



**LOAD TABLE FOR VARIABLE SPRING HANGERS**

| LOAD GROUP   | 1          | 2    | 3    | 4    | 5    | 6    | 7    | 8     | 9     | 10    | 11    | 12    | 13     |
|--------------|------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|--------|
| TRAVEL in mm | LOAD in KN |      |      |      |      |      |      |       |       |       |       |       |        |
| 0            | 0.22       | 0.34 | 0.55 | 0.86 | 1.37 | 2.16 | 3.43 | 5.49  | 8.58  | 13.73 | 21.63 | 34.34 | 54.94  |
| 5            | 0.24       | 0.37 | 0.60 | 0.94 | 1.50 | 2.36 | 3.74 | 5.98  | 9.35  | 14.96 | 23.56 | 37.40 | 59.84  |
| 10           | 0.25       | 0.40 | 0.65 | 1.01 | 1.62 | 2.55 | 4.05 | 6.47  | 10.12 | 16.19 | 25.49 | 40.47 | 64.75  |
| 15           | 0.27       | 0.44 | 0.70 | 1.09 | 1.74 | 2.74 | 4.35 | 6.97  | 10.88 | 17.41 | 27.43 | 43.53 | 69.65  |
| 20           | 0.29       | 0.47 | 0.75 | 1.16 | 1.86 | 2.94 | 4.66 | 7.46  | 11.65 | 18.64 | 29.36 | 46.60 | 74.56  |
| 25           | 0.31       | 0.50 | 0.79 | 1.24 | 1.99 | 3.13 | 4.97 | 7.95  | 12.42 | 19.87 | 31.29 | 49.66 | 79.46  |
| 30           | 0.33       | 0.53 | 0.84 | 1.32 | 2.11 | 3.32 | 5.27 | 8.44  | 13.18 | 21.09 | 33.22 | 52.73 | 84.37  |
| 35           | 0.35       | 0.56 | 0.89 | 1.39 | 2.23 | 3.52 | 5.58 | 8.93  | 13.95 | 22.32 | 35.15 | 55.75 | 89.27  |
| 40           | 0.37       | 0.59 | 0.94 | 1.47 | 2.35 | 3.71 | 5.89 | 9.42  | 14.71 | 23.54 | 37.08 | 58.86 | 94.18  |
| 45           | 0.39       | 0.62 | 0.99 | 1.55 | 2.48 | 3.90 | 6.19 | 9.91  | 15.48 | 24.77 | 39.01 | 61.93 | 99.08  |
| 50           | 0.41       | 0.65 | 1.04 | 1.62 | 2.60 | 4.09 | 6.50 | 10.40 | 16.25 | 26.00 | 40.94 | 64.99 | 103.99 |
| 55           | 0.43       | 0.68 | 1.09 | 1.70 | 2.72 | 4.29 | 6.81 | 10.89 | 17.01 | 27.22 | 42.88 | 68.06 | 108.89 |
| 60           | 0.45       | 0.71 | 1.14 | 1.78 | 2.84 | 4.48 | 7.11 | 11.38 | 17.78 | 28.45 | 44.81 | 71.12 | 113.80 |
| 65           | 0.47       | 0.74 | 1.19 | 1.85 | 2.87 | 4.67 | 7.42 | 11.87 | 18.55 | 29.68 | 46.74 | 74.19 | 118.70 |
| 70           | 0.49       | 0.77 | 1.24 | 1.93 | 3.09 | 4.87 | 7.73 | 12.36 | 19.31 | 30.90 | 48.67 | 77.25 | 123.61 |
| 75           | 0.51       | 0.80 | 1.29 | 2.01 | 3.21 | 5.06 | 8.03 | 12.85 | 20.08 | 32.13 | 50.60 | 80.32 | 128.51 |
| 80           | 0.53       | 0.83 | 1.33 | 2.08 | 3.34 | 5.25 | 8.34 | 13.34 | 20.85 | 33.35 | 52.53 | 83.38 | 133.42 |

SPRING RATE, N/mm

|      |      |      |       |       |       |       |       |        |        |        |        |        |
|------|------|------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| 1.93 | 3.07 | 4.90 | 7.66  | 12.26 | 19.31 | 30.66 | 49.05 | 76.64  | 122.62 | 193.13 | 306.56 | 490.50 |
| 3.86 | 6.13 | 9.81 | 15.33 | 24.53 | 38.63 | 61.31 | 98.10 | 153.28 | 245.25 | 386.27 | 613.12 | 981.00 |

**LOAD TABLE FOR VARIABLE SPRING HANGERS**

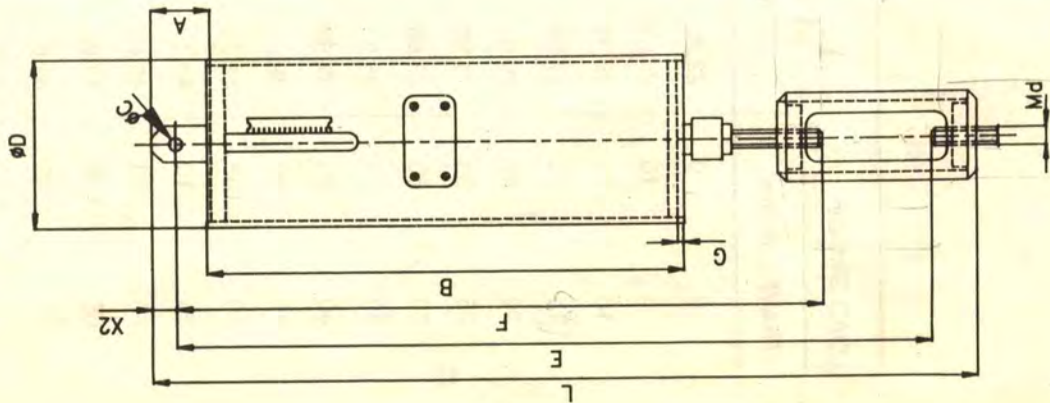
| LOAD GROUP   | 1        | 2     | 3     | 4      | 5     | 6      | 7      | 8      | 9       | 10     | 11      | 12     | 13      |
|--------------|----------|-------|-------|--------|-------|--------|--------|--------|---------|--------|---------|--------|---------|
|              | 63       | 100   | 160   | 250    | 400   | 630    | 1000   | 1600   | 2500    | 4000   | 6300    | 10000  | 16000   |
| TRAVEL in mm | LOAD, kg |       |       |        |       |        |        |        |         |        |         |        |         |
| 0            | 22.05    | 35.00 | 56.0  | 87.50  | 140.0 | 220.50 | 350.00 | 560.0  | 875.00  | 1400.0 | 2205.00 | 3500.0 | 5600.0  |
| 5            | 24.02    | 38.13 | 61.0  | 95.31  | 152.5 | 240.19 | 381.25 | 610.0  | 953.13  | 1525.0 | 2401.88 | 3812.5 | 6100.0  |
| 10           | 25.99    | 41.25 | 66.0  | 103.13 | 165.0 | 259.88 | 412.50 | 660.0  | 1031.25 | 1650.0 | 2598.75 | 4125.0 | 6600.0  |
| 15           | 27.96    | 44.38 | 71.0  | 110.94 | 177.5 | 279.56 | 443.75 | 710.0  | 1109.38 | 1775.0 | 2795.63 | 4437.5 | 7100.0  |
| 20           | 29.93    | 47.50 | 76.0  | 118.75 | 190.0 | 299.25 | 475.00 | 760.0  | 1187.50 | 1900.0 | 2992.50 | 4750.0 | 7600.0  |
| 25           | 31.89    | 50.63 | 81.0  | 126.58 | 202.5 | 318.94 | 506.25 | 810.0  | 1265.63 | 2025.0 | 3189.38 | 5062.5 | 8100.0  |
| 30           | 33.86    | 53.75 | 86.0  | 134.38 | 215.0 | 328.63 | 537.50 | 860.0  | 1343.75 | 2150.0 | 3386.25 | 5375.0 | 8600.0  |
| 35           | 35.83    | 56.88 | 91.0  | 142.19 | 227.5 | 358.31 | 568.75 | 910.0  | 1421.88 | 2275.0 | 3583.13 | 5687.5 | 9100.0  |
| 40           | 37.80    | 60.00 | 96.0  | 150.00 | 240.0 | 378.00 | 600.00 | 960.0  | 1500.00 | 2400.0 | 3780.00 | 6000.0 | 9600.0  |
| 45           | 39.77    | 63.13 | 101.0 | 157.81 | 252.5 | 397.69 | 631.25 | 1010.0 | 1578.13 | 2525.0 | 3976.88 | 6312.5 | 10100.0 |
| 50           | 41.74    | 66.25 | 106.0 | 165.63 | 265.0 | 417.38 | 662.50 | 1060.0 | 1656.25 | 2650.0 | 4173.75 | 6625.0 | 10600.0 |
| 55           | 43.71    | 69.38 | 111.0 | 173.44 | 277.5 | 437.06 | 693.75 | 1110.0 | 1734.38 | 2775.0 | 4370.63 | 6937.5 | 11100.0 |
| 60           | 45.68    | 72.50 | 116.0 | 181.25 | 290.0 | 456.75 | 725.00 | 1160.0 | 1812.50 | 2900.0 | 4567.50 | 7250.0 | 11600.0 |
| 65           | 47.64    | 75.63 | 121.0 | 189.06 | 302.5 | 476.44 | 756.25 | 1210.0 | 1890.63 | 3025.0 | 4764.38 | 7562.5 | 12100.0 |
| 70           | 49.61    | 78.85 | 126.0 | 196.88 | 315.0 | 496.13 | 787.50 | 1260.0 | 1968.75 | 3150.0 | 4961.25 | 7875.0 | 12600.0 |
| 75           | 51.58    | 81.88 | 131.0 | 204.69 | 327.5 | 515.81 | 818.75 | 1310.0 | 2046.88 | 3275.0 | 5158.13 | 8187.5 | 13100.0 |
| 80           | 53.55    | 85.00 | 136.0 | 212.50 | 340.0 | 535.50 | 850.00 | 1360.0 | 2125.00 | 3400.0 | 5355.00 | 8500.0 | 13600.0 |

SPRING RATE,  $\frac{kg}{mm}$

|      |      |      |      |      |      |      |       |       |       |       |       |        |
|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|--------|
| 0.20 | 0.31 | 0.50 | 0.78 | 1.25 | 1.97 | 3.13 | 5.00  | 7.81  | 12.50 | 19.69 | 31.25 | 50.00  |
| 0.39 | 0.63 | 1.00 | 1.56 | 2.50 | 3.94 | 6.25 | 10.00 | 15.63 | 25.00 | 39.38 | 62.50 | 100.00 |

**OVERALL DIMENSIONS OF VARIABLE SPRING HANGERS**  
**TYPE : SH - \*\* -- 080**

| TYPE SPRING | BIN CODE NUMBER | (...HOUSING...) |     | CONN.TH SIZE: Md | .....DIMENSIONS..... |     |      |      |      |                |         | ASSY. Wt (Kg) |
|-------------|-----------------|-----------------|-----|------------------|----------------------|-----|------|------|------|----------------|---------|---------------|
|             |                 | D               | B   |                  | L                    | A   | E    | F    | C    | X <sub>2</sub> |         |               |
| SH-01-080   | 94-821-401-00   | 113.9           | 219 | M12 X 1.75       | 477                  | 50  | 386  | 366  | 12.5 | 20             | 5.157   |               |
| SH-02-080   | 94-821-402-00   | 166.5           | 216 | M12 X 1.75       | 472                  | 50  | 381  | 331  | 12.5 | 20             | 8.814   |               |
| SH-03-080   | 94-821-403-00   | 113.9           | 286 | M12 X 1.75       | 544                  | 50  | 403  | 403  | 12.5 | 20             | 6.926   |               |
| SH-04-080   | 94-821-404-00   | 113.9           | 303 | M12 X 1.75       | 561                  | 50  | 470  | 420  | 12.5 | 20             | 8.165   |               |
| SH-05-080   | 94-821-405-00   | 166.5           | 310 | M16 X 2.00       | 608                  | 60  | 498  | 448  | 16.5 | 30             | 14.806  |               |
| SH-06-080   | 94-821-406-00   | 166.5           | 310 | M16 X 2.00       | 608                  | 60  | 498  | 448  | 16.5 | 30             | 16.055  |               |
| SH-07-080   | 94-821-407-00   | 219.1           | 314 | M20 X 2.50       | 701                  | 70  | 561  | 486  | 20.5 | 35             | 27.612  |               |
| SH-08-080   | 94-821-408-00   | 166.5           | 403 | M24 X 3.00       | 822                  | 80  | 677  | 602  | 24.5 | 40             | 29.246  |               |
| SH-09-080   | 94-821-409-00   | 219.1           | 466 | M24 X 3.00       | 833                  | 80  | 738  | 663  | 24.5 | 40             | 51.936  |               |
| SH-10-080   | 94-821-410-00   | 219.1           | 494 | M30 X 3.50       | 989                  | 100 | 823  | 748  | 33.5 | 50             | 69.543  |               |
| SH-11-080   | 94-821-411-00   | 323.9           | 469 | M36 X 4.00       | 1012                 | 120 | 836  | 761  | 40.5 | 60             | 122.552 |               |
| SH-12-080   | 94-821-412-00   | 355.6           | 517 | M48 X 5.00       | 1139                 | 154 | 980  | 905  | 50.5 | 77             | 200.531 |               |
| SH-13-080   | 94-821-413-00   | 406.4           | 619 | M56 X 4.00       | 1363                 | 180 | 1137 | 1062 | 60.5 | 90             | 303.387 |               |



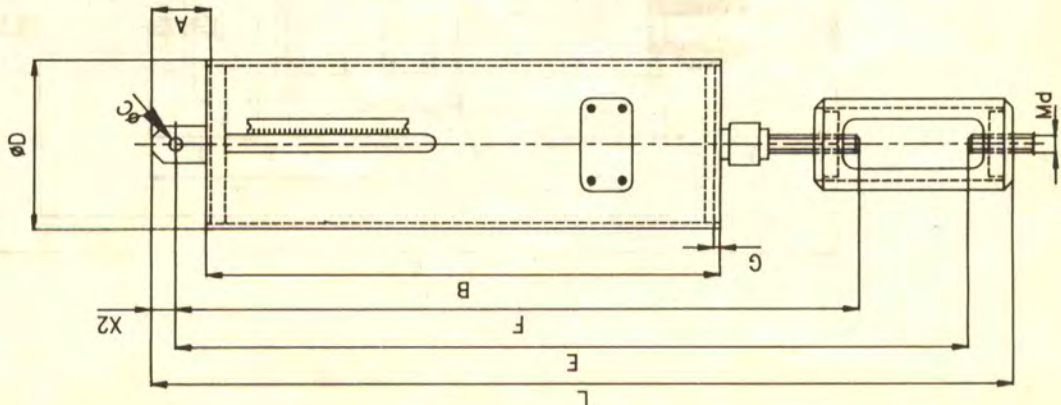
DIMENSIONS GIVEN IN THIS TABLE FOR 'E', 'F', 'L', CORRESPOND TO "ZERO" POSITION ON THE TRAVEL SCALE.

: 000 108TE 008 AVENUE E 20000 HANGERS :

**OVERALL DIMENSIONS OF VARIABLE SPRING HANGERS**

TYPE : SH - \*\* -- 160

| TYPE SPRING | BIN CODE NUMBER | (...HOUSING...) |      | CONN.TH SIZE: Md | DIMENSIONS..... |     |      |      |      |                |         | ASSY. Wt (Kg) |
|-------------|-----------------|-----------------|------|------------------|-----------------|-----|------|------|------|----------------|---------|---------------|
|             |                 | D               | B    |                  | L               | A   | E    | F    | C    | X <sub>2</sub> |         |               |
| SH-01-160   | 94-821-416-00   | 113.9           | 393  | M12 X 1.75       | 659             | 50  | 568  | 518  | 12.5 | 20             | 8.156   |               |
| SH-02-160   | 94-821-417-00   | 166.5           | 385  | M12 X 1.75       | 649             | 50  | 558  | 508  | 12.5 | 20             | 14.226  |               |
| SH-03-160   | 94-821-418-00   | 113.9           | 527  | M12 X 1.75       | 793             | 50  | 702  | 652  | 12.5 | 20             | 11.706  |               |
| SH-04-160   | 94-821-419-00   | 113.9           | 561  | M12 X 1.75       | 827             | 50  | 736  | 686  | 12.5 | 20             | 14.169  |               |
| SH-05-160   | 94-821-420-00   | 166.5           | 573  | M16 X 2.00       | 879             | 60  | 769  | 719  | 16.5 | 30             | 25.018  |               |
| SH-06-160   | 94-821-421-00   | 166.5           | 569  | M16 X 2.00       | 875             | 60  | 765  | 715  | 16.5 | 30             | 26.839  |               |
| SH-07-160   | 94-821-422-00   | 219.1           | 573  | M20 X 2.50       | 968             | 70  | 828  | 753  | 20.5 | 35             | 46.336  |               |
| SH-08-160   | 94-821-423-00   | 166.5           | 749  | M24 X 3.00       | 1176            | 80  | 1031 | 956  | 24.5 | 40             | 50.848  |               |
| SH-09-160   | 94-821-424-00   | 219.1           | 869  | M24 X 3.00       | 1294            | 80  | 1149 | 1074 | 24.5 | 40             | 92.043  |               |
| SH-10-160   | 94-821-425-00   | 219.1           | 917  | M30 X 3.50       | 1420            | 100 | 1254 | 1179 | 33.5 | 50             | 118.865 |               |
| SH-11-160   | 94-821-426-00   | 323.9           | 863  | M36 X 4.00       | 11414           | 120 | 1238 | 1163 | 40.5 | 60             | 210.309 |               |
| SH-12-160   | 94-821-427-00   | 355.6           | 951  | M48 X 5.00       | 11635           | 154 | 1422 | 1347 | 50.5 | 77             | 342.994 |               |
| SH-13-160   | 94-821-428-00   | 406.4           | 1146 | M56 X 4.00       | 11898           | 180 | 1672 | 1597 | 60.5 | 90             | 525.352 |               |



DIMENSIONS GIVEN IN THIS TABLE FOR 'E', 'F', 'L', CORRESPOND TO "ZERO" POSITION ON THE TRAVEL SCALE.