



Expansion Joints Technical Expansion Joint Overview

DETERMINING TRAVEL LENGTH NEEDED

General Rule: For PVC systems, allow 3/8" expansion for every 10°F change in temperature per 100 feet of pipe, (all diameters). For CPVC systems, allow 1/2" expansion for every 10°F change in temperature per 100 feet of pipe, (all diameters). For example, a 6" travel expansion joint will accommodate approximately 160°F temperature change in 100 ft. of PVC pipe (16 x 3/8" = 6") or approximately 120°F temperature change in 100 ft. of CPVC pipe (12 x 1/2" = 6").

INSTALLATION

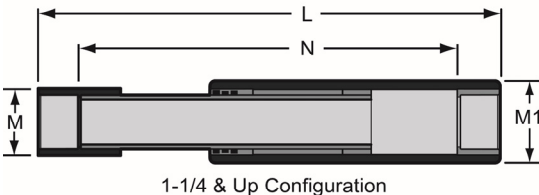
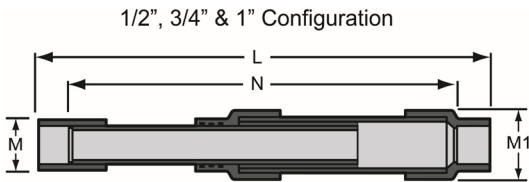
Expansion Joints consist of two telescoping tubes with internal O-ring seals. For proper operation, the outer tube should be firmly anchored to allow free movement of the inner tube or "piston". Support and thrust block the system to direct movement squarely into the Expansion Joint. Alignment is critical, axial guides should be installed to ensure straight movement into expansion joint. Provisions should be made to protect the cylinder shaft from scratches, damage and debris to prevent leaks. Expansion Joints can be installed at the travel range midpoint for most general installations and are shipped from the factory in this position. If desired, the extended position for installation may be additionally adjusted to specific system and installation parameters using the following calculation:

$$P = E \left(\frac{T-A}{T-F} \right)$$

T = Maximum Temperature of Pipe Exposure E = Maximum Expansion Joint Travel (6" or 12")
 A = Temperature of Pipe at time of Installation P = Piston Extension for Installation Position (inches)
 F = Minimum Temperature of Pipe Exposure

Example: A straight run of pipe will operate at temperatures between 60°F and 110°F. Temperature at time of installation is 75°F using a 6" travel Expansion Joint.

$$P = 6 \left(\frac{110-75}{110-60} \right) = 4.2 \text{ inches extended at installation.}$$



6" EXPANSION JOINT DIMENSION							
Size	M	M1	L-CLOSED	L-OPEN	N-CLOSED	N-OPEN	Pressure Rating @ 73°F
1/2"	1-3/16	1-3/4	10-9/16	16-9/16	8-13/16	14-13/16	235
3/4"	1-7/16	2-1/8	12	18	10	16	235
1"	1-5/8	2-3/8	12-1/2	18-1/2	10-1/4	16-1/4	235
1-1/4"	2-1/4	2-3/8	13-1/16	19-1/16	10-1/2	16-1/2	235
1-1/2"	2-3/8	2-7/8	13-1/4	19-1/4	10-7/16	16-7/16	235
2"	2-7/8	3-1/2	14-7/16	20-7/16	11-7/16	17-7/16	235
2-1/2"	4-3/16	4-1/2	16-1/4	22-1/4	12-3/4	18-3/4	150
3"	4-3/16	4-1/2	15-5/8	21-5/8	11-13/16	17-13/16	150
4"	5-1/4	5-9/16	16-15/16	22-15/16	12-9/16	18-9/16	150
6"	7-9/16	8-5/8	19-3/4	25-3/4	13-5/8	19-5/8	150
8"	9-11/16	10-3/4	24-1/2	30-1/2	16-9/16	22-9/16	150
10"	12-1/16	12-3/4	28-7/8	34-7/8	18-7/8	24-7/8	150
12"	14-1/4	16	34	40	22	28	150
14"	15-1/2	16	40-3/4	46-3/4	26	32	100

12" EXPANSION JOINT DIMENSIONS							
Size	M	M1	L-CLOSED	L-OPEN	N-CLOSED	N-OPEN	Pressure Rating @ 73°F
1/2"	1-3/16	1-3/4	16-9/16	28-9/16	14-13/16	26-13/16	235
3/4"	1-7/16	2-1/8	18	30	16	28	235
1"	1-5/8	2-3/8	18-1/2	30-1/2	16-1/4	28-1/4	235
1-1/4"	2-1/4	2-3/8	19-1/16	31-1/16	16-1/2	28-1/2	235
1-1/2"	2-3/8	2-7/8	19-1/4	31-1/4	16-7/16	28-7/16	235
2"	2-7/8	3-1/2	20-7/16	32-7/16	17-7/16	29-7/16	235
2-1/2"	4-3/16	4-1/2	22-1/4	34-1/4	18-3/4	30-3/4	150
3"	4-3/16	4-1/2	21-5/8	33-5/8	17-13/16	29-13/16	150
4"	5-1/4	5-9/16	22-15/16	34-15/16	18-9/16	30-9/16	150
6"	7-9/16	8-5/8	25-3/4	37-3/4	19-5/8	31-5/8	150
8"	9-11/16	10-3/4	30-1/2	42-1/2	22-9/16	34-9/16	150
10"	12-1/16	12-3/4	34-7/8	46-7/8	24-7/8	36-7/8	150
12"	14-1/4	16	40	52	28	40	150
14"	15-1/2	16	46-3/4	58-3/4	32	44	100