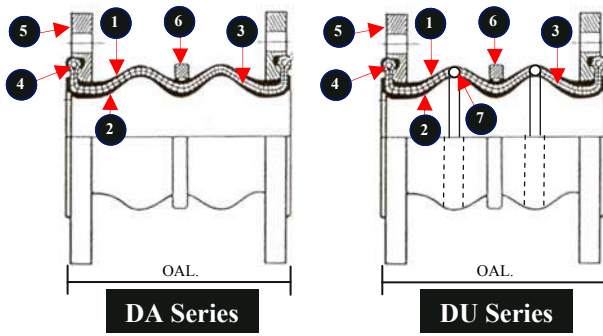


Double Sphere Rubber Expansion Joint



| Item | Construction | Material |
|------|----------------------------|---------------------------------|
| 1 | Tube | Synthetic Rubber ⁽¹⁾ |
| 2 | Cover | Synthetic Rubber ⁽¹⁾ |
| 3 | Reinforcing Fabric | Synthetic Fiber Cord |
| 4 | Reinforcing Wire | Carbon Steel |
| 5 | End Flanged ⁽²⁾ | SS41 ⁽³⁾ |
| 6 | Root Ring** | Carbon Steel |
| 7 | Reinforcing Ring | Carbon Steel |

- (1) Rubber Standard : EDPM, CR, NBR
- (2) Flanged Drilling : JIS 10K, ANSI1150, PN10/16
- (3) Optional : SS304, SS316

| Size ID | 1" - 12" | 14" - 24" | Operating Conditions |
|----------------------------|-----------------|-----------|----------------------|
| Working Pressure SA Series | 16 bar | 8 bar | |
| Working Pressure SU Series | 20 bar | 10 bar | |
| Burst Pressure | 60 bar | 24 bar | |
| Vacuum Rating DA Series | 650 mm/Hg | | |
| Vacuum Rating DU Series | 750 mm/Hg | | |
| Working Temp. | -20° to +100° C | | |



****Root ring MUST be installed when pressure (test surge operation) Exceed the rating below :**

Size ID 5" - 10" exceed 10 bar
 Size ID 12" - 14" exceed 7 bar
 Size ID 16" - 24" exceed 4 bar

Type DA200 & DU200

| Nominal Pipe | | Length OAL (mm) | Axial (mm) Compression | Axial (mm) Elongation | Lateral (mm) Movement | Angular Movement |
|--------------|----------------|--------------------|---------------------------|--------------------------|--------------------------|---------------------|
| Size ID (mm) | Size ID (inch) | | | | | |
| 40 | 1-1/2 | 175 | 50 | 30 | 45 | 35° |
| 50 | 2 | 175 | 50 | 30 | 45 | 35° |
| 65 | 2-1/2 | 175 | 50 | 30 | 45 | 35° |
| 80 | 3 | 175 | 50 | 30 | 45 | 35° |
| 100 | 4 | 225 | 50 | 35 | 40 | 35° |
| 125 | 5 | 225 | 50 | 35 | 40 | 35° |
| 150 | 6 | 225 | 50 | 35 | 40 | 35° |
| 200 | 8 | 325 | 60 | 35 | 35 | 30° |
| 250 | 10 | 325 | 60 | 35 | 35 | 30° |
| 300 | 12 | 325 | 60 | 35 | 35 | 30° |
| 350 | 14 | 350 | 40 | 30 | 30 | 20° |
| 400 | 16 | 350 | 40 | 30 | 30 | 20° |
| 450 | 18 | 350 | 40 | 30 | 30 | 20° |
| 500 | 20 | 350 | 40 | 30 | 30 | 20° |
| 600 | 24 | 350 | 40 | 30 | 30 | 20° |

Type DA202

| Nominal Pipe | | Length OAL (inch) | Axial (mm) Compression | Axial (mm) Elongation | Lateral (mm) Movement | Angular Movement |
|--------------|----------------|----------------------|---------------------------|--------------------------|--------------------------|---------------------|
| Size ID (mm) | Size ID (inch) | | | | | |
| 40 | 1-1/2 | 7 | 50 | 30 | 45 | 35° |
| 50 | 2 | 7 | 50 | 30 | 45 | 35° |
| 65 | 2-1/2 | 7 | 50 | 30 | 45 | 35° |
| 80 | 3 | 7 | 50 | 35 | 45 | 35° |
| 100 | 4 | 9 | 50 | 35 | 40 | 35° |
| 125 | 5 | 9 | 50 | 35 | 40 | 30° |
| 150 | 6 | 9 | 50 | 35 | 40 | 30° |
| 200 | 8 | 13 | 60 | 35 | 35 | 30° |
| 250 | 10 | 13 | 60 | 35 | 35 | 30° |
| 300 | 12 | 13 | 60 | 35 | 35 | 20° |

WARNING :

CONTROL UNITS **MUST BE USED** TO PROTECT RUBBER EXPANSION JOINTS FROM EXCESSIVE MOVEMENT IF PIPING IS NOT PROPERLY ANCHORED

Control units assemblies should be set at the maximum allowable expansion and/or contraction of the joint and will absorb the static pressure thrust developed at the expansion joint. When used in this manner, they are an **additional safety factor (safety device)** minimizing possible failure of the expansion joint and possible damage to the equipment. Control units will adequately protect the joints, but the user should be sure that pipe flange strength is sufficient to withstand total force that will be encountered.



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Rubber Expansion Joint

“ PREVENTING LARGE EXPANSION MOVEMENT ”

KN- Spool type rubber expansion joints, the primary difference between the molded type and the spool type is in the manufacturing process. The spool type is made by hand-build process. Because of the manufacturing process, customization is available to fulfill specific/special requirements of sizes (Up to 3,000 mm available), lengths, working pressure, movements, and connections.

KN - Spool type rubber expansion joints is commonly used in general piping systems requiring that both lower and higher pressure resistance and movement absorption capability **where KN standard molded type rubber expansion joints** are not engineering suitable. Spool type rubber expansion joints are popularly used in large-sized piping systems of public waterworks and wastewater projects to solve differential settlement problems (land sinking).

KN - Spool type rubber expansion joints can be produced in single, double and triple arch. and also with wide arch profile. Manufactured utilizing tire industry technology latest. With flanged ends, beveled ends, insertion end are available for different pipe connection. The spool type rubber expansion joints can be produced for above-ground and underground service purpose. Normally, standard material are IR, EPDM and CR rubber, NBR, Hypalon and Viton rubber are an optional.

APPLICATIONS:

The main functions of **KN - Spool type rubber expansion joints** are to protect piping from elongation, contraction and movement reactions caused by thermal fluctuations, pumping surges, settlement of foundations, load stresses, earth movements etc. In addition, they are also used to isolate vibrations, noise, sock and oscillations in pipe lines at pump or machines etc. They also serve to compensate for misalignment and eliminate electrolysis.

For these benefits, they are widely used in almost all of the industrial piping systems in :

- Power generating stations
- Heating, Ventilating and air conditioning
- Pulp and paper mill
- Petrochemical and industrial process piping
- Desalination plants
- Steel mill
- Waste water treatment and sewage disposal plants



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