## RUBBER EXPANSION JOINT

Ref. : DS 1501
Rev. : 8

## SPECIFICATIONS :

To absorb vibrations, compansion, noises
Linear and angular compansion

## USE:

Water distribution (1501-1502)
Oil, air, hydrocarbon (1503)
Max temperature Ts : $100^{\circ} \mathrm{C}$ see graph (1501-1502)
Max temperature Ts : $80^{\circ} \mathrm{C}$ (1503)
Max pressure Ps : 10 bars to $20^{\circ} \mathrm{C}$ up to DN250 7 bars over

## RANGE:

Flanged EPDM PN10 GN10 Ref. 1501 DN32 to DN600
Flanged EPDM PN10 GN16 Ref. 1502 DN200 au DN300
Flanged NBR PN10 GN10 Ref. 1503 DN32 to DN200

## MATERIALS :

| DESIGNATION | MATERIALS |
| :---: | :---: |
| Bellow material 1501-1502 | EPDM |
| Bellow material 1503 | NBR |
| Brace | Carbon steel |
| Reinforcement | Synthetic fiber |
| Flanges | Galvanized steel |

STANDARDS:
DIRECTIVE 97/23/CE : Products excluded

SIZE:

|  | DN | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \text { Ref. } \\ 1501 \\ 1503 \end{gathered}$ | L | 95 | 95 | 105 | 115 | 130 | 135 | 170 | 180 | 205 | 240 | 260 | 265 | 265 | 265 | 265 | 265 |
|  | H | 69 | 69 | 85 | 106 | 116 | 150 | 180 | 209 | 260 | 320 | 367 | 408 | 472 | 522 | 570 | 690 |
|  | P | 40 | 40 | 52 | 68 | 76 | 103 | 128 | 152 | 194 | 250 | 300 | 320 | 372 | 415 | 454 | 580 |
|  | Weig. | 3 | 3,57 | 4,11 | 5,13 | 6,23 | 6,98 | 9,64 | 12,4 | 17,3 | 22,7 | 29,15 | 38,9 | 48 | 55,4 | 66 | 73 |



GRAPH P/T :
Pressure (bar )


MOUVEMENTS (en mm) :
Compansion

Expansion



|  | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Compansion | 8 | 8 | 8 | 12 | 12 | 18 | 18 | 18 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| Expansion | 4 | 4 | 5 | 6 | 6 | 10 | 10 | 10 | 14 | 14 | 14 | 16 | 16 | 16 | 16 | 16 |
| Lateral | 8 | 8 | 8 | 10 | 10 | 12 | 12 | 12 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| Angular | $15^{\circ}$ | $15^{\circ}$ | $15^{\circ}$ | $15^{\circ}$ | $15^{\circ}$ | $15^{\circ}$ | $15^{\circ}$ | $15^{\circ}$ | $15^{\circ}$ | $15^{\circ}$ | $15^{\circ}$ | $15^{\circ}$ | $15^{\circ}$ | $15^{\circ}$ | $15^{\circ}$ | $15^{\circ}$ |

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## INSTALLATION INSTRUCTION

Expansion joint are designed for the absorption of previously specified movements under specific pressure and temperature conditions.
So that the maximum service life is achieved, the following items must be observed during installation.

1. Prior to fitment of the compensator it must be ensured that:

- The route of the pipeline is straight - The expansion tallies with that of the chosen compensator
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- The fixes points are dimensionned so that they can absorb the reaction forces and stiffness rate that arise during use.
- The pipeline is limited by fixed points
- The distance between compensator and bearing may be a maximum of 3 times the pipe diameter. Place only one compensator between

2 bearings.
2. Each pipe elbow must be fixed by support, specially if compensator is mounted with limiters.

Fixed bearings are necessary because compensator is submitted to expansion when it is under pressure.
3. Please apply the followingstages order :
a) Fixed points for above pipeline
b) Fixed points for down pipeline
c) Compensator mounting
4. Installation layout :


## 1. Fixed points <br> 2. With limiters <br> 3. Bearings <br> 4. Pipe guides

5. Check that the compensator is not subjected to the weight of the pipeline. The installation lenght must agree with the installation gap. The compensator must never be twisted. It is recommanded that specific characteristics be observed during maintenance :

- The compensator must never be painted or recovered by heat insulation
- The tightness of the bolts must be checked often.
- The flanges must be perfectly cleared

6. Use limiters : When the working pressure can excead the following values :

- Up to DN100: 10 bars
- From DN125 to DN250 : 9 bars
- From DN300 to DN350 : 6 bars
- From DN400 to DN600 : 3 bars

When there is some risk of high pressure (pump starting) or high temperature.
NOTA : The life of compensator can vary because of working conditions (fluids, pressure, temperature), that is why it is necessary to check it regullary.

WRONG INSTALLATION :


Excessive compansion


Excessive expansion


Cutting too important


Torsion


Important compansion and angular deviation


