

PROCO PRODUCTS INC. Expansion Joint 242

Proco Style 242 molded twin-sphere rubber expansion joints are built to withstand even the most rigorous piping system configurations. They allow for axial compression or axial extension, and lateral deflection as well as angular movement. Their easy installation makes them the logical choice for even the toughest jobs.

Some of the notable features and benefits of the Proco Style 242 are:

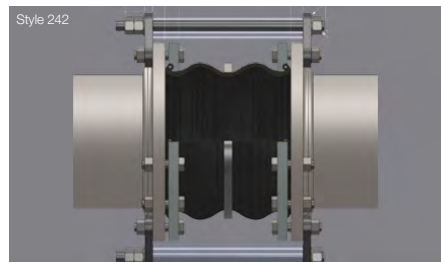
- Absorbs Directional Movement
- Easy Installation with Rotating Metallic Flanges
- Absorbs Vibration, Noise and Shock
- Wide Range of Flange Materials Available
- Wide Range of Service and Lighter Weight
- Easy Material Identification

• Flange Dimensions shown are in accordance with ANSI B16.1 and ANSI B16.5 Class 125/150 and 250/300 I.S.O. 2084-1974 Table PN10 Holes to I.S.O. /R-273 I.S.O. 2084-1974 Table PN16 Holes to I.S.O. /R-273

Table 1: Available Styles Materials

Material Code	Cover ¹ Elastomer	Tube ¹ Elastomer	Max. Operating Temp. °F	Branding Label Color
/BB	Chlorobutyl	Chlorobutyl	250°	Black
/EE ^{3,5}	EPDM	EPDM	250°	Red
/NN ⁵	Neoprene	Neoprene	225°	Blue
/NP	Neoprene	Nitrile	212°	Yellow

Style 242



Notes: All Products are reinforced with Nylon Tire Cord.

1. All NN & NP elastomer designated joints meet the Coast Guard Requirements and conform to ASTM F 1123-87 and are marked accordingly.
2. BB, EE or EE-9 are good for 300°F blower service at 20 PSI or less.
3. Elastomers are in accordance with NSF/ANSI 372, File MH47689 Und. Lab. Classified.
4. All elastomers above are not intended for steam service.
5. Series 242A, B & C In Elastomers EPDM & Neoprene are all listed for low lead content in accordance with NSF/ANSI 372 N

Table 2: Style 242 Sizes Movements Pressures Flange Standards Weights

Nominal Pipe Size I.D.	Neutral Length	PROCO Style Number	242 Movement Capability: From Neutral Position (Non-Concurrent) ²					Pressure ⁴		Standard Flange Drilling Dimensions ⁸					Weight in lbs	
			Axial Compression Inches	Axial Extension Inches	Deflection Inches	Angular Deflection Degrees	Thrust Factor ³	Positive PSIG ³	Vacuum Inches of Hg	Flange O.D. Inches	Bolt Circle Inches	Number of Holes	Size of Holes	Bolt Hole ⁷ Thread	Exp. Joint & Flanges	Control Unit Set (2 Rod)
1 (25)	10.00	242-C	2.000	1.188	1.750	45	4.43	225	26	4.25	3.13	4	0.625	—	5.2	3.6
1.25 (32)	7.00 7.00 10.00	242-A 242-HA 242-C	2.000	1.188	1.750	45	6.34	225 300 225	26	4.63	3.5	4	0.625 0.625 0.625	1/2-13 UNC — —	5.3 6.5 6.2	3.5 3.5 3.6
1.5 (40)	6.00 6.00 7.00 7.00 10.00	242-B 242-HB 242-A 242-HA 242-C	2.000	1.188	1.750	45	6.49	225 300 225 300 225	26	5.0	3.88	4	0.625 0.625 0.625 0.625 0.625	— — 1/2-13 UNC — —	6.1 7.6 6.8 8.3 7.7	4.6 4.8 4.8 4.8 5.1
2 (50)	6.00 7.00 10.00	242-B 242-A 242-C	2.000	1.188	1.750	45	7.07	225 225 235	26	6.0 6.0 6.0	4.75 4.75 4.75	4 4 4	0.750 0.750 0.750	— — 5/8-11 UNC	9.0 9.0 10.2	6.6 7.0 7.3
2.5 (65)	6.00 7.00 10.00	242-B 242-A 242-C	2.000	1.188	1.750	43	11.05	225 225 225	26	7.0	5.5	4	0.750 0.750 0.750	— — 5/8-11 UNC	12.9 13.3 14.5	7.6 8.0 8.4
3 (80)	7.00 9.00 10.00 12.00	242-A 242-B 242-C 242-C	2.000	1.188	1.750	38	13.36	225 225 225 225	26	7.5 7.5 7.5 7.5	6.0 6.0 6.0 6.0	4 4 4 4	0.750 0.750 0.750 0.750	5/8-11 UNC — — —	14.3 15.2 15.8 16.9	8.6 9.0 9.1 9.9
4 (100)	9.00 10.00 12.00	242-A 242-C 242-C	2.000	1.375	1.652	34	22.69	225 225 225	26	9.0 9.0 9.0	7.5 7.5 7.5	8 8 8	0.750 0.750 0.750	5/8-11 UNC — —	20.3 21.3 22.0	8.0 8.2 8.2
5 (125)	9.00 10.00 12.00	242-A 242-C 242-C	2.000	1.375	1.562	29	30.02	225 225 225	26	10.0 10.0 10.0	8.5 8.5 8.5	8 8 8	0.875 0.875 0.875	— — —	24.5 25.5 26.0	8.3 9.1 9.1
6 (150)	9.00 10.00 12.00 14.00	242-A 242-C 242-C 242-C	2.000	1.375	1.562	25	41.28	225 225 225 225	26	11.0 11.0 11.0 11.0	9.5 9.5 9.5 9.5	8 8 8 8	0.875 0.875 0.875 0.875	3/4-10 UNC — — —	29.5 30.5 31.0 32.0	11.7 11.9 12.0 12.0
8 (200)	9.00 10.00 12.00 13.00 14.00	242-B 242-C 242-C 242-A 242-C	2.375	1.375	1.375	19	63.62	225 225 225 225 225	26	13.5 13.5 13.5 13.5 13.5	11.75 11.75 11.75 11.75 11.75	8 8 8 8 8	0.875 0.875 0.875 0.875 0.875	— — — — 3/4-10 UNC	42.3 43.4 44.0 43.8 46.0	14.5 15.0 15.2 15.4 16.0
10 (250)	12.00 13.00 14.00	242-B 242-A 242-C	2.375	1.375	1.375	15	103.87	225 225 225	26	16.0 16.0 16.0	14.25 14.25 14.25	12 12 12	1.000 1.000 1.000	— — 7/8-9 UNC	64.1 65.5 66.7	23.5 24.5 24.5
12 (300)	12.00 13.00 14.00	242-B 242-A 242-C	2.375	1.375	1.375	13	137.89	225 225 225	26	19.0 19.0 19.0	17.00 17.00 17.00	12 12 12	1.000 1.000 1.000	— — 7/8-9 UNC	94.0 95.0 99.1	30.0 31.0 31.0
14 (350)	13.75	242-A	1.750	1.118	1.118	9	182.65	150	26	21.0	18.75	12	1.125	—	142.0	32.0
16 (400)	12.00 13.75	242-C 242-A	1.750	1.118	1.118	8	240.53	125 125	26	23.5	21.25	16	1.125 1.125	— —	154.0 162.0	28.8 30.8
18 (450)	12.00 13.75	242-C 242-A	1.750	1.118	1.118	7	298.65	125 125	26	25.0	22.75	16	1.250 1.250	— —	168.0 176.0	35.1 36.1
20 (500)	12.00 13.75	242-C 242-A	1.750	1.118	1.118	7	363.05	125 125	26	27.5	25.0	20	1.250 1.250	— —	202.0 212.0	35.0 35.5
24 (600)	12.00 13.75	242-C 242-A	1.750	1.118	1.118	5	510.70	125 125	26	32.5	29.5	20	1.375 1.375	— —	220.0 250.0	47.0 48.0

1. Standard Proco Style 242-A Expansion Joints shown in Bold Type are considered Standards and are inventoried in large quantities.
2. Movements shown in the above tables are non-concurrent.
3. Calculation of Thrust (Thrust Factor). When expansion joints are installed in the pipeline, the static portion of the thrust is calculated as a product of the area of the I.D. of the arch of the expansion joint times the maximum pressure (design, test or surge) that will occur in the line. The result is a force expressed in pounds. Take design, surge or test pressure X thrust factor to

"Effective Area"

Thrust Factor=

T= $\frac{\pi T^2}{4(D)^2}$, (P)

T = Thrust

P = PSI (Design, Test or Surge)

D = Arch I.D.

4. calculate end thrust.
4. Pressure rating is based on 170 °F operating temperature. The pressure rating is reduced at higher temperatures. 5. Pressures shown at maximum "operating pressure". Test pressure is 1.
5. Burst pressure is 4 times "operating pressure". If factory hydro-test is required, an additional joint per size must be purchased and tested. Once hydro-tested this joint may not be sent to field for installation as the beaded end will have taken a (compressed) set and can not be reused.
6. Vacuum rating is based on neutral installed length, without external load. Products should not be installed in extension for vacuum applications. Flattening of the arch in extended mode will cause the arch to collapse.
7. Style 242A/NN (neoprene elastomer only) expansion joints 1.0" I.D. thru 12" I.D. are available with tapped (threaded) holes and must be specified at time of order.
8. In addition to standard 150 lb. drilled flanges, Proco can provide expansion joints listed above in 300 lb. drilling, BS-10 (British) drilling, Metric PN10 and PN16 drilling and JIS 10kg/cm drilling

THE EXPANSION JOINT AND CHECK VALVE PEOPLE



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