

# METAL EXPANSION JOINTS

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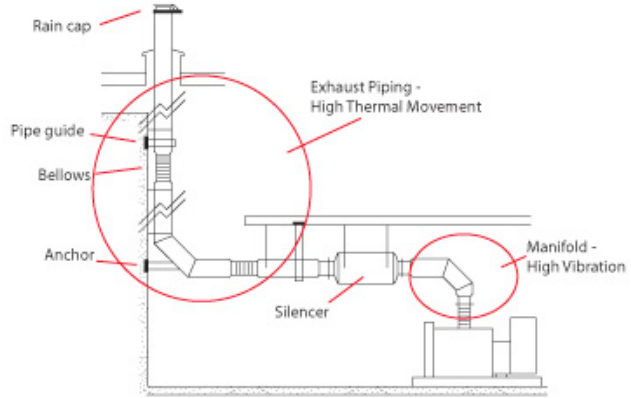
CASE STUDIES

METAL EXPANSION JOINTS

## Manifold Bellows / Flexible Joints for engine exhaust systems up to 1200°F

**Expansion compensation and vibration isolation for engine exhaust systems from the engine manifold to the silencer or muffler.**

Providing expansion compensation and vibration isolation for engine exhaust systems should be thought of as two unique and different segments. One is the connection between the engine manifold and the silencer or muffler. The other is the piping from the silencer to the roof.



### Manifold bellows

This is the section from the engine's exhaust manifold to the silencer. This section experiences high engine vibration and the highest temperatures. Bellows in this section are used primarily to isolate the engine vibration. The run between engine and silencer is so short, there is very little thermal growth. However, because each engine manufacturer has its own unique flange connection to the manifold, the make and model of the engine is needed to specify the correct manifold bellows end connections.

### Exhaust piping

The exhaust piping is typically long pipe runs from the silencer through to the roof or thru a nearby wall. Here the issue is the large thermal expansion of the long runs due to the high temperatures. Expansion joints designed for axial compression or lateral offset are required.

Metraflex provides the expansion joints/bellows for both applications.

[Contact Metraflex](#) for assistance in selecting the right Exhaust Expansion Joints and Manifold Bellows for your application.

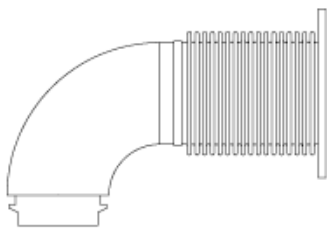
### Accessories

Rain caps available for a variety of applications. Contact Metraflex for the exact cap style you need.

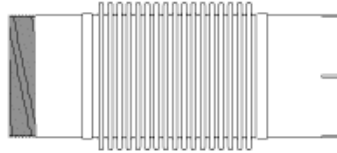


### Gaskets & Bolt Kits

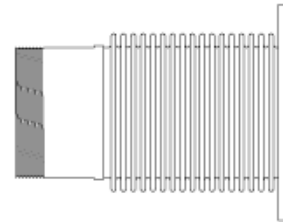
Non Asbestos, Graphite or Mica gaskets available for different temperature ranges. Carbon or s/s nuts and bolts. Contact Metraflex for the exact cap style you need.



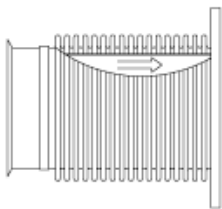
Elbow with Turbo flanged reducer



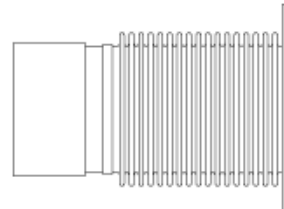
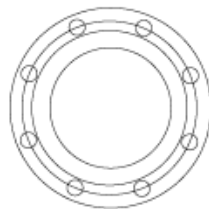
Male NPT x Cuff



Male NPT x Flange



Lop flange x Flange with FLOW Liner



Female NPT x Flange