

## Redflex Expansion Joint Accessories

**Anchoring** - Any rigid metal pipe on both ends of an expansion joint or flexible connector must be properly anchored to eliminate the danger of excessive movement. Rubber expansion joints and connectors, by nature of their design, are not designed to take end thrusts. In all cases where such forces are likely to occur, anchors should always be installed. An expansion joint should never be used to support the piping.

**Retaining Rings** - Available in galvanized steel or 316 stainless steel. 3/8" thickness is standard. Split retaining rings must be installed on rubber-flanged expansion joints to ensure a pressure-tight seal. These are placed directly against the inside of the flange to prevent damage to the rubber surface when bolts are tightened and also to provide equal distribution of bolting stress. Retaining rings are split and drilled to match the rubber flange holes.

Outside diameter is the same as a standard flange and contains the same number of bolt holes. Those used on joint sizes up to 20"

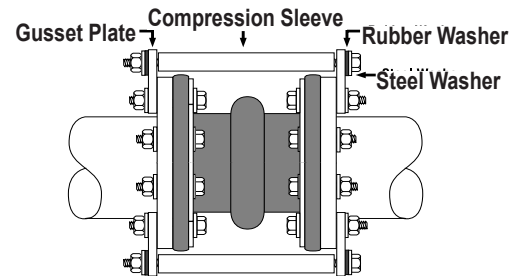


(508mm) are two-piece, four segments per joint. Four-piece rings, eight segments per joint, are used on all larger sizes.

### Steel Split Retaining Ring Dimensions

JOINT SIZE	BOLT QUANTITY	BOLT HOLE DIAMETER in/mm
1-1.5" 25-40mm	4	0.63 16
2-3" 50-80mm	4	0.75 19
4" 100mm	8	0.75 19
5-8" 125-200mm	8	0.88 22
10-12" 250-300mm	12	1.00 25
14" 350mm	12	1.13 29
16" 400mm	12	1.13 29
18" 450mm	16	1.25 32
20" 500mm	20	1.25 32
24" 600mm	20	1.38 35
30" 750mm	28	1.38 35
36" 900mm	32	1.63 41
42" 1050mm	36	1.63 41
48" 1200mm	44	1.63 41
54" 1350mm	44	2.00 51
60" 1500mm	52	2.00 51
72" 1800mm	60	2.00 51

**Control Units** - Expansion joints, vibration pipe and rubber reducers in piping systems must be rigidly anchored on both sides of the unit to control expansion and contraction. Anchoring must be capable of withstanding line thrusts generated by internal pressure or wide temperature changes. It is recommended to install control units to control expansion and contraction. The illustration below shows the details of a control unit.



The table below shows the number of rods to use for anchoring purposes by size and working pressure ratings. The calculation of rods is based on an allowable stress of 65% of yield of the rod from ASTM A-307-68 steel. **NOTE:** Increasing number of control rods does not increase pressure rating of expansion joints.

### Maximum Surge of Test Pressure of the System

(Test pressure is identified as 1-2 times the working pressure.)

SIZE	GUSSET PLATE THICKNESS in/mm	ROD DIAMETER in/mm	STANDARD PRESSURE psi/kPa	TEST PRESSURE psi/kPa	MINIMUM NO. OF CONTROL RODS	HIGH PRESSURE psi/kPa	TEST PRESSURE psi/kPa	MINIMUM NO. OF CONTROL RODS
1"	0.38	0.63	165	248	2	200	300	2
25mm	10	16	1140	1710	2	1380	2070	2
1.5"	0.38	0.63	165	248	2	200	300	2
40mm	10	16	1140	1710	2	1380	2070	2
2"	0.38	0.63	165	248	2	200	300	2
50mm	10	16	1140	1710	2	1380	2070	2
2.5"	0.38	0.63	165	248	2	200	300	2
65mm	10	16	1140	1710	2	1380	2070	2
3"	0.38	0.63	165	248	2	200	300	2
80mm	10	16	1140	1710	2	1380	2070	2
4"	0.38	0.63	165	248	2	200	300	2
100mm	10	16	1140	1710	2	1380	2070	2
5"	0.50	0.63	150	225	2	190	285	3
125mm	13	16	1030	1550	2	1310	960	3
6"	0.50	0.63	150	225	3	190	285	4
150mm	13	16	1030	1550	3	1310	960	4
8"	0.56	0.75	150	225	3	190	285	4
200mm	14	19	1030	1550	3	1310	960	4
10"	0.75	1.00	150	225	3	190	285	4
250mm	19	25	1030	1550	3	1310	960	4
12"	0.75	1.00	150	225	3	190	285	4
300mm	19	25	1030	1550	3	1310	960	4
14"	0.75	1.00	85	128	3	110	195	4
350mm	19	25	590	880	3	900	340	4
16"	0.75	1.13	65	98	2	110	165	3
400mm	19	29	450	680	2	760	1140	3
18"	0.75	1.13	65	98	3	110	165	4
450mm	19	29	450	680	3	760	1140	4
20"	0.75	1.13	65	98	3	110	165	6
500mm	19	29	450	680	3	760	1140	6
24"	1.00	1.25	65	98	3	110	150	6
600mm	25	32	450	680	3	760	1090	6
30"	1.25	1.50	55	83	3	90	135	4
750mm	32	38	380	570	3	620	930	4
36"	1.50	1.63	55	83	3	90	135	4
900mm	38	41	380	570	3	620	930	4
42"	1.50	1.63	55	83	4	80	120	6
1050mm	38	41	380	570	4	550	830	6
48"	1.50	1.63	55	83	6	80	120	6
1200mm	38	41	380	570	6	550	830	6
54"	1.88	2.00	55	83	4	80	120	6
1350mm	48	51	380	570	4	550	830	6
60"	1.88	2.00	55	83	6	80	120	8
1500mm	48	51	380	570	6	550	830	8
72"	1.88	2.00	45	68	6	70	105	N/A
1800mm	48	51	470	470	6	480	720	N/A
78"	2.00	2.25	45	68	6	70	105	8
1950mm	51	57	470	470	6	480	720	8
84"	2.00	2.25	45	68	6	70	105	N/A
2100mm	51	57	470	470	6	480	720	N/A