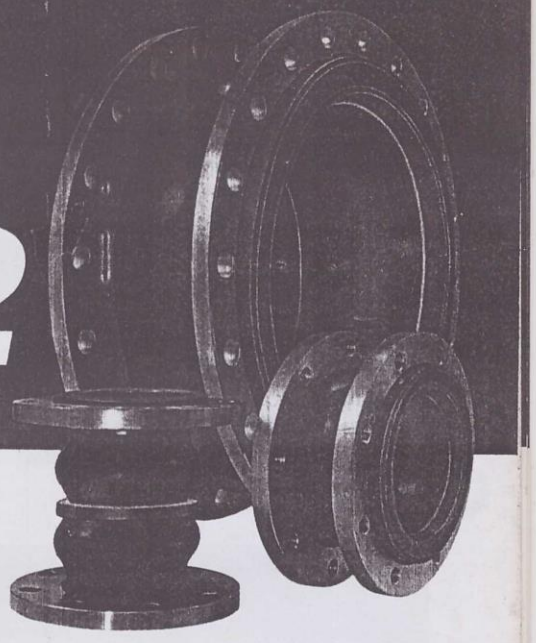
240/242



PROCO Series 240 and Series 242 Non-Metallic Expansion Joints are designed for tough demanding industrial applications as found in: Air Conditioning-Heating and Ventilating Systems, Chemical-Petrochemical and Industrial Process Piping Systems, Power Generating Systems, Marine Services, Pulp & Paper Systems, Water-Waste-water-Sewage and Pollution Control Systems. Installed next to mechanical equipment or between the anchor points of a piping system, specify the PROCO Series 240 or 242 to: (1) Absorb Pipe/Movement/Stress, (2) Reduce System Noise, (3) Isolate Vibration, (4) Compensate Alignment/Offset, (5) Eliminate Electrolysis, (6) Protect Against Start-Up/Surge Forces. Our history in the manufacturing of expansion joint products dates back to 1930. When you need an engineered rubber solution to a piping system problem, call PROCO.

Spherical Shapes-Stronger-More Efficient. Featuring an engineered molded style single or twin sphere designed bellows, the PROCO Series 240 and Series 242 are inherently stronger than the conventional hand-built Spool Type arch. Internal pressure within a sphere is exerted in all directions, distributing forces evenly over a larger area The spherical design "flowing-arch" reduces turbulence, sediment buildup, thrust area and the effects of thrust on the piping system equipment when compared to the "high-arch" design of hand-built standard products.

Greater Movements Are Available with the PROCO Series 240 and Series 242 when compared to the movements of conventional hand-built products. Axial compression, elongation, deflection and angular movements in the system are more readily absorbed by spherical types. These products are more forgiving and can be compressed or extended to install in non-standard openings, caused by equipment shifting or settling (Pre-compressing/extending the expansion joints for installation, may result in reduced pressure, vacuum and movement capabilities of the expansion joints. See Tables 2 and 3.)

Easy Installation With Alignable Metallic Flanges. The floating metallic flanges freely rotate on the bellows, compensating for mating flange misalignment, thus speeding up installation time (see Figures 1, 2, 3 & 4). Gaskets are also not required with the Series 240 or Series 242, provided the expansion joints are mated against a flat face flange as required in the installation instructions.

Less System Strain With Thin Wall Design. Manufactured by high pressure molding of elastomer and high-tensile fabric reinforcement, the Series 240 and Series 242 have a thinner wall section and lighter weight when compared to conventional hand-built products. Lower spring forces are therefore required, reducing piping/flange/equipment stress-strain-damage. PROCO Styles 240-C and 240-A are acceptable for use with plastic piping systems where even lower deflection forces are required.

Specifications Met. The PROCO Series 240 and Series 242 are designed to meet or exceed the pressure, movement and dimensional rating of the Spool Type arch as shown in the Rubber Expansion Joint Division, Fluid Sealing Association "Technical Handbook - Sixth Edition" Tables IV & V.

Absorbs Vibration-Noise-Shock. The PROCO quiet operating Series 240 and Series 242 are a replacement for "sound transmitting" metallic expansion joints. Sound loses energy traveling axially through the elastomer bellows. Water hammer pumping impulses and water-borne noises are cushioned and absorbed by the molded lightweight thin-wall structure. Install the Series 240 or Series 242 in a system to enable isolated equipment to move freely on its vibration mountings; or to reduce vibration transmission when the piping section beyond the expansion joint is anchored or sufficiently rigid.

Flange Materials/Drilling. All PROCO Spherical 240 and 242 connectors are furnished complete with plated carbon steel flanges for corrosion protection. Series 240 and 242 Neoprene connectors — 12" and below — are tapped to ANSI 125/150# drilling. All other connectors come with standard drilled holes to the ANSI 125/150# standards (see Table 7 and Figures 3 & 4). Stainless steel flanges and other drilling standards such as: ANSI 250/300#, BS-10, DIN NP-10 and DIN NP-16 are also available from stock and are listed on Table 7. JIS-5K and JIS-10K are also available upon request.

Chemical Service Capability At Minimal Cost. Expensive, exotic metal expansion joints for chemical service can be replaced with the PROCO Series 240 or Series 242. Molded with low cost chemical resistant elastomers such as Neoprene, Nitrile, Hypalon®, EPDM and Chlorobutyl insures an expansion joint is compatible with the fluid being pumped or piped. (See Table 1 below). Use the PROCO "Chemical/Rubber Guide" to specify an elastomer recommendation compatible for your requirement.

Wide Service Range With Low Cost. Engineered to operate up to 300 PSIG and 265°F, the PROCO Series 240 and Series 242 can be specified for a wide range of piping requirements. Compared to conventional hand-built Spool Type arch, you will invest less money when specifying the mass-produced, consistent high quality, molded single or twin sphere expansion joints.

Large Inventories Mean Same-Day Shipment. PROCO maintains the largest inventory of spherical expansion joints in the Americas. Every size listed is in stock in several elastomers and comes with a choice of drilling patterns. Shipment is based on customer need. PROCO can ship same day as order placement. In fact, when it comes to rubber expansion joints, **if PROCO doesn't have your requirement...nobody does!**

Information • Ordering • Pricing • Delivery. Day or night, weekends and holidays ... the PROCO phones are monitored 24 hours around the clock. When you have a question, you can call us.

Toll-Free Phone ..... 800 / 344-3246 USA/CANADA
International Calls ... 209 / 943-6088
Fax ..... 209 / 943-0242
E-mail ..... sales@procoproducts.com
Website ..... www.procoproducts.com

Weekday office hours are 5:30 a.m. to 5:15 p.m. (Pacific Time)

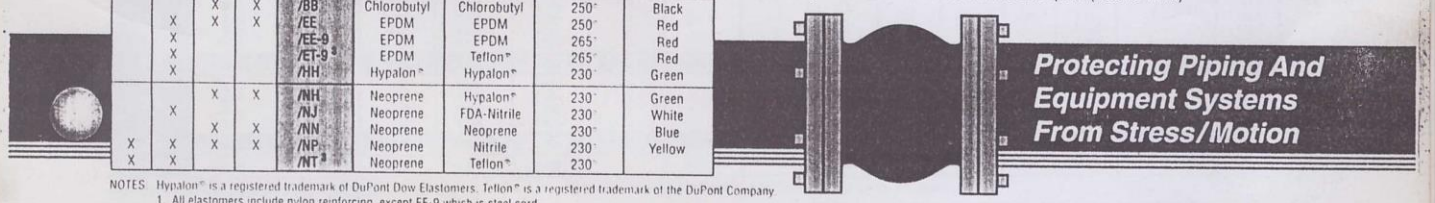
Table 1: Available Styles • Materials

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

240-A	240-C	240-N,D,E,M	242-A,B,C	PROCO™ Material Code [1]	Cover Elastomer [2]	Tube Elastomer	Maximum Operating Temp. °F	Identifying Color Band/Label
		X	X	/BB	Chlorobutyl	Chlorobutyl	250°	Black
	X	X	X	/EE	EPDM	EPDM	250°	Red
	X			/EE-9	EPDM	EPDM	265°	Red
	X			/ET-9 [3]	EPDM	Teflon®	265°	Red
	X			/HH	Hypalon®	Hypalon®	230°	Green
		X	X	/NH	Neoprene	Hypalon®	230°	Green
	X			/NJ	Neoprene	FDA-Nitrile	230°	White
		X	X	/NN	Neoprene	Neoprene	230°	Blue
X	X	X	X	/NP	Neoprene	Nitrile	230°	Yellow
X	X			/NT [3]	Neoprene	Teflon®	230°	

NOTES: Hypalon® is a registered trademark of DuPont Dow Elastomers. Teflon® is a registered trademark of the DuPont Company.

1. All elastomers include nylon reinforcing, except EE-9 which is steel cord.
   All materials meet or exceed the Rubber Expansion Joint Division, Fluid Sealing Association-REJ Division requirements for Standard Class I and II. EE-9 also meets Special Class II. For more information see The FSA Technical Handbook, Table 1.
   Materials NN, NP and NH meet all requirements of U.S.C.G.
   EPDM Materials good for up to 300°F for pressures 15 PSI or less.
2. Expansion joint "cover" (outside) can be Hypalon® painted on special order.
3. Products with Teflon® "tube" (inside) are not to be used for vacuum service.



Protecting Piping And Equipment Systems From Stress/Motion

Rev. 04 12/04

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 [2]					Pressure [4]		Standard Flange Bolting Dimensions					Weight in lbs [8]	
			Axial Compression Inches	Axial Extension Inches	Lateral Deflection Inches	Angular Deflection Degrees	Thrust Factor [3]	Positive PSIG	Vacuum Inches of Hg	Flange O.D. Inches	Bolt Circle Inches	Number of Holes	Size of Bolt Holes Inches	Bolt Hole Threads	Eye Joint & Flanges	Control Unit Set (2Req)
1	6.00	240-AV	0.500	0.375	0.500	37	4.43	225	26	4.25	3.13	4	0.625	1/2-13 UNC	3.8	3.3
1.25	3.74 **5.00** 5.00 **6.00**	240-D **240-C** 240-E **240-AV**	0.375 **1.063** .500 **.500**	0.188 **1.250** 0.375 **0.375**	0.312 **1.188** 0.500 **0.500**	14 **45** 27 **31**	6.34	225 **235** 225 **225**	26 **18** 26 **26**	4.63	3.5	4	0.625 **0.625** 0.625 **0.625**	— **—** — **1/2-13 UNC**	5.4 **5.5** 5.1 **6.0**	4.6
1.5	3.74 4.00 5.00 5.00 **6.00**	240-D 240-M 240-C 240-E **240-AV**	0.375 0.375 1.063 0.500 0.500	0.188 0.188 1.250 0.375 0.375	0.312 0.312 1.188 0.500 0.500	14 14 45 27 27	6.49	225 225 235 225 225	26 26 18 26 26	5.0	3.88	4	0.625 0.625 0.625 0.625 0.625	— — — — 1/2-13 UNC	5.4 5.5 5.1 6.0 6.1	4.6
2	**4.00** **4.13** **5.00** **5.00** **6.00** **6.00** **6.00**	**240-M** **240-D** **240-C** **240-E** **240-A** **240-HW** **240-AV**	**0.375** **0.375** **1.063** **0.375** **1.188** **0.500** **0.500**	**0.188** **0.188** **1.250** **0.375** **1.188** **0.375** **0.375**	**0.312** **0.312** **1.188** **0.500** **1.188** **0.500** **0.500**	**11** **11** **45** **20** **45** **20** **20**	**7.07**	**225** **225** **235** **225** **235** **300** **225**	**26** **26** **18** **26** **18** **26** **26**	**6.0**	**4.75**	**4**	**0.750** **0.750** **0.750** **0.750** **0.750** **0.750** **0.750**	**—** **—** **—** **—** **—** **—** **5/8-11 UNC**	**8.3** **8.3** **7.1** **8.5** **7.1** **11.0** **12.3**	**6.3** **6.3** **6.3** **6.3** **6.3** **7.6** **7.6**
2.5	4.00 4.53 5.00 5.00 6.00 6.00 **6.00**	240-M 240-D 240-C 240-E 240-A 240-AV **240-AV**	0.375 0.500 1.063 0.500 1.188 0.500 **0.500**	1.188 0.250 1.250 0.375 1.188 0.375 **0.375**	0.375 0.375 1.188 0.500 1.188 0.500 **0.500**	8 11 45 17 43 17 **17**	11.05	225 225 235 225 235 225 **225**	26 26 18 26 18 26 **26**	7.0	5.5	4	0.750 0.750 0.750 0.750 0.750 0.750 **0.750**	— — — — — 5/8-11 UNC **5/8-11 UNC**	12.0 12.3 10.6 12.0 12.0 12.3 **12.3**	7.6
3	**5.00** **5.00** **5.14** **6.00** **6.00** **6.00** **8.00**	**240-C** **240-E** **240-D** **240-A** **240-HW** **240-AV** **240-AV**	**1.063** **0.500** **0.500** **1.188** **0.500** **0.500** **0.500**	**1.250** **0.375** **0.375** **1.188** **0.375** **0.375** **0.375**	**1.188** **0.500** **0.500** **1.188** **0.500** **0.500** **0.500**	**40** **14** **14** **38** **14** **14** **14**	**13.36**	**235** **225** **225** **235** **300** **225** **225**	**15** **26** **26** **15** **26** **26** **26**	**7.5**	**6.0**	**4**	**0.750** **0.750** **0.750** **0.750** **0.750** **0.750** **0.750**	**—** **—** **—** **—** **—** **5/8-11 UNC** **5/8-11 UNC**	**13.3** **14.0** **14.0** **13.8** **17.5** **14.0** **15.0**	**8.3** **8.3** **8.3** **8.3** **8.3** **8.3** **8.7**
3.5	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	**5.00** **5.00** **5.32** **6.00** **6.00** **6.00** **8.00**	**240-C** **240-E** **240-D** **240-A** **240-HW** **240-AV** **240-AV**	**1.063** **0.750** **0.750** **1.188** **0.750** **0.750** **0.750**	**1.250** **0.500** **0.500** **1.188** **0.500** **0.500** **0.500**	**1.188** **0.500** **0.500** **1.188** **0.500** **0.500** **0.500**	**32** **14** **14** **30** **14** **14** **14**	**22.69**	**235** **225** **225** **235** **300** **225** **225**	**15** **26** **26** **15** **26** **26** **26**	**9.0**	**7.5**	**8**	**0.750** **0.750** **0.750** **0.750** **0.750** **0.750** **0.750**	**—** **—** **—** **—** **—** **5/8-11 UNC** **5/8-11 UNC**	**16.5** **17.0** **17.1** **17.5** **26.0** **18.3** **19.3**	**7.4** **7.4** **7.4** **7.4** **7.4** **7.4** **7.8**
5	5.00 5.00 6.00 **6.00** 6.69 **8.00**	240-C 240-E 240-A **240-AV** 240-D **240-AV**	1.063 0.750 1.188 0.750 0.750 0.750	1.250 0.500 1.188 0.500 0.500 0.500	1.188 0.500 1.188 0.500 0.500 0.500	27 11 25 11 11 11	30.02	235 225 235 225 225 225	10 26 10 26 10 26	10.0	8.5	8	0.875 0.875 0.875 0.875 0.875 0.875	— — — 3/4-10 UNC — 3/4-10 UNC	20.3 22.0 21.8 22.8 23.6 25.0	8.3 8.3 8.3 8.3 8.5 10.8
6	**5.00** **5.00** **6.00** **6.00** **6.00** **7.08** **8.00**	**240-C** **240-E** **240-A** **240-HW** **240-AV** **240-D** **240-AV**	**1.063** **0.750** **1.188** **0.750** **0.750** **0.750** **0.750**	**1.250** **0.500** **1.188** **0.500** **0.500** **0.500** **0.500**	**1.188** **0.500** **1.188** **0.500** **0.500** **0.500** **0.500**	**23** **9** **21** **9** **9** **9** **9**	**41.28**	**225** **225** **235** **300** **225** **225** **225**	**8** **26** **10** **15** **26** **26** **26**	**11.0**	**9.5**	**8**	**0.875** **0.875** **0.875** **0.875** **0.875** **0.875** **0.875**	**—** **—** **—** **—** **3/4-10 UNC** **—** **3/4-10 UNC**	**22.6** **26.0** **24.0** **39.0** **26.8** **29.0** **29.1**	**10.4** **10.4** **10.4** **10.4** **10.4** **10.8** **10.8**
8	5.00 5.00 6.00 6.00 6.00 8.07	240-C 240-E 240-A 240-HW 240-AV 240-D	1.063 0.750 1.188 0.750 0.500 1.000	1.188 0.500 1.188 0.500 0.500 0.563	1.188 0.500 1.188 0.500 0.500 0.875	17 7 16 7 7 8	63.62	235 225 235 300 225 225	8 26 8 15 26 26	13.5	11.75	8	0.875 0.875 0.875 0.875 0.875 0.875	— — — — 3/4-10 UNC —	35.5 40.0 38.5 70.0 40.6 41.3	13.4 13.4 13.4 13.4 13.4 14.0
10	**5.00** **5.00** **8.00** **8.00** **8.00** **8.00** **9.45** **10.00**	**240-C** **240-E** **240-A** **240-AV** **240-AV** **240-HW** **240-D** **240-AV**	**1.063** **1.000** **1.188** **1.000** **1.000** **1.000** **1.000** **1.000**	**1.188** **0.625** **1.188** **0.625** **0.625** **0.625** **0.625** **0.625**	**1.188** **0.750** **1.188** **0.750** **0.750** **0.750** **0.875** **0.750**	**14** **7** **13** **7** **7** **7** **7** **7**	**73.87**	**235** **225** **235** **225** **275** **225** **225** **225**	**6** **26** **6** **26** **26** **26** **26** **26**	**16.0**	**14.25**	**12**	**1.000** **1.000** **1.000** **1.000** **1.000** **1.000** **1.000** **1.000**	**—** **—** **—** **7/8-9 UNC** **7/8-9 UNC** **—** **—** **7/8-9 UNC**	**49.3** **56.0** **53.6** **56.6** **57.0** **56.0** **58.5** **60.5**	**21.0** **21.0** **21.3** **21.3** **22.0** **22.0** **22.0** **26.5**
12	5.00 5.00 8.00 8.00 **8.00** **8.00** 9.00 10.24	240-C 240-E 240-A 240-HW **240-AV** **240-AV** 240-M 240-D	1.063 1.000 1.188 1.000 1.000 1.000 1.000 1.000	1.250 0.625 1.188 0.625 0.625 0.625 0.625 0.625	1.188 0.750 1.188 0.750 0.750 0.750 0.750 0.875	12 6 11 6 6 6 6 6	137.89	235 225 235 275 225 225 225 225	6 26 6 26 26 26 26 26	19.0	17.0	12	1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000	— — — — 7/8-9 UNC 7/8-9 UNC — —	73.4 74.0 80.0 100.0 83.0 88.0 89.0	26.5 26.5 27.0 27.0 27.0 27.0 27.0 28.0
14	**8.00** **8.00** **9.00** **10.43**	**240-HW** **240-AV** **240-M** **240-D**	**1.000** **1.000** **1.000** **1.000**	**0.625** **0.625** **0.625** **0.625**	**0.750** **0.750** **0.750** **0.875**	**5**	**182.65**	**200** **150** **150** **150**	**26** **26** **26** **26**	**21.0**	**18.75**	**12**	**1.125** **1.125** **1.125** **1.125**	**—** **—** **—** **—**	**162.0** **115.0** **117.0** **120.0**	**28.0** **29.0** **29.0** **29.0**
16	8.00 8.00 **8.00** 9.00 10.43	240-C 240-HW **240-AV** 240-M 240-D	1.000 1.000 1.000 1.000 1.000	1.063 0.625 0.625 0.625 0.625	1.188 0.750 0.750 0.750 0.875	8 4 4 4 4	240.53	145 175 125 125 125	6 26 26 26 26	23.5	21.25	16	1.125 1.125 1.125 1.125 1.125	— — — — —	136.0 186.0 165.0 168.0 170.0	26.8 26.8 26.8 27.0 27.0
18	**8.00** **8.00** **9.00** **10.43**	**240-HW** **240-AV** **240-M** **240-D**	**1.000** **1.000** **1.000** **1.000**	**0.625** **0.625** **0.625** **0.625**	**0.750** **0.750** **0.750** **0.875**	**4**	**298.65**	**175** **125** **125** **125**	**26** **26** **26** **26**	**25.0**	**22.75**	**16**	**1.250** **1.250** **1.250** **1.250**	**—** **—** **—** **—**	**209.0** **168.0** **169.0** **170.0**	**31.4** **31.4** **33.1** **33.1**
20	8.00 8.00 **8.00** 9.00 10.43	240-C 240-HW **240-AV** 240-M 240-D	1.000 1.000 1.000 1.000 1.000	1.063 0.625 0.625 0.625 0.625	1.188 0.750 0.750 0.750 0.875	6 3 3 3 3	363.05	145 175 125 125 125	6 26 26 26 26	27.5	25.00	20	1.250 1.250 1.250 1.250 1.250	— — — — —	154.0 234.0 170.0 173.0 175.0	32.4 32.4 32.4 34.1 34.1
22	**10.00**	**240-AV**	**1.000**	**0.625**	**0.750**	**3**	**433.74**	**115**	**26**	**27.5**	**25.0**	**20**	**1.375**	**—**	**210.0**	**34.5**
24	8.00 **10.00** 10.00 10.47	240-C **240-AV** 240-HW 240-D	1.000 1.000 1.000 1.000	1.063 0.625 0.625 0.625	1.188 0.750 0.750 0.875	5 3 3 3	510.70	145 110 160 110	6 26 26 26	32.5	29.5	20	1.375 1.375 1.375 1.375	— — — —	214.0 255.0 297.0 265.0	44.0 45.5 45.5 46.0
26	**10.00**	**240-AV**	**1.000**	**0.625**	**0.750**	**3**	**593.96**	**110**	**26**	**34.25**	**31.75**	**24**	**1.375**	**—**	**270.0**	**46.5**
30	**10.00**	**240-AV**	1.000	0.625	0.750	2	779.31	110	26	38.75	36.0	28	1.375	—	295.0	57.0

Standard PROCO Style 240-AV Expansion Joints shown in Bold Type are considered Standards and inventoried in large quantities.

NOTES: 1. "HW" denotes Heavy Weight Construction.
2. Movements stated are non-concurrent.
3. To determine End Thrust: Multiply Thrust Factor by Operating Pressure of System. This is End Thrust in pounds.
4. Pressure rating is based on 170° F operating temperature. The pressure rating is reduced slightly at higher temperatures.
5. Pressures shown are maximum "operating pressure." Test pressure is 1.5 times "operating pressure." Burst pressure is approximately 4 times "operating pressure."
6. Vacuum rating is based on neutral installed length, without external load. Products should not be installed "extended" on vacuum applications.
7. Style 240-AV/NN (Neoprene elastomer only) expansion joints 1.0" I.D. – 12.0" I.D. come with tapped holes in lieu of drilled holes.
8. All expansion joints are furnished complete with flanges. Control units are required on applications where movements could exceed rated capabilities.

Table 3: Sizes • Movements • Pressures • Flange Standards • Weights

NOMINAL PIPE Size I.D.	Neutral Length	PROCO Style Number [1]	242 Movement Capability: From Neutral Position [2]					Pressure [4]		Standard Flange Bolting Dimensions					Weight in lbs [8]	
			Axial Compression Inches	Axial Extension Inches	Lateral Deflection Inches	Angular Deflection Degrees	Thrust [3] Factor	Positive PSIG	Vacuum [5] Inches of Hg	Flange O.D. Inches	Bolt Circle Inches	Number of Holes	Size of Holes Inches	Bolt Hole Thread	Exp. Joint & Flanges	Control Unit Set (2 Rod)
1	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	7.0 7.0 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 9.2	3.5 3.5 3.6
1.5	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	— — 1/2-11 UNC — —	6.1 7.6 6.8 8.3 7.7	4.6 4.6 4.8 4.8 5.1
2	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	7.95	225 300 225 300 225	26	6.0	4.75	4	0.750 0.750 0.750 0.750 0.750	— — 5/8-11 UNC — —	9.0 10.5 9.0 10.5 10.2	6.6 6.6 7.0 7.0 7.3
2.5	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	43	11.05	225 300 225 300 225	26	7.0	5.5	4	0.750 0.750 0.750 0.750 0.750	— — 5/8-11 UNC — —	12.9 15.3 13.3 15.8 14.5	7.6 7.6 8.0 8.0 8.4
3	7.00 7.00 9.00 10.00 12.00	242-A 242-HA 242-B 242-C 242-C	2.000	1.188	1.750	38	13.38	225 300 225 225 300	26	7.5	6.0	4	0.750 0.750 0.750 0.750 0.750	5/8-11 UNC	14.3 18.2 15.2 15.8 16.0	8.6 8.6 9.0 9.1 9.9
3.5	10.00	242-C	2.000	1.188	1.750	34	18.67	225	26	8.5	7.0	8	0.750	—	20.6	8.1
4	9.00 9.00 10.00 12.00	242-A 242-HA 242-C 242-C	2.000	1.375	1.562	34	22.89	225 300 225 225	26	9.0	7.5	8	0.750 0.750 0.750 0.750	5/8-11 UNC 3/4-10 UNC	20.3 26.4 21.3 22.0	8.0 8.0 8.2 8.2
5	9.00 9.00 10.00 12.00	242-A 242-HA 242-C 242-C	2.000	1.375	1.562	29	30.02	225 300 225 225	26	10.0	8.5	8	0.875 0.875 0.875 0.875	— — — —	24.5 31.4 25.5 26.0	8.3 8.3 9.1 9.1
6	9.00 9.00 10.00 12.00 14.00	242-A 242-HA 242-C 242-C 242-C	2.000	1.375	1.562	25	41.28	225 300 225 225 225	26	11.0	9.5	8	0.875 0.875 0.875 0.875 0.875	3/4-10 UNC 	29.5 38.6 30.5 31.0 32.0	11.7 11.7 11.9 12.0 12.0
8	9.00 9.00 10.00 12.00 13.00 13.00 14.00	242-B 242-HB 242-C 242-C 242-A 242-HA 242-C	2.375	1.375	1.375	19	63.62	225 300 225 225 225 300 225	26	13.5	11.75	8	0.875 0.875 0.875 0.875 0.875 0.875 0.875	— — — — 3/4-10 UNC — —	42.3 55.4 43.4 44.0 43.8 57.5 46.0	14.5 14.5 15.0 15.2 15.4 15.4 16.0
10	12.00 12.00 13.00 13.00 14.00	242-B 242-HB 242-A 242-HA 242-D	2.375	1.375	1.375	15	103.67	225 275 225 275 225	26	16.0	14.25	12	1.000 1.000 1.000 1.000 1.000	 7/8-9 UNC 	64.1 86.5 65.5 88.4 66.7	23.5 23.5 24.5 24.5 24.5
12	12.00 12.00 13.00 13.00 14.00	242-B 242-HB 242-A 242-HA 242-C	2.375	1.375	1.375	13	137.89	225 275 225 275 225	26	19.0	17.00	12	1.000 1.000 1.000 1.000 1.000	— — 7/8-9 UNC — —	94.0 110.0 95.0 110.0 99.1	30.0 30.0 31.0 31.0 31.0
14	12.00 13.75 13.75	242-D 242-A 242-HA	1.750	1.118	1.118	9	182.65	150 150 200	26	19.0	18.75	12	1.125 1.125 1.125	 	110.0 112.0 144.0	30.5 32.0 32.0
16	12.00 12.00 13.75 13.75	242-C 242-HC 242-A 242-HA	1.750	1.118	1.118	8	240.53	125 175 125 175	26	23.5	21.25	16	1.125 1.125 1.125 1.125	— — — —	124.0 160.0 132.0 170.2	28.8 28.8 30.8 30.8
18	12.00 13.75 13.75	242-C 242-A 242-HA	1.750	1.118	1.118	7	298.85	125 125 175	26	25.0	22.75	16	1.250 1.250 1.250	 	138.0 146.0 181.2	35.1 36.1 36.1
20	12.00 13.75 13.75	242-C 242-A 242-HA	1.750	1.118	1.118	7	363.05	125 125 175	26	27.5	25.0	20	1.250 1.250 1.250	— — —	172.0 182.0 182.0	35.0 35.5 35.5
22	12.00	242-C	1.750	1.118	1.118	6	433.74	115	26	29.5	27.25	20	1.375	—	181.0	35.5
24	12.00 13.75 13.75	242-C 242-A 242-HA	1.750	1.118	1.118	5	516.70	110 110 160	26	32.5	29.5	20	1.375 — 1.375	— — —	190.0 220.0 266.2	47.0 48.0 48.0
26	12.00	242-C	1.750	1.118	1.118	5	593.96	110	26	34.25	31.75	24	1.375	—	243.0	52.0
30	12.00	242-C	1.750	1.118	1.118	4	773.31	110	26	38.75	36.0	28	1.375	—	270.0	62.0

Standard PROCO Style 242-A Expansion Joints shown in Bold Type are considered Standards and inventoried in large quantities.

NOTES
1. "HA", "HB", and "HC" denote Heavy Weight Construction.
2. Movements stated are non-concurrent.
3. To determine End Thrust: Multiply Thrust Factor by Operating Pressure of System. This is End Thrust in pounds.
4. Pressure rating is based on 170° F operating temperature. The pressure rating is reduced slightly at higher temperatures.
5. Pressures shown are maximum "operating pressure." Test pressure is 1.5 times "operating pressure." Burst pressure is approximately 4 times "operating pressure."
6. Vacuum rating is based on neutral installed length, without external load. Products should not be installed "extended" on vacuum applications.
7. Style 240-AV NN (Neoprene elastomer only) expansion joints 1.25" I.D. - 12.0" I.D. come with tapped holes in lieu of drilled holes.
8. All expansion joints are furnished complete with flanges. Control units are required on applications where movements could exceed rated capabilities.

Installation Note:
Install at the neutral length dimension as shown in Tables 2 & 3. Make sure the mating flanges are **FLAT-FACE TYPE.** When attaching beaded end flanged expansion joints to raised face flanges, the use of ring gaskets are required to prevent metal flange faces from cutting rubber bead during installation. ***Care must be taken when pushing the joint into the breech between the mating flanges so as not to roll the leading edge of the joint out of its flange groove.***

Precompression Note:
Joint must be precompressed approximately 1/8" to 3/16" in order to obtain a correct installed face-to-face dimension.

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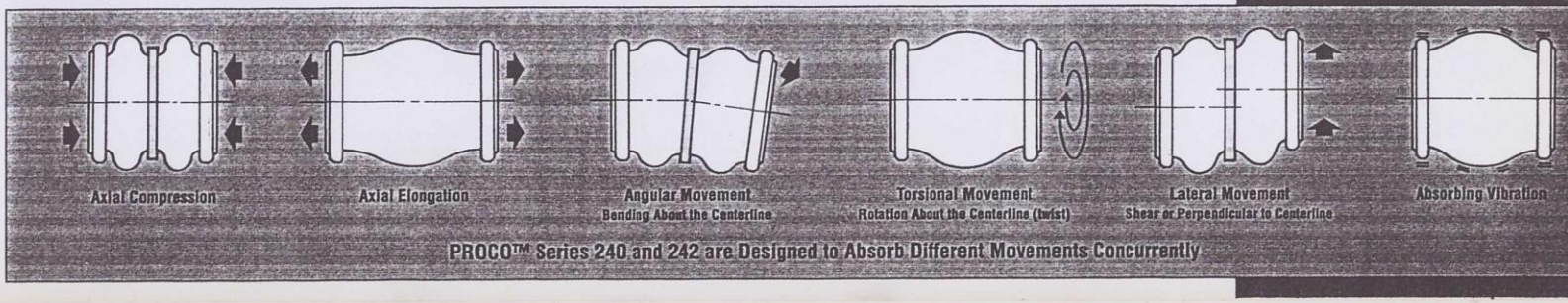
drilling for series 240 and series 242 expansion jo

Table 7: Flange Drilling

NOMINAL PIPE SIZE inch/ mm	American 125/150# Conforms to ANSI B16.1 and B16.5						American 250/300# Conforms to ANSI B16.1 and B16.5					British Standard 10:1962 Conforms to BS 10 Table E					Metric Series Conforms to I.S.O. 2084-1974 Table NP10 Holes to I.S.O. /R-273					Metric Series Conforms to I.S.O. 2084-1974 Table NP16 Holes to I.S.O. /R-273				
	Flange Thickness	Flange O.D.	Bolt Circle	No. of Holes	Drilled Hole Size	Threaded Hole Size	Flange Thickness	Flange O.D.	Bolt Circle	No. of Holes	Hole Size	Flange Thickness	Flange O.D.	Bolt Circle	No. of Holes	Hole Size	Flange Thickness	Flange O.D.	Bolt Circle	No. of Holes	Hole Size	Flange Thickness	Flange O.D.	Bolt Circle	No. of Holes	Hole Size
1 25	0.55 14.0	4.25 108.0	3.13 79.4	4 4	0.62 15.9	1/2 - 13 UNC	0.63 16.0	4.88 124.0	3.5 88.9	4 4	0.75 19.1	0.59 15.0	4.5 114.0	3.25 82.6	4 4	0.62 15.9	0.63 16.0	4.53 115.0	3.35 85.0	4 4	0.55 14.0	0.63 16.0	4.53 115.0	3.35 85.0	4 4	0.55 14.0
1.25 32	0.55 14.0	4.63 118.0	3.5 88.9	4 4	0.62 15.9	1/2 - 13 UNC	0.63 16.0	5.25 133.0	3.88 98.4	4 4	0.75 19.1	0.59 15.0	4.75 121.0	3.44 87.3	4 4	0.62 15.9	0.63 16.0	5.51 140.0	3.94 85.0	4 4	0.71 18.0	0.63 16.0	5.51 140.0	3.94 100.0	4 4	0.71 18.0
1.5 40	0.55 14.0	5.0 127.0	3.88 98.4	4 4	0.62 15.9	1/2 - 13 UNC	0.63 16.0	6.12 156.0	4.50 114.3	4 4	0.88 22.2	0.59 15.0	5.25 133.0	3.88 98.4	4 4	0.62 15.9	0.63 16.0	5.91 150.0	4.33 110.0	4 4	0.71 18.0	0.63 16.0	5.91 150.0	4.33 110.0	4 4	0.71 18.0
2 50	0.63 16.0	6.0 152.0	4.75 120.7	4 4	0.75 19.1	5/8 - 11 UNC	0.71 18.0	6.50 165.0	5.00 127.0	8 8	0.75 19.1	0.63 16.0	6.0 152.01	4.5 114.3	4 4	0.75 19.1	0.71 18.0	6.50 165.0	4.92 125.0	4 4	0.71 18.0	0.71 18.0	6.50 165.0	4.92 125.0	4 4	0.71 18.0
2.5 65	0.71 18.0	7.0 178.0	5.5 139.7	4 4	0.75 19.1	5/8 - 11 UNC	0.71 18.0	7.5 191.0	5.88 149.2	8 8	0.88 22.2	0.71 18.0	6.5 165.0	5.0 127.0	4 4	0.75 19.1	0.71 18.0	7.25 185.0	5.71 145.0	4 4	0.71 18.0	0.71 18.0	7.28 185.0	5.71 145.0	4 4	0.71 18.0
3 80	0.71 18.0	7.5 191.0	6.0 152.4	4 4	0.75 19.1	5/8 - 11 UNC	0.79 20.0	8.25 210.0	6.62 168.2	8 8	0.88 22.2	0.71 18.0	7.25 184.0	5.75 146.1	4 4	0.75 19.1	0.79 20.0	7.87 200.0	6.3 160.0	8 8	0.71 18.0	0.79 20.0	7.87 200.0	6.30 160.0	8 8	0.71 18.0
3.5 90	0.71 18.0	8.5 216.0	7.0 177.8	8 8	0.75 19.1	5/8 - 11 UNC	0.79 20.0	9.0 229.0	7.25 184.2	8 8	0.88 22.2	0.71 18.0	8.0 203.0	6.5 165.1	8 8	0.75 19.1	—	—	—	—	—	—	—	—	—	—
4 100	0.71 18.0	9.0 229.0	7.5 190.5	8 8	0.75 19.1	5/8 - 11 UNC	0.79 20.0	10.0 254.0	7.88 200.0	8 8	0.88 22.2	0.71 18.0	8.5 216.0	7.0 177.8	8 8	0.75 19.1	0.79 20.0	8.66 220.0	7.09 180.0	8 8	0.71 18.0	0.79 20.0	8.66 220.0	7.09 180.0	8 8	0.71 18.0
5 125	0.79 20.0	10.0 254.0	8.5 215.9	8 8	0.88 22.2	3/4 - 10 UNC	0.87 22.0	11.0 279.0	9.25 235.0	8 8	0.88 22.2	0.79 20.0	10.0 254.0	8.25 209.6	8 8	0.75 19.1	0.87 22.0	9.84 250.0	8.27 210.0	8 8	0.71 18.0	0.87 22.0	9.84 250.0	8.27 210.0	8 8	0.71 18.0
6 150	0.87 22.0	11.0 279.0	9.5 241.3	8 8	0.88 22.2	3/4 - 10 UNC	0.87 22.2	12.5 318.0	10.62 269.9	12 12	0.88 22.2	0.87 22.2	11.0 279.0	9.25 235.0	8 8	0.88 22.2	0.87 22.0	11.22 285.0	9.45 240.0	8 8	0.87 22.0	0.87 22.0	11.22 285.0	9.45 240.0	8 8	0.87 22.0
8 200	0.87 22.0	13.5 343.0	11.75 298.5	8 8	0.88 22.2	3/4 - 10 UNC	0.95 24.0	15.0 381.0	13.0 330.2	12 12	1.00 25.4	0.87 22.2	13.25 337.0	11.5 292.1	8 8	0.88 22.2	0.87 22.0	13.39 340.0	11.61 295.0	8 8	0.87 22.0	0.87 22.0	13.39 340.0	11.61 295.0	12 12	0.87 22.0
10 250	0.95 24.0	16.0 406.0	14.25 362.0	12 12	1.00 25.4	7/8 - 9 UNC	1.02 26.0	17.5 445.0	15.25 387.4	16 16	1.13 28.6	0.95 24.0	16.0 406.0	14.0 355.6	12 12	0.88 22.2	1.02 26.0	15.55 395.0	13.78 350.0	12 12	0.87 22.0	1.02 26.0	15.94 405.0	13.98 355.0	12 12	1.00 26.0
12 300	0.95 24.0	19.0 483.0	17.0 431.8	12 12	1.00 25.4	7/8 - 9 UNC	1.02 26.0	20.5 521.0	17.75 450.9	16 16	1.25 31.8	0.95 24.0	18.0 457.0	16.0 406.4	12 12	1.00 25.4	1.02 26.0	17.52 445.0	15.75 400.0	12 12	0.87 22.0	1.02 26.0	18.11 460.0	16.14 410.0	12 12	1.02 26.0
14 350	1.02 26.0	21.0 533.0	18.75 476.3	12 12	1.13 28.6	1 - 8 UNC	1.10 28.0	23.0 584.0	20.25 514.4	20 20	1.25 31.8	1.02 26.0	20.75 527.0	18.5 469.9	12 12	1.00 25.4	1.10 28.0	19.88 505.0	18.11 460.0	16 16	0.87 22.0	1.10 28.0	20.47 520.0	18.50 470.0	16 16	1.02 26.0
16 400	1.10 28.0	23.5 597.0	21.25 539.8	16 16	1.13 28.6	1 - 8 UNC	1.18 30.0	25.5 648.0	22.5 571.5	20 20	1.38 34.9	1.10 28.0	22.75 578.0	20.5 520.7	12 12	1.00 25.4	1.18 30.0	22.24 565.0	20.28 515.0	16 16	1.02 26.0	1.18 30.0	22.83 580.0	20.67 525.0	16 16	1.18 30.0
18 450	1.18 30.0	25.0 635.0	22.75 577.9	16 16	1.25 31.8	1 1/8 - 7 UNC	1.18 30.0	28.0 711.0	24.75 628.7	24 24	1.38 34.9	1.18 30.0	25.25 641.0	23.0 584.2	16 16	1.00 25.4	1.18 30.0	24.21 615.0	22.24 565.0	20 20	1.02 26.0	1.18 30.0	25.20 640.0	23.03 585.0	20 20	1.18 30.0
20 500	1.18 30.0	27.5 699.0	25.0 635.0	20 20	1.25 31.8	1 1/8 - 7 UNC	1.18 30.0	30.5 775.0	27.0 685.8	24 24	1.38 34.9	1.18 30.0	27.75 705.0	25.25 641.4	16 16	1.00 25.4	1.18 30.0	26.38 670.0	24.41 620.0	20 20	1.02 26.0	1.18 30.0	28.15 715.0	25.59 650.0	20 20	1.30 33.0
22 550	1.18 30.0	29.5 749.0	27.25 692.2	20 20	1.38 34.9	1 1/4 - 7 UNC	1.18 30.0	33.0 838.0	29.5 743.0	24 24	1.38 34.9	1.18 30.0	30.0 762.0	27.5 698.5	16 16	1.13 28.6	1.18 30.0	28.74 730.0	26.57 675.0	20 20	1.18 30.0	1.18 30.0	30.51 775.0	27.95 710.0	20 20	1.30 33.0
24 600	1.18 30.00	32.06 812.0	29.5 749.3	20 20	1.38 34.9	1 1/4 - 7 UNC	1.18 30.0	36.0 914.0	32.0 812.8	24 24	1.62 41.3	1.18 30.0	32.5 826.0	29.75 755.7	16 16	1.25 31.8	1.18 30.0	30.71 780.0	28.54 725.0	20 20	1.18 30.0	1.18 30.0	33.07 840.0	30.31 770.0	20 20	1.42 36.0
26 650	1.26 32.0	34.25 870.0	31.75 806.5	24 24	1.38 34.9	1 1/4 - 7 UNC	1.26 32.0	38.25 972.0	34.5 876.0	28 28	1.75 44.5	—	—	—	—	—	1.26 32.0	32.87 835.0	30.71 780.0	24 24	1.18 30.0	1.26 32.0	33.86 860.0	31.10 790.0	24 24	1.42 36.0
30 750	1.26 32.0	38.75 984.0	36.0 914.4	28 28	1.38 34.9	1 1/4 - 7 UNC	1.26 32.0	43.0 1092.0	39.25 997.0	28 28	2.00 50.8	1.26 32.0	39.25 997.0	36.5 927.1	20 20	1.38 34.9	1.26 32.0	37.99 965.0	35.43 900.0	24 24	1.30 33.0	1.26 32.0	38.19 970.0	35.43 900.0	24 24	1.42 36.0



PROCO™ Series 240 and 242 are Designed to Absorb Different Movements Concurrently