



Metal Bellows Capsules



Triad  **Bellows**
DESIGN + MANUFACTURING

MULTI-PLY BELLOWS CONSTRUCTION PROVIDES INCREASED PRESSURE AND MOVEMENT CAPABILITY COMPLETE WITH EASY TO WELD BANDED AND RESISTANCE WELDED NECKS.

SERIES-1

Triad Bellows Series-1 metal bellows are manufactured with heavier gauge T-321 s/s to achieve higher pressure ratings. The allowable movements shown are based on a minimum of 3000 non-concurrent cycles. For lower pressure applications a Series-2 expansion joint will provide increased movement capability. When a standard metal bellows is not the right fit we will design and build a custom metal bellows for your application at a standard price.

SERIES-2

Triad Bellows Series-2 expansion joints are manufactured with lighter gauge T-321 s/s material to achieve greater movement capability while still maintaining a minimum of 3000 life cycles. When an even higher cycle life is required let us know and we will go to work designing the perfect metal bellows for your application. Our EJMA 10 design software allows us to combine just the right thickness and number of bellows plies needed to balance performance and cost savings.

LOW PRESSURE EXHAUST

Triad Bellows low pressure exhaust series is perfect for engine exhaust, fans, blowers and ducting applications. Pipe sizes are standard but tube sizes are available on request. As with Series-1 and Series-2 custom sizes and designs can be made at standard prices. Each low pressure exhaust bellows is designed per EJMA 10th Edition standards to a minimum of 10,000 cycles.



2" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|-----|------------------------------------|-----------|-----------|-----|
| | 3" | 4.50" | 6" | N/A | 3" | 4.50" | 6" | N/A |
| Live Length | | | | | | | | |
| Part Number | 12-2030S1 | 12-2045S1 | 12-2060S1 | | 11-2030S1 | 11-2045S1 | 11-2060S1 | |
| Design Pressure (psig) | 300 | 250 | 150 | | 250 | 115 | 60 | |
| Design Temp (F) | 600 | 600 | 600 | | 600 | 600 | 600 | |
| Neck Length | .625 | .625 | .625 | | .625 | .625 | .625 | |
| Neck I.D. | 2.400 | 2.400 | 2.400 | | 2.400 | 2.400 | 2.400 | |
| Axial Movement* | .50 | .75 | 1.0 | | .50 | .75 | 1.0 | |
| Lateral Movement* | .188 | .375 | .75 | | .188 | .375 | .75 | |
| Axial Spring Rate | 1135 | 757 | 567 | | 516 | 344 | 258 | |
| Lateral Spring Rate | 1397 | 414 | 175 | | 633 | 187 | 79 | |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 5.78 sq.in.

2" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|-----|------------------------------------|-----------|-----------|-----|
| | 3" | 4.50" | 6" | N/A | 3" | 4.50" | 6" | N/A |
| Live Length | | | | | | | | |
| Part Number | 12-2030S2 | 12-2045S2 | 12-2060S2 | | 11-2030S2 | 11-2045S2 | 11-2060S2 | |
| Design Pressure (psig) | 275 | 130 | 70 | | 125 | 55 | 30 | |
| Design Temp (F) | 600 | 600 | 600 | | 600 | 600 | 600 | |
| Neck Length | .625 | .625 | .625 | | .625 | .625 | .625 | |
| Neck I.D. | 2.400 | 2.400 | 2.400 | | 2.400 | 2.400 | 2.400 | |
| Axial Movement* | .625 | 1.00 | 1.375 | | .625 | 1.00 | 1.375 | |
| Lateral Movement* | .188 | .50 | 1.00 | | .25 | .50 | 1.00 | |
| Axial Spring Rate | 568 | 379 | 284 | | 252 | 168 | 126 | |
| Lateral Spring Rate | 689 | 204 | 86 | | 306 | 91 | 38 | |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 5.78 sq.in.

2" Low Pressure Exhaust Bellows

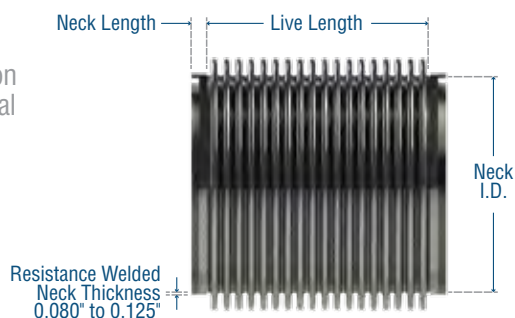
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|----------|----------|-----|------------------------------------|----------|----------|-----|
| | 3" | 4.50" | 6" | N/A | 3" | 4.50" | 6" | N/A |
| Live Length | | | | | | | | |
| Part Number | 12-2030R | 12-2045R | 12-2060R | | 11-2030R | 11-2045R | 11-2060R | |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | |
| Neck I.D. | 2.400 | 2.400 | 2.400 | | 2.400 | 2.400 | 2.400 | |
| Axial Movement* | .625 | 1.00 | 1.375 | | .625 | 1.00 | 1.375 | |
| Lateral Movement* | .25 | .50 | 1.00 | | .25 | .50 | 1.00 | |
| Axial Spring Rate | 255 | 170 | 128 | | 125 | 83 | 62 | |
| Lateral Spring Rate | 312 | 92 | 39 | | 151 | 45 | 19 | |

Tube size bellows available on request



Contact us for a personalized EJMA 10 data sheet based on your pressure, temperature and concurrent axial and lateral movements. Call (714) 204-4444 or (888) 866-1080

- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



2 1/2" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|-----------|------------------------------------|-----------|-----------|-----------|
| | 3" | 4.5" | 6" | 9" | 3" | 4.5" | 6" | 9" |
| Live Length | | | | | | | | |
| Part Number | 12-2530S1 | 12-2545S1 | 12-2560S1 | 12-2590S1 | 11-2530S1 | 11-2545S1 | 11-2560S1 | 11-2590S1 |
| Design Pressure (psig) | 275 | 140 | 80 | 35 | 190 | 125 | 70 | 30 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 |
| Axial Movement* | .75 | 1.25 | 1.75 | 1.50 | .50 | .875 | 1.25 | 1.50 |
| Lateral Movement* | .188 | .50 | 1.00 | 1.50 | .125 | .375 | .75 | 1.50 |
| Axial Spring Rate | 624 | 401 | 312 | 208 | 566 | 366 | 283 | 189 |
| Lateral Spring Rate | 1251 | 358 | 156 | 46 | 1131 | 325 | 141 | 42 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 9.51 sq.in.

2 1/2" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|-----------|------------------------------------|-----------|-----------|-----------|
| | 3" | 4.5" | 6" | 9" | 3" | 4.5" | 6" | 9" |
| Live Length | | | | | | | | |
| Part Number | 12-2530S2 | 12-2545S2 | 12-2560S2 | 12-2590S2 | 11-2530S2 | 11-2545S2 | 11-2560S2 | 11-2590S2 |
| Design Pressure (psig) | 140 | 135 | 75 | 30 | 125 | 60 | 35 | 15 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 |
| Axial Movement* | 1.00 | 1.25 | 1.75 | 1.50 | .75 | 1.25 | 1.75 | 1.50 |
| Lateral Movement* | .25 | .50 | 1.00 | 2.00 | .188 | .50 | 1.00 | 1.75 |
| Axial Spring Rate | 271 | 388 | 302 | 201 | 291 | 187 | 146 | 97 |
| Lateral Spring Rate | 541 | 347 | 152 | 45 | 582 | 166 | 73 | 22 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 9.51 sq.in.

2 1/2" Low Pressure Exhaust Bellows

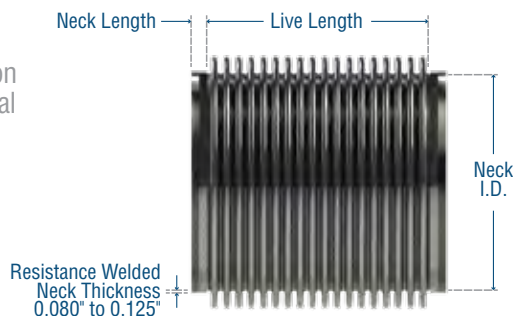
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|----------|----------|-----|------------------------------------|----------|----------|-----|
| | 4.5" | 6" | 9" | N/A | 4.5" | 6" | 9" | N/A |
| Live Length | | | | | | | | |
| Part Number | 12-2545R | 12-2560R | 12-2590R | | 11-2545R | 11-2560R | 11-2590R | |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | |
| Neck I.D. | 2.90 | 2.90 | 2.90 | | 2.90 | 2.90 | 2.90 | |
| Axial Movement* | 1.50 | 1.875 | 1.50 | | 1.375 | 1.875 | 1.50 | |
| Lateral Movement* | .625 | 1.00 | 2.00 | | .625 | 1.00 | 2.00 | |
| Axial Spring Rate | 145 | 113 | 73 | | 69 | 54 | 35 | |
| Lateral Spring Rate | 129 | 57 | 16 | | 61 | 27 | 8 | |

Tube size bellows available on request



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- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



3" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|-----------|------------------------------------|-----------|-----------|-----------|
| | 3" | 4.5" | 6" | 9" | 3" | 4.5" | 6" | 9" |
| Live Length | | | | | | | | |
| Part Number | 12-3530S1 | 12-3545S1 | 12-3560S1 | 12-3590S1 | 11-3530S1 | 11-3545S1 | 11-3560S1 | 11-3590S1 |
| Design Pressure (psig) | 350 | 350 | 300 | 140 | 275 | 275 | 155 | 70 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 3.525 | 3.525 | 3.525 | 3.525 | 3.525 | 3.525 | 3.525 | 3.525 |
| Axial Movement* | .50 | .75 | 1.125 | 1.625 | .50 | .75 | 1.00 | 1.625 |
| Lateral Movement* | .125 | .25 | .50 | 1.00 | .125 | .25 | .50 | 1.00 |
| Axial Spring Rate | 2520 | 1634 | 1260 | 840 | 1259 | 809 | 630 | 420 |
| Lateral Spring Rate | 6683 | 1927 | 835 | 248 | 3306 | 945 | 413 | 122 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 12.47 sq.in.

3" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|-----------|------------------------------------|-----------|-----------|-----------|
| | 3" | 4.5" | 6" | 9" | 3" | 4.5" | 6" | 9" |
| Live Length | | | | | | | | |
| Part Number | 12-3530S2 | 12-3545S2 | 12-3560S2 | 12-3590S2 | 11-3530S2 | 11-3545S2 | 11-3560S2 | 11-3590S2 |
| Design Pressure (psig) | 275 | 160 | 90 | 40 | 200 | 150 | 80 | 35 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 3.525 | 3.525 | 3.525 | 3.525 | 3.525 | 3.525 | 3.525 | 3.525 |
| Axial Movement* | .75 | 1.25 | 1.75 | 2.00 | .50 | .875 | 1.25 | 2.00 |
| Lateral Movement* | .188 | .50 | .875 | 1.75 | .125 | .375 | .625 | 1.50 |
| Axial Spring Rate | 718 | 462 | 359 | 239 | 679 | 437 | 340 | 226 |
| Lateral Spring Rate | 1866 | 539 | 236 | 70 | 1774 | 507 | 222 | 66 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 12.47 sq.in.

3" Low Pressure Exhaust Bellows

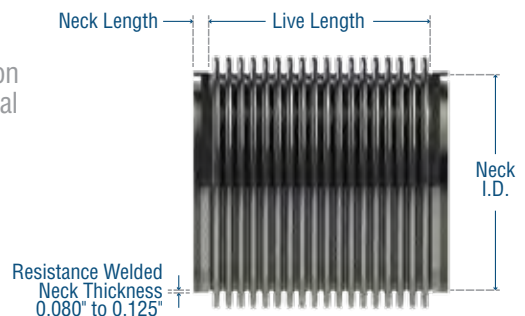
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|----------|----------|-----|------------------------------------|----------|----------|-----|
| | 4.5" | 6" | 9" | N/A | 4.5" | 6" | 9" | N/A |
| Live Length | | | | | | | | |
| Part Number | 12-3545R | 12-3560R | 12-3590R | | 11-3545R | 11-3560R | 11-3590R | |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | |
| Neck I.D. | 3.525 | 3.525 | 3.525 | | 3.525" | 3.525" | 3.525" | |
| Axial Movement* | 1.25 | 1.50 | 2.0 | | 1.00 | 1.25 | 2.0 | |
| Lateral Movement* | .50 | .625 | 1.0 | | .375 | .625 | 1.0 | |
| Axial Spring Rate | 167 | 123 | 83 | | 194 | 150 | 97 | |
| Lateral Spring Rate | 195 | 81 | 24 | | 225 | 98 | 28 | |

Tube size bellows available on request



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- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



3 1/2" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|-----------|------------------------------------|-----------|-----------|-----------|
| | 3" | 4.5" | 6" | 9" | 3" | 4.5" | 6" | 9" |
| Live Length | | | | | | | | |
| Part Number | 12-4030S1 | 12-4045S1 | 12-4060S1 | 12-4090S1 | 11-4030S1 | 11-4045S1 | 11-4060S1 | 11-4090S1 |
| Design Pressure (psig) | 350 | 300 | 250 | 100 | 300 | 300 | 250 | 100 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 4.025 | 4.025 | 4.025 | 4.025 | 4.025 | 4.025 | 4.025 | 4.025 |
| Axial Movement* | .625 | 1.00 | 1.375 | 2.00 | .50 | .625 | .875 | 1.50 |
| Lateral Movement* | .125 | .25 | .50 | 1.375 | .09 | .1875 | .375 | 1.00 |
| Axial Spring Rate | 1824 | 1277 | 983 | 639 | 1861 | 1294 | 992 | 647 |
| Lateral Spring Rate | 6478 | 2011 | 873 | 251 | 6563 | 2023 | 875 | 253 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 16.69 sq.in.

3 1/2" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|-----------|------------------------------------|-----------|-----------|-----------|
| | 3" | 4.5" | 6" | 9" | 3" | 4.5" | 6" | 9" |
| Live Length | | | | | | | | |
| Part Number | 12-4030S2 | 12-4045S2 | 12-4060S2 | 12-4090S2 | 11-4030S2 | 11-4045S2 | 11-4060S2 | 11-4090S2 |
| Design Pressure (psig) | 170 | 120 | 70 | 30 | 170 | 170 | 130 | 50 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 4.025 | 4.025 | 4.025 | 4.025 | 4.025 | 4.025 | 4.025 | 4.025 |
| Axial Movement* | 1.00 | 1.50 | 2.00 | 2.75 | .625 | .875 | 1.25 | 2.00 |
| Lateral Movement* | .188 | .50 | .875 | 2.00 | .125 | .25 | .50 | 1.25 |
| Axial Spring Rate | 509 | 358 | 277 | 179 | 919 | 641 | 493 | 321 |
| Lateral Spring Rate | 1794 | 560 | 244 | 70 | 3228 | 999 | 433 | 125 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 16.69 sq.in.

3 1/2" Low Pressure Exhaust Bellows

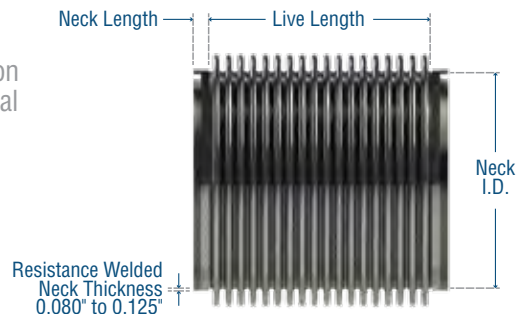
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|----------|----------|-----|------------------------------------|----------|----------|-----|
| | 4.5" | 6" | 9" | N/A | 4.5" | 6" | 9" | N/A |
| Live Length | | | | | | | | |
| Part Number | 12-4045R | 12-4060R | 12-4090R | | 11-4035R | 11-4060R | 11-4090R | |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | |
| Neck I.D. | 4.025 | 4.025 | 4.025 | | 4.025 | 4.025 | 4.025 | |
| Axial Movement* | 1.50 | 1.75 | 2.75 | | 1.25 | 1.625 | 2.50 | |
| Lateral Movement* | .50 | .625 | 1.0 | | .375 | .625 | 1.25 | |
| Axial Spring Rate | 137 | 107 | 68 | | 151 | 117 | 76 | |
| Lateral Spring Rate | 213 | 94 | 27 | | 235 | 102 | 29 | |

Tube size bellows available on request



Contact us for a personalized EJMA 10 data sheet based on your pressure, temperature and concurrent axial and lateral movements. Call (714) 204-4444 or (888) 866-1080

- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



4" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|------------|------------------------------------|-----------|-----------|------------|
| | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Live Length | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Part Number | 12-4545S1 | 12-4560S1 | 12-4590S1 | 12-45120S1 | 11-4545S1 | 11-4560S1 | 11-4590S1 | 11-45120S1 |
| Design Pressure (psig) | 300 | 275 | 120 | 65 | 275 | 275 | 120 | 65 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 4.525 | 4.525 | 4.525 | 4.525 | 4.525 | 4.525 | 4.525 | 4.525 |
| Axial Movement* | 1.00 | 1.375 | 2.00 | 2.50 | .625 | .875 | 1.50 | 2.00 |
| Lateral Movement* | .25 | .50 | 1.25 | 2.00 | .1875 | .25 | .875 | 1.50 |
| Axial Spring Rate | 1422 | 1094 | 711 | 527 | 1484 | 1138 | 742 | 569 |
| Lateral Spring Rate | 2751 | 1193 | 344 | 144 | 2848 | 1231 | 356 | 154 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 20.51 sq.in.

4" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|------------|------------------------------------|-----------|-----------|------------|
| | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Live Length | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Part Number | 12-4545S2 | 12-4560S2 | 12-4590S2 | 12-45120S2 | 11-4545S2 | 11-4560S2 | 11-4590S2 | 11-45120S2 |
| Design Pressure (psig) | 175 | 150 | 60 | 35 | 175 | 140 | 60 | 30 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 4.525 | 4.525 | 4.525 | 4.525 | 4.525 | 4.525 | 4.525 | 4.525 |
| Axial Movement* | 1.00 | 1.50 | 2.00 | 2.50 | .875 | 1.125 | 2.00 | 2.50 |
| Lateral Movement* | .375 | .625 | 1.50 | 2.00 | .25 | .44 | 1.00 | 1.75 |
| Axial Spring Rate | 755 | 581 | 378 | 291 | 717 | 550 | 359 | 275 |
| Lateral Spring Rate | 1455 | 632 | 182 | 79 | 1374 | 594 | 172 | 74 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 20.51 sq.in.

4" Low Pressure Exhaust Bellows

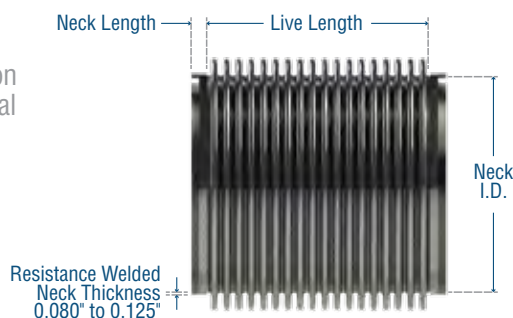
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|----------|-----------|-----|------------------------------------|----------|-----------|-----|
| | 6" | 9" | 12" | N/A | 6" | 9" | 12" | N/A |
| Live Length | 6" | 9" | 12" | N/A | 6" | 9" | 12" | N/A |
| Part Number | 12-4560R | 12-4590R | 12-45120R | | 11-4560R | 11-4590R | 11-45120R | |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | |
| Neck I.D. | 4.525 | 4.525 | 4.525 | | 4.525 | 4.525 | 4.525 | |
| Axial Movement* | 1.75 | 3.0 | 2.50 | | 1.50 | 2.50 | 2.0 | |
| Lateral Movement* | .625 | 1.0 | 1.5 | | .625 | 1.25 | 1.5 | |
| Axial Spring Rate | 120 | 46 | 55 | | 130 | 84 | 62 | |
| Lateral Spring Rate | 129 | 22 | 15 | | 140 | 40 | 17 | |

Tube size bellows available on request



Contact us for a personalized EJMA 10 data sheet based on your pressure, temperature and concurrent axial and lateral movements. Call (714) 204-4444 or (888) 866-1080

- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



5" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|------------|------------------------------------|-----------|-----------|------------|
| | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Live Length | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Part Number | 12-5545S1 | 12-5560S1 | 12-5590S1 | 12-55120S1 | 11-5545S1 | 11-5560S1 | 11-5590S1 | 11-55120S1 |
| Design Pressure (psig) | 275 | 225 | 200 | 125 | 250 | 250 | 125 | 70 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 5.85 | 5.85 | 5.85 | 5.85 | 5.85 | 5.85 | 5.85 | 5.85 |
| Axial Movement* | .875 | 1.125 | 1.75 | 2.375 | .75 | 1.00 | 1.50 | 2.125 |
| Lateral Movement* | .188 | .375 | .75 | 1.25 | .1875 | .312 | .75 | 1.375 |
| Axial Spring Rate | 2906 | 2180 | 1453 | 1090 | 1480 | 1110 | 740 | 555 |
| Lateral Spring Rate | 8396 | 3542 | 1049 | 443 | 4234 | 1786 | 529 | 223 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 30.63 sq.in.

5" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|------------|------------------------------------|-----------|-----------|------------|
| | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Live Length | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Part Number | 12-5545S2 | 12-5560S2 | 12-5590S2 | 12-55120S2 | 11-5545S2 | 11-5560S2 | 11-5590S2 | 11-55120S2 |
| Design Pressure (psig) | 200 | 200 | 120 | 65 | 100 | 100 | 60 | 30 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 5.85 | 5.85 | 5.85 | 5.85 | 5.85 | 5.85 | 5.85 | 5.85 |
| Axial Movement* | 1.00 | 1.50 | 2.25 | 3.00 | 1.00 | 1.375 | 2.00 | 3.00 |
| Lateral Movement* | .25 | .44 | 1.00 | 1.50 | .25 | .44 | 1.00 | 1.50 |
| Axial Spring Rate | 1417 | 1063 | 709 | 531 | 715 | 537 | 358 | 268 |
| Lateral Spring Rate | 4080 | 1721 | 510 | 215 | 2044 | 862 | 255 | 108 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 30.63 sq.in.

5" Low Pressure Exhaust Bellows

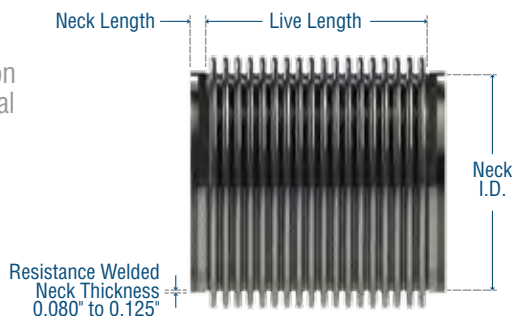
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|----------|-----------|-----|------------------------------------|----------|-----------|-----|
| | 6" | 9" | 12" | N/A | 6" | 9" | 12" | N/A |
| Live Length | 6" | 9" | 12" | N/A | 6" | 9" | 12" | N/A |
| Part Number | 12-5560R | 12-5590R | 12-55120R | | 11-5560R | 11-5590R | 11-55120R | |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | |
| Neck I.D. | 5.85 | 5.85 | 5.85 | | 5.85 | 5.85 | 5.85 | |
| Axial Movement* | 2.0 | 3.0 | 5.0 | | 1.25 | 2.50 | 3.5 | |
| Lateral Movement* | .625 | 1.0 | 1.50 | | .375 | 1.25 | 1.50 | |
| Axial Spring Rate | 105 | 66 | 43 | | 237 | 154 | 100 | |
| Lateral Spring Rate | 170 | 47 | 18 | | 380 | 110 | 46 | |

Tube size bellows available on request



Contact us for a personalized EJMA 10 data sheet based on your pressure, temperature and concurrent axial and lateral movements. Call (714) 204-4444 or (888) 866-1080

- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



6" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|------------|------------------------------------|-----------|-----------|------------|
| | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Live Length | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Part Number | 12-6545S1 | 12-6560S1 | 12-6590S1 | 12-65120S1 | 11-6545S1 | 11-6560S1 | 11-6590S1 | 11-65120S1 |
| Design Pressure (psig) | 260 | 260 | 225 | 125 | 250 | 250 | 150 | 80 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 6.650 | 6.650 | 6.650 | 6.650 | 6.650 | 6.650 | 6.650 | 6.650 |
| Axial Movement* | 1.00 | 1.25 | 2.00 | 2.75 | .75 | 1.00 | 1.625 | 2.25 |
| Lateral Movement* | .188 | .312 | .75 | 1.00 | .125 | .25 | .625 | 1.0 |
| Axial Spring Rate | 2665 | 1999 | 1332 | 999 | 1741 | 1306 | 871 | 653 |
| Lateral Spring Rate | 10729 | 4526 | 1341 | 566 | 6840 | 2886 | 855 | 361 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 41.83 sq.in.

6" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|------------|------------------------------------|-----------|-----------|------------|
| | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Live Length | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Part Number | 12-6545S2 | 12-6560S2 | 12-6590S2 | 12-65120S2 | 11-6545S2 | 11-6560S2 | 11-6590S2 | 11-65120S2 |
| Design Pressure (psig) | 200 | 200 | 145 | 80 | 125 | 125 | 65 | 35 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 6.650 | 6.650 | 6.650 | 6.650 | 6.650 | 6.650 | 6.650 | 6.650 |
| Axial Movement* | 1.00 | 1.375 | 2.125 | 3.00 | 1.00 | 1.375 | 2.25 | 3.125 |
| Lateral Movement* | .188 | .375 | .875 | 1.50 | .188 | .375 | .875 | 1.50 |
| Axial Spring Rate | 1684 | 1263 | 842 | 631 | 722 | 579 | 386 | 289 |
| Lateral Spring Rate | 6642 | 2802 | 830 | 350 | 3044 | 1284 | 380 | 161 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 41.83 sq.in.

6" Low Pressure Exhaust Bellows

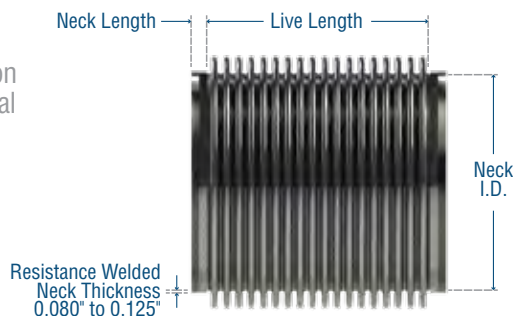
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|----------|-----------|-----|------------------------------------|----------|-----------|-----------|
| | 6" | 9" | 12" | N/A | 6" | 9" | 12" | 15" |
| Live Length | 6" | 9" | 12" | N/A | 6" | 9" | 12" | 15" |
| Part Number | 12-6560R | 12-6590R | 12-65120R | | 11-6560R | 11-6590R | 11-65120R | 11-65150R |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | 5 |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | 1200 |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | .50 |
| Neck I.D. | 6.650 | 6.650 | 6.650 | | 6.650 | 6.650 | 6.650 | 6.650 |
| Axial Movement* | 2.0 | 3.0 | 5.0 | | 1.375 | 2.50 | 3.5 | 4.25 |
| Lateral Movement* | .625 | 1.0 | 1.50 | | .375 | 1.0 | 1.50 | 2.0 |
| Axial Spring Rate | 131 | 82 | 49 | | 282 | 144 | 108 | 106 |
| Lateral Spring Rate | 288 | 80 | 28 | | 620 | 143 | 61 | 51 |

Tube size bellows available on request



Contact us for a personalized EJMA 10 data sheet based on your pressure, temperature and concurrent axial and lateral movements. Call (714) 204-4444 or (888) 866-1080

- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



8" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|------------|------------------------------------|-----------|-----------|------------|
| | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Live Length | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Part Number | 12-8545S1 | 12-8560S1 | 12-8590S1 | 12-85120S1 | 11-8545S1 | 11-8560S1 | 11-8590S1 | 11-85120S1 |
| Design Pressure (psig) | 260 | 260 | 240 | 150 | 240 | 240 | 150 | 100 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 8.650 | 8.650 | 8.650 | 8.650 | 8.650 | 8.650 | 8.650 | 8.650 |
| Axial Movement* | 1.00 | 1.25 | 2.00 | 3.00 | .75 | 1.00 | 1.625 | 2.125 |
| Lateral Movement* | .125 | .25 | .625 | .625 | .125 | .188 | .50 | .875 |
| Axial Spring Rate | 3389 | 2541 | 1694 | 1271 | 2211 | 1658 | 1106 | 829 |
| Lateral Spring Rate | 22073 | 9312 | 2759 | 1164 | 14128 | 5960 | 1766 | 745 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 69.07 sq.in.

8" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|-----------|------------|------------------------------------|-----------|-----------|------------|
| | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Live Length | 4.5" | 6" | 9" | 12" | 4.5" | 6" | 9" | 12" |
| Part Number | 12-8545S2 | 12-8560S2 | 12-8590S2 | 12-85120S2 | 11-8545S2 | 11-8560S2 | 11-8590S2 | 11-85120S2 |
| Design Pressure (psig) | 200 | 200 | 175 | 115 | 150 | 150 | 90 | 50 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 8.650 | 8.650 | 8.650 | 8.650 | 8.650 | 8.650 | 8.650 | 8.650 |
| Axial Movement* | 1.00 | 1.25 | 2.00 | 2.75 | .875 | 1.25 | 2.00 | 2.75 |
| Lateral Movement* | .125 | .25 | .625 | 1.125 | .125 | .25 | .625 | 1.125 |
| Axial Spring Rate | 2342 | 1824 | 1216 | 912 | 1113 | 835 | 557 | 417 |
| Lateral Spring Rate | 15487 | 6533 | 1936 | 817 | 7090 | 2991 | 886 | 374 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 69.07 sq.in.

8" Low Pressure Exhaust Bellows

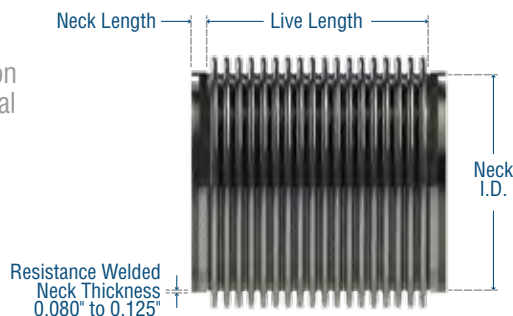
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|----------|-----------|-----|------------------------------------|----------|-----------|-----------|
| | 6" | 9" | 12" | N/A | 6" | 9" | 12" | 15" |
| Live Length | 6" | 9" | 12" | N/A | 6" | 9" | 12" | 15" |
| Part Number | 12-8560R | 12-8590R | 12-85120R | | 11-8560R | 11-8590R | 11-85120R | 11-85150R |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | 5 |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | 1200 |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | .50 |
| Neck I.D. | 8.650 | 8.650 | 8.650 | | 8.650 | 8.650 | 8.650 | 8.650 |
| Axial Movement* | 2.0 | 3.0 | 5.50 | | 1.375 | 2.50 | 3.5 | 4.25 |
| Lateral Movement* | .50 | 1.0 | 1.50 | | .25 | .75 | 1.25 | 1.88 |
| Axial Spring Rate | 165 | 103 | 64 | | 365 | 196 | 147 | 129 |
| Lateral Spring Rate | 591 | 165 | 58 | | 1305 | 315 | 133 | 93 |

Tube size bellows available on request



Contact us for a personalized EJMA 10 data sheet based on your pressure, temperature and concurrent axial and lateral movements. Call (714) 204-4444 or (888) 866-1080

- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



10" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-10560S1 | 12-10590S1 | 12-105120S1 | 12-105150S1 | 11-10560S1 | 11-10590S1 | 11-105120S1 | 11-105150S1 |
| Design Pressure (psig) | 250 | 250 | 150 | 100 | 135 | 135 | 75 | 50 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 10.775 | 10.775 | 10.775 | 10.775 | 10.775 | 10.775 | 10.775 | 10.775 |
| Axial Movement* | 1.50 | 2.375 | 3.375 | 4.25 | 1.375 | 2.25 | 3.25 | 4.00 |
| Lateral Movement* | .25 | .50 | 1.00 | 1.625 | .25 | .50 | 1.00 | 1.50 |
| Axial Spring Rate | 2439 | 1578 | 1165 | 958 | 1266 | 815 | 593 | 488 |
| Lateral Spring Rate | 14126 | 4052 | 1681 | 884 | 7236 | 2080 | 851 | 146 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 107.88 sq.in.

10" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-10560S2 | 12-10590S2 | 12-105120S2 | 12-105150S2 | 11-10560S2 | 11-10590S2 | 11-105120S2 | 11-105150S2 |
| Design Pressure (psig) | 140 | 95 | 50 | 30 | 100 | 100 | 50 | 50 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 10.775 | 10.775 | 10.775 | 10.775 | 10.775 | 10.775 | 10.775 | 10.775 |
| Axial Movement* | 2.00 | 3.25 | 4.50 | 6.00 | 1.625 | 2.50 | 3.50 | 4.50 |
| Lateral Movement* | .375 | .875 | 1.50 | 2.00 | .25 | .625 | 1.25 | 1.75 |
| Axial Spring Rate | 854 | 552 | 408 | 336 | 899 | 579 | 428 | 352 |
| Lateral Spring Rate | 4897 | 1412 | 586 | 308 | 5377 | 1477 | 613 | 322 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 107.88 sq.in.

10" Low Pressure Exhaust Bellows

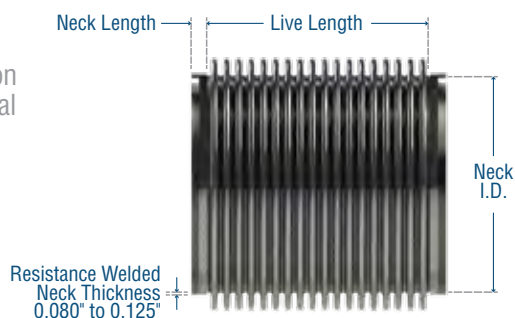
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|------------|-----|------------------------------------|-----------|------------|------------|
| | 6" | 9" | 12" | N/A | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-10560R | 12-10590R | 12-105120R | | 11-10560R | 11-10590R | 11-105120R | 11-105150R |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | 5 |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | 1200 |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | .50 |
| Neck I.D. | 10.775 | 10.775 | 10.775 | | 10.775 | 10.775 | 10.775 | 10.775 |
| Axial Movement* | 2.0 | 3.0 | 5.50 | | 1.75 | 3.0 | 4.0 | 5.5 |
| Lateral Movement* | .430 | 1.0 | 1.50 | | .25 | .75 | 1.25 | 1.88 |
| Axial Spring Rate | 154 | 103 | 80 | | 362 | 233 | 171 | 146 |
| Lateral Spring Rate | 845 | 248 | 110 | | 2069 | 593 | 245 | 133 |

Tube size bellows available on request.



Contact us for a personalized EJMA 10 data sheet based on your pressure, temperature and concurrent axial and lateral movements. Call (714) 204-4444 or (888) 866-1080

- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



12" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-12560S1 | 12-12590S1 | 12-125120S1 | 12-125150S1 | 11-12560S1 | 11-12590S1 | 11-125120S1 | 11-125150S1 |
| Design Pressure (psig) | 250 | 250 | 160 | 120 | 135 | 135 | 90 | 60 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 12.775 | 12.775 | 12.775 | 12.775 | 12.775 | 12.775 | 12.775 | 12.775 |
| Axial Movement* | 1.50 | 2.375 | 3.25 | 4.125 | 1.375 | 2.25 | 3.125 | 4.00 |
| Lateral Movement* | .188 | .50 | .875 | 1.50 | .188 | .4375 | .875 | 1.375 |
| Axial Spring Rate | 2926 | 1894 | 1399 | 1150 | 1470 | 952 | 703 | 578 |
| Lateral Spring Rate | 23045 | 6653 | 2761 | 1451 | 11523 | 3328 | 1382 | 726 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 148.60 sq.in.

12" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-12560S2 | 12-12590S2 | 12-125120S2 | 12-125150S2 | 11-12560S2 | 11-12590S2 | 11-125120S2 | 11-125150S2 |
| Design Pressure (psig) | 140 | 110 | 60 | 40 | 110 | 110 | 60 | 40 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 12.775 | 12.775 | 12.775 | 12.775 | 12.775 | 12.775 | 12.775 | 12.775 |
| Axial Movement* | 2.00 | 3.25 | 4.50 | 6.00 | 1.63 | 2.50 | 3.50 | 4.50 |
| Lateral Movement* | .25 | .75 | 1.375 | 1.75 | .188 | .50 | 1.00 | 1.625 |
| Axial Spring Rate | 1009 | 652 | 482 | 396 | 1059 | 686 | 507 | 416 |
| Lateral Spring Rate | 7921 | 2285 | 948 | 499 | 8821 | 2410 | 998 | 526 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 148.60 sq.in.

12" Low Pressure Exhaust Bellows

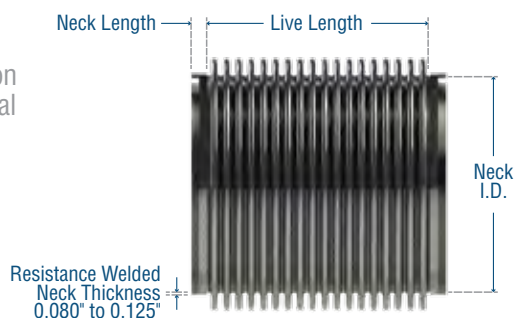
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|------------|-----|------------------------------------|-----------|------------|------------|
| | 6" | 9" | 12" | N/A | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-12560R | 12-12590R | 12-125120R | | 11-12560R | 11-12590R | 11-125120R | 11-125150R |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | 5 |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | 1200 |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | .50 |
| Neck I.D. | 12.775 | 12.775 | 12.775 | | 12.775 | 12.775 | 12.775 | 12.775 |
| Axial Movement* | 2.0 | 3.0 | 5.50 | | 1.75 | 3.0 | 4.0 | 5.0 |
| Lateral Movement* | .375 | .875 | 1.50 | | .25 | .63 | 1.0" | 1.75 |
| Axial Spring Rate | 181 | 121 | 91 | | 428 | 276 | 204 | 172 |
| Lateral Spring Rate | 1,368 | 405 | 171 | | 3352 | 968 | 399 | 216 |

Tube size bellows available on request.



Contact us for a personalized EJMA 10 data sheet based on your pressure, temperature and concurrent axial and lateral movements. Call (714) 204-4444 or (888) 866-1080

- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



14" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-14060S1 | 12-14090S1 | 12-140120S1 | 12-140150S1 | 11-14060S1 | 11-14090S1 | 11-140120S1 | 11-140150S1 |
| Design Pressure (psig) | 200 | 190 | 140 | 85 | 185 | 175 | 160 | 115 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 14.025 | 14.025 | 14.025 | 14.025 | 14.025 | 14.025 | 14.025 | 14.025 |
| Axial Movement* | 1.75 | 2.75 | 3.50 | 4.75 | 1.25 | 2.00 | 2.50 | 3.25 |
| Lateral Movement* | .25 | .50 | 1.00 | 1.50 | .125 | .375 | .625 | 1.00 |
| Axial Spring Rate | 2137 | 1425 | 1069 | 855 | 2832 | 1888 | 1416 | 1133 |
| Lateral Spring Rate | 20560 | 6092 | 2570 | 1316 | 27178 | 8053 | 3397 | 1739 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 181.10 sq.in.

14" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-14060S2 | 12-14090S2 | 12-140120S2 | 12-140150S2 | 11-14060S2 | 11-14090S2 | 11-140120S2 | 11-140150S2 |
| Design Pressure (psig) | 155 | 150 | 95 | 60 | 95 | 90 | 70 | 40 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 14.025 | 14.025 | 14.025 | 14.025 | 14.025 | 14.025 | 14.025 | 14.025 |
| Axial Movement* | 2.00 | 3.00 | 4.25 | 5.50 | 1.75 | 2.75 | 3.75 | 4.75 |
| Lateral Movement* | .25 | .625 | 1.125 | 1.75 | .188 | .50 | 1.00 | 1.50 |
| Axial Spring Rate | 1525 | 1016 | 762 | 610 | 1085 | 723 | 542 | 434 |
| Lateral Spring Rate | 14649 | 4340 | 1831 | 938 | 10389 | 3078 | 1299 | 665 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 181.80 sq.in.

14" Low Pressure Exhaust Bellows

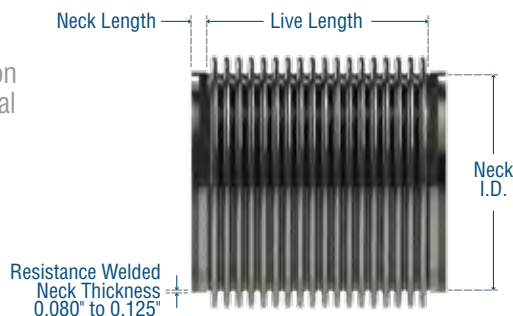
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|------------|-----|------------------------------------|-----------|------------|------------|
| | 6" | 9" | 12" | N/A | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-14060R | 12-14090R | 12-140120R | | 11-14060R | 11-14090R | 11-140120R | 11-140150R |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | 5 |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | 1200 |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | .50 |
| Neck I.D. | 14.025 | 14.025 | 14.025 | | 14.025 | 14.025 | 14.025 | 14.025 |
| Axial Movement* | 2.0 | 3.0 | 5.50 | | 2.25 | 3.0 | 4.5 | 6.0 |
| Lateral Movement* | .375 | .75 | 1.50 | | .25 | .63 | 1.0 | 1.75 |
| Axial Spring Rate | 198 | 132 | 99 | | 312 | 206 | 155 | 133 |
| Lateral Spring Rate | 1,788 | 530 | 223 | | 2980 | 877 | 370 | 204 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded.



Contact us for a personalized EJMA 10 data sheet based on your pressure, temperature and concurrent axial and lateral movements. Call (714) 204-4444 or (888) 866-1080

- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



16" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-16060S1 | 12-16090S1 | 12-160120S1 | 12-160150S1 | 11-16060S1 | 11-16090S1 | 11-160120S1 | 11-160150S1 |
| Design Pressure (psig) | 200 | 190 | 150 | 100 | 180 | 170 | 155 | 125 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 16.025 | 16.025 | 16.025 | 16.025 | 16.025 | 16.025 | 16.025 | 16.025 |
| Axial Movement* | 1.875 | 2.75 | 3.75 | 5.00 | 1.25 | 1.75 | 2.625 | 3.25 |
| Lateral Movement* | .188 | .50 | .875 | 1.25 | .125 | .25 | .625 | 1.00 |
| Axial Spring Rate | 2436 | 1614 | 1218 | 975 | 3232 | 2155 | 1616 | 1293 |
| Lateral Spring Rate | 30016 | 8842 | 3752 | 1921 | 39730 | 11772 | 4966 | 2543 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 231.68 sq.in.

16" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-16060S2 | 12-16090S2 | 12-160120S2 | 12-160150S2 | 11-16060S2 | 11-16090S2 | 11-160120S2 | 11-160150S2 |
| Design Pressure (psig) | 165 | 160 | 120 | 75 | 95 | 90 | 75 | 50 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 16.025 | 16.025 | 16.025 | 16.025 | 16.025 | 16.025 | 16.025 | 16.025 |
| Axial Movement* | 2.00 | 3.00 | 4.00 | 5.25 | 1.75 | 2.75 | 3.75 | 4.75 |
| Lateral Movement* | .188 | .50 | .875 | 1.50 | .188 | .375 | .75 | 1.375 |
| Axial Spring Rate | 1872 | 1248 | 936 | 749 | 1238 | 825 | 619 | 495 |
| Lateral Spring Rate | 22953 | 6801 | 2869 | 1469 | 15189 | 4500 | 1899 | 972 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 231.68 sq.in.

16" Low Pressure Exhaust Bellows

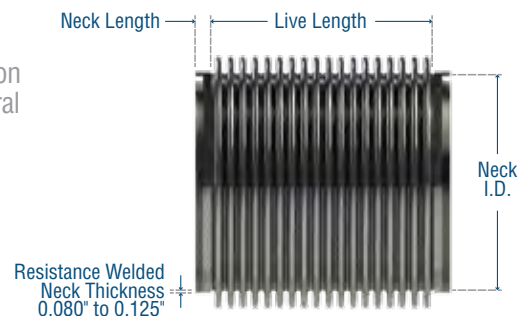
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|------------|-----|------------------------------------|-----------|------------|------------|
| | 6" | 9" | 12" | N/A | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-16060R | 12-16090R | 12-160120R | | 11-16060R | 11-16090R | 11-160120R | 11-160150R |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | 5 |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | 1200 |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | .50 |
| Neck I.D. | 16.025 | 16.025 | 16.025 | | 16.025 | 16.025 | 16.025 | 16.025 |
| Axial Movement* | 2.0 | 3.0 | 5.50 | | 2.25 | 3.0 | 4.5 | 6.0 |
| Lateral Movement* | .25 | .625 | 1.25 | | .25 | .63 | 1.0 | 1.63 |
| Axial Spring Rate | 225 | 150 | 113 | | 355 | 235 | 176 | 152 |
| Lateral Spring Rate | 2,623 | 177 | 328 | | 4352 | 1,280 | 540 | 297 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded.



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- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



18" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-18060S1 | 12-18090S1 | 12-180120S1 | 12-180150S1 | 11-18060S1 | 11-18090S1 | 11-180120S1 | 11-180150S1 |
| Design Pressure (psig) | 200 | 180 | 175 | 110 | 180 | 170 | 160 | 150 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 18.025 | 18.025 | 18.025 | 18.025 | 18.025 | 18.025 | 18.025 | 18.025 |
| Axial Movement* | 1.875 | 2.75 | 3.75 | 4.75 | 1.25 | 1.875 | 2.50 | 3.25 |
| Lateral Movement* | .188 | .375 | .75 | 1.25 | .125 | .25 | .50 | .875 |
| Axial Spring Rate | 2735 | 1823 | 1367 | 1094 | 3631 | 2420 | 1815 | 1452 |
| Lateral Spring Rate | 41988 | 12441 | 5248 | 2687 | 55622 | 16481 | 6953 | 3560 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 289.38 sq.in.

18" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-18060S2 | 12-18090S2 | 12-180120S2 | 12-180150S2 | 11-18060S2 | 11-18090S2 | 11-180120S2 | 11-180150S2 |
| Design Pressure (psig) | 160 | 155 | 125 | 80 | 95 | 90 | 80 | 55 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 18.025 | 18.025 | 18.025 | 18.025 | 18.025 | 18.025 | 18.025 | 18.025 |
| Axial Movement* | 2.00 | 3.00 | 4.00 | 5.25 | 1.75 | 2.625 | 3.625 | 4.625 |
| Lateral Movement* | .188 | .375 | .875 | 1.375 | .188 | .375 | .75 | 1.25 |
| Axial Spring Rate | 1950 | 1300 | 975 | 780 | 1391 | 927 | 695 | 556 |
| Lateral Spring Rate | 29908 | 8862 | 3738 | 1914 | 21270 | 6302 | 2659 | 1361 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 289.38 sq.in.

18" Low Pressure Exhaust Bellows

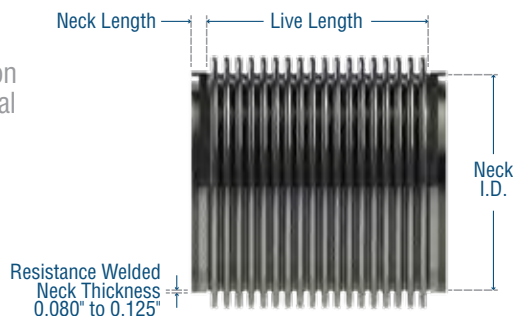
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|------------|-----|------------------------------------|-----------|------------|------------|
| | 6" | 9" | 12" | N/A | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-18060R | 12-18090R | 12-180120R | | 11-18060R | 11-18090R | 11-180120R | 11-180120R |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | 5 |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | 1200 |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | .50 |
| Neck I.D. | 18.025 | 18.025 | 18.025 | | 18.025 | 18.025 | 18.025 | 18.025 |
| Axial Movement* | 2.0 | 3.0 | 5.50 | | 2.25 | 3.0 | 4.5 | 6.0 |
| Lateral Movement* | .25 | .50 | 1.13 | | .188 | .50 | .88 | 1.5" |
| Axial Spring Rate | 253 | 168 | 126 | | 399 | 264 | 198 | 170 |
| Lateral Spring Rate | 3,684 | 1,092 | 461 | | 6090 | 1,790 | 755 | 416 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded.



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- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



20" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-20060S1 | 12-20090S1 | 12-200120S1 | 12-200150S1 | 11-20060S1 | 11-20090S1 | 11-200120S1 | 11-200150S1 |
| Design Pressure (psig) | 200 | 190 | 175 | 125 | 180 | 170 | 160 | 150 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 20.025 | 20.025 | 20.025 | 20.025 | 20.025 | 20.025 | 20.025 | 20.025 |
| Axial Movement* | 1.75 | 2.75 | 3.75 | 4.75 | 1.25 | 1.875 | 2.50 | 3.25 |
| Lateral Movement* | .125 | .375 | .625 | 1.00 | .100 | .25 | .50 | .75 |
| Axial Spring Rate | 3033 | 2022 | 1516 | 1213 | 4028 | 2685 | 2014 | 1611 |
| Lateral Spring Rate | 56766 | 16820 | 7096 | 3633 | 75252 | 22297 | 9406 | 4816 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 352.82 sq.in.

20" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-20060S2 | 12-20090S2 | 12-200120S2 | 12-200150S2 | 11-20060S2 | 11-20090S2 | 11-200120S2 | 11-200150S2 |
| Design Pressure (psig) | 155 | 150 | 135 | 90 | 95 | 90 | 80 | 60 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 20.025 | 20.025 | 20.025 | 20.025 | 20.025 | 20.025 | 20.025 | 20.025 |
| Axial Movement* | 2.00 | 3.00 | 4.00 | 5.25 | 1.75 | 2.625 | 3.625 | 4.625 |
| Lateral Movement* | .188 | .375 | .75 | 1.25 | .125 | .375 | .625 | 1.00 |
| Axial Spring Rate | 2162 | 1441 | 1081 | 865 | 1542 | 1028 | 771 | 617 |
| Lateral Spring Rate | 40430 | 11979 | 5054 | 2587 | 28772 | 8525 | 3597 | 1841 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 352.82 sq.in.

20" Low Pressure Exhaust Bellows

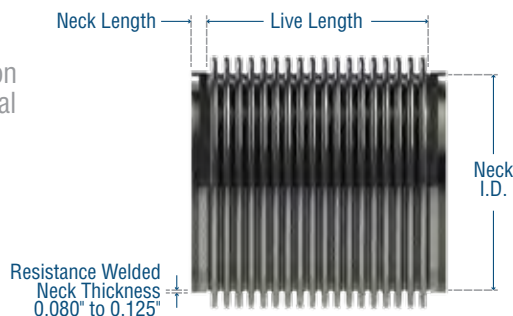
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|------------|-----|------------------------------------|-----------|------------|------------|
| | 6" | 9" | 12" | N/A | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-20060R | 12-20090R | 12-200120R | | 11-20060R | 11-20090R | 11-200120R | 11-200150R |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | 5 |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | 1200 |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | .50 |
| Neck I.D. | 20.025 | 20.025 | 20.025 | | 20.025 | 20.025 | 20.025 | 20.025 |
| Axial Movement* | 2.0 | 3.0 | 5.25 | | 2.25 | 3.0 | 4.5 | 6.0 |
| Lateral Movement* | .25 | .50 | 1.0 | | .188 | .50 | .75 | 1.38 |
| Axial Spring Rate | 280 | 186 | 171 | | 442 | 292 | 219 | 189 |
| Lateral Spring Rate | 4,997 | 1,480 | 783 | | 8235 | 2,420 | 1,021 | 562 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded.



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- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



22" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-22060S1 | 12-22090S1 | 12-220120S1 | 12-220150S1 | 11-22060S1 | 11-22090S1 | 11-220120S1 | 11-220150S1 |
| Design Pressure (psig) | 195 | 185 | 175 | 135 | 175 | 165 | 155 | 150 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 22.025 | 22.025 | 22.025 | 22.025 | 22.025 | 22.025 | 22.025 | 22.025 |
| Axial Movement* | 1.75 | 2.75 | 3.75 | 4.75 | 1.25 | 1.875 | 2.625 | 3.25 |
| Lateral Movement* | .125 | .325 | .625 | 1.00 | .100 | .25 | .375 | .625 |
| Axial Spring Rate | 3330 | 2220 | 1665 | 1332 | 4424 | 2950 | 2212 | 1770 |
| Lateral Spring Rate | 74644 | 22117 | 9331 | 4777 | 99011 | 29337 | 12376 | 6337 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 422.55 sq.in.

22" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-22060S2 | 12-22090S2 | 12-220120S2 | 12-220150S2 | 11-22060S2 | 11-22090S2 | 11-220120S2 | 11-220150S2 |
| Design Pressure (psig) | 155 | 150 | 135 | 95 | 95 | 90 | 85 | 60 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 22.025 | 22.025 | 22.025 | 22.025 | 22.025 | 22.025 | 22.025 | 22.025 |
| Axial Movement* | 2.00 | 3.00 | 4.00 | 5.25 | 1.75 | 2.625 | 3.625 | 4.625 |
| Lateral Movement* | .125 | .375 | .625 | 1.125 | .125 | .25 | .625 | 1.00 |
| Axial Spring Rate | 2373 | 1582 | 1187 | 949 | 1693 | 1129 | 847 | 677 |
| Lateral Spring Rate | 53157 | 15750 | 6645 | 3402 | 37840 | 11212 | 4730 | 2422 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 422.55 sq.in.

22" Low Pressure Exhaust Bellows

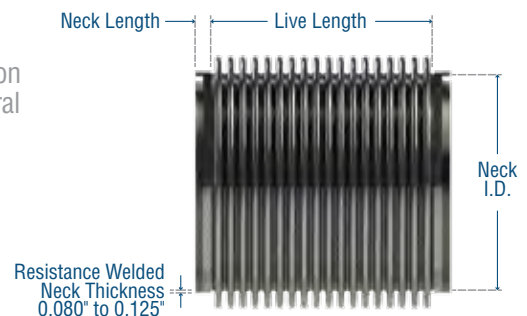
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|------------|-----|------------------------------------|-----------|------------|------------|
| | 6" | 9" | 12" | N/A | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-22060R | 12-22090R | 12-220120R | | 11-22060R | 11-22090R | 11-220120R | 11-220150R |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | 5 |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | 1200 |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | .50 |
| Neck I.D. | 22.025 | 22.025 | 22.025 | | 22.025 | 22.025 | 22.025 | 22.025 |
| Axial Movement* | 2.0 | 3.0 | 5.25 | | 2.125 | 3.0 | 4.5 | 6.0 |
| Lateral Movement* | .188 | .50 | .875 | | .188 | .38 | .75 | 1.25 |
| Axial Spring Rate | 307 | 204 | 187 | | 485 | 321 | 240 | 207 |
| Lateral Spring Rate | 6,587 | 1,952 | 1,030 | | 10831 | 2,182 | 1,342 | 739 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded.



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- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



24" Series-1 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-24060S1 | 12-24090S1 | 12-240120S1 | 12-240150S1 | 11-24060S1 | 11-24090S1 | 11-240120S1 | 11-240150S1 |
| Design Pressure (psig) | 195 | 185 | 175 | 150 | 165 | 160 | 150 | 150 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 24.025 | 24.025 | 24.025 | 24.025 | 24.025 | 24.025 | 24.025 | 24.025 |
| Axial Movement* | 1.75 | 2.75 | 3.75 | 4.75 | 1.25 | 1.875 | 2.625 | 3.25 |
| Lateral Movement* | .125 | .325 | .50 | .875 | .062 | .188 | .375 | .625 |
| Axial Spring Rate | 3625 | 2417 | 1813 | 1450 | 4820 | 3213 | 2410 | 1928 |
| Lateral Spring Rate | 95882 | 28409 | 11985 | 6136 | 127289 | 37715 | 15911 | 8147 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 498.56 sq.in.

24" Series-2 Metal Bellows

| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|------------|-------------|-------------|------------------------------------|------------|-------------|-------------|
| | 6" | 9" | 12" | 15" | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-24060S2 | 12-24090S2 | 12-240120S2 | 12-240150S2 | 11-24060S2 | 11-24090S2 | 11-240120S1 | 11-240150S2 |
| Design Pressure (psig) | 155 | 150 | 135 | 100 | 95 | 90 | 85 | 75 |
| Design Temp (F) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Neck Length | .625 | .625 | .625 | .625 | .625 | .625 | .625 | .625 |
| Neck I.D. | 24.025 | 24.025 | 24.025 | 24.025 | 24.025 | 24.025 | 24.025 | 24.025 |
| Axial Movement* | 2.00 | 3.00 | 4.00 | 5.25 | 1.75 | 2.625 | 3.625 | 4.50 |
| Lateral Movement* | .125 | .25 | .625 | 1.00 | .125 | .25 | .50 | .875 |
| Axial Spring Rate | 2584 | 1723 | 1292 | 1034 | 1844 | 1229 | 922 | 737 |
| Lateral Spring Rate | 68298 | 20236 | 8537 | 4371 | 48628 | 14408 | 6079 | 3112 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded. Effective area = 498.56 sq.in.

24" Low Pressure Exhaust Bellows

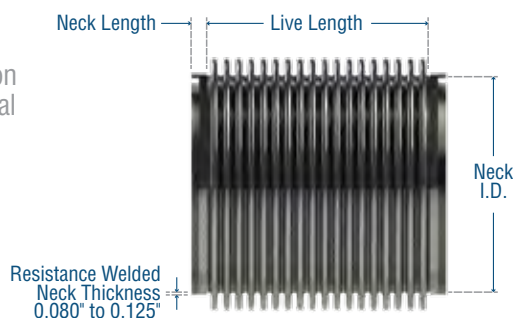
| | MULTI-PLY BELLOWS T-321 STAINLESS | | | | SINGLE-PLY BELLOWS T-321 STAINLESS | | | |
|------------------------|-----------------------------------|-----------|------------|-----|------------------------------------|-----------|------------|------------|
| | 6" | 9" | 12" | N/A | 6" | 9" | 12" | 15" |
| Live Length | | | | | | | | |
| Part Number | 12-24060R | 12-24090R | 12-240120R | | 11-24060R | 11-24090R | 11-240120R | 11-240150R |
| Design Pressure (psig) | 5 | 5 | 5 | | 5 | 5 | 5 | 5 |
| Design Temp (F) | 1200 | 1200 | 1200 | | 1200 | 1200 | 1200 | 1200 |
| Neck Length | .50 | .50 | .50 | | .50 | .50 | .50 | .50 |
| Neck I.D. | 24.025 | 24.025 | 24.025 | | 24.025 | 24.025 | 24.025 | 24.025 |
| Axial Movement* | 2.0 | 3.0 | 5.25 | | 2.125 | 3.0 | 4.5 | 6.75 |
| Lateral Movement* | .188 | .50 | .75 | | .25 | .38 | .63 | 1.25 |
| Axial Spring Rate | 333 | 222 | 204 | | 528 | 349 | 262 | 130 |
| Lateral Spring Rate | 8,482 | 2,513 | 1,324 | | 13920 | 4,088 | 1,725 | 564 |

EJMA 10th Edition data sheets available on request. Necks are banded and resistance welded.

Contact us for a personalized EJMA 10 data sheet based on your pressure, temperature and concurrent axial and lateral movements. Call (714) 204-4444 or (888) 866-1080



- *Movements are non-concurrent:
- Multi-ply design 3000 cycles minimum
 - Single-ply design 3000 cycles minimum
 - Exhaust bellows 10,000 cycles minimum



Metal Bellows Options

VANSTONE STUB ENDS

Precisely fitted to the bellows necks and shipped un-welded. Simply remove the vanstone stub from the bellows neck and reinstall with your flange. Vanstone stub ends are an economical choice when floating flanges are required. Stub ends can be fabricated in a variety of materials and thicknesses. The most common materials include T-304, T316L, T-321, Inconel, Hastelloy and Alloy-X.



FLOW LINERS

Flow liners may be required when flow velocities are high and might induce resonant vibration of the bellows. Flow liners can be expanded to fit flanges and pipes or expanded to fit right into the bellow necks. Another option is to fit the flow liner to the bellows neck and resistance weld in place. As with the vanstones, flow liners are offered in a wide variety of materials and thicknesses. For vertical applications drain holes can be added when necessary.



TUBE ENDS

For ease of fabrication tube ends can be fitted to the bellows necks of welded in place if preferred. Just add your flanges, pressure test and you are ready to ship. As with other bellows options, tube ends can be made in almost any alloy and thickness. Check with your sales engineer to make sure that your tube end is suitable for your pressure and temperature.



Custom Designed Metal Bellows

Triad Bellows can custom design and manufacture metal bellows to meet your specific application requirements. Each bellows is designed to the latest EJMA standards using sophisticated design software. Data sheets can be provided for each bellows design to illustrate the pressure and temperature rating, the theoretical spring rates and the theoretical cycle life expectancy.

Bellows are manufactured from 2" through 104" diameter in a wide variety of stainless steel and exotic alloys. With a large inventory of modular tooling sizes, odd size bellows and metric bellows can be manufactured. Let the experienced sales engineers at Triad Bellows guide you through the selection process. Features like handed and resistance welded necks will make fabrication a simple process.

A multi-ply bellows is the better choice for a longer cycle life and lower spring rates.



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