Proco Style 240/242 Molded Spherical Joints

Proco Style 240/242 Spherical Molded Expansion Joints are designed for piping systems to absorb pipe movements, relieve stress, reduce system noise/vibration, compensate for misalignment/offset and to protect rotating mechanical equipment against start-up surge forces.

The molded style 240 single sphere and 242 twin sphere designed bellows are inherently stronger than the conventional hand-built style spool arch type. Internal pressure within a "sphere" is exerted in all directions, distributing forces evenly over a larger area. The spherical design "flowing arch" reduces turbulence and sediment buildup.

Features and Benefits:

Absorbs Directional Movement

Thermal movements appear in any rigid pipe system due to temperature changes. The Style 240 and Style 242 spherical arch expansion joints allow for axial compression or axial extension, lateral deflection as well as angular movement. (Note: Rated movements in this publication are based on single plane movements. Multiple movement conditions are based on a multiple movement calculation. Contact Proco for information when designing multiple pipe movements.)

Easy Installation with Rotating Metallic Flanges

The floating metallic flanges freely rotate on the bellows, compensating for mating flange misalignment, thus speeding up installation time. Gaskets are not required with the Style 240 or Style 242, provided the expansion joints are mated against a flat face flange as required in the installation instructions.

Flange Materials/Drilling

The Proco Style 240 and Style 242 molded expansion joints are furnished complete with plated carbon steel flanges for corrosion protection. 304 or 316 stainless steel flanges are available upon request as well as ANSI 250/300 lb., BS-10, DIN PN10 & PN16 and JIS-10K drilling.

Absorbs Vibration, Noise and Shock

The Proco Style 240 and Style 242 molded expansion joints effectively dampen and insulate downstream piping against the transmission of noise and vibration generated by mechanical equipment. Noise and vibration caused by equipment can cause stress in pipe, pipe guides, anchors and other equipment downstream. Water hammer and pumping impulses can also cause strain, stress or shock to a piping system. Install the Style 240 or Style 242 molded expansion joints to help compensate for these system pressure spikes.

Wide Service Range with Low Cost

Engineered to operate up to 300 PSIG or 265°F, the Proco Style 240 and Style 242 can be specified for a wide range of piping requirements. Compared to conventional hand-built spool type joints, you will invest less money when specifying the mass-produced, consistent high quality, molded single or twin sphere expansion joints.

Material Identification

All Style 240 or Style 242 molded expansion joints have branded elastomer designations. Neoprene Tube/Neoprene Cover (NN) and Nitrile Tube/Neoprene Cover (NP) elastomer designated joints meet the Coast Guard Requirements and conform to ASTM F1123-87. 240C/NP-9 joints have ABS certification.

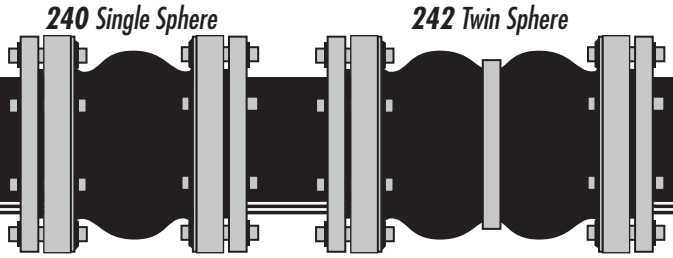
Large Inventory

Proco Products, Inc. maintains one of the largest inventories of rubber expansion joints in the world. Please contact us for price and availability.

Table 1: Available Styles • Materials

For Specific Elastomer Recommendations, See: **PROCO** "Chemical To Elastomer Guide"

240-A	240-C	240-AV,D,E,M [11]	242-A,B,C	PROCO Material Code	Cover Elastomer [1]	Tube Elastomer [2]	Max-imum Operating Temp. °F	Identifying Color Band/Label
		X	X	/BB[3]	Chlorobutyl	Chlorobutyl	250°	Black
		X	X	/EE[3,7]	EPDM	EPDM	250°	Red
X	X			/EE[3,4]	EPDM	FDA-EPDM	250°	Red
		X		/EQ[3]	EPDM	FDA-EPDM	250°	Red
X	X			/EE-9[3,5]	EPDM	EPDM	265°	DBL Red
	X			/HH	CSM	CSM	212°	Green
		X	X	/NH	Neoprene	CSM	212°	Green
	X			/NJ	Neoprene	FDA-Nitrile	212°	White
	X	X	X	/NN[7]	Neoprene	Neoprene	225°	Blue
X	X	X	X	/NP	Neoprene	Nitrile	212°	Yellow
X	X			/NP-9[6]	Neoprene	Nitrile-ABS	212°	DBL Yellow



Protecting Piping and Equipment Systems from Stress/Motion

Notes: All Products are reinforced with Nylon Tire Cord, except 240-A and 240-C which are reinforced with Polyester.

1. *All NN & NP elastomer designated joints meet the Coast Guard Requirements and conform to ASTM F 1123-87 and are marked accordingly.*
2. *Branding Label will be marked as "Food Grade".*
3. *BB, EE or EE-9 are good for 300°F blower service at 20 PSI or less.*
4. *240-A & 240-C expansion joints have black EPDM tube, but are FDA compliant.*
5. *EE-9 joints are peroxide cured.*
6. *NP-9 joints have ABS certification.*
7. *Elastomers are in accordance with NSF/ANSI 372, File MH47689 Und. Lab. Classified.*
8. *All elastomers above are not intended for steam service.*
9. *For PTFE lined single sphere see www.procoproducts.com/ptfelined.html*
10. *For 240A & 240C Rubber Joints, Vacuum Support devices are available. Published movements will be reduced by approximately 50% for this option.*
11. *Series 240AV,D,E&M + 242A,B&C In Elastomers EPDM & Neoprene are all listed for low lead content in accordance with NSF/ANSI 372*

Information subject to change without notice.

Style 240 Single Sphere Performance Data

Table 2: Sizes • Movements • Pressures • Flange Standards • Weights

NOMINAL Pipe Size I.D.	Neutral Length	PROCO Style Number [1]	240 Movement Capability: From Neutral Position (Non-Concurrent) [2]					Pressure [4]		Standard Flange Drilling Dimensions [8]					Weight in lbs	
			Axial Compression Inches	Axial Extension Inches	Lateral Deflection Inches	Angular Deflection Degrees	Thrust Factor [3]	Positive PSIG [5,9]	Vacuum [6] Inches of Hg	Flange O.D. Inches	Bolt Circle Inches	Number of Holes	Size of Holes Inches	Bolt Hole [7] Thread	Exp. Joint & Flanges	Control Unit Set (2 Rod)
1 (25)	5.00	240-C	1.063	1.250	1.188	45	4.43	225	26	4.25	3.13	4	0.625	1/2-13 UNC	3.8	3.3
	6.00	240-AV	0.500	0.375	0.500	37										
1.25 (32)	3.74	240-D	0.312	0.188	0.312	45	6.34	225	26	4.63	3.5	4	0.625	—	4.6	3.3
	5.00	240-C	1.063	1.250	1.188	17		235	21				0.625	—	5.0	
	5.00	240-E	0.500	0.375	0.500	31		225	26				0.625	—	5.0	
	6.00	**240-AV**	0.500	0.375	0.500	31		225	26				0.625	1/2-13 UNC	5.0	
1.5 (40)	3.74	240-D	0.375	0.188	0.312	14	6.49	225	26	5.0	3.88	4	0.625	—	5.4	4.6
	4.00	240-M	0.375	0.188	0.312	14		225	26				0.625	—	5.5	
	5.00	240-C	1.063	1.250	1.188	45		235	18				0.625	—	5.1	
	5.00	240-E	0.500	0.375	0.500	27		225	26				0.625	—	6.0	
	6.00	**240-AV**	0.500	0.375	0.500	27		225	26				0.625	1/2-13 UNC	6.1	
2 (50)	4.00	240-M	0.375	0.188	0.312	11	7.07	225	26	6.0	4.75	4	0.750	—	8.3	6.3
	4.13	240-D	0.375	0.188	0.312	11		225	26	6.0	4.75	4	0.750	—	8.5	6.3
	5.00	240-C	1.063	1.250	1.188	45		235	18	6.0	4.75	4	0.750	—	7.1	6.3
	5.00	240-E	0.375	0.375	0.500	20		225	26	6.0	4.75	4	0.750	—	8.5	6.3
	6.00	240-A	1.188	1.188	1.188	45		235	18	6.0	4.75	4	0.750	—	7.1	6.3
	6.00	**240-AV**	0.500	0.375	0.500	20		225	26	6.0	4.75	4	0.750	5/8-11 UNC	12.3	7.6
	6.00	Q-240-HW	0.500	0.375	0.500	20		300	26	6.5	5.0	8	0.750	—	11.0	7.6
2.5 (65)	4.00	240-M	0.375	0.188	0.375	8	11.05	225	26	7.0	5.5	4	0.750	—	12.0	7.6
	4.53	240-D	0.500	0.188	0.375	11		225	26				0.750	—	12.3	
	5.00	240-C	1.063	1.250	1.188	45		235	18				0.750	—	10.6	
	5.00	240-E	0.500	0.375	0.500	17		225	26				0.750	—	12.0	
	6.00	240-A	1.188	1.188	1.188	43		235	18				0.750	—	12.0	
	6.00	**240-AV**	0.500	0.375	0.500	17		225	26				0.750	5/8-11 UNC	12.3	
3 (80)	5.00	240-C	1.063	1.250	1.188	40	13.36	235	15	7.5	6.0	4	0.750	—	13.3	8.3
	5.00	240-E	0.500	0.375	0.500	14		225	26	7.5	6.0	4	0.750	—	14.0	8.3
	5.12	240-D	0.500	0.375	0.500	14		225	26	7.5	6.0	4	0.750	—	14.0	8.3
	6.00	240-A	1.188	1.188	1.188	38		235	15	7.5	6.0	4	0.750	—	13.8	8.3
	6.00	**240-AV**	0.500	0.375	0.500	14		225	26	7.5	6.0	4	0.750	5/8-11 UNC	14.0	8.3
	8.00	**240-AV**	0.500	0.375	0.500	14		225	26	7.5	6.0	4	0.750	5/8-11 UNC	15.0	8.7
	6.00	Q-240-HW	0.500	0.375	0.500	14		300	26	8.25	6.62	8	0.875	—	17.5	8.3
3.5 (90)	6.00	240-AV	0.500	0.375	0.500	12	18.67	225	26	8.5	7.0	8	0.750	5/8-11 UNC	17.6	7.4
4 (100)	5.00	240-C	1.063	1.250	1.188	32	22.69	235	15	9.0	7.5	8	0.750	—	16.5	7.4
	5.00	240-E	0.750	0.500	0.500	14		225	26	9.0	7.5	8	0.750	—	17.0	7.4
	5.32	240-D	0.750	0.500	0.500	14		225	26	9.0	7.5	8	0.750	—	17.1	7.4
	6.00	240-A	1.188	1.188	1.188	30		235	15	9.0	7.5	8	0.750	—	17.5	7.4
	6.00	**240-AV**	0.750	0.500	0.500	14		225	26	9.0	7.5	8	0.750	5/8-11 UNC	18.3	7.4
	8.00	**240-AV**	0.750	0.500	0.500	14		225	26	9.0	7.5	8	0.750	5/8-11 UNC	19.3	7.8
	6.00	Q-240-HW	0.750	0.500	0.500	14		300	26	10.0	7.88	8	0.750	—	26.0	7.4
5 (125)	5.00	240-C	1.063	1.250	1.188	27	30.02	235	10	10.0	8.5	8	0.875	—	20.3	8.3
	5.00	240-E	0.750	0.500	0.500	11		225	26	10.0	8.5	8	0.875	—	22.0	8.3
	6.00	240-A	1.188	1.188	1.188	25		235	10	10.0	8.5	8	0.875	—	21.8	8.3
	6.00	**240-AV**	0.750	0.500	0.500	11		225	26	10.0	8.5	8	0.875	3/4-10 UNC	22.8	8.3
	6.69	240-D	0.750	0.500	0.500	11		225	10	10.0	8.5	8	0.875	—	23.6	8.5
	8.00	**240-AV**	0.750	0.500	0.500	11		225	26	10.0	8.5	8	0.875	3/4-10 UNC	25.0	10.8
	6.00	Q-240-HW	0.750	0.500	0.500	11		300	26	11.0	9.25	8	0.875	—	28.0	14.0