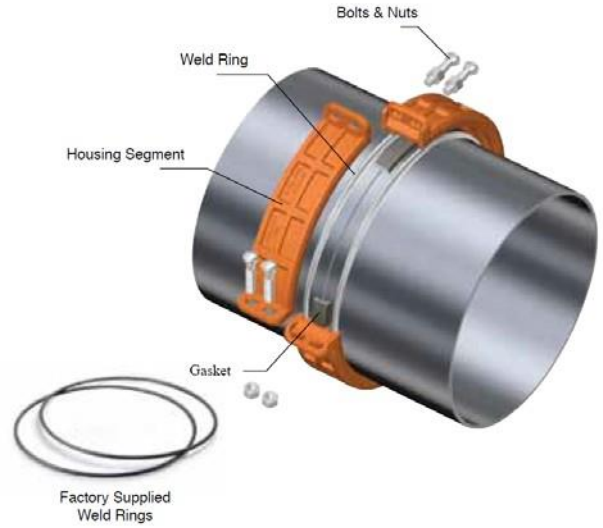
MODEL R-88 RING JOINT COUPLING

The ***Shurjoint*** Model R-88 Ring Joint Coupling is an ideal pipe joining method when pipe is difficult to groove or when grooving is not the preferred joining method. Available in sizes 8" to 96" the R-88 offers ease of use and excellent performance.

The ***Shurjoint*** Model R-88 Ring Joint Coupling is supplied with a pair of factory supplied weld rings. For installation weld a ring on each pipe end to be connected, next mount the rubber gasket over the pipe ends, place coupling segments over the gasket and fasten the bolts and nuts.

R-88 couplings should always be installed so that the coupling bolt pads make metal to metal contact.



The ***Shurjoint*** R-88 Ring Joint Coupling is considered a shouldered coupling with the factory supplied weld rings serving as the joint shoulders. The R-88's performance standards meet and or exceed the requirements of ASTM F1476 and AWWA C606. The factory supplied weld rings offer a much more economical and installation friendly alternative to that of traditional shoulder rings, including Type A, B, C, D, E, and G rings.

The R-88 coupling can also be used on stainless steel pipe with optional weld rings available in compatible stainless steel grades. Check with ***Shurjoint*** for details and availability.

Typical applications include:

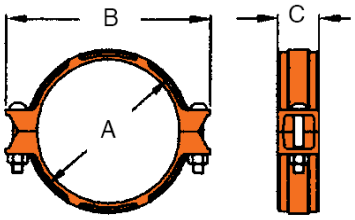
- Water & Waste Water Treatment Plants
- Mining & Tunnel Boring
- Pulp & Paper
- Hydroelectric Plants
- Co-Gen Electric Plants
- Food & Beverage
- Compressed Air
- HVAC

MODEL R-88 / R-88N RING JOINT COUPLING

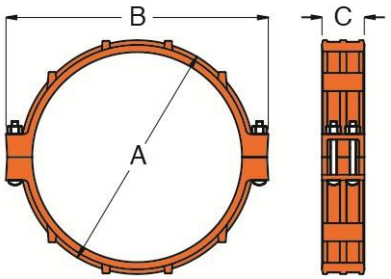
The ***Shurjoint*** Model R-88 Ring Joint Coupling is available in sizes 8" / 200 mm and above. Sizes 14" / 350 mm to 26" / 650 mm are now available in a two-segment style (R-88N). The two-segment style offers an easier and faster installation.

10 YEAR LIMITED WARRANTY

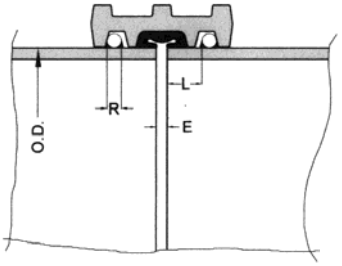
Full warranty terms can be found on www.shurjoint.com



8" ~ 12"
(R-88)



14" ~ 26"
(R-88N)



Ring Clamp

Model R-88 / R-88N Ring Joint Coupling

Nominal Size	Pipe O.D.	Rings both sides fully welded** Max. Working Pressure (CWP)*	Rings both sides fully welded** Max. End Load (CWP)*	Axial Displace-ment † E	Angular Movement / Deflection † Per Cplg	Angular Movement / Deflection † Per Pipe	Dimensions A	Dimensions B	Dimensions C	Bolts No.	Bolts Size	Sealing Surface L	Ring Size R	No. of Clamps‡	Weight
in *mm*	in *mm*	PSI *Bar*	Lbs *kN*	in *mm*	Deg.(°)	in / ft *mm / m*	in *mm*	in *mm*	in *mm*		in *mm*	in *mm*	in *mm*	No.	Lbs *Kgs*
8 *200*	8.625 *219.1*	400 *28.0*	23350 *105.51*	0-0.340 *0-8.7*	2.14	0.45 *37*	10.08 *256*	13.00 *330*	3.11 *79*	2	¾ x 4¾ *M20x120*	0.91 *23*	¼ *6.0*	3	16.8 *7.6*
10 *250*	10.750 *273.0*	400 *28.0*	36280 *163.81*	0-0.340 *0-8.7*	1.95	0.41 *34*	12.29 *312*	15.20 *386*	3.25 *83*	2	¾ x 4¾ *M20x120*	0.91 *23*	¼ *6.0*	3	22.2 *10.1*
12 *300*	12.750 *323.9*	400 *28.0*	51040 *230.59*	0-0.190 *0-4.8*	0.82	0.17 *14*	14.72 *374*	17.90 *455*	3.39 *86*	2	⅞ x 6½ ---	1.02 *26*	5/16 *8.0*	3	30.8 *14.0*
200 JIS *216.3*	8.516	400 *28.0*	22770 *102.83*	0-0.340 *0-8.7*	1.50	0.31 *26*	9.96 *253*	12.87 *327*	3.11 *79*	2	--- *M20x120*	0.91 *23*	¼ *6.0*	3	17.6 *8.0*
250 JIS *267.4*	10.528	400 *28.0*	34800 *157.16*	0-0.340 *0-8.7*	1.50	0.31 *26*	12.05 *306*	14.96 *380*	3.25 *83*	2	--- *M20x120*	0.91 *23*	¼ *6.0*	3	22.0 *10.0*
300 JIS *318.5*	12.539	400 *28.0*	49360 *222.97*	0-0.190 *0-4.8*	1.50	0.31 *26*	14.53 *369*	17.72 *450*	3.39 *86*	2	--- *M20x120*	1.02 *26*	5/16 *8.0*	3	32.6 *14.8*
14 *350 (R-88N)*	14.000 *355.6*	400 *28.0*	61540 *277.94*	0-0.250 *0-6.4*	1.20	0.25 *21*	15.93 *405*	19.40 *493*	3.65 *93*	2	⅞ x 5½ ---	1.02 *26*	5/16 *8.0*	4	31.5 *14.3*
16 *400 (R-88N)*	16.000 *406.4*	400 *28.0*	80380 *363.02*	0-0.250 *0-6.4*	0.90	0.19 *16*	17.92 *455*	21.52 *547*	3.65 *93*	2	⅞ x 5½ ---	1.02 *26*	5/16 *8.0*	4	35.0 *15.9*
18 *450 (R-88N)*	18.000 *457.2*	400 *28.0*	101730 *459.45*	0-0.375 *0-9.5*	1.20	0.25 *21*	20.37 *517*	24.17 *614*	4.23 *107*	2	1 x 5½ ---	1.18 *30*	5/16 *8.0* ⊕	4	59.9 *27.2*
20 *500 (R-88N)*	20.000 *508.0*	400 *28.0*	125600 *567.22*	0-0.375 *0-9.5*	1.08	0.23 *19*	22.46 *570*	25.99 *660*	4.35 *110*	2	1 x 5½ ---	1.18 *30*	⅜ *9.5*	4	69.5 *31.6*
24 *600 (R-88N)*	24.000 *609.6*	400 *28.0*	180860 *816.80*	0-0.375 *0-9.5*	0.80	0.17 *14*	27.17 *690*	30.00 *762*	4.84 *123*	4	⅞ x 6½ ---	1.18 *30*	½ *12.7*	4	101.9 *46.3*
26 *650 (R-88N)*	26.000 *660.4*	300 *20.0*	159190 *684.72*	0-0.500 *0-12.7*	1.06	0.22 *18*	29.58 *751*	32.78 *832*	6.69 *170*	4	1 x 10 ---	1.97 *50*	½ *12.7*	4	173.5 *78.7*

Note: Dimensions are subject to change without notice. Other sizes are available on request.

*Working Pressure and End Load are the total from all internal and external loads based on the applicable pipe wall thickness.

**Working Pressure is based on rings both sides fully welded standard wall carbon steel pipe.

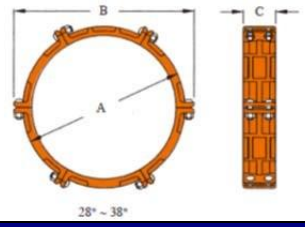
†Allowable Axial Displacement and Angular Movement (Deflection) figures shown are the maximum nominal range of movement at each R-88 coupling joint when rings are welded in the standard position. For design and installation purposes these figures should be reduced by 25%.

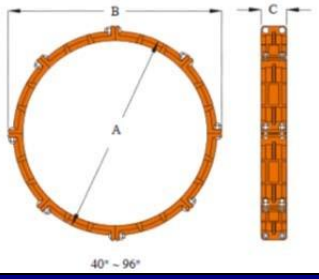
⊕10mm shoulder rings are acceptable.

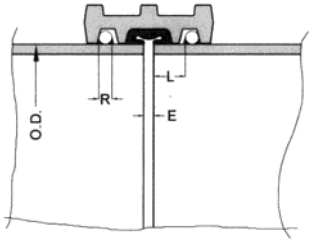
‡The number of ring clamps listed is the minimum required to correctly position the weld ring around the circumference of the pipe end.

MODEL R-88 RING JOINT COUPLING
(Large Diameter)

The ***Shurjoint*** Model R-88 Ring Joint Coupling is available in sizes 28" / 700 mm to 96" / 2400 mm. The larger diameter couplings are comprised of 6 to 8 housing segments depending on the size and feature two bolts at each joint segment to ensure a positive connection.







Ring Clamp

Model R-88 Ring Joint Coupling

Nominal Size	Pipe O.D.	Rings both sides fully welded** Max. Working Pressure (CWP)*	Rings both sides fully welded** Max. End Load (CWP)*	Rings both sides fully welded** Axial Displace-ment † E	Angular Movement / Deflection † Per Cplg	Angular Movement / Deflection † Per Pipe	Dimensions A	Dimensions B	Dimensions C	Bolts No.	Bolts Size	Sealing Surface L	Ring Size R	No. of Clamps‡	N.W.
in *mm*	in *mm*	PSI *Bar*	Lbs *kN*	in *mm*	Deg.(°)	in / ft *mm / m*	in *mm*	in *mm*	in *mm*	in *mm*		in *mm*	in *mm*		Lbs *Kgs*
28 *700*	28.0 *711.2*	300 *20.0*	184630 *794.11*	0-0.500 *0-12.7*	0.90	0.19 *16*	31.75 *806*	35.47 *901*	6.69 *170*	12	⅞ x 4	2.00 *50*	½ *12.7*	4	222.2 *101.0*
30 *750*	30.0 *762.0*	300 *20.0*	211950 *911.61*	0-0.500 *0-12.7*	0.86	0.18 *15*	33.75 *857*	37.60 *955*	6.69 *170*	12	1 x 3½	2.00 *50*	½ *12.7*	4	218.9 *99.5*
32 *800*	32.0 *812.8*	300 *20.0*	241150 *1037.21*	0-0.500 *0-12.7*	0.84	0.18 *15*	35.75 *908*	39.45 *1002*	6.69 *170*	12	1 x 3½	2.00 *50*	½ *12.7*	4	225.4 *102.2*
34 *850*	34.0 *863.4*	300 *20.0*	272230 *1170.37*	0-0.500 *0-12.7*	0.84	0.18 *15*	37.75 *959*	41.50 *1054*	7.87 *200*	12	1 x 3½	2.00 *50*	½ *12.7*	4	253.0 *115.0*
36 *900*	36.0 *914.4*	300 *20.0*	305200 *1312.72*	0-0.500 *0-12.7*	0.76	0.16 *13*	39.75 *1010*	43.50 *1103*	7.87 *200*	12	1 x 3½	2.00 *50*	½ *12.7*	4	246.0 *111.6*
38 *950*	38.0 *965.2*	232 *16.0*	262980 *1170.10*	0-0.500 *0-12.7*	0.76	0.16 *13*	41.75 *1060*	45.50 *1156*	7.87 *200*	12	1 x 3½	2.00 *50*	½ *12.7*	4	275.0 *125.0*
40 *1000*	40.0 *1016.0*	232 *16.0*	291390 *1296.51*	0-0.625 *0-15.9*	0.80	0.17 *14*	44.69 *1135*	48.39 *1229*	7.87 *200*	16	1 x 3½	2.37 *60*	⅝ *15.9*	6	310.2 *141.0*
42 *1050*	42.0 *1066.8*	232 *16.0*	321250 *1429.41*	0-0.625 *0-15.9*	0.86	0.18 *15*	46.70 *1186*	50.71 *1288*	7.87 *200*	16	1¼ x 5	2.37 *60*	⅝ *15.9*	6	326.9 *148.6*
44 *1100*	44.0 *1117.6*	232 *16.0*	352580 *1568.78*	0-0.625 *0-15.9*	0.80	0.17 *14*	48.66 *1236*	52.64 *1337*	7.87 *200*	16	1¼ x 5	2.37 *60*	⅝ *15.9*	6	343.2 *156.0*
48 *1200*	48.0 *1219.2*	232 *16.0*	419600 *1866.98*	0-0.625 *0-15.9*	0.70	0.15 *12*	52.68 *1338*	55.91 *1420*	7.87 *200*	16	1 x 3½	2.37 *60*	⅝ *15.9*	6	466.7 *211.8*
52 *1300*	52.0 *1320.8*	175 *12.0*	371460 *1643.33*	0-0.625 *0-15.9*	---	--- ---	61.25 *1555*	60.67 *1541*	7.87 *200*	16	1¼ x 5	2.37 *60*	⅝ *15.9*	6	453.2 *206.0*
54 *1350*	54.0 *1371.6*	175 *12.0*	400580 *1772.17*	0-0.625 *0-15.9*	---	--- ---	63.25 *1607*	62.52 *1588*	7.87 *200*	16	1¼ x 5	2.37 *60*	⅝ *15.9*	6	472.1 *214.6*
56 *1400*	56.0 *1422.4*	175 *12.0*	430800 *1905.87*	0-0.625 *0-15.9*	---	--- ---	65.38 *1660*	64.69 *1643*	7.87 *200*	16	1¼ x 5	2.37 *60*	⅝ *15.9*	6	488.2 *222.0*
60 *1500*	60.0 *1524.0*	175 *12.0*	494550 *2187.87*	0-0.625 *0-15.9*	---	--- ---	69.38 *1762*	68.82 *1748*	7.87 *200*	16	1¼ x 5	2.37 *60*	⅝ *15.9*	6	537.2 *244.2*
66 *1650*	66.0 *1676.4*	175 *12*	598709 *2663.19*	0-0.750 *0-19.1*	---	--- ---	76.00 *1932*	75.75 *1924*	8.00 *216*	16	1½ x 5	2.37 *60*	¾ *19.1*	8	612.5 *278.4*
68 *1700*	68.0 *1727.2*	175 *12*	635544 *2827.04*	0-0.750 *0-19.1*	---	--- ---	78.50 *1994*	78.03 *1982*	8.00 *216*	16	1½ x 5	2.37 *60*	¾ *19.1*	8	785.4 *357.0*
72 *1800*	72.0 *1828.8*	175 *12*	712513 *3169.41*	0-0.750 *0-19.1*	---	--- ---	82.50 *2095*	82.28 *2090*	8.00 *216*	16	1½ x 6⅞	2.37 *60*	¾ *19.1*	8	737.7 *335.3*
84 *2100*	84.0 *2133.6*	100 *7.0*	553890 *2501.46*	0-0.750 *0-19.1*	---	--- ---	94.75 *2406*	93.81 *2383*	8.00 *216*	16	1½ x 5	2.37 *60*	¾ *19.1*	8	780.3 *354.7*
96 *2400*	96.0 *2438.4*	100 *7.0*	723450 *3267.21*	0-0.750 *0-19.1*	---	--- ---	106.75 *2711*	106.54 *2706*	8.00 *216*	16	1½ x 5	2.37 *60*	¾ *19.1*	8	823.2 *374.2*

Note: Dimensions are subject to change without notice. Other sizes are available on request.

*Working Pressure and End Load are the total from all internal and external loads based on the applicable pipe wall thickness.

**Working Pressure is based on rings both sides fully welded standard wall carbon steel pipe.

†Allowable Axial Displacement and Angular Movement (Deflection) figures shown are the maximum nominal range of movement at each R-88 coupling joint when rings are welded in the standard position. For design and installation purposes these figures should be reduced by 25%.

‡The number of ring clamps listed is the minimum required to correctly position the weld ring around the circumference of the pipe end.

MATERIAL SPECIFICATIONS

• Housing:

Ductile Iron to ASTM A536, Gr. 65-45-12 and or to ASTM A395, Gr. 65-45-15, min. tensile strength 65,000 psi (448 MPa).

- Sizes 8"-26" consist of two housing segments
- 28"-38" consist of six housing segments
- 40"-96" consist of eight housing segments

• Surface Finish:

Standard painted finishes in orange or RAL3000 red.

- ☐ Hot-dip galvanized (Option)
- ☐ Epoxy Coatings in RAL3000 red or other colors (Option)
- ☐ Polyamide 11 (Nylon) coating (Option)

• Weld Rings:

Carbon Steel SAE J403 (ANSI) 1020.

- ☐ Stainless steel: 304, 316, 316L.

• Rubber Gasket:

Grade "E" EPDM (Color code: Green stripe) Good for cold & hot water up to +230°F (+110°C). Also good for services for water with acid, water with chlorine or chloramines, deionized water, seawater and waste water, dilute acids, oil-free air and many chemicals. Not recommended for petroleum oils, minerals oils, solvents and aromatic hydrocarbons.
Maximum Temperature Range: -30°F (-34°C) to +230°F (+110°C)*.
*EPDM gaskets for water services are not recommended for steam services unless couplings or components are accessible for frequent gasket replacement.

- ☐ (Option) **Grade "T" Nitrile** (Color code: Orange stripe) Recommended for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range. Also good for water services under +66 °C (+150 °F).
  Temperature range: -29 °C to +82 °C (-20 °F to +180 °F).
  Do not use for HOT WATER above +66 °C (+150 °F) or HOT DRY AIR above +60 °C (+140 °F).
- ☐ Other options: Grade "M" – Halogenated Butyl.

For additional details contact ***Shurjoint.***

• Bolts & Nuts:

¾" ~ 1½": Heat treated carbon steel track bolts to ASTM A183 Gr. 2, minimum tensile strength 110,000 psi (758 MPa), Zinc electroplated, with heavy-duty hexagonal nuts to ASTM A563.

- ☐ Stainless steel bolts and stainless steel nuts or Silicone-Bronze nut are available upon request.

Performance Data

The following tables show maximum cold working pressures (CWP) of ***Shurjoint*** R-88 couplings based on rings both sides fully welded and corresponding working pressure for applicable steel pipe.

Model R-88 Ring Joint Coupling

Nominal Size	Pipe O.D.	Max. Working Pressure / Max. End Load Rings both sides fully welded					
		XS (.500")		STD (.375")		LW (.312")	
in *mm*	in *mm*	PSI *Bar*	Lbs *kN*	PSI *Bar*	Lbs *kN*	PSI *Bar*	Lbs *kN*
8 *200*	8.625 *219.1*	600 *40.0*	35040 *150.74*	400 *28.0*	23359 *105.51*	400 *28.0*	23359 *105.51*
10 *250*	10.750 *273.0*	600 *40.0*	54430 *234.02*	400 *28.0*	36287 *163.81*	400 *28.0*	36287 *163.81*
12 *300*	12.750 *323.9*	600 *40.0*	76567 *329.42*	400 *28.0*	51045 *230.59*	400 *28.0*	51045 *230.59*
200 JIS	8.516 *216.3*	600 *40.0*	34215 *150.58*	400 *28.0*	22772 *102.83*	400 *28.0*	22772 *102.83*
250 JIS	10.528 *267.4*	600 *40.0*	52205 *224.52*	400 *28.0*	34803 *157.16*	400 *28.0*	34803 *157.16*
300 JIS	12.539 *318.5*	600 *40.0*	74054 *318.53*	400 *28.0*	49369 *222.97*	400 *28.0*	49369 *222.97*
14 *350 (R-88N)*	14.000 *355.6*	600 *40.0*	92316 *397.06*	400 *28.0*	61544 *277.94*	350 *24.0*	53851 *238.23*
16 *400 (R-88N)*	16.000 *406.4*	500 *35.0*	100480 *453.78*	400 *28.0*	80384 *363.02*	350 *24.0*	70336 *311.16*
18 *450 (R-88N)*	18.000 *457.2*	500 *35.0*	12170 *574.31*	400 *28.0*	101736 *459.45*	350 *24.0*	89019 *393.82*
20 *500(R-88N)*	20.000 *508.0*	500 *35.0*	157000 *709.03*	400 *28.0*	125600 *567.22*	300 *20.0*	94200 *405.16*
24 *600 (R-88N)*	24.000 *609.6*	500 *35.0*	226080 *1021.00*	400 *28.0*	180864 *816.80*	250 *17.0*	113040 *495.92*
26 *650 (R-88N)*	26.000 *660.4*	400 *28.0*	212264 *958.61*	300 *20.0*	159198 *584.72*	250 *17.0*	132665 *582.01*
28 *700*	28.000 *711.2*	400 *28.0*	246176 *1111.76*	300 *20.0*	184632 *794.11*	250 *17.0*	153860 *675.00*
30 *750*	30.000 *762.0*	400 *28.0*	282600 *1276.26*	300 *20.0*	211950 *911.61*	250 *17.0*	176625 *774.87*
32 *800*	32.000 *812.8*	400 *28.0*	321536 *1452.10*	300 *20.0*	241152 *1037.21*	250 *17.0*	200960 *881.63*
34 *850*	34.000 *863.4*	350 *24.0*	317611 *1404.45*	300 *20.0*	272238 *1170.37*	200 *14.0*	181492 *819.26*
36 *900*	36.000 *914.4*	350 *24.0*	356076 *1575.26*	300 *20.0*	305208 *1312.72*	200 *14.0*	203472 *918.90*
38 *950*	38.000 *965.2*	300 *20.0*	340062 *1462.63*	232 *16.0*	262981 *1170.10*	175 *12.0*	198370 *877.58*
40 *1000*	40.000 *1016.0*	300 *20.0*	376800 *1620.64*	232 *16.0*	291392 *1296.51*	175 *12.0*	219800 *972.39*
42 *1050*	42.000 *1066.8*	300 *20.0*	415422 *1786.76*	232 *16.0*	321260 *1429.41*	175 *12.0*	242330 *1072.05*
44 *1100*	44.000 *1117.6*	300 *20.0*	455928 *1960.98*	232 *16.0*	352584 *1568.78*	175 *12.0*	265958 *1176.59*
48 *1200*	48.000 *1219.2*	300 *20.0*	542592 *2333.72*	232 *16.0*	419604 *1866.98*	--- ---	--- ---
52 *1300*	52.000 *1320.8*	232 *16.0*	492452 *2191.11*	175 *12.0*	371462 *1643.33*	--- ---	--- ---
54 *1350*	54.000 *1371.6*	232 *16.0*	531062 *2362.90*	175 *12.0*	400586 *1772.17*	--- ---	--- ---
56 *1400*	56.000 *1422.4*	232 *16.0*	571128 *2541.17*	175 *12.0*	430808 *1905.87*	--- ---	--- ---
60 *1500*	60.000 *1524.0*	232 *16.0*	656532 *2917.16*	175 *12.0*	494550 *2187.87*	--- ---	--- ---
66 *1650*	66.000 *1676.4*	175 *12.0*	598406 *2647.32*	125 *8.6*	427433 *1897.24*	--- ---	--- ---
68 *1700*	68.000 *1727.2*	175 *12.0*	635222 *2810.19*	125 *8.6*	453730 *2013.97*	--- ---	--- ---
72 *1800*	72.000 *1828.8*	150 *10.0*	610416 *2625.44*	125 *8.6*	508680 *2257.88*	--- ---	--- ---
84 *2100*	84.000 *2133.6*	125 *8.6*	692370 *3073.22*	100 *7.0*	553896 *2501.46*	--- ---	--- ---
96 *2400*	96.000 *2438.4*	125 *8.6*	904320 *4014.01*	100 *7.0*	723456 *3267.21*	--- ---	--- ---

Pressure Ratings of Carbon Steel Pipe (ASTM A53 Gr. B)

When designing a piping system you must select pipe with the appropriate wall thickness to correspond with the intended working pressure of the system. The table lists design working pressure by the pipe wall schedule, XS, STD and LW, of representative ASTM A53 Gr. B carbon steel pipe calculated in accordance with the formula stipulated in ASME B31.1 Power Piping para. 104.1.

$$P = \frac{2SE(tm - A)}{Do - 2y(tm - A)}$$

Where:

P = Maximum internal service pressure (psi)
SE = Allowable stress (psi)
(ASTM A53 Gr. B = 15,000 psi)
tm = Minimum pipe wall thickness (inch)
(87.5% of nominal wall thickness)
Do = Outside diameter of pipe (inch)
y = A coefficient (For ferritic steels 600°F or below = 0.4)
A = Additional thickness (inch) (A = 0)

Maximum internal service pressure of Carbon Steel Pipe, ASTM A53 Gr. B

Unit: psi

Nom. Size in / mm	XS 0.5"	STD 0.375"*	LW 0.25"/0.312"^
8 / 200	1586	1006	777
10 / 250	1262	913	621
12 / 300	1058	788	522
14 / 350	962	717	475
16 / 400	839	625	415
18 / 450	744	555	368
20 / 500	668	499	331
24 / 600	555	415	275
26 / 650	512	382	318
28 / 700	475	355	295
30 / 750	443	331	275
32 / 800	415	310	258
36 / 900	368	275	229
38 / 950	349	261	217
40 / 1000	331	248	206
42 / 1050	315	236	187
44 / 1100	301	225	
48 / 1200	275	206	
52 / 1300	254	190	
54 / 1350	245	183	
56 / 1400	236	177	
60 / 1500	220	165	
66 / 1650	200	150	
68 / 1700	194	145	
72 / 1800	183	137	
84 / 2100	157	118	
96 / 2400	137	103	

Except * 8" = 0.322" and 10" = 0.365"
^ 8" to 24" = 0.25" and 26" to 40" = 0.312"

Angular deflection

The R-88 coupling is designed to provide a restrained joint with a controlled range of angular deflection (flexibility). The degree of deflection is influenced by several factors including; pipe, fitting and component dimensions, pipe end squareness, ring location, weld size and system pressure. When designing a piping system these considerations should be factored into the system. When designing a system requiring increased deflection (flexibility) please contact ***Shurjoint*** for customized solutions.

As with all piping systems proper support, anchoring and bracing are essential. Industry standard requirements such as B31.1 (Power Piping), B31.9 (Building Services) and B31.11 (Slurry Transportation), etc. should be followed for your specific type of pipeline system application.

14” and 16” R-88 couplings used at the Eastside Combined Sewer Overflow Tunnel Boring Project – Portland, Oregon, USA.

Pipe Dimensional Tolerance Requirements

Dimensional tolerance requirements for pipe ends used with R-88 couplings: For pipes used in conjunction with the R-88 Ring Joint Coupling, the pipe ends shall meet the Shurjoint dimensional requirements listed above and, in the API, 5L Table 10, listed below, "Tolerances for diameter and out-of-roundness", Diameter tolerances, Pipe end, Welded Pipe. For pipe sizes greater than 56"/DN1400, the same 56"/DN1400 formula shall apply. Pipe ovality and pipe end surface finish including flat spots and imperfections shall not vary more than the limits of API 5L end tolerance.

Specified Outside Diameter D (in)	Diameter Tolerance, inches d				Out-of-Roundness Tolerance in	
	Pipe except the end a		Pipe end a,b,c		Pipe except the End a	Pipe End a,b,c
	SMLS Pipe	Welded Pipe	SMLS Pipe	Welded Pipe		
< 2.375	-0.031 to + 0.016		- 0.031 to + 0.016		0.048	0.036
≥2.375 to 6.625	+/- 0.0075D		- 0.016 to + 0.063		0.020D for $\frac{D}{t} \leq 75$ By agreement for $\frac{D}{t} > 75$	0.015D for $\frac{D}{t} \leq 75$ By agreement for $\frac{D}{t} > 75$
>6.625 to 24.000	+/- 0.0075D	+/- 0.0075D, but max of 0.125	+/- 0.005D, but max of 0.063		0.020D	0.015D
>24 to 56	+/- 0.01D	+/- 0.005D but max of 0.160	+/- 0.079	+/- 0.063	0.015D for but max of 0.060 For $\frac{D}{t} \leq 75$ By agreement for $\frac{D}{t} > 75$	0.01D for but max of 0.500 For $\frac{D}{t} \leq 75$ By agreement for $\frac{D}{t} > 75$
>56	As agreed					

a. The pipe end includes a length of 4 in ate each of the pipe extremities
b. For SMLS pipe the tolerance apply for t≤0.984in and the tolerances for the thicker pipe shall be as agreed
c. For expanded pipe with D≥8.625in and for non-expanded pipe, the diameter tolerance and the out-of-roundness tolerance may be determined using the calculated inside diameter or measured inside diameter rather than the specified OD.
d. For determining compliance to diameter tolerance, the pipe diameter is defined as the circumference of the pipe in any circumferential plane divide by Pi.

Recommend Assembly Instructions for the R-88 Couplings

The 28" through 38" R-88 couplings consist of 6 housing sections, and the 40" through 96" R-88's consist of 8 housing sections.

When tightening these couplings, care should be taken to tighten them in an equal sequence around the pipe. Both bolts of each bolt pad should also be tightened equally during the sequence.

The tightening sequence should consist of 2-3 turns of each nut on each bolt, of the bolt pad, and then repeated for the opposite bolts 180° from those tightened. Then alternating; the sequence similar to that used when tightening a flange, as shown in the layout below.

This should be repeated while checking the pad gaps to ensure equal force is applied around the entire circumference, until fully torqued. The amount of torque to be applied is based on the bolt size and is given in the table below.

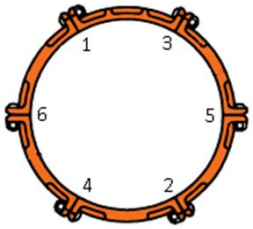
For more R-88 installation instructions, please refer to the 2013 Ring joint Piping System Catalog.

RECOMMENDED TORQUE

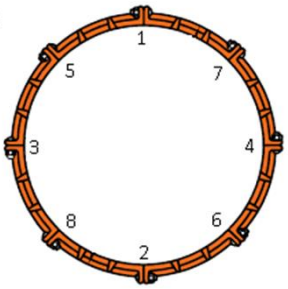
BOLT SIZE X NUMBER	LB - FT (NM)
5/8" x 6	100 - 130 (136 - 176)
3/4" x 6	150 - 200 (203 - 271)
7/8" x 8	180 - 220 (244 - 298)
1" x 16	200 - 250 (271 - 339)
1-1/4" x 16	250 - 350 (339 - 475)
1-1/2" x 16	350 - 500 (475 - 678)

Note: For systems subject to vibration or movement the use of Belleville washers or periodic checks to ensure tightness of bolts and nuts are recommended

Recommended Tightening Sequence



28"~ 38"



40"~ 96"

General Notes:

- ***Maximum Working Pressure (CWP)*** listed is the maximum cold water pressure for general piping services tested to ASTM F1476 and or AWWA C606 methods. Figures listed are based on standard wall carbon steel pipe. For other pipe schedules or pipe materials, contact ***Shurjoint*** for additional information.
- ***Max. End Load*** is calculated based on the maximum working pressure (CWP).
- ***Field Joint Test:*** For one time only the system may be tested hydrostatically at 1½ times the maximum working pressure listed (AWWA C606 5.2.3).
- ***Warning:*** Piping systems must always be depressurized and drained before attempting disassembly and or removal of any components.
- ***The 10 Year Limited Warranty*** applies to manufacturing defects only and does not cover severe service/temperature applications or wear parts.
- ***Shurjoint*** reserves the right to change specifications, designs and or standard without notice and without incurring any obligations.

Shurjoint *product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact* ***Shurjoint*** *Technical Service.* ***Shurjoint*** *reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligations to make such changes and modifications on* ***Shurjoint*** *products previously subsequently sold.*