

Series 1500 Laminated Bellows Expansion Joints

- Sizes 2" through 14" IPS.
- Design conditions of full vacuum to 150 and 300 PSIG at 500°F.
- Axial travel up to 3.0 inches
- Maximum flexibility and extended life
- Low spring rates and pressure thrust

Pipe expansion or contraction resulting from temperature changes is independent of line size; however, the bellows elements of small diameter expansion joints have less ability to absorb motion than larger sizes because of restrictions on the corrugation size. Recognizing these shortcomings, Hyspan® developed Series 1500 Laminated Bellows Expansion Joints for applications that involve axial motion. The bellows elements are designed with up to four individual thicknesses or laminations of precision stainless steel foil. This design procedure combines the high flexibility of thin material while providing the pressure resistance of

multiple laminations. As a comparison, a bellows made from four plies of 0.008" thick material has the same pressure rating as a single thickness of 0.016" thick, but the laminated construction will deflect twice as much and requires only one-half the force to compress.

The laminated bellows is integrated into the design by installing it on the inside diameter of the pipe. This method has the advantage of providing reinforcement of the bellows neck and attachment weld, and reducing the effective area of the bellows and the corresponding pressure thrust. The pressure thrust force of Series 1500 Laminated Bellows Expansion Joints ranges from 40–70% of comparable products.

All Series 1500 Laminated Bellows Expansion Joints include a stainless steel flow liner. The flow liner

eliminates added pressure drop resulting from the bellows, protects the bellows from the flow, and as a precaution provides a stop to resist squirm or bellows instability in the event of over-pressurization.

Correctly applied and properly installed, Series 1500 Laminated Bellows Expansion Joints offer the most reliable, yet economical, pipe expansion compensation available. The all-metal welded construction permits service to 500°F for standard models. The laminated design and low effective area assure that minimum loads are transferred to adjacent piping, and provide extended life at full stroke.

Warranty

Full five year replacement warranty — see page 7 for details.

Design Features

