

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.



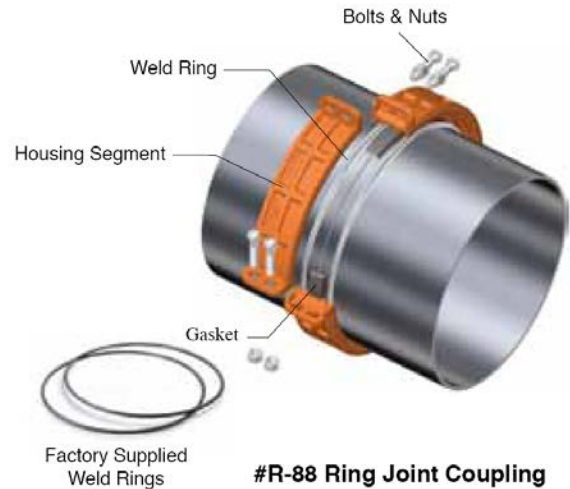
R-88 couplings should always be installed so that the coupling bolt pads make metal to metal contact.

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



#R-88 Ring Joint Coupling

MODEL R-88 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.



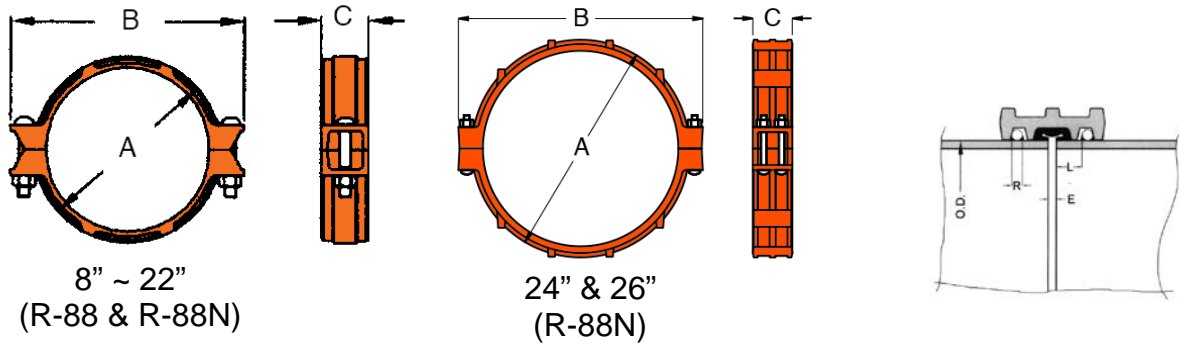
R-88
Size: 12"



R-88N
Size: 24"

**10
YEAR
LIMITED
WARRANTY**

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



Model R-88 Ring Joint Coupling

Rings both sides fully welded**															
Nominal Size	Pipe OD	Max. Working Pressure (CWP)*	ASME/ANSI Pressure Class Rating* @100°F/@38°C	Max. End Load (CWP)*	Axial Displacement † E	Angular Movement / Deflection †		Dimensions			Bolt No. & Size	Sealing Surface L	Ring Size R	N.W.	
						Per Cplg Deg.(°)	Per Pipe in / ft mm / m	A	B	C					
in mm	in mm	PSI Bar	PSI Nom. Class	Lbs kN	in mm			in mm	in mm	in mm	No. in No. mm	in mm	in mm	Lbs Kgs	
8	8.625	400	400	23350	0-0.190	2.14	0.45	10.08	13.00	3.11	2- ¾ x 4¼	0.91	¼	16.8	
200	219.1	28.0	250	105.51	0-4.8		37	256	330	79	2- M20x120	23	6.0	7.6	
10	10.750	400	400	36280	0-0.190	1.95	0.41	12.29	15.20	3.25	2- ¾ x 4¼	0.91	¼	22.2	
250	273.0	28.0	250	163.81	0-4.8		34	312	386	83	2- M20x120	23	6.0	10.1	
12	12.750	400	400	51040	0-0.190	0.82	0.17	14.72	17.90	3.39	2- ½ x 6½	1.02	5/16	30.8	
300	323.9	28.0	250	230.59	0-4.8		14	374	455	86	---	26	8.0	14.0	
200 JIS	8.516	400	400	22770	0-0.190	1.50	0.31	9.96	12.87	3.11	---	0.91	¼	17.6	
	216.3	28.0	250	102.83	0-4.8		26	253	327	79	2- M20x120	23	6.0	8.0	
250 JIS	10.528	400	400	34800	0-0.190	1.50	0.31	12.05	14.96	3.25	---	0.91	¼	22.0	
	267.4	28.0	250	157.16	0-4.8		26	306	380	83	2- M20x120	23	6.0	10.0	
300 JIS	12.539	400	400	49360	0-0.190	1.50	0.31	14.53	17.72	3.39	---	1.02	5/16	32.6	
	318.5	28.0	250	222.97	0-4.8		26	369	450	86	2- M20x120	26	8.0	14.8	
14	14.000	400	400	61540	0-0.250	1.20	0.25	15.93	19.40	3.65	2- ¾ x 5½	1.02	5/16	38.3	
350 (R-88N)	355.6	28.0	250	277.94	0-6.4		21	405	493	93	---	26	8.0	17.4	
16	16.000	400	400	80380	0-0.250	0.90	0.19	17.92	21.52	3.65	2- ¾ x 5½	1.02	5/16	35.0	
400 (R-88N)	406.4	28.0	250	363.02	0-6.4		16	455	547	93	---	26	8.0	15.9	
18	18.000	400	400	101730	0-0.375	1.20	0.25	20.37	24.17	4.23	2- 1 x 5½	1.18	5/16	50.6	
450 (R-88N)	457.2	28.0	250	459.45	0-9.5		21	517	614	107	---	30	8.0	23.0	
20	20.000	400	400	125600	0-0.375	1.08	0.23	22.46	25.99	4.35	2- 1 x 5½	1.18	¾	68.7	
500 (R-88N)	508.0	28.0	250	567.22	0-9.5		19	570	660	110	---	30	9.5	31.2	
24	24.000	400	400	180860	0-0.375	0.80	0.17	27.17	30.00	4.84	4- ¾ x 6½	1.18	½	104.7	
600 (R-88N)	609.6	28.0	250	816.80	0-9.5		14	690	762	123	---	30	12.7	47.5	
26	26.000	300	300	159190	0-0.500	1.06	0.22	29.58	32.78	6.69	4- 1 x 8¾	1.97	½	173.5	
650 (R-88N)	660.4	20.0	150	684.72	0-12.7		18	751	832	170	---	50	12.7	78.7	

Notes: R-88N is a two-segment type coupling.

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.

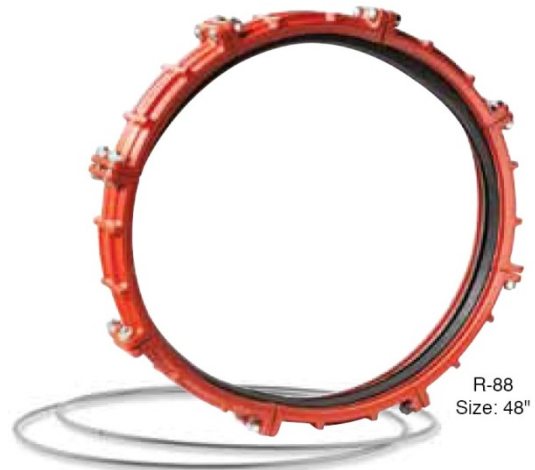
†Allowable Axial Displacement and Angular Movement (Deflection) figures shown are the maximum nominal range of movement at each R-88 coupling joint when rings are welded in the standard position. For design and installation purposes these figures should be reduced by 25%.

^The ASME/ANSI pressure class rating is not the design or maximum pressure rating, rather is provided for those that are accustomed to specifying or using ASME/ANSI pressure class rated components such as flange, valves, etc.

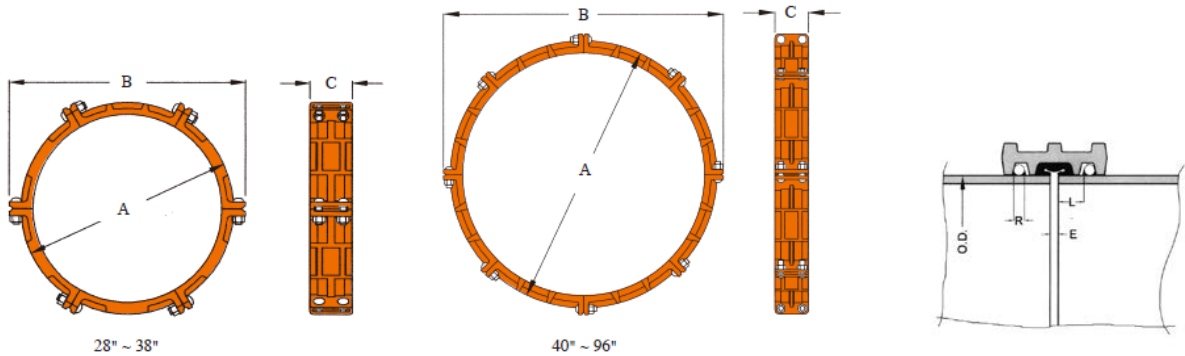
‡10mm shoulder rings are acceptable.

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.



R-88
Size: 48"



Model R-88 Ring Joint Coupling

Rings both sides fully welded**														
Nom. Size	Pipe OD	Max. Working Pressure (CWP)*	ASME/ANSI Pressure Class Rating* @100°F/ @38°C	Max. End Load (CWP)*	Axial Displacement †	Angular Movement / Deflection †		Dimensions			Bolt No. & Size	Sealing Surface L	Ring Size R	N.W.
						Per Cplg	Per Pipe	A	B	C				
in	in	PSI	PSI	Lbs	in	Per Cplg	Per Pipe	in	in	in	No. in	in	in	Lbs
mm	mm	Bar	Nom. Class	kN	mm	Per Cplg	Per Pipe	mm	mm	mm		mm	mm	Kgs
28	28.0	300	300	184630	0-0.500	0.90	0.19	31.75	35.50	6.73	12- 7/8 x 4	2.00	1/2	222.2
700	711.2	20.0	150	794.11	0-12.7		16	806	902	171		50	12.7	101.0
30	30.0	300	300	211950	0-0.500	0.86	0.18	33.75	37.60	6.73	12- 1 x 3 1/2	2.00	1/2	218.9
750	762.0	20.0	150	911.61	0-12.7		15	857	955	171		50	12.7	99.5
32	32.0	300	300	241150	0-0.500	0.84	0.18	35.75	39.50	6.73	12- 1 x 3 1/2	2.00	1/2	225.4
800	812.8	20.0	150	1037.21	0-12.7		15	908	1003	171		50	12.7	102.2
34	34.0	300	300	272230	0-0.500	0.84	0.18	37.75	41.50	6.73	12- 1 x 3 1/2	2.00	1/2	253.0
850	863.4	20.0	150	1170.37	0-12.7		15	959	1054	171		50	12.7	115.0
36	36.0	300	300	305200	0-0.500	0.76	0.16	39.75	43.50	6.73	12- 1 x 3 1/2	2.00	1/2	246.0
900	914.4	20.0	150	1312.72	0-12.7		13	1010	1103	171		50	12.7	111.6
38	38.0	232	175	262980	0-0.500	0.76	0.16	41.75	45.50	6.73	12- 1 x 3 1/2	2.00	1/2	275.0
950	965.2	16.0	125	1170.10	0-12.7		13	1060	1156	171		50	12.7	125.0
40	40.0	232	175	291390	0-0.625	0.80	0.17	44.69	48.39	7.80	16- 1 x 3 1/2	2.37	5/8	310.2
1000	1016.0	16.0	125	1296.51	0-15.9		14	1135	1229	198		60	15.9	141.0
42	42.0	232	175	321250	0-0.625	0.86	0.18	46.70	50.39	7.80	16- 1 1/4 x 5	2.37	5/8	326.9
1050	1066.8	16.0	125	1429.41	0-15.9		15	1186	1280	198		60	15.9	148.6
44	44.0	232	175	352580	0-0.625	0.80	0.17	48.66	51.89	7.80	16- 1 1/4 x 5	2.37	5/8	343.2
1100	1117.6	16.0	125	1568.78	0-15.9		14	1236	1318	198		60	15.9	156.0
48	48.0	232	175	419600	0-0.625	0.70	0.15	52.68	55.91	7.80	16- 1 x 3 1/2	2.37	5/8	466.7
1200	1219.2	16.0	125	1866.98	0-15.9		12	1338	1420	198		60	15.9	211.8
52	52.0	175	175	371460	0-0.625	---	---	61.25	60.60	7.80	16- 1 1/4 x 5	2.37	5/8	453.2
1300	1320.8	12.0	125	1643.33	0-15.9		---	1555	1539	198		60	15.9	206.0
54	54.0	175	175	400580	0-0.625	---	---	63.25	62.60	7.80	16- 1 1/4 x 5	2.37	5/8	472.1
1350	1371.6	12.0	125	1772.17	0-15.9		---	1660	1590	198		60	15.9	214.6
56	56.0	175	175	430800	0-0.625	---	---	65.38	64.60	7.80	16- 1 1/4 x 5	2.37	5/8	488.2
1400	1422.4	12.0	125	1905.87	0-15.9		---	1660	1641	198		60	15.9	222.0

Model R-88 Ring Joint Coupling

Rings both sides fully welded**															
Nom. Size	Pipe OD	Max. Working Pressure (CWP)*	ASME/ANSI Pressure Class Rating* @100°F/ @38°C	Max. End Load (CWP)*	Axial Displacement †	Angular Movement / Deflection †		Dimensions			Bolt No. & Size	Sealing Surface L	Ring Size R	N.W.	
						Per Cplg	Per Pipe	A	B	C					
						Per Cplg	Per Pipe	in	in	in					No. in
mm	mm	Bar	Nom. Class	kN	mm	Deg.(°)	mm / m	mm	mm	mm	mm	mm	mm	mm	Kgs
60	60.0	175	175	494550	0-0.625	---	---	69.38	68.60	7.80	16- 1¼ x 5	2.37	5/8	537.2	
1500	1524.0	12.0	125	2187.87	0-15.9	---	---	1762	1742	198	60	60	15.9	244.2	
66	66.0	125	175	427430	0-0.750	---	---	76.00	75.79	8.00	16- 1½ x 5	2.37	¾	612.5	
1650	1676.4	8.6	125	1897.24	0-19.1	---	---	1932	1925	216	60	60	19.1	278.4	
68	68.0	125	175	453730	0-0.750	---	---	78.50	77.79	8.00	16- 1½ x 5	2.37	¾	785.4	
1700	1727.2	8.6	125	2013.97	0-19.1	---	---	1994	1976	216	60	60	19.1	357.0	
72	72.0	125	175	508680	0-0.750	---	---	82.50	81.81	8.00	16- 1½ x 5	2.37	¾	737.7	
1800	1828.8	8.6	125	2257.88	0-19.1	---	---	2095	2078	216	60	60	19.1	335.3	
84	84.0	100	175	553890	0-0.750	---	---	94.75	93.81	8.00	16- 1½ x 5	2.37	¾	780.3	
2100	2133.6	7.0	125	2501.46	0-19.1	---	---	2406	2383	216	60	60	19.1	354.7	
96	96.0	100	175	723450	0-0.750	---	---	106.75	105.79	8.00	16- 1½ x 5	2.37	¾	823.2	
2400	2438.4	7.0	125	3267.21	0-19.1	---	---	2711	2662	216	60	60	19.1	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 ASME/ANSI pressure class rating is not the design or maximum pressure rating, rather is provided for those that are accustomed to specifying or using ASME/ANSI pressure class rated components such as flange, valves, etc.

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, 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" ~ 1": 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.

1¼" ~ 1½ sizes": Carbon steel hex. bolts to ASTM A307 Gr. A or B, minimum strength 60,000 psi (415 MPa), Zinc electroplated, with 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 OD	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	8.625	600	35040	400	23359	400	23359	
200	219.1	40.0	150.74	28.0	105.51	28.0	105.51	
10	10.750	600	54430	400	36287	400	36287	
250	273.0	40.0	234.02	28.0	163.81	28.0	163.81	
12	12.750	600	76567	400	51045	400	51045	
300	323.9	40.0	329.42	28.0	230.59	28.0	230.59	
200 JIS	8.516	600	34215	400	22772	400	22772	
	216.3	40.0	150.58	28.0	102.83	28.0	102.83	
250 JIS	10.528	600	52205	400	34803	400	34803	
	267.4	40.0	224.52	28.0	157.16	28.0	157.16	
300 JIS	12.539	600	74054	400	49369	400	49369	
	318.5	40.0	318.53	28.0	222.97	28.0	222.97	
14	14.000	600	92316	400	61544	350	53851	
350 (R-88N)	355.6	40.0	397.06	28.0	277.94	24.0	238.23	
16	16.000	500	100480	400	80384	350	70336	
400 (R-88N)	406.4	35.0	453.78	28.0	363.02	24.0	311.16	
18	18.000	500	12170	400	101736	350	89019	
450 (R-88N)	457.2	35.0	574.31	28.0	459.45	24.0	393.82	
20	20.000	500	157000	400	125600	300	94200	
500 (R-88N)	508.0	35.0	709.03	28.0	567.22	20.0	405.16	
24	24.000	500	226080	400	180864	250	113040	
600 (R-88N)	609.6	35.0	1021.00	28.0	816.80	17.0	495.92	
26	26.000	400	212264	300	159198	250	132665	
650 (R-88N)	660.4	28.0	958.61	20.0	584.72	17.0	582.01	
28	28.000	400	246176	300	184632	250	153860	
700	711.2	28.0	1111.76	20.0	794.11	17.0	675.00	
30	30.000	400	282600	300	211950	250	176625	
750	762.0	28.0	1276.26	20.0	911.61	17.0	774.87	
32	32.000	400	321536	300	241152	250	200960	
800	812.8	28.0	1452.10	20.0	1037.21	17.0	881.63	
34	34.000	350	317611	300	272238	200	181492	
850	863.4	24.0	1404.45	20.0	1170.37	14.0	819.26	
36	36.000	350	356076	300	305208	200	203472	
900	914.4	24.0	1575.26	20.0	1312.72	14.0	918.90	
38	38.000	300	340062	232	262981	175	198370	
950	965.2	20.0	1462.63	16.0	1170.10	12.0	877.58	
40	40.000	300	376800	232	291392	175	219800	
1000	1016.0	20.0	1620.64	16.0	1296.51	12.0	972.39	
42	42.000	300	415422	232	321260	175	242330	
1050	1066.8	20.0	1786.76	16.0	1429.41	12.0	1072.05	
44	44.000	300	455928	232	352584	175	265958	
1100	1117.6	20.0	1960.98	16.0	1568.78	12.0	1176.59	
48	48.000	300	542592	232	419604	---	---	
1200	1219.2	20.0	2333.72	16.0	1866.98	---	---	
52	52.000	232	492452	175	371462	---	---	
1300	1320.8	16.0	2191.11	12.0	1643.33	---	---	
54	54.000	232	531062	175	400586	---	---	
1350	1371.6	16.0	2362.90	12.0	1772.17	---	---	
56	56.000	232	571128	175	430808	---	---	
1400	1422.4	16.0	2541.17	12.0	1905.87	---	---	
60	60.000	232	656532	175	494550	---	---	
1500	1524.0	16.0	2917.16	12.0	2187.87	---	---	
66	66.000	175	598406	125	427433	---	---	
1650	1676.4	12.0	2647.32	8.6	1897.24	---	---	
68	68.000	175	635222	125	453730	---	---	
1700	1727.2	12.0	2810.19	8.6	2013.97	---	---	
72	72.000	150	610416	125	508680	---	---	
1800	1828.8	10.0	2625.44	8.6	2257.88	---	---	
84	84.000	125	692370	100	553896	---	---	
2100	2133.6	8.6	3073.22	7.0	2501.46	---	---	
96	96.000	125	904320	100	723456	---	---	
2400	2438.4	8.6	4014.01	7.0	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.

General Notes:

- **ASME/ANSI Pressure-Temperature Rating** is provided as an aid in selecting a proper coupling to incorporate with other piping components (valves, flanges, and etc.) that are used in the same system and carry the ASME/ANSI rating. Select a Class 150 coupling to incorporate with Class 150 valves and flanges.
- **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.

Job Name:	System No.	Location:
Contractor:	Approved:	Date:
Engineer:	Approved:	Date:

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.