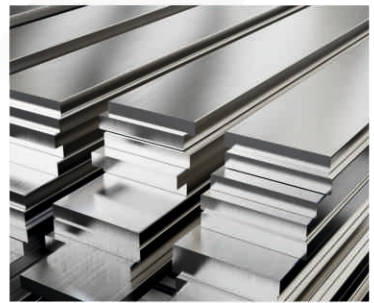




RR METAL

Mfg., Stockist & Suppliers Of: Stainless Steel, Mild Steel, Carbon Steel Alloys Steel, Duplex Steel, IBR & non IBR, Brass, Copper, Aluminum and all type of Industrial Raw Materials in Ferrous & Non Ferrous Metals.



 rrmetal2011@gmail.com

 +91 97379 63111



INTRODUCING RR METAL

Welcome to RR METAL, your trusted partner in the realm of metal solutions. Established in 2007, RR METAL has been a beacon of reliability and excellence in the industrial landscape.

Based in the vibrant city of Ahmedabad, Gujarat, our registered office at 5, SUVAN BUSINESS PARK, NESTLED IN THE VICINITY OF SOMA TEXTILE MILL COMPOUND, NEAR KEWAL KANTA, RAKHIAL, serves as the epicenter of our operations.

At **RR METAL**, we specialize in offering an extensive range of metal solutions, catering to diverse industrial needs. From Stainless Steel to Mild Steel, Carbon Steel to Alloys Steel, our repertoire includes a comprehensive array of products in various shapes, including Pipe, Sheet, Coil, Plate, Tubes, Flanges, Fittings, Angle, Channel, and more. We pride ourselves on being a one-stop destination for all types of Industrial Raw Materials in both Ferrous & Non-Ferrous Metals.

Our commitment to excellence is underlined by our MSME Certificate and our seamless adherence to regulatory standards, as evidenced by our GST No. (24CJFPB3373M1Z7) and PAN No.(CJFPB3373M).

Led by a seasoned team headed by **Bharat Bhai**, **reachable at +91 97379 63111**, RR METAL ensures that every client interaction is marked by professionalism and efficiency.

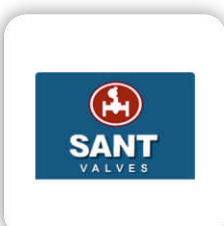
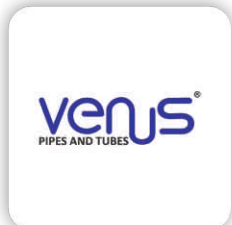
Partnering with NUTAN NAGRIK BANK, with our account housed at the Odhav branch, Ahmedabad (IFSC: NNSB0128021, Account No.: 021138230000057), we ensure financial transactions are as smooth as our metal solutions.

With branches in Baroda and Ankleshwar, RR METAL extends its reach and services, aiming to be your steadfast ally in the ever-evolving industrial landscape.

For all your metal needs, trust RR METAL - Where Reliability Meets Excellence.



BRANDS WITH US

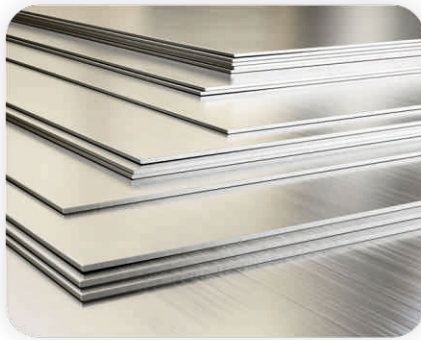




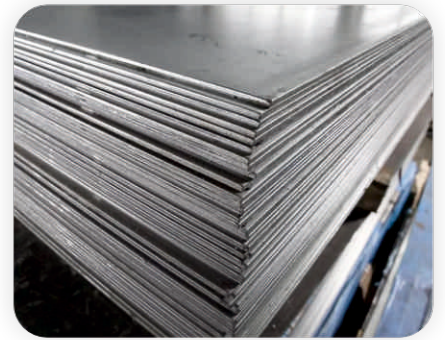
PRODUCTS



STAINLESS STEEL PIPES



STAINLESS STEEL SHEETS



STAINLESS STEEL PLATES



STAINLESS STEEL
ROUND BARS



STAINLESS STEEL
SQUARE BARS



STAINLESS STEEL
HEX BARS



WIRE BAR



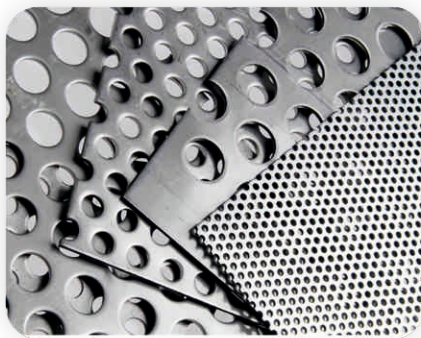
ANGLES



CHANNELS



BEAMS



PERFORATED
SHEET



TMT BARS



PRODUCTS



STAINLESS STEEL FITTINGS



STAINLESS STEEL FLANGES



VALVES



DIARY FITTINGS



FERRULE FITTINGS



STAINLESS STEEL CIRCLE



MILD STEEL PIPES



MILD STEEL FITTINGS



MILD STEEL FLANGES



CARBON STEEL PIPES



CARBON STEEL FLANGES



CARBON STEEL FITTINGS

S.S. INSTRUMENTAL FERRULE FITTINGS



Union Elbow



Male Elbow



Female Elbow



Union Tee



Male Run Tee



Male Branch Tee



Female Run Tee



Female Branch Tee



Union Cross



45 Deg. Elbow



Tube end Closure



Bulk Head Elbow



Positionable Male Elbow



Nut Ferrule



Union



Reducing Union



Bulkhead Union



Male Connector



Female Connector



Male Adaptor

S.S. TC FITTINGS



Union Elbow



Male Elbow



Female Elbow



Union Tee



Male Run Tee



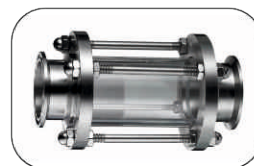
Male Branch Tee



Female Run Tee



Female Branch Tee



Union Cross



45 Deg. Elbow



Tube end Closure



Bulk Head Elbow



Positionable Male Elbow



Nut Ferrule



Union



Reducing Union



Bulkhead Union



Male Connector



Female Connector



Male Adaptor

Dear Esteemed Customer,

Subject: Registration of Our Firm as an Approved Vendor for Ferrous & Non-Ferrous Metals Supply

We take this opportunity to express our interest in registering our firm on your approved list of vendors for the supply of Ferrous and Non-Ferrous Metals. As a prominent entity in the industry, we pride ourselves on being among the leading importers, stockists, and suppliers of a comprehensive range of metals. Additionally, we excel as manufacturers of stainless steel pipes, offering a diverse selection of grades, shapes, and sizes.

With a wealth of technical expertise in this field, we have successfully served as project and maintenance suppliers to various organizations operating in the fields of CHEMICALS, FERTILIZERS, PETROCHEMICALS, NUCLEAR POWER, THERMAL POWDER, CEMENT, PAPER, REFINERIES, and more. Our commitment to providing high-quality products, coupled with our proficiency, has established us as a reliable partner for clients seeking repeat order solutions in their manufacturing and production programs.

Should any formalities be necessary for the registration process, please do not hesitate to get in touch. We consider it both a pleasure and a mark of respect to fulfill any requirements promptly. We eagerly anticipate the opportunity to serve your esteemed firm in the future, and we assure you of our commitment to delivering timely and top-notch services consistently.

Thank you for considering our application, and we look forward to a fruitful association.

Sincerely,
RR METAL



CS PIPE DIMENSION ANS B 36-10

| Size of Pipes & Tubes | | | Nominal Thickness and weight | | | | | | | | | | | | | |
|-----------------------|---------|-------|------------------------------|-------|------|-------|------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| | | | Number of Schedule | | | | | | | | | | | | | |
| | | | 5S | | 10S | | 10 | | 20 | | 30 | | 40 | | 60 | |
| Nominal | Outside | mm | kg/m | mm | kg/m | mm | kg/m | mm | kg/m | mm | kg/m | mm | kg/m | mm | kg/m | |
| Inch. | DN | | | | | | | | | | | | | | | Inch. |
| 1/8" | 6 | 10.3 | - | - | 1.28 | 0.28 | - | - | 1.60 | 0.345 | - | - | 1.73 | 0.37 | - | - |
| 1/4" | 8 | 13.7 | - | - | 1.65 | 0.49 | - | - | 2.00 | 0.580 | - | - | 2.24 | 0.63 | - | - |
| 3/8" | 10 | 17.1 | - | - | 1.65 | 0.63 | - | - | 2.00 | 0.750 | - | - | 2.31 | 0.84 | - | - |
| 1/2" | 15 | 21.3 | 1.65 | 0.81 | 2.11 | 1.00 | - | - | 2.30 | 1.070 | - | - | 2.77 | 1.27 | - | - |
| 3/4" | 20 | 26.7 | 1.65 | 1.03 | 2.11 | 1.28 | - | - | 2.50 | 1.500 | - | - | 2.87 | 1.69 | - | - |
| 1" | 25 | 33.4 | 1.65 | 1.29 | 2.77 | 2.08 | - | - | 3.00 | 2.240 | - | - | 3.38 | 2.50 | - | - |
| 1 1/4" | 32 | 42.2 | 1.65 | 1.65 | 2.77 | 2.69 | - | - | 3.00 | 2.910 | - | - | 3.56 | 3.39 | - | - |
| 1 1/2" | 40 | 48.3 | 1.65 | 1.90 | 2.77 | 3.12 | - | - | 3.00 | 3.370 | - | - | 3.68 | 4.05 | - | - |
| 2" | 50 | 60.3 | 1.65 | 2.38 | 2.77 | 3.94 | - | - | 3.00 | 4.263 | - | - | 3.91 | 5.44 | - | - |
| 2 1/2" | 65 | 73.0 | 2.11 | 3.70 | 3.05 | 5.26 | - | - | 4.00 | 6.486 | - | - | 5.16 | 8.63 | - | - |
| 3" | 80 | 88.9 | 2.11 | 4.50 | 3.05 | 6.45 | - | - | 4.00 | 8.423 | - | - | 5.49 | 11.29 | - | - |
| 3 1/2" | 90 | 101.6 | 2.11 | 5.20 | 3.05 | 7.40 | - | - | 4.50 | 10.838 | - | - | 5.74 | 13.57 | - | - |
| 4" | 100 | 114.3 | 2.11 | 5.81 | 3.05 | 8.34 | - | - | 4.50 | 12.555 | - | - | 6.02 | 16.07 | - | - |
| 5" | 125 | 141.3 | 2.77 | 9.45 | 3.40 | 11.56 | - | - | 5.00 | 16.900 | - | - | 6.55 | 21.77 | - | - |
| 6" | 150 | 168.3 | 2.77 | 11.31 | 3.40 | 13.82 | - | - | 6.35 | 24.150 | - | - | 7.11 | 28.26 | - | - |
| 8" | 200 | 219.1 | 2.77 | 14.78 | 3.76 | 19.94 | - | - | 6.35 | 33.31 | 7.04 | 36.81 | 8.18 | 42.55 | 10.31 | 53.08 |
| 10" | 250 | 273.0 | 3.40 | 22.62 | 4.19 | 27.83 | - | - | 6.35 | 41.75 | 7.80 | 51.01 | 9.27 | 60.29 | 12.70 | 81.52 |
| 12" | 300 | 323.9 | 3.96 | 33.00 | 4.57 | 36.00 | - | - | 6.35 | 49.71 | 8.38 | 65.18 | 10.31 | 79.70 | 14.27 | 108.92 |
| 14" | 350 | 355.6 | 3.96 | 34.23 | 4.78 | 41.18 | 6.35 | 54.69 | 7.92 | 67.90 | 9.53 | 81.25 | 11.13 | 94.55 | 15.09 | 126.71 |
| 16" | 400 | 406.4 | 4.19 | 41.60 | 4.78 | 47.38 | 6.35 | 62.64 | 7.92 | 77.83 | 9.53 | 93.17 | 12.70 | 123.30 | 16.66 | 160.12 |
| 18" | 450 | 457.2 | 4.19 | 46.83 | 4.78 | 53.18 | 6.35 | 70.60 | 7.92 | 87.75 | 11.13 | 122.43 | 14.27 | 155.87 | 19.05 | 205.83 |
| 20" | 500 | 508.0 | 4.78 | 59.22 | 5.54 | 68.50 | 6.35 | 78.55 | 9.53 | 117.02 | 12.70 | 155.12 | 15.09 | 183.42 | 20.62 | 247.83 |
| 22" | 550 | 558.8 | 4.78 | 63.75 | 5.54 | 73.81 | 6.35 | 86.50 | 9.53 | 129.01 | 12.70 | 171.01 | - | - | 22.23 | 294.25 |
| 24" | 600 | 609.6 | 5.54 | 82.60 | 6.35 | 94.37 | 6.35 | 94.46 | 9.53 | 140.88 | 14.27 | 209.50 | 17.48 | 254.24 | 24.61 | 355.02 |
| 26" | 650 | 660.4 | - | - | - | - | 7.92 | 127.43 | 12.70 | 202.85 | - | - | - | - | - | - |
| 28" | 700 | 711.2 | - | - | - | - | 7.92 | 137.42 | 12.70 | 218.73 | 15.88 | 272.18 | - | - | - | - |
| 30" | 750 | 762.0 | - | - | - | - | 7.92 | 147.36 | 12.70 | 234.64 | 15.88 | 292.06 | - | - | - | - |
| 32" | 800 | 812.8 | - | - | - | - | 7.92 | 157.28 | 12.70 | 250.55 | 15.88 | 311.95 | 17.48 | 342.70 | - | - |
| 34" | 850 | 863.6 | - | - | - | - | 7.92 | 167.20 | 12.70 | 266.46 | 15.88 | 331.83 | 17.48 | 364.58 | - | - |
| 36" | 900 | 914.4 | - | - | - | - | 7.92 | 177.13 | 12.70 | 282.36 | 15.88 | 351.72 | 19.05 | 420.56 | - | - |

N.B. : thickness and weight "Standard" "Extra Strong" & "Double Extra Strong" within swell edges have a correspondent Value in "schedule" for different thickness that suitable the weight can precedes by following formula $24.66 (d/t)$



CS PIPE DIMENSION ANS B 36-10

| Nominal Thickness and weight | | | | | | | | | | | | | | | |
|------------------------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|----------------|--------|--------------|--------|-------------------|--------|
| Number of Schedule | | | | | | | | | | | | | | | |
| 80 | | 100 | | 120 | | 140 | | 160 | | Standard (STD) | | Extra Strong | | Double Ex. Strong | |
| mm | kg/m | mm | kg/m | mm | kg/m | mm | kg/m | mm | kg/m | mm | kg/m | mm | kg/m | mm | kg/m |
| 2.41 | 0.47 | - | - | - | - | - | - | - | - | 1.73 | 0.37 | 2.41 | 0.47 | - | - |
| 3.02 | 0.80 | - | - | - | - | - | - | - | - | 2.24 | 0.63 | 3.02 | 0.80 | - | - |
| 3.20 | 1.10 | - | - | - | - | - | - | - | - | 2.31 | 0.84 | 3.20 | 1.10 | - | - |
| 3.73 | 1.62 | - | - | - | - | - | - | 4.78 | 1.95 | 2.77 | 1.27 | 3.73 | 1.62 | 7.47 | 2.55 |
| 3.91 | 2.20 | - | - | - | - | - | - | 5.56 | 2.90 | 2.87 | 1.69 | 3.91 | 2.20 | 7.82 | 3.64 |
| 4.55 | 3.24 | - | - | - | - | - | - | 6.35 | 4.24 | 3.38 | 2.50 | 4.55 | 3.24 | 9.09 | 5.45 |
| 4.85 | 4.47 | - | - | - | - | - | - | 6.35 | 5.61 | 3.56 | 3.39 | 4.85 | 4.47 | 9.70 | 7.77 |
| 5.08 | 5.41 | - | - | - | - | - | - | 7.14 | 7.25 | 3.68 | 4.05 | 5.08 | 5.41 | 10.15 | 9.56 |
| 5.54 | 7.48 | - | - | - | - | - | - | 8.74 | 11.11 | 3.91 | 5.44 | 5.54 | 7.48 | 11.07 | 13.44 |
| 7.01 | 11.41 | - | - | - | - | - | - | 9.53 | 14.90 | 5.16 | 8.63 | 7.01 | 11.41 | 14.02 | 20.39 |
| 7.62 | 15.27 | - | - | - | - | - | - | 11.13 | 21.35 | 5.49 | 11.29 | 7.62 | 15.27 | 15.24 | 27.68 |
| 8.08 | 18.63 | - | - | - | - | - | - | - | - | 5.74 | 13.57 | 8.08 | 18.63 | - | - |
| 8.56 | 22.32 | - | - | 11.13 | 28.32 | - | - | 13.49 | 33.54 | 6.02 | 16.07 | 8.56 | 22.32 | 17.12 | 41.03 |
| 9.53 | 30.94 | - | - | 12.70 | 40.28 | - | - | 15.88 | 49.11 | 6.55 | 21.77 | 9.53 | 30.94 | 19.05 | 57.43 |
| 10.97 | 42.56 | - | - | 14.27 | 54.20 | - | - | 18.26 | 67.56 | 7.11 | 28.26 | 10.97 | 42.56 | 21.95 | 79.22 |
| 12.70 | 64.64 | 15.09 | 75.92 | 18.26 | 90.44 | 20.62 | 100.92 | 23.01 | 111.27 | 8.18 | 42.55 | 12.70 | 64.64 | 22.22 | 107.88 |
| 15.09 | 95.97 | 18.26 | 114.70 | 21.44 | 133.00 | 25.40 | 155.09 | 28.58 | 172.33 | 9.27 | 60.29 | 15.09 | 95.97 | 25.40 | 155.09 |
| 17.48 | 132.04 | 21.44 | 159.86 | 25.40 | 186.91 | 28.58 | 208.00 | 33.32 | 238.68 | 9.53 | 73.78 | 17.48 | 132.04 | 25.40 | 186.91 |
| 19.05 | 158.10 | 23.83 | 194.96 | 27.79 | 224.65 | 31.75 | 253.56 | 35.71 | 281.70 | 9.53 | 81.25 | 19.05 | 158.10 | - | - |
| 21.44 | 203.53 | 26.19 | 245.56 | 30.96 | 286.64 | 36.53 | 333.19 | 40.49 | 365.35 | 9.53 | 93.17 | 21.44 | 203.53 | - | - |
| 23.83 | 254.67 | 29.36 | 309.76 | 34.92 | 363.64 | 39.67 | 408.45 | 45.24 | 459.59 | 9.53 | 105.10 | 23.83 | 254.67 | - | - |
| 26.19 | 311.17 | 32.54 | 381.53 | 38.10 | 441.49 | 44.45 | 508.11 | 50.01 | 564.81 | 9.53 | 117.02 | 26.19 | 311.17 | - | - |
| 28.58 | 373.83 | 34.93 | 451.52 | 41.28 | 527.02 | 47.63 | 600.63 | 53.98 | 672.26 | 9.53 | 129.01 | 28.58 | 373.83 | - | - |
| 30.96 | 441.78 | 38.89 | 547.73 | 46.02 | 639.58 | 52.37 | 719.63 | 59.54 | 807.63 | 9.53 | 140.88 | 30.96 | 441.78 | - | - |
| - | - | - | - | - | - | - | - | - | - | 9.53 | 152.80 | 12.70 | 202.85 | - | - |
| - | - | - | - | - | - | - | - | - | - | 9.53 | 164.80 | 12.70 | 218.73 | - | - |
| - | - | - | - | - | - | - | - | - | - | 9.53 | 176.73 | 12.70 | 234.64 | - | - |
| - | - | - | - | - | - | - | - | - | - | 9.53 | 188.66 | 12.70 | 250.55 | - | - |
| - | - | - | - | - | - | - | - | - | - | 9.53 | 200.59 | 12.70 | 266.46 | - | - |
| - | - | - | - | - | - | - | - | - | - | 9.53 | 212.52 | 12.70 | 282.36 | - | - |

N.B. : thickness and weight "Standard" "Extra Song" & "Double Extra Strong" within swell edges have a correspondent Value in "schedule" for different thickness that suitable the weight can precedes by following formula $24.66 (d/tt)$



STAINLESS STEEL PIPE SERIES (ANSI B 36.10, B36.19)

| Nominal Pipe Size Inch | Out Side Diameter ASTM | Wall Thickness And Weight | | | | | | | | | | | |
|------------------------|------------------------|---------------------------|--------|----------|--------|----------|---------|----------|---------|-----------|---------|----------|--------|
| | | Sch. 5S | | Sch. 10S | | Sch. 40S | | Sch. 80S | | Sch. 160S | | Sch. xxx | |
| 1/8 | 10.29 | - | - | 1.24 | 0.280 | 1.73 | 0.370 | 2.41 | 0.475 | - | - | - | - |
| 1/4 | 13.72 | - | - | 1.65 | 0.498 | 2.24 | 0.643 | 3.02 | 0.808 | - | - | - | - |
| 3/8 | 17.15 | - | - | 1.65 | 0.640 | 2.31 | 0.857 | 3.20 | 1.116 | - | - | - | - |
| 1/2 | 21.34 | 1.65 | 0.812 | 2.11 | 1.014 | 2.77 | 1.286 | 3.73 | 1.642 | 4.78 | 1.979 | 7.47 | 2.59 |
| 3/4 | 26.67 | 1.65 | 1.032 | 2.11 | 1.300 | 2.87 | 1.708 | 3.91 | 2.225 | 5.56 | 2.934 | 7.82 | 3.69 |
| 1 | 33.40 | 1.65 | 1.310 | 2.77 | 2.121 | 3.38 | 2.537 | 4.55 | 3.282 | 6.35 | 4.294 | 9.09 | 5.52 |
| 1¼ | 42.16 | 1.65 | 1.671 | 2.77 | 2.728 | 3.56 | 3.435 | 4.85 | 4.524 | 6.35 | 5.685 | 9.70 | 7.87 |
| 1½ | 48.26 | 1.65 | 1.923 | 2.77 | 3.150 | 3.68 | 4.101 | 5.08 | 5.484 | 7.14 | 7.339 | 10.16 | 9.68 |
| 2 | 60.33 | 1.65 | 2.421 | 2.77 | 3.986 | 3.91 | 5.515 | 5.54 | 7.588 | 8.71 | 11.240 | 11.07 | 13.63 |
| 2½ | 73.03 | 2.11 | 3.741 | 3.05 | 5.336 | 5.16 | 8.756 | 7.01 | 11.570 | 9.52 | 15.115 | 14.02 | 20.68 |
| 3 | 88.90 | 2.11 | 4.578 | 3.05 | 6.546 | 5.49 | 11.448 | 7.62 | 15.484 | 11.13 | 21.369 | 15.24 | 28.68 |
| 3½ | 101.16 | 2.11 | 5.248 | 3.05 | 7.514 | 5.74 | 13.756 | 8.08 | 18.891 | - | - | - | - |
| 4 | 114.30 | 2.11 | 5.918 | 3.05 | 8.483 | 6.02 | 16.296 | 8.56 | 22.628 | 13.49 | 33.990 | 17.12 | 41.59 |
| 5 | 141.30 | 2.77 | 9.593 | 3.40 | 11.721 | 6.55 | 22.065 | 9.52 | 31.364 | 15.87 | 49.760 | 19.05 | 58.22 |
| 6 | 168.28 | 2.77 | 11.461 | 3.40 | 14.014 | 7.11 | 28.648 | 10.97 | 43.143 | 18.24 | 68.420 | 21.95 | 80.30 |
| 8 | 219.08 | 2.77 | 14.979 | 3.76 | 20.240 | 8.18 | 43.129 | 12.70 | 65.526 | 23.01 | 112.790 | 22.23 | 109.40 |
| 10 | 273.05 | 3.40 | 22.920 | 4.19 | 28.863 | 9.27 | 61.131 | 12.70 | 82.661 | 28.57 | 174.620 | 25.40 | - |
| 12 | 323.82 | 3.96 | 31.669 | 4.57 | 36.477 | 9.52 | 74.810 | 12.70 | 98.790 | 33.32 | 242.010 | 25.40 | - |
| 14 | 355.60 | 3.96 | - | 4.78 | 41.923 | 11.13 | 95.840 | 19.05 | 160.230 | 35.71 | 285.580 | - | - |
| 16 | 406.40 | 4.19 | - | 4.78 | 47.993 | 12.70 | 124.990 | 21.44 | - | 40.49 | - | - | - |
| 18 | 457.20 | 4.19 | - | 4.78 | 54.064 | 14.20 | 157.260 | 23.83 | - | 45.24 | - | - | - |
| 20 | 508.00 | 4.78 | - | 5.54 | 69.590 | 15.09 | 185.950 | 26.20 | - | 50.00 | - | - | - |

STAINLESS STEEL TUBING SERIES

| Wall Thickness in mm | 0.5 | 0.6 | 0.7 | 0.8 | 1.0 | 1.2 | 1.6 | 2.0 | 2.6 | 3.0 | 3.2 | 3.6 |
|----------------------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| O.D. in mm | Weight in kg/mt | | | | | | | | | | | |
| 6.0 | 0.069 | 0.081 | 0.093 | 0.104 | 0.125 | .144 | 0.176 | - | - | - | - | - |
| 10.0 | 0.119 | 0.141 | 0.163 | 0.184 | 0.225 | 0.264 | 0.336 | - | - | - | - | - |
| 12.7 | 0.153 | 0.182 | 0.210 | 0.238 | 0.293 | 0.345 | 0.444 | - | - | - | - | - |
| 14.0 | 0.169 | 0.201 | 0.233 | 0.264 | 0.325 | 0.384 | 0.496 | - | - | - | - | - |
| 15.87 | 0.192 | 0.229 | 0.266 | 0.304 | 0.372 | 0.441 | 0.571 | 0.694 | - | - | - | - |
| 19.0 | 0.231 | 0.276 | 0.320 | 0.364 | 0.450 | 0.534 | 0.696 | 0.850 | 1.066 | 1.200 | 1.264 | - |
| 25.0 | 0.306 | 0.366 | 0.425 | 0.484 | 0.600 | 0.714 | 0.936 | 1.150 | 1.456 | 1.650 | 1.744 | 1.926 |
| 25.4 | 0.311 | 0.372 | 0.432 | 0.492 | 0.610 | 0.726 | 0.952 | 1.170 | 1.482 | 1.680 | 1.776 | 1.962 |
| 31.8 | - | - | - | - | - | 0.918 | 1.208 | 1.490 | 1.898 | 2.160 | 2.288 | 2.538 |
| 38.0 | - | - | - | - | - | 1.104 | 1.456 | 1.800 | 2.301 | 2.625 | 2.784 | 3.096 |
| 44.5 | - | - | - | - | - | 1.299 | 1.716 | 2.125 | 2.724 | 3.113 | 3.304 | 3.681 |
| 50.8 | - | - | - | - | - | - | 1.968 | 2.440 | 3.133 | 3.585 | 3.308 | 4.248 |
| 63.5 | - | - | - | - | - | - | 2.476 | 3.075 | 3.959 | 4.538 | 4.824 | 5.391 |
| 76.1 | - | - | - | - | - | - | 2.980 | 3.705 | 4.778 | 5.483 | 5.832 | 6.525 |
| 101.6 | - | - | - | - | - | - | 4.000 | 4.980 | 6.435 | 7.395 | 7.872 | 8.820 |
| 114.3 | - | - | - | - | - | - | 4.453 | 5.547 | 7.173 | 8.247 | 8.780 | 9.840 |
| 127.0 | - | - | - | - | - | - | 4.955 | 6.175 | 7.989 | 9.188 | 9.785 | 10.980 |
| 152.4 | - | - | - | - | - | - | 5.960 | 7.429 | 9.620 | 11.070 | 11.752 | 13.231 |



MILD STEEL PIPES CONFIRMING TO IS : 1239 (PARR - 1)

| Nominal Bore | | Outside Diameter | | Light | | Medium | | Heavy | |
|--------------|--------|------------------|--------|-----------|---------|-----------|---------|-----------|---------|
| | | | | Thickness | Weight | Thickness | Weight | Thickness | Weight |
| Inch | In mm | In | mm | mm | kg/mtr. | mm | Kg/Mtr. | mm | Kg/Mtr. |
| 1/8" | 3 mm | 0.406 | 10.32 | 1.80 | 0.361 | 2.00 | 0.407 | 2.65 | 0.493 |
| 1/4" | 6 mm | 0.532 | 13.49 | 1.80 | 0.517 | 2.35 | 0.650 | 2.90 | 0.769 |
| 3/8" | 10 mm | 0.872 | 17.10 | 1.80 | 0.674 | 2.35 | 0.852 | 2.90 | 1.02 |
| 1/2" | 15 mm | 0.844 | 21.43 | 2.00 | 0.952 | 2.65 | 1.122 | 3.25 | 1.45 |
| 3/4" | 20 mm | 1.094 | 27.20 | 2.35 | 1.410 | 2.65 | 1.580 | 3.25 | 1.90 |
| 1" | 25 mm | 1.312 | 33.80 | 2.65 | 2.010 | 3.25 | 2.440 | 4.05 | 2.97 |
| 1.1/4" | 32 mm | 1.656 | 42.90 | 2.65 | 2.580 | 3.25 | 3.140 | 4.05 | 3.84 |
| 1.1/2" | 40 mm | 1.906 | 48.40 | 2.90 | 3.25 | 3.25 | 3.610 | 4.05 | 4.43 |
| 2" | 50 mm | 2.375 | 60.30 | 2.90 | 4.110 | 3.65 | 5.100 | 4.47 | 6.17 |
| 2.1/2" | 65 mm | 3.004 | 76.20 | 3.25 | 5.840 | 3.65 | 6.610 | 4.47 | 7.90 |
| 3" | 80 mm | 3.500 | 88.90 | 3.25 | 6.810 | 4.05 | 8.470 | 4.85 | 10.1 |
| 4" | 100 mm | 4.500 | 114.30 | 3.65 | 9.890 | 4.50 | 12.10 | 5.40 | 14.4 |
| 5" | 125 mm | 5.00 | 139.70 | - | - | 4.85 | 16.20 | 5.40 | 17.8 |
| 6" | 150 mm | 6.500 | 165.10 | - | - | 4.85 | 19.20 | 5.40 | 21.2 |

BIG DIAMETER ERW PIPES CONFIRMING TO IS 3589 GRADE FE 410

| Wall Thickness In mm | Nominal Bore 7" NB 193.7 mm OD | Nominal Bore 8" NB 219.1 mm OD | Nominal Bore 10" NB 273 mm OD | Nominal Bore 12" NB 323.7 mm OD | Nominal Bore 14" NB 355.6 mm OD | Nominal Bore 16" NB 406.4 mm OD | Nominal Bore 18" NB 457 mm OD | Nominal Bore 20" NB 508 mm OD |
|-------------------------|--------------------------------------|--------------------------------------|-------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|
| kg/mtr | kg/mtr | kg/mtr | kg/mtr | kg/mtr | kg/mtr | kg/mtr | kg/mtr | kg/mtr |
| 4.85 | 22.59 | 25.62 | 32.07 | 38.13 | - | - | - | - |
| 5.20 | 24.17 | 27.43 | 34.34 | 40.85 | - | - | - | - |
| 5.60 | 26.00 | 29.28 | 36.93 | 43.93 | 48.11 | - | - | - |
| 6.00 | 27.88 | 31.53 | 39.50 | 47.02 | 51.49 | 61.00 | 69.00 | - |
| 6.35 | 29.34 | 33.28 | 41.73 | 49.67 | 54.43 | 62.35 | 70.50 | 78.50 |
| 7.04 | 32.27 | 36.76 | 46.43 | 55.45 | 61.82 | 69.04 | - | - |
| 7.94 | - | 41.00 | 50.95 | 61.85 | 67.98 | 77.92 | 87.80 | - |
| 8.18 | - | 42.56 | 53.42 | 65.12 | - | - | - | - |
| 9.53 | - | 51.50 | 60.24 | 73.75 | 81.21 | 93.13 | 105.00 | 117.00 |
| 12.70 | - | - | - | - | 107.28 | 123.30 | 139.00 | 115.00 |

Tolerance on Thickness and weight : as per IS 1239

The following manufacturing tolerance shall be permitted on the tubes and sockets.

- (a) Thickness
- (1) Butt welded Light tubes + Not Limited
-8 percent
- Medium and every heavy tubes + Not Limited
-10 percent
- (2) Seamless tubes + Note Limited
-12.5 percent
- (b) Weight ;
- (1) Single tube (light series) + 10 percent
- 8 percent
- (2) Single tube (Medium and heavy series) + 10 percent

MAXIMUM PERMISSIBLE PRESSURE AND TEMPERATURE FOR TUBES WITH STEEL COUPLINGS OR SCREWED AND SOCKETED JOINTS

| Nominal Bore mm | Maximum Permissible | |
|---------------------------------------|-------------------------------|---------------------------------------|
| | Pressure N/mm ² | Temperature Kg./cm ² °C |
| Upto and Including 25 mm | 1.20 | 12.24 260 |
| Over 25 mm upto and Including 40 mm | 1.03 | 10.50 260 |
| Over 40 mm upto and Including 80 mm | 0.86 | 8.77 260 |
| Over 80 mm upto and Including 100 mm | 0.69 | 7.04 260 |
| | 0.83 | 8.47 177 |
| Over 100 mm upto and Including 125 mm | 0.69 | 7.04 171 |
| Over 125 mm upto and Including 150 mm | 0.50 | 5.10 160 |

For tubes fitted with appropriate fittings of suitably butt welded together, the Max, permissible pressure shall be 21.00 Kg/cm² and Max, Permissible temp. 260°C

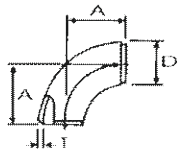


WEIGHT OF MS ANGLE, CHANNEL & BEAM

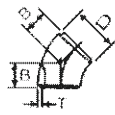
| M.S. ANGLES | | | M.S. BEAMS | | | | | | |
|-------------|-------------------------|-------------------------|-------------------------|------------------------------|------------------------------|-------|------|------------------------------|------------------------------|
| Size in mm | Weight in kgs. per feet | Weight in kgs. per Mtr. | Size in mm | Weight in kgs. per feet | Weight in kgs. | | | | |
| 20X20X3 | 0.274 | 0.899 | 100x50 | 2.432 | 7.979 | | | | |
| 25X25X3 | 0.335 | 1.099 | 125x75 | 4.023 | 13.199 | | | | |
| 25X25X5 | 0.548 | 1.099 | 150x75 | 4.571 | 14.997 | | | | |
| 31X31X3 | 0.390 | 1.280 | 175x85 | 5.943 | 19.499 | | | | |
| 35X35X5 | 0.792 | 2.599 | 200x100 | 7.893 | 25.897 | | | | |
| 37X37X3 | 0.518 | 1.700 | 250x25 | 11.612 | 38.099 | | | | |
| 40X40X3 | 0.548 | 1.798 | 300x140 | 14.782 | 48.500 | | | | |
| 40X40X5 | 0.915 | 3.002 | 350x140 | 16.125 | 52.906 | | | | |
| 40X40X6 | 1.066 | 3.498 | 400x140 | 19.080 | 62.601 | | | | |
| 50X50X5 | 1.158 | 3.799 | 450x150 | 22.280 | 73.100 | | | | |
| 50X50X6 | 1.372 | 4.502 | 500x180 | 26.730 | 87.700 | | | | |
| 60X60X6 | 1.645 | 5.397 | 600x210 | 37.370 | 122.600 | | | | |
| 65X65X6 | 1.767 | 5.798 | M.S. CHANNELS | | | | | | |
| 65X65X8 | 2.346 | 7.697 | 75x40 | 2.172 | 7.126 | | | | |
| 65X65X10 | 2.864 | 9.397 | 100x50 | 2.925 | 9.597 | | | | |
| 75X75X6 | 2.072 | 6.798 | 125x5 | 3.992 | 13.098 | | | | |
| 75X75X8 | 2.712 | 8.898 | 150x75 | 5.120 | 16.799 | | | | |
| 75X75X10 | 3.352 | 10.998 | 175x75 | 5.973 | 19.597 | | | | |
| 80X80X8 | 2.925 | 9.597 | 200x75 | 6.796 | 22.298 | | | | |
| 90X90X6 | 2.499 | 8.199 | 250x80 | 9.326 | 30.599 | | | | |
| 90X90X8 | 3.292 | 10.801 | 300x90 | 11.063 | 36.298 | | | | |
| 90X90X10 | 4.084 | 13.400 | 400x100 | 15.270 | 50.300 | | | | |
| 100X100X6 | 2.804 | 9.200 | 150x150x10 | 6.950 | 22.803 | | | | |
| 100X100X8 | 3.687 | 12.097 | 150x150x12 | 8.290 | 27.199 | | | | |
| 100X100X10 | 4.545 | 14.912 | 150x150x16 | 10.911 | 35.799 | | | | |
| 100X100X12 | 5.395 | 17.701 | 150x150x20 | 13.441 | 44.100 | | | | |
| 110X110X2 | 5.028 | 19.699 | CHEQUERED PLATES | | GALVANISED SHEETS | | | | |
| 130X130X10 | 6.004 | 6.004 | Size in mm | Weight in kgs. per Sq. / Ft. | Weight in kgs. per Sq. / Mt. | Gauge | MM | Weight in kgs. per Sq. / Ft. | Weight in kgs. per Sq. / Mt. |
| | | | 5 | 4.210 | 45.300 | 16 | 1.60 | 1.170 | 12.596 |
| | | | 6 | 4.942 | 53.200 | 18 | 1.20 | 0.936 | 10.072 |
| | | | 8 | 6.400 | 68.900 | 20 | 0.91 | 0.760 | 8.070 |
| | | | 10 | 7.860 | 84.600 | 22 | 0.71 | 0.606 | 6.527 |
| | | | 12 | 9.318 | 100.300 | 24 | 0.63 | 0.490 | 5.277 |
| | | | | | | 26 | 0.50 | 0.396 | 4.267 |
| | | | | | | 28 | 0.40 | 0.324 | 3.486 |
| | | | | | | 30 | 0.31 | 0.266 | 2.866 |



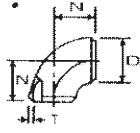
BUTT WELDING PIPE FITTING DIMENSIONAL STANDARD ANSI B-1 6.9, B-16.28



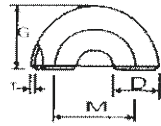
90° Elbol
long radius



45° Elbow



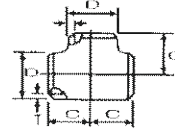
90° Elbow
short radius



180° Return
long radius



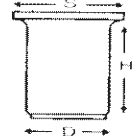
Reducer



Tee equal tee



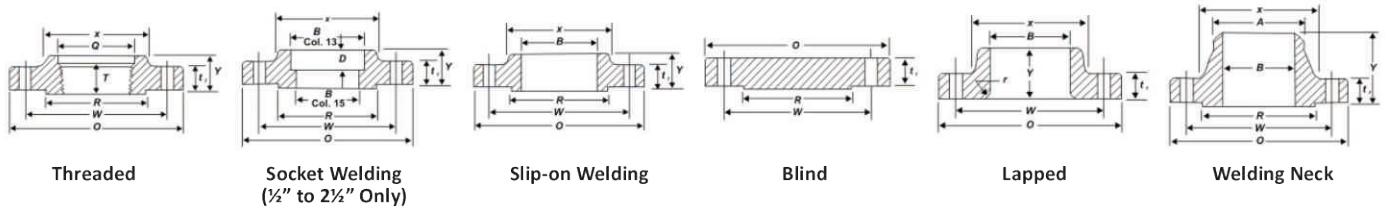
Caps



Stubends

| Nominal Pipe Size | | Outside Diameter D | Centre to Face | | | | Back to Face | | | Centre to Centre | | | Length "L" MSSSP43 B16.9 | |
|-------------------|-----|-----------------------|----------------|-------|-------|-------|--------------|--------|-------|------------------|--------|--------|-----------------------------|-------|
| Inch | mm | | A | B | C | N | E | F | G | R | M | S | L | L |
| 1/2 | 15 | 21.3 | 19.00 | 16.0 | 25.0 | - | 25.0 | 48.0 | - | 76.0 | - | 35.0 | 50.8 | 76.2 |
| 3/4 | 20 | 26.7 | 29.00 | 11.0 | 29.0 | - | 25.0 | 43.0 | - | 57.0 | - | 43.0 | 50.8 | 76.2 |
| 1 | 25 | 33.4 | 38.00 | 22.0 | 38.0 | 25.0 | 38.0 | 56.0 | 41.0 | 76.0 | 51.0 | 51.0 | 50.8 | 101.6 |
| 1 1/4 | 32 | 42.2 | 48.00 | 25.0 | 48.0 | 32.0 | 38.0 | 70.0 | 52.0 | 95.0 | 64.0 | 64.0 | 50.8 | 101.6 |
| 1 1/2 | 40 | 48.3 | 57.15 | 29.0 | 57.0 | 38.0 | 38.0 | 83.0 | 62.0 | 114.0 | 67.0 | 73.0 | 50.8 | 101.6 |
| 2 | 50 | 60.3 | 76.00 | 35.0 | 64.0 | 51.0 | 38.0 | 106.0 | 81.0 | 152.0 | 102.0 | 93.0 | 63.5 | 152.4 |
| 2 1/2 | 65 | 73.0 | 95.25 | 44.0 | 76.0 | 64.0 | 38.0 | 132.0 | 100.0 | 191.0 | 127.0 | 105.0 | 63.5 | 152.4 |
| 3 | 80 | 88.9 | 114.30 | 51.0 | 86.0 | 76.0 | 51.0 | 159.0 | 121.0 | 229.0 | 152.0 | 127.0 | 63.5 | 152.4 |
| 3 1/2 | 90 | 101.6 | 133.35 | 57.0 | 95.0 | 89.0 | 64.0 | 184.0 | 140.0 | 267.0 | 178.0 | 140.0 | 76.2 | 152.4 |
| 4 | 100 | 114.3 | 152.0 | 63.0 | 105.0 | 102.0 | 64.0 | 210.0 | 159.0 | 305.0 | 203.0 | 157.0 | 76.2 | 152.4 |
| 5 | 125 | 141.3 | 190.0 | 79.0 | 123.0 | 127.0 | 76.0 | 262.0 | 197.0 | 381.0 | 254.0 | 186.0 | 76.2 | 203.2 |
| 6 | 150 | 168.3 | 229.0 | 95.0 | 143.0 | 152.0 | 89.0 | 313.0 | 237.0 | 457.0 | 305.0 | 216.0 | 88.9 | 203.2 |
| 8 | 200 | 219.1 | 305.0 | 127.0 | 178.0 | 203.0 | 102.0 | 414.0 | 313.0 | 610.0 | 406.0 | 270.0 | 101.6 | 203.2 |
| 10 | 250 | 273.1 | 381.0 | 159.0 | 216.0 | 254.0 | 127.0 | 515.0 | 391.0 | 762.0 | 508.0 | 324.0 | 127.0 | 254 |
| 12 | 300 | 323.9 | 457.0 | 190.0 | 254.0 | 303.0 | 152.0 | 619.0 | 467.0 | 914.0 | 610.0 | 381.0 | 152.4 | 254 |
| 14 | 350 | 355.6 | 533.0 | 222.0 | 279.0 | 356.0 | 165.0 | 711.0 | 533.0 | 1067.0 | 711.0 | 413.0 | 152.4 | 305.0 |
| 16 | 400 | 406.4 | 610.0 | 254.0 | 305.0 | 406.0 | 178.0 | 813.0 | 610.0 | 1219.0 | 813.0 | 470.0 | 152.4 | 305.0 |
| 18 | 450 | 457.2 | 686.0 | 286.0 | 343.0 | 457.0 | 203.0 | 914.0 | 686.0 | 1372.0 | 914.0 | 533.0 | 152.4 | 305.0 |
| 20 | 500 | 508.0 | 762.0 | 318.0 | 381.0 | 508.0 | 229.0 | 1016.0 | 762.0 | 1524.0 | 1016.0 | 584.0 | 152.4 | 305.0 |
| 22 | 550 | 559. | 838.0 | 343.0 | 419.0 | 559.0 | 254.0 | 1118.0 | 838.0 | 1676.0 | 1118.0 | 614.40 | 152.4 | 305.0 |
| 24 | 600 | 610.0 | 914 | 381.0 | 432.0 | 610.0 | 267.0 | 1219.0 | 914.0 | 1829.0 | 1219.0 | 692.0 | 152.4 | 305.0 |
| 26 | 650 | 660.0 | 991.0 | 406.0 | 495.0 | 660.0 | 267.0 | | | | | | | |
| 28 | 700 | 711.0 | 1067.0 | 438.0 | 521.0 | 771.0 | 267.0 | | | | | | | |
| 30 | 750 | 762.0 | 1143.0 | 470.0 | 559.0 | 762.0 | 267.0 | | | | | | | |
| 32 | 800 | 813.0 | 1219.0 | 502.0 | 597.0 | 813.0 | 267.0 | | | | | | | |
| 34 | 850 | 864.0 | 1295.0 | 533.0 | 635.0 | 864.0 | 267.0 | | | | | | | |
| 36 | 900 | 914.0 | 1372.0 | 565.0 | 673.0 | 914.0 | 267.0 | | | | | | | |





DIMENSIONS OF CLASS 150 FLANGES

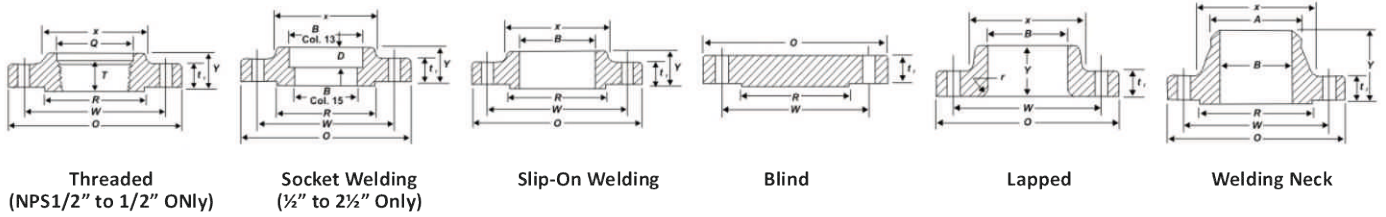
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|-----------------------|------------------------------|-------------------------------|------------------------------|---------------------------|------------------------|------------------|--------------------|--|------------------------------------|----------|------------|---------------------------------|--------------------------------|---------------|---|--|-------------------|-------------------|
| Nominal Pipe Size NPS | Outside Diameter of Flange O | Thickness of Flange, Min., t1 | Drilling | | | | Diameter of Hub, X | Hub Diameter Beginning of Chamfer Welding Neck A | Length Thru Hub | | | Threaded/Length Threaded Min. B | Bore | | | Comer Radius of Bore Lapped Flange and Pipe, R | Depth of Socket D | Diameter of RF, R |
| | | | Thickness Lap Joint Min., t1 | Diameter of Bolt Circle W | Diameter of Bolt Holes | Numbers of Bolts | | | Threaded/Slip-On/Socket Welding, Y | Lapped Y | Welding, Y | | Slip-On/Socket Welding, Min. B | Lapped Min. B | Welding Neck/Socket Welding B (Note(2)) | | | |
| 1/2 | 90 | 9.6 | 11.2 | 60.3 | 15.9 | 4 | 30 | 21.3 | 14 | 16 | 46 | 16 | 22.2 | 22.9 | 15.8 | 3 | 10 | 34.9 |
| 3/4 | 100 | 11.2 | 12.7 | 69.9 | 15.9 | 4 | 38 | 26.7 | 14 | 16 | 51 | 16 | 27.7 | 28.2 | 20.9 | 3 | 11 | 42.9 |
| 1 | 110 | 12.7 | 14.3 | 79.4 | 15.9 | 4 | 49 | 33.4 | 16 | 17 | 54 | 17 | 34.5 | 34.9 | 26.6 | 3 | 13 | 50.8 |
| 1 1/4 | 115 | 14.3 | 15.9 | 88.9 | 15.9 | 4 | 59 | 42.2 | 19 | 21 | 56 | 21 | 43.2 | 43.7 | 35.1 | 5 | 14 | 63.5 |
| 1 1/2 | 125 | 15.9 | 17.5 | 98.4 | 15.9 | 4 | 65 | 48.3 | 21 | 22 | 60 | 22 | 49.5 | 50.0 | 40.9 | 6 | 16 | 73.0 |
| 2 | 150 | 17.5 | 19.1 | 120.7 | 19.1 | 4 | 78 | 60.3 | 24 | 25 | 62 | 25 | 61.9 | 62.5 | 52.5 | 8 | 17 | 92.1 |
| 2 1/2 | 180 | 20.7 | 22.3 | 139.7 | 19.1 | 4 | 90 | 73.0 | 27 | 29 | 68 | 29 | 74.6 | 75.4 | 62.7 | 8 | 19 | 104.8 |
| 3 | 190 | 22.3 | 23.9 | 152.4 | 19.1 | 4 | 108 | 88.9 | 29 | 30 | 68 | 30 | 90.7 | 91.4 | 77.9 | 10 | 21 | 127.0 |
| 3 1/2 | 215 | 22.3 | 23.9 | 177.8 | 19.1 | 8 | 122 | 101.6 | 30 | 32 | 70 | 32 | 103.4 | 104.1 | 90.1 | 10 | - | 139.7 |
| 4 | 230 | 22.3 | 23.9 | 190.5 | 19.1 | 8 | 135 | 114.3 | 32 | 33 | 75 | 33 | 116.1 | 116.8 | 102.9 | 11 | - | 157.2 |
| 5 | 255 | 22.3 | 23.9 | 215.9 | 22.3 | 8 | 164 | 141.3 | 35 | 36 | 87 | 36 | 143.8 | 144.4 | 128.2 | 11 | - | 185.7 |
| 6 | 280 | 23.9 | 25.4 | 241.3 | 22.3 | 8 | 192 | 168.3 | 38 | 40 | 87 | 40 | 170.7 | 171.4 | 154.1 | 13 | - | 215.9 |
| 8 | 345 | 27.0 | 28.6 | 298.2 | 22.3 | 8 | 246 | 219.1 | 43 | 44 | 100 | 44 | 221.5 | 222.2 | 202.7 | 13 | - | 269.9 |
| 10 | 4.5 | 28.6 | 30.2 | 362.0 | 25.4 | 12 | 3.5 | 273.0 | 48 | 49 | 100 | 49 | 276.2 | 277.4 | 254.6 | 13 | - | 323.8 |
| 12 | 845 | 3.2 | 31.8 | 431.8 | 25.4 | 12 | 365 | 323.8 | 54 | 55 | 113 | 55 | 327.0 | 328.2 | 304.8 | 13 | - | 381.0 |
| 14 | 535 | 33.4 | 35.0 | 476.3 | 28.6 | 12 | 400 | 355.6 | 56 | 79 | 125 | 57 | 359.2 | 360.2 | To be Specified by Purchaser | 13 | - | 412.8 |
| 16 | 595 | 35.0 | 36.6 | 539.8 | 28.6 | 16 | 457 | 406.4 | 62 | 87 | 125 | 64 | 410.5 | 411.2 | - | 13 | - | 469.9 |
| 18 | 635 | 38.1 | 39.7 | 577.9 | 31.8 | 16 | 505 | 457.0 | 67 | 97 | 138 | 68 | 461.8 | 462.3 | - | 13 | - | 533.4 |
| 20 | 700 | 41.3 | 42.9 | 635.0 | 31.8 | 20 | 559 | 508.0 | 71 | 103 | 143 | 73 | 513.1 | 514.4 | - | 13 | - | 584.2 |
| 24 | 815 | 46.1 | 47.7 | 749.3 | 35.0 | 20 | 663 | 610.0 | 81 | 111 | 151 | 83 | 616.0 | 616.0 | - | 13 | - | 692.2 |

DIMENSIONS OF CLASS 300 FLANGES

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
|-----------------------|------------------------------|-------------------------------|------------------------------|---------------------------|------------------------|------------------|------------------------------------|--------------------|--|-----------------|------------|--------------------------------|---------------------------------|---------------|---|----|--|------------------------------------|-------------------|-------------------|
| Nominal Pipe Size NPS | Outside Diameter of Flange O | Thickness of Flange, Min., t1 | Thickness Lap Joint Min., t1 | Drilling | | | | Diameter of Hub, X | Hub Diameter Beginning of Chamfer Welding Neck A | Length Thru Hub | | | Threaded/Length Threaded Min. B | Bore | | | Comer Radius of Bore Lapped Flange and Pipe, R | Counter Bore Threaded FLANGE Min Q | Depth of Socket D | Diameter of RF, R |
| | | | | Diameter of Bolt Circle W | Diameter of Bolt Holes | Numbers of Bolts | Threaded/Slip-On/Socket Welding, Y | | | Lapped Y | Welding, Y | Slip-On/Socket Welding, Min. B | | Lapped Min. B | Welding Neck/Socket Welding B (Note(2)) | | | | | |
| 1/2 | 95 | 12.7 | 14.3 | 66.7 | 15.9 | 4 | 38 | 21.3 | 21 | 22 | 51 | 16 | 22.2 | 22.9 | 15.8 | 3 | 23.6 | 10 | 34.9 | |
| 3/4 | 115 | 14.9 | 15.9 | 82.6 | 19.1 | 4 | 48 | 26.7 | 24 | 25 | 56 | 16 | 27.7 | 28.2 | 20.9 | 3 | 29.0 | 11 | 42.9 | |
| 1 | 125 | 15.9 | 17.5 | 88.9 | 19.1 | 4 | 54 | 33.4 | 25 | 27 | 60 | 18 | 34.5 | 34.9 | 26.6 | 3 | 35.8 | 13 | 50.8 | |
| 1 1/4 | 135 | 17.5 | 19.1 | 98.4 | 19.1 | 4 | 64 | 42.2 | 25 | 27 | 64 | 21 | 43.2 | 43.7 | 35.1 | 5 | 44.4 | 14 | 63.5 | |
| 1 1/2 | 155 | 19.1 | 20.7 | 114.3 | 22.2 | 4 | 70 | 48.3 | 29 | 30 | 67 | 23 | 49.5 | 50.2 | 40.9 | 6 | 50.3 | 16 | 73.0 | |
| 2 | 165 | 20.7 | 22.3 | 127.0 | 19.0 | 4 | 84 | 60.3 | 32 | 33 | 68 | 29 | 61.9 | 62.5 | 52.5 | 8 | 63.5 | 17 | 92.1 | |
| 2 1/2 | 190 | 23.9 | 25.4 | 149.2 | 22.3 | 4 | 100 | 73.0 | 37 | 38 | 75 | 32 | 74.6 | 75.4 | 62.7 | 8 | 76.2 | 19 | 104.8 | |
| 3 | 210 | 27.0 | 28.6 | 168.3 | 22.3 | 4 | 117 | 88.9 | 41 | 43 | 78 | 32 | 90.7 | 91.4 | 77.9 | 10 | 92.2 | 21 | 127.0 | |
| 3 1/2 | 230 | 28.6 | 30.2 | 184.2 | 22.3 | 8 | 133 | 101.6 | 43 | 44 | 79 | 37 | 103.4 | 104.1 | 90.1 | 10 | 104.9 | - | 139.7 | |
| 4 | 255 | 30.2 | 31.8 | 200.0 | 22.3 | 8 | 146 | 114.3 | 46 | 48 | 84 | 37 | 116.1 | 116.1 | 102.3 | 11 | 117.6 | - | 157.2 | |
| 5 | 280 | 33.4 | 35.0 | 235.0 | 22.3 | 8 | 178 | 141.3 | 49 | 51 | 97 | 43 | 143.8 | 144.4 | 128.2 | 11 | 144.4 | - | 185.7 | |
| 6 | 320 | 35.0 | 36.6 | 269.9 | 22.3 | 8 | 206 | 168.3 | 51 | 52 | 97 | 47 | 170.7 | 171.4 | 154.1 | 13 | 171.1 | - | 215.9 | |
| 8 | 380 | 39.7 | 41.3 | 330.2 | 25.4 | 8 | 260 | 219.1 | 60 | 62 | 110 | 51 | 221.5 | 222.2 | 202.7 | 13 | 222.2 | - | 269.9 | |
| 10 | 445 | 46.1 | 47.7 | 387.4 | 28.6 | 12 | 321 | 273.0 | 65 | 95 | 116 | 56 | 276.2 | 277.4 | 254.6 | 13 | 276.2 | - | 323.8 | |
| 12 | 520 | 49.3 | 50.8 | 450.8 | 31.8 | 12 | 375 | 323.8 | 71 | 102 | 129 | 61 | 327.0 | 328.2 | 304.8 | 13 | 328.3 | - | 381.0 | |
| 14 | 585 | 52.4 | 54.0 | 514.4 | 31.8 | 12 | 425 | 355.6 | 75 | 111 | 141 | 64 | 359.2 | 360.2 | To be Specified by Purchaser | 13 | 360.4 | - | 412.8 | |
| 16 | 650 | 55.6 | 57.2 | 571.5 | 35.0 | 16 | 483 | 406.4 | 81 | 121 | 144 | 69 | 410.5 | 411.2 | - | 13 | 411.2 | - | 469.9 | |
| 18 | 710 | 58.8 | 60.4 | 628.6 | 35.0 | 16 | 533 | 457.0 | 87 | 130 | 157 | 70 | 461.8 | 462.3 | - | 13 | 462.0 | - | 533.4 | |
| 20 | 775 | 62.0 | 63.5 | 685.8 | 35.0 | 20 | 587 | 508.0 | 94 | 140 | 160 | 74 | 513.1 | 514.4 | - | 13 | 512 | - | 584.2 | |
| 24 | 915 | 68.3 | 69.9 | 812.8 | 41.3 | 20 | 702 | 610.0 | 105 | 152 | 167 | 83 | 616.0 | 616.0 | - | 13 | 614.4 | - | 692.2 | |

NOTE : (1) Height of RE 2mm

(2) Dimensions column 16 Correspond to the inside diameters of pipe as given in ASME B36.10M for Standard Wall Pipe, Thickness of Standard Wall is the same as Schedule 40 in Size NPS 10 and smaller. These bore size are furnished unless Otherwise specified by the Purchaser.



DIMENSIONS OF CLASS 600 FLANGES

| 1 | 2 | 3 | 4 | 5 6 7 | | | 8 | 9 10 11 | | | 12 | 13 14 15 | | | 16 | 17 | 18 | 19 |
|-----------------------|------------------------------|----------------------------|--------------------|---------------------------|---------------------------|-----------------|--|---------------------|-----------|----------------|---|-----------------|----------------|------------------------------|--|--------------------------------------|------------------|---------------|
| Nominal Pipe Size NPS | Outside Diameter of Flange O | Thickness of Flanges Min f | Diameter of Hub, X | Drilling | | | Hub Diameter Beginning of Chamfer Welding Neck A | Length Thru Hub | | | Threaded / Length Threaded Flange Min., T | Bore | | | Corner Radius of Bore of Lapped Flange and Pipe, r | Counter-Bore Threaded Flange Min., Q | Diameter of RF R | Socket Weld D |
| | | | | Diameter of Bolt Circle W | Diameter of Bolt Holes in | Number of Bolts | | Threaded/ Slip-On Y | Lapped, Y | Welding Neck Y | | Slip-On Min., B | Lapped Min., B | Welding Neck B | | | | |
| 1/2 | 95 | 14.3 | 38 | 66.7 | 15.9 | 4 | 21.3 | 22 | 22 | 52 | 16 | 22.2 | 22.9 | 3 | 23.6 | 10 | 34.9 | |
| 3/4 | 115 | 15.9 | 48 | 82.6 | 19.1 | 4 | 26.7 | 25 | 25 | 57 | 16 | 27.7 | 28.2 | 3 | 29.6 | 11 | 42.9 | |
| 1 | 125 | 17.5 | 54 | 88.9 | 19.1 | 4 | 33.4 | 27 | 27 | 62 | 18 | 34.5 | 34.9 | 3 | 35.8 | 13 | 50.8 | |
| 1 1/4 | 135 | 20.7 | 64 | 98.4 | 19.1 | 4 | 42.2 | 29 | 29 | 67 | 21 | 43.2 | 43.7 | 5 | 44.4 | 14 | 63.5 | |
| 1 1/2 | 155 | 22.3 | 70 | 114.3 | 22.3 | 4 | 48.3 | 32 | 32 | 70 | 23 | 49.5 | 50.0 | 6 | 50.6 | 16 | 73.0 | |
| 2 | 165 | 25.4 | 84 | 127.0 | 19.1 | 8 | 60.3 | 37 | 37 | 73 | 29 | 61.9 | 62.5 | To be Specified by Purchaser | 8 | 63.5 | 17 | 92.7 |
| 2 1/2 | 190 | 28.6 | 100 | 149.2 | 22.3 | 8 | 73.0 | 41 | 41 | 79 | 32 | 74.6 | 75.4 | | 8 | 76.2 | 19 | 104.8 |
| 3 | 210 | 31.8 | 117 | 168.3 | 22.3 | 8 | 88.9 | 46 | 46 | 83 | 35 | 90.7 | 91.4 | | 10 | 92.2 | 21 | 127.0 |
| 4 | 230 | 35.0 | 133 | 184.2 | 25.4 | 8 | 101.6 | 49 | 49 | 86 | 40 | 103.4 | 104.1 | | 10 | 104.9 | - | 139.7 |
| 5 | 330 | 44.5 | 189 | 266.7 | 28.6 | 8 | 141.36 | 60 | 60 | 114 | 48 | 143.8 | 144.4 | To be Specified by Purchaser | 22 | 144.4 | - | 185.7 |
| 6 | 355 | 47.7 | 222 | 292.1 | 28.6 | 12 | 168.3 | 67 | 67 | 117 | 51 | 170.7 | 171.4 | | 13 | 171.4 | - | 215.9 |
| 8 | 420 | 55.6 | 273 | 349.2 | 31.8 | 12 | 219.1 | 76 | 76 | 133 | 58 | 221.5 | 222.2 | | 13 | 222.2 | - | 269.9 |
| 10 | 510 | 63.5 | 343 | 431.8 | 35.0 | 16 | 273.0 | 86 | 111 | 152 | 66 | 276.2 | 277.4 | | 13 | 276.2 | - | 323.8 |
| 12 | 560 | 66.7 | 400 | 489.0 | 35.0 | 20 | 323.8 | 92 | 117 | 156 | 70 | 327.0 | 328.2 | | 13 | 328.6 | - | 381.0 |
| 14 | 605 | 69.9 | 432 | 527.0 | 38.1 | 20 | 355.6 | 94 | 94 | 165 | 74 | 359.2 | 360.2 | To be Specified by Purchaser | 13 | 360.4 | - | 412.8 |
| 16 | 705 | 76.2 | 495 | 603.0 | 41.3 | 20 | 406.4 | 106 | 140 | 178 | 48 | 410.5 | 411.2 | | 13 | 411.2 | - | 469.9 |
| 18 | 745 | 82.6 | 546 | 654.0 | 44.5 | 20 | 457.0 | 117 | 152 | 184 | 80 | 461.8 | 462.3 | | 13 | 462.0 | - | 533.4 |
| 20 | 815 | 88.9 | 610 | 723.9 | 44.5 | 24 | 508.0 | 127 | 165 | 190 | 83 | 513.1 | 514.4 | | 13 | 512.8 | - | 584.2 |
| 24 | 940 | 101.6 | 718 | 838.2 | 50.8 | 24 | 610.0 | 140 | 184 | 203 | 93 | 616.0 | 616.0 | | 13 | 614.4 | - | 692.2 |

Note : (1) Height of 7mm

DIMENSIONS OF CLASS 900 FLANGES

| 1 | 2 | 3 | 4 | 5 6 7 | | | 8 | 9 10 11 | | | 12 | 13 14 15 | | | 16 | 17 | 18 | 19 |
|-----------------------|------------------------------|----------------------------|--------------------|---------------------------|---------------------------|-----------------|--|---------------------|-----------|----------------|---|-----------------|----------------|------------------------------|--|--------------------------------------|------------------|---------------|
| Nominal Pipe Size NPS | Outside Diameter of Flange O | Thickness of Flanges Min f | Diameter of Hub, X | Drilling | | | Hub Diameter Beginning of Chamfer Welding Neck A | Length Thru Hub | | | Threaded / Length Threaded Flange Min., T | Bore | | | Corner Radius of Bore of Lapped Flange and Pipe, r | Counter-Bore Threaded Flange Min., Q | Diameter of RF R | Socket Weld D |
| | | | | Diameter of Bolt Circle W | Diameter of Bolt Holes in | Number of Bolts | | Threaded/ Slip-On Y | Lapped, Y | Welding Neck Y | | Slip-On Min., B | Lapped Min., B | Welding Neck B | | | | |
| 1/2 | 120 | 22.2 | 38 | 82.6 | 22.3 | 4 | 21.3 | 32 | 32 | 60 | 23 | 22.2 | 22.2 | To be Specified by Purchaser | 3 | 23.6 | 34.9 | 10 |
| 3/4 | 130 | 25.4 | 44 | 88.9 | 22.3 | 4 | 26.7 | 35 | 35 | 70 | 26 | 27.7 | 27.7 | | 3 | 29.6 | 42.9 | 11 |
| 1 | 150 | 28.6 | 52 | 101.6 | 25.4 | 4 | 33.4 | 41 | 41 | 73 | 29 | 34.5 | 34.5 | | 3 | 35.8 | 50.8 | 13 |
| 1 1/4 | 160 | 28.6 | 64 | 111.1 | 25.4 | 4 | 42.2 | 41 | 41 | 73 | 31 | 43.2 | 43.2 | | 5 | 44.4 | 63.5 | 14 |
| 1 1/2 | 180 | 31.8 | 70 | 123.8 | 28.6 | 4 | 48.3 | 44 | 44 | 83 | 32 | 49.5 | 49.5 | | 6 | 50.6 | 73.0 | 16 |
| 2 | 215 | 38.1 | 105 | 165.1 | 25.4 | 8 | 60.3 | 57 | 57 | 102 | 39 | 61.9 | 61.9 | | To be Specified by Purchaser | 8 | 63.5 | 92.7 |
| 2 1/2 | 215 | 41.3 | 124 | 190.5 | 28.6 | 8 | 73.0 | 64 | 64 | 105 | 48 | 74.6 | 74.6 | 8 | | 76.2 | 104.8 | 19 |
| 3 | 240 | 38.1 | 127 | 190.5 | 25.4 | 8 | 88.9 | 54 | 54 | 102 | 42 | 90.7 | 90.7 | 10 | | 92.2 | 127.0 | - |
| 4 | 290 | 44.6 | 159 | 235.0 | 31.8 | 8 | 101.6 | 70 | 70 | 114 | 48 | 103.4 | 103.4 | 10 | | 104.9 | 139.7 | - |
| 5 | 350 | 50.8 | 190 | 279.4 | 35.0 | 8 | 141.36 | 79 | 79 | 127 | 54 | 143.8 | 143.8 | To be Specified by Purchaser | 22 | 144.4 | 185.7 | - |
| 6 | 380 | 55.6 | 235 | 317.5 | 31.8 | 12 | 168.3 | 86 | 86 | 140 | 58 | 170.7 | 170.7 | | 13 | 171.4 | 215.9 | - |
| 8 | 470 | 63.5 | 298 | 393.7 | 38.1 | 12 | 219.1 | 114 | 114 | 162 | 64 | 221.5 | 221.5 | | 13 | 222.2 | 269.9 | - |
| 10 | 545 | 69.9 | 368 | 449.9 | 38.1 | 16 | 273.0 | 127 | 127 | 184 | 72 | 276.2 | 276.2 | | 13 | 276.2 | 323.8 | - |
| 12 | 610 | 79.4 | 419 | 533.4 | 38.1 | 20 | 323.8 | 143 | 143 | 200 | 77 | 327.0 | 327.0 | | 13 | 328.6 | 381.0 | - |
| 14 | 640 | 85.8 | 451 | 558.8 | 41.3 | 20 | 355.6 | 156 | 156 | 213 | 89 | 359.2 | 359.2 | To be Specified by Purchaser | 13 | 360.4 | 412.8 | - |
| 16 | 705 | 88.9 | 508 | 616.0 | 44.5 | 20 | 406.4 | 165 | 165 | 216 | 86 | 410.5 | 410.5 | | 13 | 411.2 | 469.9 | - |
| 18 | 785 | 101.6 | 565 | 686.8 | 50.8 | 20 | 457.0 | 190 | 190 | 229 | 89 | 461.8 | 461.8 | | 13 | 462.0 | 533.4 | - |
| 20 | 855 | 108.0 | 622 | 749.3 | 54.0 | 24 | 508.0 | 210 | 210 | 248 | 97 | 513.1 | 513.1 | | 13 | 512.8 | 584.2 | - |
| 24 | 1,040 | 139.7 | 749 | 901.7 | 66.7 | 24 | 610.0 | 267 | 267 | 292 | 102 | 616.0 | 616.0 | | 13 | 614.4 | 692.2 | - |

Note : (1) Height of 7mm



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 | 101.3 | 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 | 145.1 | 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 | 235.6 | 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 | 469.6 | 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" | 508.0 | 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 | 66.7 | 4 | 12.7 | 6.4 |
| 3 / 4" | 26.7 | 101.3 | 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 | 145.0 | 4 | 15.9 | 11.1 |
| 3-1/2" | 101.6 | 203.2 | 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 | 235.6 | 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 | 527.1 | 469.6 | 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" | 508.0 | 704.9 | 641.0 | 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 | 101.3 | 73.0 | 4 | 12.7 | 9.5 |
| 1" | 33.4 | 120.7 | 87.3 | 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 | 104.8 | 4 | 15.9 | 12.7 |
| 2" | 60.3 | 165.1 | 127.0 | 4 | 15.9 | 15.9 |
| 2-1/2" | 73.0 | 184.2 | 145.0 | 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 | 25.0 |
| 9" | 244.5 | 406.4 | 355.6 | 12 | 22.2 | 25.0 |
| 10" | 273.0 | 431.8 | 381.0 | 12 | 22.2 | 25.0 |
| 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" | 508.0 | 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 | 17.0 |
| 1-1/2" | 48.3 | 139.7 | 104.8 | 4 | 15.9 | 17.0 |
| 2" | 60.3 | 165.1 | 127.0 | 4 | 15.9 | 19.1 |
| 2-1/2" | 73.0 | 184.2 | 145.0 | 8 | 15.9 | 19.1 |
| 3" | 88.9 | 203.0 | 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 | 336.6 | 292.1 | 12 | 19.1 | 31.8 |
| 8" | 219.1 | 368.3 | 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 |

NOTE : FOR 12.7 MM AND 15.87 BOLTS DIA THE DIAMETERS OF THE HOLES WILL BE 1.58MM LARGER AND FOR 19.01 AND ABOVE THE HOLE DIA WILL BE 3.17 LARGER.



TOLERANCE ASTM SPECIFICATION FOR TUBING & PIPING

| ASTM SPECIFICATION | ALLOWABLE ALLOWABLE OUTSIDE DIAMETER VARIATION MM VARIATION | | WALL THICKNESS | TESTING |
|--|---|--|--|---|
| | OVER | UNDER | | |
| ASTM 213 Seamless Ferritic and Austenitic tubes | Nominal Diameter | | | |
| | Under 25.4mm | .1016 | .1016 | + 20% -0 |
| | 25.4 - 38.1 inclu | .1524 | .1525 | +20% -0 |
| | 38.1 - 50.8 exclu | .2032 | .2032 | +22% -0 |
| | 50.8 - 63.5 exclu | .254 | .254 | +22% -0 |
| | 63.5 - 76.2 exclu | .3048 | .3048 | +22% -0 |
| | 76.2 - 101.6 inclu | .381 | .381 | +22% -0 |
| ASTM - 249 Welded Heat Exchanger and Condenser tubes | Under 25.4 mm 25.4 - 38.1 inclu 38.1 - 50.8 exclu 50.8 - 63.5 exclu 63.5 - 76.2 exclu 76.2 - 101.6 inclu | .1016 .1524 .2032 .254 .3048 .381 | .1016 .1524 .2032 .254 .3048 .381 | ± 10% ± 10% ± 10% ± 10% ± 10% |
| ASTM - 269 Seamless and Welded Austenitic S.S. Tubes | Up to 12.7 mm 25.7 to 38.1 mm 38.1 to 88.9 mm 88.9 to 139.7 mm 139.7 to 203.2 mm | 0.13 0.13 0.25 0.38 0.76 | 0.13 0.13 0.25 0.38 0.76 | ± 15% ± 10% ± 10% ± 10% ± 10% S |
| ASTM - 312 Seamless and Welded Austenitic Pipe | 13.72 - 48.26 mm 60.33 - 114.3 141.3 - 219.08 169.28 - 219.08 273.05 - 373.85 | ± 0.04 ± 0.79 ± 0.59 ± 0.59 ± 2.38 | -0.79 -0.79 -0.79 -0.79 | -12.5% |
| ASTM - 358 Welded Austenitic pipe | 219.08 750 mm | ± 0.5% | | 3.0 mm |
| ASTM - 409 Welded Austenitic pipe | 335.6 750 mm | | ± 22% -0 ± 22% | -0.46 mm |



INDUSTRIAL VALVES



GLOBE VALVE

BS 5352 / BS 6755 / BS 1873 / BS 6755
ASME B 16.34 DIN 3356
STAINLESS STEEL (BAR STOCK)
 RATING : 150# / 300 #
 SIZE : 8 MM TO 100 MM

FORGED CARBON STEEL / S. STEEL
 RATING : 150# / 300 # / 800 # / 1500 #
 SIZE : 15 MM TO 400 MM

CAST CARBON STEEL / S. STEEL, ALLOY STEEL
 RATING : 150# / 300 # / 600 # / 900 #
 SIZE : 15 MM TO 400 MM

CAST IRON
 RATING : 125# / 150 #
 SIZE : 25 MM TO 600 MM

| | FORGED RANGE | CAST IRON |
|------------------------|--------------|--------------------|
| DESIGN (MFG.) STD. | BS 5352 | BS 1873 / DIN 3356 |
| TEST (INSPECTION) STD. | BS 6755 | BS 6755 |



GATE VALVE

STAINLESS STEEL (BAR STOCK)

RATING : 150# / 300 #
 SIZE : 8 MM TO 100 MM

FORGED CARBON STEEL / S. STEEL
 RATING : 150# / 300 # / 800 # / 1500 #
 SIZE : 15 MM TO 400 MM

CAST CARBON STEEL / S. STEEL, ALLOY STEEL
 RATING : 150# / 300 # / 600 # / 900 #
 SIZE : 25 MM TO 600 MM

CAST IRON
 RATING : 125# / 150 #
 SIZE : 25 MM TO 600 MM

| | FORGED RANGE | CAST IRON |
|------------------------|----------------------|------------------|
| PRESS / TEMP. RATING | ANSI 16.34 / API 6 D | ANSI 16.34 |
| DESIGN (MFG.) STD. | API 602 / BS 5352 | API 600 / API 6D |
| TEST (INSPECTION) STD. | API 598 BS 6755 | AI 598 / API 6D |



NON RETURN VALVE

STAINLESS STEEL (BAR STOCK)

RATING : 150# / 300 #
 SIZE : 8 MM TO 100 MM

FORGED CARBON STEEL / S. STEEL
 RATING : 150# / 300 # / 800 # / 1500 #
 SIZE : 15 MM TO 400 MM

CAST CARBON STEEL / S. STEEL, ALLOY STEEL
 RATING : 150# / 300 # / 600 # / 900 #
 SIZE : 15 MM TO 400 MM

CAST IRON
 RATING : 125 / 150 #
 SIZE : 25 MM TO 600 MM

| | FORGED RANGE | CAST IRON |
|------------------------|--------------|--------------------|
| DESIGN (MFG.) STD. | BS 5352 | BS 1873 / DIN 3356 |
| TEST (INSPECTION) STD. | BS 6755 | BS 6755 |



BUTTERFLY VALVE

API 609 / BS 5155 / IS 13095 / CAST IRON

OPERATING : LEVER / MANUAL GEAR
 DESIGN : SURE SEAL / REPLACEABLE RUBBER LINING
 ENDS : WAFER TYPE / DOUBLE FLANGE
 SIZE : LUG TYPE
 DESIGN : 40 MM TO 500 MM
 OPERATION : OFFSET DISC
 SIZE : LEVER / GEAR (ISI MARKED)
 350 MM TO 1200 MM

CAST CARBON STEEL

DESIGN : SURE SEAL / REPLACEABLE
 ENDS : RUBBER LINING
 SIZE : WAFER TYPE
 40 MM TO 500 MM

STAINLESS STEEL

DESIGN : OFFSET DISC.
 OPERATION : LEVER / MANUAL / GEAR
 ENDS : WAFER TYPE
 SIZE : 40 MM TO 400 MM

Mfg. STD : BS 5155 / AWWA C 504 API 609 / IS 13095
TEST STD : BS 6155 / BS 6755



SPHERICAL DISC VALVE

BODY & DISC : CF8/CF8M/C.I. / WCB
 SEAT : PTFE (Available EPDM Metal to Metal)

GLAND : PTFE
 BEARING : PTFE
 OPER. TEMP. : -50°C to 38°C
 -50°C to 220°C (Soft Seat)
 -50°C to 600°C (M to M)

HANDLE : M.S. / S. STEEL
 PLATE MOUNTING : NAMUR / STANDARD
 OPERATION : HAND LEVER TYPE
 WORM GEAR BOX

TYPE : PNEUMATIC ACTUATED
 ELECTRICAL ACTUATED
 SIZE : 40 MM TO 900 MM



STRAINER

CAST CARBON STEEL / S. STEEL
 DESIGN : Y-TYPE (PN 40 / DIN 3356 / BS 1873)
 SIZE : 15 MM TO 300 MM

STAINLESS STEEL

DESIGN : Y-TYPE (150#)
 ENDS : SCREWED / SOCKET WELD
 SIZE : 15 MM TO 80 MM

CAST IRON

DESIGN : Y-TYPE (150#)
 ENDS : SCREWED / FLANGED
 SIZE : 15 MM TO 300 MM
 DESIGN : POT TYPE
 ENDS : FLANGED
 SIZE : 40 MM TO 300 MM
 DESIGN : T-TYPE (DIRT BOX)
 ENDS : FLANGED
 SIZE : 25 MM TO 300 MM



DIN GLOBE VALVE

BS 6755 / BS 1873 / ASME B 16.34 / DIN 3356
CAST CARBON STEEL / S. STEEL

RATING : PN 40 / PN 64
 SIZE : 25 MM TO 300 MM
 DESIGN STD : BS 1873 / DIN 3356
 TEST (INSPECTION) STD : BS 6755

CAST IRON
 RATING : PN 10 / PN 16
 SIZE : 15 MM TO 250 MM



DIN NON RETURN VALVE

CAST CARBON STEEL S. STEEL / ALLOY STEEL

RATING : PN 40 / PN 64
 SIZE : 15 MM TO 300 MM

CAST IRON

RATING : PN 10 / PN 16
 SIZE : 15 MM TO 250 MM



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