

# MULTI-PLY EXPANSION JOINTS

## Series 1 for Higher Pressure

### SERIES 1 - MEDIUM



- 1- MULTI-PLY T-321 S/S BELLOWS
- 2- 150# A-36 C/S PLATE FLANGES (FF)
- 3- T-304 S/S FLOW LINER (OPTIONAL)
- 4- DESIGN PER EJMA 10TH EDITION
- 5- WELDING PER ASME SECTION IX



- 1- MULTI-PLY T-321 S/S BELLOWS
- 2- 150# A-105 C/S FORGED FLANGES (RF)
- 3- T-304 S/S FLOW LINER (OPTIONAL)
- 4- DESIGN PER EJMA 10TH EDITION
- 5- WELDING PER ASME SECTION IX



- 1- MULTI-PLY T-321 S/S BELLOWS
- 2- STD. WALL A-53 C/S WELD ENDS
- 3- T-304 S/S FLOW LINER (OPTIONAL)
- 4- DESIGN PER EJMA 10TH EDITION
- 5- WELDING PER ASME SECTION IX

| BELLOWS |                          |                        | PLATE FLANGES A-36 C/S |                     |                          |                           |                       |                             |             | FORGED FLANGES A-105 STEEL |                     |                          |                           |                       |                             |             | BEVELED WELD ENDS A-53 STD. |                      |                          |                           |                       |                             |             |
|---------|--------------------------|------------------------|------------------------|---------------------|--------------------------|---------------------------|-----------------------|-----------------------------|-------------|----------------------------|---------------------|--------------------------|---------------------------|-----------------------|-----------------------------|-------------|-----------------------------|----------------------|--------------------------|---------------------------|-----------------------|-----------------------------|-------------|
| SIZE    | BELLOWS LIVE LENGTH (IN) | EFFECTIVE AREA (SQ-IN) | OVERALL LENGTH (IN)    | WORKING PSIG @ 70°F | AXIAL COMPRESSION * (IN) | AXIAL SPRING RATE (LB/IN) | LATERAL OFFSET * (IN) | LATERAL SPRING RATE (LB/IN) | PART NUMBER | OVERALL LENGTH (IN)        | WORKING PSIG @ 70°F | AXIAL COMPRESSION * (IN) | AXIAL SPRING RATE (LB/IN) | LATERAL OFFSET * (IN) | LATERAL SPRING RATE (LB/IN) | PART NUMBER | OVERALL LENGTH (IN)         | WORKING PSIG @ 600°F | AXIAL COMPRESSION * (IN) | AXIAL SPRING RATE (LB/IN) | LATERAL OFFSET * (IN) | LATERAL SPRING RATE (LB/IN) | PART NUMBER |
| 2"      | 4.50                     | 5.78                   | 6.25                   | 175                 | 0.75                     | 757                       | 0.38                  | 414                         | 50-20-S1M1  | 6.75                       | 250                 | 0.75                     | 757                       | 0.38                  | 414                         | 50-20-S1M2  | 12.50                       | 250                  | 0.75                     | 757                       | 0.38                  | 414                         | 50-20-S1M3  |
| 2-1/2"  | 4.50                     | 9.51                   | 6.25                   | 175                 | 1.00                     | 723                       | 0.38                  | 650                         | 50-25-S1M1  | 7.00                       | 250                 | 1.00                     | 723                       | 0.38                  | 650                         | 50-25-S1M2  | 12.50                       | 250                  | 1.00                     | 723                       | 0.38                  | 650                         | 50-25-S1M3  |
| 3"      | 4.50                     | 12.47                  | 6.25                   | 175                 | 0.75                     | 1634                      | 0.25                  | 1927                        | 50-30-S1M1  | 7.13                       | 285                 | 0.75                     | 1634                      | 0.25                  | 1927                        | 50-30-S1M2  | 12.50                       | 350                  | 0.75                     | 1634                      | 0.25                  | 1927                        | 50-30-S1M3  |
| 3-1/2"  | 4.50                     | 16.69                  | x                      | x                   | x                        | x                         | x                     | x                           | x           | 7.25                       | 285                 | 1.00                     | 1277                      | 0.25                  | 2011                        | 50-35-S1M2  | 12.50                       | 300                  | 1.00                     | 1277                      | 0.25                  | 2011                        | 50-35-S1M3  |
| 4"      | 6.00                     | 20.51                  | 7.75                   | 175                 | 1.38                     | 1094                      | 0.50                  | 1193                        | 50-40-S1M1  | 8.88                       | 275                 | 1.38                     | 1094                      | 0.50                  | 1193                        | 50-40-S1M2  | 14.00                       | 275                  | 1.38                     | 1094                      | 0.50                  | 1193                        | 50-40-S1M3  |
| 5"      | 6.00                     | 30.63                  | 7.75                   | 175                 | 1.13                     | 2180                      | 0.38                  | 3542                        | 50-50-S1M1  | 9.12                       | 225                 | 1.13                     | 2180                      | 0.38                  | 3542                        | 50-50-S1M2  | 14.00                       | 225                  | 1.13                     | 2180                      | 0.38                  | 3542                        | 50-50-S1M3  |
| 6"      | 6.00                     | 41.83                  | 7.75                   | 175                 | 1.25                     | 1999                      | 0.31                  | 4526                        | 50-60-S1M1  | 9.38                       | 260                 | 1.25                     | 1999                      | 0.31                  | 4526                        | 50-60-S1M2  | 14.00                       | 260                  | 1.25                     | 1999                      | 0.31                  | 4526                        | 50-60-S1M3  |
| 8"      | 6.00                     | 69.07                  | 8.25                   | 175                 | 1.25                     | 2541                      | 0.25                  | 9312                        | 50-80-S1M1  | 9.75                       | 260                 | 1.25                     | 2541                      | 0.25                  | 9312                        | 50-80-S1M2  | 14.00                       | 260                  | 1.25                     | 2541                      | 0.25                  | 9312                        | 50-80-S1M3  |
| 10"     | 9.00                     | 107.9                  | 8.25                   | 175                 | 2.38                     | 1578                      | 0.50                  | 4052                        | 50-100-S1M1 | 10.13                      | 250                 | 2.38                     | 1578                      | 0.50                  | 4052                        | 50-100-S1M2 | 14.00                       | 250                  | 2.38                     | 1578                      | 0.50                  | 4052                        | 50-100-S1M3 |
| 12"     | 9.00                     | 148.6                  | 8.25                   | 175                 | 2.38                     | 1894                      | 0.50                  | 6653                        | 50-120-S1M1 | 10.63                      | 250                 | 2.38                     | 1894                      | 0.50                  | 6653                        | 50-120-S1M2 | 14.00                       | 250                  | 2.38                     | 1894                      | 0.50                  | 6653                        | 50-120-S1M3 |
| 14"     | 9.00                     | 181.1                  | 8.12                   | 150                 | 2.75                     | 1425                      | 0.50                  | 6092                        | 50-140-S1M1 | 10.75                      | 190                 | 2.75                     | 1425                      | 0.50                  | 6092                        | 50-140-S1M2 | 14.00                       | 190                  | 2.75                     | 1425                      | 0.50                  | 6092                        | 50-140-S1M3 |
| 16"     | 9.00                     | 231.7                  | 8.25                   | 150                 | 2.75                     | 1614                      | 0.50                  | 8842                        | 50-160-S1M1 | 11.25                      | 190                 | 2.75                     | 1614                      | 0.50                  | 8842                        | 50-160-S1M2 | 14.00                       | 190                  | 2.75                     | 1614                      | 0.50                  | 8842                        | 50-160-S1M3 |
| 18"     | 9.00                     | 289.4                  | 8.38                   | 150                 | 2.75                     | 1823                      | 0.38                  | 12441                       | 50-180-S1M1 | 11.63                      | 190                 | 2.75                     | 1823                      | 0.38                  | 12441                       | 50-180-S1M2 | 14.00                       | 190                  | 2.75                     | 1823                      | 0.38                  | 12441                       | 50-180-S1M3 |
| 20"     | 9.00                     | 352.8                  | 8.50                   | 150                 | 2.75                     | 2022                      | 0.38                  | 16820                       | 50-200-S1M1 | 12.00                      | 190                 | 2.75                     | 2022                      | 0.38                  | 16820                       | 50-200-S1M2 | 14.00                       | 190                  | 2.75                     | 2022                      | 0.38                  | 16820                       | 50-200-S1M3 |
| 22"     | 9.00                     | 422.6                  | 8.63                   | 150                 | 2.75                     | 2220                      | 0.33                  | 22,117                      | 50-220-S1M1 | x                          | x                   | x                        | x                         | x                     | x                           | x           | 14.00                       | 185                  | 2.75                     | 2220                      | 0.33                  | 22,117                      | 50-220-S1M3 |
| 24"     | 9.00                     | 498.6                  | 8.75                   | 150                 | 2.75                     | 2417                      | 0.33                  | 28409                       | 50-240-S1M1 | 13.00                      | 185                 | 2.75                     | 2417                      | 0.33                  | 28,409                      | 50-240-S1M2 | 14.00                       | 185                  | 2.75                     | 2417                      | 0.33                  | 28,409                      | 50-240-S1M3 |

\*\* Movements are non-concurrent-minimum 3000 cycles

- Custom lengths and pressure available on request
- Stainless flanges available on request
- Tie rods available on request
- Flow liners may be required. See EJMA 10 guidelines
- T-316, T-304, C-276, Inconel 625 and other alloys available