N PIPING SYSTEMS PVT LTD

TOTAL PIPING SYSTEMS

AN ISO 9001-2015 CERTIFIED COMPANY | (EIL & IBR APPROVED)

Manufacturers for: Pipe Fittings, Flanges & Piping Spools
Regd. Office & Works: Survey No. 302, Hissa No. 6, Manicha Pada, Vasai Phata, Vasai East, Vasai –01208, Maharashtra, India
Tel: +91-9326483335 / 8080303059 | **Email:** sales@npiping.com | **Web:** www.npiping.com

COMPREHENSIVE TECHNICAL PRODUCT CATALOGUE FLANGES

Forged & Plate Flanges | Carbon Steel, Stainless Steel, Alloy Steel, Duplex, Super Duplex & Special Alloys

Size Range: 15NB (1/2") to 600NB (24") [Up to 1500NB / 60" on Request] | **Class Ratings:** 150# to 2500#

1. COMPANY OVERVIEW & MANUFACTURING CAPABILITIES

N PIPING SYSTEMS PRIVATE LIMITED is a premier global manufacturer and exporter of high-integrity piping components engineered for critical applications in Oil & Gas, Petrochemical, Offshore, and Power Generation, Nuclear, and Heavy Chemical industries. Our manufacturing program encompasses full encirclement split tees; butt-weld fittings (seamless and welded elbows, tees, reducers, caps, and crosses), forged flanges, and custom prefabricated piping spools.

2. MATERIAL GRADES & DETAILED SPECIFICATIONS

We supply high-performance flanges across a comprehensive spectrum of material grades conforming to ASTM / ASME / EN / DIN standards, catering to high-pressure, extreme-temperature, and corrosive service conditions:

Material Category	Grades & Specifications	Key Characteristics & Applications
Stainless Steel (SS)	**Austenitic:** ASTM A182 F304/304L, F316/316L, F317L, F321, F321H, F347, F347H **Special Austenitic / High 6% Moly:** SMO 254 (UNS S31254 / F44), 904L (UNS N08904)	Excellent corrosion resistance, high ductility, and superior cryogenic performance.
Duplex & Super Duplex Steel (DSS / SDSS)	**Duplex 2205:** ASTM A182 F51 / F60 (UNS S31803 / S32205) **Super Duplex 2507:** ASTM A182 F53 (UNS S32750), F55 (UNS S32760 - Zeron 100)	High mechanical strength combined with exceptional resistance to pitting, crevice corrosion, and stress corrosion cracking in aggressive marine & offshore environments.
Alloy Steel (AS)	ASTM A182 F1, F5, F9, F11 (Class 1 & 2), F22 (Class 1 & 3), F91	Chrome-Moly alloy steels designed for high-temperature and high-pressure steam/petrochemical service with superior creep strength and resistance to hydrogen attack.
Carbon Steel (CS) & Low-Temp CS (LTCS)	**CS:** ASTM A105 / A105N (Standard high-temp forged CS) **LTCS:** ASTM A350 LF2 (Class 1 & 2) (Low-temp service down to -46°C / -50°F) **High-Yield:** ASTM A694 F42, F52, F60, F65, F70 (For high-pressure transmission pipelines)	High mechanical robustness, reliable structural integrity for general service, sub-zero low temperature applications, and high-pressure pipeline transmission.
Special Metals & Nickel Alloys	**Nickel:** Nickel 200 (UNS N02200), Nickel 201 (UNS N02201) **Monel:** Monel 400 (UNS N04400), Monel K500 (UNS N05500) **Inconel:** Inconel 600 (N06600), 625 (N06625), 718 (N07718) **Incoloy:** Incoloy 800 (N08800), 800H (N08810), 825 (N08825) **Hastelloy:** Hastelloy C276 (N10276), C22 (N06022), B2 (N10665) **Titanium & Cu-Ni:** Titanium Gr 2 / Gr 5, Copper Nickel 90/10 & 70/30	Exceptional high-temperature strength, oxidation resistance, and immune to severe chemical corrosion in hyper-aggressive process environments.

3. FLANGES TYPES & STRUCTURAL DESCRIPTIONS

1. Slip-On Weld Flange (SORF/SOFF)

Slipped over pipe outer diameter and fillet welded both inside and outside. Low cost, easy alignment, ideal for moderate pressure applications.



2. Weld Neck Flange (WNRF/WNRTJ)

Features a tapered hub butt-welded to the pipe. Transfers stress to the pipe wall, reducing stress concentration. Preferred for severe high-pressure/temperature conditions.



3. Blind Flange (BLRF/BLRTJ)

Solid disk without a bore used to seal piping system ends, pressure vessel openings, or inspection ports. Subject to highest bending stresses at center



4. Threaded Flange (THRF)

Bores feature NPT/BSP threads allowing installation without welding. Restricted to low-pressure/temperature systems or non-weldable hazardous areas.



5. Socket Weld Flange (SWRF)

Counter-bored to fit pipe O.D., joined by a single fillet weld on the outer hub. Smooth internal bore minimizes flow turbulence; widely used in small NB (15NB to 50NB) high-pressure lines.



6. Lap Joint Flange (LJ) & Stub Ends

Used with a lap joint stub end. Flange swivels freely around stub end, allowing effortless bolt hole alignment. Ideal for systems needing frequent dismantling.



7. Spectacle Blanks / Line Blanks (ASME B16.48)

Includes Figure-8 Spectacle Blanks, Paddle Blanks (Spades), and Paddle Spacers. Provides positive line isolation during maintenance and shut-downs.



4. MANUFACTURING STANDARDS & CODES

PRIMARY Manufacturing Standards:

- **ASME B16.5:** Pipe Flanges and Flanged Fittings (15 NB to 600 NB, Class 150# - 2500#).
- **ASME B16.47**: Large Diameter Steel Flanges (DN 650 to DN 1500, Series A & B).
- **ASME B16.36 / B16.48:** Orifice Flanges & Line Blanks (Spectacle Blanks, Spades, Spacers).
- **EN 1092-1 / DIN:** Circular Steel Flanges (PN 2.5 to PN 400, DN 10 to DN 4000).
- **AS 2129 / AS 4087:** Table Flanges (Table D, E, F, H) & Waterworks Flanges (PN16-PN35).

Standard Flange Facings:

- **Flat Face (FF):** Full face contact, primarily AS 2129 & cast iron mating.
- **Raised Face (RF):** 1.6mm (150#/300#) or 6.4mm (600#+) raised gasket surface.
- **Ring Type Joint (RTJ):** High-pressure metal ring groove (Class 300# to 2500#).
- **Tongue & Groove / Male & Female:** Interlocking high-integrity seals.

5. MATERIAL GRADES & CHEMICAL COMPOSITION DETAILS

Complete Chemical Composition Ranges (%) & Mechanical Standards across Carbon Steel (CS), Stainless Steel (SS), and Alloy Steel (AS):

Grade / Standard	C %	Mn %	P % Max	S % Max	Si %	Cr %	Mo %	Yield (MPa)	Tensile (MPa)
ASTM A105 / A105N (High Temp CS)	0.35 Max	0.60 - 1.05	0.035	0.040	0.15 - 0.35	0.30 Max	0.12 Max	≥ 250	≥ 485
Grade / Standard	**C %**	**Mn %**	**P % Max**	**S % Max**	**Si %**	**Cr %**	**Mo %**	**Yield (MPa)**	**Tensile (MPa)**
ASTM A350 LF2 Class 1 (LTCS -46°C)	0.30 Max	0.60 - 1.35	0.035	0.040	0.15 - 0.30	0.30 Max	0.12 Max	≥ 250	485 - 655
ASTM A694 F52 / F60 / F65 (High Yield)	0.20 Max	1.15 - 1.65	0.025	0.025	0.15 - 0.35	-	-	≥ 360 - 450	≥ 455 - 535

Grade (ASTM A182)	C % Max	Mn % Max	Si % Max	Cr %	Ni %	Mo %	N %	Tensile (MPa)
F304 / F304L (18/8 Austenitic)	0.030 (304L)	2.00	1.00	17.5 - 19.5	8.0 - 11.0	-	0.10 Max	≥ 485 / 480
F316 / F316L (Marine/Chem Grade)	0.030 (316L)	2.00	1.00	16.0 - 18.0	10.0 - 14.0	2.00 - 3.00	0.10 Max	≥ 485 / 485
F321 / F347 (Stabilized SS)	0.08	2.00	1.00	17.0 - 19.0	9.0 - 13.0	-	Ti: 5xC / Nb: 10xC	≥ 515
F51 / F60 (Duplex 2205)	0.030	2.00	1.00	22.0 - 23.0	4.5 - 6.5	3.00 - 3.50	0.14 - 0.20	≥ 655
F53 / F55 (Super Duplex 2507)	0.030	1.20	0.80	24.0 - 26.0	6.0 - 8.0	3.0 - 5.0	0.24 - 0.32	≥ 750

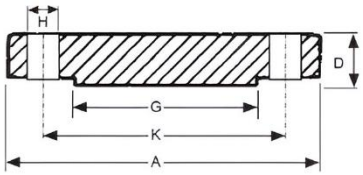
Grade (ASTM A182)	C %	Mn %	Si %	Cr %	Mo %	Other Elements	Tensile (MPa)
F1 (0.5% Mo)	0.10 - 0.20	0.30 - 0.80	0.15 - 0.35	-	0.44 - 0.65	-	≥ 485
F11 Class 2 (1.25Cr-0.5Mo)	0.10 - 0.20	0.30 - 0.80	0.50 - 1.00	1.00 - 1.50	0.44 - 0.65	-	≥ 485
F22 Class 3 (2.25Cr-1Mo)	0.05 - 0.15	0.30 - 0.60	0.50 Max	2.00 - 2.50	0.87 - 1.13	-	≥ 515
F91 (9Cr-1Mo-V)	0.08 - 0.12	0.30 - 0.60	0.20 - 0.50	8.00 - 9.50	0.85 - 1.05	V: 0.18-0.25, Nb: 0.06-0.10	≥ 585

Quality Assurance & Certification: All flanges are manufactured under ISO 9001:2015 QA systems and supplied with EN 10204 3.1 / 3.2 Material Test Certificates (MTC). Inspection capabilities include Ultrasonic Testing (UT), Magnetic Particle Inspection (MPI), Positive Material Identification (PMI), NACE MR0175/ISO 15156 compliance, and Hydrostatic testing. Third-party inspection (EIL, TUV, BV, DNV, SGS, Lloyd's) available.

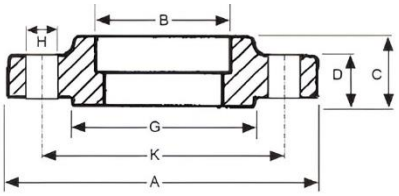
6. ASME B16.5 STANDARD FLANGE DIMENSIONS (15 NB TO 600 NB)

*All dimensions are expressed in millimeters (mm). Legend: **A** = Outside Diameter, **D** = Flange Thickness (Min), **B** = Bore SOW/SW, **G** = O.D. of Raised Face, **C** = Length Thru Hub, **K** = Bolt Circle Diameter, **H** = Bolt Hole Diameter, **No.** = Number of Bolts. Weights in kg.*

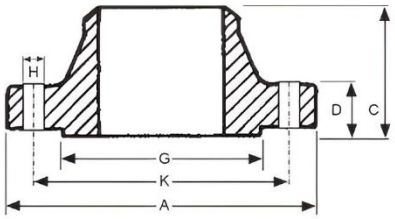
CLASS 150# FLANGES (ASME B16.5)



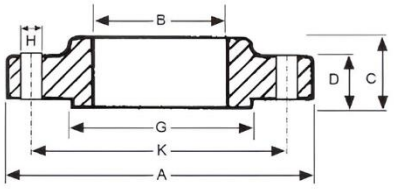
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SOCKET WELDING (SW)



WELDING NECK (WN)



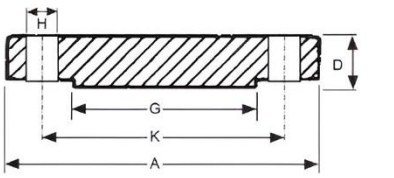
SLIP-ON WELDING (SOW)

Nominal Size		Dimensions (mm)							Bolt Drilling				Bolt Length (mm)		Weight (kg)	
DN	NPS	A	D	B	G	C (SOW)	C (WN)	K	H	No.	Diam	RF Stud	RF Mach	SOW/SW	WN	Blind
15	1/2"	88.9	11.2	22.4	35.1	15.8	47.8	60.4	15.7	4	1/2"	60.0	45.0	0.4	0.5	0.4
20	3/4"	98.6	12.7	27.7	42.9	15.8	52.3	69.9	15.7	4	1/2"	65.0	50.0	0.6	0.7	0.6
25	1"	108.0	14.2	34.5	50.8	17.5	55.6	79.2	15.7	4	1/2"	65.0	55.0	0.8	1.0	0.9
32	11/4"	117.3	15.7	43.2	63.5	20.6	57.2	88.9	15.7	4	1/2"	70.0	55.0	1.0	1.3	1.2
40	11/2"	127.0	17.5	49.5	73.2	22.4	62.0	98.6	15.7	4	1/2"	70.0	60.0	1.3	1.7	1.5
50	2"	152.4	19.1	62.0	91.9	25.5	63.5	120.7	19.1	4	5/8"	80.0	65.0	2.1	2.6	2.4
65	21/2"	177.8	22.4	74.7	104.6	28.5	69.9	139.7	19.1	4	5/8"	90.0	75.0	3.3	4.1	3.9
80	3"	190.5	23.9	90.7	127.0	30.2	69.9	152.4	19.1	4	5/8"	90.0	75.0	3.9	4.9	4.9
90	31/2"	215.9	23.9	103.4	139.7	31.8	71.4	177.8	19.1	8	5/8"	90.0	75.0	4.8	6.1	6.2
100	4"	228.6	23.9	116.1	157.2	33.3	76.2	190.5	19.1	8	5/8"	90.0	75.0	5.3	6.8	7.0
125	5"	254.0	23.9	143.8	185.7	36.6	88.9	215.9	22.4	8	3/4"	90.0	80.0	6.1	8.6	8.6
150	6"	279.4	25.4	170.7	215.9	39.6	88.9	241.3	22.4	8	3/4"	100.0	85.0	7.5	10.6	11.3
200	8"	342.9	28.4	221.5	269.7	44.5	101.6	298.5	22.4	8	3/4"	110.0	90.0	12.1	17.6	19.6
250	10"	406.4	30.2	276.4	323.9	49.3	101.6	362.0	25.4	12	7/8"	115.0	95.0	16.5	24.0	28.8
300	12"	482.6	31.8	327.2	381.0	55.6	114.3	431.8	25.4	12	7/8"	120.0	100.0	26.2	36.5	43.2
350	14"	533.4	35.1	359.2	412.8	57.2	127.0	476.3	28.4	12	1"	130.0	110.0	34.6	48.4	58.1
400	16"	596.9	36.6	410.5	469.9	63.5	127.0	539.8	28.4	16	1"	135.0	115.0	44.8	60.6	76.1
450	18"	635.0	39.6	461.8	533.4	68.3	139.7	577.9	31.8	16	11/8"	150.0	125.0	48.9	68.3	93.7
500	20"	698.5	42.9	513.1	584.2	73.2	144.5	635.0	31.8	20	11/8"	160.0	135.0	61.9	84.5	122.0
600	24"	812.8	47.8	616.0	692.2	82.6	152.4	749.3	35.1	20	11/4"	175.0	145.0	86.9	115.0	185.0

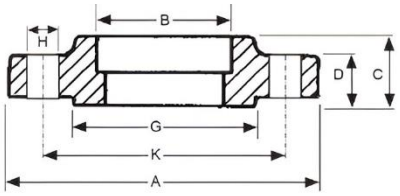
7. ASME B16.5 STANDARD FLANGE DIMENSIONS (15 NB TO 600 NB)

*All dimensions are expressed in millimeters (mm). Legend: **A** = Outside Diameter, **D** = Flange Thickness (Min), **B** = Bore SOW/SW, **G** = O.D. of Raised Face, **C** = Length Thru Hub, **K** = Bolt Circle Diameter, **H** = Bolt Hole Diameter, **No.** = Number of Bolts. Weights in kg.*

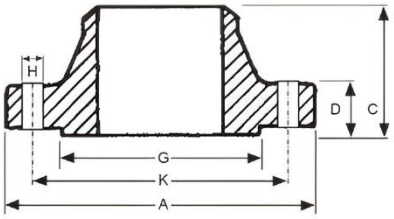
CLASS 300# FLANGES (ASME B16.5)



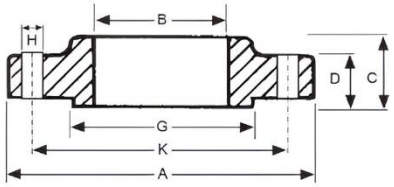
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SOCKET WELDING (SW)



WELDING NECK (WN)



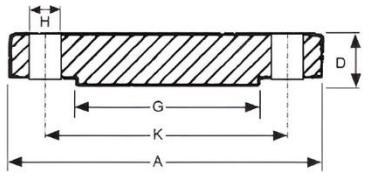
SLIP-ON WELDING (SOW)

Nominal Size		Dimensions (mm)							Bolt Drilling				Bolt Length (mm)		Weight (kg)	
DN	NPS	A	D	B	G	C (SOW)	C (WN)	K	H	No.	Diam	RF Stud	RF Mach	SOW/SW	WN	Blind
15	1/2"	95.3	14.2	22.4	35.1	22.4	52.3	66.5	15.7	4	1/2"	65.0	55.0	0.6	0.8	0.6
20	3/4"	117.3	15.7	27.7	42.9	25.4	57.2	82.6	19.1	4	5/8"	75.0	60.0	1.1	1.3	1.1
25	1"	124.0	17.5	34.5	50.8	26.9	62.0	88.9	19.1	4	5/8"	80.0	65.0	1.4	1.5	1.4
32	11/4"	133.4	19.1	43.2	63.5	26.9	65.0	98.6	19.1	4	5/8"	80.0	65.0	1.7	2.0	1.8
40	11/2"	155.5	20.6	49.5	73.2	30.2	68.3	114.3	22.4	4	3/4"	90.0	75.0	2.5	2.9	2.7
50	2"	165.1	22.4	62.0	91.9	33.3	69.9	127.0	19.1	8	5/8"	90.0	75.0	2.9	3.4	3.2
65	21/2"	190.5	25.4	74.7	104.6	38.1	76.2	149.4	22.4	8	3/4"	100.0	85.0	4.3	5.2	4.9
80	3"	215.9	28.4	90.7	127.0	42.9	79.2	168.1	22.4	8	3/4"	110.0	90.0	5.9	6.9	6.8
90	31/2"	228.6	30.2	103.4	139.7	44.5	81.0	184.2	22.4	8	3/4"	110.0	95.0	7.3	8.7	8.7
100	4"	254.0	31.8	116.1	157.2	47.8	85.9	200.2	22.4	8	3/4"	110.0	95.0	9.6	11.2	11.5
125	5"	279.4	35.1	143.8	185.7	50.8	98.6	235.0	22.4	8	3/4"	120.0	100.0	12.3	15.1	15.6
150	6"	317.5	36.6	170.7	215.9	52.3	98.6	269.7	22.4	12	3/4"	125.0	105.0	15.6	19.1	20.9
200	8"	381.0	41.1	221.5	269.7	62.0	112.3	330.2	25.4	12	7/8"	140.0	110.0	24.2	29.9	34.3
250	10"	444.5	47.6	276.4	323.9	66.5	117.3	387.4	28.4	16	1"	155.0	130.0	34.1	42.7	53.3
300	12"	520.7	50.8	327.2	381.0	73.2	130.0	450.9	31.8	16	11/8"	170.0	145.0	49.8	61.8	78.8
350	14"	584.2	53.8	359.2	412.8	76.2	142.7	514.4	31.8	20	11/8"	175.0	150.0	69.9	85.8	105.0
400	16"	647.7	57.2	410.5	469.9	82.6	146.1	571.5	35.1	20	11/4"	190.0	160.0	88.1	106.0	137.0
450	18"	711.2	60.5	461.8	533.4	88.9	158.8	626.7	35.1	24	11/4"	195.0	170.0	109.0	131.0	175.0
500	20"	774.7	63.5	513.1	584.2	95.3	162.1	685.8	35.1	24	11/4"	205.0	180.0	134.0	158.0	221.0
600	24"	914.4	70.0	616.0	692.2	106.4	168.1	812.8	41.1	24	11/2"	230.0	195.0	201.0	230.0	339.0

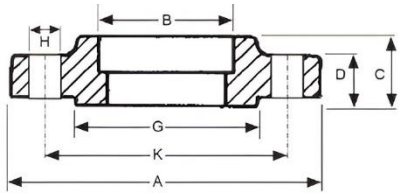
8. ASME B16.5 STANDARD FLANGE DIMENSIONS (15 NB TO 600 NB)

*All dimensions are expressed in millimeters (mm). Legend: **A** = Outside Diameter, **D** = Flange Thickness (Min), **B** = Bore SOW/SW, **G** = O.D. of Raised Face, **C** = Length Thru Hub, **K** = Bolt Circle Diameter, **H** = Bolt Hole Diameter, **No.** = Number of Bolts. Weights in kg.*

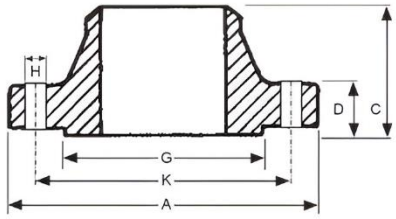
CLASS 600# FLANGES (ASME B16.5)



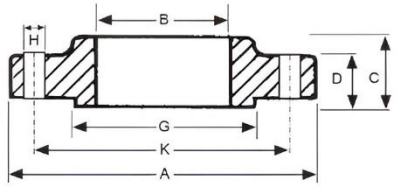
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SOCKET WELDING (SW)



WELDING NECK (WN)



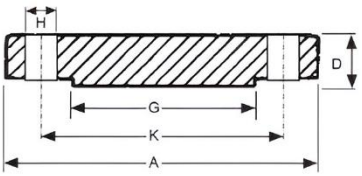
SLIP-ON WELDING (SOW)

Nominal Size		Dimensions (mm)							Bolt Drilling				Bolt Length	Weight (kg)	
DN	NPS	A	D	B	G	C (SOW)	C (WN)	K	H	No.	Diam	RF Stud (mm)	SOW/SW	WN	Blind
15	1/2"	95.3	14.2	22.4	35.1	22.4	52.3	66.5	15.7	4	1/2"	80.0	0.7	0.9	0.8
20	3/4"	117.3	15.7	27.7	42.9	25.4	57.2	82.6	19.1	4	5/8"	90.0	1.3	1.5	1.3
25	1"	124.0	17.5	34.5	50.8	26.9	62.0	88.9	19.1	4	5/8"	90.0	1.5	1.8	1.6
32	11/4"	133.4	20.6	43.2	63.5	28.4	66.5	98.6	19.1	4	5/8"	100.0	2.0	2.5	2.2
40	11/2"	155.4	22.4	49.5	73.2	31.8	69.9	114.3	22.4	4	3/4"	105.0	3.0	3.5	3.3
50	2"	165.1	25.4	62.0	91.9	36.6	73.2	127.0	19.1	8	5/8"	105.0	3.6	4.4	4.2
65	21/2"	190.5	28.4	74.7	104.6	41.1	79.2	149.4	22.4	8	3/4"	120.0	5.3	6.4	6.1
80	3"	209.6	31.8	90.7	127.0	46.0	82.6	168.1	22.4	8	3/4"	125.0	7.0	8.5	8.4
90	31/2"	228.6	35.1	103.4	139.7	49.3	85.9	184.2	25.4	8	7/8"	140.0	8.8	10.7	11.0
100	4"	273.1	38.1	116.1	157.2	53.8	101.6	215.9	25.4	8	7/8"	145.0	14.5	17.4	17.3
125	5"	330.2	44.5	143.8	185.7	60.5	114.3	266.7	28.4	8	1"	165.0	24.4	29.2	29.4
150	6"	355.6	47.8	170.7	215.9	66.5	117.3	292.1	28.4	12	1"	170.0	28.7	34.9	36.1
200	8"	419.1	55.6	221.5	269.7	76.2	133.4	349.3	31.8	12	11/8"	195.0	43.4	53.9	58.9
250	10"	508.0	63.5	276.4	323.9	85.9	152.4	431.8	35.1	16	11/4"	215.0	70.3	86.5	97.5
300	12"	558.8	66.5	327.2	381.0	91.9	155.4	489.0	35.1	20	11/4"	220.0	84.2	103.0	124.0
350	14"	603.3	69.9	359.2	412.8	93.7	165.1	527.1	38.1	20	13/8"	235.0	98.7	122.0	151.0
400	16"	685.8	76.2	410.5	469.9	106.4	177.8	603.3	41.1	20	11/2"	255.0	142.0	170.0	214.0
450	18"	743.0	82.6	461.8	533.4	117.3	184.2	654.1	44.5	20	15/8"	275.0	173.0	204.0	272.0
500	20"	812.8	88.9	513.1	584.2	127.0	190.5	723.9	44.5	24	15/8"	290.0	220.0	254.0	349.0
600	24"	939.8	101.6	616.0	692.2	139.7	203.2	838.2	50.8	24	17/8"	330.0	312.0	358.0	533.0

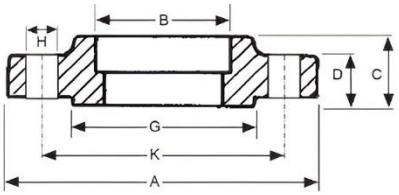
9. ASME B16.5 STANDARD FLANGE DIMENSIONS (15 NB TO 600 NB)

*All dimensions are expressed in millimeters (mm). Legend: **A** = Outside Diameter, **D** = Flange Thickness (Min), **B** = Bore SOW/SW, **G** = O.D. of Raised Face, **C** = Length Thru Hub, **K** = Bolt Circle Diameter, **H** = Bolt Hole Diameter, **No.** = Number of Bolts. Weights in kg.*

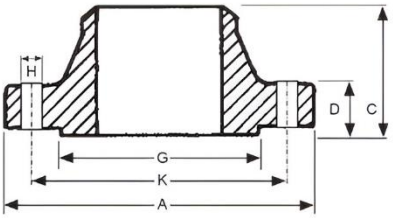
CLASS 900# FLANGES (ASME B16.5)



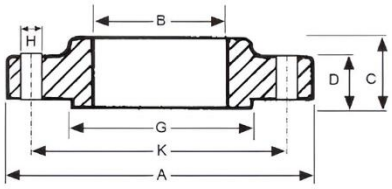
BLIND



SOCKET WELDING (SW)



WELDING NECK (WN)



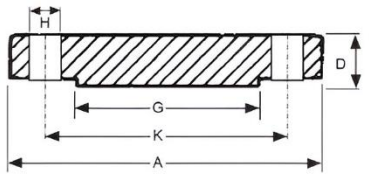
SLIP-ON WELDING (SOW)

Nominal Size		Dimensions (mm)							Bolt Drilling				Bolt Length	Weight (kg)	
DN	NPS	A	D	B	G	C (SOW)	C (WN)	K	H	No.	Diam	RF Stud (mm)	SOW/SW	WN	Blind
15	1/2"	120.7	22.4	22.4	35.1	31.8	60.5	82.6	22.4	4	3/4"	105.0	1.8	1.9	1.8
20	3/4"	130.0	25.4	27.7	42.9	35.1	70.0	88.9	22.4	4	3/4"	115.0	2.4	2.6	2.4
25	1"	149.4	28.4	34.5	50.8	41.1	73.2	101.6	25.4	4	7/8"	125.0	3.6	3.7	3.6
32	11/4"	158.8	28.4	43.2	63.5	41.1	73.2	111.3	25.4	4	7/8"	125.0	4.0	4.3	4.1
40	11/2"	177.8	31.8	49.5	73.2	44.5	82.6	124.0	28.4	4	1"	140.0	5.5	5.9	5.8
50	2"	215.9	38.1	62.0	91.9	57.2	101.6	165.1	25.4	8	7/8"	145.0	10.2	10.8	10.1
65	21/2"	244.3	41.1	74.7	104.6	63.5	104.6	190.5	28.4	8	1"	160.0	13.9	15.0	14.0
80	3"	241.3	38.1	90.7	127.0	53.8	101.6	190.5	25.4	8	7/8"	145.0	11.6	13.7	13.1
100	4"	292.1	44.5	116.1	157.2	69.9	114.3	235.0	31.8	8	11/8"	170.0	19.7	22.5	26.9
125	5"	349.3	50.8	143.8	185.7	79.2	127.0	279.4	35.1	8	11/4"	190.0	31.9	37.4	36.5
150	6"	381.0	55.6	170.7	215.9	85.9	139.7	317.5	31.8	12	11/8"	195.0	41.1	47.7	47.4
200	8"	469.9	63.5	221.5	269.7	101.6	162.1	393.7	38.1	12	13/8"	220.0	70.7	81.3	82.5
250	10"	546.1	69.9	276.4	323.9	108.0	184.2	469.9	38.1	16	13/8"	235.0	101.0	119.0	122.0
300	12"	609.6	79.2	327.2	381.0	117.3	200.2	533.4	38.1	20	13/8"	255.0	133.0	157.0	173.0
350	14"	641.4	85.6	359.2	412.8	130.0	212.9	558.8	41.1	20	11/2"	275.0	153.0	180.0	206.0
400	16"	704.9	88.9	410.5	469.9	133.4	215.9	616.0	44.5	20	15/8"	285.0	185.0	217.0	259.0
450	18"	787.4	101.6	461.8	533.4	152.4	228.6	685.8	50.8	20	17/8"	325.0	258.0	292.0	367.0
500	20"	857.3	108.0	513.1	584.2	158.8	247.7	749.3	53.8	20	2"	345.0	317.0	362.0	463.0
600	24"	1041.4	139.7	616.0	692.2	203.2	292.1	901.7	66.5	20	21/2"	435.0	606.0	665.0	876.0

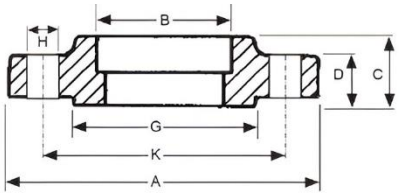
10. ASME B16.5 STANDARD FLANGE DIMENSIONS (15 NB TO 600 NB)

*All dimensions are expressed in millimeters (mm). Legend: **A** = Outside Diameter, **D** = Flange Thickness (Min), **B** = Bore SOW/SW, **G** = O.D. of Raised Face, **C** = Length Thru Hub, **K** = Bolt Circle Diameter, **H** = Bolt Hole Diameter, **No.** = Number of Bolts. Weights in kg.*

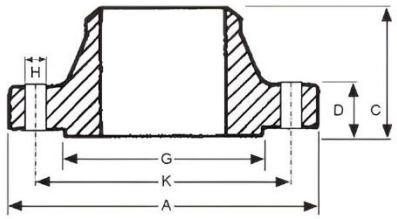
CLASS 1500# FLANGES (ASME B16.5)



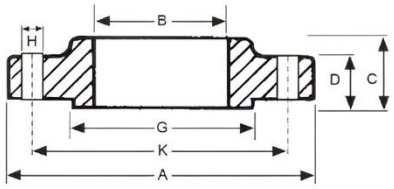
BLIND



SOCKET WELDING (SW)



WELDING NECK (WN)



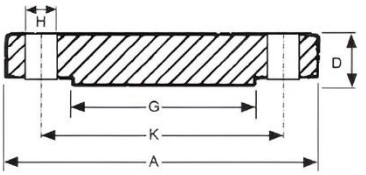
SLIP-ON WELDING (SOW)

Nominal Size		Dimensions (mm)							Bolt Drilling				Bolt Length	Weight (kg)	
DN	NPS	A	D	B	G	C (SOW)	C (WN)	K	H	No.	Diam	RF Stud (mm)	SOW/SW	WN	Blind
15	1/2"	120.7	22.4	22.4	35.1	31.8	60.5	82.6	22.4	4	3/4"	105.0	1.8	1.9	1.8
20	3/4"	130.0	25.4	27.7	42.9	35.1	69.9	88.9	22.4	4	3/4"	115.0	2.4	2.6	2.4
25	1"	149.4	28.4	34.5	50.8	41.1	73.2	101.6	25.4	4	7/8"	125.0	3.6	3.7	3.6
32	11/4"	158.8	28.4	43.2	63.5	41.1	73.2	111.3	25.4	4	7/8"	125.0	4.0	4.3	4.1
40	11/2"	177.8	31.8	49.5	73.2	44.5	82.6	124.0	28.4	4	1"	140.0	5.5	5.9	5.8
50	2"	215.9	38.1	62.0	91.9	57.2	101.6	165.1	25.4	8	7/8"	145.0	10.2	10.8	10.1
65	21/2"	244.3	41.1	74.7	104.6	63.5	104.6	190.5	28.4	8	1"	160.0	13.9	15.0	14.0
80	3"	266.7	47.8	90.7	127.0	-	117.3	203.2	31.8	8	11/8"	180.0	-	19.9	19.1
100	4"	311.2	53.8	116.1	157.2	-	124.0	241.3	35.1	8	11/4"	195.0	-	29.9	29.9
125	5"	374.7	73.2	143.8	185.7	-	155.4	292.1	41.1	8	11/2"	250.0	-	55.4	58.4
150	6"	393.7	82.6	170.7	215.9	-	171.5	317.5	38.1	12	13/8"	260.0	-	68.4	71.8
200	8"	482.6	91.9	221.5	269.7	-	212.9	393.7	44.5	12	15/8"	290.0	-	117.0	122.0
250	10"	584.2	108.0	276.4	323.9	-	254.0	482.6	50.8	12	17/8"	335.0	-	194.0	210.0
300	12"	673.1	124.0	327.2	381.0	-	282.4	571.5	53.8	16	2"	375.0	-	288.0	316.0
350	14"	749.3	133.4	359.2	412.8	-	298.5	635.0	60.4	16	21/4"	405.0	-	380.0	420.0
400	16"	825.5	146.1	410.5	469.9	-	311.2	704.9	66.5	16	21/2"	445.0	-	485.0	558.0
450	18"	914.4	162.1	461.8	533.4	-	327.2	774.7	73.2	16	23/4"	495.0	-	644.0	760.0
500	20"	984.3	177.8	513.1	584.2	-	355.6	831.9	79.2	16	3.0"	540.0	-	775.0	965.0
600	24"	1168.4	203.2	616.0	692.2	-	406.4	990.6	91.9	16	31/2"	615.0	-	1232.0	1558.0

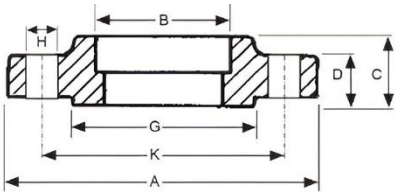
11. ASME B16.5 STANDARD FLANGE DIMENSIONS (15 NB TO 600 NB)

*All dimensions are expressed in millimeters (mm). Legend: **A** = Outside Diameter, **D** = Flange Thickness (Min), **B** = Bore SOW/SW, **G** = O.D. of Raised Face, **C** = Length Thru Hub, **K** = Bolt Circle Diameter, **H** = Bolt Hole Diameter, **No.** = Number of Bolts. Weights in kg.*

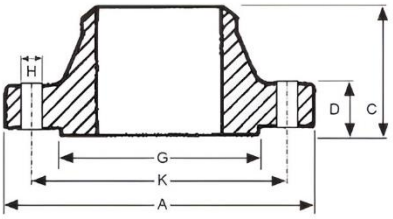
CLASS 2500# FLANGES (ASME B16.5)



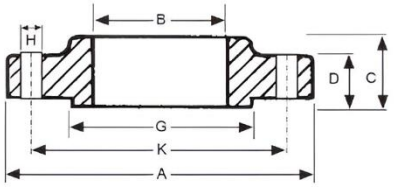
BLIND



SOCKET WELDING (SW)



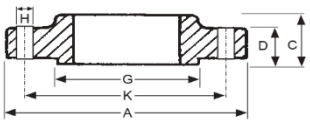
WELDING NECK (WN)



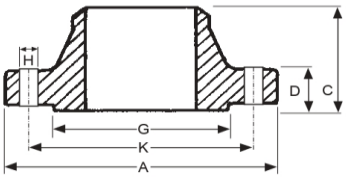
SLIP-ON WELDING (SOW)

Nominal Size		Dimensions (mm)						Bolt Drilling				Bolt Length	Weight (kg)
DN	NPS	A	D	G	C (SOW)	C (WN)	K	H	No.	Diam	RF Stud (mm)	WN	Blind
15	1/2"	133.4	30.2	35.1	39.6	73.2	88.9	22.4	4	3/4"	125.0	3.1	3.0
20	3/4"	139.7	31.8	42.9	42.9	79.2	95.3	22.4	4	3/4"	125.0	3.7	3.5
25	1"	158.8	35.1	50.8	47.8	88.9	108.0	25.4	4	7/8"	140.0	5.2	5.0
32	11/4"	184.2	38.1	63.5	52.3	95.3	130.0	28.4	4	1"	150.0	7.7	7.4
40	11/2"	203.2	44.5	73.2	60.5	111.3	146.1	31.8	4	11/8"	170.0	10.9	10.4
50	2"	235.0	50.8	91.9	69.9	127.0	171.5	28.4	8	1"	175.0	16.2	15.6
65	21/2"	266.7	57.2	104.6	79.2	142.7	196.9	31.8	8	11/8"	195.0	23.7	22.6
80	3"	304.8	66.5	127.0	-	168.1	228.6	35.1	8	11/4"	220.0	36.2	34.8
100	4"	355.6	76.2	157.2	-	190.5	273.1	41.1	8	11/2"	255.0	55.3	53.9
125	5"	419.1	91.9	185.7	-	228.6	323.9	47.8	8	13/4"	300.0	92.5	90.8
150	6"	482.6	108.0	215.9	-	273.1	368.3	53.8	12	2"	345.0	143.0	141.0
200	8"	552.5	127.0	269.7	-	317.5	438.2	53.8	12	2"	380.0	215.0	214.0
250	10"	673.1	165.1	323.9	-	419.1	539.8	66.5	12	21/2"	485.0	406.0	411.0
300	12"	762.0	184.2	381.0	-	463.6	619.3	73.2	16	23/4"	540.0	572.0	592.0

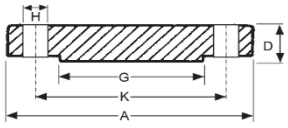
12. AS 2129 TABLE FLANGES DIMENSIONS (TABLE D, E, F, H)



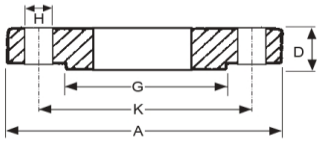
SLIP-ON WELDING (SOW)



WELDING NECK (WN)



BLIND



PLATE

TABLE "D" & Table "E" Flanges to AS 2129

Table D Flanges (AS 2129)

DN	OD (A)	Thk (D)	RF (G)	PCD (K)	Hole (H)	No.	Bolt Size	SOW (kg)	Blind (kg)
15	95	*5	47	67	14	4	M12	0.6	0.6
20	100	*5	53	73	14	4	M12	0.7	0.7
25	115	*5	65	83	14	4	M12	0.9	1.0
32	120	*6	67	87	14	4	M12	0.9	1.1
40	135	*6	78	98	14	4	M12	1.2	1.4
50	150	*8	90	114	18	4	M16	1.4	1.7
65	165	*8	103	127	18	4	M16	1.6	2.1
80	185	*10	122	146	18	4	M16	2.0	2.7
100	215	*10	154	178	18	4	M16	2.5	3.6
150	280	13	211	135	18	8	M16	4.0	6.1
200	335	13	268	292	18	8	M16	5.0	8.8
250	405	16	328	256	22	8	M20	8.7	15.8
300	455	19	378	406	22	12	M20	11.3	23.6

Table E Flanges (AS 2129)

DN	OD (A)	Thk (D)	RF (G)	PCD (K)	Hole (H)	No.	Bolt Size	SOW (kg)	Blind (kg)
15	95	*6	47	67	14	4	M12	0.6	0.7
20	100	*6	53	73	14	4	M12	0.7	0.8
25	115	*7	63	83	14	4	M12	0.9	1.0
32	120	*8	67	87	14	4	M12	1.0	1.1
40	135	*9	78	98	14	4	M12	1.2	1.4
50	150	*10	90	114	18	4	M16	1.4	1.7
65	165	*10	103	127	18	4	M16	1.6	2.1
80	185	*11	122	146	18	4	M16	2.0	2.7
100	215	13	154	178	18	8	M16	2.5	3.6
150	280	17	207	235	22	8	M20	5.0	8.3
200	335	19	264	292	22	8	M20	7.1	12.9
250	405	22	328	356	22	12	M20	11.4	21.9
300	455	25	374	406	26	12	M24	15.1	31.8

TABLE "F" & Table "H" Flanges to AS 2129

Table F Flanges (AS 2129)

DN	OD (A)	Thk (D)	RF (G)	PCD (K)	Hole (H)	No.	Bolt Size	SOW (kg)	Blind (kg)
15	95	10	47	67	14	4	M12	0.6	0.7
20	100	10	53	73	14	4	M12	0.7	0.8
25	120	10	63	87	18	4	M16	0.9	1.0
32	135	13	74	98	18	4	M16	1.1	1.3
40	140	13	81	105	18	4	M16	1.2	1.4
50	165	16	103	127	18	4	M16	2.2	2.6
65	185	16	122	146	18	4	M16	2.5	3.0
80	205	16	141	165	18	8	M16	3.0	3.8
100	230	19	167	191	18	8	M16	4.3	5.9
150	305	22	232	260	22	12	M20	8.1	11.9
200	370	35	296	324	22	12	M20	12.7	20.3
250	430	29	349	381	26	12	M24	18.1	31.4
300	490	32	406	438	26	16	M24	23.9	44.7

Table H Flanges (AS 2129)

DN	OD (A)	Thk (D)	RF (G)	PCD (K)	Hole (H)	No.	Bolt Size	SOW (kg)	Blind (kg)
15	115	13	57	83	18	4	M16	0.8	1.0
20	115	13	57	83	18	4	M16	0.9	1.0
25	120	14	64	87	18	4	M16	1.1	1.2
32	135	17	76	98	18	4	M16	1.5	1.8
40	140	17	83	105	18	4	M16	1.7	2.0
50	165	19	102	127	18	4	M16	2.6	3.1
65	185	19	114	146	18	8	M16	3.1	3.8
80	205	22	127	165	18	8	M16	4.3	5.4
100	230	25	152	191	18	8	M16	5.8	7.9
150	305	29	210	260	22	12	M20	10.8	15.4
200	370	32	260	324	22	12	M20	18.3	28.2
250	430	35	311	381	26	12	M24	22.1	38.0
300	490	41	362	438	26	16	M24	31.0	58.0

13. QUALITY ASSURANCE, CERTIFICATION & TESTING

All flanges manufactured by **N PIPING SYSTEMS PVT LTD** undergo stringent quality control processes compliant with ISO 9001:2015 standards, and are fully approved by major inspection agencies including **EIL (Engineers India Limited)** and **IBR (Indian Boiler Regulations)**.

Testing & Inspection Capabilities:

- Hydrostatic Testing: 100% pressure integrity testing.
- NON Destructive Testing (NDT): Radiographic (RT), Ultrasonic (UT), Magnetic Particle (MPI), Dye Penetrant (DPT).
- PMI Testing: Positive Material Identification via XRF analyzer.
- Destructive Testing: Tensile, Impact (Charpy V-Notch down to -196°C), Hardness, Corrosion testing (IGC Practice A/E).

Certification & Documentation

- EN 10204 3.1 & 3.2 Material Test Certificates (MTC).
- NACE MR0175 / MR0103 compliance for sour gas services
- IBR Form III-C certification for high-pressure steam lines.
- Third Party Inspection (TPI) by TUV, BV, DNV, SGS, Lloyd's, EIL.