

**NEW**

# Linear Actuators

## 1920 N

Gearhead with integrated Ball Screw,  
high accuracy grade

For combination with  
DC-Micromotors  
Brushless DC-Motors  
Stepper Motors

### Series 32L ... PB

Values at 22°C

|  |   | 1           | 1      | 1                       | 2           | 2  | 3  | 4   |
|--|---|-------------|--------|-------------------------|-------------|--|--|---|
| Number of gear stages                        |   | 1           | 1      | 1                       | 2           | 2  | 3  | 4   |
| Reduction ratio <sup>1)</sup><br>(rounded)   |   | 1:1         | 3:1    | 3,6:1<br>4,5:1<br>6,6:1 | 9:1<br>11:1 | 14:1<br>16:1<br>20:1<br>24:1<br>30:1<br>44:1 | 41:1<br>49:1<br>59:1<br>72:1<br>89:1<br>108:1<br>131:1<br>158:1<br>196:1 | 178:1<br>215:1<br>267:1<br>323:1<br>401:1<br>474:1<br>588:1<br>711:1<br>862:1<br>1 042:1<br>1 294:1 |
| Continuous output speed, max. <sup>2)</sup>  | mm/s  | 107         | 72,2   | 74,1...40,4             | 24,1...19,7 | 23,8...7,58                                  | 8,94...1,87  | 2,06...0,28   |
| Peak output speed, max. <sup>2)</sup>        | mm/s  | 133         | 83,3   | 88...48                 | 27,8...22,7 | 29,8...9,47                                  | 11,4...2,38  | 2,62...0,36   |
| Continuous input speed, max.                 | min <sup>-1</sup>   | 3 200       | 6 500  | 8 000                   | 6 500       | 10 000                                       | 11 000   | 11 000  |
| Peak input speed, max.                       | min <sup>-1</sup>   | 4 000       | 7 500  | 9 500                   | 7 500       | 12 500                                       | 14 000   | 14 000  |
| Continuous axial force, avg.                 | N   | 291         | 331    | 328...402               | 478...511   | 479...702                                    | 664...1 120  | 1084...1920   |
| Peak axial force, dynamic, max.              | N   | 1 920       | 1 920  | 1 920                   | 1 920       | 1 920  | 1 920  | 1 920   |
| Peak axial force, static, max.               | N   | 2 360       | 2 360  | 2 360                   | 2 360       | 2 360  | 2 360  | 2 360   |
| Output power, max.                           | W   | 50          | 50     | 50                      | 27          | 27   | 18   | 5   |
| Efficiency of gearhead/coupler, max.         | %   | 95          | 92     | 92                      | 82          | 82   | 78   | 65  |
| Efficiency of screw, max.                    | %   | 90          | 90     | 90                      | 90          | 90   | 90   | 90  |
| Mass inertia incl. screw, max. <sup>3)</sup> | gmm <sup>2</sup>  | 3 760       | 630    | 630                     | 463         | 463  | 199  | 85  |
| Accuracy, screw standard length, max.        | µm  | 13          | 14     | 14                      | 14          | 14   | 14   | 14  |
| Radial load, max. (15 mm from flange)        | N   | 185         | 220    | 220                     | 280         | 280  | 330  | 85  |
| Gearhead backlash, at no-load, typical       | °   | 0,31        | 0,6    | 0,6                     | 0,6         | 0,6  | 0,6  | 0,6   |
| Radial play (screw, 10 mm from flange)       | mm  | ≤ 0,05      | ≤ 0,05 | ≤ 0,05                  | ≤ 0,05      | ≤ 0,05                                       | ≤ 0,05   | ≤ 0,05  |
| Axial play:                                  |   |             |        |                         |             |  |  |   |
| - screw                                      | mm  | = 0         | = 0    | = 0                     | = 0         | = 0  | = 0  | = 0   |
| - nut  | µm  | 5           | 5      | 5                       | 5           | 5  | 5  | 5   |
| Screw length from flange:                    |   |             |        |                         |             |  |  |   |
| - standard                                   | mm  | 200         | 200    | 200                     | 200         | 200  | 200  | 200   |
| - max.                                       | mm  | 450         | 450    | 450                     | 450         | 450  | 450  | 450   |
| Length without motor L2                      | mm  | 40,7        | 40,7   | 40,7                    | 49,1        | 49,1   | 57,5   | 65,9  |
| Mass <sup>3)</sup>                           | g   | 207         | 220    | 220                     | 280         | 280  | 340  | 400   |
| Screw type                                   | 10x2 IT1 - right handed, screw direction of rotation same as motor shaft. |             |        |                         |             |  |  |   |
| Screw material                               | stainless steel   |             |        |                         |             |  |  |   |
| Nut material                                 | cylindric, metal  |             |        |                         |             |  |  |   |
| Housing material                             | stainless steel   |             |        |                         |             |  |  |   |
| Geartrain material                           | stainless steel   |             |        |                         |             |  |  |   |
| Bearings on output shaft                     | ball bearings, preloaded  |             |        |                         |             |  |  |   |
| Operating temperature range                  | °C  | -20 ... +80 |        |                         |             |  |  |   |

<sup>1)</sup> The reduction ratios are rounded, the exact values are available on request or at [www.faulhaber.com](http://www.faulhaber.com).

<sup>2)</sup> According to selected reduction ratio, screw supported

<sup>3)</sup> Standard length and standard nut

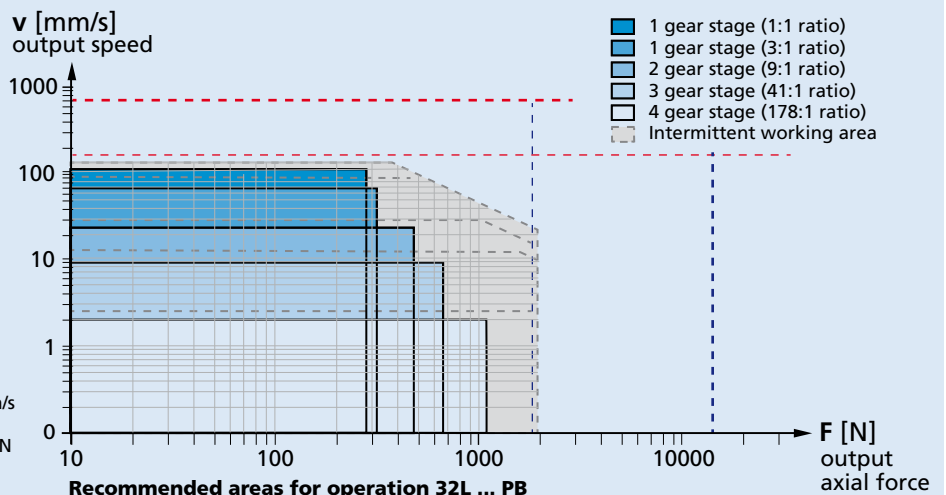
**Note:**

The display shows the range of possible operation points of the drives at a given ambient temperature of 22°C.


The diagram indicates the recommended output speed in relation to the available output axial force.

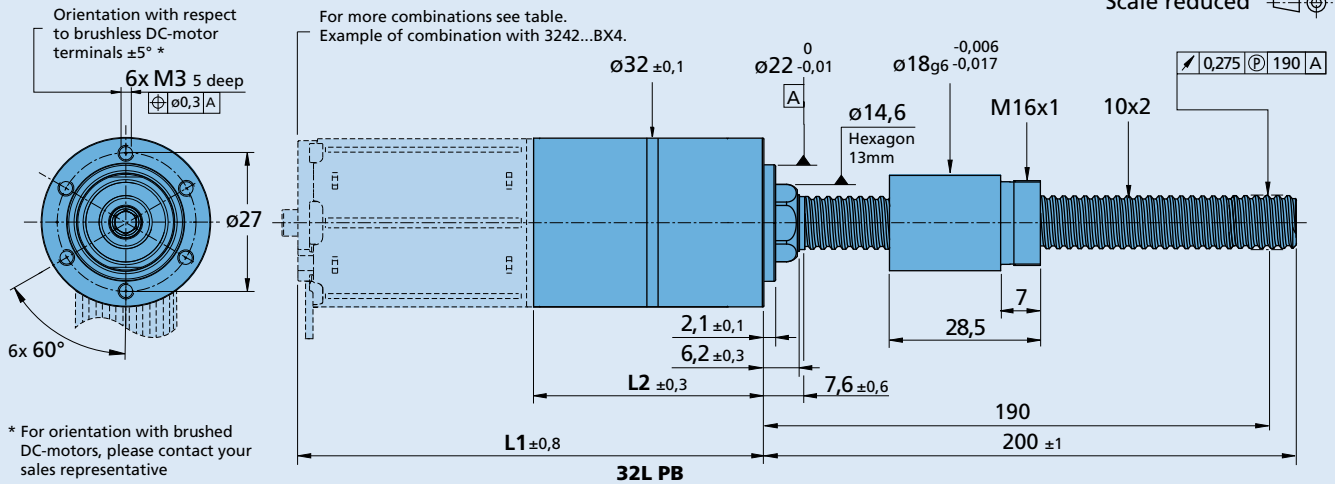
For the standard screw both supported and not, the diagram shows also the critical speeds and the buckling forces.

- - - Critical speed <sup>3)</sup> (fixed-free), 156 mm/s
- - - Critical speed <sup>3)</sup> (fixed-single), 689 mm/s
- - - Buckling force <sup>3)</sup> (fixed-free), 1790 N
- - - Buckling force <sup>3)</sup> (fixed-single), 14300 N



### Dimensional drawing

Scale reduced 



### Options

Example product designation: **32L 30:1 KP1 PB 10x2 200 KWS1**

| Option | Type                        | Description  |
|--------|-----------------------------|--|
| KL1    | Gearhead ambient conditions | Low temperature range of -55°C +100°C  |
| KL2    | Gearhead ambient conditions | Vacuum down to 10 <sup>-5</sup> Pa @22°C   |
| KL3    | Gearhead ambient conditions | Temperature range of -55°C +150°C and vacuum down to 10 <sup>-9</sup> Pa @60°C         |
| KP1    | Gearhead protection         | IP54   |
| KC1    | Cable orientation           | Motor cable/wires or terminals oriented at 15° CCW vs gearhead front threads           |
| KC2    | Cable orientation           | Motor cable/wires or terminals oriented at 30° CCW vs gearhead front threads           |
| KC3    | Cable orientation           | Motor cable/wires or terminals oriented at 45° CCW vs gearhead front threads           |
| 200    | Screw                       | Standard length (200 mm), length from 50 mm up to 450 mm are available with 5 mm steps |
| KWL1   | Screw ambient conditions    | Low temperature range of -55°C +100°C  |
| KWL2   | Screw ambient conditions    | Vacuum down to 10 <sup>-5</sup> Pa @22°C   |
| KWL3   | Screw ambient conditions    | Temperature range of -55°C +150°C and vacuum down to 10 <sup>-9</sup> Pa @60°C         |
| KWS1   | Screw                       | Screw tip  |
| KWN7   | Nut                         | Flanged metal nut  |

Note: Specified values may differ from the standard values depending on the option. Please consult your sales representative for further information.

### Product combination

| Number of gear stages          | 1     | 2     | 3     | 4     |
|--------------------------------|-------|-------|-------|-------|
| L2 [mm] = length without motor | 40,7  | 49,1  | 57,5  | 65,9  |
| L1 [mm] = length with motor    | 85,6  | 94,0  | 102,4 | 110,8 |
| 2642X...CR/CXR                 | 100,6 | 109,0 | 117,4 | 125,8 |
| 2668X...CR                     | 111,6 | 120,0 | 128,4 | 136,8 |
| 3242X...CR                     | 85,6  | 94,0  | 102,4 | 110,8 |
| 3257X...CR                     | 100,6 | 109,0 | 117,4 | 125,8 |
| 3272X...CR                     | 115,6 | 124,0 | 132,4 | 140,8 |
| 2250X...BX4                    | 95,4  | 103,8 | 112,2 | 120,6 |
| 3242X...BX4                    | 87,8  | 96,2  | 104,6 | 113,0 |
| 3268X...BX4                    | 113,8 | 122,2 | 130,6 | 139,0 |
| 2264X...BP4                    | 107,6 | 116,0 | 124,4 | 132,8 |
| 3274X...BP4                    | 121,7 | 130,1 | 138,5 | 146,9 |
| 3056X...B                      | 99,6  | 108,0 | 116,4 | 124,8 |
| 3564X...B                      | 107,6 | 116,0 | 124,4 | 132,8 |
| 3216X...BXTR                   | 59,6  | 68,0  | 76,4  | 84,8  |
| 3216X...BXTH                   | 60,4  | 68,8  | 77,2  | 85,6  |
| AM3248...10                    | 85,6  | 94,0  | 102,4 | 110,8 |