.9	10	16	268	3		M 24	(7/8")	27	11.0			
	219.1*					235													
250	267	405	26	355	70	285	6.3	12	16	320	3		12		15.6				
	273					292													
300	318	460	28	410	78	338	7.1	12	16	378	4		16		22.0				
	323.9					344													
350	355.6	520	30	470	82	390	8	12	16	438	4		M 27	(1")	30	28.7			
	368																		
400	406.4	580	32	525	85	445	8	12	16	490	4		M 30	(1.1/8")	33	36.3			
	419																		
500	508	715	34	650	90	548	8	12	16	610	4		M 33	(1.1/4")	36	59.3			
	521																		
600	609.6	840	36	770	95	652	8.8	12	18	725	5		20		73.4				
	622																		
700	711.2	910	36	840	100	755	8.8	12	18	795	5		24		75.0				
	720																		
800	812.8	1025	38	950	105	855	10	12	20	900	5		M 36	(1.3/8")	39	99.0			
	820																		
900	914.4	1125	40	1050	110	955	10	12	20	1000	5		M 39	(1.1/2")	42	119			
	920																		
1000	1016	1255	42	1170	120	1058	10	16	22	1115	5				159				
	1020																		

\* 4 bolts for ND 10 (nominal pressure) (the order than needs welding neck flange 80/88.9 ND 10 DIN 2633)



# Fine Industrial Corporation



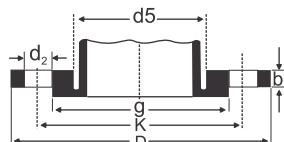
**DIN 2634**  
Welding Neck Flanges for Nominal pressure 25

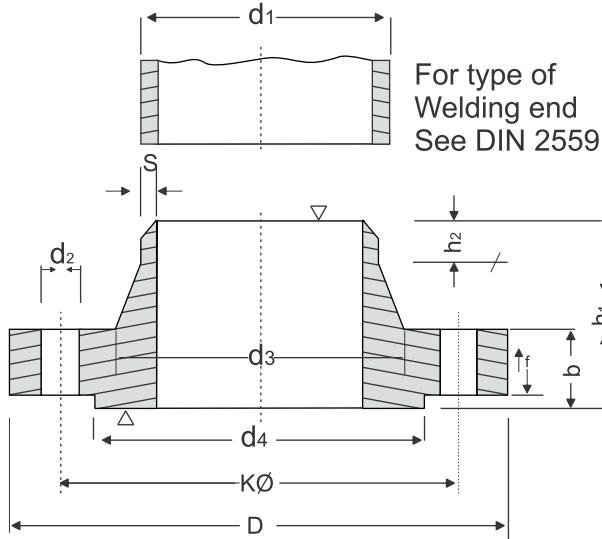
Pipe		Flange				Neck				Raised face		Bolts		d <sub>2</sub>	Weight of one Flange 7.85kg./dm <sup>3</sup> Kg.	
NW	d <sub>1</sub>	D	b	k	h <sub>1</sub>	d <sub>3</sub>	s	r	h <sub>2</sub>	h <sub>4</sub>	f	No.	Thread			
175	(191) 193.7	330	28	280	75	215 218	5.6	10	15	248	3	12	M24	7/8"	27	13.4
200	216 219.1		30	310	80	240 244	6.3	10	16	278	3					17.0
250	267 273	425	32	370	88	292 298	7.1	12	18	335	3	16	M27	(1")	30	24.4
300	318 323.9		34	430	92	345 352	8	12	18	395	4					31.2
350	355.6 368	555	38	490	100	398	8	12	20	450	4	16	M30	(1 1/8")	33	45.0
400	406.4 419		40	550	110	452	8.8	12	20	505	4					58.7
500	508 521	730	44	660	125	558	10	12	20	615	4	20	M33	(1 1/4")	36	86.1
600	609.6 622		46	770	125	660	11	12	20	720	5					101

For nominal sizes 10 up to 150 see DIN 2635

**Loose Flange for Flange Collar PN 10**  
(DIN 2642, DIN Connections)

Nom Pipe size	Flange D mm	d <sub>5</sub> mm	b mm	r mm	k mm	Drilling Number	d <sub>2</sub> mm	Weight Kg.	Collar g mm
10	90	16	16	5	60	4	15	0.23	45
15	95	23	16	5	65	4	15	0.26	50
20	105	28	16	5	75	4	15	0.30	60
25	115	33	16	5	85	4	15	0.37	70
32	140	42	16	5	100	4	18	0.54	82
40	150	50	16	5	110	4	18	0.59	92
50	165	62	18	5	125	4	18	0.80	107
65	185	81	18	5	145	4	18	0.90	127
80	200	94	20	5	160	4	18	1.28	142
100	220	113	20	5	180	8	18	1.37	162
125	250	138	22	6	210	8	18	1.78	192
150	285	164	22	6	240	8	22	2.27	218
175	315	195	24	6	270	8	22	2.90	248
200	340	222	24	7	295	8	22	3.16	273
250	395	273	26	7	350	12	22	4.22	328
300	445	324	26	7	400	12	22	4.80	378
350	505	374	26	8	460	16	22	5.85	438
400	565	426	32	8	515	16	25	8.45	490
450	615	475	32	8	565	20	25	9.45	540
500	670	530	34	8	620	20	25	11.35	595
600	780	630	36	10	725	20	30	15.30	695
700	895	730	40	10	840	24	30	21.40	810
800	1015	832	44	10	950	24	34	30.50	916





**DIN 2635**  
Welding Neck Flanges for Nominal pressure 40

Pipe		Flange				Neck				Raised face		Bolts			Weight of One Flange 7.85 Kg./dm <sup>3</sup> ) Kg.	
NW	$d_1$	D	b	k	$h_1$	$d_3$	s	r	$h_2$	$d_4$	f	No.	Thread	$d_2$		
10	14 17.2	90	16	60	35	25 28	1.8	4	6	40	2	4	M 12	1/2"	14	0.661
15	20 21.3	95	16	65	38	30 32	2	4	6	45	2					0.746
20	25 26.9	105	18	75	40	38 40	2.3	4	6	58	2					1.06
25	30 33.7	115	18	85	40	42 46	2.6	4	6	68	2					1.29
32	38 42.4	140	18	100	42	52 56	2.6	6	6	78	2		M 16	5/8"	18	1.88
40	44.5 48.3	150	18	110	45	60 64	2.6	6	7	88	3					2.33
50	57 60.3	165	20	125	48	72 75	2.9	6	8	102	3					2.82
65	76.1	185	22	145	52	90	2.9	6	10	122	3		M 20	3/4"	23	3.74
80	88.9	200	24	160	58	105	3.2	8	12	138	3					4.75
100	108 114.3	235	24	190	65	128 134	3.6	8	12	162	3					6.52
125	133 139.7	270	26	220	68	155 162	4	8	12	188	3		M 24	7/8"	27	9.07
150	159 168.3	300	28	250	75	182 192	4.5	10	12	218	3					11.8
175	191 193.7	350	32	295	82	215 218	5.6	10	15	260	3		M 27	1"	30	18.2
200	216 219.1	375	34	320	88	240 244	6.3	10	16	285	3					21.5
250	267 273	450	38	385	105	298 306	7.1	12	18	345	3		M 30	1 1/8"	33	34.9
300	318 323.9	515	42	450	115	352 362	8	12	18	410	4					49.7
350	355.6 368	580	46	510	125	408	8.8	12	20	460	4					68.1
400	406.4 419	660	50	585	135	462	11	12	20	535	4	16	M 33	1 1/4"	36	96.5
500	508 521	755	52	670	140	562	14.2	12	20	615	4					117



**Fine Industrial Corporation**

## **British Standard Pipe Flanges**

DIMENSION OF PIPE FLANGES AS PER TABLE BS - 10

**Table D : For Working Steam Pressure upto 50 lbs per sq. inch**

Nominal Pipe Size	O.D of pipe	Dia of flange	Dia of Bolt Circle	No. of Bolt	Dia. of Bolt	Thickness
1/2"	27/32"	3.3/4"	2.5/8"	4	1/2"	3/16"
3/4"	1.1/16"	4"	2.7/8"	4	1/2"	3/16"
1"	1.11/32"	4.1/2"	3.1/4"	4	1/2"	3/16"
1.1/4"	1.11/16"	4.3/4"	3.7/16"	4	1/2"	1/4"
1.1/2"	1.29/32"	5.1/4"	3.7/8"	4	1/2"	1/4"
2"	2.3/8"	6"	4.1/2"	4	5/8"	5/16"
2.1/2"	3"	6.1/2"	5"	4	5/8"	5/16"
3"	3.1/2"	7.1/4"	5.3/4"	4	5/8"	3/8"
3.1/2"	4"	8"	6.1/2"	4	5/8"	3/8"
4"	4.1/2	8.1/2"	7"	4	5/8"	3/8"
5"	5.1/2"	10"	8.1/4"	8	5/8"	1/2"
6"	6.1/2"	11"	9.1/4"	8	5/8"	1/2"
7"	7.1/2"	12"	10.1/4"	8	5/8"	1/2"
8"	8.5/8"	13.1/4"	11.1/2"	8	5/8"	1/2"
9"	9.5/8"	14.1/2"	12.3/4"	8	5/8"	5/8"
10"	10.3/4"	16"	14"	8	3/4"	5/8"
12"	12.3/4"	18"	16"	12	3/4"	5/8"
14"	14"	20.3/4"	18.1/2"	12	7/8"	3/4"
16"	16"	22.3/4"	20.1/2"	12	7/8"	3/4"
18"	18"	25.1/4"	23"	12	7/8"	7/8"
20"	20"	27.3/4"	25.1/4"	16	7/8"	1"
24"	24"	32.1/2"	29.3/4"	16	1"	1.1/8"

**Table E : For Working Steam Pressure 50 lbs and upto 100 lbs per sq. inch**

Nominal Pipe Size	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolts	Thickness
1/2"	3.3/4"	2.5/8"	4	1/2"	1/4"
3/4"	4"	2.7/8"	4	1/2"	1/4"
1"	4.1/2"	3.1/4"	4	1/2"	9/32"
1.1/4"	4.3/4"	3.7/16"	4	1/2"	5/16"
1.1/2"	5.1/4"	3.7/8"	4	1/2"	11/32"
2"	6"	4.1/2"	4	5/8"	3/8"
2.1/2"	6.1/2"	5"	4	5/8"	13/32"
3"	7.1/4"	5.3/4"	4	5/8"	7/16"
3.1/2"	8"	6.1/2"	8	5/8"	15/32"
4"	8.1/2"	7"	8	5/8"	1/2"
5"	10"	8.1/4"	8	5/8"	9/16"
6"	11"	9.1/4"	8	3/4"	11/16"
7"	12"	10.1/4"	8	3/4"	3/4"
8"	13.1/4"	11.1/2"	8	3/4"	3/4"
9"	14.1/2"	12.3/4"	12	3/4"	13/16"
10"	16"	14"	12	3/4"	7/8"
12"	18"	16"	12	7/8"	1"
14"	20.3/4"	18.1/2"	12	7/8"	1"
16"	22.3/4"	20.1/2"	12	7/8"	1"
18"	25.1/4"	23"	16	7/8"	1.1/8"
20"	27.3/4"	25.1/4"	16	7/8"	1.1/4"
24"	32.1/2"	29.3/4"	16	1.1/8"	1.1/2"

**Table F : For Working Steam Pressure above 100 lbs and upto 150 lbs per sq. inch**

Nominal Pipe Size	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolts	Thickness
1/2"	3.3/4"	2.5/8"	4	1/2"	3/8"
3/4"	4"	2.7/8"	4	1/2"	3/8"
1"	4.3/4"	3.7/16"	4	5/8"	3/8"
1.1/4"	5.1/4"	3.7/8"	4	5/8"	1/2"
1.1/2"	5.1/2"	4.1/8"	4	5/8"	1/2"
2"	6.1/2"	5"	4	5/8"	5/8"
2.1/2"	7.1/4"	5.3/4"	8	5/8"	5/8"
3"	8"	6.1/2"	8	5/8"	5/8"
3.1/2"	8.1/2"	7"	8	5/8"	3/4"
4"	9"	7.1/2"	8	5/8"	3/4"
5"	11"	9.1/4"	8	3/4"	7/8"
6"	12"	10.1/4"	12	3/4"	7/8"
7"	13.1/4"	11.1/2"	12	3/4"	7/8"
8"	14.1/2"	12.3/4"	12	3/4"	1"
9"	16"	14"	12	7/8"	1"
10"	17"	15"	12	7/8"	1"
12"	19.1/4"	17.1/4"	16	7/8"	1.1/8"
14"	21.3/4"	19.1/2"	16	1"	1.1/4"
16"	24"	21.3/4"	20	1"	1.1/4"
18"	26.1/2"	24"	20	1.1/8"	1.3/8"
20"	29"	26.1/2"	24	1.1/8"	1.3/8"
24"	33.1/2"	30.3/4"	24	1.1/4"	1.5/8"

**Table H : For Working Steam Pressure above 150 lbs and upto 250 lbs per sq. inch**

Nominal Pipe Size	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolts	Thickness
1/2"	4.1/2"	3.1/4"	4	5/8"	1/2"
3/4"	4.1/2"	3.1/4"	4	5/8"	1/2"
1"	4.3/4"	3.7/16"	4	5/8"	9/16"
1.1/4"	5.1/4"	3.7/8"	4	5/8"	11/16"
1.1/2"	5.1/2"	4.1/8"	4	5/8"	11/16"
2"	6.1/2"	5"	4	5/8"	3/4"
2.1/2"	7.1/4"	5.3/4"	8	5/8"	3/4"
3"	8"	6.1/2"	8	5/8"	7/8"
3.1/2"	8.1/2"	7"	8	5/8"	7/8"
4"	9"	7.1/2"	8	5/8"	1"
5"	11"	9.1/4"	8	3/4"	1.1/8"
6"	12"	10.1/4"	12	3/4"	1.1/8"
7"	13.1/4"	11.1/2"	12	3/4"	1.1/4"
8"	14.1/2"	12.3/4"	12	3/4"	1.1/4"
9"	16"	14"	12	7/8"	1.1/4"
10"	17"	15"	12	7/8"	1.3/8"
12"	19.1/4"	17.1/4"	16	7/8"	1.1/2"
14"	21.3/4"	19.1/2"	16	1"	1.5/8"
16"	24"	21.3/4"	20	1"	1.3/4"
18"	26.1/2"	24"	20	1.1/8"	1.7/8"
20"	29"	26.1/2"	24	1.1/8"	2"
24"	33.1/2"	30.3/4"	24	1.1/4"	2.1/4"



**Fine Industrial Corporation**

## **British Standard Pipe Flanges**

**Table J : For Working Steam Pressure**  
above 250 lbs and upto 350 lbs per sq. inch

Nominal Pipe Size	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolts	Thickness
1/2"	4.1/2"	3.1/4"	4	5/8"	5/8"
3/4"	4.1/2"	3.1/4"	4	5/8"	5/8"
1"	4.3/4"	3.7/16"	4	5/8"	3/4"
1.1/4"	5.1/4"	3.7/8"	4	5/8"	3/4"
1.1/2"	5.1/2"	4.1/8"	4	5/8"	7/8"
2"	6.1/2"	5"	4	3/4"	1"
2.1/2"	7.1/4"	5.3/4"	8	3/4"	1"
3"	8"	6.1/2"	8	3/4"	1.1/4"
3.1/2"	8.1/2"	7"	8	3/4"	1.1/4"
4"	9"	7.1/2"	8	3/4"	1.3/8"
5"	11"	9.1/4"	8	7/8"	1.1/2"
6"	12"	10.1/4"	12	7/8"	1.1/2"
7"	13.1/4"	11.1/2"	12	7/8"	1.5/8"
8"	14.1/2"	12.3/4"	12	7/8"	1.5/8"
9"	16"	14"	12	1"	1.3/4"
10"	17"	15"	12	1"	1.7/8"
12"	19.1/4"	17.1/4"	16	1"	2"
14"	21.3/4"	19.1/2"	16	1.1/8"	2.1/8"
16"	24"	21.3/4"	20	1.1/8"	2.1/4"
18"	26.1/2"	24"	20	1.1/4"	2.3/8"
20"	29"	26.1/2"	24	1.1/4"	2.1/2"
24"	33.1/2"	30.3/4"	24	1.3/8"	2.3/4"

**Table K : For Working Steam Pressure**  
above 350 lbs and upto 450 lbs per sq. inch

Nominal Pipe Size	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolts	Thickness
1/2"	4.1/2"	3.1/4"	4	5/8"	3/4"
3/4"	4.1/2"	3.1/4"	4	5/8"	3/4"
1"	5"	3.3/4"	4	5/8"	7/8"
1.1/4"	5.1/4"	3.7/8"	4	5/8"	7/8"
1.1/2"	6"	4.1/2"	4	3/4"	1"
2"	6.1/2"	5"	8	5/8"	1"
2.1/2"	7.1/4"	5.3/4"	8	3/4"	1.1/8"
3"	8"	6.1/2"	8	3/4"	1.1/4"
3.1/2"	9"	7.1/4"	8	7/8"	1.1/4"
4"	9.1/2"	7.3/4"	8	7/8"	1.3/8"
5"	11"	9.1/4"	12	7/8"	1.5/8"
6"	12"	10.1/4"	12	7/8"	1.5/8"
7"	13.1/2"	11.1/2"	12	1"	1.3/4"
8"	14.1/2"	12.1/2"	12	1"	1.7/8"
9"	16"	14"	16	1"	2"
10"	17"	15"	16	1"	2"
12"	19.1/4"	17"	16	1.1/8"	2.1/4"
14"	22.1/2"	20"	16	1.1/4"	2.3/8"
16"	24.3/4"	22.1/4"	20	1.1/4"	2.5/8"
18"	28.1/4"	25.3/4"	20	1.3/8"	3"
20"	31"	28"	20	1.1/2"	3.1/4"

For 1/2" and 5/8" Bolts the diameters of the holes 1/6" in larger than the bolts.

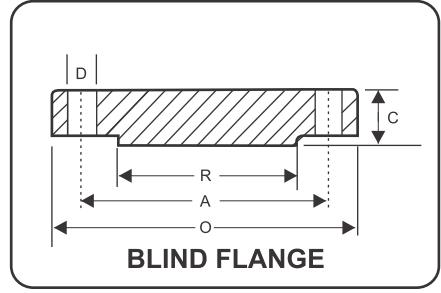
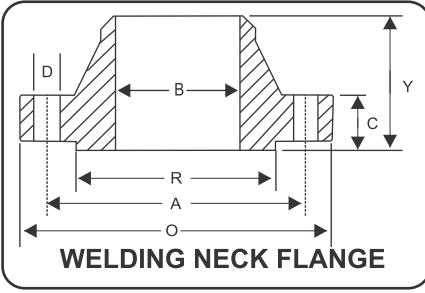
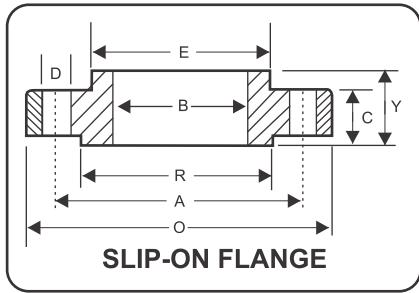
for 3/4" Bolts and sizes above, the diameter shall be 1/8" in larger than the bolts.

## **BRITISH STANDARD PIPE FLANGES**

### **PRESSURE TEMPERATURE RATINGS FOR CARBON STEEL FLANGES**

#### **TEMPERATURE**

Table	°F0 - 450	500	550	600	650	700	750	800	825	850	875	900	Max. Hyd. raulic Test Pressure
	-17.8 °C to 232.2	260.0	287.8	315.6	343.3	371.1	399	427	441	454	468	482	
D	100	95	85	80	70	65	55	50	-	-	-	-	150
E	200	185	170	155	140	130	115	100	-	-	-	-	300
F	300	280	255	235	215	195	170	150	-	-	-	-	450
H	500	465	430	395	355	320	285	250	215	180	150	115	750
J	700	650	600	550	500	450	400	350	300	255	210	160	1050
K	900	835	770	705	645	580	515	450	390	325	265	205	1350
R	1200	1115	1030	945	855	770	685	600	520	435	355	275	1800
S	1800	1670	1545	1415	1285	1155	1030	900	780	655	535	415	2700
T	2800	2600	2400	2200	2000	1800	1600	1400	1210	1025	835	645	4200



## DIMENSIONAL TOLERANCES

## Welding Neck

* Outside diameter	O.D. 600 or smaller O.D. over 600	$\pm 1.6$ $\pm 3.1$
inside diameter (bore)	250 and smaller 12 through 450 500 and larger	$\pm 0.7$ $\pm 1.6$ $+3.1 \quad -1.6$
diameter of contact face	1.6 raised face 6.3 raised face : tongue & grooved male and female	$\pm 0.7$ $\pm 0.4$

* diameter of hub at base	When E is 600 or smaller When E is over 600	$\pm 1.6$ $\pm 3.1$
diameter of hub at point of welding	125 and smaller 150 and larger	$+0.7 \quad \pm 0.7$ $+4.0 \quad \pm 0.0$
thickness	450 and smaller 500 and larger	$+3.1 \quad -0.0$ $+4.7 \quad -0.0$

length through hub	250 and smaller 300 and larger	$\pm 1.6$ $\pm 3.1$
-	bold circle	$\pm 1.6$

drilling	bolt hole spacing	$\pm 0.7$
-	eccentricity with respect to bore	0.7 max

## Threaded, slip on, lap joint, socket welding and blind

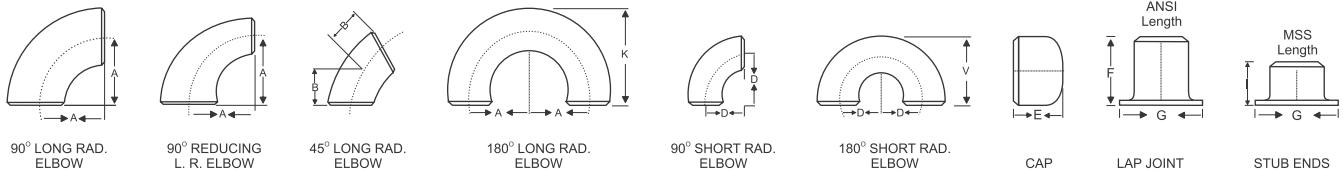
* Outside diameter	O.D. 50 or smaller O.D. over 600	$\pm 1.6$ $\pm 3.1$
inside diameter (bore)	250 and smaller 300 and larger	threaded : to standard gauge limits slip-on: lap joint: socket welding: 250 and smaller $+0.7 \quad -0.0$ 300 and larger $+1.6 \quad -0.0$
diameter of counter bore	250 and smaller 300 and larger	threaded
* Outside diameter of hub	300 and smaller 350 and larger	$+0.7 \quad -0.0$ $+1.6 \quad -0.0$
diameter of contact face	1.6 raised face 6.3 raised : tongue & grooved male & female	$\pm 0.7$ $\pm 0.4$
thickness	450 and smaller 500 and larger	$+3.1 \quad -0.0$ $+4.7 \quad -0.0$
thickness	450 and smaller 500 and larger	$+3.1 \quad -0.0$ $+4.7 \quad -0.0$
* length through hub	250 and smaller 300 and larger	$\pm 1.6$ $\pm 3.1$
drilling	bolt Circle	$\pm 1.6$
eccentricity with respect to bore	bolt hole spacing	$\pm 0.7$
-	eccentricity with respect to bore	0.7max

★ Not Covered By ANSI- B 16.5

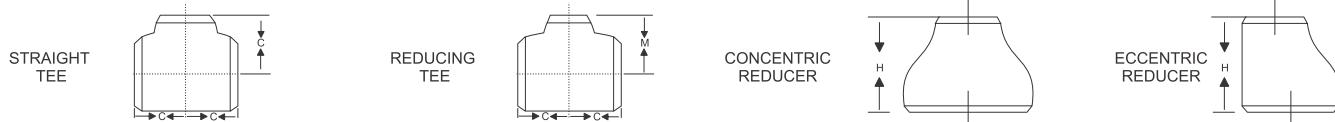


# Fine Industrial Corporation

## BUTT-WELDING FITTINGS



Nom. Pipe Size (Inches)	Pipe O. D.	ELBOW				CAPS		G O. D. of Lap	Stub ends (See note below)				Nom. Pipe Size (Inches)	
		A	B	D	K	V	E		Type A		Type B. C. A			
									F(length) ANSI std.	I (length) MSS Std.	Corner Radius	I (length) MSS Std.	Corner Radius	
1/2	0.84	1.50	0.62	-	1.88	-	1.00	1.38	3.00	2.00	0.12	2.00	1/32	1/2
3/4	1.05	1.12	0.44	-	1.69	-	1.00	1.69	3.00	2.00	0.12	2.00	1/32	3/4
1	1.32	1.50	0.88	1.00	2.19	1.62	1.50	2.00	4.00	2.00	0.12	2.00	1/32	1
1 1/4	1.66	1.88	1.00	1.25	2.75	2.06	1.50	2.50	4.00	2.00	0.19	2.00	1/32	1 1/4
1 1/2	1.90	2.25	1.12	1.50	3.25	2.44	1.50	2.88	4.00	2.00	0.25	2.00	1/32	1 1/2
2	2.38	3.00	1.38	2.00	4.19	3.19	1.50	3.62	6.00	2.50	0.31	2.50	1/32	2
2 1/2	2.88	3.75	1.75	2.50	5.19	3.94	1.50	4.12	6.00	2.50	0.31	2.50	1/32	2 1/2
3	3.50	4.50	2.00	3.00	6.25	4.75	2.00	5.00	6.00	2.50	0.38	2.50	1/32	3
3 1/2	4.00	5.25	2.25	3.50	7.25	5.50	2.50	5.50	6.00	3.00	0.38	3.00	1/32	3 1/2
4	4.50	6.00	2.50	4.00	8.25	6.25	2.50	6.19	6.00	3.00	0.44	3.00	1/32	4
5	5.56	7.50	3.12	5.00	10.31	7.75	3.00	7.31	8.00	3.00	0.44	3.00	1/16	5
6	6.62	9.00	3.75	6.00	12.31	9.31	3.50	8.50	8.00	3.50	0.50	3.50	1/16	6
8	8.62	12.00	5.00	8.00	16.31	12.31	4.00	10.62	8.00	4.00	0.50	4.00	1/16	8
10	10.75	15.00	6.25	10.00	20.38	15.38	5.00	12.75	10.00	5.00	0.50	5.00	1/16	10
12	12.75	18.00	7.50	12.00	24.38	18.38	6.00	15.00	10.00	6.00	0.50	6.00	1/16	12
14	14.00	21.00	8.75	14.00	28.00	21.00	6.50	16.25	12.00	-	0.50	-	-	14
16	16.00	24.00	10.00	16.00	32.00	24.00	7.00	18.50	12.00	-	0.50	-	-	16
18	18.00	27.00	11.25	18.00	36.00	27.00	8.00	21.00	12.00	-	0.50	-	-	18
20	20.00	30.00	12.50	20.00	40.00	30.00	9.00	23.00	12.00	-	0.50	-	-	20
22	22.00	33.00	13.50	22.00	44.00	33.00	10.50	25.25	12.00	-	0.50	-	-	22
24	24.00	36.00	15.00	24.00	48.00	36.00	10.50	27.50	-	-	0.50	-	-	24



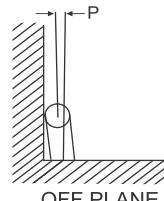
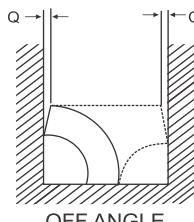
Nom. Pipe Size	Outlet	C	M	H	Nom. Pipe Size	Outlet	C	M	H	Nom. Pipe Size	Outlet	C	M	H	Nom. Pipe Size	Outlet	C	M	H
3/4	0.75	1.12	-	-	3 1/2	3.50	3.75	-	-	10	10.00	8.50	-	-	20	20.00	15.00	-	-
	0.50	1.12	1.12	1.50		3.00	3.75	3.62	4.00		8.00	8.50	8.00	7.00		18.00	15.00	14.50	20.00
	1.00	1.50	-	-		2.50	3.75	3.50	4.00		6.00	8.50	7.62	7.00		16.00	15.00	14.00	20.00
	0.75	1.50	1.50	2.00		2.00	3.75	3.25	4.00		5.00	8.50	7.50	7.00		14.00	15.00	14.00	20.00
	0.50	1.50	1.50	2.00		1.50	3.75	3.12	4.00		4.00	8.50	7.25	7.00		12.00	15.00	13.62	20.00
	1.25	1.88	-	-	4	4.00	4.12	-	-		12.00	10.00	-	-		10.00	17.00	-	-
	1.00	1.88	1.88	2.00		3.50	4.12	4.00	4.00		10.00	10.00	9.50	8.00		24.00	17.00	-	-
	0.75	1.88	1.88	2.00		3.00	4.12	3.88	4.00		8.00	10.00	9.00	8.00		20.00	17.00	17.00	20.00
	0.50	1.88	1.88	2.00		2.50	4.12	3.75	4.00		6.00	10.00	8.62	8.00		18.00	17.00	16.50	20.00
	1.50	2.25	-	-		2.00	4.12	3.50	4.00		5.00	10.00	8.50	8.00		16.00	17.00	16.00	20.00
1 1/4	1.25	2.25	2.25	2.50	5	5.00	4.88	-	-	14	14.00	11.00	-	-	30	30.00	22.00	-	-
	1.00	2.25	2.25	2.50		4.00	4.88	4.62	5.00		12.00	11.00	10.62	13.00		24.00	22.00	21.00	24.00
	0.75	2.25	2.25	2.50		3.50	4.88	4.50	5.00		10.00	11.00	10.12	13.00		20.00	22.00	20.00	24.00
	0.50	2.25	2.25	2.50		3.00	4.88	4.38	5.00		8.00	11.00	9.75	13.00		18.00	22.00	19.50	24.00
	2.00	2.50	-	-		2.50	4.88	4.25	5.00		6.00	11.00	9.75	13.00		16.00	22.00	19.00	24.00
	1.50	2.50	2.25	2.50	6	6.00	5.62	-	-		16.00	12.00	-	-		36.00	26.50	-	-
	1.25	2.50	2.25	2.50		5.00	5.62	5.38	5.50		14.00	12.00	11.62	14.00		30.00	26.50	25.00	24.00
	1.00	2.50	2.00	3.00		4.00	5.62	5.12	5.50		12.00	12.00	11.62	14.00		24.00	26.50	24.00	24.00
	0.75	2.50	1.75	3.00		3.00	5.62	4.88	5.50		10.00	12.00	11.12	14.00		20.00	26.50	23.00	24.00
	2.50	3	-	-		2.50	5.62	4.75	5.50		8.00	12.00	10.75	14.00		18.00	26.50	22.50	24.00
2 1/2	2.00	3	2.75	3.50	8	8.00	7.00	-	-	18	18.00	13.50	-	-	42	42.00	30.00	-	-
	1.50	3	2.62	3.50		6.00	7.00	6.62	6.00		16.00	13.50	13.00	15.00		36.00	30.00	28.00	24.00
	1.25	3	2.50	3.50		5.00	7.00	6.38	6.00		12.00	13.50	12.62	15.00		30.00	30.00	28.00	24.00
	1.00	3	2.25	3.50		4.00	7.00	6.12	6.00		10.00	13.50	12.12	15.00		24.00	30.00	26.00	24.00
	3.00	3.38	-	-	18	3.50	7.00	6.00	6.00		8.00	13.50	11.75	15.00		20.00	30.00	26.00	24.00
	2.50	3.38	3.25	3.50		5.00	7.00	6.62	6.00		14.00	13.50	13.00	15.00		36.00	30.00	28.00	24.00
	2.00	3.38	3.00	3.50		4.00	7.00	6.12	6.00		12.00	13.50	12.62	15.00		30.00	30.00	28.00	24.00
	1.50	3.38	2.88	3.50		3.50	7.00	6.00	6.00		10.00	13.50	12.12	15.00		24.00	30.00	26.00	24.00
	1.25	3.38	2.75	3.50		3.00	7.00	6.00	6.00		8.00	13.50	11.75	15.00		20.00	30.00	26.00	24.00

All the dimensions are in inches.



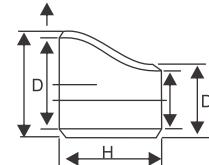
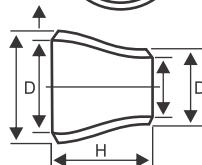
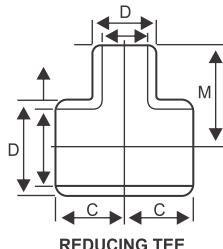
Fine Industrial Corporation

Nominal (NPS)	Outside Diameter of reducing Tees & crosses						Center to end length of reducing tees and crosses						End to End of Reducers		
	Run D			Branch D			Run C			Branch M			H		
Pipe Size	Min.	Nom.	Max.	Min.	Nom.	Max.	Min.	Nom.	Max.	Min.	Nom.	Max.	Min.	Nom.	Max.
12 x 10	321	324	328	270	273	277	251	254	257	238	241	244	200	203	206
12 x 8	321	324	328	217	219	221	251	254	257	226	229	232	200	203	206
12 x 6	321	324	328	167	168	171	251	254	257	216	219	222	200	203	206
12 x 5	321	324	328	140	141	144	251	254	257	213	216	219	200	203	206
14 x 12	353	356	360	321	324	328	276	279	282	267	270	273	327	330	333
14 x 10	353	356	360	270	273	277	276	279	282	254	257	260	327	330	333
14 x 8	353	356	360	217	219	221	276	279	282	245	248	251	327	330	333
14 x 6	353	356	360	167	168	171	276	279	282	235	238	241	327	330	333
16 x 14	403	406	410	353	356	360	302	305	308	302	305	308	353	356	359
16 x 12	403	406	410	321	324	328	302	305	308	292	295	298	353	356	359
16 x 10	403	406	410	270	273	277	302	305	308	280	283	286	353	356	359
16 x 8	403	406	410	217	219	221	302	305	308	270	273	276	353	356	359
18 x 16	454	457	461	403	406	410	340	343	346	327	330	333	378	381	384
18 x 14	454	457	461	353	356	360	340	343	346	327	330	333	378	381	384
18 x 12	454	457	461	321	324	328	340	343	346	318	321	324	378	381	384
18 x 10	454	457	461	270	273	277	340	343	346	305	308	311	378	381	384
20 x 18	503	508	514	454	457	461	378	381	384	365	368	371	505	508	511
20 x 16	503	508	514	403	406	410	378	381	384	353	356	359	505	508	511
20 x 14	503	508	514	353	356	360	378	381	384	353	356	359	505	508	511
20 x 12	503	508	514	321	324	328	378	381	384	343	346	349	505	508	511
20 x 10	503	508	514	270	273	277	378	381	384	330	333	336	505	508	511
24 x 20	605	610	616	503	508	514	429	432	435	429	432	435	505	508	511
24 x 18	605	610	616	454	457	461	429	432	435	416	419	422	505	508	511
24 x 16	605	610	616	403	406	410	429	432	435	403	406	410	505	508	511



### DIMENSIONAL TOLERANCE OF FITTINGS

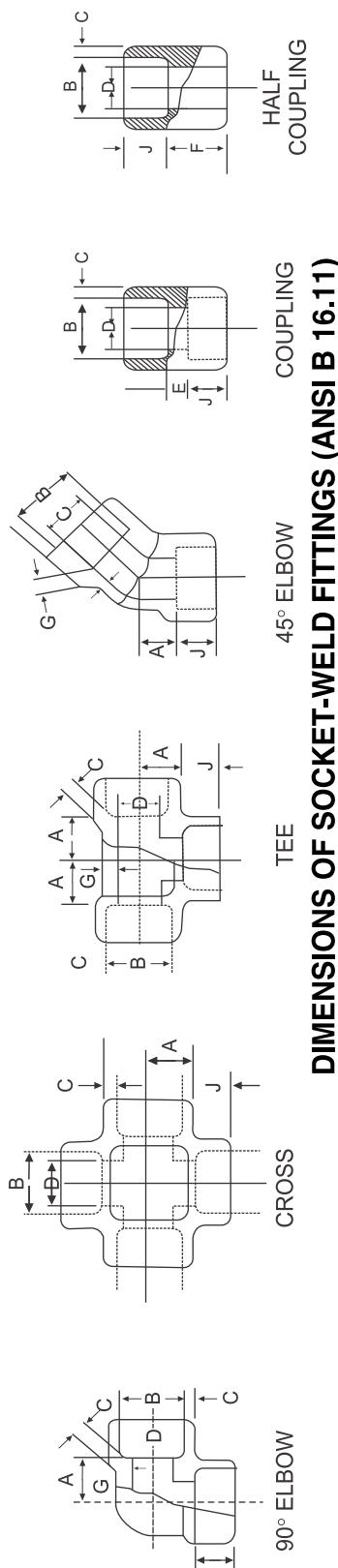
(ANSI B 16.9, B 16.28)							(In mm)														
All Fittings				90° and 45° Elbows	Tees	Reducers	Caps	180° Returns			Angularity Tolerance										
Nominal pipe size	Outside Diameter at Bevel OD	Inside Diameter at End ID	Wall Thickness T	Center to-End Dimension A. B.	Center to-End Dimension C. M.	Overall Length H	Overall Length E	Center to Center Dimension P	Back to Face Dimension K	Alignment of Ends U	Nominal Pipe Size	Off Angle Q	Off Plane P								
1/2-2 1/2	+1.5 -0.7	± 0.7	Not less than 87.5% of Nominal thickness	± 1.5	± 1.5	± 3.0	± 6.3	± 6.3	± 6.3	± 0.7	1/2-4	0.7	1.5								
03-04	+1.5	± 1.5									5-8	1.5	3.0								
05-08	+2.2 -1.5										10-12	2.2	4.8								
10-18	+4.0 -3.0	± 3.0		± 2.2	± 2.2	± 2.2	± 9.6	± 6.3	± 0.7	14-16											
20-24	+6.3 -4.8	± 4.8									18.24	3.0	9.6								
26-30		± 3.0		± 3.0	± 4.8					26.30	4.8	12.7									
32-48		± 4.8		± 4.8						32.42											
											44-48		19.0								



## DIMENSIONS OF REDUCING TEES AND REDUCERS (ANSI B 16.9)

(In mm)

Nominal (NPS)	Outside Diameter of reducing Tees & crosses						Center to end length of reducing tees and crosses						End to end of reducers		
	Run D			Branch D			Run C			Branch M			H		
	Min.	Nom.	Max.	Min.	Nom.	Max.	Min.	Nom.	Max.	Min.	Nom.	Max.	Min.	Nom.	Max.
3/4 x 1/2	26	27	28	20	21	22	27	29	31	27	29	31	36	38	40
3/4 x 3/8	26	27	28	16	17	18	27	29	31	27	29	31	36	38	40
1 x 3/4	32	33	34	26	27	28	36	38	40	36	38	40	49	51	53
1 x 1/2	32	33	34	20	21	22	36	38	40	36	38	40	49	51	53
1-1/4 x 1	41	42	43	32	33	34	46	48	50	46	48	50	49	51	53
1-1/4 x 3/4	41	42	43	26	27	28	46	48	50	46	48	50	49	51	53
1-1/4 x 1/2	41	42	43	20	21	22	46	48	50	46	48	50	49	51	53
1-1/2 x 1/4	47	48	49	41	42	43	55	57	59	55	57	59	62	64	66
1-1/2 x 1	47	48	49	32	33	34	55	57	59	55	57	59	62	64	66
1-1/2 x 3/4	47	48	49	26	27	28	55	57	59	55	57	59	62	64	66
1-1/2 x 1/2	47	48	49	20	21	22	55	57	59	55	57	59	62	64	66
2 x 1-1/2	59	60	61	47	48	49	62	64	66	58	60	62	74	76	78
2 x 1-1/4	59	60	61	41	42	43	62	64	66	55	57	59	74	76	78
2 x 1	59	60	61	32	33	34	62	64	66	49	51	53	74	76	78
2 x 3/4	59	60	61	26	27	28	62	64	66	42	44	46	74	76	78
2 1/2 x 2	72	73	74	59	60	61	74	76	78	68	70	72	87	89	91
2 1/2 x 1 1/2	72	73	74	47	48	49	74	76	78	65	67	69	87	89	91
2 1/2 x 1 1/4	72	73	74	41	42	43	74	76	78	62	64	66	87	89	91
2 1/2 x 1	72	73	74	32	33	34	74	76	78	55	57	59	87	89	91
3 x 2 1/2	88	89	90	72	73	74	84	86	88	81	83	85	87	89	91
3 x 2	88	89	90	59	60	61	84	86	88	74	76	78	87	89	91
3 x 1 1/2	88	89	90	47	48	49	84	86	88	71	73	75	87	89	91
3 x 1 1/4	88	89	90	41	42	43	84	86	88	68	70	72	87	89	91
4 x 3	113	114	116	88	89	90	103	105	107	96	98	100	100	102	104
4 x 2 1/2	113	114	116	72	73	74	103	105	107	93	95	97	100	102	104
4 x 2	113	114	116	59	60	61	103	105	107	87	89	91	100	102	104
4 x 1 1/2	113	114	116	47	48	49	103	105	107	84	86	88	100	102	104
5 x 4	140	141	144	113	114	116	122	124	126	115	117	119	125	127	129
5 x 3	140	141	144	88	89	90	122	124	126	109	111	113	125	127	129
5 x 2 1/2	140	141	144	72	73	74	122	124	126	106	108	110	125	127	129
5 x 2	140	141	144	59	60	61	122	124	126	103	105	107	125	127	129
6 x 5	167	168	171	140	141	144	141	143	145	135	137	139	138	140	142
6 x 4	167	168	171	113	114	116	141	143	145	128	130	132	138	140	142
6 x 3	167	168	171	88	89	90	141	143	145	122	124	126	138	140	142
6 x 2 1/2	167	168	171	72	73	74	141	143	145	119	121	123	138	140	142
8 x 6	217	219	221	167	168	171	176	178	180	166	168	170	150	152	154
8 x 5	217	219	221	140	141	144	176	178	180	160	162	164	150	152	154
8 x 4	217	219	221	113	114	116	176	178	180	154	156	158	150	152	154
10 x 8	270	273	277	217	219	221	214	216	218	201	203	205	176	178	180
10 x 6	270	273	277	167	168	171	214	216	218	192	194	196	176	178	180
10 x 5	270	273	277	140	141	144	214	216	218	189	191	193	176	178	180
10 x 4	270	273	277	113	114	116	214	216	218	182	184	186	176	178	180

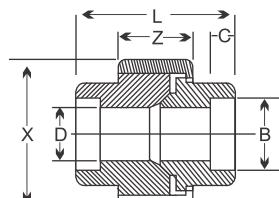


## DIMENSIONS OF SOCKET-WELD FITTINGS (ANSI B 16.11)

Nominal Pipe Size	Socket Bore Dia (2) B	Bore Diameter of (2) Fittings (D)	Socket Wall Thickness-C (1)			Depth of Socket J Min	Center of Bottom of Socket-A			Laying Lengths			Tolerances				
			Pressure Class Designation				90° Elbows Tees & Crosses			45° Elbows							
			3000	6000	9000		3000	6000	9000	3000	6000	9000	E	F	A	E	F
1/8	10.92	7.59	4.80	3.17	3.17	3.96	3.42			9.65	11.17	11.17	7.87	7.87	6.35	15.74	0.76
	10.66	6.07	3.20							9.65	11.17	13.46	7.87	7.87	6.35	15.74	0.76
1 / 4	14.35	10.00	7.11	3.78	3.30	4.59	4.01			9.65	13.46						0.76
	14.09	8.48	5.58							9.65	13.46	15.74	7.87	11.17	6.35	17.52	1.52
3/8	17.78	13.28	9.88	4.01	3.50	5.02	4.36			9.65							1.52
	17.52	11.76	8.35							9.65							
1/2	22.04	16.56	12.54	7.62	4.68	4.08	5.18	9.34	8.17	9.65	15.74	19.05	25.40	11.17	12.70	15.74	9.65
	21.71	15.03	11.02	6.09						9.65						22.35	1.52
3 / 4	27.30	21.69	16.30	11.78	4.90	4.26	6.95	6.04	9.77	8.55	12.70	19.05	22.35	28.44	12.70	14.22	19.05
	27.05	20.16	14.78	10.26						9.65						23.87	1.52
1	34.03	27.40	21.46	15.97	5.68	4.97	7.92	6.93	11.37	9.95	12.70	22.35	26.92	31.75	14.22	17.52	20.57
	33.78	25.88	19.93	14.45						9.65						28.44	2.03
1.1/4	42.79	35.81	30.22	23.52	6.07	5.28	7.92	6.93	12.14	10.61	12.70	26.92	31.75	35.05	17.52	20.51	22.35
	42.54	34.30	28.70	21.99						9.65						30.22	2.03
1.1/2	48.89	41.65	34.74	28.70	6.35	5.53	8.91	7.79	12.70	11.12	12.70	31.70	38.10	38.10	20.57	25.40	12.70
	48.64	40.13	33.22	27.17						9.65						31.75	2.03
2	61.36	53.26	43.61	38.93	6.93	6.04	10.92	9.49	13.84	12.11	15.74	38.10	41.14	53.84	25.40	28.44	19.05
	61.11	52.20	41.90	37.41						9.65						41.14	2.03
2.1/2	74.18	64.23			8.76	7.67					15.74	41.14		28.44		19.05	43.09
	73.81	61.18														2.54	
3	90.17	79.45			9.52	8.30					15.74	57.15		31.75		19.05	44.45
	89.78	76.40														2.54	
4	115.82	103.78			10.69	9.34					19.05	66.54		41.14		19.05	47.75
	115.44	100.73														2.54	



Fine Industrial Corporation

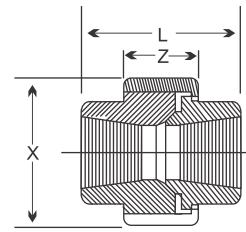


UNION SOCKET WELD

### DIMENSIONS OF SOCKET-WELD

AND

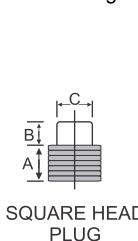
### THREADED UNION (BS3799)



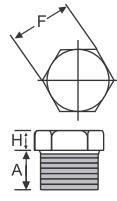
UNION THREADED

Nominal Pipe Size	3000 L B						6000 L B					
	L	X	D	Z	C	B	L	X	D	Z	C	B
1/8	36.0	32.0	06.1-7.6	16.0	11.0	10.7-10.9						
1/4	42.0	38.0	08.5-10.0	18.0	11.0	14.1-14.4						
3/8	45.0	41.0	11.8-13.3	19.0	11.0	17.5-17.8						
1/2	49.0	50.0	15.0-16.6	21.0	13.1	21.7-22.0	56.0	54.0	11.0-12.6	24.0	13.5	21.7-22.0
3/4	56.0	54.0	20.2-21.7	24.0	13.5	27.1-27.3	59.0	63.0	14.8-16.3	25.0	15.5	27.1-27.3
1	59.0	63.0	25.9-27.4	25.0	15.2	33.8-34.0	67.0	77.0	19.9-21.5	29.0	17.0	33.8-34.0
1-1/4	67.0	77.0	34.3-35.8	29.0	17.4	42.5-42.8	70.0	85.0	28.7-30.2	30.0	19.0	42.5-42.8
1-1/2	70.0	85.0	40.1-41.7	30.0	18.8	48.6-48.9	81.8	95.0	33.2-34.8	35.8	21.0	48.6-48.9
2	81.8	95.0	51.7-53.3	35.8	21.8	61.1-61.4	90.0	122.0	42.1-43.6	42.0	23.0	61.1-61.4

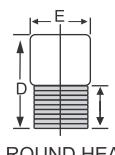
Note : X is the Length of across flats



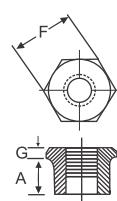
SQUARE HEAD PLUG



HEX HEAD PLUG



ROUND HEAD PLUG



HEX HEAD BUSHING



FLUSH BUSHING

### DIMENSION OF STEEL PLUG & BUSHINGS (BS 3799)

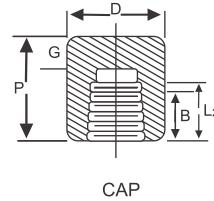
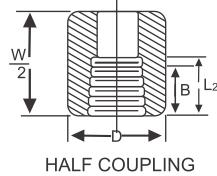
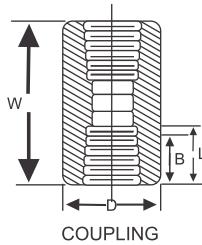
Nominal Pipe Size	Length (Minimum ) A	Plugs Square Head		Plugs Rounded Head		Hex Plugs & Bushings		
		Height of Square (Minimum) B	Width Flats (Minimum) C	Nominal Diameter Of Head E	Length Minimum D	Width Flats (Nominal) F	Bushing G	Plugs H
1/8	9.7	6.6	7.1	10.4	35.1	11.2		6.4
1/4	11.2	6.6	9.7	13.5	41.1	15.7	3.0	6.4
3/8	12.7	7.9	11.2	17.5	41.1	17.5	4.1	7.9
1/2	14.2	9.7	14.2	21.3	44.5	22.4	4.8	7.9
5/8	15.7	11.2	15.7	26.9	44.5	26.9	5.6	9.7
1	19.1	12.7	20.6	33.3	50.8	35.1	6.4	9.7
1-1/4	20.6	14.2	23.9	42.9	50.8	44.5	7.1	14.2
1-1/2	20.6	15.7	28.4	48.5	50.8	50.8	7.9	15.7
2	22.4	17.5	33.3	60.5	63.5	63.5	8.6	17.5
2-1/2	26.9	19.1	38.1	73.2	69.9	76.2	9.7	19.1
3	28.4	20.6	42.9	88.9	69.9	88.9	10.4	20.6
4	31.8	25.4	53.5	114.3	76.2	117.3	12.7	25.4

#### CAUTIONARY NOTE REGARDING HEX HEAD BUSHINGS :

Hex head Bushings of one size reduction should not be used in services wherein they might be subject to harmful loads and forces other than internal pressures.



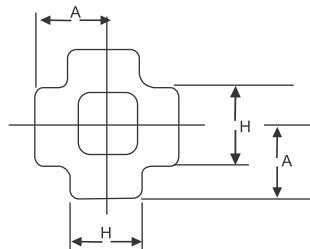
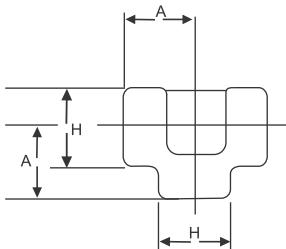
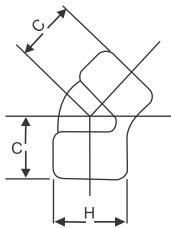
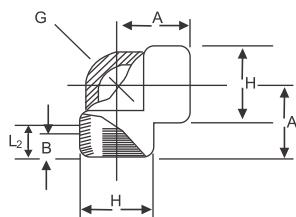
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### DIMENSIONS OF COUPLINGS AND CAPS (BS 3799)

Nominal Pipe Size	End to End Couplings W	End to End Caps P		Outside Diameter D		End Wall Thickness G Min		Length of Thread Min. (1)	
	3000 & 6000	3000	6000	3000	6000	3000	6000	B	L <sub>2</sub>
1/8	31.8	19.1		15.7	22.4	4.8		6.4	6.7
1/4	35.1	25.4	26.9	19.1	25.4	4.8	6.4	8.1	10.2
3/8	38.1	25.4	26.9	22.4	31.8	4.8	6.4	9.1	10.4
1/2	47.8	31.8	33.3	28.4	38.1	6.4	7.9	10.9	13.6
5/8	50.8	36.6	38.1	35.1	44.5	6.4	7.9	12.7	13.9
1	60.5	41.1	42.9	44.5	57.2	9.7	11.2	14.7	17.3
1-1/4	66.5	44.5	46.0	57.2	63.5	9.7	11.2	17.0	18.0
1-1/2	79.2	44.5	47.8	63.5	76.2	11.2	12.7	17.8	18.4
2	85.9	47.8	50.8	76.2	91.9	12.7	15.7	19.1	19.2
2-1/2	91.9	60.5	63.5	91.9	108.0	15.7	19.1	23.6	28.9
3	108.0	65.0	68.3	108.0	127.0	19.1	22.4	25.9	30.5
4	120.7	68.3	74.7	139.7	158.8	22.4	28.4	27.7	33.0

- Dimension B is minimum length of perfect thread. The Length of useful thread (B Plus threads with fully formed roots and flat crests) shall not be less than L<sub>2</sub> (effective length of external thread) required by American National Standard for pipe threads (ANSI B2.1)
- Class 2000 and NPS 1/8 Class 6000 coupling, Half couplings and caps are not included in this standard.



90° ELBOW

45° ELBOW

TEE

CROSS

### DIMENSION OF THREADED FITTING (ANSI B 16.11)

Nominal Pipe Size	A			C			H			G			Min (1)	
	2000	3000	6000	2000	3000	6000	2000	3000	6000	2000	3000	6000	B	L <sub>2</sub>
1/8	20.57	20.57	24.63	17.52	17.52	18.93	22.35	22.30	25.40	3.175	3.110	6.350	6.303	6.700
1/4	20.57	24.63	28.44	17.52	18.93	22.35	22.35	25.40	33.20	3.175	3.302	6.604	8.128	10.205
3/8	24.63	28.44	33.27	18.93	22.35	25.40	25.40	33.27	38.10	3.175	2.505	6.985	9.544	10.298
5/8	28.44	33.27	38.10	22.35	25.40	28.44	38.27	38.10	45.97	3.175	4.089	8.153	10.922	13.555
3/4	33.27	38.10	44.45	25.40	28.44	33.27	38.10	45.97	55.62	3.175	4.318	8.534	12.700	13.860
1	38.10	44.45	50.80	28.44	33.27	35.05	45.97	55.62	61.97	3.688	4.978	9.931	14.732	17.343
1 1/4	44.45	50.80	60.45	33.27	35.04	42.92	55.62	61.97	75.43	3.886	5.283	10.591	17.018	17.952
1-1/2	50.00	60.45	76.02	33.05	42.92	43.68	61.97	75.43	84.07	4.013	5.562	11.074	17.780	18.376
2	60.45	63.50	82.55	42.92	43.68	52.32	75.43	84.07	101.60	4.267	7.137	12.090	19.050	19.138
2-1/2	76.20	82.55	95.25	52.37	52.32	63.50	91.94	101.60	120.65	5.613	7.645	15.290	23.622	28.905
3	85.85	95.25	106.42	63.50	63.50	79.24	109.47	120.65	146.05	5.994	8.839	18.637	25.408	30.500
4	106.42	114.30	114.30	78.24	78.24	79.24	146.05	152.40	152.40	6.555	11.669	18.684	27.777	33.000

# PIPE LINE DIMENSIONS



Fine Industrial Corporation

Nominal Pipe Size Inch	Nominal Pipe Size mm	Outer Diameter mm	Schedule 10 mm	Schedule 20 mm	Schedule 30 mm	Schedule Thickness mm	Schedule 40 mm	Extra Strong mm	Schedule 60 mm	Schedule 80 mm	Schedule 100 mm	Schedule 120 mm	Schedule 140 mm	Schedule 180 mm	Double Extra mm
1/4	8	13.7	1.65			2.24	2.24	3.02		3.02					
3/8	10	17.1	1.65			2.31	2.31	3.20		3.20					
1/2	15	21.3	2.11			2.77	3.73	3.73		3.73					4.78 5.56
3/4	20	26.7	2.11			2.87	2.87	3.91		3.91					7.47 7.82
1	25	33.4	2.77			3.38	3.40	4.55		4.50					6.35 6.35
1 1/4	32	42.2	2.77			3.56	3.58	4.85		4.85					9.09 9.70
1 1/2	40	48.3	2.77			3.68	3.68	5.08		5.08					7.14 10.15
2	50	60.3	2.77			3.91	3.91	5.54		5.54					8.74 9.53
2 1/2	65	73.0	3.05			5.16	5.16	7.01		7.01					11.07 14.02
3	80	88.9	3.05			5.49	5.48	7.62		7.82					11.13 15.24
3 1/2	90		3.05			5.74	5.74	8.08		8.08					13.50 17.12
4	100	114.3	3.05			6.02	6.02	8.56		8.56					15.88 19.05
5	125	141.3	3.40			6.55	6.55	9.53		9.53					18.26 21.95
6	150	168.3	3.40	6.35	7.04	7.11	7.11	10.97		10.97					
8	200	219.1	3.78			8.18	8.18	12.70	10.31	12.70	15.05				
10	250	273.1	4.19	6.35	7.80	7.80	90.27	12.70	12.70	15.09	18.26	21.44	25.40	28.58	25.40
12	300	323.9	4.57	6.35	8.40	8.38	10.30	12.70	14.27	17.48	21.44	25.40	28.58	33.32	
14	350	355.6	6.35	7.90	9.50	9.53	11.10	12.70	15.09	19.05	23.83	27.79	31.75	35.71	
16	400	406.4	6.35	7.90	9.50	9.53	12.70	12.70	16.66	21.44	26.19	30.96	36.53	40.49	
18	450	457	6.35	7.90	11.10	1.13	14.30	12.70	19.05	23.83	29.36	34.93	39.67	45.24	
20	500	508	6.35	9.53	12.70	9.53	15.09	12.70	20.62	28.19	32.54	3810	44.45	50.01	
22	550	559	6.35	9.53	12.70	9.53		12.70	22.20	28.58	34.83	41.28	47.63	53.98	
24	600	610	6.35	9.53	14.27	9.53	17.48	12.70	24.81	30.96	38.89	46.02	52.37	59.54	
26	650	660	7.92	12.70		9.53		12.70							
28	700	711	7.92	12.70	15.88	9.53		12.70							
30	750	762	7.92	12.70	15.88	9.53		12.70							
32	800	813	7.92	12.70	15.88	9.53	17.48	12.70							
34	850	864	7.92	12.70	15.88	9.53	17.48	12.70							
36	900	914	7.92	12.70	15.88	9.53	19.05	12.70							

## PIPE LINE WEIGHT

Nominal Pipe Size Inch	Nominal Pipe Size mm	Outside Diameter mm	Schedule 10 Kg / M	Schedule 20 Kg / M	Schedule 30 Kg / M	Standard Weight Kg / M	Schedule 40 Kg / M	Extra Strong Kg / M	Schedule 60 Kg / M	Schedule 80 Kg / M	Schedule 100 Kg / M	Schedule 120 Kg / M	Schedule 140 Kg / M	Schedule 180 Kg / M	Double Extra Kg / M
1/4	8	13.7	0.49			0.63	0.63	0.80		0.80					
3/8	10	17.1	0.63			0.85	0.85	1.10		1.10					
1/2	15	21.3	1.00			1.27	1.27	1.62		1.62					1.95 2.89
3/4	20	26.7	1.27			1.88	1.68	2.19		2.19					3.63 4.23
1	25	33.4	2.09			2.50	2.50	3.23		3.23					5.45
1 1/4	32	42.2	2.69			3.38	3.38	4.47		4.47					5.60 7.24
1 1/2	40	48.3	3.11			4.05	4.05	5.41		5.41					9.55
2	50	60.3	3.94			5.44	5.44	7.48		7.48					11.11 14.91
2 1/2	65	73.0	5.25			8.62	8.82	11.41		11.41					20.39
3	80	88.9	6.46			11.29	11.29	15.27		15.27					21.33 27.67
3 1/2	90	101.06	7.42			13.57	13.57	18.62		18.62					
4	100	114.3	8.37			16.07	16.07	22.31		22.31					33.35 49.09
5	125	141.3	11.61			21.78	21.78	30.05		30.5					41.7 87.55
6	150	168.3	13.81	33.31	36.79	28.26	28.26	42.56	53.09	42.56					79.18
8	200	219.1	20.01			42.53	42.53	64.33		84.63	75.89	90.43	100.93	111.25	107.87
10	250	273.1	27.79	41.77	51.00	60.29	60.29	61.54	81.54	95.97	114.74	133.00	155.10	172.25	155.10
12	300	323.9	36.00	49.72	65.20	73.82	79.72	97.44	108.96	132.01	159.85	186.92	208.04	238.72	186.92
14	350	355.6	54.68	67.94	81.28	81.28	94.49	107.38	126.68	158.08	194.90	224.60	253.53	281.68	
16	400	406.4	62.63	77.86	93.21	93.21	123.29	123.39	160.12	203.48	245.50	286.62	333.11	365.30	
18	450	457	70.59	87.79	122.36	105.14	155.91	139.19	205.80	254.59	309.7	363.65	408.45	459.51	
20	500	508	78.54	117.07	155.10	117.07	183.37	155.10	247.85	311.17	381.53	441.49	508.11	564.51	
22	550	559	86.50	129.01	171.01	129.01		171.01	294.25	373.83	451.42	527.02	600.63	672.26	
24	600	610	94.45	140.94	209.54	140.94	255.14	166.92	355.02	442.08	547.71	640.03	720.15	808.22	
26	650	660	127.50	202.83		152.87		200.83							
28	700	711	137.42	218.73	272.18	164.80		218.73							
30	750	762	147.36	234.64	292.06	173.73		234.64							
32	800	813	157.28	250.55	311.95	188.66	342.70	250.55							
34	850	864	167.20	266.46	331.83	200.59	384.58	236.46							
36	900	914	177.13	282.36	351.72	212.52	420.56	282.36							

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CLASS	SIZE N. B.	APPROX O. D.	THICKNESS	NOMINAL WEIGHT OF BLACK PIPES									
				PLAIN ENDED				SCREWED & SOCKETED					
mm	Inch	mm	Inch	mm	inch	swg	kgs/m	mtrs/tonne	ft	kgs/m	mtrs/tonne	ft	
(A)	L	15	1/2	21.3	0.843	2.00	0.079	14	0.947	1056	3465	0.956	
	I	20	3/4	26.9	1.062	2.30	0.091	13	1.380	725	2379	1.390	
	G	25	1	33.7	1.328	2.60	0.102	12	1.980	505	1657	2.000	
	H	32	1 1/4	42.4	1.682	2.60	0.102	12	2.540	394	1293	2.570	
	T	40	1 1/2	48.3	1.906	2.90	0.114	11	3.230	310	1017	3.270	
	T	50	2	60.3	2.375	2.90	0.114	11	4.080	245	804	4.150	
	65	2 1/2	76.1	3.000	3.20	0.126	10	5.710	175	574	5.830	172	
	80	3	88.9	3.500	3.20	0.126	10	6.720	149	489	6.890	145	
	100	4	114.3	4.500	3.60	0.142	9	9.750	103	338	10.000	100	
	15	1/2	21.3	0.843	2.60	0.102	12	1.210	826	2710	1.220	820	
(B)	M	20	3/4	26.9	1.062	2.60	0.102	12	1.560	641	2103	1.570	637
	E	32	1 1/4	42.4	1.682	3.20	0.126	10	3.200	415	1362	3.430	412
	D	40	1 1/2	48.3	1.906	3.20	0.126	10	3.560	323	1060	3.130	1047
	D	50	2	60.3	2.375	3.60	0.142	9	5.030	281	922	3.600	278
	U	65	2 1/2	76.1	3.000	3.60	0.142	9	6.420	156	512	6.540	153
	M	80	3	88.9	3.500	4.00	0.157	8	8.360	120	394	8.530	117
	(B)	100	4	114.3	4.500	4.50	0.177	7	12.200	82	269	12.500	80
	125	5	139.7	5.500	4.80	0.189	6	15.900	63	207	16.400	61	
	150	6	165.1	6.500	4.80	0.189	6	18.900	53	174	19.500	51	
	H	15	1/2	21.3	0.843	3.20	0.126	10	1.440	694	2277	1.450	690
(C)	E	20	3/4	26.9	1.062	3.20	0.126	10	1.870	535	1755	1.880	532
	A	25	1	33.7	1.328	4.00	0.157	8	2.930	341	119	2.950	112
	V	32	1 1/4	42.4	1.682	4.00	0.157	8	3.790	264	866	3.820	262
	V	40	1 1/2	48.3	1.906	4.00	0.157	8	4.370	229	751	4.410	227
	Y	50	2	60.3	2.375	4.50	0.177	7	6.190	162	531	6.260	160
	Y	65	2 1/2	76.1	3.000	4.50	0.177	7	7.930	126	413	8.050	124
	80	3	88.9	3.500	4.80	0.189	6	9.900	101	331	10.400	96	
	100	4	114.3	4.500	5.40	0.213	5	14.500	69	226	14.800	68	
	125	5	139.7	5.500	5.40	0.213	5	17.900	56	184	18.400	54	
	150	6	165.1	6.500	5.40	0.213	5	21.300	47	154	21.900	46	

## TECHNICAL DATA OF BLACK STEEL PIPES CONFORMING TO IS 3589 OF 2001

STANDARD LENGTH: 6.00 meter $\pm$ 50 mm (approx. 19'8" $\pm$ 2")											
ZINC COATING : Galvanising as per IS 4736-1986											
TOLERANCES :											
<b>THICKNESS:</b> Light Class : + No. Limit - 10% Class: + No Limit- 10%											
<b>WEIGHT:</b> Single Tube : Light Class: $\pm$ 10% - 8% For 10MT: $\pm$ 5% Single Tube: Medium and Heavy Class: + 10% - 8% for 10MT: $\pm$ 5% single											
<b>LENGTH:</b> Random length: 4 to 7 meters, Approx. length will be within $\pm$ 150 mm. of specified length, Exact Length: $\pm$ 6mm -00											

## TOLERANCES :

O.D.: Below 168.3: 0.5mm O.D. 168.3mm and above 1.00mm  
ECCENTRICITY:  
Any cross Section the eccentricity shall not exceed 5% of specified wall thickness

**MASS:**  
Single tube (Medium & Heavy)  $\pm$  10% for 10 tonnes, (Medium & Heavy)  $\pm$  5% for 5 tonnes

**OUTSIDE DIAMETER:** upto 219.1mm O.D.  $\pm$  0.75%  
**THICKNESS:**  $\pm$  10%

**MASS PER 10M. TON OR ABOVE:**  $\pm$  7.5% Nominal theoretical mass of the tubes.

**STRAIGHTNESS:** Maximum deviation from straight line 0.2% of the length LENGTH: Random length: 4 to 7 meters. And for specific length  $\pm$  100mm

**THICKNESS:**  $\pm$  10% of any length measured at centre.  
**LENGTH:** Random length: 4 to 7 meter, and for specific length  $\pm$  50mm

CALCULATED NOMINAL WEIGHT OF GALVANISED PIPES											
PLAIN ENDED				SCREWED & SOCKETED				NO. OF PIPES PACKED PER STANDARD BUNDLE			
Kgs/m	mtrs/tonne	ft	kg/m	mtrs/tonne	ft	Kgs/m	mtrs/tonne	ft	Kgs/m	mtrs/tonne	ft
1.000	1000	3281	1.007	993	3257	180	1.000	1000	3281	1.007	993
1.440	694	2277	1.460	685	2247	130	1.440	694	2277	1.460	685
2.060	485	1591	2.090	478	1568	90	2.060	485	1591	2.090	478
2.640	379	1243	2.680	373	1224	70	2.640	379	1243	2.680	373
3.350	298	978	3.400	294	965	61	3.350	298	978	3.400	294
4.220	237	778	4.300	233	764	44	4.220	237	778	4.300	233
5.890	170	558	6.020	166	545	30	5.890	170	558	6.020	166
6.930	144	472	7.100	141	463	27	6.930	144	472	7.100	141
10.030	100	328	10.280	97	318	19	10.030	100	328	10.280	97

# ANSI FLANGE WEIGHT (KGS)

Nominal	150 #			300 #			600 #			900 #			1500 #		
	Pipe Size	WN	S/O	B/K	WN	S/O	B/K	WN	S/O	B/K	WN	S/O	B/K	WN	S/O
1/2"	0.70	0.40	0.70	0.8	0.7	0.91	0.90	0.80	0.95	3.17	2.72	1.81	3.7	2.72	1.81
3/4"	0.90	0.70	0.90	1.4	1.2	1.36	1.60	1.4	1.36	3.17	2.72	2.72	3.7	2.72	2.72
1"	1.10	0.80	1.10	1.7	1.4	1.81	1.90	1.7	1.81	4.08	3.40	4.08	3.85	3.40	4.08
1 1/4"	1.50	1.20	1.50	2.2	1.8	2.72	2.60	2.1	2.72	4.53	4.53	4.53	4.53	4.53	4.53
1 1/2"	1.80	1.40	1.80	3.2	2.7	3.17	3.5	3.1	3.63	6.35	6.35	6.35	6.35	6.35	6.35
2"	2.70	2.20	1.85	3.6	3.2	3.63	4.7	3.8	4.54	11.34	9.98	11.34	11.34	9.98	11.34
2 1/2"	4.40	3.50	5.00	5.5	4.5	6.80	6.7	5.5	6.80	16.33	13.61	15.87	16.33	16.33	15.87
3"	5.10	4.10	6.35	7.3	6.1	7.26	8.7	7.3	9.07	19.05	17.69	17.24	21.77	21.77	21.77
3 1/2"	6.40	5.20	6.89	9.0	7.5	9.07	11.2	8.9	13.15	-	-	-	-	-	-
4"	7.5	5.60	8.63	11.9	10.0	12.25	18.3	15.8	18.60	23.13	22.23	24.50	33.11	33.11	33.11
5"	9.0	6.30	9.52	16.0	12.5	18.60	30.5	25.0	30.84	39.01	36.74	39.46	59.87	59.87	64.41
6"	11.0	7.80	12.70	20.0	16.2	22.68	37.0	29.5	39.01	49.90	47.63	51.25	74.39	74.39	72.12
8"	18.5	12.6	21.77	31.0	25.0	36.29	55.0	44.0	63.50	84.82	78.02	81.36	121.83	117.03	136.98
10"	25.0	18.0	31.75	44.3	35.0	54.43	91.0	71.0	104.33	121.56	111.13	131.54	205.93	197.77	229.97
12"	38.0	27.5	47.63	64.0	50.0	83.46	108.0	85.0	133.81	168.74	147.87	187.33	312.98	302.55	351.63
14"	51.0	37.0	61.23	88.0	72.0	112.94	150.0	96.0	171.46	254.92	172.36	224.07	426.38	-	442.23
16"	63.0	46.0	79.83	112.0	90.0	146.96	180.0	145.0	239.05	310.71	208.20	280.77	567.00	-	589.67
18"	71.0	50.0	97.10	138.0	115.0	188.70	240.0	175.0	301.64	419.12	303.91	399.16	737.10	-	793.79
20"	88.0	64.0	128.82	171.0	137.0	234.05	295.0	220.0	387.83	527.98	393.72	502.13	929.86	-	1009.24
24"	120.0	90.0	180.53	240.0	210.0	346.10	363.0	315.0	532.98	680.39	635.03	918.52	1508.19	-	1644.24





**Fine Industrial Corporation**

**BRIEF DESCRIPTION OF ITEMS  
PLATE / FORGED / MILD STEEL, CARBON STEEL  
AND STAINLESS STEEL FLANGES**

<b>Type</b>	: Slip-on, Weld Neck, Blind, Threaded Socket-Weld Lap Joints
<b>Standards</b>	: BS 10 (Table - D. E. F. H. J & K) ASA 150, 300, 600, 900, 1500 AND 2500 lbs. DIN ND 6, 10, 16, 25 and 40 IS 6392, 1538 ANSI B 16.5, ASME 16.47, MSS-SP-44, API 605, AWWA 207

**MATERIAL OF CONSTRUCTION:**

Mild Steel	: IS 2062 GR. A, GR. B
Carbon Steel	: ASTM -A105, IS 2002,516 GR.70
Stainless Steel	: ASTM, A-182, A-240, F 304, F 316, F, 321, F 304L, F 316L
Alloy steel	: LF2, P11, P22, F11, F22

**FITTINGS**

1) Butt-weld Forged steel elbow (1.5D) and Bend (3D)
Size : 1/2" to 24" IN SCH. 40, 80 and160 As Per ANSI B 16.9

**2) Forged Carbon Steel fittings for High pressure of 3000/6000 lbs.**

Type	: Union, Coupling, Elbow, Tee, Nipple, Reducer,
Size	: 1/2" to 6" Dia.
Ends	: Socket / Butt Weld, Flanges BSPT / NPT

<b>Specification</b>	: AS PERANSIB 16.11
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<b>Inspection</b>	: Lloyds/BVIS/DNV/UDAY/T.U.V. (If third party inspection required will be arrange by you)
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<b>Ex-Stock Range</b>	: From 1/2" to 6" Fittings, 1/2" to 24 Flanges & ASA 150 to 300 lbs.
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**SPECIALISATION**

MANUFACTURER T. C. WITH NABL SUPPORTING TEST CERTIFICATE  
DOUBLE FACE  
SERRATED SURFACE 125 - 250 AARH  
THREE GASKET GROOVES  
RAISED FACE  
COLLAR SCREWED  
AND ALSO AS PER DRAWINGS.

**FLANGES SUITABLE FOR UPTO 60" O.D. PIPE**





# Fine Industrial Corporation

AN ISO 9001-2008 REGISTERED CO.



The RvA is a signatory to the IAF MLA

APPROVED BY:  
**TQ**  
 TATA PROJECTS  
 QUALITY SERVICES



**MSME**  
 MICRO, SMALL & MEDIUM ENTERPRISES  
 सुखम, लघु एवं मध्यम उद्यम

এন এস আয় সী  
**NSIC**  
 ISO 9001 : 2008



Name of Company : **FINE INDUSTRIAL CORPORATION**  
 Office : Plot No.100-101, Reti Bunder, Near  
 Manikant Godown, Darukhana,  
 Reay Road, Mumbai - 400 010.

Factory (Unit I) : Plot No.100-101, Reti Bunder,  
 Near Manikant Godown,  
 Darukhana, Reay Road (East)  
 Mumbai - 400 010.

GST No. : 27ACBPK7677A1ZN

Factory (Unit II) : Success Industrial Park, Nighoje,  
 Unit No.24, Gate No.444/4, B/H.  
 Mahindra & Mahindra Vehicle Ltd.,  
 Off Talwade Mhalunge MIDC Road,  
 Nr. Indrayani River, Nighoje,  
 Chakan, Pune-410501 (INDIA)

Pan : ACBPK7677A

Contact Us : Workshop : 23732661  
 Office : 23742662  
 Telefax : 23713454

Bankers : **UNION BANK OF INDIA**  
 Branch : Darukhana, Reay Road,  
 Mumbai-400010

Website : [www.fine-industries.com](http://www.fine-industries.com)  
 E-mail : [info@fine-industries.com](mailto:info@fine-industries.com)

Account No. : 361101010036485  
 IFSC : UBIN0536113  
 MICR CODE NO. : 400026052  
 Member : National Small Industries Corporation  
 Micro Small Scale Industries  
 Entrepreneur Memorandum  
 No. 27231100816