

# Metallic Expansion Joint

## Abstract and Feature :

- Free type is most widely used and absorb axial, lateral, angular movement and vibration.
- Normally, this type is applied for low pressure but can be used on high pressure application by multi-ply bellows designed.

## Application :

- Low pressure gas line, exhaust duct line and engine exhaust line.
- Inlet and outlet of pump blower and vibration absorption, etc.

## Design Condition :

- Design Temp. : 300° C
- Design Pressure : 10 bar
- Design Life Cycles: 3,000 cycles

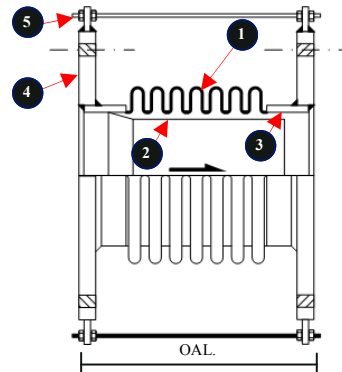
## Construction & Material :

- Bellows : SS304 (L), SS316 (L), SS321, Incoloy, Hastelloy C
- Internal Sleeve : SSSS304 (L), SS316 (L), SS321
- End Pipe : SS400, SS304, SS316
- End Flanged\* : SS400, SS304
- Tie Rods : SS400

\* Flange drilling : JS10K, ANSI 150#, PN10/16 or on request.



## Type FT100



| Nominal Pipe<br>( Ranging ) |                     | Length         | Axial<br>Compression ( mm ) | Axial<br>Elongation ( mm ) | Lateral<br>Movement ( mm ) |
|-----------------------------|---------------------|----------------|-----------------------------|----------------------------|----------------------------|
| Size ID<br>( mm )           | Size ID<br>( inch ) | OAL.<br>( mm ) |                             |                            |                            |
| 40 - 600                    | (1-1/2) - 24        | 300            | 40                          | 10                         | 3                          |
| 40 - 600                    | (1-1/2) - 24        | 500            | 50                          | 15                         | 5                          |
| 40 - 600                    | (1-1/2) - 24        | 700            | 60                          | 15                         | 10                         |

\*\* Others Length, axial, lateral movement can be designed as request

## Type FT101

| Nominal Pipe<br>( Ranging ) |                     | Length         | Axial<br>Compression ( mm ) | Axial<br>Elongation ( mm ) | Lateral<br>Movement ( mm ) |
|-----------------------------|---------------------|----------------|-----------------------------|----------------------------|----------------------------|
| Size ID<br>( mm )           | Size ID<br>( inch ) | OAL.<br>( mm ) |                             |                            |                            |
| 40 - 300                    | (1-1/2) - 12        | 300            | 20                          | 20                         | 3                          |
| 40 - 300                    | (1-1/2) - 12        | 350            | 25                          | 25                         | 5                          |



## Abstract and Feature :

- De-vibration is intently used for absorb vibration. purpose.
- Bellows is flared over stud ends, no welding arch, that would free bellows to flex freely.

## Application :

- Low pressure gas line, exhaust duct line and engine exhaust line.
- Inlet and outlet of pump blower and high vibration.

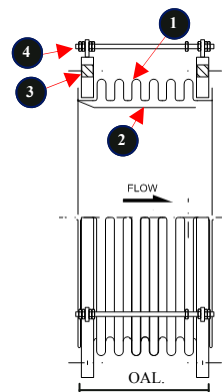
## Design Condition :

- Design Temp. : 300° C
- Design Pressure : 10 bar
- Design Life Cycles: 3,000 cycles

## Construction & Material :

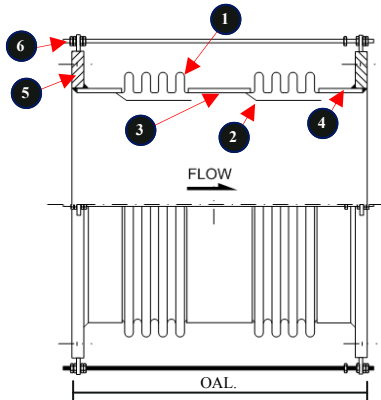
- Bellows : SS304 (L), SS316 (L), SS321, Incoloy, Hastelloy C
- Internal Sleeve : SSSS304 (L), SS316 (L), SS321
- End Flanged\* : SS400, SS304
- Tie Rods : SS400

\* Flange drilling : JS10K, ANSI 150#, PN10/16 or on request.



# Metallic Expansion Joint

## Type UT200



### Abstract and Feature :

Tie rod assemblies should be designed to withstand against for the internal pressure thrust and this type absorb a lateral movement by means of angular motion of each bellows on both ends.

### Application :

- Unfixed complex piping system
- Connection with equipment
- Ground Settlement for oil storage tank
- For unbalanced ground settlement and earthquake

To apply an expansion joint for the purpose of absorbing axial and lateral movement on piping system, main anchor should be considered on piping arrangement

### Design Condition :

- Design Temp. : 300° C
- Design Pressure : 10 bar
- Design Life Cycles: 3,000 cycles

### Construction & Material :

1. Bellows : SS304 (L), SS316 (L), SS321, Inconel, Incoloy, Hastelloy C
2. Internal Sleeve : SSSS304 (L), SS316 (L), SS321
3. Inter Pipe : SSSS304, SS316, SS321
4. End Pipe : SS400, SS304, SS316
5. End Flanged\* : SS400, SS304, SS316
6. Tie Rods : SS400

\* Flange drilling : JS10K, ANSI 150#, PN10/16 or on request.

| Nominal Pipe   |                  | Lateral Movement ( mm ) |      |      |      |      |      |      |      |
|----------------|------------------|-------------------------|------|------|------|------|------|------|------|
|                |                  | 50                      | 100  | 150  | 200  | 250  | 300  | 350  | 400  |
| Size ID ( mm ) | Size ID ( inch ) | Overall Length ( mm )   |      |      |      |      |      |      |      |
| 80             | 3                | 700                     | 1000 | 1400 | 1700 | 2100 | 2400 | 2700 | 3100 |
| 100            | 4                | 700                     | 1100 | 1400 | 1800 | 2100 | 2500 | 2800 | 3200 |
| 125            | 5                | 800                     | 1200 | 1600 | 2000 | 2300 | 2700 | 3100 | 3500 |
| 150            | 6                | 800                     | 1200 | 1600 | 2000 | 2400 | 2800 | 3200 | 3600 |
| 200            | 8                | 900                     | 1300 | 1700 | 2100 | 2500 | 2900 | 3300 | 3700 |
| 250            | 10               | 1000                    | 1400 | 1800 | 2200 | 2600 | 3000 | 3300 | 3700 |
| 300            | 12               | 1000                    | 1400 | 1800 | 2200 | 2600 | 3000 | 3300 | 3700 |
| 350            | 14               | 1100                    | 1500 | 1900 | 2300 | 2700 | 3100 | 3400 | 3800 |
| 400            | 16               | 1200                    | 1600 | 2100 | 2400 | 2800 | 3200 | 3600 | 4000 |
| 450            | 18               | 1200                    | 1700 | 2200 | 2600 | 3100 | 3500 | 4000 | 4500 |
| 500            | 20               | 1300                    | 1800 | 2300 | 2800 | 3300 | 3800 | 4300 | 4800 |
| 550            | 22               | 1300                    | 1900 | 2500 | 3000 | 3600 | 4100 | 4700 | 5300 |
| 600            | 24               | 1400                    | 1900 | 2500 | 3000 | 3600 | 4100 | 4700 | 5300 |

\*\* Others Length, lateral movement can be designed as request



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