G FMH EXPANSION JOINTS



FACILITY

FMH Expansion Joints occupies a large manufacturing facility in the metro Atlanta, Georgia area, with a strong network of local suppliers and subcontractors. FMH Expansion Joints is one of the only American owned and managed expansion joint manufacturers in the United States. We are dedicated to providing the best service and quality expansion joints in the business.

DELIVERY

If you have an urgent need for an Expansion Joint call FMH Expansion Joints and allow us to show you the best service in the industry. FMH Expansion Joints offers SAME DAY shipments as well as NEXT DAY and TWO-DAY service. This type of performance is routine at FMH Expansion Joints as well as our Standard Delivery, which is typically offered at one to two weeks after authorization to proceed.

QUALITY ASSURANCE

FMH Expansion Joints can provide units designed, fabricated and tested in accordance with the following codes and standards:

EJMA

ASME B31.1

ASME B31.3

ASME Section VIII, Div. I

ASME Section IX

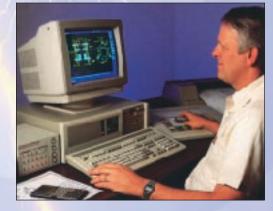
ASME Section II

ASMF Section V

MIL-E-17813

USCG CG115

American Bureau of Shipping



FMH Expansion Joints can provide the following nondestructive examination and testing procedures:

- □ Radiography
- ☐ Liquid Penetrant and Magnetic Particle
- Mass Spectrometer Leak Detection
- ☐ Hydro and Pneumatic Testing
- Movement and Spring Rate Testing
- □ Hardness Testing

- □ Cycle Life Testing
- ☐ Burst Testing
- □ Chemical Analysis
- ☐ Charpy Impact Testing
- □ Ultrasonic Testing
- ☐ Shock & Vibration Testing

FMH EXPANSION JOINTS 6



Table of Contents

FACILITY AND QUALITY ASSURANCEIFO
TABLE OF CONTENTS
INTRODUCTION AND QUALITY STATEMENT
DESIGN OF BELLOWS
BELLOWS SQUIRM
BELLOWS PRESSURE THRUST AND RESTRAINT
PIPE GUIDE RECOMMENDATIONS
BELLOWS DEFLECTIONS
AXIAL
LATERAL
ANGULAR
TORSION
CONCURRENT
VIBRATION
INSTALLATION MISALIGNMENT
EXPANSION JOINT TYPES6-6
SINGLE UNRESTRAINED
SINGLE TIED
HINGED
SLOTTED HINGED
GIMBAL
UNIVERSAL TIED UNIVERSAL
PRESSURE BALANCED
IN-LINE PRESSURE BALANCED
EXPANSION JOINT ACCESSORIES8-9
INTERNAL FLOW LINERS
EXTERNAL PROTECTIVE COVERS
WARRANTY STATEMENT
SINGLE EXPANSION JOINTS 10
HOW TO GENERATE A SINGLE EXPANSION JOINT PART NUMBER 10
SINGLE EXPANSION JOINT DESIGN TABLES11-3
UNIVERSAL EXPANSION JOINTS
HOW TO GENERATE A UNIVERSAL EXPANSION JOINT
PART NUMBER38
UNIVERSAL EXPANSION JOINT DESIGN TABLES39-63
EXTERNALLY PRESSURIZED EXPANSION JOINTS (FX) 64-68
HOW TO GENERATE AN EXTERNALLY PRESSURIZED
EXPANSION JOINT PART NUMBER60
EXTERNALLY PRESSURIZED EXPANSION JOINT DESIGN TABLES67-73
ANCHOR SPECIFICATIONS74
ENGINEERING DATA
GENERAL CONVERSION FACTORS79
THERMAL EXPANSION DATA70
TEMPERATURE CONVERSIONS
NOTES 78-8 0
EXPANSION JOINT SPECIFICATION SHEETIBO

G FMH EXPANSION JOINTS

INTRODUCTION / COMPANY HISTORY



FMH Expansion Joints, a division of Flexible Metal Hose Co., Tucker, Georgia, began fabricating bellows type expansion joints in 1972. This product fit very well with the initial metal corrugated hose products Flexible Metal Hose Co. had been fabricating and manufacturing since 1954. This was a natural progression based on the application of these products and the related customer base. Over the years Flexible Metal Hose Co. has manufactured a number of Expansion Joints ranging from 1" in diameter to 120" diameter. These Expansion Joints have been utilized in high pressure as well as high vacuum service. The applications range from very low cryogenics, to very high elevated temperatures, in a wide range of industries, such as, Marine, Power, Petrochemical, Pulp and Paper and HVAC, just to name a few. In order to focus efforts in the expansion joint industry, Flexible Metal

Hose Co. has created a new division, FMH Expansion Joints. This new division provides a clearer definition of our products along with an enhanced ability to service our customers. This new definition will continue to enhance Flexible Metal Hose Co's position as the leader in designing solutions for flexibility, vibration absorption, expansion compensation and corrosion in piping systems. As always, our constant objective is customer service and 100% satisfaction with no sacrifice to product quality and reliability.

Flexible Metal Hose Co., as the leader in the metal hose and expansion joint industry, was the first metal hose and expansion joint manufacturer to be certified to the ISO 9001 Quality Standard. This internationally recognized quality standard assures our customers of our, "Complete Quality Commitment", as independently verified by an outside auditor and registrar.

COMPLETE QUALITY COMMITMENT

FLEXIBLE METAL HOSE COMPANY AND ITS EMPLOYEES STRIVE FOR CONTINUING QUALITY, PROCESS AND PRODUCT IMPROVEMENT. WE WILL MEET ISO 9001 QUALITY STANDARDS WITH FULL EMPLOYEE PARTICIPATION, AND SUPPLY THE HIGHEST QUALITY FLEXIBLE METAL HOSE AND BELLOWS PRODUCTS.

Flexible Metal Hose Company strives for continuing quality and product improvements. From aerospace to industrial, government contract to standard catalog items, Flexible Metal Hose Company's primary goal is to supply only the highest quality flexible hose and bellows products possible.



