

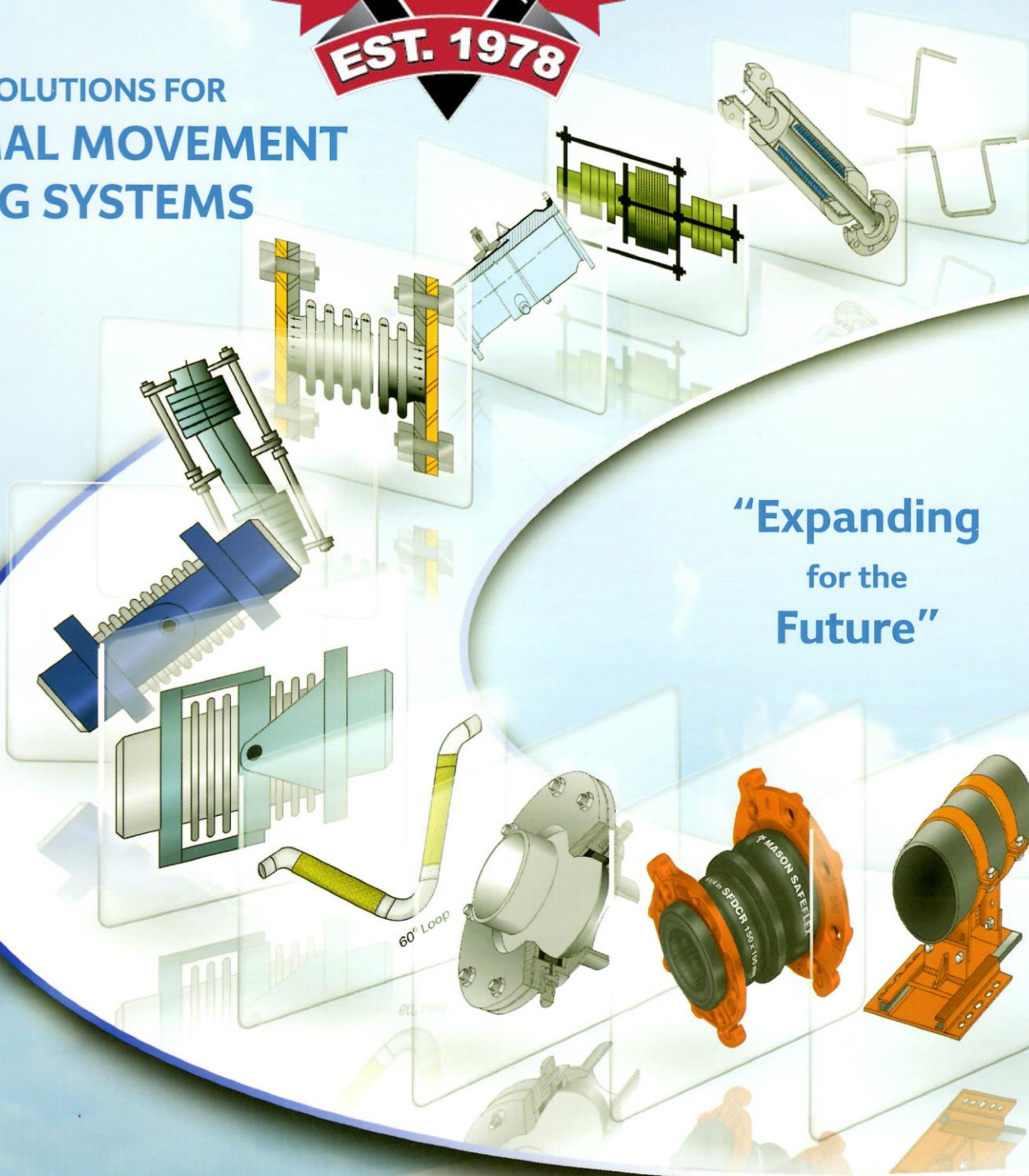


MASON-DALLAS

INCORPORATED

www.mason-dallas.com

TYPICAL SOLUTIONS FOR THERMAL MOVEMENT IN PIPING SYSTEMS



**“Expanding
for the
Future”**



In keeping with our customer service philosophy, this brochure was created by Mason-Dallas, Inc. to provide a complete and descriptive listing of methods designed for handling thermal movement in chilled, heating and steam piping systems. Information in the brochure provides industry professionals with a single source that will quickly help identify the right solution when it comes to "Thermal Movement in Piping Systems".

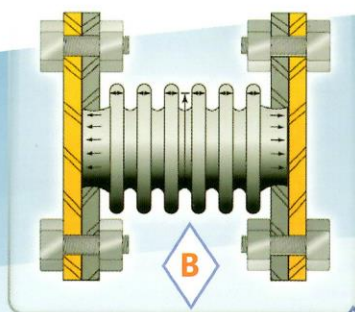
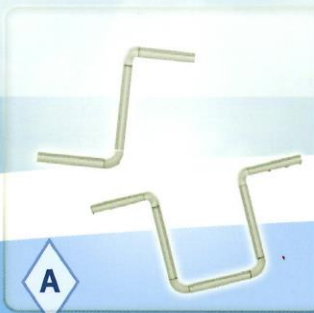
Mason-Dallas, Inc. was founded more than three decades ago based on a philosophy of providing superior customer service and the highest quality engineering design and technical products to the HVAC industry for vibration/isolation, seismic and noise control. At the time of our founding in 1978, Mason Industries was our sole source supplier for these products and continues to be one of our most valued business resources. This and other long-time relationships are testimony to our commitment to providing quality service and support to our business associates. This same dedication carries through to our customers. Most of our initial customers remain our customers today.

Mason-Dallas has not lost sight of our original commitments to provide the highest quality products along with professional design and engineering services. These commitments continue to be supported by customer friendly information pieces such as this "Thermal Movement in Piping Systems" brochure intended to provide recommended solutions.

For a complete listing of other Mason-Dallas, Hydronic, Vibration/Isolation, Seismic and Noise Control Solutions visit us on line at www.mason-dallas.com or call 817-267-8651 to speak to one of our associates.

A HARD PIPE OFFSETS/LOOPS:

- Preferred Method
- Same Material as the rest of the system
- Low Anchor Forces
- Overall Size Requirements can be a problem
- Extra pipe & elbows increase pump head pressure

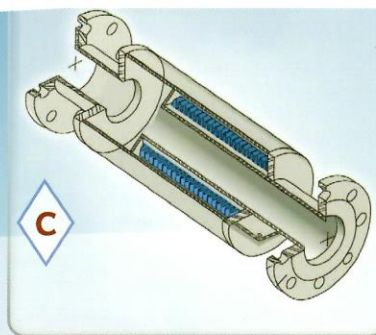


B UNHOUSED SIMPLE EXPANSION JOINT:

- Most economical
- Limited axial movement

C EXTERNALLY PRESSURIZED EXPANSION JOINT:

- Allows for greater axial movements without squirm
- Has internal guide ring
- Packless
- Maintenance free



D PACKED EXPANSION JOINT:

- Rugged pipe within pipe slip type design
- Pliable graphite packing for self lubrication
- Designed with repacking ports
- Typically handles pipe movements up to 20"
- Used mostly in steam & industrial applications

E UNIVERSAL TIED EXPANSION JOINT:

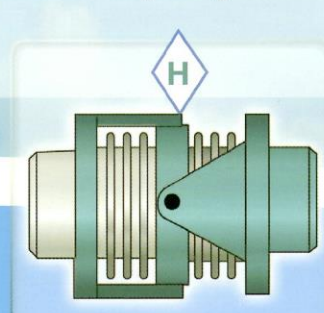
- Eliminates pressure thrust force
- Used to absorb lateral movements
- Design incorporates two bellows, spool piece & tie rods to prevent axial movement
- The longer the spool piece the greater the lateral Offset capability
- Minimum guiding

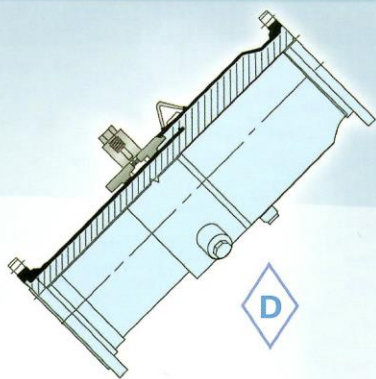
F INLINE PRESSURE BALANCED EXPANSION JOINT:

- Produces no pressure thrust
- Oversized bellows creates annular pressure chamber which produces a balancing thrust force
- Control rods link bellows and contain pressure thrust force

G HINGED EXPANSION JOINT:

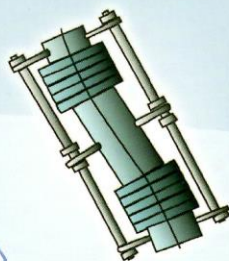
- Handles angular movement in one plane
- Eliminates pressure thrust forces
- Prevents torsion of the bellows
- Requires minimum guiding





H GIMBAL EXPANSION JOINT:

- Handles angular movement in any plane
- Eliminates pressure thrust forces
- Supports dead weight
- Prevents torsion on bellows
- Requires minimum guiding



I FLEXIBLE VEE:

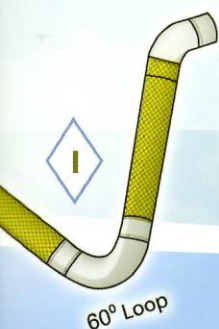
- Handles all modes of movement, in & out, up & down or transverse
- Minimal displacement forces
- Requires minimum guiding

J BALL JOINT:

- Very durable
- Handles shock & vibration
- Ball joint breakaway forces much less than bellows or packed type expansion joints
- Handles a wide range of operation conditions
- Provided with injection ports
- Typical sealant, pliable graphite
- Requires minimum guiding
- Reduces possibility of catastrophic failure
- Handles large amounts of multiple plane movements

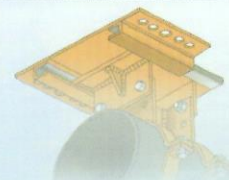
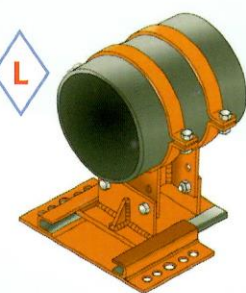
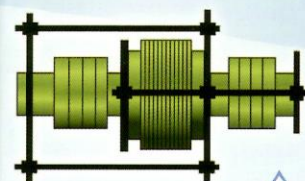
K SPHERICAL RUBBER EXPANSION JOINT:

- Generally installed at equipment
- Compensates for pipe misalignment
- Relieves equipment nozzles of stress
- Prevents transmission of noise and vibration
- Inherent flexibility good for seismic applications



L ADJUSTABLE SLIDING GUIDE AND PIPE SUPPORT

- Sliding foot and outside guide wrapped or lined in Stainless Steel
- Supports pipe weight as per maximum hanger spacing per industry code
- Guide travel equal to standard Spider Guide travel
- Adjustable height for different insulation thicknesses
- Universal baseplates have multitude of holes



Our Philosophy

We are committed to offer our clients the highest quality top-of-the-line Mason-Dallas products, supported by outstanding customer service, as is detailed in our corporate Vision, Mission Statement, Value Statement and Business Focus below:

Corporate Vision

To continue Mason-Dallas' role as the preferred solutions provider to our present and future clients, through performance and service.

Mission Statement

To provide our clients with outstanding service and technical support by meeting and exceeding their expectations through the cultivation of teamwork and employee performance.

Value Statement

To recognize each individual, client organization, vendor and supplier as an intricate part of the Mason-Dallas family. Mason-Dallas stakeholders can expect to be treated with honesty, integrity and fairness.

Business Focus

- To successfully support our stakeholders with proven performance and quality products that establish Mason-Dallas as the industry leader.
- To ensure our clients responsive solutions, detailed and complete specification, highest quality products, prompt on-time delivery and complete support on all projects developed and products sold.

These statements are a reflection of our culture and are supported by more than thirty years of successfully doing business with many longtime customers. We look forward to adding your company to our roster of satisfied customers.



MASON-DALLAS

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"SUBSIDIARY OF FARCO INDUSTRIES"

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SHIPPING & RECEIVING