

Table 4: Sizes • Movements • Forces • Weights																			See Notes Below		
EXPANSION JOINT SIZE Nom. I.D. x Inch / (mm)	NEUTRAL LENGTH Inch / (mm)		EXPANSION JOINT STYLE	233 / 223 Movement Capability: From Neutral Position						Spring Rate Capability Based on 1" of Movement at Zero Pressure Conditions						Operating <sup>4</sup> Conditions		Weights <sup>5</sup> lbs / (kgs)			
				Axial Compression Inch / (mm)	Axial Extension Inch / (mm)	Lateral Deflection Inch / (mm)	Angular <sup>1</sup> Deflection Degrees	Torsional <sup>2</sup> Rotation Degrees	Force lbs per 1" rated Compression	Force lbs per 1" rated Extension	Force lbs per 1" rated Lateral Deflection	Force lb- inches per 1" rated Angular	Thrust Factor <sup>3</sup> Inz / (cmz)	Positive PSIG/ (Bar)	Vacuum Inches of Hg/ (mm of Hg)	Expansion Joint Assembly	Retaining Ring Set	Control <sup>6</sup> Rod Assembly			
14	(350)	20	(508)	233	4.7 (120)	2.4 (61)	2.4 (61)	18.9	2.0	U N D E R C U R R E N T T E S T I N G	210.18 (1356)	130 (9.0)	26 (660)	48.5 (22.0)	27.0 (12.3)	20.0 (9.1)					
		16	(406)	223	4.0 (102)	2.0 (51)	2.0 (51)	10.5	2.0		257.54 (1662)	115 (8.0)	26 (660)	55.0 (24.9)	33.5 (15.2)	20.0 (9.1)					
16	(400)	18	(457)	233	4.7 (120)	2.4 (61)	2.4 (61)	16.7	2.0		264.74 (1708)	115 (8.0)	26 (660)	55.0 (24.9)	33.5 (15.2)	20.0 (9.1)					
		20	(508)	233	4.7 (120)	2.4 (61)	2.4 (61)	16.7	2.0		264.74 (1708)	115 (8.0)	26 (660)	55.0 (24.9)	33.5 (15.2)	20.0 (9.1)					
18	(450)	16	(406)	223	4.0 (102)	2.0 (51)	2.0 (51)	9.3	2.0		316.59 (2043)	115 (8.0)	26 (660)	66.0 (29.9)	34.0 (15.5)	21.0 (9.5)					
		18	(457)	233	4.7 (120)	2.4 (61)	2.4 (61)	14.9	2.0		325.50 (2100)	115 (8.0)	26 (660)	66.0 (29.9)	34.0 (15.5)	21.0 (9.5)					
20	(500)	20	(508)	233	4.7 (120)	2.4 (61)	2.4 (61)	14.9	2.0		325.50 (2100)	115 (8.0)	26 (660)	66.0 (29.9)	34.0 (15.5)	21.0 (9.5)					
		18	(457)	233	4.7 (120)	2.4 (61)	2.4 (61)	13.5	2.0		392.62 (2533)	115 (8.0)	26 (660)	78.0 (35.4)	38.0 (17.3)	21.0 (9.5)					
24	(600)	20	(508)	233	4.7 (120)	2.4 (61)	2.4 (61)	13.5	2.0		392.62 (2533)	115 (8.0)	26 (660)	78.0 (35.4)	38.0 (17.3)	21.0 (9.5)					
		18	(457)	223	4.8 (120)	2.4 (61)	2.2 (55)	14.0	2.0		562.82 (3631)	100 (7.0)	26 (660)	91.5 (41.5)	48.0 (21.8)	32.0 (14.5)					
30	(750)	20	(508)	233	6.0 (150)	3.0 (75)	2.7 (69)	14.0	2.0		562.03 (3626)	100 (7.0)	26 (660)	91.5 (41.5)	48.0 (21.8)	32.0 (14.5)					
		18	(457)	223	4.8 (120)	2.4 (61)	2.2 (55)	11.3	2.0		798.58 (5152)	90 (6.0)	26 (660)	131.0 (59.4)	63.0 (28.6)	32.0 (14.5)					
36	(900)	20	(508)	233	6.0 (150)	3.0 (75)	2.7 (69)	11.3	2.0		842.27 (5434)	90 (6.0)	26 (660)	131.0 (59.4)	63.0 (28.6)	32.0 (14.5)					
		18	(457)	223	4.8 (120)	2.4 (61)	2.2 (55)	9.5	2.0		1217.14 (7873)	90 (6.0)	26 (660)	157.0 (71.2)	76.0 (34.5)	43.0 (19.5)					
		20	(508)	233	6.0 (150)	3.0 (75)	2.7 (69)	9.5	2.0		1179.09 (7607)	90 (6.0)	26 (660)	157.0 (71.2)	76.0 (34.5)	43.0 (19.5)					

**Larger diameters available upon request.**

Neutral lengths underlined are the recommended minimum lengths.

Metric Conversion Formula: Nominal I.D.: in. x 25 = mm; Dimensions: in. x 25.4 = mm; Pressure: PSIG x .069 = Bar

NOTES:

- The degree of angular movement is based on the maximum rated extension.
- Torsional movement is expressed when the expansion joint is at neutral length.
- To determine "end thrust", multiply thrust factor by operating pressure of system.
- Pressure rating is based on 170°F operating temperature with a 4:1 safety factor. At higher temperatures, the pressure rating is reduced slightly. Hydrostatic testing at 1.5 times rated or working pressure for 10 minutes is available upon request.
- Weights are approximate and vary due to OAL.
- Control rod unit weight consists of one rod with washers, nuts and two control rod plates. Multiply number of control rods needed for application (as specified in the Fluid Sealing Association's Technical Handbook) to determine correct weights.

**Filled Arch Rubber Expansion Joints**

Known as Style FA233 or Style FA223, the Series FA230 Rubber Expansion Joints are designed to eliminate flow turbulence and collection of solids in the arch core. Filled Arch Rubber Expansion Joints can be found in applications such as sludge, slurries or other heavy solids where material entrapment, high flow velocity or high abrasion conditions exist. Filled arch products are manufactured with seamless tube and are built as an integral part of the carcass. Although the tube is made of a low durometer filler stock, movement ratings of the Style FA233 or Style FA223 are 50% less than those movements listed in the table above. PROCO can manu-

