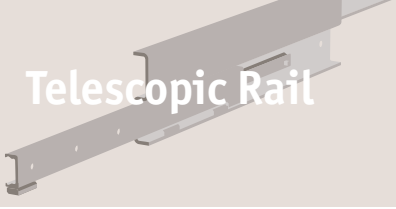
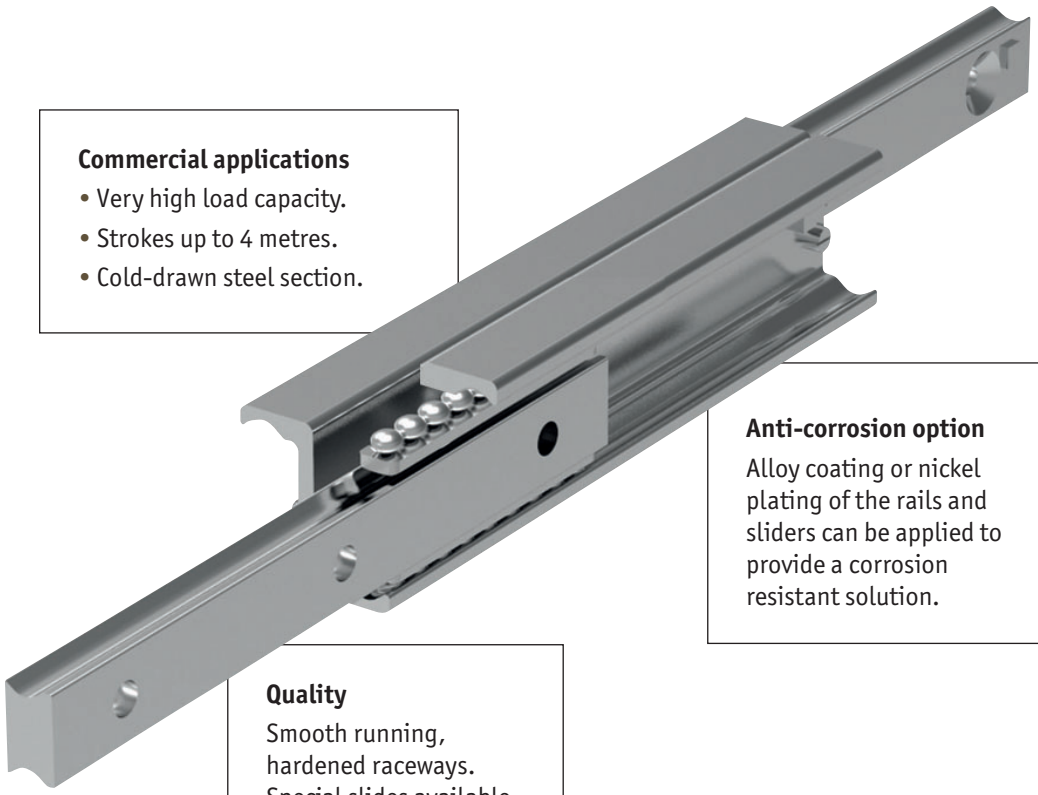





If you are looking for heavy duty, quality telescopic rails for industrial or commercial applications then these are the rails for you!

### The best heavy duty telescopic slides on the market

These are unique rails that are not made from pressed steel but from cold-drawn steel section. The rails can take high loads, with very long strokes, with repeated use, low deflection and minimal play.



**Commercial applications**

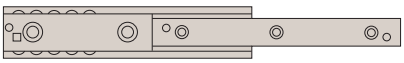
- Very high load capacity.
- Strokes up to 4 metres.
- Cold-drawn steel section.

**Anti-corrosion option**

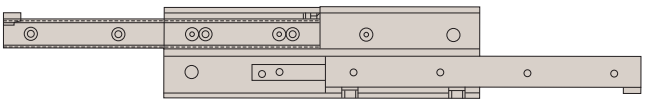
Alloy coating or nickel plating of the rails and sliders can be applied to provide a corrosion resistant solution.

**Quality**

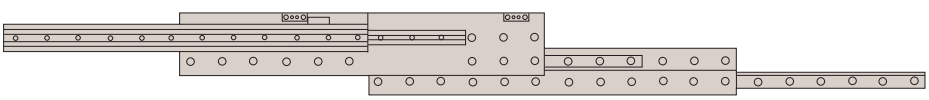
Smooth running, hardened raceways. Special slides available.



Partial Stroke (~60%)



Full Stroke (~100%)



Over-extension (150%)

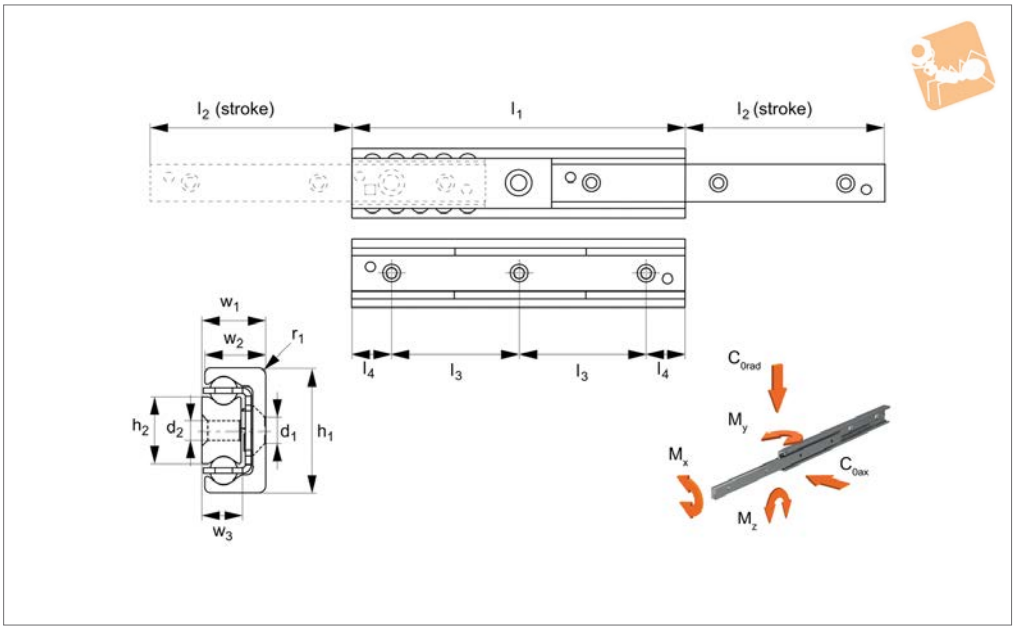
### Rail types

Our range of telescopic rails covers partial, full stroke and over-extension.

For more information refer to our product specifications pages or call our technical department.

# Partially Telescopic Slides
size 22

## L1994.22



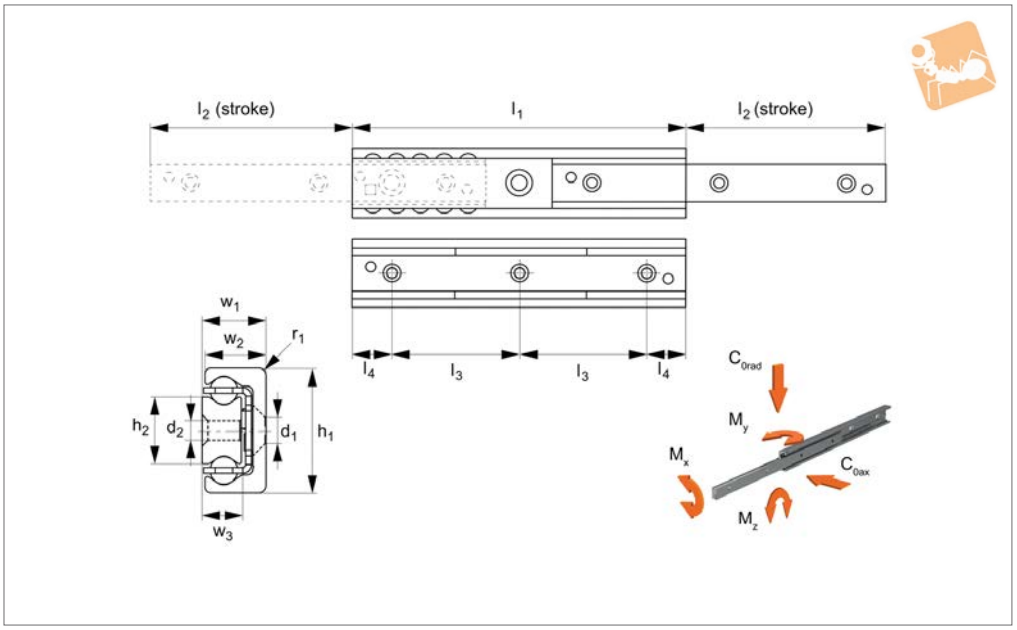

### Material
Cold drawn bearing steel raceways hardened to 60 HRc. Balls - hardened steel.
Zinc coating to ISO2081 (excluding race-ways). Corrosion resistant coatings available on request.

### Technical Notes
These are extremely strong and rigid telescopic slides with high load capacities, offering a semi-telescopic movement. $C_{0rad}$ is the load rating for a single telescopic slide. They have very low deflection characteristics.
Weight 1,32 Kg/m.
Temperature range: -30°C to +170°C.

### Tips
A double direction stroke can be obtained by removing the end stops screws at the end of each side of the intermediate member.
For double direction strokes, when the moving element has started the stroke in the opposite direction it will catch the intermediate member and force it to return.
The slides have end stops, but these are not designed to stop a moving, loaded slide. External end stops should be used for this.
Special strokes up to 65% of the closed length can be provided on request.

### Important Notes
$d_1$ and $d_2$ for M4 threads.
r = 3.

| Order No. | $l_1$ | $l_2$ | $h_1$ | $w_1$ | $l_3$ | $l_4$ | $h_2$ | $w_2$ | $w_3$ | No. of holes | Load (per rail) $C_{0\,ax}$ N max. | Load (per rail) $C_{0\,rad}$ N max. | $M_x$ Nm | $M_y$ Nm | $M_z$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1994.22-0130 | 130 | 76 | 22 | 11 | 80 | 25 | 11,3 | 10,25 | 6,5 | 2 | 219 | 313 | 5,7 | 10 | 15 |
| L1994.22-0210 | 210 | 111 | 22 | 11 | 80 | 25 | 11,3 | 10,25 | 6,5 | 3 | 501 | 715 | 10,7 | 36 | 51 |
| L1994.22-0290 | 290 | 154 | 22 | 11 | 80 | 25 | 11,3 | 10,25 | 6,5 | 4 | 696 | 994 | 14,9 | 69 | 99 |
| L1994.22-0370 | 370 | 196 | 22 | 11 | 80 | 25 | 11,3 | 10,25 | 6,5 | 5 | 895 | 1278 | 19 | 113 | 162 |
| L1994.22-0450 | 450 | 231 | 22 | 11 | 80 | 25 | 11,3 | 10,25 | 6,5 | 6 | 1190 | 1701 | 24 | 180 | 258 |
| L1994.22-0530 | 530 | 274 | 22 | 11 | 80 | 25 | 11,3 | 10,25 | 6,5 | 7 | 1385 | 1979 | 28,2 | 248 | 355 |
| L1994.22-0610 | 610 | 316 | 22 | 11 | 80 | 25 | 11,3 | 10,25 | 6,5 | 8 | 1584 | 2262 | 32,3 | 327 | 467 |
| L1994.22-0690 | 690 | 351 | 22 | 11 | 80 | 25 | 11,3 | 10,25 | 6,5 | 9 | 1882 | 2689 | 37,3 | 436 | 623 |
| L1994.22-0770 | 770 | 394 | 22 | 11 | 80 | 25 | 11,3 | 10,25 | 6,5 | 10 | 2077 | 2967 | 41,5 | 539 | 769 |




# L1994.28



## Material
Cold drawn bearing steel raceways hardened to 60 HRc. Balls - hardened steel.
Zinc coating to ISO2081 (excluding raceways). Corrosion resistant coatings available on request.

## Technical Notes
These are extremely strong and rigid telescopic slides with high load capacities, offering a semi-telescopic movement. $C_{0rad}$ is the load rating for a single telescopic slide. They have very low deflection characteristics.
Weight 2,02 Kg/m.
Temperature range: -30°C to +170°C.

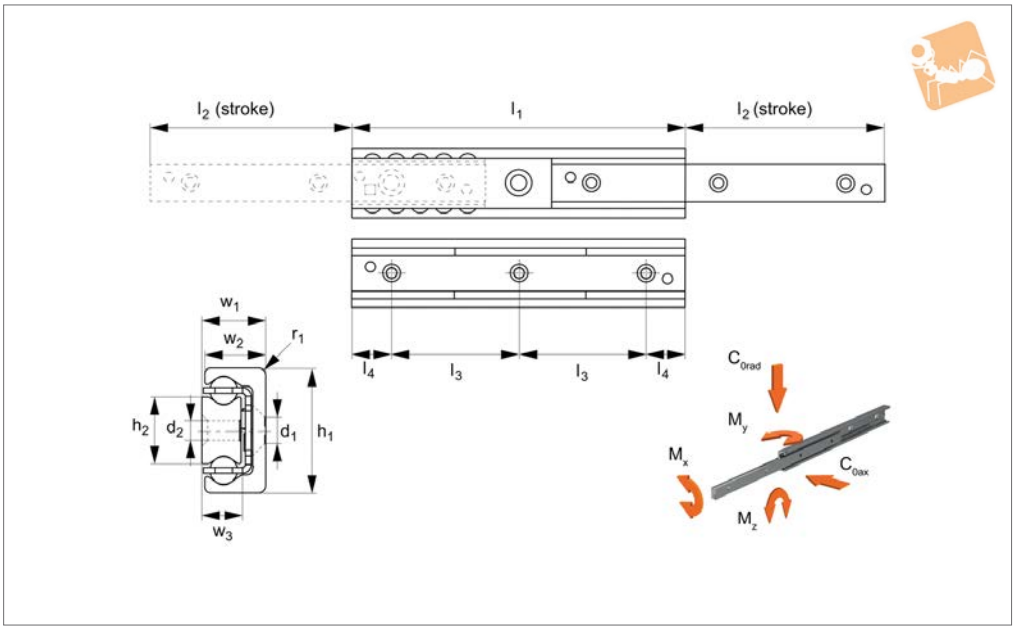
## Tips
A double direction stroke can be obtained by removing the end stops screws at the end of each side of the intermediate member.
For double direction strokes, when the moving element has started the stroke in the opposite direction it will catch the intermediate member and force it to return.
The slides have end stops, but these are not designed to stop a moving, loaded slide. External end stops should be used for this.
Special strokes up to 65% of the closed length can be provided on request.

## Important Notes
$d_1$=Ø5.5 and $d_2$=M5.
r=1.

| Order No. | $l_1$ | $l_2$ stroke | $h_1$ | $w_1$ | $l_3$ | $l_4$ | $h_2$ | $w_2$ | $w_3$ | No. of holes | Load (per rail) $C_{0\,ax}$ N max. | Load (per rail) $C_{0\,rad}$ N max. | $M_x$ Nm max. | $M_y$ Nm max. | $M_z$ Nm max. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1994.28-0130 | 130 | 74 | 28 | 13 | 80 | 25 | 15 | 12,3 | 7,5 | 2 | 452 | 645 | 17 | 23 | 30 |
| L1994.28-0210 | 210 | 116 | 28 | 13 | 80 | 25 | 15 | 12,3 | 7,5 | 3 | 816 | 1165 | 27,5 | 60 | 86 |
| L1994.28-0290 | 290 | 148 | 28 | 13 | 80 | 25 | 15 | 12,3 | 7,5 | 4 | 1413 | 2019 | 41 | 135 | 190 |
| L1994.28-0370 | 370 | 190 | 28 | 13 | 80 | 25 | 15 | 12,3 | 7,5 | 5 | 1780 | 2543 | 52 | 215 | 309 |
| L1994.28-0450 | 450 | 232 | 28 | 13 | 80 | 25 | 15 | 12,3 | 7,5 | 6 | 2148 | 3069 | 64 | 316 | 450 |
| L1994.28-0530 | 530 | 274 | 28 | 13 | 80 | 25 | 15 | 12,3 | 7,5 | 7 | 2517 | 3595 | 74 | 438 | 625 |
| L1994.28-0610 | 610 | 316 | 28 | 13 | 80 | 25 | 15 | 12,3 | 7,5 | 9 | 2906 | 4151 | 83,5 | 579 | 822 |
| L1994.28-0690 | 690 | 358 | 28 | 13 | 80 | 25 | 15 | 12,3 | 7,5 | 9 | 3266 | 4666 | 95 | 738 | 1055 |
| L1994.28-0770 | 770 | 400 | 28 | 13 | 80 | 25 | 15 | 12,3 | 7,5 | 10 | 3634 | 5192 | 107 | 916 | 1310 |
| L1994.28-0850 | 850 | 433 | 28 | 13 | 80 | 25 | 15 | 12,3 | 7,5 | 11 | 4232 | 6045 | 120 | 1166 | 1667 |
| L1994.28-0930 | 930 | 475 | 28 | 13 | 80 | 25 | 15 | 12,3 | 7,5 | 12 | 4584 | 6549 | 129 | 1392 | 1991 |
| L1994.28-1010 | 1010 | 517 | 28 | 13 | 80 | 25 | 15 | 12,3 | 7,5 | 13 | 4952 | 7074 | 141 | 1637 | 2333 |
| L1994.28-1090 | 1090 | 559 | 28 | 13 | 80 | 25 | 15 | 12,3 | 7,5 | 14 | 5267 | 7709 | 151 | 1896 | 2709 |
| L1994.28-1170 | 1170 | 601 | 28 | 13 | 80 | 25 | 15 | 12,3 | 7,5 | 15 | 5688 | 8125 | 162 | 2178 | 3111 |

# Partially Telescopic Slides
size 35

## L1994.35





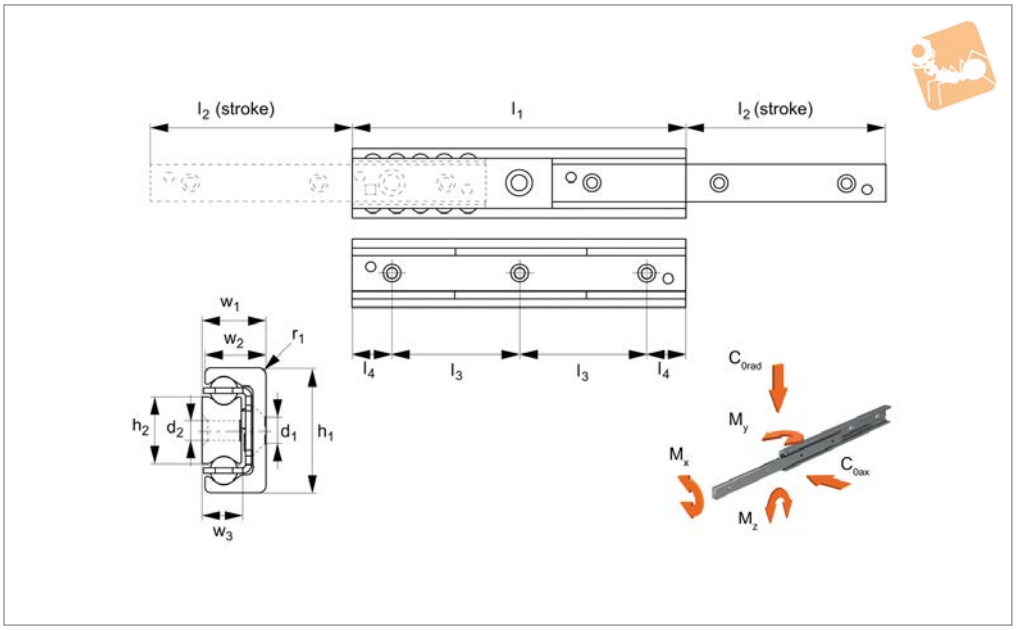

### Material
Cold drawn bearing steel raceways hardened to 60 HRc. Balls - hardened steel.
Zinc coating to ISO2081 (excluding race-ways). Corrosion resistant coatings available on request.

### Technical Notes
These are extremely strong and rigid telescopic slides with high load capacities, offering a semi-telescopic movement. $C_{0rad}$ is the load rating for a single telescopic slide. They have very low deflection characteristics.
Weight 3,05 Kg/m.
Temperature range: -30°C to +170°C.

### Tips
A double direction stroke can be obtained by removing the end stops screws at the end of each side of the intermediate member.
For double direction strokes, when the moving element has started the stroke in the opposite direction it will catch the intermediate member and force it to return.
The slides have end stops, but these are not designed to stop a moving, loaded slide. External end stops should be used for this.
Special strokes up to 65% of the closed length can be provided on request.

### Important Notes
$d_1$=Ø6.5 and $d_2$=M6
r=2.

| Order No. | $l_1$ | $l_2$ stroke | $h_1$ | $w_1$ | $l_3$ | $l_4$ | $h_2$ | $w_2$ | $w_3$ | No. of holes | Load (per rail) $C_{0\,ax}$ N max. | Load (per rail) $C_{0\,rad}$ N max. | $M_x$ Nm max. | $M_y$ Nm max. | $M_z$ Nm max. | Weight kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1994.35-0210 | 210 | 127 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 3 | 763 | 1090 | 37 | 63 | 90 | 0,63 |
| L1994.35-0290 | 290 | 159 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 4 | 1471 | 2101 | 56 | 155 | 218 | 0,87 |
| L1994.35-0370 | 370 | 203 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 5 | 1880 | 2686 | 69 | 247 | 348 | 1,11 |
| L1994.35-0450 | 450 | 247 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 6 | 2289 | 3271 | 80,5 | 365 | 515 | 1,35 |
| L1994.35-0530 | 530 | 279 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 7 | 3045 | 4350 | 101 | 553 | 787 | 1,59 |
| L1994.35-0610 | 610 | 323 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 8 | 3452 | 4932 | 113 | 722 | 1027 | 1,85 |
| L1994.35-0690 | 690 | 367 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 9 | 3860 | 5514 | 125 | 914 | 1296 | 2,07 |
| L1994.35-0770 | 770 | 399 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 10 | 4629 | 6614 | 143,5 | 1203 | 1711 | 2,31 |
| L1994.35-0850 | 850 | 443 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 11 | 5035 | 7192 | 157 | 1446 | 2063 | 2,55 |
| L1994.35-0930 | 930 | 487 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 12 | 5440 | 7773 | 170 | 1713 | 2441 | 2,79 |
| L1994.35-1010 | 1010 | 519 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 13 | 6218 | 8882 | 186 | 2104 | 3002 | 3,03 |
| L1994.35-1090 | 1090 | 563 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 14 | 6609 | 9504 | 201 | 24122 | 3457 | 3,27 |
| L1994.35-1170 | 1170 | 607 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 15 | 7026 | 10037 | 215 | 2764 | 3946 | 3,51 |
| L1994.35-1250 | 1250 | 639 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 16 | 7798 | 11288 | 232 | 3256 | 4648 | 3,75 |
| L1994.35-1330 | 1330 | 683 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 17 | 8209 | 11728 | 244,5 | 3652 | 5211 | 3,99 |
| L1994.35-1410 | 1410 | 727 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 18 | 8726 | 12338 | 257 | 4070 | 5809 | 3,99 |
| L1994.35-1490 | 1490 | 759 | 35 | 17 | 80 | 25 | 15,8 | 16,5 | 10 | 19 | 9396 | 13423 | 273 | 4663 | 6654 | 4,47 |




# L1994.43



## Material

Cold drawn bearing steel raceways hardened to 60 HRc. Balls - hardened steel.
Zinc coating to ISO2081 (excluding raceways). Corrosion resistant coatings available on request.

## Technical Notes

These are extremely strong and rigid telescopic slides with high load capacities, offering a semi-telescopic movement. $C_{0rad}$ is the load rating for a single telescopic slide. They have very low deflection characteristics.
Weight 5,25 Kg/m.
Temperature range: -30°C to +170°C.

## Tips

A double direction stroke can be obtained by removing the end stops screws at the end of each side of the intermediate member.
For double direction strokes, when the moving element has started the stroke in the opposite direction it will catch the intermediate member and force it to return.
The slides have end stops, but these are not designed to stop a moving, loaded slide. External end stops should be used for this.
Special strokes up to 65% of the closed length can be provided on request.

## Important Notes

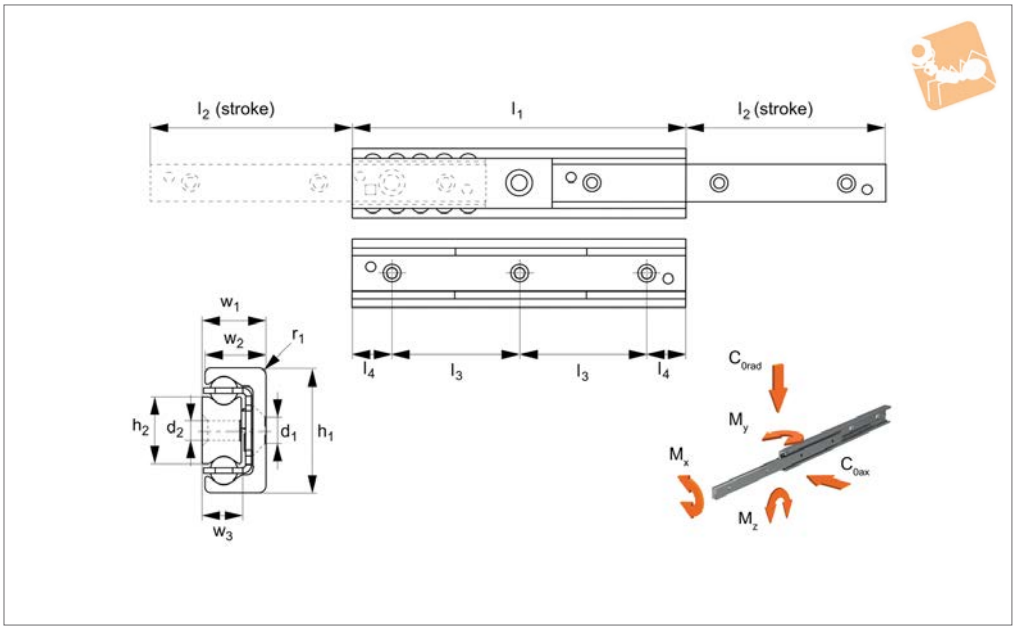
$d_1$=Ø8.5 and $d_2$=M8.
r=2,5.

| Order No. | $l_1$ | $l_2$ stroke | $h_1$ | $w_1$ | $l_3$ | $l_4$ | $h_2$ | $w_2$ | $w_3$ | No. of holes | Load (per rail) $C_{0ax}$ N max. | Load (per rail) $C_{0rad}$ N max. | $M_x$ Nm max. | $M_y$ Nm max. | $M_z$ Nm max. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1994.43-0210 | 210 | 123 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 3 | 1190 | 1700 | 62 | 89 | 123 |
| L1994.43-0290 | 290 | 158 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 4 | 2123 | 3033 | 96,5 | 204 | 294 |
| L1994.43-0370 | 370 | 208 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 5 | 2482 | 3546 | 119 | 313 | 444 |
| L1994.43-0450 | 450 | 243 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 6 | 3436 | 4909 | 151 | 514 | 735 |
| L1994.43-0530 | 530 | 278 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 7 | 4415 | 6308 | 184 | 766 | 1092 |
| L1994.43-0610 | 610 | 313 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 8 | 5410 | 7728 | 210 | 1069 | 1525 |
| L1994.43-0690 | 690 | 363 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 9 | 5730 | 8185 | 240 | 1297 | 1853 |
| L1994.43-0770 | 770 | 398 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 10 | 6533 | 9490 | 273 | 1687 | 2405 |
| L1994.43-0850 | 850 | 433 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 11 | 7432 | 10617 | 305 | 2120 | 3030 |
| L1994.43-0930 | 930 | 483 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 12 | 8034 | 11477 | 331 | 2442 | 3489 |
| L1994.43-1010 | 1010 | 518 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 13 | 9031 | 12902 | 362,5 | 2964 | 4233 |
| L1994.43-1090 | 1090 | 568 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 14 | 9904 | 13360 | 384 | 3343 | 4775 |
| L1994.43-1170 | 1170 | 603 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 15 | 10342 | 14774 | 417 | 3945 | 5636 |
| L1994.43-1250 | 1250 | 638 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 16 | 11198 | 16048 | 450 | 4602 | 6575 |
| L1994.43-1330 | 1330 | 688 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 17 | 11654 | 16649 | 470,5 | 5067 | 7237 |
| L1994.43-1410 | 1410 | 723 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 18 | 12618 | 17963 | 505 | 5809 | 8300 |
| L1994.43-1490 | 1490 | 758 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 19 | 13366 | 19094 | 538 | 6601 | 9427 |
| L1994.43-1570 | 1570 | 793 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 20 | 14532 | 20704 | 572 | 7442 | 10630 |
| L1994.43-1650 | 1650 | 843 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 21 | 14964 | 21378 | 593,5 | 8032 | 11476 |
| L1994.43-1730 | 1730 | 878 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 22 | 15962 | 22796 | 626 | 8961 | 12799 |
| L1994.43-1810 | 1810 | 928 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 23 | 16274 | 23249 | 650 | 9603 | 13722 |
| L1994.43-1890 | 1890 | 963 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 24 | 17142 | 24213 | 684 | 10619 | 15170 |

# Partially Telescopic Slides

size 43

| Order No. | $l_1$ | $l_2$ stroke | $h_1$ | $w_1$ | $l_3$ | $l_4$ | $h_2$ | $w_2$ | $w_3$ | No. of holes | Load (per rail) $C_0$ $^{ax}$ N max. | Load (per rail) $C_0$ $^{rad}$ N max. | $M_x$ Nm max. | $M_y$ Nm max. | $M_z$ Nm max. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1994.43-1970 | 1970 | 1013 | 43 | 22 | 80 | 25 | 23 | 21 | 13,5 | 25 | 17585 | 25122 | 709 | 11320 | 16169 |




# L1994.63



## Material
Cold drawn bearing steel raceways hardened to 60 HRc. Balls - hardened steel.
Zinc coating to ISO2081 (excluding raceways). Corrosion resistant coatings available on request.

## Technical Notes
These are extremely strong and rigid telescopic slides with high load capacities, offering a semi-telescopic movement. $C_{0rad}$ is the load rating for a single telescopic slide.
They have very low deflection characteristics.
Weight 10,3 Kg/m.
Temperature range: -30°C to +170°C.

## Tips
A double direction stroke can be obtained by removing the end stops screws at the end of each side of the intermediate member.
For double direction strokes, when the moving element has started the stroke in the opposite direction it will catch the intermediate member and force it to return.
The slides have end stops, but these are not designed to stop a moving, loaded slide. External end stops should be used for this.
Special strokes up to 65% of the closed length can be provided on request.

## Important Notes
$d_1$ (for DIN7984 cap screws) and $d_2$ for M8 threads.
$h_3$ = 2 x 45°.

| Order No. | $l_1$ | $l_2$ | $h_1$ | $w_1$ | $l_3$ | $l_4$ | $h_2$ | $w_2$ | $w_3$ | No. of holes | Load (per rail) $C_{0\,ax}$ N max. | Load (per rail) $C_{0\,rad}$ N max. | $M_x$ Nm max. | $M_y$ Nm max. | $M_z$ Nm max. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1994.63-0610 | 610 | 333 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 8 | 7414 | 10591 | 474 | 1553 | 2219 |
| L1994.63-0690 | 690 | 373 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 9 | 8774 | 12534 | 547 | 2072 | 2960 |
| L1994.63-0770 | 770 | 413 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 10 | 10142 | 14489 | 621 | 2666 | 3808 |
| L1994.63-0850 | 850 | 453 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 11 | 11516 | 16452 | 694 | 3334 | 4763 |
| L1994.63-0930 | 930 | 493 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 12 | 12985 | 18421 | 768 | 4077 | 5824 |
| L1994.63-1010 | 1010 | 533 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 13 | 14277 | 20395 | 841 | 4894 | 6992 |
| L1994.63-1090 | 1090 | 573 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 14 | 15661 | 22373 | 914 | 5787 | 8267 |
| L1994.63-1170 | 1170 | 613 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 15 | 17048 | 24354 | 988 | 6754 | 9648 |
| L1994.63-1250 | 1250 | 653 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 16 | 18436 | 26337 | 1061 | 7795 | 11136 |
| L1994.63-1330 | 1330 | 693 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 17 | 19825 | 28322 | 1135 | 8912 | 12731 |
| L1994.63-1410 | 1410 | 733 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 18 | 21216 | 30309 | 1208 | 10102 | 14432 |
| L1994.63-1490 | 1490 | 773 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 19 | 22608 | 32297 | 1282 | 11368 | 16240 |
| L1994.63-1570 | 1570 | 813 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 20 | 24001 | 34287 | 1355 | 12708 | 18155 |
| L1994.63-1650 | 1650 | 853 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 21 | 25394 | 36277 | 1429 | 14123 | 20176 |
| L1994.63-1730 | 1730 | 893 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 22 | 26788 | 38268 | 1502 | 15631 | 22304 |
| L1994.63-1810 | 1810 | 933 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 23 | 28182 | 40261 | 1576 | 17177 | 24539 |
| L1994.63-1890 | 1890 | 973 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 24 | 29577 | 42253 | 16479 | 18816 | 26880 |
| L1994.63-1970 | 1970 | 1013 | 63 | 29 | 80 | 25 | 29,3 | 28 | 10,5 | 25 | 30973 | 44247 | 1723 | 20530 | 29328 |

# Telescopic Rail

## Specifications and applications



### Specifications

- Generally all our telescopic rails have induction hardened raceways.
- Cold drawn roller bearing steel.
- Maximum operating speed 0,8 m/s.
- Temperature range (mainly -30°C to +170°C).
- Electrolytic galvanised to ISO 2081, other anti-corrosion finishes on request.
- High load ratings with low deflection characteristics.
- Minimum play (even at maximum load ratings).
- Smooth, free running movement.
- Long strokes and heavy load ratings.
- Can be used in horizontal applications only (due to the use of a ball cage), with the exception of part number L1985 which uses roller bearings.
- Light duty "cage stops" are included on the telescopic rails to prevent damage to the ball cage. External end stops must be designed into your application (to protect the rails from high forces and possible damage on opening and closing).
- For telescopic rails with an "upper" and "lower" rail, the moving rail should be the lower one. Using the upper rail as the moving element effects the smooth running and the load capacity of the telescopic sliders.
- All load capacity figures are given for a single rail, and based on continuous use.
- Fix to structures using screws of strength class 10,9.
- Anti-corrosion option. We have a highly effective anti-corrosive coating option, and we utilise stainless steel ball bearings in this version.

### Applications

**Special purpose & packaging machines**
Precision positioning systems
handling units
robotic systems • cutting machines

**Seating**
Sliding seats
disability ramps
seat extensions

**Safety guarding**
Extending protective systems
sliding gates
automatic pick & place

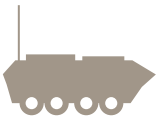
**Logistics solutions**
Container extensions
heavy duty extending systems
sliding doors

**Disability vehicles**
Sliding seats
extension ramps

**Transport (naval)**
Sliding hatches
pull-out storage

**Transport (rail)**
Seat adjustment
sliding doors
battery removal units

**Transport (automotive)**
Ambulance sliding systems
fire fighting vehicles
sliding panels

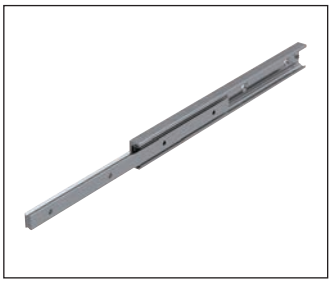


**Transport (military)**
Sliding seats
protective hatches
stretcher extensions

### Partial extension telescopic slides

**L1994** - these are extremely compact rails with a simple design and very high load ratings. They have high radial and axial load capacity as well as the ability to take considerable moment loads.

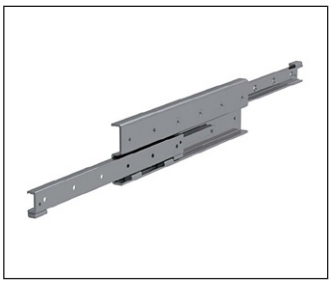
| | |
|---|---|
| **Standard extension** | 50% |
| **Special extension range** | up to 65% (on request) |
| **Single & double direction?** | Yes (remove end stop) |
| **Number of rail sizes** | 5 |
| **Maximum extension (at 50%)** | 1010 mm |
| **Maximum load (per rail)** | 4500 Kg |



### Full extension telescopic slides

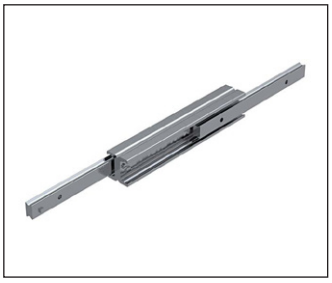
**L1984** - these are very thin rails with high levels of rigidity and load capacity. Very low deflection even when fully loaded and in an open position.

| | |
|---|---|
| **Standard extension** | 100% |
| **Special extension range** | up to 130% (on request) |
| **Single & double direction?** | Yes (specify on ordering) |
| **Number of rail sizes** | 4 |
| **Maximum extension (at 100%)** | 2020 mm |
| **Maximum load (per rail)** | 1200 Kg |



**L1986** - a very low height rail gives the slide very rigid capabilities. The double T cross section allows a compact size with low radial loading deflection and axial load capability too.

| | |
|---|---|
| **Standard extension** | 100% |
| **Special extension range** | up to 130% (on request) |
| **Single & double direction?** | Yes (remove end stop) |
| **Number of rail sizes** | 5 |
| **Maximum extension (at 100%)** | 2020 mm |
| **Maximum load (per rail)** | 700 Kg |



**L1988** - the compact, low profile, square shaped configuration gives the slides similar load capacities for radial and axial loads.

| | |
|---|---|
| **Standard extension** | 100% |
| **Special extension range** | up to 130% (on request) |
| **Single & double direction?** | Yes (remove end stop) |
| **Number of rail sizes** | 4 |
| **Maximum extension (at 100%)** | 2020 mm |
| **Maximum load (per rail)** | 1250 Kg |

# Technical Information

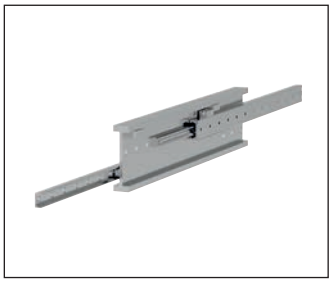
## Product overview



**L1992** - our lightest duty telescopic slides. Still from cold-drawn steel but with unhardended raceways making these parts robust but less expensive than our other telescopic rails.

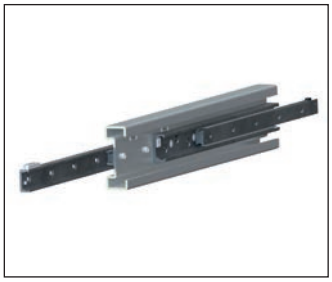
| | |
|---|---|
| **Standard extension** | 100% |
| **Special extension range** | No |
| **Single & double direction?** | No |
| **Number of rail sizes** | 1 |
| **Maximum extension (at 100%)** | 1010 mm |
| **Maximum load (per rail)** | 60 Kg |

**L1996** - these are ultra heavy-duty telescopic slides, for very heavy loads. An extremely rigid double T profile acts as an intermediate element providing a high load capacity and minimum deflection.



| | |
|---|---|
| **Standard extension** | 100% |
| **Special extension range** | up to 130% (on request) |
| **Single & double direction?** | On request |
| **Number of rail sizes** | 1 |
| **Maximum extension (at 100%)** | 2250 mm |
| **Maximum load (per rail)** | 1900 Kg |

**L1995** - these are compact design, heavy duty full stroke telescopic rails. They have a relatively light weight, and have induction hardened raceways for long-life.



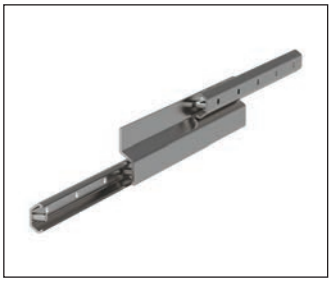
| | |
|---|---|
| **Standard extension** | 100% |
| **Special extension range** | up to 130% (on request) |
| **Single & double direction?** | Yes (remove end stop) |
| **Number of rail sizes** | 4 |
| **Maximum extension (at 100%)** | 2020 mm |
| **Maximum load (per rail)** | 550 Kg |

**L1985** - these are full extension slides to be used where dirt or other contaminants might be present. The ball bearings are replaced with large roller bearings (with wipers to clear the rail). Based on our compact rail system.

| | |
|---|---|
| **Standard extension** | 100% |
| **Special extension range** | No |
| **Single & double direction?** | No |
| **Number of rail sizes** | 1 |
| **Maximum extension (at 100%)** | 1980 mm |
| **Maximum load (per rail)** | 275 Kg |

**L1989** - these are full extension slides made from 316L stainless steel. For use in applications where corrosion may be a problem.

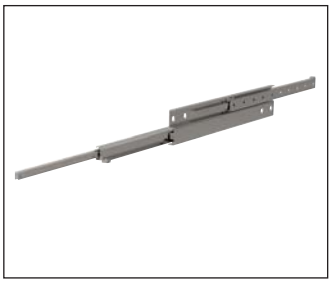
| | |
|---|---|
| **Standard extension** | 100% |
| **Special extension range** | No |
| **Single & double direction?** | No |
| **Number of rail sizes** | 1 |
| **Maximum extension (at 100%)** | 1120 mm |
| **Maximum load (per rail)** | 35 Kg |



### Extended stroke telescopic rails

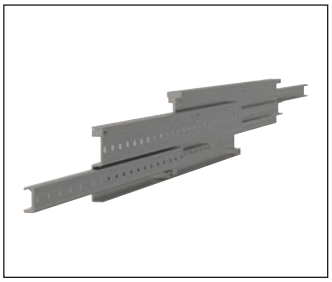
**L1997** - these are extended stroke (150%), heavy duty telescopic rails, with high load capacity and stiffness.

| | |
|---|---|
| **Standard extension** | 150% |
| **Special extension range** | On request |
| **Single & double direction?** | No |
| **Number of rail sizes** | 1 |
| **Maximum extension (at 150%)** | 3030 mm |
| **Maximum load (per rail)** | 240 Kg |



**L1998** - these are extended stroke (150%), heavy duty telescopic rails. They have a solid steel intermediate element. They are our heaviest duty extended stroke units.

| | |
|---|---|
| **Standard extension** | 150% |
| **Special extension range** | On request |
| **Single & double direction?** | No |
| **Number of rail sizes** | 1 |
| **Maximum extension (at 150%)** | 3020 mm |
| **Maximum load (per rail)** | 480 Kg |



## How to select a telescopic rail

Firstly, these telescopic rails are for heavy duty applications, they are not made from pressed steel but from cold-drawn steel, with hardened raceways.

As a result they can be used in demanding applications and for repetitive applications or for applications where a high degree of product reliability is required as well as smooth and consistent operation. They have smooth movement, minimal play and a low coefficient of friction. There are no better telescopic rails available!

### Stroke required

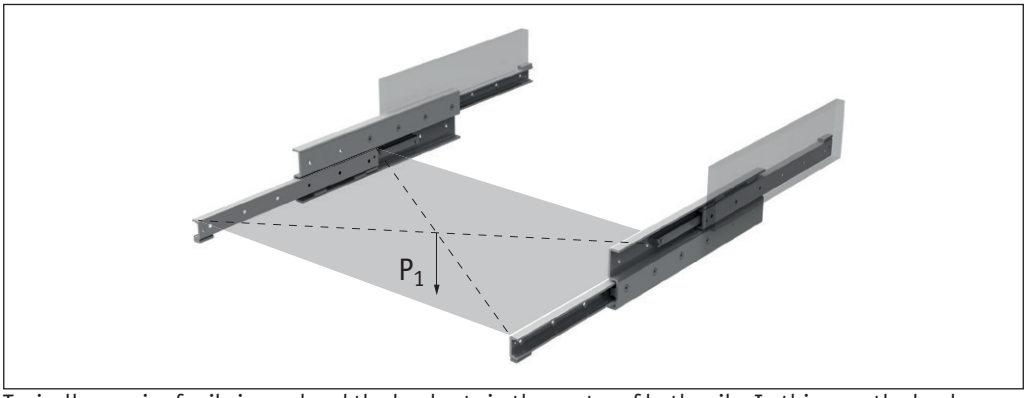
In general the partial extension (strokes of 50% of overall rail length) telescopic rails are less expensive than the full extension rails and over-extension rails.

Where possible the use of a double direction rail (i.e. can stroke forward and backwards) can be very cost-effective, allowing twice the stroke for the same rail length, but this may not suit many applications.

### Load capacity

The next consideration is based on the load to be carried. All loads given are for a single rail and assume the load is centred in the mid-point of the moveable rail, in its extended position.

**Important: In cases where the rail has an upper and lower rail, the receiving rail should be the lower one.**




Typically, a pair of rails is used and the load acts in the centre of both rails. In this case the load capacity of the pair of rails is calculated as follows:

$$P_1 = 2 \cdot C_{0rad}$$

Some rails are more suited to axial loads and moment loads than others, dependent on their cross sectional form.

### Rail shape

The different rail profiles and sizes allow rails to be chosen to suit various applications e.g.

**L1984** - thin section.
**L1992** - thin section (but lighter duty).
**L1986** - low height.
**L1988** - low height.
**L1995** - very heavy duty.
**L1996** - very heavy duty.

## Anti-corrosion treatments

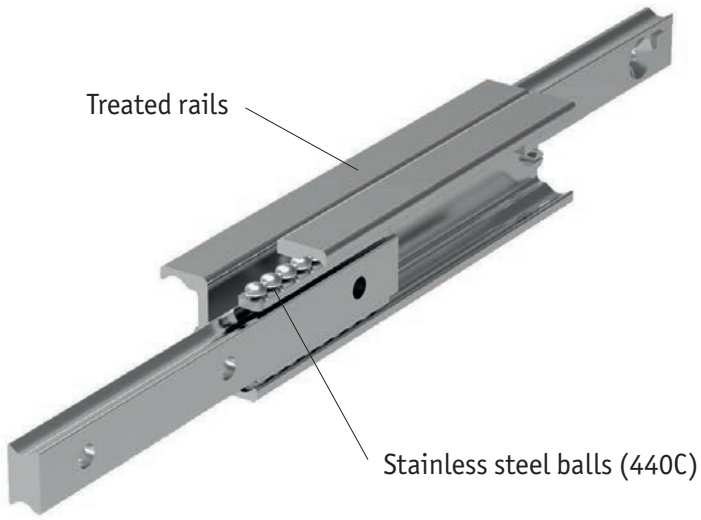
The telescopic slides have a standard electrolytic zinc plate coating (to ISO 2081).

We offer a number of alternatives to increase the anti-corrosion protection including nickel plating.

However, our preferred and most effective solution to inhibit corrosion is to apply a special corrosion resistant (Lanthane) plating to the rails and sliders and to combine this with stainless steel ball bearings.

This coating is applied after the zinc plating process and is a special trivalent chromium passivation that is approximately 15 microns thick (and is free of Chromium VI).

This applies a nano-particle coating and has extremely good results of 200 hours in salt spray tests before any signs of white rust.




Use with stainless steel fixing screws, strength class 10,9

**Salt Spray Test (to DIN EN ISO 9227 NSS)**

Coating after 720 hours salt spray

Chemical nickel plating after 360 hours

Testing conducted by independent institute

The coating on the telescopic slides is a soft coating and will (over time) wear off the raceways (which are subject to loads from the ball bearings) – this can be seen sometimes by a thin line on the raceways.

However lubricating the raceways with grease (as recommended) ensures, as far as possible, the good corrosion properties of the overall coating.

Telescopic Rail from Automotion Components

# Technical Information

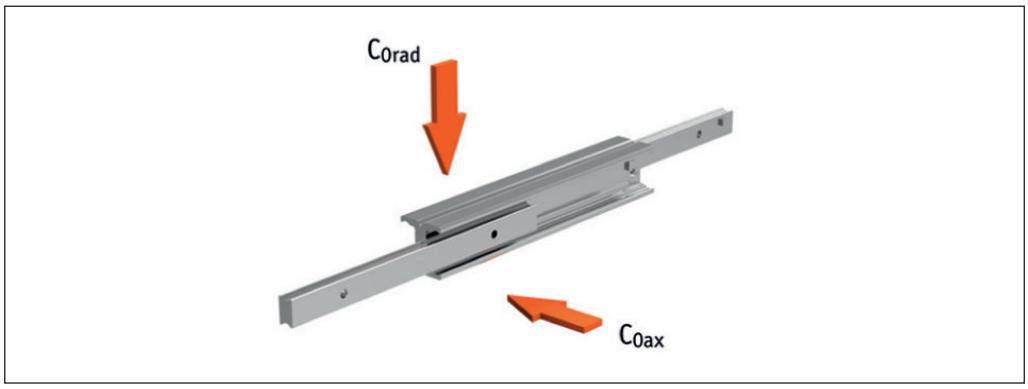
## Load ratings explained



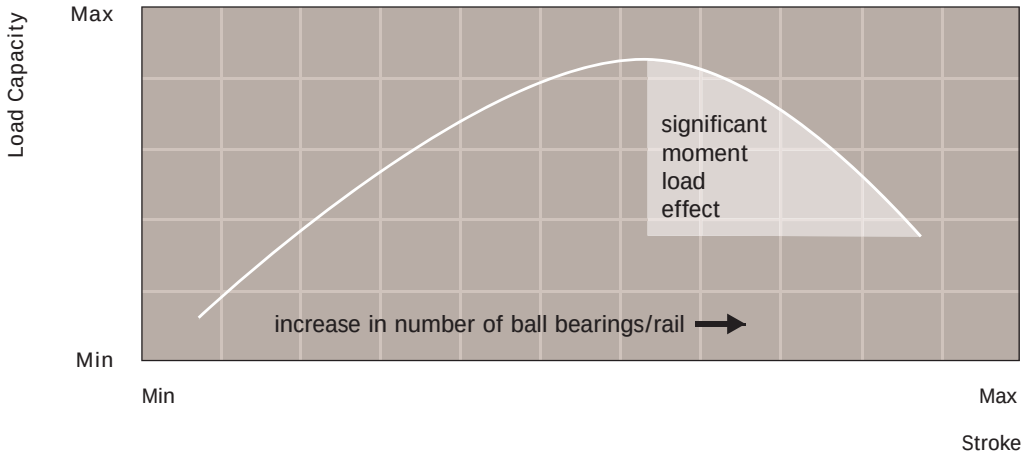


Wherever possible the telescopic rails should be used so that the main load applied is a radial load on the telescopic rail. Only certain types of our telescopic rails can accept axial loads.

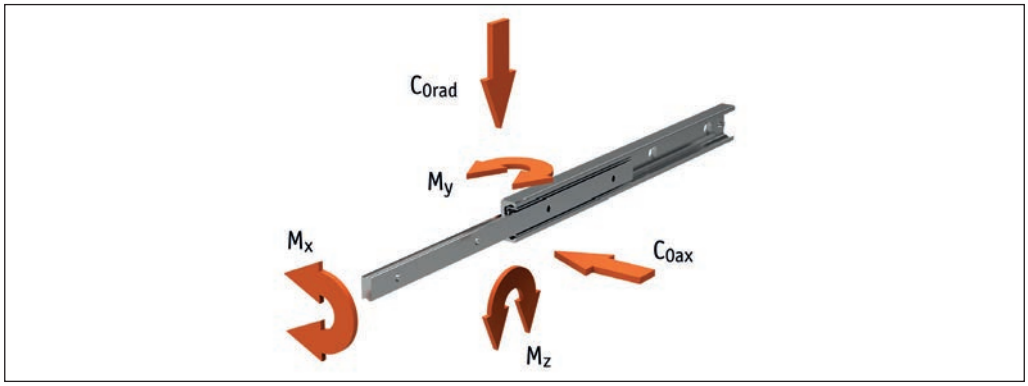
Typically the radial load is around an extra 60% to 100% of the axial load. All our load figures are shown per rail and assume that the load is centred about the mid-extended position of the rails.




For telescopic rails with an upper and lower element, the moving element should be the lower element. A typical telescopic rail size will have then following load capacity profile:-




Partially telescopic rails will have a considerably higher load capacity than fully telescopic rails, so if you have space to fit a partially telescopic rail (say 50% extension) then choosing this type can allow a smaller profile size rail to be chosen, reducing the cost. Partially telescopic rails can also accept some moment loads.




For the load ratings to apply the structure to which they are mounted must be rigid and not distorted, and all the fixing holes for the mounting screws should be used.

### Increasing the stroke

The stroke of many of the rails can be increased slightly from the standard.

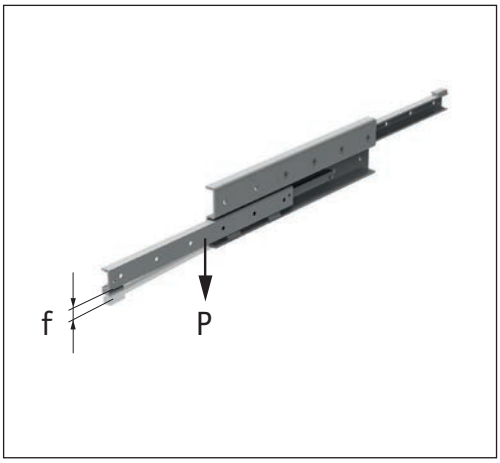
This is achieved by reducing the length of the ball cage in the rail. This will have the effect of reducing the load capacity of the rail - in this case for a correct load rating please consult our Technical Department.

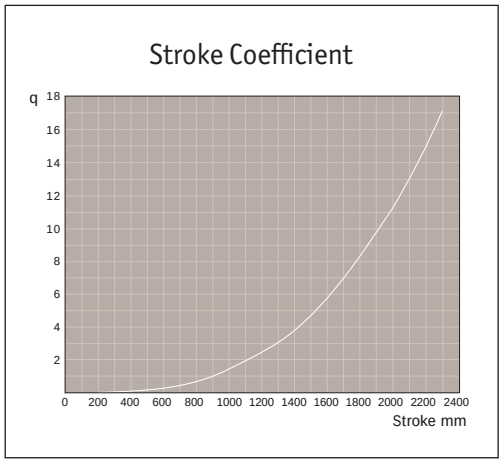
Typically a 100% stroke rail can be increased to a maximum stroke of 130% (of the closed length of the rail) and a partial extension stroke rail (50% extension) can be increased to a maximum of 65%.

Please see the table in the technical pages which shows how special stroke rails can be specified.

### Deflection

The maximum deflection allowed should also be considered.




If the load P acts vertically on the rail, then the expected elastic deflection of the individual telescopic rail in the extended state can be found by:

$$f = \frac{q}{t} \cdot P$$

f = expected elastic deflection (in mm)
q = stroke coefficient (see graph)
t = factor depending on the model of the telescopic rail (see below)
P = actual load acting on the centre of a rail, in N

| | | | |
|---|---|---|---|
| L1984.28 | t = 180 | L1986.63 | t = 540 |
| L1984.35 | t = 470 | L1988.22 | t = 3 |
| L1984.43 | t = 800 | L1988.28 | t = 8 |
| L1984.43 | t = 4000 | L1988.35 | t = 13 |
| L1986.22 | t = 8 | L1988.43 | t = 56 |
| L1986.28 | t = 17 | L1992.LTF44 | t = 25 |
| L1986.35 | t = 54 | L1985.43 | t = 3500 |
| L1986.43 | t = 120 | L1985.43 | t = 800 |

Note: This formula applies to a single rail. When using a rail pair, the load of the single rail is $P = P_1/2$. This estimated value assumes an absolutely rigid adjacent construction. If this rigidity is not present, the actual deflection will deviate from the calculation.

Important: With the partial extensions series, the deflection is almost completely determined by the rigidity (i.e. by the moment of inertia) of the adjacent construction.

# Technical Information

## Special strokes





### Example of a special stroke

| Product series | Maximum stroke as % of closed length |
|---|---|
| L1984 | 130% |
| L1986 | 130% |
| L1988 | 130% |
| L1994 | 65% |

E.g. a standard stroke for L1984.435-0070 is 796mm.

This can be increased to 130% of 770 i.e. 1001 mm, but is limited by the factor in the table below (in this example the stroke modification is 30mm):

**Standard stroke: 796mm**

**Stroke modification: 30mm (ball spacing)**

**e.g. extra ... 826, 856, 886, 916... 976**

Therefore the part number for the maximum stroke would be:

### Special strokes

Special strokes are defined as deviations from standard stroke $l_2$. Increasing the stroke involves reducing the length of the ball cage and number of balls. This in turn reduces the rail load capacity. To confirm the reduced rail load capacity figures, please contact our Technical Department.

These values are dependent on the spacing of the ball cage (i.e. by reducing the number of balls the stroke can be increased).

| Type | Size | Stroke modification mm |
|---|---|---|
| L1984 | 28 | 19 |
| L1986 | 35 | 24 |
| L1988 | 43 | 30 |
| L1994 | 28 | 9,5 |
| | 35 | 12 |
| | 43 | 15 |

No stroke modification is possible for series L1984 and L1985. Each stroke modification influences the load capabilities stated in the catalogue. It can happen that after a stroke modification, important fastening holes are no longer accessible. For more infomation, please consult our Technical Department. Stroke modification of series L1996 on request.

### External stops

On many of our rails, light duty end stops are built into the rail. These are only to stop movement when not loaded - they are not designed to stop a moving, loaded slide.

External end stops must be designed into systems to prevent any damage to the telescopic rails (some examples are shown below).

Rubber bumper stop

Shock absorber stop

Fixed stop with spring plunger

### Locking systems

For the L1984 series telescopic rails, there is an optional locking system unit (for locking in the closed position). This would be used for example in transport sector applications (military, rail etc.) where there is often a need to have the slide locked off during vehicle movement.

For locking in the up position (if required) customers design their own locking system (in built in their designed structure).

### Rigidity and alignment of structure

To get the best life, minimum rail deflection, and smoothness of movement, it is very important that the slides are installed (using all the accessible mounting holes) onto a rigid, parallel, plane structure.

The fixed and moving part of the slides assume the rigidity of the mounting structure.

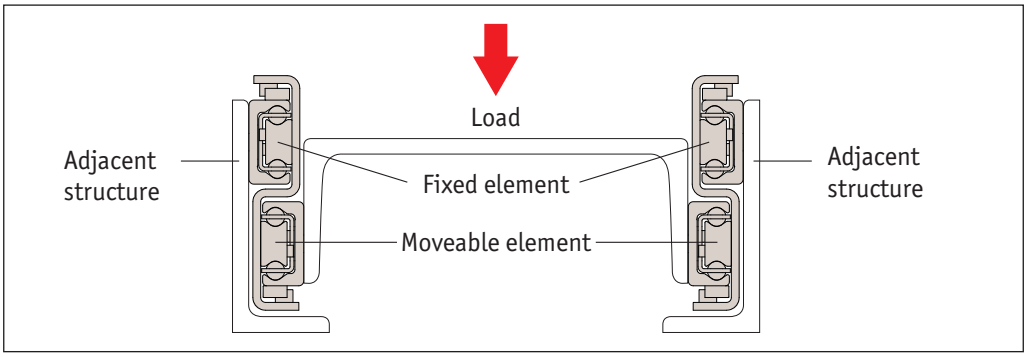
### Lubrication

Recommended lubrication intervals are heavily dependent upon the ambient conditions, speed and temperature. Under normal conditions, lubrication is recommended after 100 Km of operational performance or after an operating period of six months. In critical application cases the interval should be shorter.

Please clean the raceways carefully before lubrication. Raceways and spaces of the ball cage are lubricated with a lithium lubricant of average consistency (roller bearing lubricant).

Different lubricants for special applications are available upon request, e.g. lubricant with FDA approval is available for use in the food industry.

## Installation instructions




### General

- Internal stops are used to stop the unloaded slider and the ball cage. Please use external stops as end stops for a loaded system.
- To achieve optimum running properties, high service life and rigidity, it is necessary to fix the telescopic rails with all accessible holes onto a rigid and level surface. When using two telescopic rails, please observe the parallelism of the installation surfaces. The fixed and moveable rails fit to the rigid assembly construction.
- Our telescopic rails are suitable for continuous use in automatic systems. For this, the stroke should remain constant in all moving cycles and the operating speed must be checked.
  The movement of the telescopic rails is enabled by internal ballcages, which may experience an offset from the original position with differing strokes. This phase offset can have a negative effect on the running properties or limit the stroke. If differing strokes occur in an application, the drive force must be sufficient to appropriately synchronise the ball cage offset. Otherwise, an additional maximum stroke must be planned regularly to ensure the correct position of the ballcage.

### L1994

- The L1994 series accepts radial and axial loads as well as moment loads in all principle directions.
- Horizontal preferred (vertical application is possible, but prior to vertical installation, we recommend you consult our Technical Department).
- The installation of two partial extensions on a single profile provides a very high load capacity full extension, please consult our Technical Department.

### L1986 and L1988

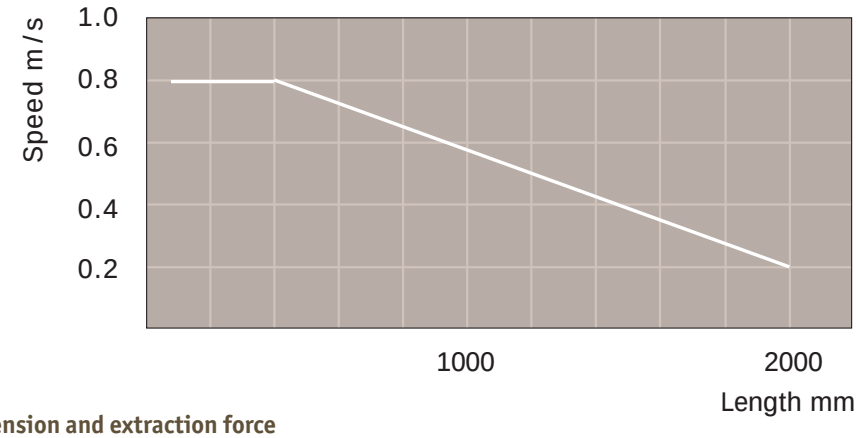
- The L1986 and L1988 series accept radial and axial loads.
- Horizontal preferred (vertical application is possible, but prior to vertical installation, we recommend you consult our Technical Department).

### L1984, L1992, L1996, L1985 and L1989

- The L1984, L1992, L1996, L1995 and L1989 series accept radial loads. This should act in the vertical cross-sectional axis on the moveable rails.
- Horizontal preferred (vertical application is possible, but prior to vertical installation, we recommend you consult our Technical Department).
- When installing make sure that the load is placed on the moveable element (the lower rail). The opposite assembly negatively affects smooth movement and load capacity of the telescopic stroke.
- Installation must be done on a rigid, adjacent construction using all accessible fixing holes.
- Pay attention to the parallel alignment during assembly with a paired application.

### Speed

The maximum operating speed is determined by the mass of the intermediate element, which moves with the movable rail. This reduces the maximum permissible operating speed with the increasing length.




### Extension and extraction force

The required actuation forces of a telescopic rail depend on the acting load and the deflection in the extended state. The force required for opening is principally determined by the coefficient of friction of the linear bearing, with correct assembly and lubrication, this is 0,01.

During the extension, the force is reduced with the elastic deflection of the loaded telescopic rail. A higher force is required to close a telescopic extension, since, based on the elastic deflection, even if it is minimal, the moveable rail must move against an inclined plane.

### Double-sided stroke

For all designs allowing double-sided stroke, it must be carefully noted that the position of the intermediate element is defined only in the extended state.

In the extracted state, the intermediate element may protrude by half of its length on each side (with the exception of both the L1994 series, (which comes out as a partial extension without the intermediate element) and the custom design of series L1986 which can be supplied with special driving disc on request.

The double-sided stroke in series L1994, L1986 and L1988 is achieved by removing the set screw.

For series L1984 version D, the double-sided stroke is achieved with a special set-up so that two types of rails are shown in the catalogue L1986 (single extension) and L1986 (double extension).

The double-sided stroke for series DMS is available on request. Series L1984.DSB (locking version), L1985 and L1992 are not available with double-sided stroke.

### Temperature range

- Series L1994, L1986, L1988 and L1992 can be used up to an ambient temperature of +170°C. A lithium lubricant for high operating temperature is recommended for temperatures above 130°C.
- Series L1984 and L1985 have a useable range of -30°C to +110°C due to the rubber stop.





## Service life

The service life is defined as the time span between commissioning and the first fatigue or wear indications on the raceway. The service life of a telescopic rail is dependent on several factors, such as the effective load, the installation precision, occurring shocks and vibrations, the operating temperature, the ambient conditions and the lubrication.
Calculation of the service life is based exclusively on the loaded rows of balls.

In practice, the decommissioning of the bearing, due to its destruction or extreme wear of a component, represents the end of service life.

This is taken into account by an application coefficient ($f_i$), so the service life consists of:

$$L_{Km} = 100 \cdot \left( \frac{\delta}{W} \cdot \frac{1}{f_i} \right)^3$$

L = calculated service life in Km
δ = load capacity factor in N (see tables on following pages)
W = equivalent load in N
$f_i$ = application coefficient

### Application coefficient $f_i$

| Operating conditions | Safety factor (.fi) |
|---|---|
| Neither shocks or vibrations, smooth and low-frequency direction change, clean environment | 1,3 - 1,8 |
| Light vibrations and average direction change | 1,8 - 2,3 |
| Shocks and vibrations, high-frequency direction change, very dirty environment | 2,3 - 3,5 |

If the external load, P, is the same as the dynamic load capacity, $C_{0rad}$ (which of course must never be exceeded), the service life at ideal operating conditions ($f_i = 1$) is 100Km.

For a single load P, the following applies: W = P.

If several external loads occur simultaneously, the equivalent load is calculated as follows:

$$W = P_{rad} + \left( \frac{P_{ax}}{C_{0ax}} + \frac{M_1}{M_x} + \frac{M_2}{M_y} + \frac{M_3}{M_z} \right) \cdot C_{0rad}$$

## Static load

The telescopic extension of the various series accept different forces and moments loads.

During the static tests the radial load capacity, $C_{0rad}$, the axial load capacity, $C_{0ax}$, and the moments $M_x$, $M_y$ and $M_z$ indicate the maximum permissible values of the loads; higher loads negatively effect the running properties and the mechanical strength.

A safety factor, z, is used to check the static load, which takes into account the basic parameters of the application and is defined in more detail in the following table.

### Safety factor Z

| Basic parameters of the application | Safety factor, z |
|---|---|
| Neither shocks or vibrations, smooth and low-frequency reverse, high assembly accuracy, no elastic deformations | 1 - 1,5 |
| Normal installation conditions | 1,5 - 2 |
| Shocks and vibrations, high-frequency, significant elastic deformation | 2 - 3,5 |

The ratio of the actual load to maximum permissible load may be as large as the reciprocal of the accepted safety factor, z, at the most.

$$\frac{P_{0rad}}{C_{0rad}} \le \frac{1}{z} \quad \left| \quad \frac{P_{0ax}}{C_{0ax}} \le \frac{1}{z} \quad \right| \quad \frac{M_1}{M_x} \le \frac{1}{z} \quad \left| \quad \frac{M_2}{M_y} \le \frac{1}{z} \quad \right| \quad \frac{M_3}{M_z} \le \frac{1}{z}$$

The above formulae are valid for a single load case. If two or more of the described forces act simultaneously, the following check must be made:

$$\frac{P_{0rad}}{C_{0rad}} + \frac{P_{0ax}}{C_{0ax}} + \frac{M_1}{M_x} + \frac{M_2}{M_y} + \frac{M_3}{M_z} \le \frac{1}{z}$$

$P_{0rad}$ = effective radial load
$C_{0rad}$ = permissible radial load
$P_{0ax}$ = effective axial load
$C_{0ax}$ = permissible axial load
$M_1$ = effective moment in the X direction
$M_x$ = permissible moment in the X direction
$M_2$ = effective moment in the Y direction
$M_y$ = permissible moment in the Y direction
$M_3$ = effective moment in the Z direction
$M_z$ = permissible moment in the Z direction

# Technical Information

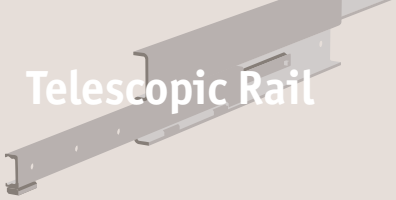
## Load capacity factor δ



| Length mm | L1984 | | |
|---|---|---|---|
| | 28 | 35 | 43 |
| | δ N | | |
| 290 | 863 | | |
| 370 | 1164 | 1533 | 2288 |
| 450 | 1466 | 1892 | 4055 |
| 530 | 1768 | 2540 | 3120 |
| 610 | 2078 | 2878 | 3929 |
| 690 | 2381 | 3217 | 4197 |
| 770 | 2684 | 3881 | 5010 |
| 850 | 3180 | 4218 | 5836 |
| 930 | 3474 | 4555 | 6090 |
| 1010 | 3778 | 5226 | 6916 |
| 1090 | 4081 | 5561 | 7750 |
| 1170 | 4384 | 5897 | 7646 |
| 1250 | 4896 | 6573 | 8829 |
| 1330 | 5193 | 6907 | 9077 |
| 1410 | 5496 | 7242 | 9909 |
| 1490 | 5806 | 7920 | 10746 |
| 1570 | | 8253 | 10988 |
| 1650 | | 8588 | 11825 |
| 1730 | | 9268 | 12665 |
| 1810 | | | 12904 |
| 1890 | | | 13743 |
| 1970 | | | 13983 |

Data to be used for service life ($L_{Km}$) calculations.

Telescopic Rail from Automotion Components



| Length mm | L1986 and L1988 | | |
|---|---|---|---|
| | 28 | 35 | 43 |
| | δ N | | |
| 130 | 357 | | |
| 210 | 655 | 614 | 923 |
| 290 | 1153 | 1211 | 1687 |
| 370 | 1456 | 1552 | 1974 |
| 450 | 1759 | 1892 | 2764 |
| 530 | 2063 | 2540 | 3580 |
| 610 | 2372 | 2878 | 4414 |
| 690 | 2675 | 3217 | 4661 |
| 770 | 2979 | 3881 | 5493 |
| 850 | 3487 | 4218 | 6335 |
| 930 | 3783 | 4555 | 6572 |
| 1010 | 4086 | 5226 | 7411 |
| 1090 | 4388 | 5561 | 8257 |
| 1170 | 4691 | 5897 | 8489 |
| 1250 | | 6573 | 9332 |
| 1330 | | 6907 | 9568 |
| 1410 | | 7242 | 10409 |
| 1490 | | 7920 | 11255 |
| 1570 | | | 12105 |
| 1650 | | | 12330 |
| 1730 | | | 13178 |
| 1810 | | | 13406 |
| 1890 | | | 14252 |
| 1970 | | | 14483 |

Data to be used for service life ($L_{Km}$) calculations.



Telescopic Rail from Automotion Components

# Technical Information

## Load capacity factor δ



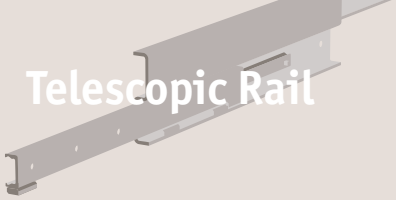
| Length mm | L1985 |
|---|---|
| | 43 |
| | δ N |
| 770 | 5160 |
| 850 | 5306 |
| 930 | 5424 |
| 1010 | 5522 |
| 1090 | 5605 |
| 1170 | 5675 |
| 1250 | 5736 |
| 1330 | 5789 |
| 1410 | 5836 |
| 1490 | 5878 |
| 1570 | 5915 |
| 1650 | 5948 |
| 1730 | 5978 |
| 1810 | 6005 |
| 1890 | 6030 |
| 1970 | 6053 |
| 2050 | 29341 |
| 2130 | 28763 |
| 2210 | 30595 |

Data to be used for service life ($L_{Km}$) calculations.

| Length mm | L1992 |
|---|---|
| | 43 |
| | δ N |
| 200 | 163 |
| 225 | 191 |
| 250 | 215 |
| 275 | 243 |
| 300 | 267 |
| 325 | 295 |
| 350 | 319 |
| 375 | 347 |
| 400 | 372 |
| 425 | 400 |
| 450 | 424 |
| 500 | 476 |
| 550 | 529 |
| 600 | 581 |
| 650 | 633 |
| 700 | 686 |
| 750 | 738 |
| 800 | 791 |
| 850 | 843 |
| 900 | 896 |
| 950 | 948 |
| 1000 | 1000 |

Data to be used for service life ($L_{Km}$) calculations.

Telescopic Rail from Automotion Components



| Length mm | L1994 | | |
|---|---|---|---|
| | 28 | 35 | 43 |
| | δ N | | |
| 130 | 872 | | |
| 210 | 1577 | 1533 | 2288 |
| 290 | 2692 | 2906 | 4055 |
| 370 | 3405 | 3721 | 4794 |
| 450 | 4119 | 4537 | 6602 |
| 530 | 4832 | 5990 | 8451 |
| 610 | 5557 | 6803 | 10325 |
| 690 | 6271 | 7617 | 11005 |
| 770 | 6984 | 9093 | 12877 |
| 850 | 8111 | 9903 | 14762 |
| 930 | 8811 | 10714 | 15429 |
| 1010 | 9524 | 12201 | 17310 |
| 1090 | 10237 | 13009 | 17981 |
| 1170 | 10950 | 13818 | 19860 |
| 1250 | | 15311 | 21747 |
| 1330 | | 16118 | 22411 |
| 1410 | | 16925 | 24295 |
| 1490 | | 18423 | 26186 |
| 1570 | | | 28083 |
| 1650 | | | 28733 |
| 1730 | | | 30626 |
| 1810 | | | 31281 |
| 1890 | | | 33172 |
| 1970 | | | 33829 |

Data to be used for service life ($L_{Km}$) calculations.



Telescopic Rail from Automotion Components

# Technical Information

## Fixing screws





### Tightening torques of the standard fixing screws to be used

| Property class | Size | Tightening torque Nm |
|---|---|---|
| 10,9 | 28 | 8,5 |
| | 35 | 14,6 |
| | 43 | 34,7 |

### L1985.43 roller telescopic slides

| Size | Screw type | $d_1$ | $d_2$ | $l_1$ | $l_2$ | s |
|---|---|---|---|---|---|---|
| 43 | M8 x 16 | M8 x 1,25 | 16 | 16 | 3 | T40 |

The L1985.43 telescopic slide must be fixed with a custom design of Torx® screws with low cap head. The screws are included.

All other rails are fixed with countersunk or cap head screws as per DIN 7991 or 7984.
In size 63 of the ASN and DMS series, Torx® screws with low head cap screws are available on request.

### Technical support

We have a team of experienced technical support staff. It is often the case that we can provide a more cost-effective solution than customers could do simply by selecting parts from the catalogue. Please don't hesitate to ask for advice which we will be happy to provide.

### CAD models

To speed up your design process, most of our telescopic rails have corresponding 3D CAD files directly downloadable from our website in a full range of CAD formats.