

Redflex J-1 Expansion Joint (JRE)



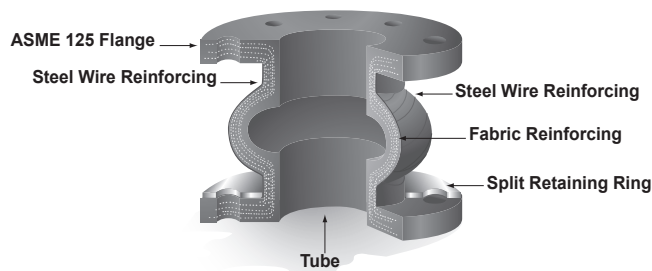
- Single or multiple arches available
- Full-face integral flanges, no gaskets needed
- Sizes 1-108" (25-2750mm)
- Heavy-duty, steel wire reinforced construction
- Made in the U.S.A.

Materials of Construction

- **Elastomers:** Natural Rubber (NR), Ethylene Propylene Diene Terpolymer (EPDM)*, Acrylonitrile-Butadiene (NBR), Fluoroelastomer (FKM), Chloroprene (CR)*, Chlorosulfonated Polyethylene (CSM), Chloro-Isobutylene-Isoprene (CIIR)
- * - White food grade options available.

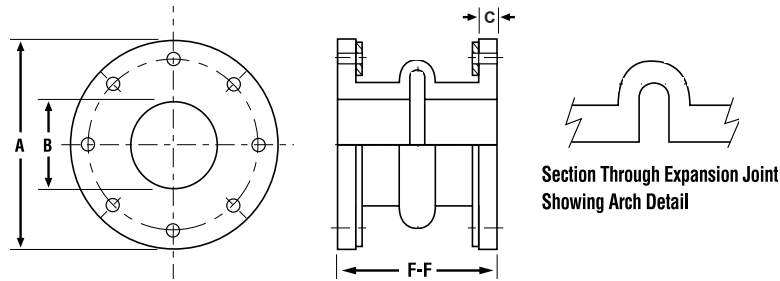
The Redflex J-1 Expansion Joint is the most common type of joint used to compensate for pipeline movement and vibration. The construction of the J-1 is very much like a heavy-duty truck tire: layers of high-quality elastomers are reinforced with steel wires and synthetic fabrics. The inner layer forms a tube that extends through the inside of the joint, and across the face of the end flanges. The middle layer of the joint contains the bias-ply synthetic fabric reinforcement that gives the joint its form and pressure rating, and a layer(s) of wire reinforcement for added strength. The outer layer of the joint is chosen to be compatible with the environment in which the joint is to be installed. This allows the joint to stand up to occasional contact with oils, corrosion, and weathering.

The J-1 features full-face integral flanges that eliminate the need for additional gaskets when installing the joint. The flanges are drilled to mate with ASME 125/150 flanges, with special drilling available upon request. Metal split retaining rings are required for proper installation. These can be provided in galvanized or stainless steel. J-1 Expansion Joints can also be manufactured to meet Coast Guard and military standards as well.



J-1 Expansion Joints are available with a single arch, double arches, or triple arches to meet the face-to-face and movement requirements of the installation. The arches, along with the flexibility of the elastomer construction, allows the J-1 to provide stress relief in piping systems due to thermal expansion and contraction, and mechanical movement and vibration.

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Redflex J-1 - Single and Multiple Arch Expansion Joints

SIZE	DIMENSIONS in/mm						# OF BOLTS	APPROX. WEIGHT lb/kg		
	A	B	C	BOLT CIRCLE DIA.	DRILLED HOLE	BOLT DIA.		EXP. JOINT	RET. RINGS	SET OF RODS
*1" 25mm	4.25 108	1.00 25	0.56 14	3.13 80	0.63 16	0.50 13	4	2.00 1	2.00 1	13.00 6
*1.25" 32mm	4.63 118	1.25 32	0.56 14	3.50 89	0.63 16	0.50 13	4	2.50 1	3.00 1	13.00 6
*1.5" 40mm	5.00 127	1.50 38	0.56 14	3.88 99	0.63 16	0.50 13	4	3.00 1	3.00 1	13.00 6
*2" 50mm	6.00 152	2.00 51	0.56 14	4.75 121	0.75 19	0.63 16	4	4.00 2	3.00 1	13.00 6
2.5" 65mm	7.00 178	2.50 64	0.56 14	5.50 140	0.75 19	0.63 16	4	4.50 2	5.00 2	13.00 6
3" 80mm	7.50 191	3.00 76	0.56 14	6.00 152	0.75 19	0.63 16	4	5.25 2	5.00 2	13.00 6
4" 100mm	9.00 229	4.00 102	0.56 14	7.50 191	0.75 19	0.63 16	8	7.00 3	7.00 3	16.00 7
5" 125mm	10.00 254	5.00 127	0.56 14	8.50 216	0.88 22	0.75 19	8	8.25 4	8.00 4	16.00 7
6" 150mm	11.00 279	6.00 152	0.63 16	9.50 241	0.88 22	0.75 19	8	9.75 4	9.00 4	16.00 7
8" 200mm	13.50 343	8.00 203	0.75 19	11.75 298	0.88 22	0.78 19	8	15.00 7	13.00 6	20.00 9
10" 250mm	16.00 406	10.00 254	0.75 19	14.25 362	1.00 25	0.88 22	12	21.00 10	17.00 8	32.00 15
12" 300mm	19.00 483	12.00 305	0.75 19	17.00 432	1.00 25	0.88 22	12	28.00 13	24.00 11	32.00 15
14" 350mm	21.00 533	14.00 356	0.88 22	18.75 476	1.13 29	1.00 25	12	39.00 18	27.00 12	40.00 18
16" 400mm	23.50 597	16.00 406	0.88 22	21.25 540	1.13 29	1.00 25	16	45.50 21	33.00 15	40.00 18
18" 450mm	25.00 635	18.00 457	0.88 22	22.75 578	1.25 32	1.13 29	16	50.50 23	32.00 15	42.00 19
20" 500mm	27.50 699	20.00 508	1.00 25	25.00 635	1.25 32	1.13 29	20	61.00 28	38.00 17	42.00 19
24" 600mm	32.00 813	24.00 610	1.00 25	29.50 749	1.38 35	1.25 32	20	75.00 34	50.00 23	64.00 29
26" 650mm	34.25 870	26.00 660	1.00 25	31.75 806	1.38 35	1.25 32	24	85.50 39	56.00 25	64.00 29
28" 700mm	36.50 927	28.00 711	1.00 25	34.00 864	1.38 35	1.25 32	28	93.00 42	60.00 27	64.00 29
30" 750mm	38.75 984	30.00 762	1.00 25	36.00 914	1.38 35	1.25 32	28	101.50 46	65.00 29	64.00 29
36" 900mm	46.00 1168	36.00 914	1.00 25	42.75 1086	1.63 41	1.50 38	32	137.50 62	94.00 43	86.00 39
42" 1050mm	53.00 1346	42.00 1067	1.19 30	49.50 1257	1.63 41	1.50 38	36	182.50 83	119.00 54	88.00 40
48" 1200mm	59.50 1511	48.00 1219	1.19 30	56.00 1422	1.63 41	1.50 38	44	211.00 96	143.00 65	88.00 40
54" 1350mm	66.25 1683	54.00 1372	1.19 30	62.75 1594	2.00 51	1.75 45	44	265.50 120	171.00 78	174.00 79
60" 1500mm	73.00 1854	60.00 1524	1.19 30	69.25 1759	2.00 51	1.75 45	52	309.00 140	205.00 93	174.00 79

Chart continued on next page.

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SIZE	DIMENSIONS in/mm						# OF BOLTS	APPROX. WEIGHT lb/kg		
	A	B	C	BOLT CIRCLE DIA.	DRILLED HOLE	BOLT DIA.		EXP. JOINT	RET. RINGS	SET OF RODS
72" 1800mm	<u>86.50</u> 2184	<u>72.00</u> 1829	<u>1.19</u> 30	<u>82.50</u> 2096	<u>2.00</u> 51	<u>1.75</u> 44	60	<u>385.00</u> 166	<u>284.00</u> 129	<u>174.00</u> 79
78" 1950mm	<u>93.00</u> 2362	<u>78.00</u> 1981	<u>1.19</u> 30	<u>88.75</u> 2254	<u>2.25</u> 57	<u>2.00</u> 51	60	<u>410.00</u> 186	<u>314.00</u> 142	<u>206.00</u> 96
84" 2100mm	<u>99.75</u> 2534	<u>84.00</u> 2134	<u>1.19</u> 30	<u>95.50</u> 2426	<u>2.25</u> 57	<u>2.00</u> 51	64	<u>480.00</u> 218	<u>343.00</u> 156	<u>226.00</u> 103
90" 2300mm	<u>106.50</u> 2705	<u>90.00</u> 2286	<u>1.19</u> 30	<u>102.00</u> 2591	<u>2.38</u> 60	<u>2.13</u> 54	68	<u>600.00</u> 272	<u>360.00</u> 163	<u>281.00</u> 127
96" 2400mm	<u>113.25</u> 2877	<u>96.00</u> 2438	<u>1.19</u> 30	<u>108.50</u> 2756	<u>2.5</u> 64	<u>2.25</u> 57	68	<u>650.00</u> 295	<u>435.00</u> 197	<u>366.00</u> 166
108" 2750mm	<u>126.75</u> 3219	<u>108.00</u> 2743	<u>1.19</u> 30	<u>120.75</u> 3067	<u>2.5</u> 64	<u>2.25</u> 57	72	<u>700.00</u> 318	<u>510.00</u> 231	<u>375.00</u> 170

* Filled arch only. Other sizes available with filled arches, but allowable movement is reduced by half.

Pressure Ratings

JOINT SIZE	PRESSURE RATING psi/kPa	VACUUM RATING* in Hg/mm Hg	HIGH PRESSURE RATING psi/kPa
<u>1-2.5"</u> 25-64mm	<u>165</u> 1140	<u>30</u> 762	<u>200</u> 1380
<u>3-4"</u> 76-100mm	<u>165</u> 1140	<u>15</u> 381	<u>200</u> 1380
<u>5-6"</u> 125-150mm	<u>140</u> 970	<u>15</u> 381	<u>190</u> 1310
<u>8-12"</u> 200-300mm	<u>140</u> 970	<u>15</u> 381	<u>190</u> 1310
<u>14"</u> 350mm	<u>85</u> 590	<u>15</u> 381	<u>130</u> 900
<u>16-20"</u> 400-500mm	<u>65</u> 450	<u>15</u> 381	<u>110</u> 760
<u>22-24"</u> 550-600mm	<u>65</u> 450	<u>15</u> 381	<u>100</u> 690
<u>26-40"</u> 650-1000mm	<u>55</u> 380	<u>15</u> 381	<u>90</u> 620
<u>42-66"</u> 1050-1650mm	<u>55</u> 380	<u>15</u> 381	<u>80</u> 550
<u>72 & Larger"</u> 1800mm	<u>45</u> 300	<u>15</u> 381	<u>70</u> 480

*All J-1 Expansion Joints can be manufactured for 30" (70mm) Hg vacuum service.

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Movement Data

SIZE	DIMENSIONS in/mm											
	SINGLE ARCH				DOUBLE ARCH				TRIPLE ARCH			
	F-F	COMPRESS	EXTENSION	DEFLECTION	F-F	COMPRESS	EXTENSION	DEFLECTION	F-F	COMPRESS	EXTENSION	DEFLECTION
*1" 25mm	6.00 152	0.44 11	0.25 6	0.50 13	10.00 254	0.88 22	0.50 13	1.00 25	12.00 305	1.19 30	0.75 19	1.50 38
*1.5" 40mm	6.00 152	0.44 11	0.25 6	0.50 13	10.00 254	0.88 22	0.50 13	1.00 25	12.00 305	1.19 30	0.75 19	1.50 38
*2" 50mm	6.00 152	0.44 11	0.25 6	0.50 13	10.00 254	0.88 22	0.50 13	1.00 25	12.00 305	1.19 30	0.75 19	1.50 38
2.5" 65mm	6.00 152	0.44 11	0.25 6	0.50 13	10.00 254	0.88 22	0.50 13	1.00 25	12.00 305	1.19 30	0.75 19	1.50 38
3" 80mm	6.00 152	0.44 11	0.25 6	0.50 13	10.00 254	0.88 22	0.50 13	1.00 25	12.00 305	1.19 30	0.75 19	1.50 38
4" 100mm	6.00 152	0.44 11	0.25 6	0.50 13	10.00 254	0.88 22	0.50 13	1.00 25	12.00 305	1.19 30	0.75 19	1.50 38
5" 125mm	6.00 152	0.44 11	0.25 6	0.50 13	10.00 254	0.88 22	0.50 13	1.00 25	12.00 305	1.19 30	0.75 19	1.50 38
6" 150mm	6.00 152	0.44 11	0.25 6	0.50 13	10.00 254	0.88 22	0.50 13	1.00 25	12.00 305	1.19 30	0.75 19	1.50 38
8" 200mm	6.00 152	0.69 18	0.38 10	0.50 13	10.00 254	1.38 35	0.75 19	1.00 25	14.00 356	2.06 52	1.13 29	1.50 38
10" 250mm	8.00 203	0.69 18	0.38 10	0.50 13	12.00 305	1.38 35	0.75 19	1.00 25	16.00 406	2.06 52	1.13 29	1.50 38
12" 300mm	8.00 203	0.69 18	0.38 10	0.50 13	12.00 305	1.38 35	0.75 19	1.00 25	16.00 406	2.06 52	1.13 29	1.50 38
14" 350mm	8.00 203	0.69 18	0.38 10	0.50 13	12.00 305	1.38 35	0.75 19	1.00 25	16.00 406	2.06 52	1.13 29	1.50 38
16" 400mm	8.00 203	0.69 18	0.38 10	0.50 13	12.00 305	1.38 35	0.75 19	1.00 25	16.00 406	2.06 52	1.13 29	1.50 38
18" 450mm	8.00 203	0.69 18	0.38 10	0.50 13	12.00 305	1.38 35	0.75 19	1.00 25	16.00 406	2.06 52	1.13 29	1.50 38
20" 500mm	8.00 203	0.81 21	0.44 11	0.50 13	12.00 305	1.63 41	0.88 22	1.00 25	16.00 406	2.44 62	1.31 33	1.50 38
24" 600mm	10.00 254	0.81 21	0.44 11	0.50 13	14.00 356	1.63 41	0.88 22	1.00 25	18.00 mm	2.44 62	1.31 33	1.50 38
30" 750mm	10.00 254	0.94 24	0.50 mm	0.50 13	14.00 356	1.63 41	1.00 25	1.00 25	18.00 mm	2.81 71	1.50 38	1.50 68
36" 900mm	10.00 254	0.94 24	0.50 13	0.50 13	14.00 356	1.63 41	1.00 25	1.00 25	18.00 mm	2.81 71	1.50 38	1.50 38
42" 1050mm	12.00 305	1.00 25	0.56 14	0.50 13	14.00 356	2.00 51	1.13 29	1.00 25	20.00 mm	3.00 76	1.69 43	1.50 38
48" 1200mm	12.00 305	1.00 25	0.56 14	0.50 13	16.00 406	2.00 51	1.13 29	1.00 25	20.00 mm	3.00 76	1.69 43	1.50 68
54" 1350mm	12.00 305	1.00 25	0.56 14	0.50 13	16.00 406	2.00 51	1.13 29	1.00 25	20.00 mm	3.00 76	1.69 43	1.50 38
60" 1500mm	12.00 305	1.00 25	0.56 14	0.50 13	16.00 406	2.00 51	1.13 29	1.00 25	20.00 mm	3.00 76	1.69 43	1.50 38
72" 1800mm	12.00 305	1.00 25	0.56 14	0.50 13	16.00 406	2.00 51	1.13 29	1.00 25	20.00 mm	3.00 76	1.69 43	1.50 68
84" 2100mm	12.00 305	1.00 25	0.56 14	0.50 13	16.00 406	2.00 51	1.13 29	1.00 25	20.00 mm	3.00 76	1.69 43	1.50 38
90" 2300mm	12.00 305	1.00 25	0.56 14	0.50 13	16.00 406	2.00 51	1.13 29	1.00 25	20.00 mm	3.00 76	1.69 43	1.50 38
96" 2400mm	12.00 305	1.00 25	0.56 14	0.50 13	16.00 406	2.00 51	1.13 29	1.00 25	20.00 mm	3.00 76	1.69 43	1.50 68
108" 2750mm	12.00 305	1.00 25	0.56 14	0.50 13	16.00 406	0.88 51	1.13 29	1.00 25	20.00 mm	3.00 76	1.69 43	1.50 38

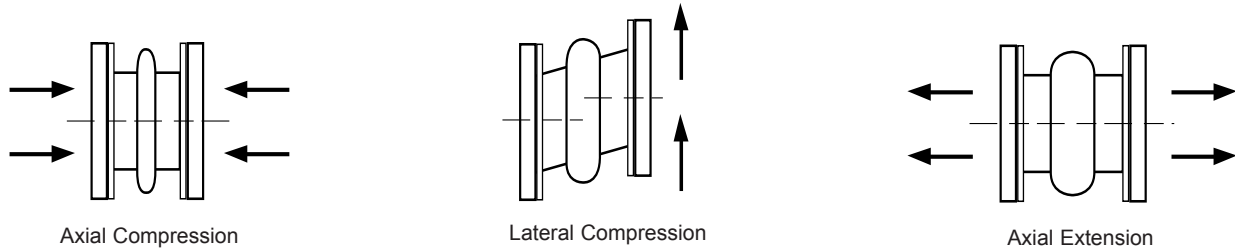
NOTE: Allowable movement is reduced by 50% with filled arches.

* Available with filled arched only.

* Filled arch only. Other sizes available with filled arches, but allowable movement is reduced by half.

Redflex J-1 Expansion Joint (JRE)

Types of Movement



Force to Cause Movement

JOINT SIZE	COMPRESS lbs/kg	EXTENSION lbs/kg	DEFLECTION lbs/kg
<u>*1"</u> 25mm	<u>103</u> 47	<u>76</u> 34	<u>175</u> 79
<u>*1.5"</u> 40mm	<u>154</u> 70	<u>115</u> 52	<u>262</u> 119
<u>*2"</u> 50mm	<u>185</u> 84	<u>138</u> 63	<u>350</u> 159
<u>2.5"</u> 65mm	<u>232</u> 105	<u>172</u> 78	<u>381</u> 173
<u>3"</u> 80mm	<u>278</u> 126	<u>207</u> 94	<u>412</u> 187
<u>4"</u> 100mm	<u>371</u> 168	<u>276</u> 125	<u>476</u> 216
<u>5"</u> 125mm	<u>463</u> 210	<u>344</u> 156	<u>546</u> 248
<u>6"</u> 150mm	<u>556</u> 252	<u>413</u> 187	<u>617</u> 280
<u>8"</u> 200mm	<u>971</u> 440	<u>689</u> 313	<u>753</u> 342
<u>10"</u> 250mm	<u>1214</u> 551	<u>861</u> 391	<u>809</u> 367
<u>12"</u> 300mm	<u>1456</u> 660	<u>1033</u> 469	<u>948</u> 430
<u>14"</u> 350mm	<u>1274</u> 578	<u>904</u> 410	<u>1117</u> 507
<u>16"</u> 400mm	<u>1456</u> 650	<u>1033</u> 469	<u>1286</u> 583
<u>18"</u> 450mm	<u>1638</u> 743	<u>1163</u> 528	<u>1420</u> 644
<u>20"</u> 500mm	<u>2152</u> 976	<u>1505</u> 693	<u>1588</u> 720
<u>24"</u> 600mm	<u>2582</u> 1171	<u>1807</u> 820	<u>1706</u> 774
<u>30"</u> 750mm	<u>3311</u> 1502	<u>2297</u> 1042	<u>2075</u> 941
<u>36"</u> 900mm	<u>3973</u> 1802	<u>2756</u> 1250	<u>3164</u> 1435
<u>42"</u> 1050mm	<u>4732</u> 2146	<u>3253</u> 1476	<u>3423</u> 1553
<u>48"</u> 1200mm	<u>5408</u> 2453	<u>3717</u> 1686	<u>3866</u> 1754
<u>54"</u> 1350mm	<u>6085</u> 2760	<u>4182</u> 1897	<u>4303</u> 1952
<u>60"</u> 1500mm	<u>6761</u> 3067	<u>4651</u> 2110	<u>4736</u> 2148
<u>72"</u> 1800mm	<u>8113</u> 3680	<u>5561</u> 2522	<u>5477</u> 2484
<u>84"</u> 2100mm	<u>9465</u> 4293	<u>6511</u> 2953	<u>6425</u> 2914
<u>90"</u> 2300mm	<u>6085</u> 2760	<u>4182</u> 1897	<u>4303</u> 1952
<u>96"</u> 2400mm	<u>10817</u> 4907	<u>7441</u> 3375	<u>7375</u> 3345
<u>108"</u> 2750mm	<u>12169</u> 5520	<u>8372</u> 3797	<u>8325</u> 3776

* Available with filled arched only.

Forces to compress, deflect and elongate the J-1 Expansion Joints are based upon zero pressure conditions. This data should be used only as an approximation. The force to deflect an expansion joint is defined as the total load required to deflect the expansion joint a distance equal to the maximum rated movement of the product. The force value is expressed in pounds/kilograms for compression, elongation and lateral movement.