

Specification:

1. General

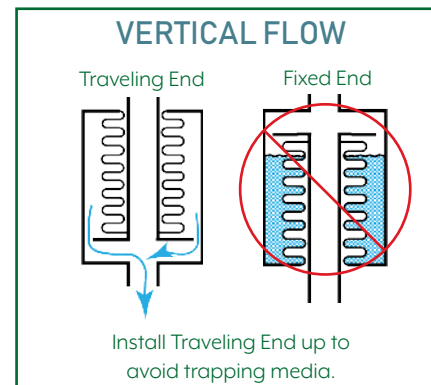
- A. Provide expansion joints as indicated on the contract drawings or as required to accommodate any axial thermal expansion or contraction of the piping system.
- B. Expansion joints to be of the packless, externally pressurized type where system line pressure is external to the bellows to minimize squirm.
- C. Externally pressurized bellows expansion joints shall not be utilized to compensate for lateral, angular or rotational movements.
- D. All joints to be provided with drain connection and lifting lug. Double end joints shall have anchor base to act as intermediate anchor.
- E. All materials of construction, pressure ratings, and end fittings shall be appropriate for the application. Guiding and anchoring per EJMA recommendations and guidelines

2. Products

- A. Expansion joints shall conform to ASTM F-2934
- B. Manufacturer: Expansion joints shall be “**MetraGator**” as manufactured by The Metraflex Company®, Chicago, IL.
- C. Performance: Expansion joints shall be pressure rated for 150 psi @ 700 F or 300 psi @ 700° F, as required.
- D. Movement capabilities to be 4”, 6”, or 8” axial movement, as required.
- E. Joints shall be in single or dual configurations as required.
- F. Construction: All welded construction with stainless steel bellows, steel shroud, integral guide rings, and internal liner.
- G. Bellows: Bellows shall be 2 ply, low corrugation style manufactured from T 304 stainless steel. The number of corrugations and overall length of the expansion joints shall be determined by the thermal expansion requirements, system design engineer, and manufacturer’s recommendations based on EJMA (Expansion Joint Manufacturers Association) standards.

3. Execution

- A. Guiding: Pipe guides adjacent to the expansion joint shall be in accordance to EJMA guidelines based on design pressure and line size. Alternative guiding may be acceptable after design review by manufacturer, calculations with qualified design professional’s signature and seal shall be submitted.
- B. When installed in vertical pipe runs expansion joint shall be installed with the traveling end on top to facilitate drainage of the expansion joint.
- C. Drain: Expansion joint shall be installed so that the drain connection is on the low end of the joint.
- D. Installation shall be in accordance to manufacturers printed instructions.
- E. Standard joints are supplied set for pipe expansion in hot systems. Purchaser shall specify if joint is to be installed for contraction in a chilled system.



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Every engineered pipe system must compensate for noise, vibration, movement and piping alignment.

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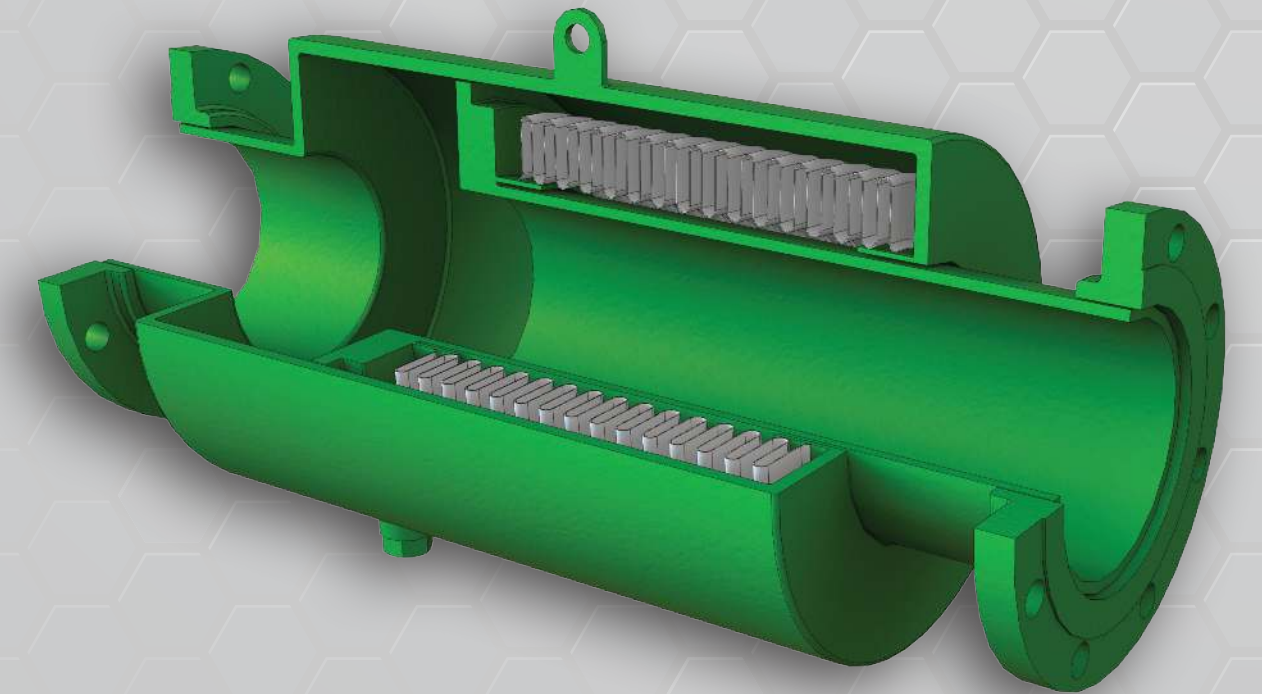
Metraflex



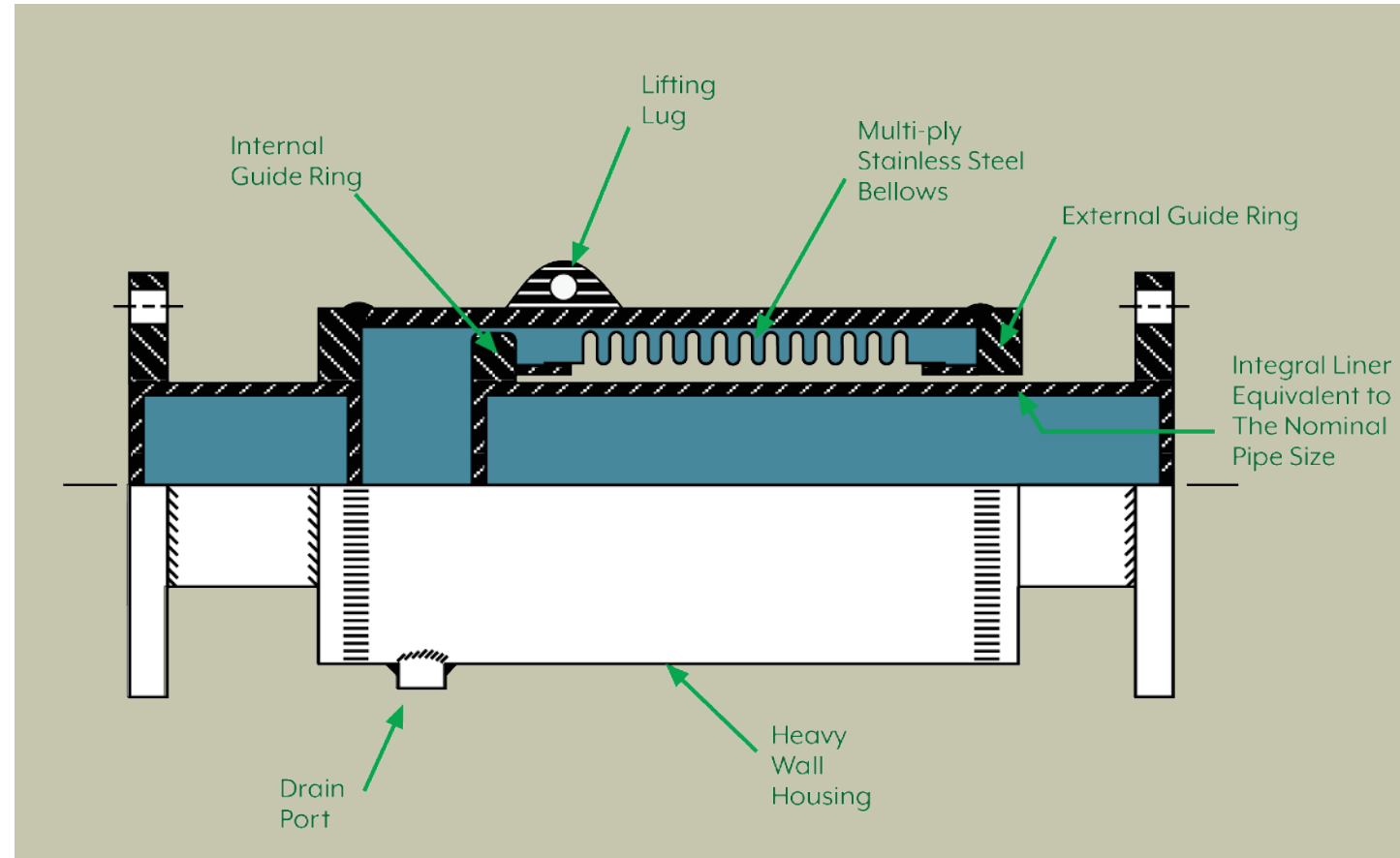
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THE MetraGator

Externally Pressurized Metal Expansion Joint



FROM
Metraflex
for pipes in motion

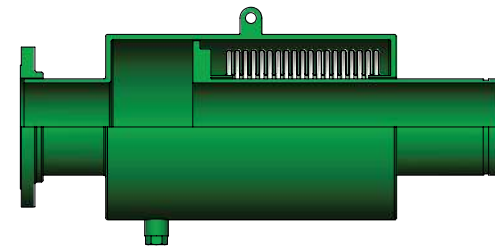


This unique expansion joint design, incorporating an externally pressurized bellows, imparts upon the MetraGator a number of advantages over the traditional internally pressurized joint.

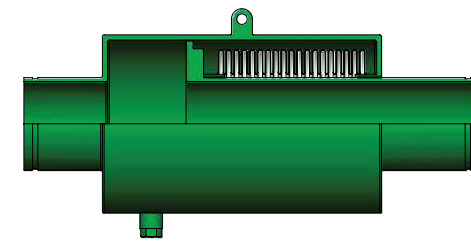
- Large axial movements. External pressurization eliminates bellows squirm allowing longer movements of 4, 6 or 8 inch for single units, and 12 or 16 inch movements for dual units.
- Maintenance free. All welded construction, no packing!
- Integral liner. The bellows is not exposed directly to any abrasive impact of the flowing media. No erosion.
- Self-cleaning bellows. With the media on the outside of the bellows there is no accumulation of sediment in the root of the convolutions.
- Cover / Housing. The heavy wall housing adds extra protection to the joint minimizing external damage.



OPTIONS: METRAGATORS can be custom made in almost any weldable material with almost any end configuration. – Consult factory for your specific needs.

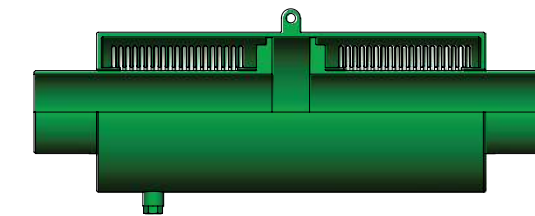


Flanged by Groove End

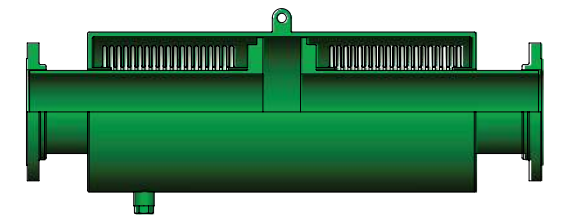


Grooved Ends

Use only Non flexing couplings and consult coupling manufacturer

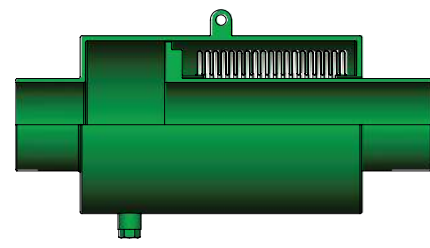


Dual Weld End

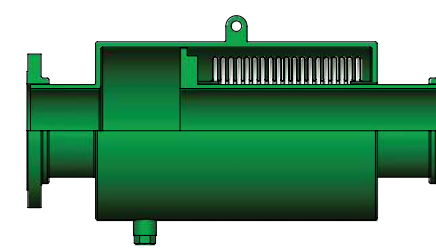


Dual Flanged End

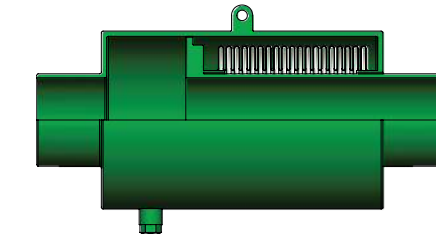
STANDARD CONSTRUCTION: Stainless Steel Bellows, Carbon Steel Housing, Plate Steel Flanges or Schedule 40 Weld Ends.



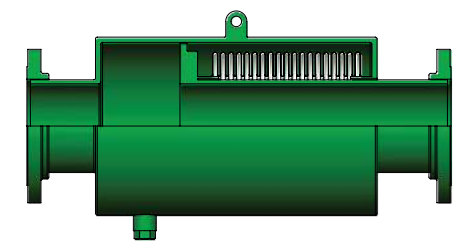
Weld End



Flanged End



Weld End



Flanged End

150 PSI WORKING PRESSURE AT 700°F (225 psi max. test press.)								
SIZE (mm)	AXIAL COMPRES-SION	WELD ENDS		FLANGED ENDS		HOUSING O.D.	EFFECTIVE AREA (in sq.)	SPRING RATE (lbs./in.)
		OAL	LBS	OAL	LBS			
2" (50)	4"	24-1/2"	26	24-7/8"	34	5-1/2"	13	183
	6"	31	33	31-5/8"	41			115
	8"	37-3/4"	42	38-3/8"	50			92
2-1/2 (65)	4"	24-1/2"	29	25-1/8"	40	5-1/2"	13	183
	6"	31-1/4"	37	31-7/8"	48			115
	8"	38	47	38-5/8"	58			92
3 (80)	4"	23-1/4"	38	23-7/8"	51	6-5/8"	21	343
	6"	29-1/2"	47	30-1/8"	60			235
	8"	37-3/4"	62	38-3/8"	75			172
4 (100)	4"	24-1/4"	59	23-7/8"	75	8-5/8"	36	200
	6"	30-3/4"	73	31-3/8"	89			143
	8"	37-1/4"	94	37-7/8"	110			103
5 (125)	4"	24-1/4"	91	25	112	10-3/4"	47	235
	6"	30-3/4"	112	31-1/2"	133			166
	8"	37-1/2"	144	38-1/4"	165			120
6 (150)	4"	24-3/4"	115	25-1/2"	138	12-7/8"	59	269
	6"	31-1/2"	139	32-1/4"	162			189
	8"	37-3/4"	177	38-1/2"	200			138
8 (200)	4"	27-1/4"	153	28-1/4"	198	14"	89	332
	6"	33-3/4"	185	34-3/4"	230			235
	8"	41	238	42	283			166
10 (250)	4"	26	186	27	240	16"	125	400
	6"	33	227	34	281			280
	8"	39-1/4"	288	40-1/4"	342			200
12 (300)	4"	26	226	27	308	18"	167	463
	6"	32-1/4"	273	33-1/4"	355			326
	8"	38-3/4"	346	39-3/4"	428			235

Consult Factory for Larger Sizes

300 PSI WORKING PRESSURE AT 850°F (450 psi max. test press.)								
SIZE (mm)	AXIAL COMPRES-SION	WELD ENDS		FLANGED ENDS		HOUSING O.D.	EFFECTIVE AREA (in sq.)	SPRING RATE (lbs./in.)
		OAL	LBS	OAL	LBS			
2" (50)	4"	28-1/2"	35	29	49	6-5/8"	14	639
	6"	36-1/2"	48	37	63			435
	8"	45	58	45-1/2"	72			340
2-1/2 (65)	4"	28-1/2"	36	29	56	6-5/8"	14	639
	6"	36-1/2"	52	37	73			435
	8"	45-1/4"	63	45-3/4"	84			340
3 (80)	4"	27-1/2"	47	28	75	8-5/8"	23	823
	6"	33-1/4"	59	33-3/4"	87			650
	8"	43-1/4"	78	45-3/4"	106			441
4 (100)	4"	28-1/4"	74	28-3/4"	121	10-3/4"	36	1223
	6"	34-1/4"	94	34-3/4"	141			935
	8"	43-3/4"	124	44-1/4"	170			663
5 (125)	4"	27-3/4"	97	28-1/4"	158	10-3/4"	47	1615
	6"	33-1/4"	120	33-3/4"	181			1269
	8"	40-3/4"	143	41-1/4"	203			987
6 (150)	4"	27-3/4"	106	28-1/4"	190	12-3/4"	59	1803
	6"	33-1/4"	130	33-3/4"	214			1417
	8"	40-3/4"	155	41-1/4"	239			1102
8 (200)	4"	29	168	29-1/2"	295	14"	93	2592
	6"	34-1/2"	209	34-3/4"	336			2036
	8"	42-1/2"	250	43	377			1584
10 (250)	4"	29-3/4"	216	30-1/4"	396	16"	130	2834
	6"	36	272	36-1/2"	452			2125
	8"	47-1/4"	354	47-3/4"	534			1417
12 (300)	4"	31-1/4"	285	31-3/4"	540	18"	173	2854
	6"	37-3/4"	355	38-1/4"	610			2219
	8"	48-3/4"	457	49-1/4"	712			1540

Consult Factory for Larger Sizes