HPFF Expansion Compensators for Copper Pipe.
OPERATION, INSTALLATION AND MAINTENANCE INSTRUCTIONS

General: HPFF expansion compensators are used to compensate for axial movement in copper piping systems, and are available in diameters of ¾" through 4" for 2" or 3" compression. The HPFF features an externally pressurized stainless steel bellows and housing with copper sweat ends

Application:

1. HPFF expansion compensators are designed for axial compression only. HPFF compensators are not designed for lateral, angular movement, or torques. Install only one joint between anchors.
2. All expansion compensators require guiding and anchoring in accordance with EJMA (Expansion Joint Manufacturers Association) guidelines. Guide spacing shall be in accordance to "Copper Tube Guide Spacing" table below.
3. HPFF compensators as a standard are supplied to absorb pipe growth in hot systems. If compensator is for pipe contraction in a chilled system, notify Metraflex.
4. HPFF Expansion compensators are not flow directional. When installing HPFF joints on a vertical application, the traveling end should be installed on the top to allow for proper drainage.
5. Location of Expansion Compensator should be reviewed to insure proper operation.

Installation:

1. Inspect joint for shipping damage, insure that the shipping bar is intact.
2. HPFF expansion compensators are supplied with standard copper sweat ends. Comply with project documents for cleaning and soldering requirements
3. **Apply flux sparingly. HPFF expansion compensators have stainless steel components, and the flux used to prepare a copper joint is extremely corrosive to stainless steel. Exposing the stainless steel components to flux will lead premature failure.**
4. Installation of compensator and anchors must be made as close to the design ambient temperature as possible. If compensator is installed into a hot pipeline or at other than design ambient, consult Metraflex.
5. **Exposure temperatures exceeding 1000º F. may damage internal expansion compensator joints. Use cold strapping or other heat sink procedures to avoid exposure temperatures exceeding 1000º F.**
6. Do not remove shipping bar before the installation of guides and anchors.

Testing:

1. Joint may be one-time pressure tested to 225 PSIG. Do not exceed maximum pressure or temperature during operation.
2. Metraflex recommends hydrostatic test with all air in the system removed. If an air test is performed, appropriate safety precautions must be made.
3. Do not test until joint it is properly anchored and guided. The shipping bar is not designed to restrain the hydrostatic end load that will be developed by the expansion compensator under pressure.

Precautions:

1. Apply flux sparingly. See note 3 in Installation.
2. Joint will develop hydrostatic end loads equal to pressure time effective area, and must be included in anchor load calculations.

Maintenance:

1. HPFF Expansion compensators have no serviceable parts and do not require maintenance.

CUSTOMER _____

PROJECT _____

ENGINEER _____

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PRO. OR P.O. NO. _____

Metraflex.
for pipes in motion

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Copper Tube Guide Spacing

Tube Size†	Max distance from bellows to 1st guide/anchor	Approx. distance from 1st to end guide	Maximum Spacing for Intermediate Guides for Copper Tube (Feet) 25 PSI	50 PSI	70 PSI
1/2”	2”	7”	5’	4’	3’
3/4”	3”	10-1/2”	7’	6’	5’
1”	4”	1’2”	9’	8’	6’
1-1/4”	5”	1’5-1/2”	14’	11’	9’
1-1/2”	6”	1’9”	14’	11’	9’
2”	8”	2’4”	19’	14’	12’
2-1/2”	10”	2’11”	23’	17’	15’
3”	1’	3’6”	27’	20’	18’
4”	1’4”	4’8”	31’	23’	21’

†Note: For type "M" tubing.
For type "L" tubing spacing may be increased by 10%.
For type "K" tubing spacing may be increased by 20%

Contact Metraflex or your local Metraflex Representative with ANY questions.

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