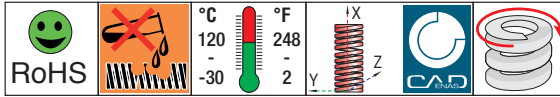
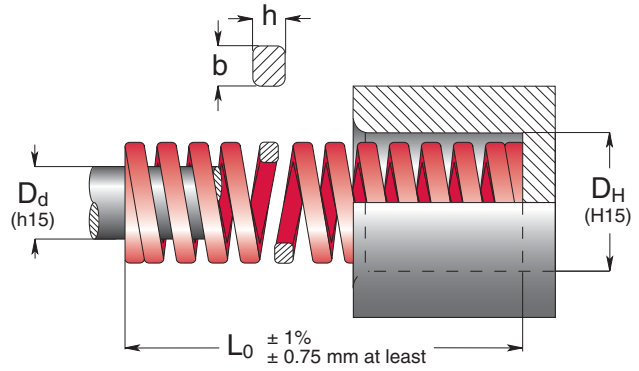


R SERIES

- IT** Molle carico forte
- EN** Strong load springs
- DE** Federn für hohe Spannung
- FR** Ressorts charge forte
- ES** Muelles carga fuerte
- PT** Molas carga forte



| Code | D_H Hole Diameter | D_d Rod Diameter | L_0 Free Length | R Spring Constant | A 20% L_0 | | B 25% L_0 | | C 27.5% L_0 | | D 30% L_0 | | E do not use | Pcs |
|------------|------------------------|-----------------------|----------------------|----------------------|----------------|------|----------------|------|------------------|------|----------------|------|-----------------|-----|
| | | | | | mm | N | mm | N | mm | N | mm | N | | |
| | $b \times h$ | | | $\pm 10\%$ | + 3.000.000 | | ~ 1.500.000 | | 300 - 500.000 | | 100 - 200.000 | | | |
| | mm | mm | mm | N/mm | mm | N | mm | N | mm | N | mm | N | mm | |
| R 10 - 025 | 10 | 5 | 25 | 22.1 | 5.0 | 111 | 6.3 | 139 | 6.9 | 152 | 7.5 | 166 | 9.2 | 50 |
| R 10 - 032 | | | 32 | 17.5 | 6.4 | 112 | 8.0 | 140 | 8.8 | 154 | 9.6 | 168 | 12.1 | 50 |
| R 10 - 038 | | | 38 | 17.1 | 7.6 | 130 | 9.5 | 162 | 10.5 | 179 | 11.4 | 195 | 13.2 | 50 |
| R 10 - 044 | | | 44 | 15.0 | 8.8 | 132 | 11.0 | 165 | 12.1 | 182 | 13.2 | 198 | 15.1 | 50 |
| R 10 - 051 | | | 51 | 12.8 | 10.2 | 131 | 12.8 | 164 | 14.0 | 180 | 15.3 | 196 | 19.5 | 25 |
| R 10 - 064 | | | 64 | 10.7 | 12.8 | 137 | 16.0 | 171 | 17.6 | 188 | 19.2 | 205 | 21.8 | 25 |
| R 10 - 076 | | | 76 | 7.5 | 15.2 | 114 | 19.0 | 143 | 20.9 | 157 | 22.8 | 171 | 27.9 | 25 |
| R 10 - 305 | 1.9 x 1.5 | | 305 | 2.1 | 61.0 | 128 | 76.3 | 160 | 83.9 | 176 | 91.5 | 192 | 127 | 10 |
| R 13 - 025 | 12.5 | 6.3 | 25 | 42.1 | 5.0 | 211 | 6.3 | 265 | 6.9 | 289 | 7.5 | 316 | 9.8 | 50 |
| R 13 - 032 | | | 32 | 33.2 | 6.4 | 212 | 8.0 | 266 | 8.8 | 292 | 9.6 | 319 | 13.6 | 50 |
| R 13 - 038 | | | 38 | 29.3 | 7.6 | 223 | 9.5 | 278 | 10.5 | 306 | 11.4 | 334 | 14.6 | 50 |
| R 13 - 044 | | | 44 | 24.6 | 8.8 | 216 | 11.0 | 271 | 12.1 | 298 | 13.2 | 325 | 18.1 | 25 |
| R 13 - 051 | | | 51 | 19.6 | 10.2 | 200 | 12.8 | 251 | 14.0 | 275 | 15.3 | 300 | 22.3 | 25 |
| R 13 - 064 | | | 64 | 15.0 | 12.8 | 192 | 16.0 | 240 | 17.6 | 264 | 19.2 | 288 | 27.3 | 25 |
| R 13 - 076 | | | 76 | 13.2 | 15.2 | 201 | 19.0 | 251 | 20.9 | 276 | 22.8 | 301 | 33.1 | 25 |
| R 13 - 089 | 89 | 11.4 | 17.8 | 203 | 22.3 | 254 | 24.5 | 279 | 26.7 | 304 | 38.9 | 20 | | |
| R 13 - 102 | 102 | 8.4 | 20.4 | 171 | 25.5 | 214 | 28.1 | 236 | 30.6 | 257 | 43.8 | 10 | | |
| R 13 - 305 | 2.4 x 1.9 | | 305 | 2.8 | 61.0 | 171 | 76.3 | 214 | 83.9 | 235 | 91.5 | 256 | 140 | 10 |
| R 16 - 025 | 16 | 8 | 25 | 75.7 | 5.0 | 379 | 6.3 | 477 | 6.9 | 520 | 7.5 | 568 | 8.4 | 50 |
| R 16 - 032 | | | 32 | 52.8 | 6.4 | 338 | 8.0 | 422 | 8.8 | 465 | 9.6 | 507 | 10.5 | 50 |
| R 16 - 038 | | | 38 | 48.5 | 7.6 | 369 | 9.5 | 461 | 10.5 | 507 | 11.4 | 553 | 13.6 | 25 |
| R 16 - 044 | | | 44 | 42.8 | 8.8 | 377 | 11.0 | 471 | 12.1 | 518 | 13.2 | 565 | 15.9 | 25 |
| R 16 - 051 | | | 51 | 37.1 | 10.2 | 378 | 12.8 | 475 | 14.0 | 520 | 15.3 | 568 | 18.9 | 25 |
| R 16 - 064 | | | 64 | 30.3 | 12.8 | 388 | 16.0 | 485 | 17.6 | 533 | 19.2 | 582 | 24.9 | 25 |
| R 16 - 076 | | | 76 | 25.7 | 15.2 | 391 | 19.0 | 488 | 20.9 | 537 | 22.8 | 586 | 29.2 | 20 |
| R 16 - 089 | 89 | 21.7 | 17.8 | 386 | 22.3 | 484 | 24.5 | 531 | 26.7 | 579 | 34.5 | 20 | | |
| R 16 - 102 | 102 | 19.3 | 20.4 | 394 | 25.5 | 492 | 28.1 | 541 | 30.6 | 591 | 39.1 | 20 | | |
| R 16 - 115 | 115 | 15.7 | 23.0 | 361 | 28.8 | 452 | 31.6 | 497 | 34.5 | 542 | 44.0 | 10 | | |
| R 16 - 305 | 3.1 x 2.5 | | 305 | 7.1 | 61.0 | 433 | 76.3 | 542 | 83.9 | 596 | 91.5 | 650 | 104 | 10 |
| R 20 - 025 | 20 | 10 | 25 | 216 | 5.0 | 1080 | 6.3 | 1361 | 6.9 | 1485 | 7.5 | 1620 | 8.3 | 50 |
| R 20 - 032 | | | 32 | 168 | 6.4 | 1075 | 8.0 | 1344 | 8.8 | 1478 | 9.6 | 1613 | 10.9 | 50 |
| R 20 - 038 | | | 38 | 129 | 7.6 | 980 | 9.5 | 1226 | 10.5 | 1348 | 11.4 | 1471 | 12.5 | 25 |
| R 20 - 044 | | | 44 | 112 | 8.8 | 986 | 11.0 | 1232 | 12.1 | 1355 | 13.2 | 1478 | 15.0 | 25 |
| R 20 - 051 | | | 51 | 94.0 | 10.2 | 959 | 12.8 | 1203 | 14.0 | 1318 | 15.3 | 1438 | 17.6 | 25 |
| R 20 - 064 | | | 64 | 72.1 | 12.8 | 923 | 16.0 | 1154 | 17.6 | 1269 | 19.2 | 1384 | 22.6 | 25 |
| R 20 - 076 | | | 76 | 59.7 | 15.2 | 907 | 19.0 | 1134 | 20.9 | 1248 | 22.8 | 1361 | 27.5 | 25 |
| R 20 - 089 | 89 | 50.5 | 17.8 | 899 | 22.3 | 1126 | 24.5 | 1236 | 26.7 | 1348 | 31.7 | 20 | | |
| R 20 - 102 | 102 | 44.2 | 20.4 | 902 | 25.5 | 1127 | 28.1 | 1240 | 30.6 | 1353 | 37.5 | 20 | | |
| R 20 - 115 | 115 | 38.4 | 23.0 | 883 | 28.8 | 1106 | 31.6 | 1214 | 34.5 | 1325 | 42.6 | 10 | | |
| R 20 - 127 | 127 | 34.1 | 25.4 | 866 | 31.8 | 1084 | 34.9 | 1191 | 38.1 | 1299 | 45.5 | 10 | | |
| R 20 - 139 | 139 | 31.0 | 28.0 | 868 | 35.0 | 1085 | 38.2 | 1185 | 42.0 | 1302 | 50.1 | 10 | | |
| R 20 - 152 | 152 | 28.2 | 30.4 | 857 | 38.0 | 1072 | 41.8 | 1179 | 45.6 | 1286 | 55.8 | 10 | | |
| R 20 - 305 | 4.0 x 3.3 | | 305 | 15.0 | 61.0 | 915 | 76.3 | 1145 | 83.9 | 1258 | 91.5 | 1373 | 114 | 10 |

Special Springs 16-012

1 N = 0.1 daN = 0.102 kgf

Load (N) = R (N/mm) x Deflection (mm)

R 50 - 152 (Series) D_H - L_0

ISO 10243 : 2010

SERIES R

| Code | D _H | D _d | L ₀ | R | A | B | C | D | E | Pcs | | | | | | |
|------------|----------------|----------------|----------------|-----------------|--------------------|--------------------|----------------------|--------------------|------------|-------|-------|-------|-------|-------|------|---|
| | Hole Diameter | Rod Diameter | Free Length | Spring Constant | 20% L ₀ | 25% L ₀ | 27.5% L ₀ | 30% L ₀ | do not use | | | | | | | |
| | b x h | | | ± 10% | + 3.000.000 | ~ 1.500.000 | 300 - 500.000 | 100 - 200.000 | | | | | | | | |
| | mm | mm | mm | N/mm | mm | N | mm | N | mm | mm | | | | | | |
| R 25 - 025 | 25 | 12.5 | 25 | 375 | 5.0 | 1875 | 6.3 | 2363 | 6.9 | 2578 | 7.5 | 2813 | 8.5 | 50 | | |
| R 25 - 032 | | | 32 | 297 | 6.4 | 1901 | 8.0 | 2376 | 8.8 | 2614 | 9.6 | 2851 | 11.0 | 25 | | |
| R 25 - 038 | | | 38 | 219 | 7.6 | 1664 | 9.5 | 2081 | 10.5 | 2289 | 11.4 | 2497 | 12.6 | 25 | | |
| R 25 - 044 | | | 44 | 187 | 8.8 | 1646 | 11.0 | 2057 | 12.1 | 2263 | 13.2 | 2468 | 14.8 | 25 | | |
| R 25 - 051 | | | 51 | 156 | 10.2 | 1591 | 12.8 | 1997 | 14.0 | 2188 | 15.3 | 2387 | 17.9 | 25 | | |
| R 25 - 064 | | | 64 | 123 | 12.8 | 1574 | 16.0 | 1968 | 17.6 | 2165 | 19.2 | 2362 | 23.1 | 25 | | |
| R 25 - 076 | | | 76 | 99.0 | 15.2 | 1505 | 19.0 | 1881 | 20.9 | 2069 | 22.8 | 2257 | 26.3 | 20 | | |
| R 25 - 089 | | | 89 | 84.0 | 17.8 | 1495 | 22.3 | 1873 | 24.5 | 2056 | 26.7 | 2243 | 30.5 | 20 | | |
| R 25 - 102 | | | 102 | 73.0 | 20.4 | 1489 | 25.5 | 1862 | 28.1 | 2048 | 30.6 | 2234 | 37.3 | 20 | | |
| R 25 - 115 | | | 115 | 65.0 | 23.0 | 1495 | 28.8 | 1872 | 31.6 | 2056 | 34.5 | 2243 | 41.9 | 10 | | |
| R 25 - 127 | | | 127 | 57.7 | 25.4 | 1466 | 31.8 | 1835 | 34.9 | 2015 | 38.1 | 2198 | 46.2 | 10 | | |
| R 25 - 139 | | | 139 | 52.7 | 28.0 | 1476 | 35.0 | 1845 | 38.2 | 2014 | 42.0 | 2213 | 49.3 | 10 | | |
| R 25 - 152 | | | 152 | 47.8 | 30.4 | 1453 | 38.0 | 1816 | 41.8 | 1998 | 45.6 | 2180 | 55.7 | 10 | | |
| R 25 - 178 | | | 178 | 41.0 | 35.6 | 1460 | 44.5 | 1825 | 49.0 | 2007 | 53.4 | 2189 | 65.1 | 10 | | |
| R 25 - 203 | | | 203 | 35.8 | 40.6 | 1453 | 50.8 | 1819 | 55.8 | 1999 | 60.9 | 2180 | 74.5 | 10 | | |
| R 25 - 305 | 5.5 x 4.2 | 305 | 22.9 | 61.0 | 1397 | 76.3 | 1747 | 83.9 | 1921 | 91.5 | 2095 | 110 | 5 | | | |
| R 32 - 038 | 32 | 16 | 38 | 388 | 7.6 | 2949 | 9.5 | 3686 | 10.5 | 4055 | 11.4 | 4423 | 12.5 | 20 | | |
| R 32 - 044 | | | 44 | 324 | 8.8 | 2851 | 11.0 | 3564 | 12.1 | 3920 | 13.2 | 4277 | 14.9 | 20 | | |
| R 32 - 051 | | | 51 | 272 | 10.2 | 2774 | 12.8 | 3482 | 14.0 | 3815 | 15.3 | 4162 | 17.8 | 20 | | |
| R 32 - 064 | | | 64 | 212 | 12.8 | 2714 | 16.0 | 3392 | 17.6 | 3731 | 19.2 | 4070 | 22.4 | 20 | | |
| R 32 - 076 | | | 76 | 172 | 15.2 | 2614 | 19.0 | 3268 | 20.9 | 3595 | 22.8 | 3922 | 26.1 | 20 | | |
| R 32 - 089 | | | 89 | 141 | 17.8 | 2510 | 22.3 | 3144 | 24.5 | 3451 | 26.7 | 3765 | 30.8 | 10 | | |
| R 32 - 102 | | | 102 | 122 | 20.4 | 2489 | 25.5 | 3111 | 28.1 | 3422 | 30.6 | 3733 | 36.8 | 10 | | |
| R 32 - 115 | | | 115 | 107 | 23.0 | 2461 | 28.8 | 3082 | 31.6 | 3384 | 34.5 | 3692 | 41.4 | 10 | | |
| R 32 - 127 | | | 127 | 93.0 | 25.4 | 2362 | 31.8 | 2957 | 34.9 | 3248 | 38.1 | 3543 | 44.4 | 10 | | |
| R 32 - 139 | | | 139 | 86.0 | 28.0 | 2408 | 35.0 | 3010 | 38.2 | 3287 | 42.0 | 3612 | 48.5 | 10 | | |
| R 32 - 152 | | | 152 | 78.0 | 30.4 | 2371 | 38.0 | 2964 | 41.8 | 3260 | 45.6 | 3557 | 54.8 | 10 | | |
| R 32 - 178 | | | 178 | 67.2 | 35.6 | 2392 | 44.5 | 2990 | 49.0 | 3289 | 53.4 | 3588 | 63.6 | 5 | | |
| R 32 - 203 | | | 203 | 59.1 | 40.6 | 2399 | 50.8 | 3002 | 55.8 | 3299 | 60.9 | 3599 | 72.5 | 5 | | |
| R 32 - 254 | | | 254 | 46.4 | 50.8 | 2357 | 63.5 | 2946 | 69.9 | 3241 | 76.2 | 3536 | 92.8 | 5 | | |
| R 32 - 305 | | | 7.1 x 5.4 | 305 | 38.0 | 61.0 | 2318 | 76.3 | 2899 | 83.9 | 3187 | 91.5 | 3477 | 112 | 5 | |
| R 40 - 051 | 40 | 20 | 51 | 350 | 10.2 | 3570 | 12.8 | 4480 | 14.0 | 4909 | 15.3 | 5355 | 17.0 | 20 | | |
| R 40 - 064 | | | 64 | 269 | 12.8 | 3443 | 16.0 | 4304 | 17.6 | 4734 | 19.2 | 5165 | 21.9 | 10 | | |
| R 40 - 076 | | | 76 | 219 | 15.2 | 3329 | 19.0 | 4161 | 20.9 | 4577 | 22.8 | 4993 | 26.7 | 10 | | |
| R 40 - 089 | | | 89 | 190 | 17.8 | 3382 | 22.3 | 4237 | 24.5 | 4650 | 26.7 | 5073 | 31.3 | 10 | | |
| R 40 - 102 | | | 102 | 163 | 20.4 | 3325 | 25.5 | 4157 | 28.1 | 4572 | 30.6 | 4988 | 37.1 | 10 | | |
| R 40 - 115 | | | 115 | 142 | 23.0 | 3266 | 28.8 | 4090 | 31.6 | 4491 | 34.5 | 4899 | 41.0 | 10 | | |
| R 40 - 127 | | | 127 | 128 | 25.4 | 3251 | 31.8 | 4070 | 34.9 | 4470 | 38.1 | 4877 | 46.5 | 5 | | |
| R 40 - 139 | | | 139 | 115 | 28.0 | 3220 | 35.0 | 4025 | 38.2 | 4396 | 42.0 | 4830 | 53.1 | 5 | | |
| R 40 - 152 | | | 152 | 105 | 30.4 | 3192 | 38.0 | 3990 | 41.8 | 4389 | 45.6 | 4788 | 56.1 | 5 | | |
| R 40 - 178 | | | 178 | 89 | 35.6 | 3168 | 44.5 | 3961 | 49.0 | 4357 | 53.4 | 4753 | 67.4 | 5 | | |
| R 40 - 203 | | | 203 | 77 | 40.6 | 3126 | 50.8 | 3912 | 55.8 | 4299 | 60.9 | 4689 | 76.2 | 5 | | |
| R 40 - 254 | | | 254 | 61 | 50.8 | 3099 | 63.5 | 3874 | 69.9 | 4261 | 76.2 | 4648 | 96.2 | 2 | | |
| R 40 - 305 | | | 8.4 x 6.2 | 305 | 51 | 61.0 | 3111 | 76.3 | 3891 | 83.9 | 4278 | 91.5 | 4667 | 115 | 2 | |
| R 50 - 064 | | | 50 | 25 | 64 | 413 | 12.8 | 5286 | 16.0 | 6608 | 17.6 | 7269 | 19.2 | 7930 | 22.4 | 5 |
| R 50 - 076 | | | | | 76 | 339 | 15.2 | 5153 | 19.0 | 6441 | 20.9 | 7085 | 22.8 | 7729 | 26.5 | 5 |
| R 50 - 089 | 89 | 288 | | | 17.8 | 5126 | 22.3 | 6422 | 24.5 | 7049 | 26.7 | 7690 | 31.5 | 5 | | |
| R 50 - 102 | 102 | 245 | | | 20.4 | 4998 | 25.5 | 6248 | 28.1 | 6872 | 30.6 | 7497 | 37.6 | 5 | | |
| R 50 - 115 | 115 | 215 | | | 23.0 | 4945 | 28.8 | 6192 | 31.6 | 6799 | 34.5 | 7418 | 42.7 | 5 | | |
| R 50 - 127 | 127 | 192 | | | 25.4 | 4877 | 31.8 | 6106 | 34.9 | 6706 | 38.1 | 7315 | 47.5 | 5 | | |
| R 50 - 139 | 139 | 168 | | | 28.0 | 4704 | 35.0 | 5880 | 38.2 | 6422 | 42.0 | 7056 | 51.8 | 5 | | |
| R 50 - 152 | 152 | 154 | | | 30.4 | 4682 | 38.0 | 5852 | 41.8 | 6437 | 45.6 | 7022 | 57.8 | 2 | | |
| R 50 - 178 | 178 | 134 | | | 35.6 | 4770 | 44.5 | 5963 | 49.0 | 6559 | 53.4 | 7156 | 68.5 | 2 | | |
| R 50 - 203 | 203 | 117 | | | 40.6 | 4750 | 50.8 | 5944 | 55.8 | 6532 | 60.9 | 7125 | 77.6 | 2 | | |
| R 50 - 254 | 254 | 89 | | | 50.8 | 4521 | 63.5 | 5652 | 69.9 | 6217 | 76.2 | 6782 | 97.9 | 2 | | |
| R 50 - 305 | 11.1 x 7.6 | 305 | | | 73 | 61.0 | 4453 | 76.3 | 5570 | 83.9 | 6123 | 91.5 | 6680 | 121 | 2 | |
| R 63 - 076 | 63 | 38 | | | 76 | 618 | 15.2 | 9394 | 19.0 | 11742 | 20.9 | 12916 | 22.8 | 14090 | 24.7 | 5 |
| R 63 - 089 | | | | | 89 | 515 | 17.8 | 9167 | 22.3 | 11485 | 24.5 | 12605 | 26.7 | 13751 | 30.0 | 5 |
| R 63 - 102 | | | | | 102 | 438 | 20.4 | 8935 | 25.5 | 11169 | 28.1 | 12286 | 30.6 | 13403 | 35.1 | 5 |
| R 63 - 115 | | | 115 | 370 | 23.0 | 8510 | 28.8 | 10656 | 31.6 | 11701 | 34.5 | 12765 | 37.5 | 5 | | |
| R 63 - 127 | | | 127 | 333 | 25.4 | 8458 | 31.8 | 10589 | 34.9 | 11630 | 38.1 | 12687 | 45.9 | 2 | | |
| R 63 - 152 | | | 152 | 269 | 30.4 | 8178 | 38.0 | 10222 | 41.8 | 11244 | 45.6 | 12266 | 56.5 | 2 | | |
| R 63 - 178 | | | 178 | 226 | 35.6 | 8046 | 44.5 | 10057 | 49.0 | 11063 | 53.4 | 12068 | 66.8 | 2 | | |
| R 63 - 203 | | | 203 | 198 | 40.6 | 8039 | 50.8 | 10058 | 55.8 | 11053 | 60.9 | 12058 | 78.8 | 2 | | |
| R 63 - 254 | | | 254 | 155 | 50.8 | 7874 | 63.5 | 9843 | 69.9 | 10827 | 76.2 | 11811 | 102 | 2 | | |
| R 63 - 305 | | | 11.6 x 12.3 | 305 | 128 | 61.0 | 7808 | 76.3 | 9766 | 83.9 | 10736 | 91.5 | 11712 | 122 | 2 | |

Estimated life 100.000 cycles

1 N = 0.1 daN = 0.102 kgf

Load (N) = R (N/mm) x Deflection (mm)



R 50 - 152 (Series | D_H - L₀)

Special Springs 17-2012