FMH Expansion Joints

EXTERNALLY PRESSURIZED EXPANSION JOINTS (FX)

The Externally Pressurized Expansion Joint is an exceptional product for absorbing large amounts of axial movement in long straight lengths of pipe. This type of expansion joint is one of the safest and most reliable on the market. The following design features are what make this style unit such an appealing option in expansion joint applications.

SQUIRM FREE

The Externally Pressurized Expansion Joint is designed such that the system pressure is applied to the outside surface of the bellows element. This feature eliminates the problems associated with squirm that are present in the typical internally pressurized expansion joint. The elimination of squirm allows a bellows to be fabricated with an almost unlimited number of convolutions and consequently an unlimited axial movement capability.

MAINTENANCE FREE

The Externally Pressurized Expansion Joint has an all welded metal construction which provides a completely leak tight and maintenance free expansion joint. This is an enormous improvement over the slip type joint, which requires periodic lubrication and repacking in order to function properly.

SELF LIMITING & GUIDING

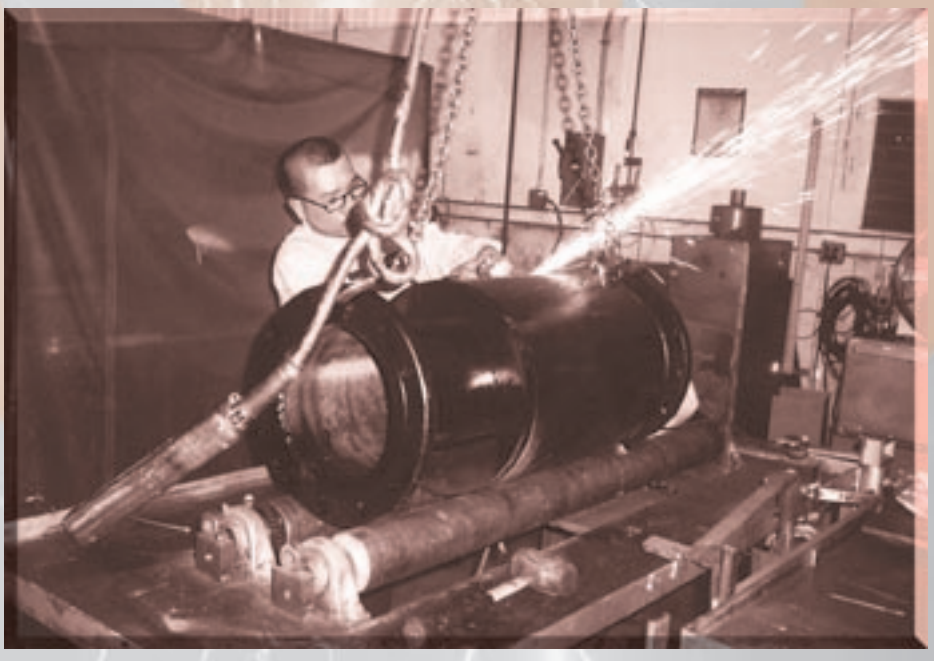
The Externally Pressurized Expansion Joint incorporates an internal ring that provides bellows protection in the event of over compression of the expansion joint. This ring also provides protection of the bellows from contact with the inside of the outer shell. This ring also reduces the number of pipe guides required for the piping system as compared with a standard internally pressurized expansion joint.

SELF DRAINING

The Externally Pressurized Expansion Joint has the added advantage of self-draining convolutions. This can greatly reduce the corrosion problems associated with some internally pressurized expansion joint applications.

INHERENT SAFETY & LINING

The Externally Pressurized Expansion Joint is totally enclosed by an outer shell that is designed to contain the full line pressure of the system. This full strength outer shell protects the bellows from external damage and greatly reduces the chance of damage during shipment or installation. This outer shell also provides a shield in the event of a bellows failure, which will direct the media longitudinally along the length of the pipe instead of radially outward and possibly in the direction of personnel. The Externally Pressurized Expansion Joint also is designed such that the standard wall pipe on the movable end of the expansion joint lines the bellows. This eliminates the need to specify additional liners for this style of joint. Based on this liner design, the Externally Pressurized Expansion Joint can accommodate a multidirectional flow.



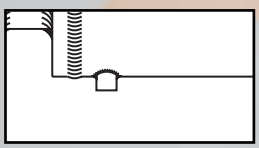
FX ADVANTAGE

FMH Expansion Joints offers a standard Externally Pressurized Expansion Joint which has a number of exceptional features that are not found in some other competitor's models.

- Multi-ply Bellows:

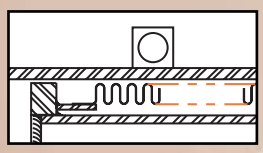
FMH Expansion Joints utilizes a multi-ply bellows design for the standard units offered in this catalog section. This multi-ply design provides a flexible element with much lower deflection stresses, and consequently, a much longer service life. The following standard units are designed to accommodate the stated movements for a minimum 2000 EJMA cycles.

- Drain Connection:



The FMH Expansion Joints externally pressurized design provides a drain plug on every standard unit. This provides the customer with the capability to remove any internal dirt, scale, sludge, condensate or other foreign matter. The drain connection is also an ideal location for a steam trap.

- Bellows Attachment:



The FMH Expansion Joints standard design provides the bellows attachment with a tangent and band connection, unlike some other competitor's models that place the bellows weld attachment on the radius or side wall of the convolution. The FMH Expansion Joints bellows attachment is far superior, and greatly enhances the service life of the expansion joint.

How to Generate an Externally Pressurized Expansion Joint Part Number

NOM SIZE		UNIT TYPE		DESIGN PRESSURE		AXIAL COMPRESSION		END FITTINGS				**OVERALL LENGTH		SPECIAL MATERIALS	
														BELLOWS MAT'L	END MAT'L
2	-	XSO	-	150	-	8.0	-	FR	-	FR	-	37 3/4"	-	B3	E3

2-XSO-150-8.0-FR-FR-37 3/4-B3E3

UNIT TYPE

CODE	DESCRIPTION
XSO	SINGLE w/o ANCHOR
XSA	SINGLE w/ ANCHOR
XDA	DUAL w/ ANCHOR

END FITTINGS

CODE	DESCRIPTION
FR	FIXED RFSO FLANGE
WS	WELD END STD. WT. PIPE
WH	WELD END SCH. E.H./80s PIPE

This expansion joint is a 2" NOM. DIA. single, externally pressurized unit w/o an anchor. The bellows material is A240 T316.

150 psig design pressure.

8.0" Axial Compression
(see Axial Compression column)

A182 F316 Stainless Steel Fixed RFSO Flanges and A312 TP316 Stainless Steel Pipe.

BELLOWS MATERIAL LISTING

CODE	DESCRIPTION
B1	A240 / T304
B2	A240 / T304L
B3	A240 / T316
B4	A240 / T316L
B5	**A240 / T321 (STANDARD)**
B6	B162 / (NICKEL) ALLOY 200
B7	B127 / (MONEL) ALLOY 400
B8	B168 / ALLOY 600
B9	B443 / ALLOY 625
B20	OTHER

END MATERIAL LISTING

CODE	DESCRIPTION
E1	304 (A240 T / A182 F / A312 TP)
E2	304L (A240 T / A182 F / A312 TP)
E3	316 (A240 T / A182 F / A312 TP)
E4	316L (A240 T / A182 F / A312 TP)
E5	321 (A240 T / A182 F / A312 TP)
E10	**A105 (STANDARD FORGED FLG.)**
E11	**A53 - GR.B (STANDARD PIPE)**
E12	A106 - GR.B
E13	A285 - GR.C
E14	A516 - 70
E15	**A - 36 (STANDARD PLATE FLG.)**
E20	OTHER

**Overall Lengths in this catalog are shown as decimals but should be specified as fractions in the part number.

Standard Bellows Material is A240 T321.
Other materials are available but may have different movement and spring rate values than those listed.
Please consult the factory

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