MEDLINE® IMPROVING EFFICIENCY
CARELINE® IMPROVING EFFICIENCY

# Actuator **LA23**

The LA23 actuator is a small and strong push/pull actuator (up to 2500 N). The LA23 can be used in various applications where size is important.

Some of the benefits the LA23 offers you are:

- Compact design
- High lifting force
- Exchangeable cables

The standard LA23 is available for both the CARELINE® and MEDLINE® product ranges.

**Features and options:**

- Load in push: 2500N, 1800N, 1500N, 1200N or 900N
- Load in pull: 2500N, 1800N, 1500N, 1200N or 900N
- Housing colour: Grey or black
- Protection class: IPX4, IPX6
- Motor: 12 V DC, 24 V DC
- Stroke length: 20 - 300 mm
- Built-in dimensions: 110 - 146 mm + stroke length
- Positioning options: Potential free end-stop signals Hall potentiometer or Hall PWM position Single Hall, Dual Hall
- Back fixture material: Plastic or steel
- Nut: Guided
- Safety nut: In push or pull (2500N and 1800N version only safety nut in push)
- Mechanical spline: Yes
- Built-in electrical end-stop: Yes
- Exchangeable cable: Yes
- Static safety factor: 2.5
- Noise level: Max. 58.5 dB(A) (At nominal voltage and with no load, according to EN ISO 3743-1)
- Mechanical end stop: Yes
- Integrated Control Yes

**Usage:**

- Duty cycle: 10%, 2 minutes continuous use followed by 18 minutes not in use
- Usage temperature:
  -30°C to +55°C (according to ISO 7176-9)
- Storage temperature:
  -45°C to +70°C (according to ISO 7176-9)
- Compatibility: CB20, CB16, CB6S, CBJ 1/2, CBJC, CBJH, CBD4, CBD5 & CBD6*, CA30, CA40, CO61 and SMPS-T160 (for combination possibilities, please see the User Manual for SMPS-T160 on our website)
  * SLS must be ignored Up + Down in the CBD4, CBD5 or CBD6 when configured for LA23.
  * Only the 3, 6 & 12 mm versions can be configured in the CBD4, CBD5 or CBD6.
  * Only tested for single use.
- Approvals:
  IEC60601-1:2005 3rd ed.
  ANSI / AAMI ES60601-1:2005 3rd edition,
  LA23IC is not approved according to the above.
  LA23 in combination with CBD4, CBD5 & CBD6 has no approvals.
- Fire catagory: Enclosure UL94-V0

LINAK®
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**LA23**
**Ordering example:**

23 6 1 A 0 1 0 00 250 A 4

**IP degree:**
4 = IPX4
6 = IPX6

**Motortype:**
A = 12V
B = 24V (Running mainly with battery (CBJ1, CBJ2, CBJH, CBJC, wheelchairs))
G = 24V (For OpenBus (CB20, CB16, CB6s)) not available with LA23IC

**Stroke:**
XXX = mm Min. 020 mm, Max. 300 mm in steps of 5 mm
Recommended versions:
020 mm
050 mm
100 mm
150 mm
200 mm
250 mm
300 mm

**Positioning:**
00 = No positioning
01 = Potential free end stop signals
02 = Dual Hall digital positioning
03 = Dual Hall PNP positioning
1x = Hall potentiometer feedback
2x = Hall potentiometer feedback and potential free endstop
3x = Hall PWM position feedback
4x = Hall PWM position and potential free endstop
50 = IC with standard electrical endstop - no positioning
52 = IC with Standard Single Hall Positioning
6x = IC with Hall potentiometer feedback.
7x = IC with Hall PWM position feedback
Xx for more information please call LINAK

**Safety option:**

| | |
|---|---|
| 0 = No safety options | (pitch 3, 5, 6, 9 or 12) |
| 1 = Safety nut for push | (pitch 3, 5, 6, 9 or 12) |
| 2 = Safety nut for pull | (pitch 6, 9 or 12) |
| 3 = Mechanical spline without safety nut | (pitch 3, 5, 6, 9 or 12) |
| 4 = Mechanical spline with safety nut | (pitch 3, 5, 6, 9 or 12)) |

**Housing colour:**

| | |
|---|---|
| 1 = Black | (RAL 9005) |
| 2 = Light grey | (RAL 7035) |

**Piston rod eye:**
0 = Standard (steel) with slot (6.1 mm), eye Ø10.2 mm, incl. plastic bushings
1 = Standard (steel) with slot (6.1 mm), eye Ø10.2 mm (0231033)
2 = Standard (steel) with slot (6.1 mm), eye Ø12.3 mm (0231016)

**Back fixture rotation:**

| | | |
|---|---|---|
| 0 = 0° clockwise | H = 60° clockwise | Q = 120° clockwise |
| A = 7.5° clockwise | J = 67.5° clockwise | R = 127.5° clockwise |
| B = 15° clockwise | K = 75° clockwise | S = 135° clockwise |
| C = 22.5° clockwise | L = 82.5° clockwise | T = 142.5° clockwise |
| D = 30° clockwise | 1 = 90° clockwise | U = 150° clockwise |
| E = 37.5° clockwise | M = 97.5° clockwise | V = 157.5° clockwise |
| F = 45° clockwise | N = 105° clockwise | W = 165° clockwise |
| G = 52.5° clockwise | P = 112.5° clockwise | Z = 172.5° clockwise |

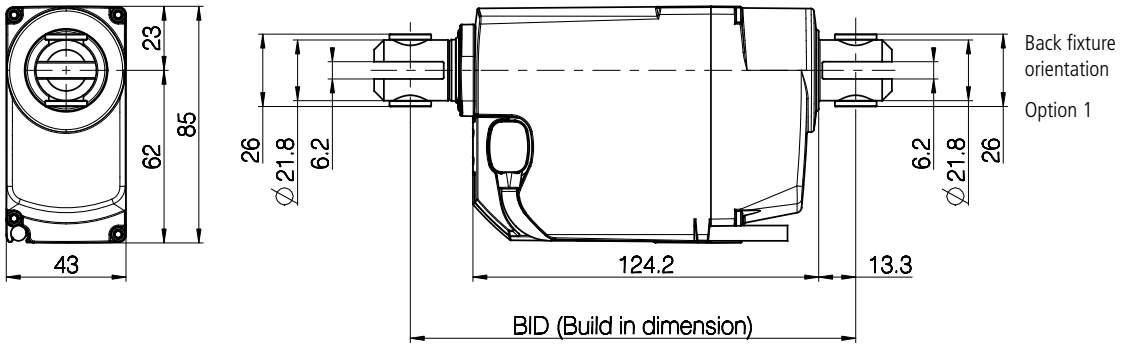
**Back fixture:**
1 = Plastic with slot (6.1 mm), eye Ø10.2 mm (only for Standard push load) (0231017)
(only for pitch 6, 9 or 12 and safety option 0 or 1 (push))
2 = Steel with slot (6.1 mm), eye Ø10.2 mm, incl. plastic bushings
3 = Steel with slot (6.1 mm), eye Ø10.2 mm (0231034)
4 = Steel with slot (6.1 mm), eye Ø12.3 mm (0231020)

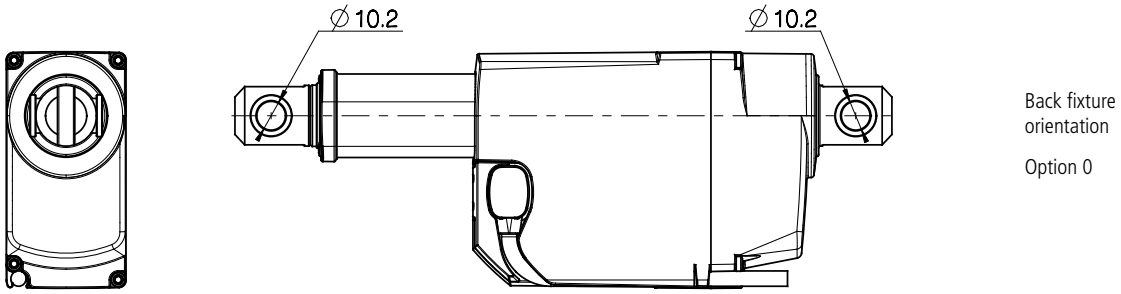
**Spindletype:**

| | |
|---|---|
| 3 = 3 mm pitch | (2500 N) |
| 5 = 5 mm pitch | (1800 N) |
| 6 = 6 mm pitch | (1500 N) |
| 9 = 9 mm pitch | (1200 N) |
| 0 = 12 mm pitch | (900 N) |

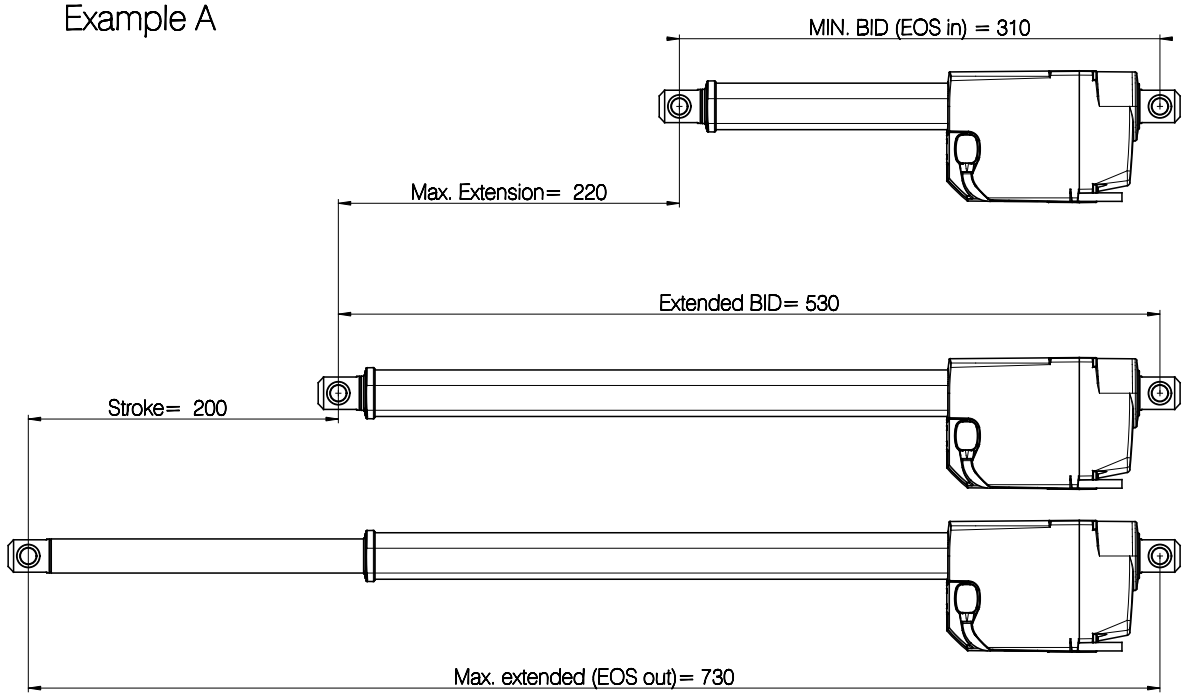
**Actuator type:**
23 = LA23

**Dimensions:**




Example A

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The built-in dimension depends upon the chosen safety option and stroke length. Please see the table below to decide upon the built-in dimension.

| **Safety option** | **Stroke length** | **Spindle pitch** | **Min. built-in Dimensions** |
|---|---|---|---|
| 0 = No safety option | 20 - 49 | 6, 9 or 12 | 160 |
| 0 = No safety option | 20 - 49 | 3, 5 | 168 |
| 1 = Safety nut for push | 20 - 49 | 6, 9 or 12 | 160 |
| 1 = Safety nut for push | 20 - 49 | 3, 5 | 168 |
| 2 = Safety nut for pull | 20 - 49 | 6, 9 or 12 | 172 |
| 3 = Mechanical Spline for push | 20 - 49 | 6, 9 or 12 | 180 |
| 3 = Mechanical Spline for push | 20 - 49 | 3, 5 | 196 |
| 4 = Mechanical Spline & safety nut for push | 20 - 49 | 6, 9 or 12 | 180 |
| 4 = Mechanical Spline & safety nut for push | 20 - 49 | 3, 5 | 196 |
| | | | |
| 0 = No safety option | 50 - 200 | 6, 9 or 12 | 110 + stroke |
| 0 = No safety option | 50 - 200 | 3, 5 | 118 + stroke |
| 1 = Safety nut for push | 50 - 200 | 6, 9 or 12 | 110 + stroke |
| 1 = Safety nut for push | 50 - 200 | 3, 5 | 118 + stroke |
| 2 = Safety nut for pull | 50 - 200 | 6, 9 or 12 | 122 + stroke |
| 3 = Mechanical Spline for push | 50 - 200 | 6, 9 or 12 | 130 + stroke |
| 3 = Mechanical Spline for push | 50 - 200 | 3, 5 | 146 + stroke |
| 4 = Mechanical Spline & safety nut for push | 50 - 200 | 6, 9 or 12 | 130 + stroke |
| 4 = Mechanical Spline & safety nut for push | 50 - 200 | 3, 5 | 146 + stroke |
| | | | |
| 0 = No safety option | 201 - 300 | 6, 9 or 12 | 130 + stroke |
| 0 = No safety option | 201 - 300 | 3, 5 | 138 + stroke |
| 1 = Safety nut for push | 201 - 300 | 6, 9 or 12 | 130 + stroke |
| 1 = Safety nut for push | 201 - 300 | 3, 5 | 138 + stroke |
| 2 = Safety nut for pull | 201 - 300 | 6, 9 or 12 | 142 + stroke |
| 3 = Mechanical Spline for push | 201 - 300 | 6, 9 or 12 | 150 + stroke |
| 3 = Mechanical Spline for push | 201 - 300 | 3, 5 | 166 + stroke |
| 4 = Mechanical Spline & safety nut for push | 201 - 300 | 6, 9 or 12 | 150 + stroke |
| 4 = Mechanical Spline & safety nut for push | 201 - 300 | 3, 5 | 166 + stroke |

**It is possible to order LA23 with extended built-in dimensions if the following requirements are fulfilled**

<table>
<tr><td rowspan="3"></td><td>Spindle pitch =<br>6, 9, 12</td><td>Spindle pitch =<br>3, 5</td><td>Spindle pitch =<br>6, 9, 12</td><td>Spindle pitch =<br>6, 9, 12</td><td>Spindle pitch =<br>3, 5</td></tr>
<tr><td colspan="2">Safety option 0 :<br>No safety option</td><td rowspan="2">Safety option 2 : safety nut pull</td><td colspan="2">Safety option 3 :<br>Spline without safety nut</td></tr>
<tr><td colspan="2">Safety option 1 :<br>safety nut push</td><td colspan="2">Safety option 4 :<br>Spline + safety nut push</td></tr>
<tr><td>Max. built-in dimensions</td><td>≤ 730 - stroke</td><td>≤ 738 - stroke</td><td>≤ 742 - stroke</td><td>≤ 750 - stroke</td><td>≤ 766 - stroke</td></tr>
</table>

Example:
A) 6 mm pitch no safety option, stroke 200, BID can be max. (730 - 200) = 530
B) 3 mm pitch no safety option, stroke 20, BID can be max. (738 - 20) = 718

**Technical specifications:**

| Power supply | Spindle pitch (mm) | Load max. Push or Pull (N) | Motor type | *Typical speed at 0/ full load (mm/sec.) | *Typical current at 0/ full load (Amp.) | Inrush current (Amp) |
|---|---|---|---|---|---|---|
| 12VDC | 3 | 2500 / 2500 | A: 12V | 3.1 / 2.5 | 0.8 / 3.6 | 13.4 |
| CBJ1/2, CBJH and CBJC | 3 | 2500 / 2500 | B: 24V | 3.2 / 2.6 | 0.4 / 1.9 | 8.7 |
| OpenBus™ | 3 | 2500 / 2500 | G: 24V | 3.3 / 2.7 | 0.3 / 1.4 | 6.2 |
| 12VDC | 5 | 1800 / 1800 | A: 12V | 5.4 / 4.2 | 0.8 / 3.9 | 13.4 |
| CBJ1/2, CBJH and CBJC | 5 | 1800 / 1800 | B: 24V | 5.4 / 4.5 | 0.4 / 1.9 | 8.7 |
| OpenBus™ | 5 | 1800 / 1800 | G: 24V | 5.6 / 4.6 | 0.3 / 1.4 | 6.2 |
| 12VDC | 6 | 1500 / 1500 | A: 12V | 6.6 / 5.2 | 0.8 / 3.6 | 13.4 |
| CBJ1/2, CBJH and CBJC | 6 | 1500 / 1500 | B: 24V | 6.4 / 5.5 | 0.4 / 1.7 | 8.7 |
| OpenBus™ | 6 | 1500 / 1500 | G: 24V | 6.7 / 5.5 | 0.3 / 1.3 | 6.2 |
| 12VDC | 9 | 1200 / 1200 | A: 12V | 9.9 / 7.5 | 0.9 / 4.0 | 13.4 |
| CBJ1/2, CBJH and CBJC | 9 | 1200 / 1200 | B: 24V | 9.5 / 8.1 | 0.4 / 1.9 | 8.7 |
| OpenBus™ | 9 | 1200 / 1200 | G: 24V | 9.9 / 8.1 | 0.3 / 1.3 | 6.2 |
| 12VDC | 12 | 900 / 900 | A: 12V | 13 / 9.6 | 0.9 / 3.8 | 13.4 |
| CBJ1/2, CBJH and CBJC | 12 | 900 / 900 | B: 24V | 12.6 / 10.4 | 0.4 / 1.9 | 8.7 |
| OpenBus™ | 12 | 900 / 900 | G: 24V | 13.3 / 10.7 | 0.3 / 1.4 | 6.2 |

**Safety nut and steel back fixture overview**

| Pitch (mm) | Load (N) | Safety nut | Steel back fixture | Plastic back fixture |
|---|---|---|---|---|
| 12 | 900 N | Optional in push or pull | Required in pull | Only in push |
| 9 | 1200 N | Optional in push or pull | Required in pull | Only in push |
| 6 | 1500 N | Optional in push or pull | Required in pull | Only in push |
| 5 | 1800 N | Optional in push<br>(Safety nut 2500N not available in pull) | Always required | Not available |
| 3 | 2500 N | Optional in push<br>(Safety nut 2500N not available in pull) | Always required | Not available |

**Self-locking specifications**

| Spindle pitch | Without short circuit | With short circuit |
|---|---|---|
| 12 mm pitch | 750 | 900 |
| 9 mm pitch | 750 | 1200 |
| 6 mm pitch | 1200 | 1500 |
| 5 mm pitch | 1600 | 1800 |
| 3 mm pitch | 2500 | 2500 |