

Expansion Joints

Metal Hose

Expansion Joint vs. Metal Hose

Braided metal hose assemblies and expansion joints share many similar attributes, but it is their differences in construction that determine which is best for a specific application. Braided metal hose assemblies are constructed from flexible, corrugated hose typically formed using a single layer of strip. The number of corrugations per foot dictates the flexibility of the hose, while the outer braid layer provides its pressure bearing capability. Braided metal hoses are designed to accommodate one plane of movement: either lateral (side to side), or angular (one end moving, or bending, relative to the other). Axial movement (compression or extension) is to be avoided, as it can cause the braid to loosen from the hose, thus reducing its pressure bearing capability and leaving the hose susceptible to squirm.



Because expansion joints are designed to accommodate pressure and movements without the need for braid, they are capable of handling all three planes of movement: lateral, angular, and axial. Expansion joint movement and pressure bearing capabilities are determined by the number of convolutions, as well as material thickness, number of plies, and wall height specified by the product's individual design.

Multi-ply expansion joints are ideally suited for applications where vibration may be present. Additionally, multi-ply designs feature lower spring rates which reduces stress on piping components, and increases cycle life for a given installation.

Though Hose Master manufactures many customized and intricate expansion joints for a variety of specialized applications, there are four basic designs that are most commonly used. Each is available in 15, 50, 150, and 300 psi design pressures and is manufactured from T321 or T316 stainless steel. Available sizes range from 2" - 30" nominal diameter.

Basic Bellows



A bellows can be supplied without end fittings for field installation. The skirt (straight portion at each end of the bellows) can be sized to fit a flange or pipe. Please specify skirt length and attachment type when ordering.

Unrestrained Single



An unrestrained single expansion joint is best used when piping systems are equipped with proper guides and anchors to absorb axial, angular, and a small amount of lateral movement.

Limit Single



A limit single expansion joint is best used when main anchors and guides are in the pipeline. It allows for some axial movement as well as lateral movement; however, the hardware protects the expansion joint from exceeding its design movements.

Tied Single



A tied single expansion joint is best used in piping systems without a main anchor. It allows for lateral movement only while also restraining pressure thrust.



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