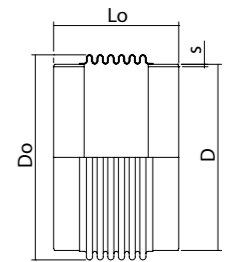


EXHAUST EXPANSION JOINTS WITH WELDING ENDS

US1SU / ID no. 13

PN 1 - with flange drilling according to DIN 86044

Weblink: 13503



US

| DN Nominal diameter | MOVEMENT | | | LENGTH Built-in length Lo mm | ID no. | WELDING ENDS | | BELLOW | | ADJUSTING FORCES | | | WEIGHT kg | DN Nominal diameter | MOVEMENT | | | LENGTH Built-in length Lo mm | ID no. | WELDING ENDS | | BELLOW | | ADJUSTING FORCES | | | WEIGHT kg |
|------------------------|-----------------|-----------------|-------------------|------------------------------------|-----------|-----------------------------|---------------------------|------------------------------|--------------------------------|------------------|------------------|---------------------|--------------|------------------------|-----------------|-----------------|-------------------|------------------------------------|-----------|-----------------------------|---------------------------|------------------------------|--------------------------------|------------------|------------------|---------------------|--------------|
| | AX 2δN mm | LA 2λN mm | AN 2αN deg. | | | Outside diameter D mm | Wall thickness s mm | Outside diameter Do mm | Eff. cross-section A cm² | AX Cδ N/mm | LA Cλ N/mm | AN Cα Nm/deg. | | | AX 2δN mm | LA 2λN mm | AN 2αN deg. | | | Outside diameter D mm | Wall thickness s mm | Outside diameter Do mm | Eff. cross-section A cm² | AX Cδ N/mm | LA Cλ N/mm | AN Cα Nm/deg. | |
| 50 | 30 | 18 | 50 | 215 | 13.007.10 | 60,3 | 2,9 | 69 | 27,9 | 73 | 36 | 0,6 | 0,7 | 400 | 90 | 8 | 23 | 230 | 13.018.10 | 406,4 | 6,3 | 461 | 1478 | 59 | 1710 | 25 | 12,5 |
| 50 | 49 | 50 | 50 | 280 | 13.007.20 | 60,3 | 2,9 | 69 | 27,9 | 45 | 8,1 | 0,4 | 0,8 | 400 | 151 | 23 | 39 | 305 | 13.018.20 | 406,4 | 6,3 | 461 | 1478 | 36 | 371 | 15 | 14,5 |
| 65 | 34 | 15 | 50 | 205 | 13.008.10 | 76,1 | 2,9 | 87 | 46,0 | 64 | 65 | 0,9 | 0,8 | 400 | 229 | 56 | 50 | 410 | 13.018.30 | 406,4 | 6,3 | 457 | 1459 | 44 | 185 | 18 | 22,7 |
| 65 | 56 | 42 | 50 | 270 | 13.008.20 | 76,1 | 2,9 | 87 | 46,0 | 63 | 23 | 0,9 | 1,3 | 450 | 88 | 7 | 20 | 230 | 13.019.10 | 457 | 6,3 | 511 | 1842 | 69 | 2470 | 36 | 14,0 |
| 80 | 34 | 8 | 38 | 165 | 13.009.10 | 88,9 | 3,2 | 114 | 79,4 | 64 | 233 | 1,4 | 1,2 | 450 | 152 | 21 | 35 | 305 | 13.019.20 | 457 | 6,3 | 511 | 1842 | 42 | 543 | 22 | 16,3 |
| 80 | 56 | 22 | 50 | 210 | 13.009.20 | 88,9 | 3,2 | 114 | 79,4 | 38 | 51 | 0,9 | 1,4 | 450 | 229 | 50 | 50 | 410 | 13.019.30 | 457 | 6,3 | 510 | 1832 | 44 | 230 | 23 | 22,1 |
| 80 | 85 | 51 | 50 | 270 | 13.009.30 | 88,9 | 3,2 | 114 | 79,4 | 26 | 15 | 0,6 | 1,5 | 500 | 99 | 8 | 21 | 240 | 13.020.10 | 508 | 6,3 | 566 | 2263 | 72 | 2800 | 46 | 15,7 |
| 100 | 49 | 9 | 43 | 165 | 13.010.10 | 114,3 | 3,6 | 145 | 131 | 40 | 274 | 1,5 | 1,7 | 500 | 188 | 28 | 40 | 340 | 13.020.20 | 508 | 6,3 | 564 | 2254 | 45 | 547 | 28 | 18,2 |
| 100 | 70 | 19 | 50 | 200 | 13.010.20 | 114,3 | 3,6 | 144 | 130 | 29 | 87 | 1,1 | 1,7 | 500 | 266 | 59 | 50 | 445 | 13.020.30 | 508 | 6,3 | 564 | 2248 | 47 | 250 | 29 | 28,3 |
| 100 | 119 | 59 | 50 | 275 | 13.010.30 | 114,3 | 3,6 | 144 | 129 | 27 | 26 | 1 | 2,6 | 600 | 101 | 6 | 17 | 240 | 13.022.10 | 610 | 4 | 679 | 3257 | 129 | 7410 | 116 | 13,8 |
| 125 | 49 | 7 | 36 | 165 | 13.011.10 | 139,7 | 4 | 171 | 188 | 46 | 459 | 2,4 | 2,2 | 600 | 177 | 21 | 31 | 330 | 13.022.20 | 610 | 4 | 679 | 3257 | 74 | 1390 | 67 | 20,4 |
| 125 | 84 | 23 | 50 | 215 | 13.011.20 | 139,7 | 4 | 171 | 187 | 42 | 135 | 2,2 | 3,2 | 600 | 279 | 52 | 49 | 450 | 13.022.30 | 610 | 4 | 679 | 3257 | 47 | 358 | 43 | 22,4 |
| 125 | 125 | 65 | 50 | 315 | 13.011.30 | 139,7 | 4 | 172 | 186 | 47 | 39 | 2,4 | 4,9 | 700 | 98 | 5 | 15 | 260 | 13.024.10 | 711 | 4 | 777 | 4335 | 150 | 11300 | 180 | 20,7 |
| 150 | 54 | 7 | 33 | 175 | 13.012.10 | 168,3 | 4,5 | 204 | 271 | 51 | 598 | 3,8 | 2,6 | 700 | 176 | 18 | 27 | 350 | 13.024.20 | 711 | 4 | 778 | 4341 | 82 | 2060 | 99 | 25,1 |
| 150 | 109 | 31 | 50 | 250 | 13.012.20 | 168,3 | 4,5 | 204 | 271 | 26 | 75 | 1,9 | 3,4 | 700 | 280 | 45 | 43 | 470 | 13.024.30 | 711 | 4 | 781 | 4358 | 47 | 475 | 56 | 31,8 |
| 150 | 158 | 94 | 50 | 405 | 13.012.30 | 168,3 | 4,5 | 203 | 266 | 48 | 29 | 3,5 | 6,8 | 800 | 76 | 2 | 10 | 230 | 13.026.10 | 813 | 4 | 886 | 5654 | 169 | 30200 | 265 | 23,7 |
| 200 | 76 | 10 | 36 | 190 | 13.014.10 | 219,1 | 6,3 | 257 | 442 | 40 | 578 | 4,9 | 4,5 | 800 | 153 | 11 | 20 | 320 | 13.026.20 | 813 | 4 | 886 | 5654 | 85 | 3780 | 133 | 23,7 |
| 200 | 120 | 32 | 50 | 275 | 13.014.20 | 219,1 | 6,3 | 259 | 441 | 62 | 206 | 7,6 | 7,3 | 800 | 279 | 39 | 37 | 470 | 13.026.30 | 813 | 4 | 884 | 5640 | 50 | 659 | 78 | 36,4 |
| 200 | 149 | 48 | 50 | 310 | 13.014.30 | 219,1 | 6,3 | 259 | 444 | 32 | 74 | 4 | 7,1 | 900 | 75 | 2 | 9 | 230 | 13.028.10 | 914 | 4 | 990 | 7110 | 173 | 38600 | 342 | 21,0 |
| 250 | 67 | 7 | 26 | 190 | 13.015.10 | 273 | 6,3 | 309 | 663 | 59 | 1210 | 11 | 6,1 | 900 | 151 | 10 | 18 | 320 | 13.028.20 | 914 | 4 | 990 | 7110 | 87 | 4840 | 171 | 32,3 |
| 250 | 144 | 38 | 50 | 310 | 13.015.20 | 273 | 6,3 | 314 | 673 | 39 | 134 | 7,3 | 8,8 | 900 | 253 | 29 | 30 | 440 | 13.028.30 | 914 | 4 | 990 | 7110 | 52 | 1050 | 103 | 35,3 |
| 250 | 194 | 73 | 50 | 400 | 13.015.30 | 273 | 6,3 | 313 | 667 | 47 | 76 | 8,6 | 14,3 | 1000 | 75 | 2 | 8 | 230 | 13.030.10 | 1016 | 4 | 1096 | 8749 | 165 | 45100 | 399 | 29,6 |
| 300 | 69 | 6 | 23 | 190 | 13.016.10 | 323,9 | 7,1 | 365 | 927 | 70 | 1860 | 18 | 9,1 | 1000 | 127 | 6 | 13 | 290 | 13.030.20 | 1016 | 4 | 1098 | 8765 | 92 | 9190 | 224 | 35,9 |
| 300 | 121 | 18 | 40 | 245 | 13.016.20 | 323,9 | 7,1 | 370 | 943 | 21 | 220 | 5,3 | 8,5 | 1000 | 252 | 26 | 27 | 440 | 13.030.30 | 1016 | 4 | 1093 | 8724 | 55 | 1360 | 133 | 39,2 |
| 300 | 207 | 70 | 50 | 415 | 13.016.30 | 323,9 | 7,1 | 365 | 923 | 48 | 98 | 13 | 17,6 | 1100 | 100 | 3 | 9 | 280 | 13.031.10 | 1120 | 4 | 1198 | 10540 | 144 | 26800 | 421 | 34,8 |
| 350 | 54 | 3 | 16 | 190 | 13.017.10 | 355,6 | 6,3 | 404 | 1132 | 39 | 1900 | 13 | 8,5 | 1100 | 178 | 11 | 17 | 370 | 13.031.20 | 1120 | 4 | 1194 | 10503 | 95 | 5810 | 278 | 41,7 |
| 350 | 121 | 17 | 36 | 265 | 13.017.20 | 355,6 | 6,3 | 402 | 1126 | 22 | 285 | 6,9 | 9,8 | 1100 | 270 | 28 | 26 | 485 | 13.031.30 | 1120 | 4 | 1197 | 10531 | 55 | 1320 | 159 | 52,4 |
| 350 | 219 | 64 | 50 | 415 | 13.017.30 | 355,6 | 6,3 | 400 | 1113 | 45 | 129 | 14 | 19,7 | | | | | | | | | | | | | | |

To be continued...

Design code: EJMA 9
Temperature: Calculated at 550°C
Minimum fatigue life: 1000 cycles

Important: The movements should be considered alternatives. The total accumulated coefficient of utilisation cannot exceed 1.

Please refer to Weblink 13503 or the QR code to access online tools and online inquiry/order form and more

information about: **Primer, connection ends, inner sleeve, cover etc.**

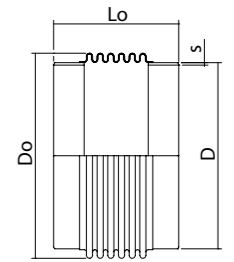


EXHAUST EXPANSION JOINTS WITH WELDING ENDS

US1SU / ID no. 13

PN 1 - with flange drilling according to DIN 86044

Weblink: 13503



US

| DN Nominal diameter | MOVEMENT | | | LENGTH Built-in length Lo mm | ID no. | WELDING ENDS | | BELLOW | | ADJUSTING FORCES | | | WEIGHT kg | DN Nominal diameter | MOVEMENT | | | LENGTH Built-in length Lo mm | ID no. | WELDING ENDS | | BELLOW | | ADJUSTING FORCES | | | WEIGHT kg |
|------------------------|-----------------|-----------------|-------------------|------------------------------------|-----------|--------------------------|------------------------|---------------------------|-----------------------------|------------------|------------------|---------------------|--------------|------------------------|-----------------|-----------------|-------------------|------------------------------------|-----------|--------------------------|------------------------|---------------------------|-----------------------------|------------------|------------------|---------------------|--------------|
| | AX 2δN mm | LA 2λN mm | AN 2αN deg. | | | Outside diameter D mm | Wall thickness s mm | Outside diameter Do mm | Eff. cross-section A cm² | AX Cδ N/mm | LA Cλ N/mm | AN Cα Nm/deg. | | | AX 2δN mm | LA 2λN mm | AN 2αN deg. | | | Outside diameter D mm | Wall thickness s mm | Outside diameter Do mm | Eff. cross-section A cm² | AX Cδ N/mm | LA Cλ N/mm | AN Cα Nm/deg. | |
| 1200 | 106 | 3 | 9 | 315 | 13.032.10 | 1220 | 4 | 1264 | 11794 | 163 | 35200 | 533 | 38,0 | 2200 | 77 | 1 | 3 | 285 | 13.042.10 | 2220 | 4 | 2260 | 38865 | 375 | 450100 | 4050 | 63,6 |
| 1200 | 170 | 10 | 15 | 400 | 13.032.20 | 1220 | 4 | 1264 | 11813 | 101 | 6700 | 329 | 45,5 | 2200 | 126 | 3 | 6 | 345 | 13.042.20 | 2220 | 4 | 2260 | 38865 | 225 | 96200 | 2430 | 76,0 |
| 1200 | 286 | 30 | 26 | 555 | 13.032.30 | 1220 | 4 | 1259 | 11765 | 71 | 1590 | 232 | 57,1 | 2200 | 234 | 10 | 12 | 470 | 13.042.30 | 2220 | 4 | 2260 | 38865 | 125 | 16900 | 1350 | 102 |
| 1300 | 79 | 1 | 6 | 285 | 13.033.10 | 1320 | 4 | 1366 | 13818 | 218 | 97500 | 835 | 37,1 | | | | | | | | | | | | | | |
| 1300 | 130 | 5 | 11 | 345 | 13.033.20 | 1320 | 4 | 1364 | 13818 | 151 | 24200 | 580 | 41,1 | | | | | | | | | | | | | | |
| 1300 | 222 | 16 | 19 | 460 | 13.033.30 | 1320 | 4 | 1364 | 13797 | 78 | 3720 | 299 | 53,6 | | | | | | | | | | | | | | |
| 1400 | 79 | 1 | 6 | 285 | 13.034.10 | 1420 | 4 | 1466 | 15980 | 234 | 120900 | 1040 | 39,8 | | | | | | | | | | | | | | |
| 1400 | 130 | 5 | 10 | 345 | 13.034.20 | 1420 | 4 | 1464 | 15980 | 162 | 30000 | 719 | 44,2 | | | | | | | | | | | | | | |
| 1400 | 222 | 15 | 17 | 460 | 13.034.30 | 1420 | 4 | 1464 | 15958 | 84 | 4610 | 371 | 57,6 | | | | | | | | | | | | | | |
| 1500 | 79 | 1 | 5 | 285 | 13.035.10 | 1520 | 4 | 1565 | 18287 | 259 | 153200 | 1320 | 42,6 | | | | | | | | | | | | | | |
| 1500 | 130 | 4 | 9 | 345 | 13.035.20 | 1520 | 4 | 1564 | 18299 | 173 | 36700 | 879 | 47,3 | | | | | | | | | | | | | | |
| 1500 | 224 | 14 | 16 | 460 | 13.035.30 | 1520 | 4 | 1564 | 18275 | 90 | 5670 | 453 | 61,6 | | | | | | | | | | | | | | |
| 1600 | 79 | 1 | 5 | 285 | 13.036.10 | 1620 | 4 | 1664 | 20750 | 285 | 191500 | 1650 | 45,5 | | | | | | | | | | | | | | |
| 1600 | 130 | 4 | 9 | 345 | 13.036.20 | 1620 | 4 | 1664 | 20776 | 184 | 44300 | 1070 | 50,4 | | | | | | | | | | | | | | |
| 1600 | 222 | 13 | 15 | 460 | 13.036.30 | 1620 | 4 | 1664 | 20750 | 95 | 6810 | 547 | 65,7 | | | | | | | | | | | | | | |
| 1700 | 79 | 1 | 5 | 285 | 13.037.10 | 1720 | 4 | 1763 | 23368 | 313 | 236900 | 2030 | 48,3 | | | | | | | | | | | | | | |
| 1700 | 130 | 4 | 8 | 345 | 13.037.20 | 1720 | 4 | 1764 | 23409 | 195 | 52800 | 1270 | 53,6 | | | | | | | | | | | | | | |
| 1700 | 223 | 12 | 14 | 460 | 13.037.30 | 1720 | 4 | 1763 | 23368 | 105 | 8450 | 677 | 69,8 | | | | | | | | | | | | | | |
| 1800 | 78 | 1 | 4 | 285 | 13.038.10 | 1820 | 4 | 1864 | 26142 | 343 | 288000 | 2490 | 48,3 | | | | | | | | | | | | | | |
| 1800 | 130 | 3 | 8 | 345 | 13.038.20 | 1820 | 4 | 1864 | 26199 | 206 | 62500 | 1500 | 56,7 | | | | | | | | | | | | | | |
| 1800 | 224 | 12 | 14 | 460 | 13.038.30 | 1820 | 4 | 1864 | 26142 | 115 | 10400 | 830 | 73,9 | | | | | | | | | | | | | | |
| 1900 | 74 | 1 | 4 | 285 | 13.039.10 | 1920 | 4 | 1962 | 29117 | 390 | 352600 | 3150 | 50,8 | | | | | | | | | | | | | | |
| 1900 | 126 | 3 | 7 | 345 | 13.039.20 | 1920 | 4 | 1963 | 29132 | 225 | 74400 | 1820 | 59,8 | | | | | | | | | | | | | | |
| 1900 | 228 | 11 | 13 | 465 | 13.039.30 | 1920 | 4 | 1963 | 29132 | 125 | 12800 | 1020 | 77,9 | | | | | | | | | | | | | | |
| 2000 | 72 | 1 | 4 | 285 | 13.040.10 | 2020 | 4 | 2061 | 32204 | 425 | 418800 | 3800 | 56,7 | | | | | | | | | | | | | | |
| 2000 | 121 | 3 | 6 | 345 | 13.040.20 | 2020 | 4 | 2061 | 32204 | 255 | 90900 | 2280 | 62,9 | | | | | | | | | | | | | | |
| 2000 | 217 | 10 | 12 | 465 | 13.040.30 | 2020 | 4 | 2061 | 32204 | 142 | 15600 | 1270 | 82,0 | | | | | | | | | | | | | | |
| 2100 | 77 | 1 | 4 | 285 | 13.041.10 | 2120 | 4 | 2160 | 35449 | 359 | 393000 | 3540 | 60,7 | | | | | | | | | | | | | | |
| 2100 | 125 | 3 | 6 | 345 | 13.041.20 | 2120 | 4 | 2161 | 35466 | 208 | 80400 | 2040 | 72,6 | | | | | | | | | | | | | | |
| 2100 | 225 | 10 | 12 | 465 | 13.041.30 | 2120 | 4 | 2162 | 35483 | 111 | 13300 | 1100 | 96,5 | | | | | | | | | | | | | | |

Design code: EJMA 9
 Temperature: Calculated at 550°C
 Minimum fatigue life: 1000 cycles

Important: The movements should be considered alternatives. The total accumulated coefficient of utilisation cannot exceed 1.

Please refer to Weblink 13503 or the QR code to access online tools and online inquiry/order form and more

information about: **Primer, connection ends, inner sleeve, cover etc.**

