



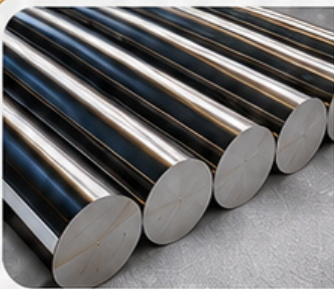
PIPE CHEM INDUSTRIES

— Connecting Strength, Delivering Quality —



PIPE CHEM INDUSTRIES

CONNECTING STRENGTH, DELIVERING QUALITY



T-3, Shop No. T-3/7, K.S.I.D.C.,
Main Road, 1st Stage,
Peenya Industrial Estate,
Bangalore-560058



Plot No. 773# Siggegahalli Gate,
Magadi Road,
Bangalore, 560091



Website
www.pipechem.in



Email
pipechemindustries@gmail.com



Email
sales@pipechem.in



**AN ISO 9001:2015
CERTIFIED COMPANY**

PCI

PIPE CHEM INDUSTRIES

— AN ISO 9001:2015 —



Tele:
080-41602929



phone:
+91 9916777501
+91 9353077501



Email: pipechemindustries@gmail.com
Email: sales@pipechem.in



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ISO CERTIFICATE

Certificate of Registration



This is to Certify That The Quality Management System of

PIPE CHEM INDUSTRIES

SHOP NO. T-3/7, K.S.S.I.D.C. MAIN ROAD, 1ST STAGE PEENYA INDUSTRIAL
ESTATE, BANGLORE - 560058, KARNATAKA, INDIA.

has been assessed and found to conform to the requirements of

ISO 9001:2015

for the following scope :

STOCKIST & SUPPLIER OF STAINLESS STEEL PLATE, COILS, ROD, STRIPS,
FLANGES, PIPE FITTINGS, BRASS, ALUMINIUM, COPPER, NICKEL, HAST
ALLOY, TITANIUM, INDUSTRIAL FERROUS & NON FERROUS RAW MATERIAL.

Certificate No : 24DQMS18
Initial Registration Date : 15/02/2024
Date of Expiry : 14/02/2027
1st Surve. Due : 15/01/2025

Issuance Date : 15/02/2024

2nd Surve. Due : 15/01/2026



DIRECTOR

ROHS Certification Pvt. Ltd.

A-60, 1st Floor (G1), Sector-63, Noida-201301, India (Reg. under Ministry of Corporate Affairs, Govt. of India)

This Registration is not a Product Quality Certificate. "Subject to successful completion of surveillance audits."

Verify certificate on: www.rohscertification.co.in

Certificate is the compliance of ROHS Certification Pvt. Ltd.



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PIPE CHEM INDUSTRIES Company Profile

PIPE CHEM INDUSTRIES one of the knowledgeable and reliable Manufacturers & Suppliers of Stainless steel pipe, Stainless steel pipe & fitting, Stainless steel coils, Stainless steel rods, Stainless Steel fasteners, Stainless steel sheet, Stainless steel plate, Stainless Steel flat, Stainless Steel angle, Stainless Steel Tube (Square & Rectangle) Stainless Steel Ball Valve (Flanged & Screwed) Stainless steel flange & Stainless steel railing, Stainless steel capsule design, Stainless steel pillar/baluster design, Stainless steel furniture accessories, Brass, Aluminum, Copper, Nickel, Hastalloy, Titanium & Industrial raw material. We always believe in manufacturing the best & effective quality product line for this with the best quality & effective services to over the best for this all the time. We always believe in o ering the best quality product line for the customization as per the total needs and demands of our clients with their entire satisfaction for the product and at very a ordable price rates.



Name of Proprietor

:

Mr. P. C. Bishnoi



Year of Establishment

:

2010



Nature of Business

:

Manufacturer & Supplier



Number of Employees

:

10



Market Covered

:

Domestic

Stainless Steel Pipe



Material Grade :

ASTM A 312 / TP304 / 304L / 310 / 316 316L / 317 / 317L / 321 / 310 / 347



Size :

904L etc.



Types :

1/8" to 24" (Seamless & Welded)



Wall Thickness :

Round, Square, Rectangular



Sch - 05 to Sch - xxs



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COMPANY PROFILE

	COMPANY NAME	:	PIPE CHEM INDUSTRIES
	REGD. OFFICE	:	#T-3, Shop No. T-3/7, K.S.I.D.C., Main Road, 1st Stage, Peenya Industrial Estate, Bangalore- 560058
	CONTACT PERSON	:	Mr. PC Bishnoi
	TELEPHONE	:	080-41602929
	MOBILE	:	+91 9916777501, +91 9900511729
	STATUS OF FIRM	:	Registered
	DATE OF ESTABLISHMENT	:	26 Oct. 2010
	E-MAIL	:	pipechemindustries@gmail.com
	WEBSITE	:	www.pipechem.in
	TIN NO.	:	29750586110
	PAN NO.	:	AMOPB9297N
	GST NO	:	29AMOPB9297N1ZZ
	Bank Account Details	:	A/C No. 172410200000003797 IFS Code: IBKL0001724 A/C Holder Name: Pipe Chem Industries Branch: Peenya
	TEM IMPORTED/STOCKED	:	As Per Technical Hand Book
	TESTING FACILITY	:	At Outside Govt. Approved Lab & (OWN) PMI Testing Machine
	INSPECTION	:	Any Third Party



FOUNDER & PROPRIETOR

P C BISHNOI
Mo.+91 9916777501



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Product Range



PIPES



- **Stainless Steel:** ASTM A312/A213/A249/A358 TP304/304L/304H/316/316L/317/317L/321/310/347/904L etc.
- **Carbon Steel:** ASTM A53 Gr B/A106 Gr. B/API5L Grade B/API5L Gr X42/46/52/56/60/65/70/A333 Gr. 3/6/9 etc.
- **Alloy Steel:** ASTM A335 Gr. P/P5/P9/P11/P22/P91 etc.
- **Others:** Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead etc.
- **Types:** Round, Square, Rectangular.
- **Size:** Upto 1/4" to 48" NB (Seamless & Welded)
- **Wall Thickness:** Sch. 5S to Sch. XXS



BUTT-WELD FITTINGS



- **Stainless Steel:** ASTM A403 WP 304/304L/304H/316/316L/317/317L/321/310/347/904L etc.
- **Carbon Steel:** ASTM A234 WPB/A420 WPL3/A420/WPL6/WPL9/LX42/XS-SP-75 WPHY42/46/52/56/60/65/70
- **Alloy Steel:** ASTM A234 WP1/WPS/WP9/WP11/WP22/WP91 etc.
- **Others:** Monel, Nickel, Inconel, Hastalloy, Copper Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead etc.
- **Types:** Elbow, Tee, Reducer, Return Bends, Stubends, Cap, Collar, Cross, Inserratec.
- **Size:** Upto 1/4" to 48" NB (Seamless & Welded)
- **Wall Thickness:** Sch. 5S to Sch. XXS



SCREWED & FORGED FITTINGS



- **Stainless Steel:** ASTM 182/F304/304L/304H/316/316L/317/317L/321/310/347/904L etc.
- **Carbon Steel:** ASTM A105/A694/F42/46/52/56/60/65/70/A350LF3/A350 LF2 etc.
- **Alloy Steel:** ASTM A182 F1/F5/F9/F11/F22/F91 etc.
- **Others:** Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead etc.
- **Types:** Elbow Tee, Union, Cross, Coupling, Cap, Bushing, Plug, Swage, Nipple, Welding Boss, Hexagon Nipple, Barrel, Nipple, Welding Nipple, Lateral Nipple, Street Elbow, Hexagon Nut, Hose Nipple, Bend, Adapter, Insert, Weld-o-let, Elbow-olet, Socket-olet, Threadolet, Threoplet, Lateral-olet
- **Size:** 1/4" NB to 4" NB (Socket weld & Threadolet)
- **Class:** 3000 5000# 9000



FLANGES



- **Stainless Steel:** ASTM 182/F304/304L/304H/316/316L/317/317L/321/310/347/904L etc.
- **Carbon Steel:** ASTM A105/A694/F42/46/52/56/60/65/70/A350LF3/A350 LF2 etc.
- **Alloy Steel:** ASTM A182 F1/F5/F9/F11/F22/F91 etc.
- **Others:** Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead etc.
- **Types:** Weldneck, Slipon, Blind Socket Weld, Lap Joint, Spectacle, Ring Joint, Oriface, Long Weldneck, Deck Flange etc.
- **Size:** 1/2" NB to 48" NB
- **Wall Thickness:** 150#-300#-400#-600#, 900#,1500# & 2500#



FASTNERS



- **Stainless Steel:** AISI 302, 304, 304L, 316, 316, 310, 317, 317L, 321, 347, 410, 420, 904L etc.
- **Alloy Steel:** 4.6, 5.6, 6.6, 8.8, 10.9 & 12.9 (P'S,T Conditions)
- **Carbon Steel:** Bare Conditioning, Galvanized, Phosphorised, Cadmium Plated, Hot Daop, Galvanazized, Bloodied, Nickel, Chrome Plated etc.
- **Non-Ferrous Metal:** Copper, Brass, Aluminium, Titanium, Nichrome, AlBronze Phosphorous Bronze etc.
- **Types:** Bolts, Nuts, Washers, Anchor, Fasteners- Stud Bolts, Eye Bolt, Stud, Threaded Rod, Cotter-Pin, Socket-Screw, Fine, Fasteners & Spares Foundation Fasteners etc



NICKET ALLOY RODS



TUBES/PIPE & PIPE FITTING

Other service: Draw & Expansion as per required Size & Length, Polish (Electro & Commercial) Heat Treatment, Bending, Annealing & Pickled, Sand Blasting, Machining Etc.

Specialize: Capillary Tube, Fabricated Pipe, Square & Rectangular & Other Odd Size.

Heat Exchanger & Condenser Tubes, Long Bend with Radius-R10, 150, 20, 30, 50 & 100

Pigtalable Bend & as per your drawing

Test Certificate: Manufacturer Test Certificate/Laboratory Test Certificate from Govt. Approved Lab.

Under Third Party Inspection with Excise Gate Pass to avail Modvat benefit.



PREMIUM
QUALITY



WIDE RANGE
OF PRODUCTS



TIMELY
DELIVERY



CUSTOMER
SATISFACTION



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Stainless Steel Flanges

» weight of s.s. pipe

O.D. (mm) - W. Thick (mm) X W. Thick (mm) x 0.0248 = Wt. Per Mtr.
O.D. (mm) - W. Thick (mm) X W. Thick (mm) x 0.00756 = Wt. Per Feet



Stainless Steel Butt-Weld Fittings

» weight of s.s. round bar

DIA (mm) x DIA (mm) x 0.00623 = Wt. Per Mtr.
DIA (mm) x DIA (mm) x 0.0019 = Wt. Per Feet



Stainless Steel Square Bar

» weight of s.s. square bar

DIA (mm) x DIA (mm) x 0.00788 = Wt. Per Mtr.
DIA (mm) x DIA (mm) x 0.0024 = Wt. Per Feet



Stainless Steel Hexagonal Bar

» weight of s.s. hexagonal bar

DIA (mm) x DIA (mm) x 0.00680 = Wt. Per Mtr.
DIA (mm) x DIA (mm) x 0.002072 = Wt. Per Feet



Carbon Steel Butt - weld Fittings

» weight of s.s. flat Bar

Width (mm) x Thick (mm) x 0.00798 = Wt. Per Mtr.
Width (mm) x Thick (mm) x 0.00243 = Wt. Per Feet



Stainless Steel Sheets & Plates

» weight of s.s. sheets & plates

Length (Mtrs) x Width (Mtrs) x Thick (mm) x 8 = Wt. Per PC
Length (Ft) x Width (Ft) x Thick (mm) x 3/4 = Wt. Per PC



Stainless Steel VALVES

» weight of s.s. circle

DIA (mm) x DIA (mm) x 0.00788 = Wt. Per Mtr.
DIA (mm) x DIA (mm) x 0.0024 = Wt. Per Feet



Brass Pipe / Copper Pipe

» weight of brass pipe/copper pipe

O.D. (mm) - Thick (mm) x 0.0260 = Wt. Per Mtr.



Lead Pipe

» weight of of lead pipe

o. D. (mm) - Wt. (mm) x Wt. (mm) x 0.0345 = Wt. Per Mtr.



Stainless Steel Pipes

» weight of aluminum pipe

o. D. (mm) - Thick (mm) x Thick (mm) x 0.0083 = Wt. Per Mtr.



Stainless Steel COILS

» weight of aluminum sheet

Length (Mtr.) x Width (Mtr.) x Thick (mm) x 2.69 = Wt. Per PC



Conversion

» weight of conversion of mtr. to feet

Wt. of Mtr. 3.2808 = Wt. Per Feet.



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Email: sales@pipechem.in



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SBGTVS

STAINLESS STEEL BARSTOCK GATE VALVE INSIDE SCREW, SCREWED BONNET, SCREWED END CLASS 150#

Size: ½" to 4" (15mm to 100mm)

Desing & Manufacturing Standed : confirm to BS 5352

Pressure Test Standard : BS 6755

Body & Bonnet : AISI 304/316

Ends : Screwed to BSP / BSPT/NPT

Test Pressure :

Body- 425 psig (30kg/cm)

Seat- 300 psig (21kg/cm)

Optiona:Pressure Rating : 300#

Ends : flanged to ANSI B 16.5 RF (150#)

flanged to bs 10 table D/E/F

Other Material & Specification are welcome.



Precision
Engineering



Corrosion
Resistant



High Pressure
Performance



Premium
Quality

SBGTVS

STAINLESS STEEL BARSTOCK GATE VALVE INSIDE SCREW, SCREWED BONNET, SCREWED END CLASS 150#

Size: ½" to 4" (15mm to 100mm)

Desing & Manufacturing Standed : confirm to BS 5352

Pressure Test Standard : BS 6755

Body & Bonnet : AISI 304/316

Ends : Screwed to BSP / BSPT/NPT

Test Pressure :

Body- 425 psig (30kg/cm)

Seat- 300 psig (21kg/cm)

Optiona:Pressure Rating : 300#

Ends : flanged to ANSI B 16.5 RF (150#)

flanged to bs 10 table D/E/F

Other Material & Specification are welcome.



Precision
Engineering



Corrosion
Resistant



High Pressure
Performance



Premium
Quality

SBGTVS

STAINLESS STEEL BARSTOCK GATE VALVE INSIDE SCREW, SCREWED BONNET, SCREWED END CLASS 150#

Size: ½" to 4" (15mm to 100mm)

Desing & Manufacturing Standed : confirm to BS 5352

Pressure Test Standard : BS 6755

Body & Bonnet : AISI 304/316

Ends : Screwed to BSP / BSPT/NPT

Trim : AISI 304/316

Test Pressure :

Body- 425 psig (30kg/cm)

Seat- 300 psig (21kg/cm)

Optiona:Pressure Rating : 300#

Ends : flanged to ANSI B 16.5 RF (150#)

flanged to bs 10 table D/E/F

Other Material & Specification are welcome.



Precision
Engineering



Corrosion
Resistant



High Pressure
Performance



Premium
Quality

SBGTVS

STAINLESS STEEL BARSTOCK GATE VALVE INSIDE SCREW, SCREWED BONNET, SCREWED END CLASS 150#

Size: ½" to 2-1/2" (15mm to 65mm)

Desing & Manufacturing Standed : Manufacturing Standard

Pressure Test Standard : Manufacturing Standard

Body & Bonnet : AISI 304/316

Trim : AISI 304/316

Ends : Screwed to BSP / BSPT/NPT

Test Pressure :

Body- 1000 psig (77 kg/cm)

Seat- 800 psig (56 kg/cm)

Optiona:Pressure Rating : 300#

Ends : flanged to ANSI B 16.5 RF (150#)

flanged to bs 10 table D/E/F

Other Material & Specification are welcome.



Precision
Engineering



Corrosion
Resistant



High Pressure
Performance



Premium
Quality

SBGTVS

STAINLESS STEEL BARSTOCK GATE VALVE INSIDE SCREW, SCREWED BONNET, SCREWED END CLASS 150#

Size: ½" to 1" (15mm to 25mm)

Desing & Manufacturing Standed : Manufacturing Standard

Pressure Test Standard : Manufacturing Standard

Body & Bonnet : AISI 304/316

Trim : AISI 304/316

Ends : Screwed to BSP / BSPT/NPT

Test Pressure :

Body- 1000 psig (77kg/cm)

Seat- 800 psig (56kg/cm)

Optiona:Ends

flanged to ANSI B 16.5 RF (150#)

flanged to bs 10 table D/E/F

Other Material & Specification are welcome.



Precision
Engineering



Corrosion
Resistant



High Pressure
Performance



Premium
Quality

SBGTVS

STAINLESS STEEL BARSTOCK GATE VALVE INSIDE SCREW, SCREWED BONNET, SCREWED END CLASS 150#

Size: ½" to 4" (15mm to 100mm)

Desing & Manufacturing Standed : Manufacturing Standard

Pressure Test Standard : Manufacturing Standard

Spring Loaded , Reltif Type

Open Discharge/Enclosed Discharge (Angle Type)

Body & Bonnet : AISI 304/316

Ends : Screwed to BSP / BSPT/NPT

Test Pressure : 150 psig (10kg/cm)

Optiona:safety valve confirm to API 526

Ends : flanged to ANSI B 16.5 RF (150#)

flanged to bs 10 table D/E/F

Other Material & Specification are welcome.



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Engineering



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Resistant



High Pressure
Performance



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CSBGTVS

CAST STEEL GATE VALVE OS & Y TYPE BOLTED BONNET FLANGED END CLASS 150#

Size: 1" to 12" (25mm to 300mm)

Desing & Manufacturing Standard : API 600/API 6D

Pressure Test Standard : API 598

Pressure Temperature Standard : ANSI B 16.34

Face to Face Standard: ASME/ANSI B 16.10

Body & Bonnet : ASTM A 216 Gr. WCB

Trim : ASTM A 351 Gr. CF8 / CF8M

Ends : Screwed to BSP / BSPT/NPT

Test Pressure :

Hydro- 450 psig

Air- 315 psig

Optional: Pressure Rating

300# / 600# / 900# / 1500# / PN 40

Other Material & Specification are welcome.



CSBGTVS

CAST STEEL GATE VALVE OS & Y TYPE BOLTED BONNET FLANGED END CLASS 150#

Size: 1" to 12" (25mm to 300mm)

Desing & Manufacturing Standard : BS 1873

Pressure Test Standard : API 598

Pressure Temperature Standard : ANSI B 16.34

Face to Face Standard: ASME/ANSI B 16.10

Body & Bonnet : ASTM A 216 Gr. WCB

Trim : ASTM A 182 Gr. F6a (AISI 410)

Ends : Screwed to BSP / BSPT/NPT

Test Pressure :

Hydro- 450 psig

Air- 315 psig

Optional: Pressure Rating

300# / 600# / 900# / 1500# / PN 40

Other Material & Specification are welcome.



CSBGTVS

CAST STEEL GATE VALVE OS & Y TYPE BOLTED BONNET FLANGED END CLASS 150#

Size: 1" to 12" (25mm to 300mm)

Desing & Manufacturing Standard : BS 1868/API 6D

Pressure Test Standard : API 598/BS 5164

Pressure Temperature Standard : ANSI B 16.34

Face to Face Standard: ANSI B 16.10

Body & Bonnet : ASTM A 216 Gr. WCB

Trim : ASTM A 351 Gr. CF8 / CF8M

Ends : Flanged to ANSI B 16.5 RF (150#)

Test Pressure :

Body- 425 psig

Seat- 300 psig

Optional: Pressure Rating:

300# / 600# / 900# / 1500# / PN 40

Other Material & Specification are welcome.



CSBGTVS

CAST STEEL GATE VALVE OS & Y TYPE BOLTED BONNET FLANGED END CLASS 150#

Size: 1" to 12" (25mm to 300mm)

Desing & Manufacturing Standard : API 6D/ANSI B 16.34

Pressure Test Standard : API 598 / BS 5164

Pressure Temperature Standard : ANSI B 16.34

Face to Face Standard: ANSI B 16.10

Body & Bonnet : ASTM A 216 Gr. WCB

Trim : ASTM A 351 Gr. CF8 / CF8M

Ends : Flanged to ANSI B 16.5 RF (150#)

Test Pressure :

Body- 425 psig

Seat- 315 psig

Optional: Pressure Rating:

300# / 600# / 900# / 1500# / PN 40

Other Material & Specification are welcome.



CSBGTVS

CAST STEEL GATE VALVE OS & Y TYPE BOLTED BONNET FLANGED END CLASS 150#

Size: 1" to 12" (25mm to 300mm)

Desing & Manufacturing Standard : API 600/API 594

Pressure Test Standard : API 598

Pressure Temperature Standard : ANSI B 16.34

Face to Face Standard: ANSI B 16.10

Body & Cover : ASTM A 216 Gr. WCB

Trim : ASTM A 351 Gr. CF8 / CF8M

Ends : Flanged to ANSI B 16.5 RF (150#)

Test Pressure :

Body- 450 psig

Seat- 285 psig

Optional: Pressure Rating: 300# PN 40

Other Material & Specification are welcome.



CSBGTVS

CAST STEEL GATE VALVE OS & Y TYPE BOLTED BONNET FLANGED END CLASS 150#

Size: 2" to 24" (50mm to 600mm)

Desing & Manufacturing Standard : API 600/API 594

Pressure Temperature Standard: ANSI B 16.34

Body: ASTM A 105/ASTM A 182 Gr. 304/316

Cover: ASTM A 105/ASTM A 182 Gr. 304/316

Trim : AISI 410 (13% Cr.)

Ends : Flanged to ANSI B 16.5 RF (150#)

Test Pressure : 425 psig

Optional: Pressure Rating:

600# / 900# / 1500#

Other Material &

Specification are welcome.



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TCGV



THROUGH CONDUCT GATE VALVE

Size: 2" to 12" (50mm to 300mm)

Material: Cast Iron/ASTM A 351 Gr. CF8/CF8M
ASTM A 216 Gr. WCB

Ends: Flanges to ANSI B 16.5 RF (150#)



TCGV



TOP ENTRY BALL VALVE

Size: 2" to 12" (50mm to 300mm)

Material: Cast Iron/ASTM A 351 Gr. CF8/CF8M
ASTM A 216 Gr. WCB

Ends: Flanges to ANSI B 16.5 RF (150#)



SSBV



SPECIAL SERVICE BALL VALVE

For Pharmaceutical Industries

Size: 1/4" to 4" (08mm to 100mm)

Material: ASTM A 351 Gr. CF8/CF8M

Ends: Screwed End to BSP/NPT
Socket Weld/Butt Weld/Tube End / Triclover End/
Flanged to ANSI B 16.5 RF (150#)



LV

LINED VALVE

- ✓ High Corrosion Resistance
- ✓ Superior Lining Protection
- ✓ Longer Service Life
- ✓ Suitable for Harsh Chemicals



FWV

FULLY WELDED VALVE

- ✓ 100% Leak Proof Design
- ✓ Robust & Compact
- ✓ Low Maintenance
- ✓ Ideal for High Pressure & Temperature



JV

JACKED VALE

- ✓ Steam Jackted Design
- ✓ Temperature Control
- ✓ Enhanced Process Efficiency
- ✓ Suitable for Viscous Fluids



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NRV Valve
ATPF 01



Ball Valve
ATPF 02



Butterfly Valve
ATPF 03



Sight Glass
ATPF 04



TC End Ball
Valve APTF 05



Threaded Butterfly
Valve APTF 06



Sight Glass
ATPF 07



SMS Three Way
Valve APTF 08



Three Way
Valve APTF 09



Diaphragm
Valve APTF 10



Auto-Ball Flushing
ATPF 11



Sample Valve
ATPF 12



Threaded Ball Valve
ATPF 13



Threaded Ball Valve
ATPF 14



Threaded Union
ATPF 15



But-Weld Tee
ATPF 16



Coupling
ATPF 17



Reducer
ATPF 18



Con Reducer
ATPF 19



But-Weld Reducer
ATPF 20



But-Weld Bend
ATPF 21



But-Weld Stubend
ATPF 22



But-Weld Tee
ATPF 23



Slip On Flange
ATPF 24



Weld Neck Flange
ATPF 25

Specialist in:

Stainless Steel Fittings for Dairy Industries,
Food & Beverage, Pharmaceuticals & Chemicals Plants etc.



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Email: pipechemindustries@gmail.com
Email: sales@pipechem.in



Website: www.pipechem.in

ANGLES (Equal Sides) Angles (Equal and unequal Sides)

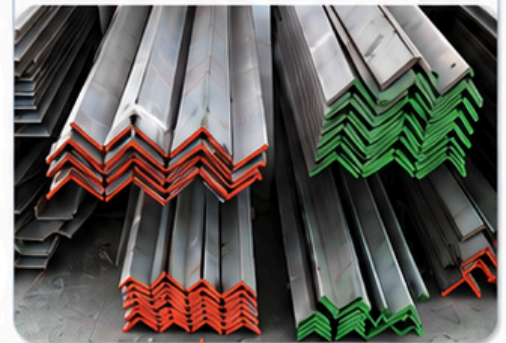
Sides in	Thickness				Weight in Kg per meter							
mm	3	4	5	6	8	10	12	15	16	18	20	
Equivqlqnt 20x20mm	0.9	1.1										
25x25mm	1.1	1.4	1.8									
30x30mm	1.4	1.8	2.2									
35x35mm	1.6	2.1	2.6	3.0								
40x40mm	1.8	2.4	3.0	3.5								
45x45mm	2.1	2.7	3.4	4.0								
50x50mm	2.3	3.0	3.8	4.5								
55x55mm			4.1	4.9	5.4	7.9						
60x60mm			4.5	5.4	7.0	8.6						
65x65mm			4.9	5.8	7.7	9.4						
70x70mm			5.3	6.3	8.3	10.2						
75x75mm			5.7	6.8	8.9	11.0						
45x30mm	1.7	2.2	2.8	3.3								
75x50mm			4.7	5.6	7.4	9.0						
90x60mm				6.8	8.9	11.0	13.0					
100x75mm				8.0	10.5	13.0	15.4					
125x75mm				9.2	12.1	14.9						
125x95mm				10.1	13.3	16.5	19.6					
150x75mm					13.7	16.9	20.1					
150x115mm					16.2	20.0	23.8	29.5				

Size in mm	Weight kg/M	MILL
ANGLES(equal)		
50x50x6	4.5	BMM
65x65x6	5.8	BMM
65x65x8	7.7	BMM
65x65x10	9.4	BMM
75x75x6	6.8	BMM
75x75x8	8.9	BMM
75x75x10	11.0	BMM
80x80x8	7.3	BMM
80x80x8	9.6	BMM
80x80x10	11.8	BMM
90x90x6	8.2	BMM
90x90x8	10.8	BMM
90x90x10	13.4	BMM
100x100x8	12.1	DSM
100x100x10	14.9	DSM
100x100x12	17.7	DSM
100x100x12	17.6	DSM
110x110x10	16.6	DSM
110x110x12	19.7	DSM
130x130x10	19.7	DSM
130x130x12	23.4	DSM
150x150x16	35.8	BRSM
150x150x20	44.1	BRSM
200x200x16	48.5	BRSM
200x200x20	60.0	BRSM

ANGLES (Equal)

Desig. nation	Size	Thickness		Weight		Desig. nation	Size	Thickness		Weight	
		Web	Flangd	Meter	Foot			Web	Flange	Meter	Foot
INST	mmxmm	mm	mm	Kg	ib	ISDT	mmxmm	mm	mm	Kg	ib
				(Normal tee)							
20	20x20	3	3	0.9	0.60	100	100X50	6.8	10	8.7	
						150	150X75	8.0	11.6	15.7	
20	20x20	4	4	1.1							
30	30x30	3	3	1.4	0.9	ISLT					
30	30x30	4	4	1.8		200	200x163				
						250	200x180	8.0	12.5	28.4	
40	40x40	6	6	3.5	2.35			9.2	14.1	37.5	
50	50x50	6	6	5.4	3.63	ISHT		(Slit Tee Fram H Section)			
75	75x75	9	9	10.0		75	75x150	8.4	9.0	15.3	10.28
75	75x75	10	10	10.95		100	100x200	7.0	9.0	20.0	13.48
						125	125x250	8.8	9.7	27.4	18.41
80	80x80	8	8	9.6	6.45	150	150x150	7.9	10.8	29.4	19.76
100	100x100	10	10	14.9							
150	150x150	10	10	22.7							

- Common Grades IS : 2062 SAILMA
- Tolerance as per IS : 1852
- Abbreviations used :
 - BMM (BHILAI MERCHANT MILL)
 - DSM (DILLIAH SECTION MILL)
 - BRSM (BHILAI & STRUCTURAL MILL)



Specialist in:

**Stainless Steel Fittings for Dairy Industries,
Food & Beverage, Pharmaceuticals & Chemicals Plants etc.**



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Email: sales@pipechem.in



Website: www.pipechem.in

The range of industrial rubber we offer

(A) INDUSTRIAL HOSE MAKE

- General Purpose Rubber Water Hose Conforming To IS: 7447 Type 1, 2 & 3.
- Water Suction & Discharge Hose as Per IS 3349/83.
- Rubber Air Hose Conforming To IS: 446/87 Type-1.
- Rubber Rock Drill Hose Conforming IS: 446/87 Type 1.
- Rubber Hose For Welding Conforming To IS: 447/88.
- Rubber Hose For Chemicals As Per IS: 7654/80.
- Rubber Hose For Sand Blasting Conforming To IS: 5894/80.
- Oil Suction & Discharge Hose Conforming To IS: 8189/76.
- Stem Hose IS: 10655/83.
- Hot Water Hose IS: 5821/79.
- Oil & Solvent Resistant Hose IS: 633/82.
- Asbestos Covered Furnace Coolent Hose.
- Heat Resistant Carbon Free Non Conductive Hose.
- Brewery/Food/Quality Hose BS: 5118.
- Air Duct Hose.

(B) OTHER HOSES

- BHARAT Thunder Hose.
- BHARAT Thermoplast Hose.
- PVC Vacuum Hose.
- Sewer Jetting Hose.
- Paint Spray Hose.
- Grease Lubrication Hose.
- PTFE Convuluted Hose.
- H. D. P. E. Hose.

(C) MOULDED PRODUCTS:

- Gaskets, O Rings, Diaphragms, Pads, Cords, Tubes, Strips and bushes.

(D) BHARAT FLEX PVC. PRODUCTS

- Expansion Jion and Bitumen Pad
- PVC. Reinforced Braided Hose.
- PVC. Hand Rails.
- PVC. Agricultural Suction Hose.
- PVC. Vinyl Hose.
- PVC. Duct Hose.
- PVC. Petrol Pipe.
- PVC. Transparent Tubing.
- PVC. Water Stopper.

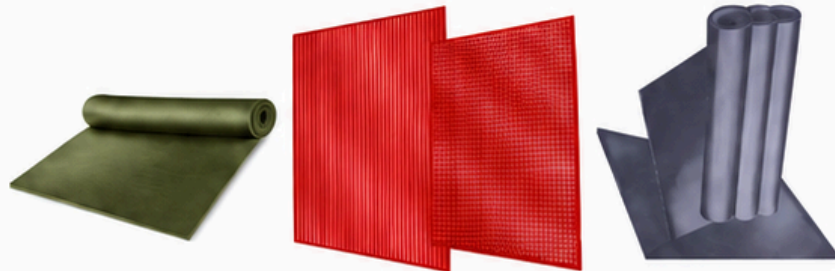
(E) RUBBER SHEET & ELECTRICAL MATS

- Electrical Mats as per IS 5424/69.
- Steam Quality Rubber Sheet.
- Stand/Short Blasting Sheet.
- Anti-Vibration Sheet.
- Commercial quality Rubber Sheet & Rubber Skirt.
- Synthetic/Nitrile Neoprene Rubber Sheet.
- Sponge Rubber Sheet.
- Insertion Rubber Sheet as per IS 638/79.
- Rubber Sheet as per IS 3192/73.
- Silicon/EPDM Rubber Sheet (Heat resistant)

WATER DELIVERY HOSE		PNEUMATIC HOSE		ROCK DRILL HOSE	
SIZE	WORKING PRES	SIZE	WORKING PRES	SIZE	WORKING PRES
1/2"	10KG/CM ²	1/4"	14KG/CM ²	1/2"	14KG/CM ²
3/4"	10KG/CM ²	5/16"	14KG/CM ²	3/4"	14KG/CM ²
1"	10KG/CM ²	3/8"	14KG/CM ²	1"	14KG/CM ²
1 1/4"	7 KG/CM ²	1"	14KG/CM ²	1 1/4"	14KG/CM ²
1 1/2"	7 KG/CM ²	1 1/4"	10 KG/CM ²	1 1/2"	14KG/CM ²
2"	7 KG/CM ²	2"	10 KG/CM ²	2"	14KG/CM ²

WATER DELIVERY HOSE		PNEUMATIC HOSE		ROCK DRILL HOSE	
SIZE	WORKING PRES	SIZE	WORKING PRES	SIZE	WORKING PRES
1/4"	12 KG/CM ²	1/2"	10 KG/CM ²	1/2"	10 KG/CM ²
5/16"	12 KG/CM ²	3/4"	10 KG/CM ²	3/4"	10 KG/CM ²
3/8"	12 KG/CM ²	1"	10 KG/CM ²	1"	10 KG/CM ²
AVAILABLE IN THREE COLOURS RED BLUE BLACK		1 1/4"	10 KG/CM ²	1 1/4"	10 KG/CM ²
		1 1/2"	10 KG/CM ²	1 1/2"	10 KG/CM ²
		2"	10 KG/CM ²	2"	10 KG/CM ²
		2 1/2"	10 KG/CM ²	3"	10 KG/CM ²
		3"	10 KG/CM ²		

WATER DELIVERY HOSE		PNEUMATIC HOSE		ROCK DRILL HOSE	
SIZE	WORKING PRES	SIZE	WORKING PRES	SIZE	WORKING PRES
1/2"	12 KG/CM ²	1/2"	10 KG/CM ²	1-1/4"	10 KG/CM ²
3/4"	12 KG/CM ²	3/4"	10 KG/CM ²	1-1/2"	10 KG/CM ²
1"	12 KG/CM ²	1"	10 KG/CM ²	2"	10 KG/CM ²
1 1/4"	07 KG/CM ²	1 1/4"	10 KG/CM ²	2-1/2"	10 KG/CM ²
1 1/2"	07 KG/CM ²	1 1/2"	10 KG/CM ²	3"	10 KG/CM ²
2"	07 KG/CM ²	2"	10 KG/CM ²	6"	10 KG/CM ²
		2 1/2"	10 KG/CM ²	8"	10 KG/CM ²
		3"	10 KG/CM ²	10"	10 KG/CM ²
				12"	10 KG/CM ²



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Magadi Road,
Bangalore - 560 091



RUBBER HEAT RESISTANT CARBON FREE/CABLE – COOLANT HOSE / ASBESTOS COVERED FURNACE COOLANT HOSE

APPLICATION Carbon Free Hose

Non-conductive (electrical) hose used as an outer protective covering for power cable in steel mills, glass works etc. to avoid damage to cables, leakage of current due to exposure to open flame splashes of hot metal or radiation.

Cable Coolant Hose Plain Or Asbestos Cover

Used for conveying power cable with a mix of oil as an additional protection from exposure to extremely high temperature radiation from steel furnace open flame etc.

Furnace Coolant Asbestos Covered Hose

Especially designed for service in iron and steel mills, glass works, electrical furnaces and cut fields where hose resistant to heat radiation open flame and splashes of hot metals is required, Heat Resistant.

CONSTRUCTION

White or black smooth non-conductive synthetic rubber compound oil & electrical resistant.

Tube

Textile reinforcement impregnated with rubber in suitable numbers of plies or synthetic fibre yarn.

Reinforcement Cover

Oil & heat or electrical resistant synthetic rubber compound white non-conductive (electrical) rubber with asbestos cloth capable to withstand temperature upto 500°C (932)

-40°F to 200°F.

Max. 18 metres.

Temperature Range Length



TECHNICAL SPECIFICATIONS

Nominal Bore in mm	Tolerance on Nominal bore in mm	Number of reinforcement ply	Working Pressure Kg./cm ²	Testing Pressure Kg./cm ²	Bursting Pressure Kg./cm ²
12.5	0.75	2	10	20	40
16.0	0.75	2	10	20	40
20.0	0.75	2	10	20	40
25.0	1.25	2	10	20	40
28.0	1.25	2	10	20	40
31.0	1.25	3	10	20	40
35.0	2.00	3	10	20	40
38.0	2.00	3	10	20	40
50.0	2.00	4	10	20	40
56.0	2.00	4	10	20	40
60.0	2.50	4	10	20	40
63.0	2.50	5	10	20	40
70.0	2.50	5	10	20	40
75.0	2.50	5	10	20	40
88.0	2.50	5	10	20	40
100.0	2.50	5	10	20	40

RUBBER SAND / SHOT BLAST HOSE (AS PER IS : 5894 / 1980)

APPLICATION

This special hose has an extra soft & thick smooth tube for sand/shot blasting systems using gravels, quartz, sand and steel ball shots. It finds application for clearing metal surface, smoothing castings, etching glass etc.

CONSTRUCTION

Tube

Seamless, extra thick but uniform in thickness and soft tube.

Reinforcement

Textile reinforcement impregnated with rubber in suitable number of plies or synthetic fibre.

Electrical bonding

Antistatic, copper wire provided for electrical continuity if required.

Cover

Antistatic, weather resistant rubber cover.

Temperature Range

-40°F to 200°F.

Length

Max. 18 metres.

TYPE-I							TYPE-II		
Nominal Bore in mm	Tolerance on Nominal bore in mm	Minimum thickness of tube in mm	Minimum thickness of cover in mm	Working Pressure Kg./cm ²	Testing Pressure Kg./cm ²	Bursting Pressure Kg./cm ²	Working Pressure Kg./cm ²	Testing Pressure Kg./cm ²	Bursting Pressure Kg./cm ²
25.0	0.75	6.3	1.5	7	17.5	35	10	25	50
31.0	0.75	6.3	1.5	7	17.5	35	10	25	50
38.0	0.75	6.3	1.5	7	17.5	35	10	25	50
45.0	0.75	6.3	1.5	7	17.5	35	10	25	50
50.0	0.75	6.3	1.5	7	17.5	35	10	25	50



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Plot No. 773# Siggahalli Gate, Magadi Road,
Bangalore, 560091



(NICKEL BASE ALLOYS) GUIDE TO APPLICATIONS

NICKEL 200	Commercial pure wrought Nickel for the construction of chemical plant
NICKLE 201	Alow-carbon grade of nickel free from the stress-corrosion cracking associated with graphitisation in chemical plant operating at temperatures above 300 c. e.g. castic soda plant.
NICKLE 205	A high-purity nickel for anodes, plants and grids of electronic valves and for magnetostrictive transducers.
NICKLE 212	Slightly stiffer than pure nickle. Used for electrode support wires in radio valves and tungsten filament lamps.
NICKLE 222	A cathode nickle for the sleeves of indirectly heated, oxide-coated cathode in radio valves.
NICKLE 270	Ahigh-purity nickle with a minimum temperature coefficient of resistant of 0.006°C over the range 0.100°C. Made by the powder metallurgy process. Used for components of special valves, such as hydrogen thyratrons and for electric resistance thermometer and controls.
MONEL alloy 400	Ageneral engineering alloy with good resistance to corrosion by sea water, sulphuric, hydrochloric and phosphoric acids, pharmaceutical products, ammonium sulphate, fatty acids, etc. It retains its strength and toughness up to about 450°C and is used for chemical, stream and petroleum plant, marine and picking equipment.
MONEL alloy K-500	An alloy with similar corrosion-resistance to MONEL alloy 400 but amenable to precipitation hardening to give high strength. Used for propeller and pump shafts, bolts, doctor blades and valve spindles.
Cast Monel alloys	Cast alloy pig supplied for foundry addition to silicon. For corrosion-resistance castings.
Inconel alloy 600	This alloy has excellent mechanical properties and oxidation-resistance at high temperatures. It is used for furnace parts, heat-treatment equipment, heating element sheating in nuclear engineering and in the construction of chemical plant.
Inconel alloy 625	An alloy with high strength and toughness from cryogenic temperatures to 1100°C in addition to good oxidation-resistance. It resist attack by other media and is virtually immune to chloride-stress-corrosion cracking. It is used in aerospace and is being evaluated for chemical and marine engineering.
Incoloy alloy 800	This alloy resist hydrogen/hydrogen sulphide corrosion and chloride stress corrosion cracking, It is based for pigtails and headers and hydrocarbon "cracker" tubes for other high-temperature processing equipment.
Incoloy alloy 825	This products resist corrosion by acids and alkalies in either reducing or oxidising condition. It is resistant to stress-corrosion cracking and pitting and used for chemical plant and pickling plant. A nickle iron cobalt alloy combining a low coefficient of expansion and higher inflexion temperature with higher strength than is usual in this composition range. It is being evaluated for such application as diesel engine piston crowns compensating members in gas turbine engines and controlled clearance rotating machinery parts.
Incoloy alloy DS	A general purpose heat resisting alloy with particular resistance to carburisation and alternating carburisation and oxidation. It is used for furnace parts, heat treatment and vitreous enamelling equipment.



NICKEL BASE ALLOYS

NOMINAL CHEMICAL COMPOSITION, % (NOT FOR SPECIFICATION PURPOSES)													
Nickel	NI	C	Mn	Fe	S	Si	Cu	Cr	Co	Mo	Al	Ti	Other
Nickel	99.5	0.08	0.18	0.2	0.005	0.18	0.13	-	-	-	-	-	-
Nickel 201	99.5	0.01	0.18	0.2	0.005	0.18	0.13	-	-	-	-	-	-
Nickel 205	99.5	0.08	0.18	0.10	0.004	0.08	0.08	-	-	-	-	0.03	Mg 0.05
Nickel 212	97.7	0.10	2.0	0.05	0.005	0.05	0.03	-	-	-	-	-	-
Nickel 222	99.5	0.01	0.02	0.04	0.0025	0.01	0.01	0.01	0.06	-	0.01	0.01	Mg 0.08
Nickel 270	99.98	0.01	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	Mg<0.001
MONEL alloy 400	NI	C	Mn	Fe	S	Si	Cu	Cr	Co	Mo	Al	Ti	Other
MONEL alloy 500	63.0min	0.15	1.0	25 max	0.024 max	0.05 max	31.0	-	-	-	-	-	-
Cast MONEL alloy	63.0min	0.15	1.5max	2.0 max	0.010 max	0.5	30.0	-	-	-	2.9	0.6	-
Cast MONEL alloy	63.0min	0.07	0.75	2.5 max	0.02max	0.4 max	30.0	0.10 max	-	0.20max	0.05max	0.01max	-
Cast MONEL alloy	63.0min	0.03max	0.20max	2.5 max	0.02max	0.04 max	30.0	0.10	-	0.20max	0.05mx	0.01max	-
INCONEL alloy 600	NI	C	Mn	Fe	S	Si	Cu	Cr	Co	Mo	Al	Ti	Other
INCONEL alloy 605	72.0min	0.15max	1.0max	8.0	0.015max	0.05max	0.5max	15.5	-	-	-	-	Nb+Ta
INCONEL alloy 605	60.5	0.10max	0.25	5.0max	0.015max	0.5max	-	21.5	-	9.0	0.25	0.25	3.65
INCONEL alloy 800	NI	C	Mn	Fe	S	Si	Cu	Cr	Co	Mo	Al	Ti	Other
INCONEL alloy 825	32.5	0.10max	1.5max	Bal	0.015max	1.0max	0.75max	21.0	-	-	0.38	0.38	-
INCONEL alloy 904	42.0	0.05max	1.0max	Bal	0.03max	0.5max	2.25	21.5	-	3.0	0.20max	0.9	-
INCONEL alloy DS	32.5	0.025	0.025	Bal	0.015	0.25	0.25	-	14.5	-	0.1	1.6	-
INCONEL alloy DS	37.0	1.2	1.2	Bal	-	2.3max	2.3max	18.0	-	-	-	0.20	-
Hastelloy B	Rest/Bal	0.10	0.80	5.58	0.7		0.6	1.25	28	-	-	-	-
Hastelloy C	Rest/Bal	0.07	0.80	5.75	0.7		16.0	1.25	17	-	-	-	-
Hastelloy G Alloy	Rest/Bal	0.05	1.0-2.0	18.0-21.0	0.7		1.5	1.25	5.575	-	-	-	-

PHYSICAL AND MECHANICAL PROPERTIES

Nickel	Density Kg/mm ³	Melting range C	Specific heat at 20°C J/Kg C	Thermal Conductivity at 20°C W/m C	Thermal expansion 10-c/C 20-95°C	Electrical resistivity at 20°C Microhm cm	Tensile Strength N/mm ²	Hardness HV
Nickel 200	8.89	1435-1445	456	74.9	13.3	9.5	380-550	90-120
Nickel 201	8.89	1435-1445	456	79.2	13.3	7.6	340-420	75-100
Nickel 205	8.89	1435-1445	456	74.9	13.3	9.5	340	77
Nickel 212	8.89	1435-1445	430	44.1	-	10.9	476	144
Nickel 222	8.89	1435-1445	456	74.9	13.3	8.8	340	77
Nickel 270	8.89	1435-1445	456	85.7	13.3	7.5	340	80
MONEL alloy 400	8.83	1300-350	419	21.7	14.1	51.0	480-620	111-151
MONEL alloy K-500	8.46	1315-1350	419	17.4	13.7	61.4	620-760	141-189
MONEL alloy 600	8.42	1370-1425	461	14.8	13.3	103	550-690	121-173
MONEL alloy 600	8.44	1290-1350	410	9.8	12.8	129	830-1040	146-247
MONEL alloy 800	7.95	1355-1385	502	11.7	14.2	99	520-700	121-188
MONEL alloy 825	8.14	1370-1400	441	10.9	14.0	113	590-730	121-183
MONEL alloy 904	8.12	-	442	14.9	4.6	72	923	-
MONEL alloy DS	7.92	1330-1400	452	12.0	14.1	108	680	208



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CHEMICAL COMPOSITION OF S. S. PIPES & TUBES

Grade	UNS Designation	Composition %														
		Carbon max	Manganese max	Sulfur max	Phosphorus max	Silicon	Nickel	Chromium	Molybdenum	Titanium	Columbium plus Tantalum	Tantalum max	Nitrogen	Vanadium	Copper	Carbon
TP304	S30400	0.08	2.00	0.040	0.030	0.75 Max	8.00-11.0	18.0-20.0	---	---	---	---	---	---	---	---
TP304H	S30409	0.04-0.10	2.00	0.040	0.030	0.75 Max	8.00-11.0	18.0-20.0	---	---	---	---	---	---	---	---
TP304L	S30403	0.035	2.00	0.040	0.030	0.75 Max	8.00-13.0	18.0-20.0	---	---	---	---	---	---	---	---
TP304LN	S30451	0.08	2.00	0.040	0.030	0.75 Max	8.00-11.0	18.0-20.0	---	---	---	---	0.10-0.16	---	---	---
TP304N	S30453	0.035	2.00	0.040	0.030	0.75 Max	8.00-11.0	18.0-20.0	---	---	---	---	0.10-0.18	---	---	---
TP309CO	S30940	0.08	2.00	0.045	0.030	0.75 Max	8.00-16.0	22.0-24.0	0.75 max	---	10 x C min 1.10 max	---	---	---	---	---
TP309H	S30909	0.04-1.10	2.00	0.040	0.030	0.75 max	12.0-15.0	22.0-24.0	---	---	---	---	---	---	---	---
TP309HCB	S3041	0.04-0.10	2.00	0.045	0.030	0.75 max	12.0-16.0	22.0-24.0	0.75 max	---	10 x C min 1.10 max	---	---	---	---	---
TP309S	S30908	0.08	2.00	0.045	0.030	0.75 max	12.0-15.0	22.0-24.0	0.75 max	---	---	---	---	---	---	---
TP310Cb	S31040	0.08	2.00	0.045	0.30	0.75 max	19.0-22.0	24.0-26.0	0.75 max	---	10 x C min 1.10 max	---	---	---	---	---
TP310H	S31009	0.04-0.10	2.00	0.040	0.030	0.75 max	19.0-22.0	24.0-26.0	---	---	---	---	---	---	---	---
TP310HCB	S31041	0.04-0.10	2.00	0.045	0.030	0.75 max	19.0-22.0	24.0-26.0	0.75 max	---	10 x C min 1.10 max	---	---	---	---	---
TP310S	S31008	0.08	2.00	0.045	0.030	0.75 max	19.0-22.0	24.0-26.0	0.75 max	---	---	---	---	---	---	---
	S31272	0.08-0.12	1.5	0.030	0.015	0.3-0.7	14.0-16.0	14.0-16.0	1.0-1.4	0.3	---	---	---	---	---	0.04
TP316	S31600	0.08	2.00	0.040	0.030	0.75 max	11.0-14.0	16.0-18.0	2.00-3.00	---	---	---	---	---	---	0.00
TP316H	S31609	0.04-0.10	2.00	0.040	0.030	0.75 max	11.0-14.0	16.0-18.0	2.00-3.00	---	---	---	---	---	---	---
TP316L	S31603	0.035	2.00	0.040	0.030	0.75 max	10.0-15.0	16.0-18.0	2.00-3.00	---	---	---	---	---	---	---
TP316LN	S31651	0.08	2.00	0.040	0.030	0.75 max	11.0-14.0	16.0-18.0	2.00-3.00	---	---	---	0.10-0.16	---	---	---
TP316LN	S31653	0.035	2.00	0.040	0.030	0.75 max	11.0-14.0	16.0-18.0	2.00-3.00	---	---	---	0.10-0.18	---	---	---
TP317	S31700	0.08	2.00	0.040	0.030	0.75 max	11.0-14.0	18.0-20.0	3.00-4.00	---	---	---	---	---	---	---
TP317L	S31703	0.035	2.00	0.040	0.030	0.75 max	11.0-15.0	18.0-20.0	3.00-4.00	---	---	---	---	---	---	---
TP321	S32100	0.08	2.00	0.040	0.030	0.75 max	9.00-13.0	17.0-20.0	---	---	---	---	---	---	---	---
TP321H	S32109	0.04-0.10	2.00	0.040	0.030	0.75 max	9.00-13.0	17.0-20.0	---	---	---	---	---	---	---	---
TP347	S34700	0.08	2.00	0.040	0.030	0.75 max	9.00-13.0	17.0-20.0	---	---	---	---	---	---	---	---
TP347H	S34709	0.04-0.10	2.00	0.040	0.030	0.75 max	9.00-13.0	17.0-20.0	---	---	---	---	---	---	---	---
TP347LN	S34751	0.005	2.00	0.040	0.030	0.75 max	9.00-13.0	17.0-20.0	---	---	0.2-0.5	---	---	---	---	---
TP348	S34800	0.08	2.00	0.040	0.030	0.75 max	9.00-13.0	17.0-20.0	---	---	---	0.10	---	---	---	---
TP348H	S34809	0.04-0.10	2.00	0.040	0.030	0.75 max	9.00-13.0	17.0-20.0	---	---	---	0.10	---	---	---	---
TPXM 10	S21900	0.08	8.00	0.040	0.030	1.00 max	5.50-7.50	19.0-21.5	---	---	---	---	0.15-0.40	---	---	---
		1000	10.00													
TPXM 11	S21904	0.04	8.00	0.040	0.030	1.00 max	5.50-7.50	19.0-21.5	---	---	---	---	0.15-0.40	---	---	---
		10.00	10.00													
TPXM 15	S38100	0.08	2.00	0.030	0.030	1.50-2.50	17.5-18.5	17.0-19.0	---	---	---	---	0.20-0.40	0.10	---	---
TPXM19	S20910	0.60	4.00	0.040	0.030	1.00 max	11.5-13.5	20.5-3.00	1.50-3.00	---	0.10	---	0.20-0.40	0.30	---	---
		6.00	6.00								0.30	---				
TPXM29	S24000	0.80	11.5	0.060	0.030	1.00 max	2.25-3.75	17.0-19.0	---	---	---	---	0.20-0.40	---	---	---
		14.5														
---	S31254	0.020	1.00	0.030	0.010	0.80 max	17.5-18.5	19.5-20.5	6.00-6.50	---	---	---	0.18-0.22	---	0.50-1.00	---
---	S30615	0.10-0.24	2.00	0.030	0.030	3.2-4.0	13.5-16.0	17.0-19.5	---	---	---	---	---	---	---	---
---	S30815	0.05-0.10	0.80	0.040	0.030	1.40-2.00	10.0-12.0	20.0-22.0	---	---	---	---	0.14-0.20	---	---	0.03
																0.06
---	S31050	0.025	2.00	0.020	0.015	0.4	20.5-23.5	24.0-26.0	1.6-2.6	---	---	---	0.09-0.15	---	---	---
---	S30600	0.018	2.00	0.020	0.020	3.7-4.3	14.0-15.5	17.0-18.5	0.20max	---	---	---	---	---	0.50 max	---
---	S31725	0.03	2.00	0.040	0.030	0.75	13.5-17.5	18.0-20.0	4.0-5.0	---	---	---	0.10 max	---	0.75 max	---
---	S31726	0.03	2.00	0.040	0.030	0.75	13.5-17.5	17.0-20.0	4.0-5.0	---	---	---	0.10-0.20	---	0.75 max	---
---	S32615	0.07	2.00	0.045	0.030	4.8-6.0	19.0-22.0	16.5-19.5	0.3-1.5	---	---	---	---	---	1.5-2.5	---
---	S33228	0.04-0.08	1.00	0.020	0.015	0.30 max	31.0-33.0	26.0-28.0	---	---	0.5-1.0	---	---	---	---	0.05-
																0.10
---	S24565	0.03	5.0-7.0	0.030	0.010	1.00max	16.0-18.0	23.0-25.0	4.0-5.0	---	0.1 max	---	0.04-0.6	---	---	---
---	S30415	0.4-0.06	0.80	0.045	0.030	1.00-2.00	9.00-10.0	18.0-19.0	---	---	---	---	0.12-0.16	---	---	0.03
																0.08
---	S32654	0.020	2.00-4.00	0.030	0.005	0.50 max	21.0-23.0	24.0-25.0	7.00-8.00	---	---	---	0.45-0.55	---	0.030-0.60	---
---	S35315	0.04-0.08	2.00	0.045	0.030	0.75	34.0-36.0	24.0-26.0	---	---	---	---	0.12-0.18	---	---	0.03
																0.08
---	N08367	0.030	2.00	0.030	0.030	1.00 max	23.50-25.50	20.00-22.00	6.00-7.00	---	---	---	0.18-0.25	---	0.75 max	---
---	N08904	0.020	2.00	0.045	0.035	1.00	23.0-28.0	19.0-23.0	4.0-5.0	---	---	---	0.10 max	---	1.0-2.0	---

- New designation established in accordance with Practice E 527 and SAE J 1086
- Maximum, unless otherwise indicated. The method of analysis for nitrogen shall be a matter of agreement between the purchaser and manufacturer.
- For welded TPXM, TPXMS, TPXMW and TPXM pipe the nickel range shall be 0.05% less. For small diameter or thin walls or both, when any or all welding passes are required, a carbon maximum of 0.04% is necessary in grades TP304L and TP316L. Small diameter tubes are defined as those less o.d. 0.500 in (12.7mm) in outside diameter and light wall tubes as those less than 0.049 in (1.2mm) in average wall thickness in weight in mill annealed condition
- The titanium content shall be not less than that at time the carbon content and not more than 0.30%. The lithium content shall be not be less than four times the carbon content and not more than 0.6%. The Columbium plus tantalum content shall be not less than ten times the carbon content and not more than 1.10%
- The Columbium plus tantalum content shall be not less than eight times the carbon content and not more than 1.0%
- For welded pipe, the phosphorus maximum shall be 0.050%. Grade 347N shall have a columbium (Niobium) plus tantalum content of not less than 15 times the carbon content.



#T-3, Shop No. T-3/7, K.S.I.D.C., Main Road, 1st Stage, Peenya Industrial Estate, Bangalore-560058



Plot No. 773# Siggehalli Gate, Magadi Road, Bangalore, 560091



STAINLESS STEEL PIPE, SCHEDULE, DIMENSION

DESIGNATION OF DIAMETER		O/D DIA	NOMINAL WALL THICKNESS														
			SCH.5S		SCH.5		SCH.10S		SCH. 10		SCH 20S		SCH 30		STCH.40S		SCH 40
(A)	(B)	METER MM	WALL THK	WEIGHT KG/MTR	WALL THK	WEIGHT KG/MTR	WALL THK	WEIGHT KG/MTR	WALL THK	WEIGHT KG/MTR	WALL THK	WEIGHT KG/MTR	WALL THK	WEIGHT KG/MTR	WALL THK	WEIGHT KG/MTR	WALL THK
6	1/8	10.3	1.0	0.23			1.2	0.27			1.5	33			1.73	0.37	
8	1/4	13.7	1.2	0.37			1.65	0.49			2.00	58			2.24	0.64	
10	3/8	17.2	1.2	0.47			1.65	0.63			2.00	74			2.31	0.87	
15	1/2	21.3	1.65	0.81	1.65	0.81	2.11	1.02	2.11	1.02	2.5	115			2.77	1.29	
20	3/4	26.7	1.65	1.03	1.65	1.03	2.11	1.30	2.11	1.30	2.5	149			2.87	1.71	
25	1	33.4	1.65	1.31	1.65	1.31	2.77	2.13	2.77	2.13	3.00	224			3.38	2.54	
32	1 1/4	42.2	1.65	1.67	1.65	1.67	2.77	2.73	2.77	2.73	3.00	290			3.56	3.44	
40	1 1/2	48.3	1.6	1.93	1.65	1.93	2.77	3.16	2.77	3.16	3.00	335			3.68	4.11	
50	2	60.3	1.65	2.42	1.65	2.42	2.77	3.99	2.77	3.99	3.5	490			3.91	5.52	
65	2 1/2	73.0	2.11	3.75	2.11	3.75	3.05	5.34	3.05	5.34	3.5	600			5.16	8.77	
80	3	88.9	2.11	4.59	3.05	6.56	3.05	6.56	3.05	6.65	4.00	837			5.49	11.47	
90	3 1/2	101.6	2.11	5.25	2.11	5.25	3.05	7.53	3.05	7.53	4.00	962			5.74	13.78	
100	4	114.3	2.11	5.93	2.11	5.93	3.05	8.50	3.05	8.50	4.5	1218			6.02	16.32	
125	5	141.3	2.77	9.61	2.77	9.61	3.40	11.74	3.40	11.74	5.00	1680			6.55	822.10	
150	6	168.3	2.77	11.47	2.77	11.47	3.40	14.04	3.40	14.04	5.00	2208			7.11	28.69	
200	8	219.1	2.77	15.00	2.77	15.00	3.76	20.27	3.76	20.27	6.35	33.82	7.04	37.38	8.01	43.20	
250	10	273.1	3.40	22.95	3.40	22.95	4.19	28.20	4.19	8.20	6.35	42.41	780	51.81	9.27	61.22	
300	12	323.9	3.96	31.72	4.19	33.60	4.57	36.54	4.57	36.54	6.35	50.48	8.38	66.20	9.53	75.01	10.31
350	14	355.6	3.96	34.86			4.78	41.99	6.35	55.53	7.92	68.95	9.53	82.58	9.53	82.58	11.13
400	16	406.4	4.19	42.20			4.78	48.07	6.35	63.61	7.92	79.03	9.53	94.70	9.53	94.70	12.70
450	18	457.2	4.19	47.46			4.78	54.15	6.35	71.69	7.92	89.10	11.13	124.32	9.53	106.83	14.27
500	20	508.0	4.78	60.23			5.54	69.70	6.35	79.76	9.35	18.93	12.70	157.51	9.53	118.93	15.06
550	22	558.8	4.78	65.95			5.54	76.75	6.35	87.84	9.35	131.07	12.70	173.66	9.53	131.07	15.88
600	24	609.6	5.54	83.80			6.35	95.92	6.35	95.92	9.53	143.20	14.27	212.72	9.53	143.20	17.45
650	26	660.4							7.92	129.40	12.70	205.97			9.53	155.32	
700	28	711.2							7.92	139.47	12.70	222.13	15.88	276.48	9.53	167.44	
750	30	726.0	6.35	120.15			7.92	149.55	7.92	149.55	12.70	238.28	15.88	296.68	9.53	179.56	
800	32	812.8							7.92	159.62	12.70	254.44	15.88	316.88	9.35	191.69	17.48
850	34	863.6							7.92	169.64	12.70	270.50	15.88	336.96	9.35	203.74	17.48
900	36	914.4							7.92	179.77	12.70	286.75	15.88	357.20	9.35	215.93	19.05



#T-3, Shop No. T-3/7, K.S.I.D.C., Main Road, 1st Stage,
Peenya Industrial Estate, Bangalore-560058



Plot No. 773# Siggehalli Gate, Magadi Road,
Bangalore, 560091



WALL THICKNESS, WEIGHT / METER

NOMINAL WALL THICKNESS																
	SCH.60		SCH..80S		SCH. 80		SCH. 10		SCH. 120		SCH. 140		STCH. 160		SCH. XXS	
WEIGHT KG/MTR	WALL THK	WEIGHT KG/MTR	WALL THK	WEIGHT KG/MTR	WALL THK	WEIGHT KG/MTR	WALL THK	WEIGHT KG/MTR	WALL THK	WEIGHT KG/MTR	WALL THK	WEIGHT KG/MTR	WALL THK	WEIGHT KG/MTR	WALL THK	WEIGHT KG/MTR
			2.41	0.47												
			3.02	0.82												
			3.20	1.12												
			3.73	1.64									4.75	1.97	7.47	2.59
			3.91	2.93									5.54	2.93	7.82	3.69
			4.55	3.29									6.35	4.30	9.09	5.53
			4.85	4.53									6.35	5.69	9.70	7.88
			5.08	5.49									7.14	7.35	10.16	9.69
			5.54	7.60									8.71	11.26	11.07	13.65
			7.01	11.59									9.35	15.15	14.02	20.72
			7.62	15.51									11.13	21.67	15.24	28.11
			8.08	18.92											16.15	34.56
			8.56	22.66					11.13	28.75			13.49	34.05	17.12	41.66
			9.53	31.44					12.70	40.90			15.88	49.87	19.05	58.31
			10.97	43.21					14.27	55.03			18.24	68.53	21.95	79.1
	10.81	53.90	12.70	65.63			15.06	76.93	18.24	91.73	20.62	102.47	23.01	112.97	22.23	108.00
	10.81	82.80	12.70	82.30	15.06	97.27	18.24	166.38	21.41	134.90	25.40	157.51	28.58	174.95	25.40	155.5
80.94	14.27	110.62	12.70	98.95	17.45	133.88	21.41	162.14	25.40	189.32	28.58	211.31	33.32	242.40	25.40	189.8
96.00	15.06	128.42	12.70	109.04	19.05	160.54	23.80	97.74	27.76	277.38	31.75	257.47	35.71	286.04		
125.20	16.66	162.59	12.70	125.20	21.41	206.40	26.19	249.34	30.94	290.88	36.53	338.32	40.46	370.74		
158.20	19.05	209.00	12.70	141.35	23.80	258.29	29.36	314.54	34.93	369.34	39.67	414.74	45.24	466.67		
185.89	20.62	251.65	12.70	157.51	26.19	315.97	32.54	387.41	38.10	448.30	44.45	515.94	49.99	573.31		
216.04	22.23	298.65	12.70	173.66	28.57	379.70	34.92	457.83	41.27	535.17	47.62	609.30	53.97	682.31		
258.74	24.59	360.21	12.70	189.82	30.94	448.30	38.89	555.76	46.02	649.44	52.37	730.72	59.51	819.70		
			12.70	205.97	24.66 (D-t)t 1000 wt/pam+formulae weight stainless steel pipe OD (mm) -(mm) x 0.02466 = Kg. per mtr.											
			12.70	22.13												
			12.70	238.13												
348.11			12.70	254.44												
370.22			12.70	270.50												
427.09			12.70	286.75												

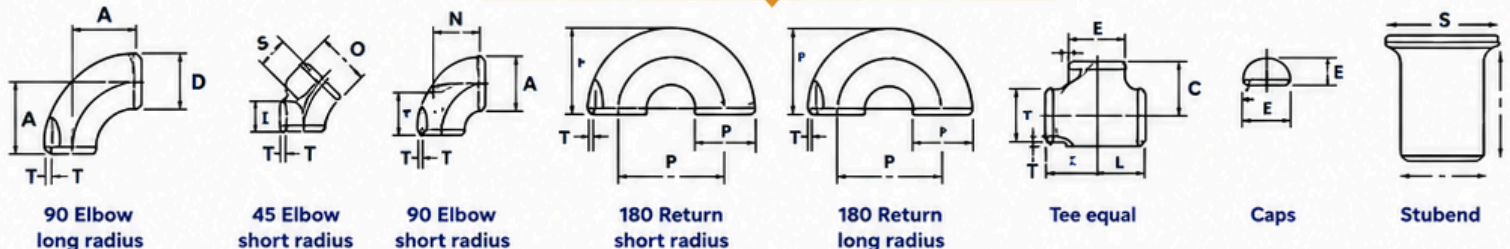


#T-3, Shop No. T-3/7, K.S.I.D.C., Main Road, 1st Stage,
Peenya Industrial Estate, Bangalore-560058



Plot No. 773# Siggegahalli Gate, Magadi Road,
Bangalore, 560091

BUTT WELDING PIPE FITTING DIMENSIONAL STANDARD ANSI B-16.9 AND B-16.28



Nominal pipe size		Outside Diameter	centre to face				Back to face			Centre to Centre			Length 'L'	
Inch	mm	D	A	B	C	N	E	F	G	R	M	S	MSS SP-43	ANSI B 16.9
1/2	15	21.3	19	16	25	-	25	48	-	38	-	34.9	50.8	76.2
3/4	20	26.7	29	11	29	-	25	43	-	57	-	42.8	50.8	76.2
1	25	33.4	38	22	38	25	38	56	41	76	51	50.8	50.8	101.6
1 1/4	32	42.2	48	25	48	32	38	70	52	95	64	63.5	50.8	101.6
1 1/2	40	48.3	57	29	57	38	38	83	62	114	76	70	50.8	101.6
2	50	60.3	76	35	64	51	38	106	81	152	102	92	63.5	152.4
2 1/2	65	73.0	95	44	76	64	51	132	100	191	127	104.8	63.5	152.4
3	80	88.9	114	57	86	76	51	159	121	229	152	127	63.5	152.4
3 1/2	90	101.6	133	57	98	89	64	184	140	267	178	139.7	76.2	152.4
4	100	114.3	152	64	105	102	64	210	159	305	203	157.2	76.2	152.4
5	125	141.3	190	79	124	127	76	262	197	381	254	185.7	76.2	203.2
6	150	168.3	229	95	143	152	89	313	237	457	305	215.9	88.9	203.2
8	200	219.1	305	127	178	203	102	414	313	610	406	270	101.6	203.2
10	250	273.1	381	159	216	254	127	518	391	762	508	324	127.0	254.0
12	300	323.9	457	190	254	305	152	619	467	914	610	381	152.4	254.0
14	350	355.6	533	222	279	356	165	711	533	1067	711	412.3	152.4	305.0
16	400	406.4	610	254	305	406	178	813	610	1219	813	470	152.4	305.0
18	450	457.0	669	266	343	457	203	914	686	1372	914	533.4	152.4	305.0
20	500	508.0	762	318	381	508	229	1016	762	1524	1016	584.2	152.4	305.0
22	550	559.0	838	343	419	559	254	1118	838	1676	1118	614.4	152.4	305.0
24	600	609.6	914	381	432	610	267	1219	914	1829	1219	692.2	152.4	305.0
26	650	660.0	1961.0	406.0	495	660	267							
28	700	711.0	1067.0	406.0	521	711	267							
30	750	762.0	1143.0	470.0	559	762	267							
32	800	813.0	1219	502.0	597	813	267							
34	850	864.0	1299.0	533.0	635	864	267							
36	900	914.0	1372.0	565.0	673	914	267							
38	950	965.0	1448.0	600.0	711	965	305							
40	1000	1016.0	1524.0	632.0	749	1016	305							
42	1050	1067.0	1600.0	660.0	762	1067	305							
44	1100	1118.0	1676.0	695.0	813	1118	343							
46	1150	1168.0	1753.0	720.0	851	1168	343							
48	1200	1219.0	1829.0	759.0	889	1219	343							



24.66 (D-t)t

1000

wt/pam+formulae

weight stainless steel pipe

OD (mm) - (mm) x 0.02466 = Kg. per mtr.

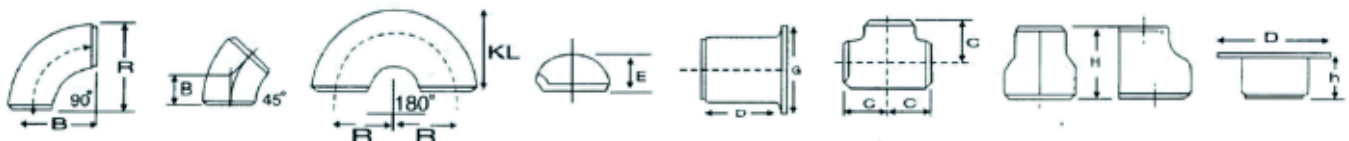
📍 #T-3, Shop No. T-3/7, K.S.I.D.C., Main Road, 1st Stage,
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📍 Plot No. 773# Siggegahalli Gate, Magadi Road,
Bangalore, 560091



BUTT WELDED PIPE FITTINGS

Nom.	Pipe	wall thickness			Radius					R						Length				
Bore Inch	O.D	5S	10S	40S	80S	1D	1.5D	2D	3D	A	B	C	E	G	L	L	H	D	h	
1/2	21.34	1.65	2.11	2.77	3.73	12.7	19.06	25.4	38.1	12.7	15.9	25.4	25.4	34.9	50.8	76.2	50.8	42	8	
3/4	26.67	1.65	2.11	2.87	3.91	19.05	28.57	38.10	57.15	19.05	11.1	28.6	25.4	42.8	50.8	76.2	50.8	5	8	
1	33.40	1.65	2.77	3.38	4.55	25.4	38.2	50.8	76.2	52.4	22.2	38.1	38.1	50.8	50.8	101.6	50.8	65	10	
1 1/4	42.16	1.65	2.77	3.56	4.85	31.75	47.6	63.5	95.25	31.75	25.0	47.6	38.1	63.1	50.8	101.6	50.8	72	12	
1 1/2	48.26	1.65	2.77	3.68	5.08	38.1	57.15	76.2	114.3	38.10	28.6	57.2	38.1	73.0	50.8	101.16	63.5	82	12	
2	60.32	1.65	2.77	3.91	5.54	50.8	76.2	101.6	152.4	50.8	34.0	63.5	38.1	92.0	63.5	152.4	76.2	98	16	
2 1/2	73.02	2.11	3.05	5.16	7.01	63.5	95.25	127.0	190.5	63.5	44.0	76.2	38.1	104.8	63.5	152.4	88.9	118	15	
3	88.90	2.11	3.05	5.49	7.62	76.2	114.30	152.4	228.6	76.22	50.8	85.7	50.8	127.0	63.5	152.4	88.9	130	18	
3 1/2	101.60	2.11	3.05	5.74	8.08	88.9	133.35	177.8	266.7	88.9	57.2	95.3	63.5	139.7	76.2	152.4	101.6	140	18	
4	114.30	2.11	3.05	6.02	8.56	101.6	152.4	203.2	304.8	101.6	63.5	104.8	63.5	157.2	76.2	152.4	101.6	168	20	
5	141.30	2.77	3.40	6.55	9.52	127.0	190.5	254.0	381.8	127.0	82.6	123.8	76.2	185.7	76.2	203.2	127.0	188	25	
6	168.27	2.77	3.40	7.11	10.97	152.4	228.6	304.8	457.2	152.4	95.3	142.7	88.9	215.9	88.9	203.2	139.7	215	25	
8	219.07	2.77	3.76	8.18	12.7	203.2	304.8	406.4	609.6	203.2	127.0	177.5	101.6	270.0	101.6	203.2	152.4	270	30	
10	273.05	3.40	4.19	9.27	12.7	254.0	381.0	508.0	762.0	254.0	158.7	275.9	127.0	324.0	127.0	254.0	177.8	330	35	
12	323.85	3.96	4.57	9.52	12.7	304.8	457.2	609.6	914.4	340.8	190.5	254.0	152.4	381.0	152.4	254.0	203.2	400	40	
14	355.60	3.96	4.76	9.52	12.7	355.6	533.4	711.2	1066	355.6	222.2	280.0	165.1	412.8	152.4	305.0	330.2	470	40	
16	406.40	4.19	4.76	9.52	12.7	406.4	609.6	812.8	1219	406.4	254.0	340.8	177.8	470.0	152.4	305.0	355.6	535	40	
18	457.20	4.19	4.76	9.52	12.7	457.2	685.8	914.4	1372	457.2	285.7	343.0	203.2	533.4	152.4	305.0	381.0	535	40	
20	508.00	4.76	5.54	9.52	12.7	508.0	762.0	1016	1524	508.0	317.6	381.0	228.6	584.2	152.4	305.0	508.0	642	40	
24	609.60	5.54	6.35	9.52	12.7	609.6	914.4	1219	1829	-	881.00	431.8	266.7	698.5	152.4	305.0	508.0	693	40	



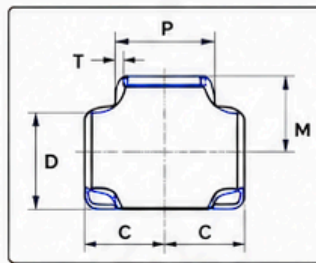
#T-3, Shop No. T-3/7, K.S.I.D.C., Main Road, 1st Stage,
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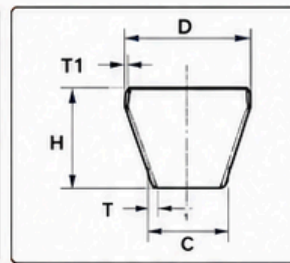
Plot No. 773# Siggehalli Gate, Magadi Road,
Bangalore, 560091



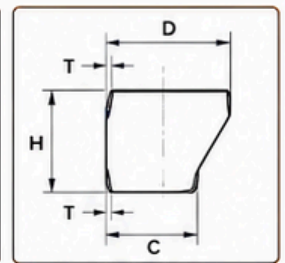
BUTT WELDING PIPE FITTINGS



REDUCING TEES



CONCENTRIC



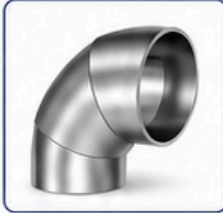
ECCENTRIC

DIMENSIONAL STANDARD ANSI B-16.9

Nominal Pipe Size		Outside Diameter		Centre to End		Length
Inch.	mm	D	P	C	M	H
1/2 x 3/8	15 x 10	21.3	17.1	25	25	-
1/2 x 1/4	15 x 8	21.3	13.7	25	25	-
3/4 x 1/2	20 x 15	26.7	21.3	29	29	38
3/4 x 3/8	20 x 10	26.7	17.1	29	29	38
1 x 3/4	25 x 20	33.4	26.7	38	38	51
1 x 1/2	25 x 15	33.4	21.3	38	38	51
1 1/4 x 1	32 x 25	42.2	33.4	48	48	51
1 1/4 x 3/4	32 x 20	42.2	26.7	48	48	51
1 1/4 x 1/2	32 x 15	42.2	21.3	48	48	51
1 1/2 x 1 1/2	40 x 32	48.3	42.2	57	57	64
1 1/2 x 1	40 x 25	48.3	33.4	57	57	64
1 1/2 x 3/4	40 x 20	48.3	26.7	57	57	64
1 1/2 x 1/2	40 x 15	48.3	21.3	57	57	64
2 x 1 1/2	50 x 40	60.3	48.2	64	60	76
2 x 1 1/4	50 x 32	60.3	42.2	64	57	76
2 x 1	50 x 25	60.3	33.4	64	51	76
2 x 3/4	50 x 20	60.3	26.7	64	44	76
2 1/2 x 2	65 x 50	73.0	60.3	76	70	89
2 1/2 x 1 1/2	65 x 40	73.0	48.3	76	67	89
2 1/2 x 1 1/4	65 x 32	73.0	42.2	76	64	89
2 1/2 x 1	65 x 25	73.0	33.4	76	57	89
3 x 2 1/2	80 x 65	88.9	73.0	86	83	89
3 x 2	80 x 50	88.9	60.3	86	76	89
3 x 1 1/2	80 x 40	88.9	48.3	86	73	89
3 x 1 1/4	80 x 32	88.9	42.2	86	70	89
3 1/2 x 3	90 x 80	101.6	88.9	95	92	102
3 1/2 x 2 1/2	90 x 65	101.6	73.0	95	89	102
3 1/2 x 2	90 x 50	101.6	60.3	95	83	102
3 1/2 x 1 1/2	90 x 40	101.6	48.3	95	79	102
3 1/2 x 1 1/4	90 x 40	101.6	42.2	-	-	102
4 x 3 1/2	100 x 90	114.3	101.6	105	102	102
4 x 3	100 x 80	114.3	88.9	105	98	102
4 x 2 1/2	100 x 65	114.3	73.0	105	95	102
4 x 2	100 x 50	114.3	60.3	105	89	102
4 x 1 1/2	100 x 40	114.3	48.3	105	86	102
5 x 4	125 x 100	141.3	114.3	124	117	127
5 x 3 1/2	125 x 90	141.3	101.6	124	114	127
5 x 3	125 x 80	141.3	88.9	124	111	127
5 x 2 1/2	125 x 65	141.3	73.0	124	108	127
5 x 2	125 x 50	141.3	60.3	124	105	127
6 x 5	150 x 125	168.3	141.3	143	137	140
6 x 4	150 x 100	168.3	114.3	143	130	140
6 x 3 1/2	150 x 90	168.3	101.6	143	127	140
6 x 3	150 x 80	168.3	88.9	143	124	140
6 x 2 1/2	150 x 60	168.3	73.0	143	121	140

Nominal Pipe Size		Outside Diameter		Center to End		Length
Inch.	mm	D	P	C	M	H
8 x 6	200 x 150	219.1	168.3	178	168	152
8 x 5	200 x 125	219.1	141.3	178	162	152
8 x 4	200 x 100	219.1	114.3	178	156	152
8 x 3 1/2	200 x 90	219.1	101.6	178	152	152
10 x 8	250 x 200	273.1	219.1	216	203	178
10 x 6	250 x 150	273.1	168.1	216	194	178
10 x 5	250 x 125	273.1	141.3	216	191	178
10 x 4	250 x 100	273.1	114.3	216	184	178
12 x 10	300 x 250	323.9	273.1	254	241	203
12 x 8	300 x 200	323.9	219.1	254	229	203
12 x 6	300 x 150	323.9	168.3	254	219	203
12 x 5	330 x 125	323.9	141.3	254	216	203
14 x 12	350 x 300	355.6	323.9	279	270	330
14 x 10	350 x 250	355.6	273.1	279	257	330
14 x 8	350 x 200	355.6	219.1	279	248	330
14 x 6	350 x 150	355.6	168.3	279	238	330
16 x 14	400 x 350	406.4	355.6	305	305	356
16 x 12	400 x 300	406.4	323.9	305	295	356
16 x 10	400 x 250	406.4	273.1	305	283	356
16 x 8	400 x 200	406.4	219.1	305	273	356
16 x 6	400 x 150	406.4	168.3	305	264	356
18 x 16	450 x 400	457.0	406.4	343	330	381
18 x 14	450 x 350	457.0	355.6	343	330	381
18 x 12	450 x 300	457.0	323.9	343	321	381
18 x 10	450 x 250	457.0	273.1	343	308	381
18 x 8	450 x 200	457.0	219.1	343	298	381
20 x 18	500 x 450	508.0	457.0	381	386	508
20 x 16	500 x 400	508.0	406.4	381	356	508
20 x 14	500 x 350	508.0	355.6	381	356	508
20 x 12	500 x 300	508.0	323.9	381	346	508
20 x 10	500 x 250	508.0	273.1	381	333	508
20 x 8	500 x 200	508.0	219.1	381	324	508
22 x 20	550 x 500	559.0	508.0	419	406	508
22 x 18	550 x 450	559.0	457.0	419	394	508
22 x 16	550 x 400	559.0	406.0	419	381	508
22 x 14	550 x 350	559.0	355.6	419	381	508
22 x 12	550 x 300	559.0	323.9	419	371	508
22 x 10	550 x 250	559.0	273.1	419	359	508
21 x 22	600 x 550	610.0	559.0	432	432	508
24 x 20	600 x 500	610.0	508.0	432	432	508
24 x 18	600 x 450	610.0	457.0	432	419	508
24 x 16	600 x 400	610.0	406.4	432	406	508
24 x 14	600 x 350	610.0	355.6	432	406	508
24 x 12	600 x 300	610.0	323.9	432	397	508
21 x 10	600 x 250	610.0	273.1	432	384	508





MITERED BENDS

Pipe Size	TYPE I				R Identical for All & Types	Ring Joint		Tongue & Male		TYPE II				TYPE III				Pipe Size
	150#	300#	450#	600#		150#	300#	150#	300#	A	B	C	D	A	B	C	D	
6"	318	327	324	335	333	324	333	324	333	130	95	60	134	84	62	39	167	6"
8"	406	416	413	424	422	413	422	413	422	172	127	81	178	111	81	52	224	8"
10"	483	499	489	506	504	489	504	489	504	214	157	101	224	138	102	65	279	10"
12"	572	587	578	595	594	578	594	578	594	258	190	123	267	166	122	79	355	12"
14"	660	676	667	684	683	667	683	667	683	295	221	148	312	191	143	95	390	14"
16"	737	756	743	764	762	743	762	743	762	337	252	168	358	218	164	109	446	16"
18"	826	845	832	853	851	832	851	832	851	379	284	189	402	245	184	122	502	18"
20"	907	924	913	934	930	913	930	913	930	422	316	211	446	273	205	137	557	20"
22"	987	1003	994	1014	1010	994	1010	994	1010	464	348	223	490	300	225	105	613	22"
24"	1067	1083	1073	1094	1089	1073	1089	1073	1089	505	379	252	535	327	245	164	669	24"
26"										548	410	273	581	354	265	176	726	26"
28"										589	447	295	620	381	286	191	781	28"
30"										632	474	316	669	409	307	205	836	30"
32"										673	505	337	714	435	327	218	892	32"
34"										716	537	357	758	464	348	232	947	34"
36"										757	568	379	804	491	368	245	1004	36"

NOTES:

- Mitered bends are made by cutting and welding pipes or tubes to the required angle.
- All dimensions are in millimetres unless otherwise specified.
- Dimensions are approximate and may vary as per manufacturing tolerances.
- Fabrication as per ANSI B 16.9 standard.
- Wall thickness schedule is as per ANSI B 36.10M for welded fittings.
- Welding to be performed by qualified welders and as per applicable codes (e.g., ASME B31.3).
- All fittings are supplied in annealed condition unless specified otherwise.
- Special angles and sizes available on request.
- Ends are prepared for butt welding as per ANSI B 16.25.
- Dimensions subject to change without prior notice.



WEIGHT OF COPPER & ALUMINIUM COPPER STRIP/FLAT KG./FT.

Thickness width	1/16"	1/8"	3/16"	1/4"	5/16"	5/16"	1/2"	5/8"	3/4"
1/2"	0.165	0.033	0.050	0.66	0.083	0.100	0.132	0.165	0.200
1/2"	0.058	0.116	0.174	0.232	0.290	0.348	0.464	0.580	0.696
3/4"	0.025	0.050	0.075	0.100	0.125	0.150	0.200	0.250	0.300
3/4"	0.087	0.174	0.261	0.348	0.435	0.522	0.696	0.870	1.044
1"	0.033	0.066	0.099	0.132	0.165	0.200	0.265	0.330	0.400
1"	0.116	0.232	0.348	0.464	0.580	0.690	0.928	1.160	1.380
1.1/4	0.042	0.083	0.126	0.168	0.210	0.252	0.336	0.420	0.500
1.1/4	0.145	0.290	0.435	0.580	0.725	0.870	1.160	1.450	1.740
1.1/2"	0.050	0.100	0.150	0.200	0.250	0.300	0.400	0.500	0.600
1.1/2"	0.174	0.348	0.522	0.696	0.870	1.044	1.392	1.740	2.088
2"	0.066	0.132	0.198	0.264	0.330	0.396	0.528	0.660	0.800
2"	0.232	0.464	0.690	0.928	1.160	1.380	1.856	2.320	2.760
2.1/2	0.84	0.168	0.252	0.336	0.420	0.504	0.672	0.840	1.000
2.1/2"	0.290	0.580	0.870	1.160	1.450	1.740	2.320	2.900	3.480
3"	0.100	0.200	0.300	0.400	0.500	0.600	0.800	1.000	1.200
3"	0.132	0.264	0.396	0.528	0.660	0.800	1.040	1.280	1.520
4"	0.464	0.928	1.380	1.856	2.320	2.760	3.712	4.640	5.520
5"	0.168	0.336	0.504	0.672	0.840	1.000	1.345	1.680	2.000
5"	0.580	1.160	1.740	2.320	2.900	3.480	4.640	5.800	6.960
6"	0.200	0.400	0.600	0.800	1.000	1.200	1.600	2.000	2.400
6"	0.696	1.392	2.088	2.784	3.480	4.176	5.568	6.960	8.352





MECHANICAL PROPERTIES OF S.S. PIPES

Table-2 Annealing Requirements			A 312/A 312M		Table 3 Tensile Requirements	
Grade or UNS Designation	Solution Treating Temperature	Coolong Requirements	Grade	UNS Designation	Tensile Strength, min Ksi (Mpa)	Yield Strength, min Ksi (Mpa)
All Grades not individually listed below	1900°F(1040°C)	rapid	TP304L	S30403	70 (485)	25 (170)
TP321H, TP347H, TP348H			TP316L	S31603	70 (485)	25 (170)
Cold Rolled	2000°F (1100°C)		TP304	S30400	75 (515)	30 (205)
Hot Rolled only	1925°F (1050°C)		TP304H	S30409	75 (515)	30 (205)
TP304H, TP316H			TP309Cb	S30940	75 (515)	30 (205)
Cold Rolled	1900°F (1040°C)		TP309H	S30909	75 (515)	30 (205)
Hot rolled only	1900°F (1040°C)		TP309HCB	S30941	75 (515)	30 (205)
TP309H, TP309HCB, TP310H	1900°F (1040°C)		TP309S	S30908	75 (515)	30 (205)
TP310HCB			TP310Cb	S31040	75 (515)	30 (205)
S30815	1920°F (1050°C)	rapid	TP310H	S31040	75 (515)	30 (205)
S31272	1920°F (1050°C)	rapid	TP310HCB	S31041	75 (515)	30 (205)
S31254	2100°F (1150°C)	rapid	TP310S	S31008	75 (515)	30 (205)
S24565	2050-2140°F (1120-1170°C)	rapid	TP317	S31272	65 (450)	29 (200)
S35315	2010°F (1100°C)	rapid	TP316	S31600	75 (515)	30 (50)
N08367	2010°F (1100°C)	rapid	TP316H	S31600	75 (515)	30 (205)
N08904	2010°F (1100°C)	rapid	TP317	S31700	75 (515)	30 (205)
			TP317H	S31703	75 (515)	30 (205)
			TP321	S32100		
			Welded Seamless		75 (515)	30 (205)
			< 3/8 in.		75 (515)	30 (205)
			> 3/8 in.		70 (485)	25 (170)
			TP321H	S32109		
			Welded Seamless		75 (515)	30 (205)
			< 3/8 in.		75 (515)	30 (205)
			> 3/8 in.		70 (485)	25(170)
			TP347	S34700	75 (515)	30 (205)
			TP347H	S3470	75 (515)	30 (205)
			TP347LN	S34751	75(515)	30 (205)
			TP348	S34800	75 (515)	30 (205)
			TP348H	S34809	75 (515)	30 (205)
			TPXM-10	S21900	90 (620)	50 (345)
			TPXM-11	S21904	90 (620)	50 (345)
			TPXM-15	S38100	75 (515)	30 (205)
			TPXM-29	S24000	100 (690)	55 (380)
			TPXM-19	S20910	100 (690)	55 (380)
			TP304N	S30451	80 (550)	35(240)
			TP316N	S31651	80 (550)	35 (240)
			TP304LN	S31653	75 (515)	30 (205)
			---	S31254	94 (650)	44 (300)
			---	S30615	90 (620)	40 (275)
			---	S30815	87 (600)	45 (310)
			---	S30600	78 (540)	35 (240)
			---	S31725	75 (515)	30 (205)
			---	S31726	80 (550)	35 (240)
			---	S31050		
			T<0.25 I.		84 (580)	39 (270)
			T>0.25 in.		78 (540)	37 (255)
			---	S32615	80 (550)	32 (220)
			---	S33228	73 (500)	27 (185)
			---	S24565	115 (795)	60 (415)
			---	S30415	87 (600)	42 (290)
			---	S 32654	109 (750)	62 (430)
			---	N08367:	94 (650)	39 (270)
			t<0.187		100 (690)	45 (310)
			t<0.187		95 (690)	45 (310)
			---	N08904	71 (490)	31 (215)

Elongation in 2 in or 50mm (or 4D), min, % Longitudinal Transverse
All Grades except S 31050 and S 32615 35 25 532615, S91050 25-N08367
Prior to the issuance of A 312/A 312 M-88a, the tensile and yield strength values were 76 (515) and 30 (205) respectively, for nominal wall greater than 3/8 in. (9.5 mm).

Elongation in 2 in or 50mm (or 4D), min, % Longitudinal Transverse
All Grades except S 31050 and S 32615 35 25 532615, S91050 25-N08367
Prior to the issuance of A 312/A 312 M-88a, the tensile and yield strength values were 75 (515) and 30 (205) respectively, for nominal wall greater than 3/8 in. (9.5 mm).



#T-3, Shop No. T-3/7, K.S.I.D.C., Main Road, 1st Stage,
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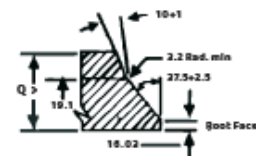
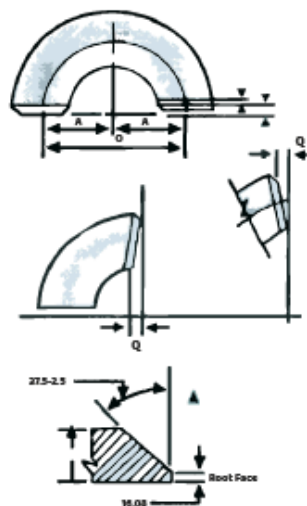
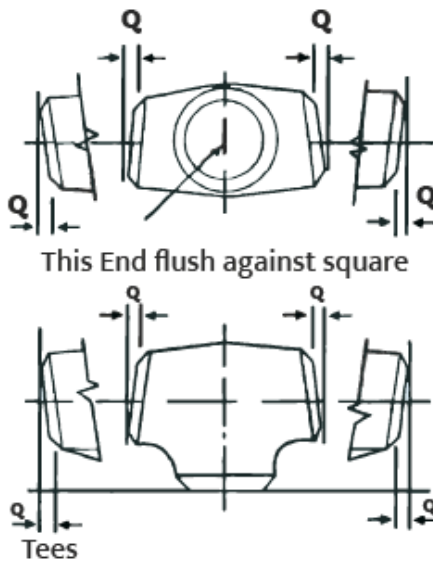
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Bangalore, 560091



DIMENSIONAL TOLERANCES AS PER ANSI B16.9 / B16.28 / MSS SP-43

BUTT WELD FITTING

ALL FITTING						REDUC-ERS		180 RETURNS						CAPS		ANGULARITY TOLERANCE															
Normal Pipe Size Inch/mm	Outside Diameter at Level	Inside Dia meter	Wall Thickness at End	Centre to End		Overall Length Dimensions		Centre to End		Back to Face Dimensions		Alignment of End Dimensions		Overall length		Nominal Pipe size	Off Angel Inch/mm	Off Place													
	D		T	A,B,C,M		H		O		K		U		E			Q	P													
	(1) B16.9 MSS Sp43	(2) B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43	B16.9 MSS Sp43													
1/2To2 1/2 80 To 90	±1.0	±0.79	±0.8		From 1/2 To 10 15 To 250	From 3/4" 2 To 10 15 To 250	From 1/2 To 10 15 To 250	From 1/2 To 8" 15 To 200							±4	±3.17	1/2" to 4" 15 To 100	1	1												
3" To5 1/2 80 To 90																	5 To8' 125 To 200	2	4												
4" 100	+2 -1																±1.6	±2	±1.59	±2	±1.59	±7	±6.35	±7	±6.35	±10	±0.79	10 To8' 125 To 200	3	5	
5" to 6" 125 to 150	+3 -1																±1.59											14 To16' 350 To 400	3	16" to 24" 400 To 600 1.6	7
8" 200	±2																-0.79	Not Less Than 87.5% Normal Thk.	Not Less Than 87.5% Normal Thk.									18" To 24" 450 To 600	4		10
10" To10" 250 To 450	+4 -3	+2.38 -0.79	±3.2		Form 12" to 30" ±3 300 to 750	±2.38	Form 12" to 30" ±3 300 to 750	10" to 24" ±2.38 250 To 600	±10"	±9.53			±2.0"	±1.59"			26" To 42" 650 To 750	5	26" to 36" 650 To 900 24	10											
20" To 21" 500 To 600	+6 5	+3.7 -0.79															32" To 42" 800 To 450	5		13											
26" To 18" 250 To 450	+7 -5	±4.8													±10		44" To 48" 1100 To 1200	5	38" to 48" 950 To 1200 3.2	20											
32" To 48" 800 to 1200	+7 -5																	42" To 48" 1050 To 1200	±5		±20										



NOTES:

Elongation in 2 in or 50mm (or 4D), min. %, Longitudinal Test Transverse.
All Grades except S 3005S and S 32953 SS S 3255S. Shore 20-Nooter
Refer to the requirements of A 213/A 213M tube, the tensile and yield strengths
values were 75 (s/m²) and 30 (205) respectively, for nominals wall greater than
3/16 in. (4.8 mm).



#T-3, Shop No. T-3/7, K.S.I.D.C., Main Road, 1st Stage,
Peenya Industrial Estate, Bangalore-560058

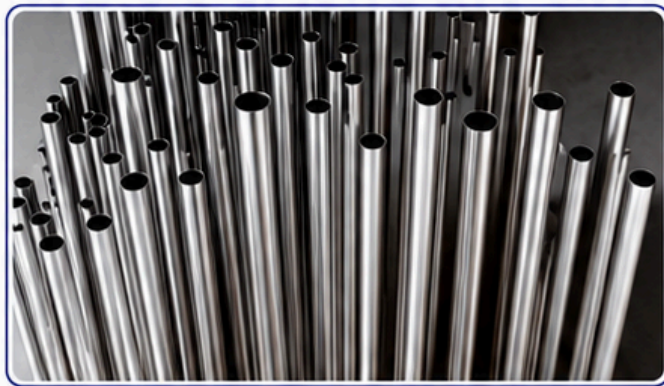


Plot No. 773# Siggegahalli Gate, Magadi Road,
Bangalore, 560091



TOLERANCE: ASTM SPECIFICATION FOR TUBING & PIPING

Specification	Allowable Outsize Diameter Variation in mm			Allowable Wall Thickness Variation		Exact Length Testing Tolerance in mm		
	Nominal Diameter	Over	Under	%Over	%Under	Over	Under	
ASTM-A213 Seamless Boiler Superheater and Heat Exchanger Tubes	Under 25.4	1016	1016	+20	-0	3.175	0	Tension Test Flattening Test Flare Test Hardness Test 100% Hydrostatic test Refer to ASTM A-450
	25.4-38.1 incl	1524	1524	+22	-0	3.175	0	
	38.1-50.8 excl	2032	2032	+22	-0	3.176	0	
	50.8-63.5 excl	254	254	+2	-0	4.46	0	
	63.5-76.2 excl	3048	3048	+22	-0	4.46	0	
	76.2-101.6 incl	381	381	+22	-0	4.76	0	
ASTM-A249 Welder Boiler Superheater Heat Exchanger And Condenser Tubes	Under 25.4	1016	1016	+10	-10	3.175	0	Tension Test Flattening Test Flare Test Reverse Bend Test Hardness Test 100% Hydrostatic Test 'Reverse flattening Test Refer to ASTM A-450 'Wherever applicable
	25.4-38.1 incl	1524	1524	+10	-10	3.175	0	
	38.1-50.8 excl	2032	2032	+10	-10	3.175	0	
	50.8-63.5 excl	254	254	+10	-10	4.76	0	
	63.5-76.2 excl	3048	3048	+10	-10	4.76	0	
	76.2-101.6 incl	381	381	+10	-10	4.76	0	
ASTM-A269 Seamless & Welded Tubing for General Service	Lintp 12.7	.13	.13	+15	-15	3.2	0	Flare Test Flance Test (Welded Only) Hardness Test Reverse Flattening Test (Welded only) 100% Hydrostatic Test Refer to ASTM-A269
	12.7-38.1 excl	.13	.13	+10	-10	3.2	0	
	38.1-88.9 excl	.25	.25	+10	-10	4.8	0	
	88.9-139.7 excl	.38	.38	+10	-10	4.8	0	
	139.7-203.2 excl	.76	.76	+10	-10	4.8	0	
ASTM-A213 Semiless & Weded Sanitary Tubing	25.4	.05	.20	+12.5	-12.5	3.2	0	Reverse Flattening Test 100% Hydrostatic Test Externa Polish on all tubes Refer to ASTM A-270
	38.1	.05	.20	+12.5	-12.5	3.2	0	
	50.8	.05	.20	+12.5	-12.5	3.2	0	
	60.5	.05	.28	+12.5	-12.5	3.2	0	
	76.2	.08	.30	+12.5	-12.5	3.2	0	
	101.	.08	38	+12.5	-12.5	3.2	0	
ASTM-A312 Semiless & Welded pipe	3.175-38.1 incl	.4	.79	Minimum wall 12.5% under nominal wall Specified		6.4	0	Tension Test Flattening Test 100% Hydrostatic Test Refer to ASTN A-530
	38.1-101.6 incl	.79	.79			6.4	0	
	101.6-203.2 imcl	1.59	.79			6.4	0	
						Noemally Random Lengths ordered		
ASTM-A358 Welded pipe	219.08-750mm or 0.01 inch	+0.5%		-0.3		6.0		Refer to ASTM A-530



NOTE:

Elongation in 2 in or 50mm (or 4D), min. % , Longitudinal Test Transverse.
All Grades except S 3005S and S 32953 SS S 3255S. Shore 20-Nooter
Refer to the requirements of A 213/A 213M tube, the tensile and yield strengths
values were 75 (s/m²) and 30 (205) respectively, for nominals wall greater than
3/16 in. (4.8 mm).



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Email: pipechemindustries@gmail.com

Email: sales@pipechem.in



Website: www.pipechem.in

CARBON STEEL, ALLOY STEEL LOW TEMP, PIPE AND TUBE SPECIFICATION

CHEMICAL									MECHANICAL PROPERTIES			SPECIFIC REQUIREMENT
									TENSILE STRENGTH	YEILD STRESS	ELONGGATI ON	
SPECIFICATION	WT	C %	Mn%	P % MAX	S % MAX	Si %	Cr%	Mo %	Mpa	Mpa	50mm MIN Longitudinal	
ASTM A53/A	AW	0.25MAX	0.95MAX	0.050	0.045	-	-	-	330 MIN	250 MIN	36	Cr Mo Cu Ni VA 40 15 40 40 08 Five elements not to exceed 1%
ASTM A53/B	AW	0.30MAX	0.120MAX	0.050	0.045	-	-	-	415 MIN	240 MIN	29/5	
ASTM/A 106/A	AW	0.25MAX	0.27-0.93	0.035	0.025	0.10 MIN	0.40 MAX	0.15 MAX	330 MIN	205 MIN	35/2	
ASTM A106/B	AW	0.30MAX	0.29-1.06	0.035	0.032	0.10 MIN	0.40 MAX	0.15 MAX	415 MIN	240 MIN	30/22	
ASTM A106/C	AW	0.35MAX	0.29-1.06	0.035	0.035	0.10 MIN	0.40 MAX	0.15 MAX	485 MIN	275 MIN	30/22	
ASTM A179	MW	0.06-118	0.27-0.63	0.035	0.035	-	-	-	325 MIN	180 MIN	35.0	Hardness 72 hrv Max Hardness 72 hrv Max Hardness 77 hrv Max Hardness 80 hrv Max Hardness 81 hrv Max Hardness 77 hrv Max Hardness 79 hrv Max Hardness 89 hrv Max
ASTM A214	MW	0.18MAX	0.27-0.63	0.035	0.035	-	-	-	385 MIN	180 MIN	35.0	
ASTM A192	MW	0.06-0.18	0.27-0.63	0.035	0.035	0.25 MAX	-	-	325 MIN	180 MIN	35.0	
ASTM A209/T1	MW	0.100-20	0.30-0.80	0.025	0.025	0.10-0.50	-	0.44-0.65	380 MIN	205 MIN	30/22	
ASTM A209/T1a	MW	0.15-0.25	0.30-0.80	0.025	0.025	0.10-0.50	-	0.44-0.65	365 MIN	195 MIN	30/22	
ASTM A209/T 1b	MW	0.14MAX	0.30-0.80	0.025	0.025	0.10-0.50	-	0.44-0.65	415 MIN	220 MIN	30/22	
ASTM A210A-1	MW	0.27MAX	0.93 MAX	0.035	0.035	0.10 MIN	-	-	415 MIN	255 MIN	30/22	
ASTM A210/C	MW	0.35MAX	0.23-1.06	0.035	0.035	0.10 MIN	-	-	485 MIN	275 MIN	30/22	
ASTM A213/T2	MW	0.100.20	0.30-0.61	0.025	0.025	0.10-0.30	0.50-0.81	0.44-0.65	415 MIN	205 MIN		Impact as-50f for 40x10 J18/17 50 f 40 x 10J 18/14 90 hrb mx
ASTM A213/T5	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50 MAX	4.00-6.00	0.44-0.65	415 MIN	205 MIN		
ASTM A213/T11	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	0.44-0.65	415 MIN	205 MN		
ASTM A213/T12	0.05	0.15MAX	0.30-0.61	0.025	0.025	0.50MAX	0.80-1.25	0.44-0.65	415 MIN	220 MIN		
ASTM A213/T22	0.05	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	1.90-1.60	0.87-1.13	415 MIN	205MIN		
ASTM A333/3	AW	0.19MAX	0.31-0.64	0.025	0.025	0.18-0.37	Ni	3.18-3.82	380 MIN	205 MIN	35/25	
ASTM A333/9	AW	0.30MAX	0.29-1.06	0.025	0.025	0.10 MIN	-	-	415 MIN	240 MIN	30/22	
ASTM A334/3	AW	0.19MAX	0.31-0.64	0.025	0.025	0.18-0.37	Ni	3.18-3.82	380 MIN	205 MIN	35/28	
ASTM A334/6	MW	0.30MAX	0.9-1.06	0.025	0.025	0.10 MIN	-	-	415 MIN	240 MIN	30/22	
ASTM A335/P1	AW	0.10-0.20	0.30-0.80	0.025	0.025	0.10-0.50	-	0.40-0.65	380 MIN	205 MIN	30/22	
ASTM A335/P2	AW	0.100-20	0.30-0.61	0.025	0.025	0.10-0.30	0.50-0.81	0.40-0.65	380 MIN	205 MIN	30/22	
ASTM A335/P5	AW	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	4.00-6.00	0.40-0.65	415 MIN	205 MIN	30/22	
ASTM A335/P11	0.05	0.15MAX	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	0.400-0.65	415 MIN	205 MIN	30/22	
ASTM A335/P12	0.05	0.15MAX	0.30-0.61	0.025	0.025	0.50MAX	0.80-1.25	0.40-0.65	415 MIN	205 MIN	50/22	
ASTM A335/P22	0.05	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	1.90-2.60	0.87-1.13	415 MIN	205 MIN	30/22	
BS/3059/1/33		0.15MAX	0.30-0.70	0.050	0.050	-	-	-	324-441	186 MIN	25	
BS/3059/2/33		0.15MAX	0.400-0.70	0.050	0.050	0.10-0.35	-	-	324-441	186 MIN	21	
BS/3059/2/45		0.120.18	0.90-1.20	0.035	0.035	0.10-0.35	-	-	441-560	245 MIN	22	
BS/3059/2/620		0.100.15	0.40-0.70	0.040	0.040	0.10-0.35	0.70-1.10	0.45-0.65	441-618	235 MIN	22	HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX
DIN/17175/ST35.8		0.17MAX	0.40MIN	0.040	0.040	0.35MAX	-	-	340-441	235 MIN	25	
DIN/17175/ST45.8		0.22MAX	0.45MIN	0.040	0.040	0.10-0.35	-	-	441-540	255 MIN	25	
DIN/17175/15MO3		0.120.20	0.50-0.80	0.040	0.040	0.10-0.35	-	0.250-0.35	441-540	284 MIN	21	
DIN/17175/13CrMo44		0.10-0.18	0.40-0.70	0.040	0.040	0.100-35	0.70-1.60	0.40-0.50	441-570	294 MIN	22	
DIN/17175/10CrM910		0.15MAX	0.40-0.60	0.040	0.040	0.15-0.50	2.0-2.5	0.9-1.10	441-570	294 MIN	22	
ASTM A199/T5	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	4.00-6.00	0.45-0.65	415 MIN	170 MIN	30/22	
ASTM A199/T11	MW	0.05-0.15	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	0.44-0.65	415 MIN	170 MIN	30/22	
ASTM A199/T22	MW	0.05-0.15	0.30-0.60	0.025	0.025	0.50MAX	1.90-2.60	0.87-1.13	415 MIN	170 MIN	30/22	
ASTM A199/T4	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50-1.00	2.15-2.85	0.44-0.65	415 MIN	170 MIN	30/22	
ASTM A199/T7	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50-1.00	6.00-8.00	0.45-0.65	415 MIN	170 MIN	30/22	HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX HARDNESS 85 HRB MAX
ASTM A200/T5	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	4.00-6.00	0.45-0.65	415 MIN	170 MIN	30/22	
ASTM A200/T11	MW	0.05-0.15	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	0.44-0.65	415 MIN	170 MIN	30/22	
ASTM A200/T22	MW	0.05-0.15	0.30-0.60	0.025	0.025	0.50MAX	1.90-2.60	0.87-1.13	415 MIN	170 MIN	30/22	
ASTM A200/T4	MW	0.05-0.15	0.30-0.60	0.025	0.025	0.50-1.00	2.15-2.85	0.44-0.85	415 MIN	170 MIN	30/22	
ASTM A200/T7	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50-1.00	6.00-8.00	0.45-0.65	415 MIN	170 MIN	30/22	
ASTM A199/T9	MW	0.15MAX	0.30-0.60	0.025	0.025	0.25-1.00	8.00-1.00	0.90-1.10	415 MIN	170 MIN	30/22	
ASTM A200 T9	MW	0.15MAX	0.30-0.60	0.025	0.025	0.25-1.00	8.00-1.00	0.90-1.10	415 MIN	170 MIN	30/22	
ASTM A213/T9	MW	0.15MAX	0.30-0.60	0.025	0.025	0.25-1.00	8.00-1.00	0.90-1.10	415 MIN	170 MIN	30/22	
ASTM A335/P9	MW	0.15MAX	0.30-0.60	0.025	0.025	0.25-1.00	8.00-10.00	0.090-1.10	415 MIN	172 MIN	30/22	
ASTM A178 A	MW	0.06-0.18	0.30-0.63	0.035	0.035	-	-	-	325 MIN	180 MIN	35	
ASTM A178 C	MW	0.35MAX	0.80 MAX	0.035	0.035	-	-	-	415 MIN	255 MIN	30	
ASTM A178 B	MW	0.27MAX	10-15	0.030	0.015	0.10 MIN	-	-	485 MIN	275 MIN	30	





CHEMICAL & PHYSICAL PROP. OF CARBON STEEL, STAINLESS STEEL, AND ALLOY STEEL FORGED FITTINGS

ASTM Grade	C	Mn	Si	S	P	Cr	Ni	Mo	Other	Tensile PSI(Kg/mm ²)	Yield PSI(Kg/mm ²)	Elongation %	Hardness BHN	Redn. in Area
A105	0.35 max	0.60 1.05	0.35 max	0.050 max	0.040 max	-	-	-	-	70000 49.46	36000 (25.50)	30Strip 22Round	187	30% Round
A 181 CI 50 & 70	0.35 max	1.10 max	0.32 max	0.35 min	0.05 max	-	-	-	-	CI.70-700000(49.46) CI.60-600000(42.32)	30000(20.90) 30000(25.25)	22	-	35%
A 182 F 304	0.08 max	2.00 max	1.00 max	0.03 max	0.04 max	18.0 20.0	8.0 11.0	-	-	75000 (52.52)	30000 (20.90)	30	-	50%
A 182 F 304 L	0.085 max	2.00 max	1.00 max	0.03 max	0.04 max	18.0 20.0	8.0 13.0	-	-	70000 (49.46)	25000 (17.34)	30	-	50%
A 182 F 304 N	0.08 max	2.00 max	0.75 max	0.03 max	0.04 max	18.4 20.0	8.0 10.50	-	-	80000 (56.09)	35000 (24.47)	30(long) 25(trans)	-	50% (long) 45 (trans)
A 182 F 316	0.08 max	2.00 max	1.00 max	0.03 max	0.04 max	16 18.5	10.0 14.0	2.0 3.0	M=0.1-0.16	75000 (52.52)	30000 (20.90)	30	-	50%
A 182 F 316L	0.35 max	2.00 max	1.00 max	0.03 max	0.04 max	16 18.0	10.0 15.0	2.0 3.0	-	70000 (49.46)	25000 (17.34)	30	-	50%
A 182 F 316H	0.04 0.10	2.00 max	1.00 max	0.03 max	0.04 max	16 18.0	10. 14.0	2.0 3.0	-	75000 (52.52)	3000 (20.90)	30	-	50%
A 182 F 321	0.08 max	2.00 max	1.00 max	0.03 max	0.04 max	17 min	9 12.0	2.0 3.0	TI+Cx5 0.74 max	75000 (52.52)	30000 (20.90)	30	-	50%
A 182 F 310	0.15 max	2.00 max	1.00 max	0.03 max	0.04 max	24.0 26.0	19.0 22.0	-	-	75000 (52.52)	3000 (20.90)	30	-	50%
A 182 F 317L	0.03 max	2.00 max	1.00 max	0.03 max	0.045 max	18.0 20.0	11.0 15.0	3.0 4.0	-	70000 (49.46)	25000 (17.34)	30	-	50%
A 182 F 317H	0.04 max	2.00 max	1.00 max	0.03 max	0.04 max	17.0 20.0	9.0 13.0	-	Cb+Ta+ -8C-1.0	75000 (52.52)	30000 (20.90)	30	-	50%
A 182 F1	0.28 max	0.60 max	0.15 0.35	0.045 max	0.045 max	-	-	0.44 0.65	-	70000 (49.46)	40000 (28.05)	20	143-192	30
A 182 F12 Class 2	0.10 0.20	0.30 0.80	0.10 0.60	0.04 max	0.04 max	0.8 1.25	-	0.44 0.65	-	70000 (49.46)	40000 (28.05)	20	143-207	30
A 182 F 11 Class 2	0.10 0.20	0.30 0.80	0.50 1.0	0.04 max	0.04 max	1.0 1.50	-	0.44 0.65	-	70000 (49.45)	40000 (28.05)	20	143-207	30
A 182 F 22 Class 3	0.05 0.15	0.30 0.60	0.5 max	0.04 max	0.04 max	2.0 2.50	-	0.87 1.13	-	75000 (52.52)	45000 (31.7)	20	156-207	30
A 182 F5	0.05 max	0.30 0.60	0.5 max	0.03 max	0.03 max	4.0 6.0	0.5 max	0.44 0.65	-	70000 (49.45)	40000 (28.05)	20	143-217	35
A 182 F9	0.05 max	0.30 0.60	0.5 max	0.03 max	0.03 max	8.0 10.0	-	0.90 1.10	-	85000 (56.65)	55000 (38.75)	20	179-217	40





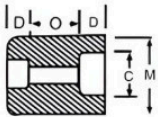
Email: pipechemindustries@gmail.com
Email: sales@pipechem.in



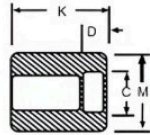
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SOCKET WELD FITTING TO ANSI B-16.11

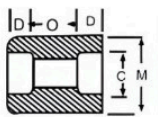
REDUCER



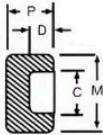
HALF COUPLING



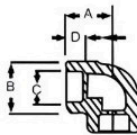
COUPLING



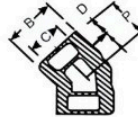
CAP



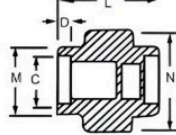
90° ELBOW



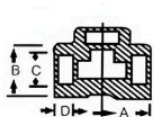
45° ELBOW



UNION

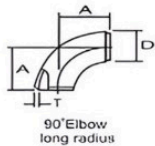


TEE



NOM BORE	PIPE O.D	3000 LBS.									COMMON FACTORS					6000 LBS			
		A max	B max	K	J	L	M	N	P	Q	C min.	D min.	O min.	O min.	A	B	M	K	N
1/8"	10.3	22	18.5	26	16	40	17.3	32	15	10	10.7	10	5	8	22	22	20	25	46
1/4"	13.7	22	22	26	18	43	21.2	32	15	10	14.1	10	5	8	27	25	24	25	51
3/8"	17.2	25	25	26	19	48	25.4	36	16.5	10	17.6	10	3	9	27	28	28	26	60
1/2"	21.3	27	35	30	21	51	31	41	16.5	10	21.7	10	6	13	31	34	34	31	72
3/4"	26.7	34	38	36	24	57	37	50	19.5	13	27	13	6	13	37	42	41	35	80
1"	33.4	37	46	40	25	64	45.2	60	22.5	13	33.8	13	9	17	42	50	50	40	94
1 1/4"	42.2	42	56	40	29	70	55	70	22.5	13	42.6	13	9	17	47	59	58	41	100
1 1/2"	48.3	47	62	40	30	79	61.4	78	24	13	48.7	13	9	17	53	67	66	43	122
2"	60.3	56	75	52	37	89	75	95	29	13	61.2	16	15	23	59	84	83	55	
2 1/2"	73.02	60	92	52	48	114	91.3	125	32	16	73.8	16	14	24		102		56	
3"	89.00	76	110	52	51	127	108.8	140	35	16	89.8	16	14	24		121		58	
4"	114.50	88	137	58		150	136.9		42	19	115.5	19	14	24		152		64	

FORGED SCREWED FITTING TO ANSI B-16.11 3000/6000 LBS THREADED TO ASA B 2.1



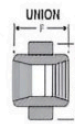
90° ELBOWS



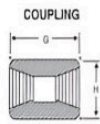
TEE



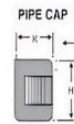
45° ELBOW



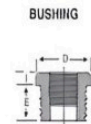
UNION



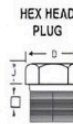
COUPLING



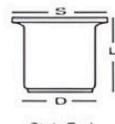
PIPE CAP



BUSHING



HEX HEAD PLUG



Stub-End

NOM BORE	PIPE O.D.	3000 LBS								COMMON FACTORS					6000 LBS				
		A	B	C	G	H	K	D	E	F	I	J	L	A	B	C	G	H	K
1/8"	10.3	21	22	17	32	16	19	11	15	40	-	6	-	25	25	19	32	22	-
1/4"	13.7	25	25	19	35	19	25	16	11	43	3	6	32	29	33	24	35	25	27
3/8"	17.2	29	33	22	38	22	25	17.5	16	48	4	8	38	33	38	28	38	32	27
1/2"	21.3	33	38	25	48	29	32	22	15	51	5	8	46	38	46	29	48	38	33
3/4"	26.7	38	46	29	51	35	37	27	16	57	6	10	51	44	56	33	51	44	38
1"	33.4	44	56	33	60	44	41	35	19	64	6	10	60	51	62	35	60	57	43
1 1/4"	42.2	51	62	35	67	57	44	44.5	21	70	7	14	72	60	75	43	67	64	64
1 1/2"	48.3	60	75	43	79	64	44	51	21	79	8	16	80	64	84	44	79	76	48
2"	60.3	64	84	45	86	76	48	63.5	22	88	9	17	94	83	102	52	86	92	51
2 1/2"	73.02	83	102	52	92	92	60	76	27	118	10	21	122	95	121	64	92	108	64
3"	89.00	95	121	64	108	108	65	89	29	121	10	25	140	106	146	79	108	127	68
4"	114.5	114	152	79	121	140	68	117.5	32	150	13	25	180	114	152	79	121	159	75



#T-3, Shop No. T-3/7, K.S.I.D.C., Main Road,
1st Stage, Peenya Industrial Estate, Bangalore-560058



Plot No. 773# Siggehalli Gate,
Magadi Road, Bangalore, 560091

CHEMICAL COMPOSITION

ASTM A353-78 PRESSURE VESSEL PLANES ALLOY STEEL, 9 PERCENT NICKEL, DOUBLE- NORMALIZED & TEMPERED

Chemical Composition %							Tensile Test		
Designation max	C	Si max	Mn max	P max	S	Ni	Tensile Strength ksi (MPa)	Yield Strength ksi (Mpa) min	Elongation x min, GL-2 in or 50 mm
A 353	0.13	0.15 – 0.30	0.90	0.035	0.040	8.50–9.50	100 – 120 (690 – 825)	75(515)	20

ASTM A387-78 PRESSURE VESSEL PLATES, ALLOY STEEL, CHROMIUM – MOLYBDENUM

CHEMICAL COMPOSITION, %										
Designation	Specification	C max	Si max	Mn max	P max	S max	Cr	Mo	Tensile Strength ksi (Mpa)	Yield Strength (0.2% offset) Ksi (Mpa) min
A 387	Grade 2	0.21	0.15 – 0.30	0.35 – 0.80	0.035	0.040	0.50 – 0.80	0.45 – 0.60	55–60 (380–550)	33 (230)
	Grade 12	0.17	0.15 – 0.30	0.40 – 0.65	0.035	0.040	0.80 – 1.15	0.45 – 0.60	55–60 (380–550)	33 (230)
	Grade 11	0.17	0.50 – 0.80	0.40 – 0.65	0.035	0.040	1.00 – 1.50	0.45 – 0.65	60–65 (415–585)	35 (240)
	Grade 22	0.15*	0.50 max	0.30 – 0.60	0.035	0.035	2.00 – 2.50	0.90 – 1.10	60–65 (415–585)	35 (240)
	Grade 21	0.15*	0.50 max	0.30 – 0.60	0.035	0.035	2.75 – 2.25	0.90 – 1.10	60–65 (415–585)	30 (205)
	Grade 5	0.15	0.50 max	0.30 – 0.60	0.040	0.030	4.00 – 6.00	0.45 – 0.65	60–65 (415–585)	30 (205)
	Grade 7	0.15	1.00 max	0.30 – 0.60	0.030	0.030	6.00 – 8.00	0.45 – 0.65	60–65 (415–585)	30 (205)
	Grade 9	0.15	1.00 max	0.30 – 0.60	0.030	0.030	8.00 – 10.00	0.90 – 1.10	60–65 (415–585)	30 (205)

- 1). The carbon content for plates over 5 inch (127 mm) in thickness is 0.17% max. on product analysis.
- *2). a) For plates under 0.312 inch (7.92 mm) in thickness, a deduction of 1.25% from the specified percentage of elongation shall be made for each decrease of 0.031 inch (0.79 mm) of the specified thickness under 0.312 inch.
- b) For plates over 3.5 inch (88.9 mm) in thickness, a deduction of 0.3% from the specified percentage of elongation in 2 inch (50 mm) shall be made for each increase of 0.05 inch of the specified thickness over 3.5 in this deduction shall not exceed 3%
- c) For plates upto the including 3/4 inch thickness, if the percentage of elongation of an 8 inch or 200 mm gauge length test specimen falls not more than 3% below the amount prescribed, the elongation shall be considered satisfactory provided the percentage of elongation in 2 inch (50 mm) across the break is not less than 25%.
- *3). Measured on round test specimen.
- *4). Measured on flat test specimen
- *5). Applicable to annealed and normalised-tempered materials
- *6). Not applicable to annealed material



CARBON STEEL / ALLOY STEEL SEAMLESS

Nominal pipe size inches	O D mm	Schedule 10		Schedule 20		Schedule 30		Standard		Schedule 40		Schedule 60	
		Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.
1/8	10.3							1.7	0.357	1.7	0.357		
1/4	13.7							2.2	0.625	2.2	0.625		
3/8	17.1							2.3	0.848	2.3	0.848		
1/2	21.3							2.8	1.26	2.8	1.26		
3/4	26.7							2.9	1.68	2.9	1.68		
1	33.4							3.4	2.50	3.4	2.50		
1 1/4	42.2							3.6	3.38	3.6	3.38		
1 1/2	48.3							3.7	4.05	3.7	4.05		
2	60.3							3.9	5.43	3.9	5.43		
2 1/2	73.0							5.2	8.62	5.2	8.62		
3	88.9							5.5	11.3	5.5	11.3		
3 1/2	101.6							5.7	13.6	5.7	13.6		
4	114.3							6.0	16.1	6.0	16.1		
5	141.3							6.6	21.8	6.6	21.8		
6	168.3							7.1	28.2	7.1	28.2		
8	219.1			6.4	33.3	7.0	36.7	8.2	42.5	8.2	42.5	10.3	53.1
10	273.0			6.4	41.7	7.8	50.9	9.3	60.2	9.3	60.2	12.7	81.5
12	323.9			6.4	49.7	8.4	65.1	9.5	73.8	10.3	79.7	14.3	109.0
14	355.6	6.4	54.6	7.9	68.1	9.5	81.2	9.5	81.2	11.1	94.3	15.1	126.0
16	406.4	6.4	62.6	7.9	77.9	9.5	93.1	9.5	93.1	12.7	123.0	16.7	160.0
18	457.2	6.4	70.5	7.9	87.8	11.1	122.0	9.5	105.0	14.3	156.0	19.0	206.0
20	508.0	6.4	78.5	9.5	117.0	12.7	155.0	9.5	117.0	15.1	183.0	20.6	248.0
22	558.8	6.4	88.5	9.5	129.0	12.7	171.0	9.5	129.0			22.2	294.0
24	609.6	6.4	94.7	9.5	141.0	14.3	210.0	9.5	141.0	17.4		24.6	355.0
26	660.4	7.9	128.0	12.7	203.0			9.5	153.0				
28	711.2	7.9	138.0	12.7	219.0	15.9	272.0	9.5	165.0				
30	762.0	7.9	147.0	12.7	234.0	15.9	292.0	9.5	176.0				
32	812.8	7.9	157.0	12.7	250.0	15.9	312.0	9.5	188.0				
34	863.6	7.9	167.0	12.7	266.0	15.9	332.0	9.5	200.0				
36	914.4	7.9	177.0	12.7	282.0	15.9	351.0	9.5	212.0				



PIPE DIMENSION & WEIGHT

AS A PIPE SCHEDULES

WALL = WALL THICKNESS IN MILLIMETER

WT = WEIGHT IN KG PER MTR

[illegible]

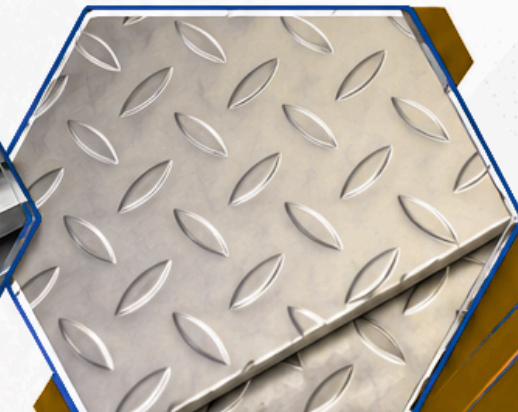
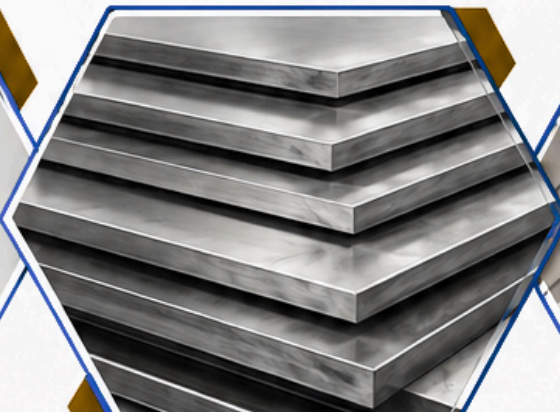
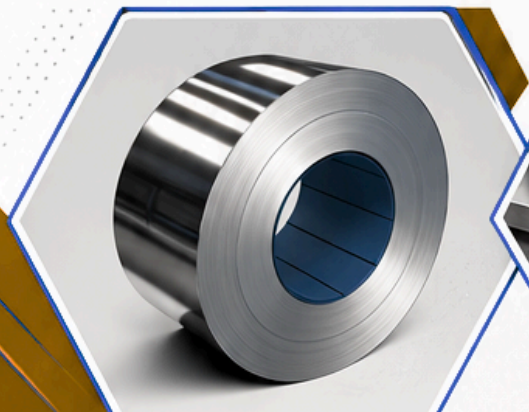


MECHANICAL PROPERTIES

ALLOY STEEL PLATES - MECHANICAL PROPERTIES ASTMA -387 GRADE 2, 7, 9, 11, 12, 22 CLASS 1&2

Tensile Test

Class 1*5					Class 2*6			Heat Treatment Tempering Temperature
Elongation %min		Reduction of area %min	Tensile Strength Ksi(MPa)	Yield Strength (0.020%Offset) Ksi(MPa)	Elongation %min		Reduction of Area % min	
GL=6 in. or 2 or 200 mm	GL=2 in. or 50 m				GL=6 in. or 2 or 200 mm	GL=2 in. or 50 m		
18	22	- -	70-90 (485-620)	45 (310)	18	22	- -	1,150°F(620°C)and over
18	22	- -	65-85 (450-585)	40 (310)	19	22	- -	1,150°F(620°C)and over
19	22	- -	75-100 (515-690)	45 (310)	18	22	- -	1,150°F(620°C)and over
- -	18	45*3 40*4	75-100 (515-690)	45 (310)		18	45*3 40*4	1,250°F(675°C)and over
- -	18	45*3 40*4	75-100 (515-690)	45 (310)		18	45*3 40*4	1,300°F(705°C)and over
- -	18	45*3 40*4	75-100 (515-690)	45 (310)		18	45*3 40*4	1,250°F(675°C)and over 1,250°F(675°C)and over
- -	18	45*3 40*4	75-100 (515-690)	45 (310)		18	45*3 40*4	1,300°F(705°C)and over 1,250°F(675°C)and over
- -	18	45*3 40*4	75-100 (515-690)	45 (310)		18	45*3 40*4	1,250°F(675°C)and over



#T-3, Shop No. T-3/7, K.S.I.D.C.,
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Peenya Industrial Estate,
Bangalore-560058



Plot No. 773# Siggehalli Gate,
Magadi Road,
Bangalore, 560091

DIMENSION OF 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	O.D.	P.C.D	No. of Bolt	Dia of Bolt	Thickness
1/2"	21.3	95.3	66.7	4	12.7	4.8
3/4"	26.7	101.6	73.0	4	12.7	4.8
1"	33.4	114.3	82.6	4	12.7	4.8
1.1/4"	42.2	120.7	87.3	4	12.7	6.4
1.1/2"	48.3	133.4	98.4	4	12.7	6.4
2"	60.3	152.4	114.3	4	15.9	7.9
2.1/2"	73.0	165.1	127.0	4	15.9	7.9
3"	88.9	184.2	146.1	4	15.9	9.5
3.1/2"	101.6	203.2	165.1	4	15.9	9.5
4"	114.3	215.9	177.8	4	15.9	9.5
5"	141.3	254.0	209.6	8	15.9	12.7
6"	168.3	279.4	228.6	8	15.9	12.7
7"	190.5	304.8	260.4	8	15.9	12.7
8"	219.1	336.6	292.1	8	15.9	12.7
9"	244.5	368.3	323.9	8	15.9	15.9
10"	273.0	406.4	355.6	8	19.1	15.9
12"	323.9	457.2	406.4	12	19.1	15.9
14"	355.6	527.1	469.9	12	22.2	19.1
16"	406.4	577.9	520.7	12	22.2	19.1
18"	457.2	641.4	584.2	12	22.2	22.2
20"	503.0	704.9	641.4	16	22.5	25.4
24"	609.6	825.5	755.7	16	25.4	28.6

TABLE E

For Working Steam Pressure upto 100 lbs per sq. inch

Nominal Pipe Size	O.D. OF Pipe	O.D.	P.C.D	No. of Bolt	Dia of Bolt	Thickness
1/2"	21.3	95.3	66.3	4	12.7	6.4
3/4"	26.7	101.6	73.0	4	12.7	6.4
1"	33.4	114.3	82.6	4	12.7	7.1
1.1/4"	42.2	120.7	87.3	4	12.7	7.9
1.1/2"	48.3	133.4	98.4	4	12.7	8.7
2"	60.3	152.4	114.3	4	15.9	9.5
2.1/2"	73.0	165.1	127.0	4	15.9	10.3
3"	88.9	184.2	146.1	4	15.9	11.1
3.1/2"	101.6	203.0	165.1	8	15.9	11.9
4"	114.3	215.9	177.8	8	15.9	12.7
5"	141.3	254.0	209.6	8	15.9	14.3
6"	168.3	279.4	228.6	8	19.1	17.5
7"	190.5	304.8	260.4	8	19.1	19.1
8"	219.1	336.6	292.1	8	19.1	19.1
9"	244.5	368.3	323.9	12	19.1	20.6
10"	273.0	406.4	355.6	12	19.1	22.2
12"	323.9	457.2	406.4	12	22.2	25.4
14"	355.6	527.2	469.9	12	22.2	25.4
16"	406.4	577.9	520.7	12	22.2	25.4
18"	457.2	641.4	584.2	16	22.2	28.6
20"	503.0	704.9	647.4	16	22.2	31.8
24"	609.6	825.5	755.7	16	25.4	38.1

TABLE F

For Working Steam Pressure above 100 lbs and upto 150 lbs per sq. inch

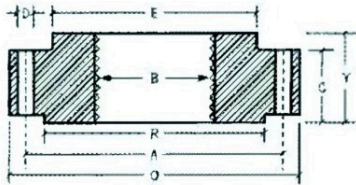
Nominal Pipe Size	O.D. OF Pipe	O.D.	P.C.D	No. of Bolt	Dia of Bolt	Thickness
1/2"	21.3	95.3	66.7	4	12.7	9.5
3/4"	26.7	101.6	73.0	4	12.7	9.5
1"	33.4	120.7	82.6	4	15.9	9.5
1.1/4"	42.2	133.4	98.4	4	15.9	12.7
1.1/2"	48.3	139.7	114.3	4	15.9	12.7
2"	60.3	165.1	127.0	4	15.9	15.9
2.1/2"	73.0	184.2	146.1	8	15.9	15.9
3"	88.9	203.2	165.1	8	15.9	15.9
3.1/2"	101.6	215.9	177.8	8	15.9	19.1
4"	114.3	228.6	190.5	8	15.9	19.1
5"	141.3	279.4	235.0	8	19.1	22.2
6"	168.3	304.8	260.4	12	19.1	22.2
7"	190.5	336.6	292.1	12	19.1	22.2
8"	219.1	368.3	323.9	12	19.1	25.4
9"	244.5	406.4	355.6	12	22.2	25.4
10"	273.0	431.8	381.0	12	22.2	25.4
12"	323.9	489.0	438.2	16	22.2	28.6
14"	355.6	552.5	495.3	16	25.4	31.8
16"	406.4	609.6	552.5	20	25.4	31.8
18"	457.2	673.1	609.6	20	28.6	34.9
20"	503.0	736.6	673.1	24	28.6	38.1
24"	609.6	850.9	781.1	24	31.8	41.3

TABLE H

For Working Steam Pressure above 150 lbs and upto 250 lbs per sq. inch

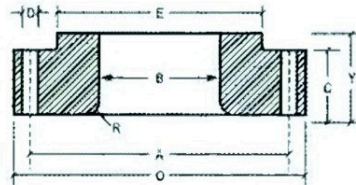
Nominal Pipe Size	O.D. OF Pipe	O.D.	P.C.D	No. of Bolt	Dia of Bolt	Thickness
1/2"	21.3	114.3	82.6	4	15.9	12.7
3/4"	26.7	114.3	82.6	4	15.9	12.7
1"	33.4	120.7	87.3	4	15.9	14.3
1.1/4"	42.2	133.4	98.4	4	15.9	17.5
1.1/2"	48.3	139.7	104.8	4	15.9	17.5
2"	60.3	165.1	127.0	4	15.9	19.1
2.1/2"	73.0	184.0	146.1	8	15.9	19.1
3"	88.9	203.2	165.1	8	15.9	22.2
3.1/2"	101.6	215.9	177.8	8	15.9	22.2
4"	114.3	228.6	190.5	8	15.9	25.4
5"	141.3	279.4	235.0	8	19.1	28.6
6"	168.3	304.8	260.4	12	19.1	28.6
7"	190.5	335.6	292.1	12	19.1	31.8
8"	219.1	363.3	323.9	12	19.1	31.8
9"	244.5	406.4	355.6	12	22.2	34.9
10"	273.0	431.8	381.0	12	22.2	34.9
12"	323.9	489.0	438.2	16	22.2	38.1
14"	355.6	552.5	495.3	16	25.4	41.3
16"	406.4	609.6	552.5	20	25.4	44.5
18"	457.2	673.1	609.6	20	28.6	47.6
20"	508.0	736.6	673.1	24	28.6	50.8
24"	609.6	850.9	781.1	24	31.8	57.2

DIMENSION OF FLANGES AS PER TABLE BS-10



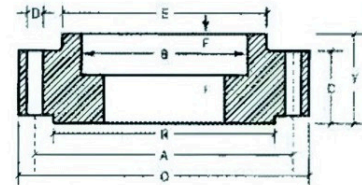
THREADED

Nominal Pipe Size	Approx Weight		
	S/O	Blind	W/N
15	0.4	0.4	0.5
20	0.7	0.7	0.7
25	0.8	0.9	1.1
32	1.1	1.3	1.5
40	1.4	1.6	1.8
50	2.2	2.6	2.7
65	3.6	4.1	4.4
80	4.1	5	5.2
100	5.6	7.1	7.5
125	6.3	9	9.2
150	7.5	11.8	11
200	12.6	21	18.3
250	18.5	30	25
300	28	45	39
350	36	59	51
400	46	79	60
450	50	97	71
500	64	124	88
600	89	188	119



LAP JOINT

Nominal Pipe Size	Approx Weight		
	S/O	Blind	W/N
15	0.7	0.7	0.8
20	1.1	1.2	1.3
25	1.4	1.5	1.7
32	1.8	2	2.2
40	2.6	2.9	3.2
50	3.4	3.4	3.6
65	4.4	5.1	5.4
80	6.1	7	7.4
100	10.1	11.8	11.9
125	12.5	15.5	16
150	14.1	21.3	20.2
200	24.8	35.2	31
250	37.1	57	44.3
300	50	82	64
350	70	106	88
400	97	140	113
450	123	178	134
500	133	223	171
600	203	345	238



SOCKET WELD

Nominal Pipe Size	Approx Weight		
	S/O	Blind	W/N
15	0.8	0.7	0.9
20	1.4	1.2	1.5
25	1.6	1.5	1.9
32	2.1	2	2.6
40	3.1	3.2	3.3
50	3.7	4.3	4.7
65	5.4	6	6.5
80	7.3	8	8.7
100	15.88	18	18.1
125	24.5	28.5	30.5
150	29.5	35.5	36.2
200	43	58	49.5
250	70	98	89
300	86	125	110
350	100	151	150
400	142	215	190
450	175	275	240
500	221	350	295
600	315	532	363

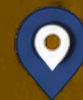
Nominal Pipe Size	Approx Weight		
	S/O	Blind	W/N
15	1.7	1.8	1.9
20	2.3	2.4	2.6
25	3.4	3.6	3.6
32	3.9	4.1	4.4
40	5.4	5.8	6.1
50	9.8	10.1	11.1
65	11.6	13.1	14
80	11.6	14	15.5
100	19.8	22.11	23.2
125	32	36.5	37.1
150	41.2	47.4	49.3
200	71	82.5	84
250	100	123	123
300	133	174	163
350	152	206	186
400	184	259	224
450	258	367	300
500	317	463	373
600	608	875	680

Nominal Pipe Size	Approx Weight		
	S/O	Blind	W/N
15	1.7	1.8	1.9
20	2.3	2.4	2.6
25	3.4	3.6	3.8
32	3.9	4.1	4.4
40	5.4	5.8	6.1
50	9.8	10.1	11.1
65	13.7	14	15.5
80	18	19	20.4
100	27.8	30	30.5
125	52	58	58
150	61	72	70
200	104	122	119
250	175	210	204
300	264	315	303

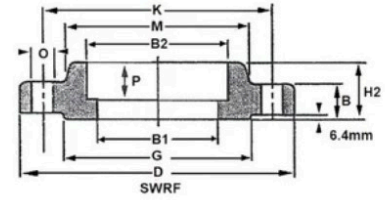
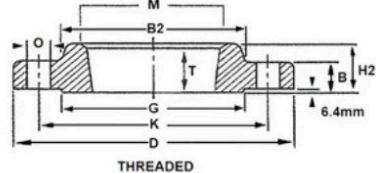
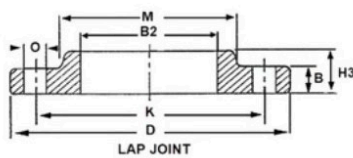
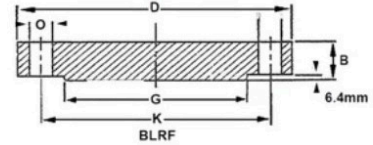
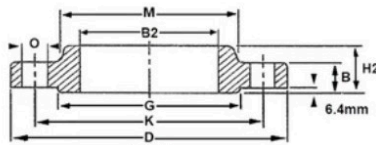
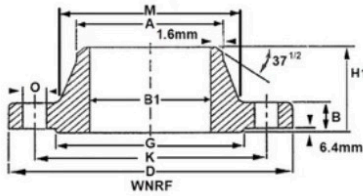
Nominal Pipe Size	Approx Weight		
	S/O	Blind	W/N
15	1.7	1.8	1.9
20	2.3	2.4	2.6
25	3.4	3.6	3.8
32	3.9	4.1	4.4
40	5.4	5.8	6.1
50	9.8	10.1	11.1
65	13.7	14	15.5
80	18	19	20.4
100	27.8	30	30.5
125	52	58	58
150	61	72	70
200	104	122	119
250	175	210	204
300	264	315	303



#T-3, Shop No. T-3/7, K.S.I.D.C.,
Main Road, 1st Stage,
Peenya Industrial Estate,
Bangalore-560058



Plot No. 773# Siggehalli Gate,
Magadi Road,
Bangalore, 560091



DIMENSIONS IN MM OF ANSI B 16.5 CLASS 150

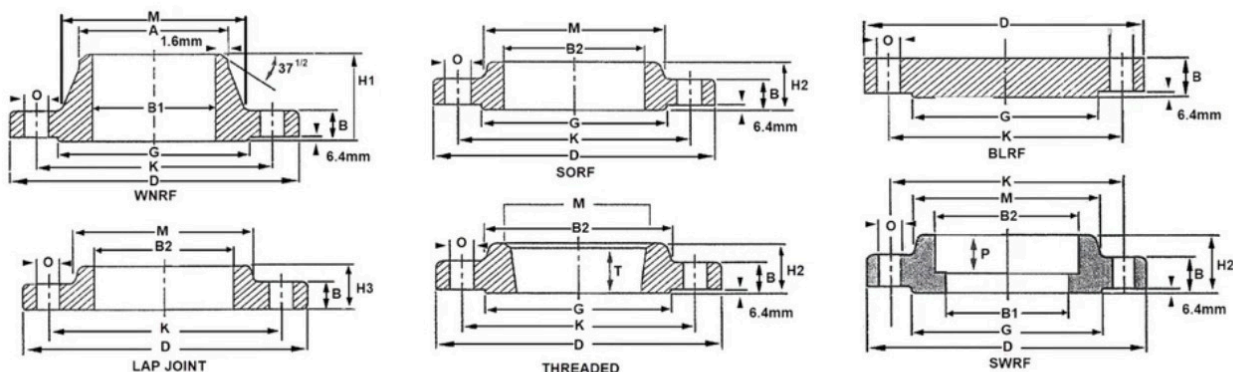
Size	D	B	G	M	H1	H2	H3	A	B1	B2	K	N	O	DEP
	O.D.	THK	R.F.DIA	HUB OD	W/N	SORF	LAP JOINT	Neck OD	WINRF ID	ID SW/ LAP/SORF	PCD	NO.OF HOLES	HOLE DIA	P
1/2	88.9	11.1	34.9	30.2	47.6	15.9	15.9	21.3	15.7	22.35	60.3	4	15.9	9.65
3/4	98.4	12.7	42.9	38.1	52.4	15.9	15.9	26.7	20.8	27.70	69.8	4	15.9	11.14
1	107.9	14.3	50.8	49.2	55.6	17.5	17.5	33.5	26.7	34.54	79.4	4	15.9	12.7
1.1/4	117.5	15.9	63.5	58.7	57.1	20.6	20.6	42.2	35.1	43.20	88.9	4	15.9	14.3
1.1/2	127.0	17.5	73.0	65.1	61.9	22.2	22.2	48.3	40.9	49.50	98.4	4	15.9	15.9
2	152.4	19.1	92.1	77.8	63.5	25.4	25.4	60.4	52.6	62.00	120.6	4	19.0	17.5
2.1/2	177.8	22.2	104.8	90.5	69.8	28.6	28.6	73.1	62.7	74.70	139.7	4	19.0	19.0
3	190.5	23.8	127.0	107.9	69.8	30.2	30.2	88.9	78.0	90.70	152.4	4	19.0	20.6
3.1/2	215.9	23.8	139.7	122.2	71.4	31.7	31.7	101.6	90.2	103.50	177.8	8	19.0	22.3
4	228.6	23.8	157.2	134.9	76.2	33.3	33.3	114.3	102.4	116.00	190.5	8	19.0	23.8
5	254.0	23.8	185.7	163.5	88.9	36.5	36.5	141.2	128.3	143.80	215.9	8	22.2	23.8
6	279.4	25.4	215.9	192.1	88.9	39.7	39.7	168.4	152.4	170.50	241.3	8	22.2	26.9
8	342.9	28.6	269.9	246.1	101.6	44.4	44.4	219.2	202.7	221.50	298.4	8	22.2	31.7
10	406.9	30.2	323.8	304.8	101.6	49.2	49.2	273.0	254.5	276.40	361.9	12	25.4	33.2
12	482.6	31.8	381.0	365.1	114.3	55.6	55.6	323.8	304.8	327.20	431.8	12	25.4	39.6
14	533.4	34.9	412.7	400.0	127.0	57.1	79.4	355.6	336.6	359.20	476.2	12	28.6	41.4
16	596.9	36.5	469.9	457.2	127.0	63.5	87.3	406.4	387.35	410.50	539.7	16	28.6	44.4
18	635.0	39.7	533.4	504.8	139.7	68.3	96.8	457.2	438.15	461.80	577.8	16	31.7	49.2
20	698.5	42.9	584.2	558.8	144.5	73.0	103.2	508.0	489.00	513.10	635.0	20	31.7	54.1
22	749.3	46.0	641.3	609.6	149.2	79.4	107.9	558.0	539.75	564.40	692.1	20	34.9	60.4
24	812.8	47.6	692.1	663.6	152.4	82.5	111.1	609.0	590.55	616.00	749.3	20	34.9	63.5
26	869.9	50.8	742.9	676.3	120.7	85.7	-	660	-	-	806.4	24	34.9	-
28	927.1	52.4	793.7	727.1	125.4	87.3	-	711	-	-	863.6	28	34.9	-
30	984.2	54.0	857.2	781.05	136.5	88.9	-	762	-	-	914.4	28	34.9	-
32	1060.4	57.1	908.0	831.9	144.5	92.1	-	813	-	-	977.9	28	41.3	-
34	1111.2	58.7	958.8	882.7	149.2	93.7	-	864	-	-	1028.7	32	41.3	-
36	1168.4	60.3	1022.3	933.5	157.2	95.2	-	914	-	-	1085.8	32	41.3	-
38	1238.2	60.3	1073.2	990.6	157.2	95.2	-	965	-	-	1149.3	32	41.3	-
40	1289.0	63.5	1124.0	1044.4	163.5	98.4	-	1016	-	-	1200.1	36	41.3	-
42	1346.2	66.7	1193.8	1092.2	171.4	101.6	-	1067	-	-	1257.3	36	41.3	-
44	1403.3	66.7	1244.6	1143.0	177.8	101.6	-	1118	-	-	1314.4	40	41.3	-
46	1454.1	68.3	1295.4	1196.8	185.7	103.2	-	1168	-	-	1365.2	40	41.3	-
48	1511.3	69.8	1358.9	1247.6	192.0	104.8	-	1219	-	-	1422.4	41	41.3	-



#T-3, Shop No. T-3/7, K.S.I.D.C.,
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Bangalore-560058



Plot No. 773# Siggehalli Gate,
Magadi Road,
Bangalore, 560091

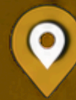


DIMENSIONS IN MM OF ANSI B 16.5 CLASS 300

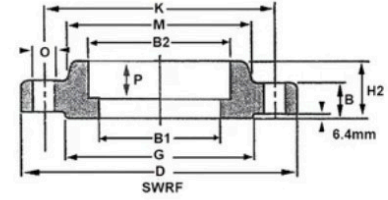
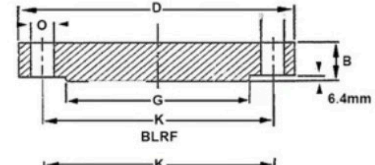
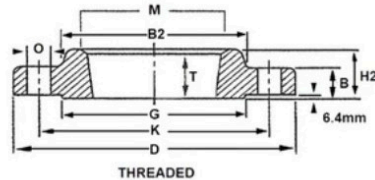
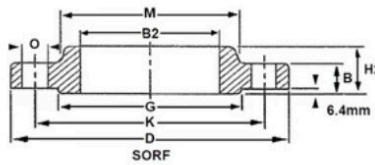
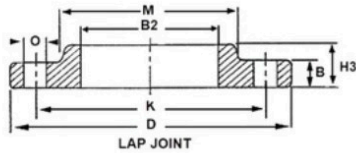
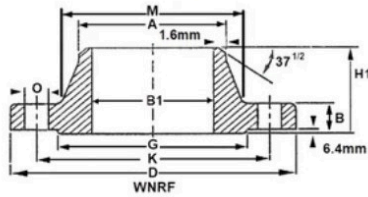
Size	D	B	G	M	H1	H2	H3	A	B1	B2	K	N	O	P	Thread
	O.D.	THK	R.F.DIA	HUB OD	W/N	SORF	LAP JOINT	NECK OD	WNRF ID	ID SW/ LAP/SORF	PCD	No. of HOLES	HOLE DIA	DEP.	T
1/2	95.2	14.3	34.9	38.1	52.4	22.2	22.2	21.3	15.7	22.35	66.7	4	15.9	9.6	15.7
3/4	117.5	15.9	42.9	47.6	57.1	25.4	25.4	26.7	20.8	27.70	82.5	4	19.0	11.1	15.7
1	123.8	17.5	50.8	54.0	61.9	26.9	26.9	33.5	26.7	34.54	88.9	4	19.0	12.7	17.5
1.1/4	133.3	19.0	63.5	63.5	65.1	26.9	26.9	42.2	35.1	43.20	98.4	4	19.0	14.3	20.5
1.1/2	155.6	20.6	73.0	69.8	68.3	30.2	30.2	48.3	40.9	49.50	114.3	4	22.2	15.9	22.3
2	165.1	22.2	92.1	84.1	69.8	33.3	33.3	60.4	52.6	62.00	127.0	8	19.0	17.5	28.4
2.1/2	190.5	25.4	104.8	100.0	76.2	38.1	38.1	73.1	62.7	74.70	149.2	8	22.2	19.0	31.7
3	209.5	28.6	127.0	117.5	79.4	42.9	42.9	88.9	78.0	90.70	168.3	8	22.2	20.6	31.7
3.1/2	228.6	30.2	139.7	133.4	81.0	44.4	44.4	101.6	90.2	103.50	184.1	8	22.2	-	36.5
4	254.0	31.8	157.2	146.1	85.7	47.6	47.6	114.3	102.4	116.00	200.0	8	22.2	-	36.5
5	279.4	34.9	185.7	177.8	98.4	50.8	50.8	141.2	128.3	143.80	234.9	8	22.2	-	42.9
6	317.5	36.5	215.9	206.4	98.4	52.4	52.4	168.4	152.4	170.50	269.9	12	22.2	-	45.9
8	381.0	41.3	269.9	260.4	111.1	61.9	61.9	219.2	202.7	211.50	330.2	12	25.4	-	50.8
10	444.5	47.6	323.8	320.7	117.5	66.7	95.2	273.0	254.5	276.40	387.3	16	28.6	-	55.6
12	520.7	50.8	381.0	374.6	130.2	73.0	101.6	323.8	304.8	327.20	450.8	16	31.7	-	60.4
14	584.2	54.0	412.7	425.5	142.9	76.2	111.1	355.6	336.6	359.20	514.3	20	31.7	-	63.5
16	647.7	57.2	469.9	482.6	146.0	82.5	120.6	406.4	387.35	410.50	571.5	20	34.9	-	68.3
18	711.2	60.3	533.4	533.4	158.7	88.9	130.2	457.2	438.15	461.80	628.6	24	34.9	-	69.8
20	774.7	63.5	584.2	587.4	161.9	95.2	139.7	508.0	489.00	513.10	658.8	24	34.9	-	73.1
22	838.2	66.7	641.3	641.2	165.1	101.6	146.0	558.8	539.75	564.40	742.9	24	41.3	-	79.5
24	914.4	69.8	692.1	701.7	168.3	106.4	152.4	609.6	590.55	616.00	812.8	24	41.3	-	82.5
26	971.5	79.4	749.3	720.7	184.1	184.1	-	660.4	-	-	876.3	28	44.4	-	-
28	1035.0	85.7	800.1	774.7	196.8	196.8	-	711.2	-	-	939.8	28	44.4	-	-
30	1092.2	92.1	857.2	827	209.5	209.5	-	762	-	-	996.9	28	47.6	-	-
32	1149.3	98.4	914.4	881.1	222.2	222.2	-	812.8	-	-	1054.1	28	50.8	-	-
34	1206.5	101.6	965.2	936.8	231.8	231.8	-	863.6	-	-	1104.9	28	50.8	-	-
36	1270.0	104.8	1022.3	990.6	241.3	241.3	-	914.4	-	-	1168.4	28	54.0	-	-
42	1447.8	117.5	1193.8	1099	200.1	276.2	-	1067	-	-	1339.8	28	54.0	-	-



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Magadi Road,
Bangalore, 560091

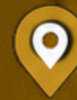


DIMENSIONS IN MM OF ANSI B 16.5 CLASS 600

Size	D	B	G	M	H1	H2	H3	A	B1	B2	K	N	O	Depth	Thread
	O.D.	THK	R.F.DIA	HUB OD	W/N	SORF	LAP JOINT	NECK OD	WNRF ID	ID SW/ LAP/SORF	PCD	No.of HOLES	HOLE DIA	DEP.	T
1/2	95.2	14.3	34.9	38.1	52.4	22.2	22.2	21.3		22.30	66.7	4	15.9	0.6	15.7
3/4	117.5	15.9	42.9	47.6	57.1	25.4	25.4	26.7		27.70	82.5	4	19.0	11.1	15.7
1	123.8	17.5	50.8	54.0	61.9	26.9	26.9	33.5		34.54	88.9	4	19.0	12.7	17.25
1.1/4	133.3	20.6	63.5	63.5	66.7	28.6	28.6	42.2		43.20	98.4	4	19.0	14.3	20.6
1.1/2	155.6	22.4	73.0	69.8	69.8	31.7	31.7	48.3		49.50	114.3	4	22.2	15.9	22.4
2	165.1	25.4	92.1	84.1	73.0	36.5	36.5	60.4		62.00	127.0	8	19.0	17.5	28.4
2.1/2	190.5	28.6	104.8	100.0	79.4	41.3	41.3	73.1		74.700	149.2	8	22.2	19.0	31.8
3	209.5	31.8	124.0	117.5	82.5	46.0	46.0	88.9	TO BE SPECIFIED BY THE PURCHASER	90.70	158.3	8	22.2	20.6	35.1
3.1/2	228.5	34.9	139.7	133.4	85.7	49.2	49.2	101.6		103.50	184.1	8	25.4	-	39.6
4	273.5	38.1	157.2	152.4	101.6	53.9	53.9	114.3		116.00	215.9	8	25.4	-	41.1
5	330.2	44.5	185.7	188.9	114.3	60.3	60.3	141.2		143.80	266.7	8	28.6	-	47.8
6	335.6	47.8	215.9	222.3	117.5	66.7	66.7	168.4		170.50	292.1	12	28.6	-	50.8
8	419.1	55.6	269.9	273.1	133.3	76.2	76.2	219.2		221.50	349.2	12	31.7	-	57.2
10	508.0	63.5	323.8	342.9	152.4	85.7	111.1	273.0		276.40	431.8	16	34.9	-	65.0
12	558.0	66.5	381.0	400.0	155.6	92.1	117.5	323.0		327.20	488.9	20	34.9	-	69.9
14	603.2	69.9	412.7	431.8	165.1	93.7	127.0	355.6		359.20	527.0	20	38.1	-	73.2
16	685.8	76.2	469.9	495.3	177.8	106.4	139.7	406.4		410.50	603.2	20	41.3	-	77.7
18	742.9	82.6	533.4	564.1	184.2	117.5	152.4	457.0		461.80	654.0	20	44.4	-	79.2
20	812.8	88.9	584.2	609.6	190.5	127.0	165.1	508.0		513.10	723.9	24	44.4	-	82.6
22	870.0	95.2	641.3	666.7	196.8	133.3	174.6	558.8		564.40	777.9	24	47.6	-	91.9
24	939.8	101.6	692.1	717.5	203.2	139.7	184.1	609.6		616.00	838.0	24	50.8	-	-
26	1016.0	107.9	749.3	747.8	222.2	222.2	-	660.4		-	914.4	28	50.8	-	-
28	1073.1	111.1	800.1	803.1	234.9	234.9	-	711.2		-	965.2	28	50.8	-	-
30	1130.3	114.3	857.2	862.1	247.6	247.6	-	762		-	1022.3	28	50.8	-	-
32	1193.8	117.5	914.4	917.4	260.3	260.3	-	812.8		-	1079.5	28	60.3	-	-
34	1244.6	120.6	965.2	970.0	269.9	269.9	-	863.6		-	1130.3	28	60.3	-	-
36	1314.4	123.8	1022.3	1032	282.6	282.6	-	914.4		-	1193.8	28	66.7	-	-
42	1492.2	139.7	1193.8	1127	279.4	279.4	-	1067		-	1365.2	28	73.0	-	-



#T-3, Shop No. T-3/7, K.S.I.D.C.,
Main Road, 1st Stage,
Peenya Industrial Estate,
Bangalore-560058



Plot No. 773# Siggehalli Gate,
Magadi Road,
Bangalore, 560091

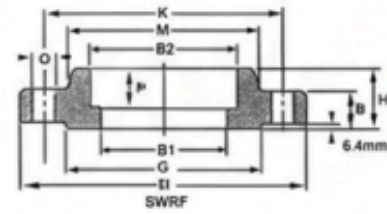
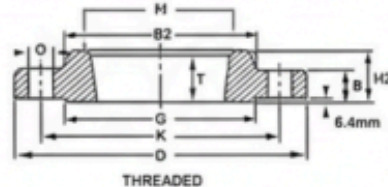
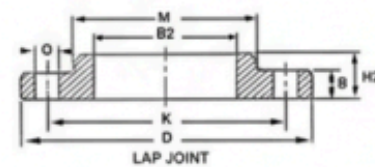
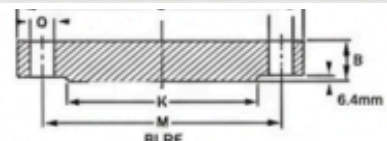
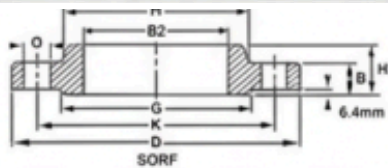
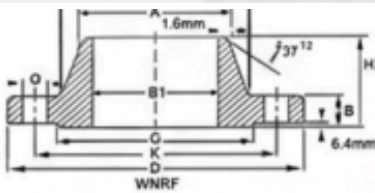


Email: pipechemindustries@gmail.com

Email: sales@pipechem.in



Website: www.pipechem.in

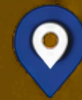


DIMENSIONS IN MM OF ANSI B 16.5 CLASS 900

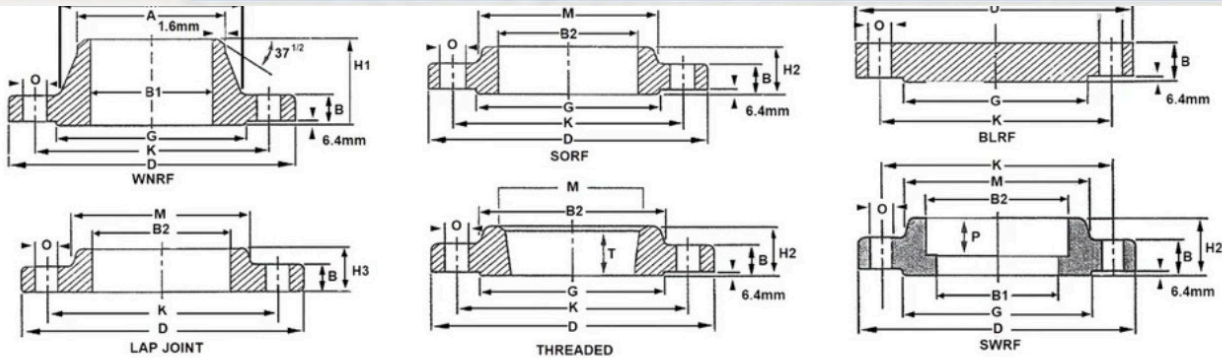
Size	D	B	G	M	H1	H2	H3	A	B1	B2	K	N	O	Depth	Thread
	O.D.	THK	R.F.DIA	HUB OG	W/N	SORF	LAP JOINT	NECK OF	WNRJ ID	ID SW/ LAP/SORF	PCD	No of HOLES	HOLE DD.	DEP.	T
1/2	120.6	22.2	24.9	38.1	60.3	31.7	31.7	21.3		22.30	82.5	4	22.2	9.6	22.3
3/4	130.2	28.4	42.9	44.4	68.9	34.9	34.9	25.7		27.70	88.9	4	22.2	11.1	25.4
1	149.2	28.6	50.5	52.3	73.0	41.3	41.3	33.5		34.54	101.6	4	25.4	12.7	28.7
1 1/4	158.7	28.6	63.5	63.5	73.0	41.3	41.3	42.2		43.20	111.1	4	25.4	14.3	30.2
1 1/2	177.8	31.7	92.1	99.6	82.5	44.4	44.4	48.3		62.00	123.8	4	25.6	18.9	31.7
2	215.9	34.1	92.1	104.6	104.6	57.2	63.5	60.4		67.00	190.5	6	25.4	19.6	38.1
2 1/2	241.5	41.3	104.8	132.0	104.8	62.5	63.5	73.1		74.70	190.5	6	25.4	19.0	47.7
3	241.3	38.1	127.8	133.3	101.6	54.0	64.0	88.9		90.70	190.5	8	25.4	-	41.4
4	349.1	40.8	157.3	162.0	114.3	69.4	69.4	144.3		116.00	279.9	8	34.7	-	57.7
5	469.2	50.8	115.9	299.5	137.0	79.4	79.4	141.2		116.00	279.4	9	34.9	-	54.1
6	581.0	55.6	323.9	228.6	139.7	95.7	85.7	168.4		221.50	337.5	12	31.7	-	71.4
8	469.9	63.5	209.9	450.1	101.9	101.6	114.2	229.2		276.60	392.7	12	38.1	-	63.5
10	641.1	69.9	412.8	368.3	164.1	107.5	117.0	223.0		322.80	463.9	16	38.1	-	71.4
14	641.5	78.4	331.9	495.3	200.0	117.5	155.5	335.6		378.40	553.4	20	33.1	-	82.5
16	841.3	88.7	412.7	495.3	212.7	150.5	165.5	355.6		357.20	615.9	20	44.3	-	82.2
18	704.8	88.9	449.9	552.4	218.9	155.	165.9	406.4		410.30	615.0	20	44.4	-	88.9
18	787.4	101.6	533.4	588.9	228.6	152.4	190.5	457.2		410.50	685.5	20	50.0	-	92.2
20	857.2	107.9	584.2	641.3	247.6	158.7	209.5	508.0		461.80	749.3	20	54.0	-	95.5
24	1041.4	139.7	692.1	703.0	285.1	283.2	266.7	604.6		511.10	901.7	20	66.7	-	101.6
26	1088.3	139.7	789.3	-	285.7	286.7	-	660.4		664.40	952.5	20	73.0	-	-
28	1168.4	142.9	800.1	-	298.4	298.4	-	711.2		616.00	1022.3	20	79.4	-	-
30	1231.9	149.2	857.2	-	311.1	311.1	-	762.0		-	1088.5	20	79.4	-	-
32	1314.1	158.7	914.4	-	330.2	330.2	-	812.8		-	1155.7	20	85.7	-	-
34	1357.0	165.1	965.2	-	349.2	349.2	-	863.6		-	1225.5	20	92.1	-	-
36	1460.5	171.4	1022.3	-	361.9	361.9	-	914.4		-	1289.0	20	92.1	-	-



#T-3, Shop No. T-3/7, K.S.I.D.C.,
Main Road, 1st Stage,
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Bangalore-560058



Plot No. 773# Siggehalli Gate,
Magadi Road,
Bangalore, 560091

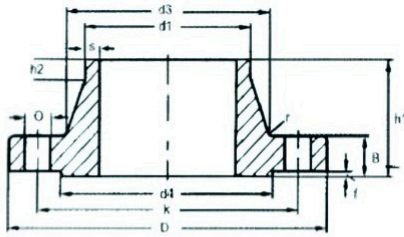


DIMENSIONS IN MM OF ANSI B 16.5 CLASS 1500

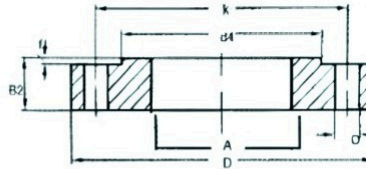
Size	D	B	G	M	H1	H2	H3	A	B1	B2	K	N	O	Depth	Thread
	O.D.	THK	R.F.DIA	HUB OD	W/N	SORF	LAP JOINT	NECK OD	WNRF ID	ID SW/ LAP/SORF	PCD	No.of HOLES	HOLE DIA	p	T
1/2	120.6	22.2	34.9	38.1	60.3	31.7	31.7	21.3		22.30	82.5	4	22.2	9.6	22.3
3/4	130.2	25.4	42.9	44.4	69.8	34.9	34.9	26.7		27.70	88.9	4	22.2	11.7	25.4
1	149.2	28.6	50.8	52.3	73.0	41.3	41.3	33.5		34.54	101.6	4	25.4	12.7	28.7
1.1/4	158.7	28.6	63.5	63.5	73.0	41.3	41.3	42.2		43.20	111.1	4	25.4	14.3	30.2
1.1/2	177.8	31.7	73.0	69.8	82.5	44.4	44.4	48.3		49.50	123.8	4	28.6	15.9	31.7
2	215.9	38.1	92.1	104.6	101.6	57.2	57.2	60.4		62.00	165.1	8	25.4	17.5	38.1
2.1/2	244.5	41.3	104.8	123.9	104.8	63.5	63.5	73.1		74.70	190.5	8	28.6	19.0	47.7
3	266.7	47.6	127.0	133.3	117.4	73.0	73.0	88.9		90.70	203.2	8	31.7		50.8
4	311.1	54.0	157.2	162.0	123.8	90.5	90.5	114.3		103.50	241.3	8	34.9		57.1
5	374.6	73.0	185.7	196.8	155.5	104.8	104.8	141.2		116.00	292.1	8	41.3		63.5
6	393.7	82.5	215.9	228.6	171.4	119.1	119.1	168.4		143.80	317.5	12	38.1		69.8
8	482.6	92.1	269.9	292.1	212.7	142.8	142.8	219.2		170.50	393.7	12	44.4		76.2
10	584.2	107.9	323.8	368.3	254.0	158.7	177.8	273.0		221.50	482.6	12	50.8		84.0
12	673.1	123.8	381.0	450.8	282.5	180.9	219.1	323.8		276.40	571.5	16	54.0		92.2
14	749.3	133.3	412.7	495.3	298.4	-	241.3	355.6		-	635.0	16	60.3		-
16	825.5	146.1	469.9	552.4	311.1	-	260.3	406.4		-	704.8	16	66.7		-
18	914.4	161.9	533.4	596.9	327.0	-	276.2	457.2		-	774.7	16	73.0		-
20	984.2	177.8	584.2	641.3	355.6	-	292.1	508.0		-	831.8	16	79.4		-
24	1168.4	203.2	692.1	762.0	406.4	-	330.2	609.5		-	990.6	16	92.1		-

DIMENSIONS IN MM OF ANSI B 16.5 CLASS 2500

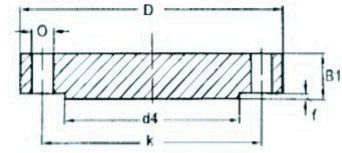
Size	D	B	G	M	H1	H2	H3	A	B1	B2	K	N	O	Thread
	O.D.	THK	R.F.DIA	HUB OD	W/N	SORF	LAP JOINT	NECK OD	WNRF ID	ID SW/ LAP/SORF	PCD	No.of HOLES	HOLE DIA	T
1/2	133.3	30.1	34.9	42.9	73.0	39.7	39.7	21.3		22.30	88.9	4	22.2	28.7
3/4	139.7	31.7	42.9	50.8	79.4	42.9	42.9	26.7		27.70	85.2	4	22.2	31.7
1	158.7	34.9	50.8	57.2	88.9	47.6	47.6	33.5		34.54	107.9	4	25.4	35.0
1.1/4	184.1	38.1	63.5	73.2	95.2	52.4	52.4	42.2		43.20	130.2	4	28.6	38.1
1.1/2	203.2	44.4	73.0	79.2	111.1	60.3	60.3	48.3		49.50	146.0	4	31.7	44.45
2	234.9	50.8	92.1	95.3	127.0	69.8	69.8	60.4		62.00	171.4	8	28.6	50.8
2.1/2	266.7	57.1	104.8	114.3	142.8	79.4	79.4	73.1		74.40	196.8	8	31.7	57.15
3	304.8	66.6	127.0	133.4	168.3	92.1	92.1	88.9		90.70	228.6	8	34.9	63.5
4	355.6	76.2	157.2	165.1	190.5	107.9	107.9	114.3		103.50	273.0	8	41.3	69.85
5	419.1	92.0	185.7	203.2	228.6	130.2	130.2	141.2		113.00	323.8	8	47.6	76.2
6	482.6	107.9	215.9	235.0	273.0	152.4	152.4	168.4		143.80	368.3	8	54.0	82.5
8	552.4	127.0	269.9	304.8	317.5	177.8	177.8	219.2		170.50	438.1	12	54.0	95.25
10	673.1	165.1	323.8	374.7	419.1	228.6	223.6	273.0		221.50	539.7	12	66.7	107.9
12	762.0	184.1	381.0	441.5	463.5	254.0	254.0	323.8		276.40	619.1	12	73.0	120.6



WNRF



SORF



BLRF

DIMENSIONS IN MM OF PN 10 FLANGES

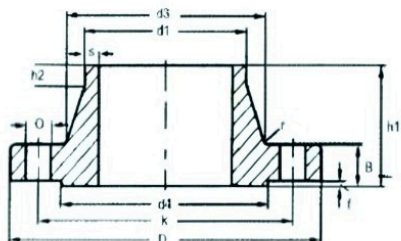
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	O.D	NKOD	ID 2576	thk2632	thk2527	thk2576	PCD	wnrl		Nkthk			Rf 2632	Rf Thk	of loles	BOLT	Hole
			SORF	WNRF	BLRF	SORF		height					WNRF				DIA
10	90	17.2	17.7	14	14	14	60	35	28	1.8	4	6	40	2	4	M 12	14
15	95	21.3	22	14	14	14	65	35	32	2	4	6	45	2	4	M 12	14
20	105	26.9	27.6	16	16	16	75	38	40	2.3	4	6	58	2	4	M 12	14
25	115	33.7	34.4	16	16	16	85	38	45	2.6	4	6	65	2	4	M 12	14
32	140	42.4	43.1	16	16	16	100	40	56	2.6	6	6	78	2	4	M 16	18
40	150	48.3	49	16	16	16	110	42	64	2.6	6	7	88	3	4	M 16	18
50	165	60.3	61.1	18	18	18	125	45	75	2.9	6	8	102	3	4	M 16	18
65	185	76.1	77.1	18	18	18	145	45	90	2.9	6	10	122	3	4	M 16	18
80	200	88.9	90.3	20	20	20	160	50	105	3.2	8	10	138	3	8	M 16	18
100	220	114.3	115.9	20	20	20	180	52	131	3.6	8	12	158	3	8	M 16	18
125	250	139.5	141.6	22	22	22	210	55	156	4	8	12	188	3	8	M 16	18
150	285	168.3	170.5	22	22	22	240	55	184	4.5	10	12	212	3	8	M 20	22
175	315	193.7	196.1	24	24	24	270	60	210	5.4	10	12	242	3	8	M 20	22
200	340	219.1	221.8	24	24	24	295	62	235	5.9	10	16	268	3	8	M 20	22
250	395	273	276.2	26	26	26	350	68	292	6.3	12	16	320	3	12	M 20	22
300	445	323.9	327.6	26	26	26	400	68	344	7.1	12	16	370	4	12	M 20	22
350	505	355.6	359.7	26	26	28	460	68	385	7.1	12	16	430	4	16	M 20	22
400	565	406.4	411	26	26	32	515	72	440	7.1	12	16	482	4	16	M 24	26
450	615	457	462.5	23	-	38	565	72	488	7.1	12	16	532	4	20	M 24	26
500	670	508	513.6	28	28	38	620	75	542	7.1	12	16	585	4	20	M 24	26
600	780	610	-	28	-	-	725	80	642	7.1	12	18	685	5	20	M 27	30
700	895	711	-	30	-	-	840	80	745	8	12	18	800	5	24	M 27	30
800	1015	813	-	32	-	-	950	90	850	8	12	18	905	5	24	M 30	33
900	1115	914	-	34	-	-	1050	95	950	10	12	20	1005	5	28	M 30	33
1000	1230	1016	-	34	-	-	1160	95	1052	10	16	20	1110	5	28	M 33	36
1200	1544	1220	-	38	-	-	1380	115	1255	11	16	25	1330	5	32	M 36	39
1400	1675	1420	-	42	-	-	1590	120	1460	12	16	25	1535	5	36	M 39	42
1600	1915	1620	-	46	-	-	1820	130	1665	14	16	25	1760	5	40	M 45	48
1800	2115	1820	-	50	-	-	2020	140	1868	15	16	30	1960	5	44	M 45	48
2000	2325	2020	-	54	-	-	2230	150	2072	16	16	30	2170	5	48	M 45	48
2200	2550	2220	-	58	-	-	2440	160	2275	18	18	35	2370	6	52	M 52	56
2400	2760	2420	-	62	-	-	2650	170	2478	20	18	35	2570	6	56	M 52	56
2600	2960	2620	-	66	-	-	2850	180	2630	22	18	40	2780	6	60	M 52	56
2800	3180	2820	-	70	-	-	3070	190	2882	22	18	40	3000	6	64	M 52	56
3000	3405	3020	-	75	-	-	3290	200	3085	24	18	45	3210	6	68	M 56	62



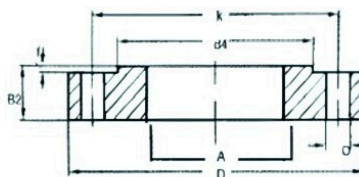
#T-3, Shop No. T-3/7, K.S.I.D.C.,
Main Road, 1st Stage,
Peenya Industrial Estate,
Bangalore-560058



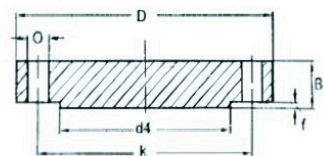
Plot No. 773# Siggehalli Gate,
Magadi Road,
Bangalore, 560091



WNRF



SORF



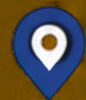
BLRF

DIMENSIONS IN MM OF PN 16 FLANGES

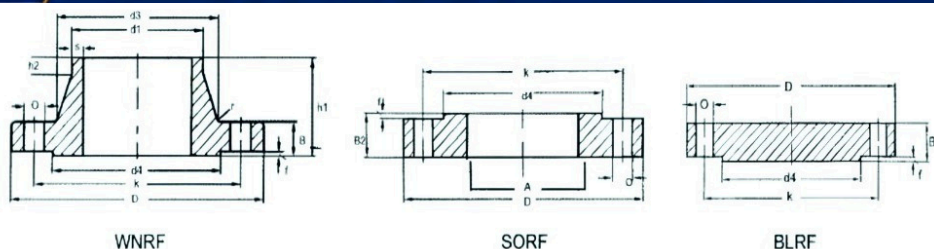
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	O.D	NKOD	ID	thk2632	thk2527	thk	PCD	wnrf		Nkthk			Rf 2633	RF Thk	of loes	BOLT	Hole
			SORF	WNRF	BLRF	SORF		height					WNRF				DIA
10	90	17.2	17.7	14	14	14	60	35	28	1.8	4	6	40	2	4	M 12	14
15	95	21.3	22	14	14	14	65	35	32	2	4	6	45	2	4	M 12	14
20	105	26.9	27.	16	16	16	75	38	40	2.3	4	6	58	2	4	M 12	14
25	115	33.7	34.4	16	16	16	85	38	45	2.6	4	6	65	2	4	M 12	14
32	140	42.4	43.1	16	16	16	100	40	56	2.6	6	6	78	2	4	M 16	18
40	150	48.3	49	16	16	16	110	42	64	2.6	6	7	88	3	4	M 16	18
50	165	60.3	61.1	18	18	18	125	45	75	2.9	6	8	102	3	4	M 16	18
65	185	76.1	77.1	18	18	18	145	45	90	2.9	6	10	122	3	4	M 16	18
80	200	88.9	90.3	20	20	20	160	50	105	3.2	8	10	138	3	8	M 16	18
100	220	114.3	115.9	20	20	20	180	52	131	3.6	8	12	158	3	8	M 16	18
125	250	139.5	141.6	22	22	22	210	55	156	4	8	12	188	3	8	M 16	18
150	285	168.3	170.5	22	22	22	240	55	184	4.5	10	12	212	3	8	M 20	22
175	315	193.7	196.1	24	24	24	270	60	210	5.4	10	12	242	3	8	M 20	22
200	340	219.1	221.8	24	24	24	295	62	235	5.9	10	16	268	3	8	M 20	22
250	405	273	276.2	26	26	26	355	70	292	6.3	12	16	320	3	12	M 24	26
300	460	323.9	327.6	28	28	28	410	78	344	7.1	12	16	378	4	12	M 24	26
350	520	355.6	359.7	30	30	30	470	82	390	8	12	16	438	4	16	M 24	26
400	580	406.4	411	32	32	32	525	85	445	8	12	16	490	4	16	M 27	30
450	640	457	462.5	34	-	34	585	85	490	8	12	16	550	4	20	M 27	30
500	715	508	513.6	34	34	34	650	90	548	8	12	16	610	4	20	M 30	33
600	840	610		36	-	-	770	95	652	8.8	12	18	725	5	20	M 33	36
700	910	711		36	-	-	840	100	755	8.8	12	18	795	5	24	M 33	36
800	1025	813		38	-	-	950	105	855	10	12	20	900	5	24	M 36	39
900	1125	914		40	-	-	1050	110	955	10	12	20	1000	5	28	M 36	39
1000	1255	1016		42	-	-	1170	120	1058	10	16	22	1115	5	28	M 39	42
1200	1485	1220		48	-	-	1390	130	1262	13	16	30	1330	5	32	M 45	48
1400	1685	1420		52	-	-	1590	145	1465	14	16	30	1530	5	36	M 45	48
1600	1930	1620		58	-	-	1820	160	1688	16	16	35	1750	5	40	M 52	56
1800	2130	1820		62	-	-	2020	170	1870	18	16	35	1950	5	44	M 52	56
2000	2345	2020		66	-	-	2230	180	2072	20	16	40	2150	5	48	M 56	62



#T-3, Shop No. T-3/7, K.S.I.D.C.,
Main Road, 1st Stage,
Peenya Industrial Estate,
Bangalore-560058



Plot No. 773# Siggehalli Gate,
Magadi Road,
Bangalore, 560091



DIMENSIONS IN MM OF PN 25 FLANGES

size	D	D1	A	B	B1	B2	k	h1	d3	s	r	h2	d4	f	No	size	o
	O.D	NKOD	ID	thk2634	thk2527	thk	PCD	wnrf		Nkthk			Rf 2634	RF Thk	Holes	BOLT	Hole
				SORF	WNRF	BLRF	SCRF	height					WNRF				DIA
10	90	17.2	17.7	16	16	16	60	35	28	1.8	4	6	40	2	4	M 12	14
15	95	21.3	22	16	16	16	65	38	32	2	4	6	45	2	4	M 12	14
20	105	26.9	27.6	18	18	18	75	40	40	2.3	4	6	58	2	4	M 12	14
25	115	33.7	34.4	18	18	18	85	40	46	2.6	4	6	68	2	4	M 12	14
32	140	42.4	43.1	18	18	18	100	42	56	2.6	6	6	78	2	4	M 16	18
40	150	48.3	49	18	18	18	110	45	64	2.6	6	7	88	3	4	M 16	18
50	165	60.3	61.1	20	20	20	125	48	75	2.9	6	8	102	3	4	M 16	18
65	185	76.1	77.1	22	22	22	145	52	90	2.9	6	10	122	3	8	M 16	18
80	200	88.9	90.3	24	24	24	160	58	105	3.2	8	12	138	3	8	M 16	18
100	235	114.3	115.9	24	24	24	190	65	134	3.6	8	12	162	3	8	M 20	22
125	270	139.5	141.6	26	26	26	220	68	162	4	8	12	188	3	8	M 24	26
150	300	168.3	170.5	28	28	28	250	75	192	4.5	10	12	218	3	8	M 24	26
175	330	193.7	196.1	28	28	28	280	75	218	5.6	10	15	248	3	12	M 24	26
200	360	219.1	221.8	30	30	30	310	80	244	6.3	10	16	278	3	12	M 24	26
250	425	273	276.2	32	32	32	370	88	298	7.1	12	18	335	3	12	M 27	30
300	485	323.9	327.6	34	34	34	430	92	352	8	12	18	395	4	16	M 27	30
350	555	355.6	359.7	38	38	38	490	100	398	8	12	20	450	4	16	M 30	33
400	620	406.4	411	40	40	40	550	110	452	8.8	12	20	505	4	16	M 33	36
450	670	457	462.5	42	-	42	600	110	500	8.8	12	20	550	4	20	M 33	36
500	730	508	513.6	44	45	44	660	125	558	10	12	20	615	4	20	M 33	36
600	845	610	-	46	-	-	770	125	660	11	12	20	720	5	20	M 36	39
700	960	711	-	46	-	-	875	125	760	13	20	24	820	5	24	M 39	42
800	1035	813	-	50	-	-	990	135	865	14	22	24	930	5	24	M 45	48
900	1185	914	-	54	-	-	1090	145	968	16	24	28	1030	5	28	M 45	48
1000	1320	1016	-	58	-	-	1210	155	1070	18	24	28	1140	5	28	M 52	56

DIMENSIONS IN MM OF PN 40 FLANGES

size	D	D1	A	B	B1	B2	k	h1	d3	s	r	h2	d4	f	No	size	o
	O.D	NKOD	ID	thk2634	thk2527	thk	PCD	wnrf		Nkthk			Rf 2634	RF Thk	Holes	BOLT	Hole
				SORF	WNRF	BLRF	SCRF	height					WNRF				DIA
10	90	17.2	17.7	16	16	16	60	35	28	1.8	4	6	40	2	4	M 12	14
15	95	21.3	22	16	16	16	65	38	32	2	4	6	45	2	4	M 12	14
20	105	26.9	27.6	18	18	18	75	40	40	2.3	4	6	58	2	4	M 12	14
25	115	33.7	34.4	18	18	18	85	40	46	2.6	4	6	68	2	4	M 12	14
32	140	42.4	43.1	18	18	18	100	42	56	2.6	6	6	78	2	4	M 16	18
40	150	48.3	49	18	18	18	110	45	64	2.6	6	7	88	3	4	M 16	18
50	165	60.3	61.1	20	20	20	125	48	75	2.9	6	8	102	3	4	M 16	18
65	185	76.1	77.1	22	22	22	145	52	90	2.9	6	10	122	3	8	M 16	18
80	200	88.9	90.3	24	24	24	160	58	105	3.2	8	12	138	3	8	M 16	18
100	235	114.3	115.9	24	24	24	190	65	134	3.6	8	12	162	3	8	M 20	22
125	270	139.5	141.6	26	26	26	220	68	162	4	8	12	188	3	8	M 24	26
150	300	168.3	170.6	28	28	28	250	75	192	4.5	10	12	218	3	8	M 24	26
175	330	193.7	196.1	32	32	32	295	82	218	5.6	10	15	260	3	12	M 27	30
200	360	219.1	221.6	34	34	34	320	88	244	6.3	10	16	285	3	12	M 27	30
250	425	273	276.2	38	38	38	385	105	206	7.1	12	18	45	3	12	M 30	33
300	485	323.9	327.6	42	42	42	450	115	362	8	12	18	410	4	16	M 30	33
350	555	355.6	359.7	46	46	46	510	125	403	8.8	12	20	465	4	16	M 33	36
400	620	406.4	411	50	50	50	585	135	462	1	12	20	535	4	16	M 36	39
450	670	457	462.5	50	50	50	610	135	500	12.5	12	20	560	4	20	M 36	39
500	730	508	513.6	52	52	52	670	140	562	14.2	12	20	615	4	20	M 39	42

WEIGHT OF ROUND, SQUARE AND HEXAGON (in Kg. per Meter)

Size mm	Round	Square	Hexagon	Size mm	Round	Square	Size mm	Round	Square
5	0.154	0.196	0.170	57	20.03	25.51	145	129.63	165.05
6	0.222	0.283	0.245	58	20.74	26.41	150	138.72	176.66
7	0.302	0.385	0.333	59	21.46	27.33	155	148.42	188.60
8	0.395	0.502	0.435	60	22.20	28.26	160	157.83	200.96
9	0.499	0.636	0.551	61	22.94	29.21	165	167.85	213.72
10	0.617	0.785	0.680	62	23.70	30.18	170	178.18	226.87
11	0.746	0.950	0.823	63	24.47	31.16	175	188.81	240.41
12	0.888	1.130	0.979	64	25.25	32.15	180	199.76	244.35
13	1.042	1.327	1.149	65	26.05	33.17	185	211.01	268.67
14	1.208	1.539	1.332	66	26.86	34.20	190	222.57	283.39
15	1.387	1.766	1.530	67	27.68	35.24	195	234.44	298.50
16	1.578	2.010	1.740	68	28.51	36.30	200	246.61	314300
17	1.782	2.269	1.965	69	29.35	37.37	205	259.10	329.90
18	1.998	2.543	2.203	70	30.21	38.47	210	271.89	346.19
19	2.226	2.834	2.454	71	31.08	39.57	215	284.99	362.87
20	2.466	3.140	2.719		31.96	40.69	220	298.40	379.94
21	2.719	3.462	2.866	73	32.86	41.83	225	312.12	397.41
22	2.984	3.799	3.299	74	33.76	42.99	230	326.13	415.27
23	3.261	4.153	3.596	75	34.68	44.16	235	340.48	433.52
24	3.551	4.522	3.916	76	35.61	45.34	240	355.13	452.16
25	3.853	4.906	4.249	77	36.56	46.54	245	370.08	471.20
26	4.168	5.307	4.596	78	37.51	47.76	250	385.34	490.63
27	4.495	5.723	4.956	79	38.48	48.99	255	400.90	510.45
28	4.834	6.154	5.330	80	39.46	50.24	260	416.78	530.66
29	5.185	6.602	5.717	81	40.45	51.50	265	432.96	551.27
30	5.549	7.065	6.118	82	41.46	52.78	270	445.46	572.27
31	5.925	7.544	6.533	53	42.47	54.08	275	466.26	593.66
32	6.313	8.038	6.961	84	43.50	55.39	280	483.37	615.44
33	6.714	8.549	7.403	85	44.55	56.72	285	500.78	637.62
34	7.127	9.075	7.859	86	45.60	58.06	290	518.51	660.19
36	7.553	9.616	8.328	87	46.67	59.42	295	536.54	683.15
36	7.990	10.174	8.810	88	47.75	60.79	300	554.88	706.50
37	8.440	10.747	9.307	89	48.84	62.18	310	592.49	754.39
38	8.903	11.335	9.817	90	49.94	63.59	320	631.33	803.84
39	9.378	11.940	10.340	91	51.06	65.01	330	671.41	854.87
40	9.865	12.560	10.877	92	52.18	66.44	340	712.72	907.46
41	10.364	13.196	11.428	93	53.32	67.90	350	755.26	961.63
42	10.876	13.847	11.992	94	54.48	69.36	360	799.03	1017.36
43	11.400	14.515	12.570	95	55.64	70.85	370	844.08	1074.67
44	11.936	15.198	13.161	96	56.82	72.35	380	890.28	1133.54
45	12.485	15.896	13.766	97	58.01	73.86	390	937.75	1193.99
46	13.046	16.611	14.385	98	59.21	75.39	400	986.46	1256.00
47	13.619	17.341	15.017	99	60.43	76.94	410	1036.40	1319.59
48	14.205	18.086	15.663	100	61.65	78.50	420	1087.57	1384.74
49	14.803	18.848	16.322	105	67.97	86.55	430	1139.98	1451.47
50	15.413	19.625	16.996	110	74.60	94.99	440	1193.62	1519.76
51	16.04	20.42	17.682	115	81.54	103.82	450	1248.49	1589.63
52	16.67	21.23	18.382	120	89.78	113.0	460	1304.59	1661.06
53	17.32	22.05	19.096	125	96.33	122.66	470	1361.93	1734.07
54	17.98	22.89	19.823	130	104.19	132.67	480	1420.50	1808.64
55	18.65	23.75	20.564	135	122.36	143.07	490	1480.31	1884.79
56	19.34	24.62	21.319	140	120.84	153.86	500	1541.34	1962.50



#T-3, Shop No. T-3/7, K.S.I.D.C.,
Main Road, 1st Stage,
Peenya Industrial Estate,
Bangalore-560058



Plot No. 773# Siggehalli Gate,
Magadi Road,
Bangalore, 560091

SUMMARY OF MAIN ASTM STANDARDS GENERALLY FOR PIPING

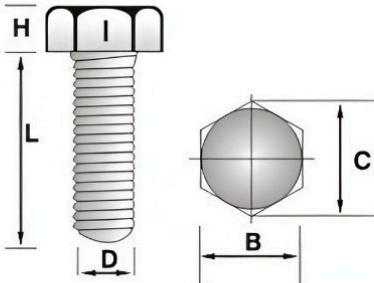
ASTM	Grade	Chemical Requirements Percent (%)										Mechanical Requirements			
		C max	Mn max	P max	S max	Ni	Cr	Mo	Cu	Others	Tensile Strength mini-Mpa/Psi	Yield Strength mini-Mpa/Psi	Elong mini %	Impact test at C	F
A 53	Types A	0.25	0.95	0.05	0.06	0.40 max	0.40 max	0.15 max	0.40 max	0.08 max	330-48000	205-30000	36.00		
	B	0.30	1.20	0.05	0.06	0.40 max	0.40 max	0.15 max	0.40 max	0.08 max	415-60000	240-35000	29.50		
A 106	A	0.25	0.27-0.93	0.035	0.025	0.40 max	0.40 max	0.15 max	0.40 max	0.08 max	330-48000	205-30000	L35-T25		
	B	0.30	0.29-1.06	0.035	0.025	0.40 max	0.40 max	0.15 max	0.40 max	0.08 max	415-60000	240-35000	L30-T16.5		
	C	0.35	0.29-1.06	0.035	0.025	0.40 max	0.40 max	0.15 max	0.40 max	0.08 max	485-70000	275-40000	L30-T16.5		
A 312	TP 304	0.03	2.00	0.040	0.030	8.00-11.0	18.0-20.0				515-75000	205-30000	L35-T25		
	TP 304 L	0.035	2.00	0.040	0.030	8.00-13.0	18.0-20.0				485-70000	170-25000	L35-T25		
	TP 310 S	0.08	2.00	0.040	0.030	19.0-22.0	24.0-26.0	0.75 MAX			515-75000	205-30000	L35-T25		
	TP 316	0.08	2.00	0.040	0.030	11.00-14.0	16.0-18.0	2.00-3.00			515-75000	205-30000	L35-T25		
	TP 316 L	0.035	2.00	0.040	0.030	10.00-15.0	16.0-18.0	2.00-3.00			485-70000	170-25000	L35-T25		
	TP 317 L	0.035	2.00	0.040	0.030	11.00-15.0	18.0-20.0	3.00-4.00			515-75000	205-30000	L35-T25		
	TP 321	0.08	2.00	0.040	0.030	9.00-13.0	17.0-20.0			5c<Ti0.70% 10C<Cb+Ta<1.00%	515-75000	205-30000	L35-T25		
	TP 347	0.08	2.00	0.040	0.030	9.00-13.0	17.0-20.0				515-75000	205-30000	L35-T25		
A 333	3	0.19	0.31-0.64	0.025	0.025	3.18-3.82	0.44-1.01		0.40-0.75		450-65000	205-35000	L30-T20	-100	-150
	4	0.12	0.50-1.05	0.025	0.025	0.18-0.37	0.47-0.98				415-60000	240-35000	L30-T16.5	-100	-150
	6	0.30	0.29-1.06	0.025	0.025	0.10 mini					415-60000	240-35000	L30-T16.5	-45	-50
	7	0.19	0.90	0.025	0.025	2.03-2.57					450-65000	240-35000	L30-T22	-75	-100
	8	0.13	0.90	0.025	0.025	8.40-9.60					690-10000	515-75000	L22	-195	-320
	9	0.20	0.40-1.06	0.025	0.025	1.60-2.24			0.75-1.25		435-63000	315-46000	L28	-75	-100
	P1	0.10-0.20	0.30-0.80	0.025	0.025	0.50		0.44-0.65			0.44-0.65	205-30000	L30-T20		
	P2	0.10-0.20	0.30-0.61	0.025	0.025	0.10-0.30	0.50-0.81	0.44-0.65			0.44-0.65	205-30000	L30-T20		
	P5	0.15	0.30-0.60	0.025	0.025	0.50	4.00-6.00	0.44-0.65			0.44-0.65	205-30000	L30-T20		
A 335	P9	0.15	0.30-0.60	0.025	0.025	0.25-1.00	8.00-10.0	0.90-1.10			0.90-1.10	205-30000	L30-T20		
	P11	0.15	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	0.44-0.65			0.44-0.65	205-30000	L30-T20		
	P12	0.15	0.30-0.61	0.025	0.025	0.50	0.80-1.25	0.44-0.65			0.44-0.65	205-30000	L30-T20		
	P15	0.05-0.15	0.30-0.60	0.025	1.15-1.65			0.44-0.65			0.44-0.65	205-30000	L30-T20		
	P21	0.15	0.30-0.60	0.025	0.50		2.65-3.35	0.80-1.06			0.44-0.65	205-30000	L30-T20		
	P22	0.15	0.30-0.60	0.025	0.50		1.90-2.60	0.87-1.13			0.80-1.06	205-30000	L30-T20		
	P91	0.08-0.12	0.30-0.60	0.025	0.20-0.50	0.40 max	8.00-9.50	0.85-1.05			0.87-1.13	205-30000	L30-T20		
											0.85-1.05	415-65000	L20		
A 358	TP 304	0.08	2.00	0.045	0.030	8.0-10.50	18.0-20.0	-							
	TP 310 S	0.08	2.00	0.045	0.030	19.0-22.0	24.0-26.0	-							
	TP 316	0.08	2.00	0.045	0.030	10.0-14.0	16.0-18.0	2.0-3.0							
	TP 316 L	0.030	2.00	0.045	0.030	10.4-14.0	16.0-18.0	2.0-3.0							
	TP 317 L	0.035	2.00	0.045	0.030	11.0-15.0	18.0-20.0	3.0-4.0							
	TP 321	0.08	2.00	0.045	0.030	9.0-12.0	17.0-19.0								
	TP 347	0.08	2.00	0.045	0.030	9.0-13.0	17.0-19.0								
Formula-Sheet Width Required for Rolled & Welded Pipes-O.D. (mm)-Thickness (mm) x 3.14 = Sheet Width															

Class 1 : Double welded pipes & full Radiography
 Class 2 : Double welded no Radiography
 Class 3 : Single welded full Radiography
 Class 4 : Single welded full Radiography root pass without addition of filler metal
 Class : Double welded spot Radiography

DIN 933

in mm

SIZE	M3	M4	M5	M6	M8	M10	M12	M16	M20
PITCH	0.50	0.70	0.80	1.00	1.25	1.50	1.75	2.00	2.50
B	Max	5.50	7.00	8.00	10.00	13.00	17.00	24.00	30.00
	Min	5.32	6.78	7.78	9.78	12.73	16.73	23.67	29.67
H	Max	2.13	2.92	3.65	4.15	5.45	6.22	7.68	1.18
	Min	1.88	2.68	3.35	3.85	5.15	6.65	7.32	9.82
									12.26



BS: 1083: 1965

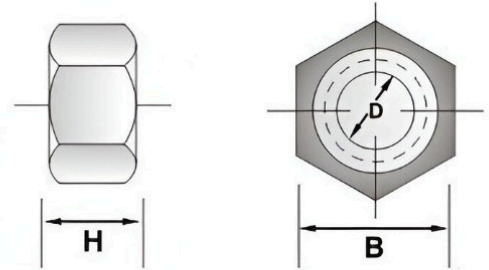
in inches

SIZE	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
B	Max	0.324	0.445	0.525	0.600	0.820	1.010
	Min	0.319	0.438	0.518	0.592	0.812	1.000
H	Max	0.112	0.176	0.218	0.260	0.343	0.417
	Min	0.107	0.166	0.208	0.250	0.333	0.407
							0.480

DIN 934

in mm

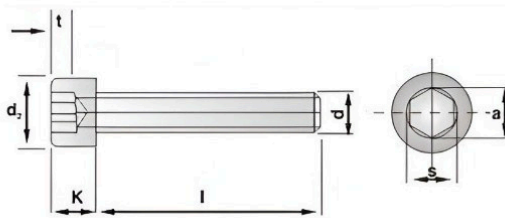
SIZE	M3	M4	M5	M6	M8	M10	M12	M16
PITCH	0.50	0.70	0.80	1.00	1.25	1.50	1.75	2.00
B	Max	5.50	7.00	8.00	10.00	13.00	17.00	24.00
	Min	5.32	6.78	7.78	9.78	12.73	16.73	23.67
H	Max	2.40	3.20	4.00	5.00	6.50	8.00	10.80
	Min	2.15	2.90	3.70	4.70	6.14	7.64	9.64
								12.30



BS: 1083: 1965

in inches

SIZE	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"
B	Max	0.220	0.2248	0.324	0.445	0.525	0.600	0.820
	Min	0.216	0.243	0.319	0.438	0.518	0.592	0.812
H	Max	0.115	0.130	0.162	0.200	0.250	0.312	0.437
	Min	0.110	0.125	0.155	0.190	0.240	0.302	0.427
								0.552



	M3	M4	M5	M6	M8	M10	M12	M16	M20
PITCH	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5
d	Max	5.68	7.22	8.72	10.22	12.37	16.27	24.33	30.33
	Min	5.32	6.78	8.28	9.78	12.73	15.73	23.67	28.67
e	Min	2.87	3.44	4.58	5.72	6.86	9.15	11.43	16
K	Max	3	4	5	6	8	10	12	16
	Min	2.86	3.82	4.82	5.7	7.64	9.64	11.57	15.57
S	Min	2.52	3.02	4.02	5.02	6.02	8.025	10.025	14.032
	Mx	2.58	3.08	4.095	5.14	6.14	8.175	10.175	14.212
t	Min	1.33	2	2.5	3	4	5	6	8
									10

CHEESE HEAD - DIN 84/IS: 1336: 1982

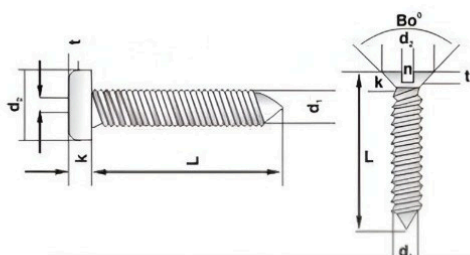
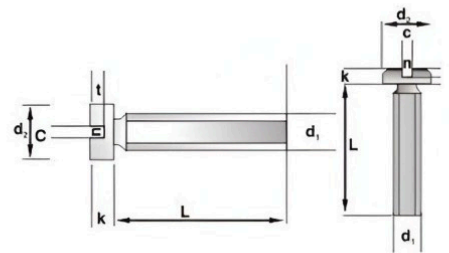
in inches

d1	M 2.5	M3	M4	M5	M6	M8	M10
d2 Max	4.50	5.50	7.00	8.50	10.00	13.00	16.00
k Max	1.60	2.00	2.60	3.30	3.90	5.00	6.00
n Min	0.60	0.80	1.20	1.20	1.60	2.00	2.50
t Min	0.70	0.90	1.10	1.30	1.60	2.00	2.40

SLOTTED PAN HEAD - DIN 85

in mm

d1	M2	M 2.5	M3	M3.5	M4	M5	M6	M8	M10
d2	Max	4.00	5.00	6.00	7.00	8.00	10.00	12.00	16.00
KMAX	1.20	1.50	1.80	2.10	2.40	3.00	3.60	4.80	6.00
NMIN	0.60	0.60	0.80	1.00	1.20	1.20	1.60	2.00	2.50
t	Min	0.50	0.60	0.70	0.80	1.00	1.20	1.40	1.90
									2.40



PH.PAN - IS 7173: 1974 / DIN 7971

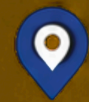
in mm

d1	M2.2	2.9	3.5	(3.9)	4.2	4.8	(5.5)	6.3
d2	Max	4.20	5.60	6.90	7.50	8.20	9.50	10.80
k	Max	1.35	1.75	2.10	2.25	2.45	2.80	3.20
n	Min	0.60	0.80	1.00	1.00	1.20	1.20	1.60
t	Min	0.55	0.75	0.95	1.05	1.15	1.35	1.55
								1.80

d1	M2.2	2.9	3.5	(3.9)	4.2	4.8	(5.5)	6.3
d2Max	4.30	5.50	6.80	7.50	8.10	9.50	10.80	12.40
k	Max	0.60	0.80	1.00	1.00	1.20	1.20	1.60
t	Min	0.40	0.50	0.60	0.70	0.75	0.85	1.00
								1.20



#T-3, Shop No. T-3/7, K.S.I.D.C.,
Main Road, 1st Stage,
Peenya Industrial Estate,
Bangalore-560058



Plot No. 773# Siggehalli Gate,
Magadi Road,
Bangalore, 560091

FASTNERS



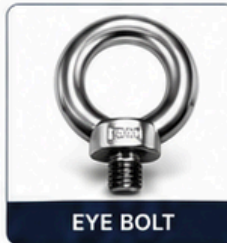
POP RIVET



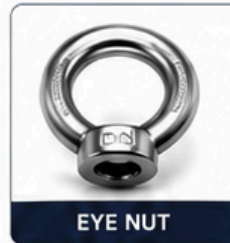
ANCHOR NUT



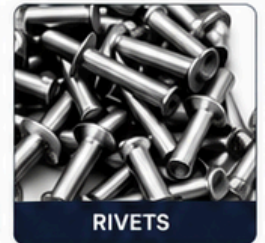
FLANGE BOLT



EYE BOLT



EYE NUT



RIVETS



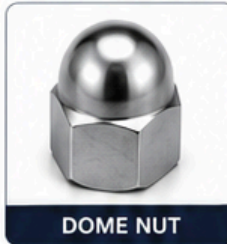
U-BOLT



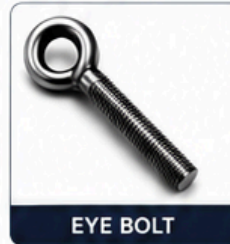
CASTEL NUT



COUPLING NUT



DOME NUT



EYE BOLT



HEX NUT



ANCHOR



FOUNDATION BOLT



STUB BOLT



COTTER PIN



HEX BOLT



L-HOOK
BOLT



NYLOCK NUT



SQUARE NUT



PHILIPS CSK
PAN HEAD



WING NUT



RING



ALLEN CSK



BOTTOM SCREW



CHEESE HEAD



ALLEN CAP



EX.CIRCLIP



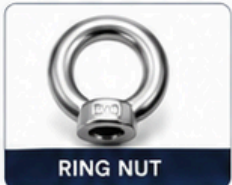
J-BOLT



CSK



SQ.WASHER



RING NUT



EYE BOLT



IN.CIRCLIP



FLAT SP. WASHER



SELF TAPPING



PLAIN WASHER



J LIFTING HOOK



STUD HT



WIRE NAIL



#T-3, Shop No. T-3/7, K.S.I.D.C.,
Main Road, 1st Stage,
Peenya Industrial Estate,
Bangalore-560058



Plot No. 773# Siggegahalli Gate,
Magadi Road,
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Head Office

#T-3, Shop No. T-3/7, K.S.I.D.C., Main
Road, 1st Stage, Peenya Industrial Estate,
Bangalore-560058



Godown

#773, Dhaka Nivas, 9th Cross, Shantial Mutha
Layout, Magadi Main Road, Seegehalli Gate,
Bangalore - 560091



Mail: pipechemindustries@gmail.com
sales@pipechem.in



MOB: +91 9916777501 | +91 9353077501 | +91 9900511729



LINE NO: 080-41243471 | 080-41602929