

EXTERNALLY PRESSURIZED EXPANSION JOINTS

TFEP expansion joints are designed with external pressure to the bellows along with an internal guide ring, which eliminates bellow squirm. They have an integral design to eliminate flow-induced vibrations along with an internal limit stop to eliminate over-extension and compression of the bellows. They are compact in comparison to a pipe loop, saving valuable space. Simplicity of this proven design eliminates packing, requires no maintenance, will demonstrate long-life and dependability, and is easy to insulate.

MATERIALS

TFEP expansion joints are constructed with multi-ply T-304 stainless steel bellows and a seamless carbon steel shroud that encases the bellows. This will ensure a high level of safety and long service life. These joints have a guide ring and a limit stop. TFEP expansion joints may be provided with weld ends, grooved ends, threaded ends, or 150# and 300# flanges. Whatever fitting configuration you may require, we can custom fabricate to your exact specifications. TFEP expansion joints are the most economical way to absorb large axial motions.

SIZES

Joints are rated for 300 PSIG working pressure up to 650°F. Axial movements of 4" compression and ¾" extension (short) or 8" compression and 1 ½" extension (long).

END FITTINGS

- TFEPW for welded piping ends
- TFPEM for threaded piping ends
- TFEFP for flanged piping ends
- TFEPP for grooved piping ends

INSTALLATION

Carefully align joint and make proper allowance for temperature of pipe at time of installation. Pipe guides should be placed per EJMA standards (refer to Table 2, Page 2).

ADVANTAGES

- In-stock
- Long life dependability
- Compact to save space
- Eliminates bellow squirm
- Requires no maintenance
- Compensates for thermal growth
- Domestic and custom available

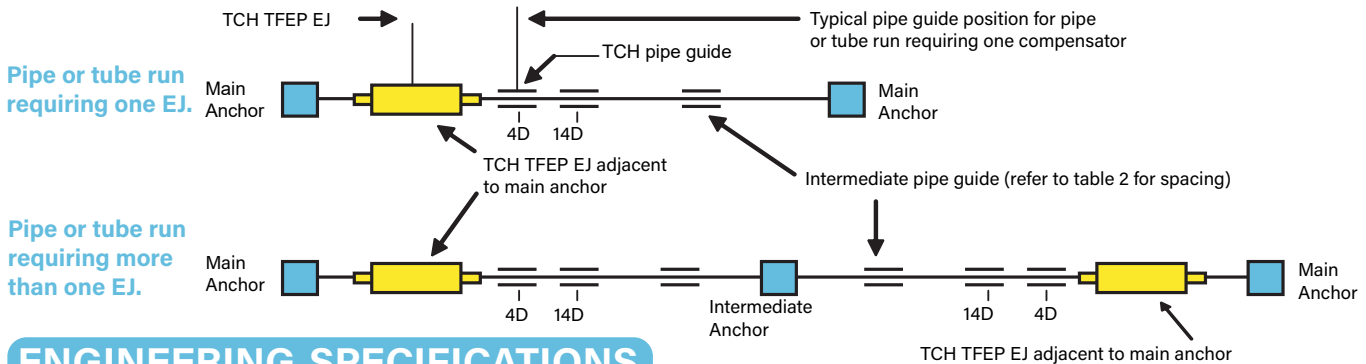


APPLICATIONS

- Sanitary Systems
- Return and Supply Lines
- Heating and Cooling Systems
- Steam and Steam Condensate
- Heating and Chilled Water Systems



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ENGINEERING SPECIFICATIONS

TCH expansion joints shall be utilized on heat transfer piping, tubing, heaters, radiators, domestic hot water, chilled water, heating water, steam and steam condensate and other equipment as indicated within the specifications, drawings and equipment schedules to compensate for thermal pipeline growth. Joints shall be constructed with Series 300 stainless steel multi-ply bellows and carbon steel seamless shroud, internal liner and end fittings. All connections shall have ends to match the piping system. Joints for steel piping shall have plain weld ends, male NPT threaded ends, grooved ends or flanged ends. Joints have a minimum rating of 300 PSIG working pressure and axial movements of 4" or 8" axial compression required. Carefully align joint and make proper allowance for temperature of pipe at time of installation. Pipe guides should be placed per EJMA standards.

PIPE GUIDES

Table 1 Thermal Expansion Linear thermal expansion or pipe and tube per 100 feet between 70°F and tabulated temperature.

Saturated Steam Pressure	Temperature		Carbon	
	DEG F	DEG C		
Steel Pipe	-350	-198		
	-300	-185		
	-250	-157		
	-200	-129		
	-150	-101		
	-100	-73		
	-50	-46		-0.84
	0	-18	-0.49	
	25	-4	-0.32	
	Vacuum (inches of mercury)	29.7	32	0
29.6		50	10	-0.14
29.2		70	21	0
28.0		100	38	0.23
26.0		125	52	0.42
22.4		150	66	0.61
16.3		175	80	0.80
6		200	93	0.99
0		212	100	1.10
Pressure (PSIG)	4	225	107	1.21
	5	250	121	1.40
	31	275	135	1.61
	52	300	149	1.82
	82	325	163	2.04
	120	350	177	2.26
	150	358	181	2.33
	169	375	191	2.48
	232	400	205	2.70
	300	417	214	2.86

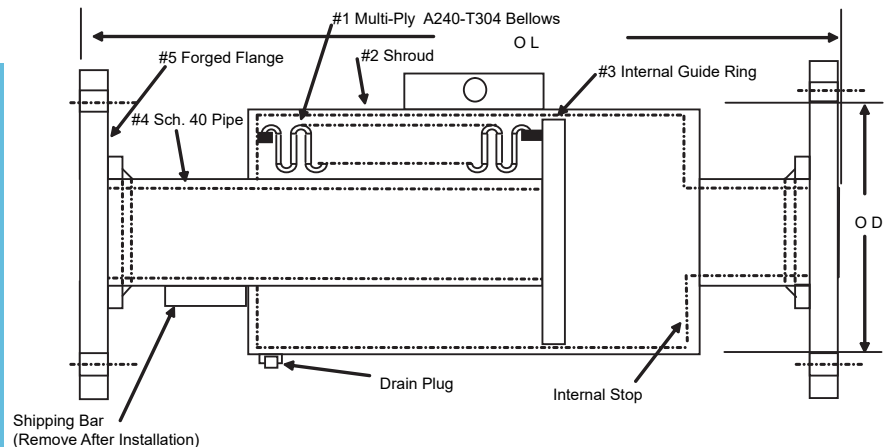


Table 2 Intermediate Guide Spacing (Center to Center, Feet)

Nominal Size	Pressure (PSIG)			
	50	100	150	300
2"	32'	23'	18'	17'
2 1/2"	35'	28'	22'	20'
3"	38'	28'	23'	17'
4"	52'	38'	31'	22'
5"	63'	45'	38'	25'
6"	68'	48'	40'	28'
8"	87'	62'	45'	38'
10"	107'	75'	60'	48'
12"	118'	85'	70'	50'

