Multi-ply Metal Bellows

The term multi-ply bellows means that multiple tubes are telescoped together before the forming process. Sizes 2” i.d. up to 110” diameter can be manufactured with up to 5 plies. During bellows movement, each layer in the multi-ply bellows design bends independently of the next. Resulting stresses are much lower in the thinner layers of the multi-wall bellows design (as compared to one thick layer in a single ply metal bellows design).

Triad’s multi-ply bellows expansion joints are frequently used in high vibration applications because the multiple layers of material have a dampening effect.

The unique design of Triad’s Multi-ply metal bellows means lower spring rates. Therefore, the result is lower forces on the piping anchors, the engine turbo charger or manifold. You achieve longer overall expansion joint life—translating into overall cost reduction.

Single-Ply Metal Bellows

Not every situation calls for multi-ply bellows: There are times when single-ply bellows will do the job sufficiently. Triad’s single-ply metal bellows are formed using the same precise method as our multi-ply bellows. The single-ply bellows in this catalog were designed with the best geometry and material thicknesses to achieve maximum cycle life. Our engineers are happy to help you determine which product is best for your piping system. Sizes are available up to 110” diameter.

FlexCaps

A unique blend of single-ply bellows and exhaust flex hose makes this product a good choice for applications where a metal bellows is not in the budget and something better than flex hose is desired. FlexCaps are individually manufactured, not cut from a long lengths like corrugated flex hose.

The major advantage FlexCaps have over flex hose is that the fitting attachment welds are not on the corrugation but rather at the extended neck just like a bellows. The heat affected zone is not on the corrugation, the first area that fatigue cracking will start.

Flex Hose

Exhaust flex hose is produced in long lengths and is cut to size as needed. The automated manufacturing process limits the height of the convolution to a short profile which is not nearly as flexible as a bellows. This is the most economical choice but should be limited to non-critical applications. In the past flex hose was common in all emergency generator installation. Today many consumers insist on multi-ply bellows to eliminate the weakest link in the piping system.

Triad Bump

The Triad Bump also known as a “snubber con” is used to dampen vibration and reinforce the bellows neck. The Triad Bump is a reduced height convolution and can be incorporated into most multi-ply bellows, single-ply bellows and FlexCap designs.
Triad Bellows can **Design** and **Manufacture** affordable solutions to meet your vibration, thermal expansion and space requirements.

**CHOOSE BELLOWS OR FLEX**

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**CHOOSE BELLOWS LIVE LENGTH REQUIRED**

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FOR ASSISTANCE CONTACT OUR ENGINEERING DEPARTMENT AT **(888) 866-1080**

Or find us on the web at [WWW.TRIADBELLOWS.COM](http://WWW.TRIADBELLOWS.COM)