



# metal sitcoflex bellows

## Description

Metal bellows, sometimes called instrument bellows are manufactured from a thin wall butt-welded stainless steel tube into which rounded narrow close pitch corrugations are pressed by mechanical means.

Metal bellows by their construction are very flexible in all directions and possess a number of features including pressure resistance, vacuum tightness, high temperature capability, corrosion resistance, maintenance free, long service life and economical. The 'soft' parallel corrugations absorb movements without friction. Usually the demand for high spring rates and high pressure capabilities do not go hand in hand but metal bellows should achieve an optimum compromise.

## typical applications

Typical applications include:

- absorbing vibration and stresses for noise reduction
- as contact pressure elements and sealing elements in mechanical engineering
- as a safety element in motor vehicle steering columns
- as low stress connections on sensitive applications
- as a spindle sealing bellows in valves
- in the exhaust manifold on the cylinder block of a motor vehicle
- as a mechanical shaft seal for pumps and compressors
- as a volume compensating element
- as a flexible shaft coupling

The range of industries using flexible, pressure tight components are numerous including chemical, medical, motor vehicle, appliance, measurement and control engineering, pump, compressor and aerospace industries.

## Service life

The service life of a metal bellows is the number of load cycles achieved by the bellows until the first leak occurs. A single load cycle is the movement of the bellows from and its return to its initial position.

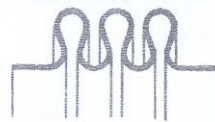
The service life depends upon many factors including the operating temperature, correct installation, pressure surges, corrosive medium or atmosphere and the frequency and extent of its movements.

As a guide, metal bellows have a rated service life of approximately 10,000 load cycles.

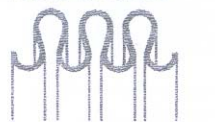
## cuff end styles

Metal bellows can be supplied with three different styles of cuff ends or a combination of the ends as follows:

End form 1



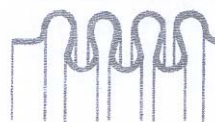
End form 2



End form 3



End form 4



### Unmachined end form

Particularly economical for medium and large quantities with hydraulic forming.

### Machined end form

Preferred for flash welds. In principle, for all sizes of bellows possible.

### Unmachined end forms

Mainly for small quantities and single piece production. Which of these two forms is more economical, depends on the forming process and must be decided upon for each individual case.