



## TIED UNIVERSAL 3.5-25 BAR

### Specification

Bellows : Austenitic Stainless Steel  
 Weld End : Carbon Steel or Stainless Steel  
 Standard : JIS, ANSI, DIN

**Notes**

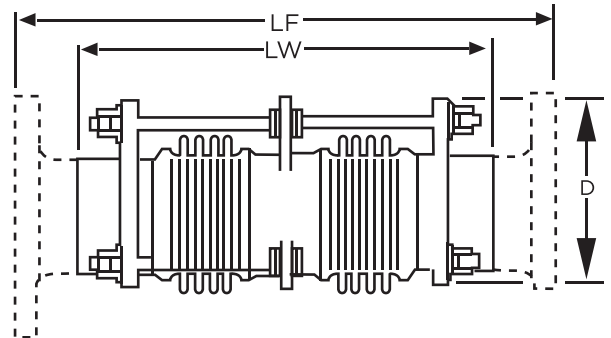
- Unit weights are estimated and refer to weld end unit.
- To increase lateral movement capability, the overall length of the unit must be increased. New length of unit = Original length + NX

**Where**

N is member of additions ± 25mm increments of lateral movement required.

X is tabulated below.

$$\text{New lateral spring rate} = \frac{1 \times \text{Original lateral rate}}{(N + 1)^2}$$



| N.B. | Press | Movement    |                | Overall length |                | Pipe O.D. | Thick                        | Weld end | Flange end | X Length | Lat'l spring rate | Approx. Wt. |
|------|-------|-------------|----------------|----------------|----------------|-----------|------------------------------|----------|------------|----------|-------------------|-------------|
|      |       | Lat'l Bar g | Total Lat'l mm | ± Lw mm        | Weld end LF mm |           |                              |          |            |          |                   |             |
| 80   | 6     | 50          | 25             | 555            | 575            | 88.9      | To be Specified by Purchaser | 230      | 280        | 197      | 4.3               | 13          |
|      | 10    | 50          | 25             | 555            | 575            | 88.9      |                              | 230      | 280        | 197      | 4.3               | 13          |
|      | 16    | 50          | 25             | 570            | 590            | 88.9      |                              | 260      | 335        | 200      | 6.2               | 14          |
|      | 25    | 50          | 25             | 560            | 580            | 88.9      |                              | 260      | 335        | 200      | 12.3              | 18          |
| 100  | 6     | 50          | 25             | 630            | 650            | 114.3     |                              | 255      | 310        | 224      | 4.9               | 15          |
|      | 10    | 50          | 25             | 630            | 650            | 114.3     |                              | 255      | 310        | 224      | 4.9               | 17          |
|      | 16    | 50          | 25             | 650            | 680            | 114.3     |                              | 310      | 410        | 235      | 6.7               | 21          |
|      | 25    | 50          | 25             | 620            | 640            | 114.3     |                              | 310      | 410        | 220      | 16.1              | 32          |
| 125  | 6     | 50          | 25             | 630            | 650            | 141.3     |                              | 280      | 360        | 224      | 8.3               | 24          |
|      | 10    | 50          | 25             | 630            | 650            | 141.3     |                              | 280      | 360        | 224      | 8.3               | 25          |
|      | 16    | 50          | 25             | 650            | 670            | 141.3     |                              | 330      | 435        | 235      | 11.4              | 30          |
|      | 25    | 50          | 25             | 620            | 640            | 141.3     |                              | 330      | 435        | 220      | 25.2              | 39          |
| 150  | 6     | 50          | 25             | 680            | 700            | 168.3     | 340                          | 385      | 221        | 20.3     | 30                |             |
|      | 10    | 50          | 25             | 680            | 700            | 168.3     | 340                          | 385      | 221        | 20.3     | 32                |             |
|      | 16    | 50          | 25             | 700            | 720            | 168.3     | 385                          | 485      | 231        | 27.8     | 43                |             |
|      | 25    | 50          | 25             | 680            | 700            | 168.3     | 385                          | 485      | 220        | 44.6     | 46                |             |
| 200  | 6     | 50          | 25             | 700            | 720            | 219.1     | 410                          | 480      | 221        | 40.6     | 45                |             |
|      | 10    | 50          | 25             | 700            | 720            | 219.1     | 410                          | 480      | 221        | 40.6     | 47                |             |
|      | 16    | 50          | 25             | 720            | 740            | 219.1     | 460                          | 630      | 231        | 55.5     | 56                |             |
|      | 25    | 50          | 25             | 700            | 740            | 219.1     | 460                          | 630      | 220        | 88.9     | 60                |             |
| 250  | 6     | 50          | 25             | 740            | 760            | 273       | 480                          | 585      | 221        | 74       | 80                |             |
|      | 10    | 50          | 25             | 740            | 760            | 273       | 480                          | 585      | 221        | 74       | 85                |             |
|      | 16    | 50          | 25             | 760            | 780            | 273       | 540                          | 685      | 231        | 101      | 90                |             |
|      | 25    | 50          | 25             | 740            | 760            | 273       | 540                          | 685      | 220        | 162      | 130               |             |



**TIED DOUBLE 3.5-25 BAR**

| N.B. | Press | Movement       |            | Overall length |                  | Pipe O.D. | Thick | Weld end | Flange end | X Length | Angl'r mvt./ bellow | Lat'l spring rate | Angl'r spring rate | Approx. Wt. |
|------|-------|----------------|------------|----------------|------------------|-----------|-------|----------|------------|----------|---------------------|-------------------|--------------------|-------------|
|      |       | Total Lat'l mm | 3 Lat'l mm | Weld end Lw mm | Flange end LF mm |           |       |          |            |          |                     |                   |                    |             |
| 300  | 3.5   | 50             | 25         | 755            | 790              | 323.9     |       | 525      | 620        | 218      | 9.5                 | 183               | 36.9               | 65          |
|      | 6     | 50             | 25         | 770            | 790              | 323.9     |       | 565      | 660        | 224      | 9.5                 | 168               | 73.8               | 85          |
|      | 10    | 50             | 25         | 770            | 790              | 323.9     |       | 565      | 660        | 224      | 9.5                 | 168               | 73.8               | 95          |
|      | 16    | 50             | 25         | 805            | 825              | 323.9     |       | 610      | 710        | 242      | 9.5                 | 211               | 110.7              | 105         |
|      | 25    | 50             | 25         | 895            | 915              | 323.9     |       | 610      | 710        | 286      | 9.5                 | 320               | 229                | 160         |
| 350  | 3.5   | 50             | 25         | 755            | 610              | 355.6     |       | 630      | 630        | 218      | 8.5                 | 192               | 48.5               | 70          |
|      | 6     | 50             | 25         | 820            | 630              | 355.6     |       | 670      | 790        | 224      | 8.5                 | 221               | 96.9               | 130         |
|      | 10    | 50             | 25         | 820            | 630              | 355.6     |       | 670      | 790        | 224      | 8.5                 | 221               | 96.9               | 185         |
|      | 16    | 50             | 25         | 905            | 735              | 355.6     |       | 695      | 855        | 242      | 8.5                 | 285               | 145                | 225         |
|      | 25    | 50             | 25         | 1045           | 735              | 355.6     |       | 745      | 895        | 286      | 8.5                 | 418               | 298                | 385         |
| 400  | 3.5   | 50             | 25         | 810            | 630              | 406.4     |       | 685      | 740        | 218      | 7.5                 | 217               | 70.5               | 105         |
|      | 6     | 50             | 25         | 870            | 655              | 406.4     |       | 730      | 870        | 224      | 7.5                 | 321               | 141                | 190         |
|      | 10    | 50             | 25         | 870            | 655              | 406.4     |       | 730      | 870        | 224      | 7.5                 | 321               | 141                | 255         |
|      | 16    | 50             | 25         | 995            | 760              | 406.4     |       | 755      | 940        | 242      | 7.5                 | 413               | 211                | 320         |
|      | 25    | 50             | 25         | 1095           | 760              | 406.4     |       | 810      | 990        | 286      | 7.5                 | 611               | 436                | 505         |
| 450  | 3.5   | 50             | 25         | 865            | 650              | 457.2     |       | 760      | 785        | 224      | 6.5                 | 217               | 94.5               | 135         |
|      | 6     | 50             | 25         | 820            | 680              | 457.2     |       | 815      | 965        | 224      | 6.5                 | 430               | 189                | 250         |
|      | 10    | 50             | 25         | 820            | 680              | 457.2     |       | 815      | 965        | 224      | 6.5                 | 430               | 189                | 310         |
|      | 16    | 50             | 25         | 1005           | 775              | 457.2     |       | 835      | 1020       | 242      | 6.5                 | 556               | 283                | 385         |
|      | 25    | 50             | 25         | 1145           | 775              | 457.2     |       | 865      | 1090       | 286      | 6.5                 | 843               | 601                | 660         |
| 500  | 3.5   | 50             | 25         | 930            | 670              | 508       |       | 845      | 870        | 242      | 6                   | 262               | 134                | 170         |
|      | 6     | 50             | 25         | 990            | 690              | 508       |       | 870      | 1070       | 242      | 6                   | 528               | 268                | 315         |
|      | 10    | 50             | 25         | 990            | 690              | 508       |       | 870      | 1070       | 242      | 6                   | 528               | 268                | 340         |
|      | 16    | 50             | 25         | 1055           | 790              | 508       |       | 910      | 1125       | 242      | 6                   | 794               | 401                | 405         |
|      | 25    | 50             | 25         | 1190           | 790              | 508       |       | 960      | 1160       | 286      | 6                   | 1162              | 830                | 795         |
| 600  | 3.5   | 50             | 25         | 930            | 690              | 609.6     |       | 945      | 1020       | 290      | 5                   | 306               | 226                | 240         |
|      | 6     | 50             | 25         | 985            | 705              | 609.6     |       | 945      | 1020       | 290      | 5                   | 612               | 451                | 430         |
|      | 10    | 50             | 25         | 985            | 705              | 609.6     |       | 990      | 1220       | 290      | 5                   | 612               | 451                | 455         |
|      | 16    | 50             | 25         | 1100           | 805              | 609.6     |       | 1045     | 1305       | 290      | 5                   | 918               | 677                | 760         |
|      | 25    | 50             | 25         | 1154           | 805              | 609.6     |       | 1120     | 1120       | 290      | 5                   | 1898              | 1395               | 870         |
| 700  | 3.5   | 50             | 25         | 1030           | 710              | 711.2     |       | 1070     | 1150       | 32.3     | 4.5                 | 481               | 438                | 355         |
|      | 6     | 50             | 25         | 1090           | 750              | 711.2     |       | 1070     | 1150       | 32.3     | 4.5                 | 692               | 876                | 580         |
|      | 10    | 50             | 25         | 1090           | 750              | 711.2     |       | 1125     | 1360       | 32.3     | 4.5                 | 692               | 876                | 635         |
|      | 16    | 50             | 25         | 1205           | 1360             | 711.2     |       | 1200     | 1470       | 32.3     | 4.5                 | 1445              | 1314               | 945         |
|      | 25    | 50             | 25         | 1205           | 1360             | 711.2     |       | 1200     | 1470       | 32.3     | 4.5                 | 1445              | 1314               | 945         |
| 750  | 3.5   | 50             | 25         | 1030           | 730              | 762       |       | 1120     | 1230       | 32.3     | 4.5                 | 566               | 515                | 390         |
|      | 6     | 50             | 25         | 1090           | 780              | 762       |       | 1120     | 1320       | 32.3     | 4.5                 | 1130              | 1030               | 685         |
|      | 10    | 50             | 25         | 1090           | 780              | 762       |       | 1205     | 1480       | 32.3     | 4.5                 | 1130              | 1030               | 735         |
|      | 16    | 50             | 25         | 1205           | 1390             | 762       |       | 1315     | 1315       | 32.3     | 4.5                 | 1696              | 1545               | 1100        |
|      | 25    | 50             | 25         | 1205           | 1390             | 762       |       | 1315     | 1315       | 32.3     | 4.5                 | 1696              | 1545               | 1100        |
| 800  | 3.5   | 50             | 25         | 1120           | 750              | 812.8     |       | 1175     | 1310       | 36.3     | 4                   | 557               | 643                | 475         |
|      | 6     | 50             | 25         | 1090           | 855              | 812.8     |       | 1195     | 1370       | 36.3     | 4                   | 1114              | 1286               | 810         |
|      | 10    | 50             | 25         | 1090           | 855              | 812.8     |       | 1275     | 1550       | 36.3     | 4                   | 1114              | 1286               | 915         |
|      | 16    | 50             | 25         | 1295           | 1420             | 812.8     |       | 1375     | 1375       | 36.3     | 4                   | 1673              | 1930               | 1175        |
|      | 25    | 50             | 25         | 1295           | 1420             | 812.8     |       | 1375     | 1375       | 36.3     | 4                   | 1673              | 1930               | 1175        |
| 900  | 3.5   | 50             | 25         | 1170           | 780              | 914.4     |       | 1250     | 1415       | 415      | 3.5                 | 578               | 903                | 510         |
|      | 6     | 50             | 25         | 1185           | 890              | 914.4     |       | 1320     | 1510       | 415      | 3.5                 | 1198              | 1805               | 1150        |
|      | 10    | 50             | 25         | 1185           | 890              | 914.4     |       | 1405     | 1695       | 415      | 3.5                 | 1198              | 1805               | 1100        |
|      | 16    | 50             | 25         | 1345           | 1510             | 914.4     |       | 1515     | 1515       | 415      | 3.5                 | 1802              | 2703               | 1525        |
|      | 25    | 50             | 25         | 1345           | 1510             | 914.4     |       | 1515     | 1515       | 415      | 3.5                 | 1802              | 2703               | 1525        |
| 1000 | 3.5   | 50             | 25         | 1220           | 840              | 1016      |       | 1390     | 1580       | 415      | 3                   | 1925              | 2897               | 705         |
|      | 6     | 50             | 25         | 1235           | 915              | 1016      |       | 1470     | 1580       | 415      | 3                   | 1623              | 2443               | 1370        |
|      | 10    | 50             | 25         | 1235           | 1370             | 1016      |       | 1525     | 1580       | 415      | 3                   | 1623              | 2443               | 1165        |
|      | 25    | 50             | 25         | 1235           | 1370             | 1016      |       | 1525     | 1580       | 415      | 3                   | 1623              | 2443               | 1165        |
| 1050 | 3.5   | 50             | 25         | 1290           | 870              | 1065      |       | 1485     | 1640       | 485      | 3                   | 1514              | 3114               | 950         |
|      | 6     | 50             | 25         | 1305           | 940              | 1065      |       | 1525     | 1805       | 485      | 3                   | 1278              | 2631               | 1590        |
|      | 10    | 50             | 25         | 1305           | 1490             | 1065      |       | 1630     | 1940       | 485      | 3                   | 1278              | 2631               | 1275        |
|      | 25    | 50             | 25         | 1305           | 1490             | 1065      |       | 1630     | 1940       | 485      | 3                   | 1278              | 2631               | 1275        |
| 1100 | 3.5   | 50             | 25         | 1340           | 900              | 1120      |       | 1525     | 1725       | 485      | 3                   | 1854              | 3817               | 1140        |
|      | 6     | 50             | 25         | 1355           | 965              | 1120      |       | 1595     | 1805       | 485      | 3                   | 1563              | 3217               | 1845        |
|      | 10    | 50             | 25         | 1355           | 1520             | 1120      |       | 1705     | 1705       | 485      | 3                   | 1563              | 3217               | 1420        |
|      | 25    | 50             | 25         | 1355           | 1520             | 1120      |       | 1705     | 1705       | 485      | 3                   | 1563              | 3217               | 1420        |
| 1200 | 3.5   | 50             | 25         | 1435           | 920              | 1220      |       | 1625     | 1850       | 581      | 2.5                 | 670               | 4935               | 1285        |
|      | 6     | 50             | 25         | 1450           | 1025             | 1220      |       | 1730     | 1910       | 581      | 2.5                 | 1408              | 4161               | 2055        |
|      | 10    | 50             | 25         | 1450           | 1540             | 1220      |       | 1830     | 1830       | 581      | 2.5                 | 1408              | 4161               | 1680        |
|      | 25    | 50             | 25         | 1450           | 1540             | 1220      |       | 1830     | 1830       | 581      | 2.5                 | 1408              | 4161               | 1680        |

To be Specified by Purchaser