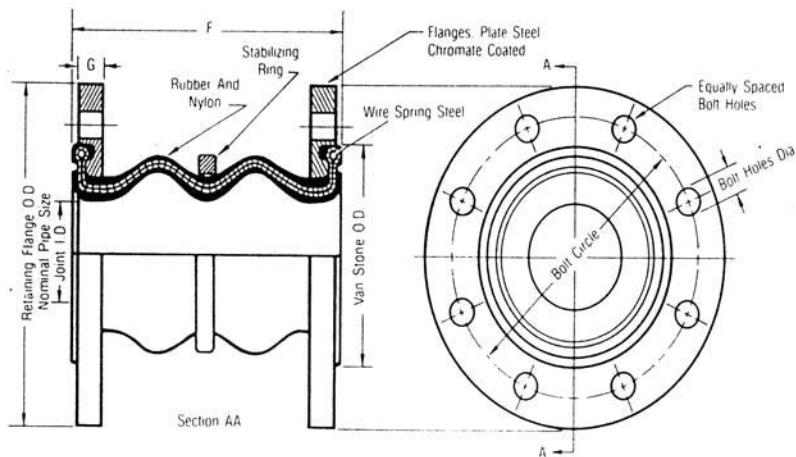


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***Maximum Operating Conditions**

| Temperature (°F) | Maximum Pressure PSI |
|------------------|----------------------|
| | 12" & Smaller |
| 170° | UP TO 225 |
| 180° | UP TO 220 |
| 190° | UP TO 175 |
| 210° | UP TO 150 |
| 200° | UP TO 125 |
| 220° | UP TO 100 |
| 230° | UP TO 75 |

Contact factory for other elastomers. Not for steam applications.

WARNING: Control units must be used to protect this part from excessive movement if piping is not properly anchored. Expansion joints may operate in pipelines or equipment carrying fluids and/or gases at elevated temperature and pressures. Normal precautions should be taken to make sure these parts are installed correctly and inspected regularly. Precautions should be taken to protect personnel in the event of leakage or splash.

| Data | Item Number | 302NN0200 | 302NN0250 | 302NN0300 | 302NN0400 | 302NN0500 |
|-----------------|--------------------------------|--------------|--------------|--------------|--------------|--------------|
| | Number Required | | | | | |
| | EFP Style Number | 302NN0200 | 302NN0250 | 302NN0300 | 302NN0400 | 302NN0500 |
| Dimensions | Nominal Pipe Size-Joint I.D. | 2.00" | 2.50" | 3.00" | 4.00" | 5.00" |
| | F-Length of Joint | 7.00" | 7.00" | 7.00" | 9.00" | 9.00" |
| | G-Flange Width | 0.63" | 0.71" | 0.71" | 0.71" | 0.79" |
| | | | | | | |
| Bolting | Flange/Ring O.D. | 6.00" | 7.00" | 7.50" | 9.00" | 10.00" |
| | Bolt Circle | 4.75" | 5.50" | 6.0" | 7.50" | 8.50" |
| | Number & Hole Size | 4 - 0.75" | 4 - 0.75" | 4 - 0.75" | 8 - 0.75" | 8 - 0.88" |
| Movements | Axial Compression | 2.000" | 2.000" | 2.000" | 2.000" | 2.000" |
| | Axial Extension | 1.188" | 1.188" | 1.188" | 1.375" | 1.375" |
| | Lateral Deflection | 1.750" | 1.750" | 1.750" | 1.562" | 1.562" |
| | Angular Deflection | 45° | 43° | 38° | 34° | 29° |
| Physical | Pressure Rating ⁽¹⁾ | 225 PSIG | 225 PSIG | 225 PSIG | 225 PSIG | 225 PSIG |
| | Vacuum Rating ⁽¹⁾ | 26 IN/HG | 26 IN/HG | 26 IN/HG | 26 IN/HG | 26 IN/HG |
| | Temperature Rating | 230° F | 230° F | 230° F | 230° F | 230° F |
| | FSA Pressure Series | C | C | C | C | C |
| | FSA Material Class | STANDARD | STANDARD | STANDARD | STANDARD | STANDARD |
| Approx. Weights | Expansion Joint | 9.0 LBS | 13.3 LBS | 14.3 LBS | 20.3 LBS | 24.5 LBS |
| | Control Unit Set | - | - | - | - | - |
| | Packing Crates | - | - | - | - | - |
| | Total Approx. Wght Ea. | 9.0 LBS | 13.3 LBS | 14.3 LBS | 20.3 LBS | 24.5 LBS |
| Materials | Tube Elastomer | NEOPRENE | NEOPRENE | NEOPRENE | NEOPRENE | NEOPRENE |
| | Cover Elastomer | NEOPRENE | NEOPRENE | NEOPRENE | NEOPRENE | NEOPRENE |
| | Body Fabric | NYLON FABRIC | NYLON FABRIC | NYLON FABRIC | NYLON FABRIC | NYLON FABRIC |
| | Body Reinforcing | FABRIC | FABRIC | FABRIC | FABRIC | FABRIC |
| | Control Units | - | - | - | - | - |



5331 Quam Ave., N.E.
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PH: 763-201-2151
FAX: 763-201-2134

SCALE: NONE

PRINT CERTIFICATION: Certified correct as of 10/12/17 by R. Vance (Pres.) Subscribed & sworn to before me, on this 12th day of October, 2017

By: _____ (Notary Public)

| | | |
|---|-------------------|---|
| DWG NO: | PROP/INQ/ORD. NO: | REMARKS: |
| FORM NO: TWIN SPHERE | CUSTOMER NAME: | (1) PRESSURE RATING IS BASED ON 170° F. MOVEMENTS ARE NON-CONCURRENT. |
| APPVD BY: RV CHECKED BY: RV | PROJECT NAME: | SEE ATTACHED FOR CONTROL ROD REQUIREMENTS |
| PROD. DESC: | CONTRACTOR: | HAVE CONTROL UNITS BEEN SPECIFIED/ORDERED FOR THIS INSTALLATION: NO |
| THE ABOVE EXPANSION JOINTS AND RELATED HARDWARE, MEET OR EXCEED THE PHYSICAL, MECHANICAL OR MATERIAL SPECIFICATIONS OF THE RUBBER EXPANSION JOINT DIV., FLUID SEALING ASSOCIATION. FOR ADDITIONAL INFORMATION, SEE THE ASSOCIATION, "TECHNICAL HANDBOOK, FIFTH EDITION", CHAPTER II, PARAGRAPH A.1. AND TABLES II, III, IV. | | |

Table 6: Control Units/Unanchored

Control Units must be installed when pressures (test • design • surge • operating) exceed rating below:

| Pipe Size | Series 301 P.S.I.G. | Series 302 P.S.I.G. |
|--------------|------------------------|------------------------|
| 1" thru 4" | 180 | 135 |
| 5" thru 10" | 135 | 135 |
| 12" thru 14" | 90 | 90 |
| 16" thru 24" | 45 | 45 |
| 30" | 35 | 35 |

| Table 7: | | Maximum Surge or Test Pressure of the System | | | |
|--|-------|--|-----|-----|-----|
| Nominal Pipe Size Expansion Joint I.D. Inch /(mm) | | Number of Control Rods Recommended | | | |
| | | 2 | 4 | 6 | 8 |
| 1 | (25) | 949 | • | • | • |
| 1.25 | (32) | 830 | • | • | • |
| 1.5 | (40) | 510 | • | • | • |
| 2 | (50) | 661 | • | • | • |
| 2.5 | (65) | 529 | • | • | • |
| 3 | (75) | 441 | • | • | • |
| 4 | (100) | 311 | 622 | • | • |
| 5 | (125) | 235 | 470 | • | • |
| 6 | (150) | 186 | 371 | • | • |
| 8 | (200) | 163 | 326 | • | • |
| 10 | (250) | 163 | 325 | 488 | • |
| 12 | (300) | 160 | 320 | 481 | • |
| 14 | (350) | 112 | 223 | 335 | • |
| 16 | (400) | 113 | 227 | 340 | 453 |
| 18 | (450) | 94 | 187 | 281 | 375 |
| 20 | (500) | 79 | 158 | 236 | 315 |
| 24 | (600) | 74 | 147 | 221 | 294 |
| 30 | (750) | 70 | 141 | 211 | 281 |

Note:

Pressures listed above do not relate to the actual design pressure of the expansion joint products, but are the maximum surge or pressure for a specific control rod nominal pipe size.