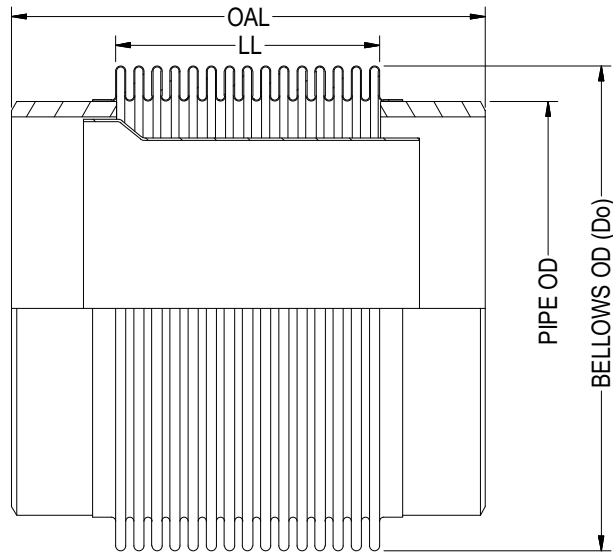


# TYPE -20



ISOMETRIC VIEW

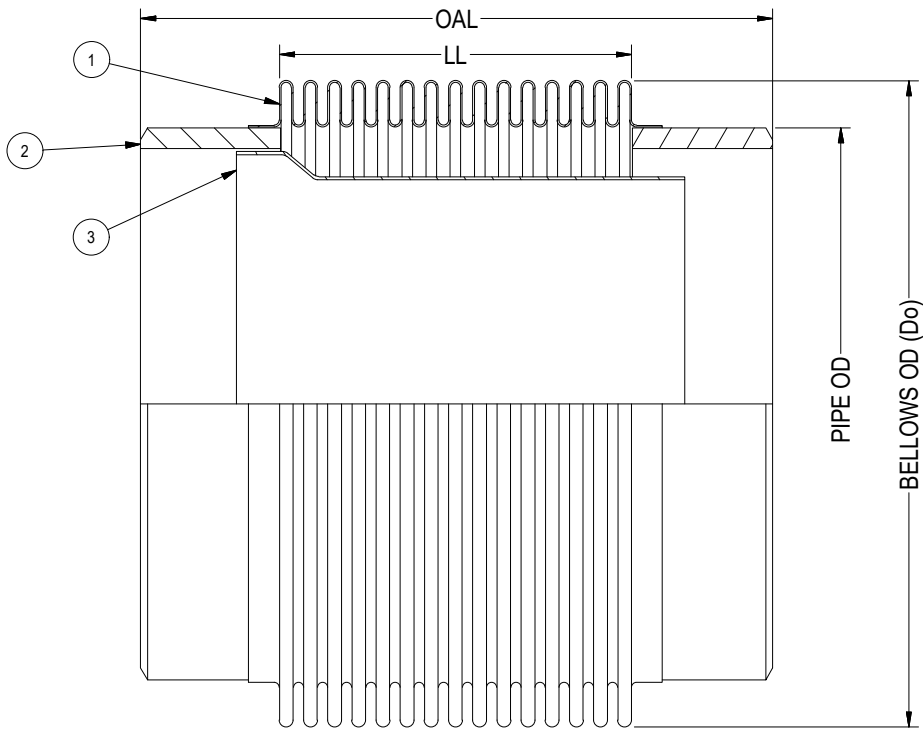
| PIPE SIZE | BELLOWS OD (Do) | LIVE LENGTH (LL) | OVERALL LENGTH (OAL) |
|-----------|-----------------|------------------|----------------------|
| 0.75      | 1.27            | 1.33             | 6.00                 |
| 1         | 1.75            | 2.00             | 8.00                 |
| 1-1/2     | 2.50            | 2.00             | 8.00                 |
| 2         | 3.10            | 2.00             | 8.00                 |
| 2         | 3.10            | 6.00             | 12.00                |
| 2-1/2     | 3.70            | 2.00             | 8.00                 |
| 2-1/2     | 3.70            | 6.00             | 12.00                |
| 3         | 4.40            | 2.00             | 8.00                 |
| 3         | 4.40            | 6.00             | 12.00                |
| 4         | 5.36            | 2.50             | 8.00                 |
| 4         | 5.36            | 5.50             | 12.00                |
| 4         | 5.15            | 9.00             | 15.00                |
| 5         | 6.55            | 5.50             | 12.00                |
| 6         | 7.70            | 3.00             | 9.00                 |
| 6         | 7.63            | 5.50             | 12.00                |
| 8         | 10.10           | 4.13             | 10.00                |
| 8         | 10.10           | 5.50             | 12.00                |
| 10        | 12.00           | 2.00             | 8.00                 |
| 10        | 12.00           | 5.50             | 12.00                |

| PIPE SIZE | BELLOWS OD (Do) | LIVE LENGTH (LL) | OVERALL LENGTH (OAL) |
|-----------|-----------------|------------------|----------------------|
| 12        | 14.80           | 6.00             | 12.00                |
| 12        | 14.00           | 8.00             | 14.00                |
| 12        | 14.30           | 13.50            | 20.00                |
| 14        | 16.30           | 1.25             | 7.00                 |
| 14        | 16.00           | 4.50             | 10.00                |
| 14        | 15.75           | 13.00            | 19.00                |
| 16        | 17.75           | 8.00             | 14.00                |
| 16        | 17.75           | 13.50            | 20.00                |
| 18        | 20.20           | 4.00             | 10.00                |
| 18        | 20.20           | 10.00            | 16.00                |
| 18        | 20.20           | 13.00            | 19.00                |
| 20        | 22.00           | 4.00             | 10.00                |
| 20        | 22.25           | 4.50             | 10.00                |
| 20        | 21.91           | 9.00             | 15.00                |
| 20        | 21.75           | 13.50            | 20.00                |
| 24        | 25.90           | 4.50             | 10.00                |
| 24        | 26.00           | 12.00            | 18.00                |
| 24        | 26.00           | 13.00            | 19.00                |
| 24        | 25.75           | 20.00            | 26.00                |

**NOTES:**

1. PIPE WELD END WALL THICKNESS IS BASED ON STD./SCH, ALTERNATIVE SIZES AVAILABLE ON REQUEST.
2. OAL IS BASED ON STD. 3" PIPE WELD NECK LENGTH. FOR OTHER OPTIONAL LENGTHS PLEASE PROVIDE THEM IN THE SPECIFICATION SHEET.
3. PIPE END MATERIAL: ASTM A106 B. FOR OTHER OPTIONAL MATERIAL PLEASE CONTACT BSI.
4. BELLOW MATERIAL: ASTM A-240 GRADE 321. OTHER MATERIALS (STAINLESS STEELS, NICKEL ALLOYS ETC.) ARE AVAILABLE ON REQUEST.
5. AVAILABLE IN 1 PLY, 2 PLY (STD) OR 3 PLY DESIGNS.
6. SPECIFY DESIGN/OPERATION PRESSURE & TEMPERATURE IN PAGE 2.
7. FOR MOVEMENTS AND LIFE CYCLE REFER TO BELLOWS CATALOG OR CONTACT BSI ENGINEERING.

|  |                       |            |     |  |                       |   |                    |
|--|-----------------------|------------|-----|--|-----------------------|---|--------------------|
|  |                       |            |     |  <b>Bellows Systems</b> |                       | BELLOWS SYSTEMS, INC.<br>Houston, TX<br>www.bellows-systems.com |                    |
|  |                       |            |     |  |                       | SINGLE EXPANSION JOINT<br>STD. TYPE-20 W/ PIPE ENDS & LINER     |                    |
| REV.   | DESCRIPTION           | DATE:      | BY: | CHKD:  | APPD:                 | CAGE CODE: 22727  |                    |
| E  | UPDATED TABLE         | 09/15/2023 | UG  |  |                       |   |                    |
| D  | UPDATED TABLE & NOTES | 09/11/2023 | UG  |  |                       |   |                    |
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|  |                       |            |     |  |                       | DRAWING NUMBER:<br>130-CAT-0020                                 | SHEET#:<br>1 OF 2  |
|  |                       |            |     |  |                       | REV.<br>E   |                    |



|   |                       | 1 | 2 | 3 | 4 |
|---|-----------------------|---|---|---|---|
| <b>DIM.:</b>  | PIPE/ NOMINAL SIZE:   |   |   |   |   |
|   | OVERALL LENGTH (OAL): |   |   |   |   |
| <b>DESIGN:</b>  | PRESSURE:             |   |   |   |   |
|   | TEMPERATURE:          |   |   |   |   |
| <b>MOV. &amp; LIFE CYLS:</b>  | AXIAL COMPRESSION:    |   |   |   |   |
|   | AXIAL EXPANSION:      |   |   |   |   |
|   | LATERAL:              |   |   |   |   |
|   | ANGULAR:              |   |   |   |   |
| <b>MATL S.:</b>   | ① BELLOWS:            |   |   |   |   |
|   | ② PIPE ENDS:          |   |   |   |   |
|   | ③ LINER:              |   |   |   |   |
| <b>DESIGN CODES/STANDARDS:</b><br>(EJMA/ ASME SECT VII DIV I/ ASME B 31.1/ ASME B 31.3) |                       |   |   |   |   |
| <b>APPLICATION NOTES:</b>   |                       |   |   |   |   |
| <b>QUANTITY:</b>  |                       |   |   |   |   |

**OPTIONAL FEATURES:**

- WITHOUT FLOW LINER (SEE TYPE-00).
- EXTERNAL COVER.

|  |                       |                           |                       |  |                    |   |                   |
|--|-----------------------|---------------------------|-----------------------|--|--------------------|---|-------------------|
|  |                       |                           |                       |  <b>Bellows Systems</b> |                    | <b>BELLOWS SYSTEMS, INC.</b><br>Houston, TX<br><a href="http://www.bellows-systems.com">www.bellows-systems.com</a> |                   |
|  |                       |                           |                       |  |                    | SINGLE EXPANSION JOINT<br>TYPE-20 SPECIFICATION SHEET   |                   |
| REV.   | DESCRIPTION           | DATE:                     | BY:                   | CHKD:  | APPD:              | CAGE CODE: 22727  |                   |
| E  | UPDATED TABLE         | 09/15/2023                | UG                    |  |                    |   |                   |
| D  | UPDATED TABLE & NOTES | 09/11/2023                | UG                    |  |                    |   |                   |
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|  |                       |                           |                       |  |                    |   | REV.<br>E         |