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Linear Actuator LA42

Data Sheet



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Introduction



The LA42 is a strong and flexible actuator with a push load of up to 7,000 N (6,000 N after first 50 mm) and a dynamic load pull of 3,500 N, offering stable and reliable performance. The motor housing offers the ability to customise the motor direction, allowing designers more options for placement in applications. With an IPX6 rating, the LA42 enables a high level of hygienic cleaning.

The LA42 is flexible in terms of its unique configuration possibilities and can be linked in systems with several LA42 actuators via the Power Junction Box PJB4.

This actuator can be used with various PCP 2.0 control boxes like CO71 and LIFT50™, where PCP communication allows the LA42 to maintain its actuator channel regardless of which PCP port it is connected to.

Strong benefits of using LA42 are:

- Multi-directional angling of motor housing
- Innovative system connectivity via PCP 2.0
- IPX6
- Strong and fast actuator in a small form factor

Features and options

Load in push:	Up to 7,000 N (6,000 N after first 50 mm, 6,000 N self-lock)
Load in pull:	Up to 3,500 N
Dynamic push and pull:	Actuators are designed for push or pull applications. If a combination is required, please contact your local LINAK salesperson.
Housing colour:	Black RAL9005
Protection class:	IPX6
Motor:	24 VDC Motor can be rotated in increments of 10 degrees* The motor position cannot be changed after the LA42 has been produced.
Minimum mechanical stroke length:	50 mm - 400 mm in steps of 5 mm
Minimum mechanical built-in dimensions:	137 mm + stroke length
Sound level:	≤ 54 dB (A)
Safety nut:	Standard in push
Built-in endstop switches:	Virtual endstop + mechanical endstop
Safety factor:	2.5 in push, 5 in pull Please note that an extension of the built-in dimension may reduce the safety factor
Weight:	1.8 kg
Static bending moment:	No side load allowed

* Specific angle specification, see ordering example

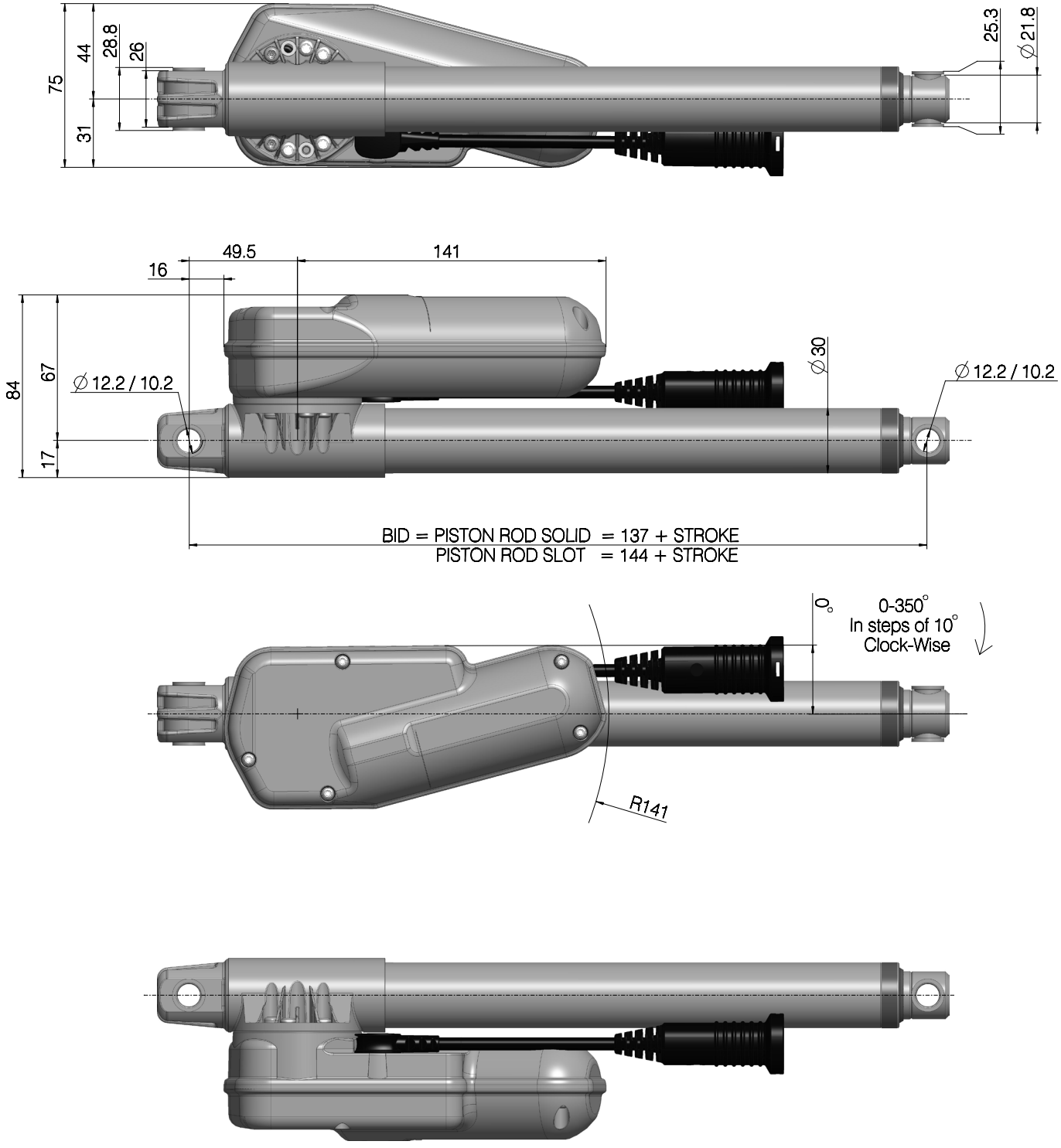
Usage

Operation temperature:	+5 °C to +40 °C
Storage temperature:	-10 °C to +50 °C
Compatibility:	Compatible with LINAK control boxes with Power Communication Port (PCP 2.0 only)
Relative humidity:	20% to 80% – non-condensing
Atmospheric pressure:	700 to 1060 hPa
Height above sea level:	Max. 3000 meters
Duty cycle:	10%, 2 minutes continuous use, followed by 18 minutes not in use
Flammability rating:	UL94V-0
Approvals:	IEC60601-1 ANSI/AAMI ES60601-1 CAN/CSA-22.2 No 60601-1

Dimensions

All dimensions are in mm.

Tolerance on BID + stroke length +/- 2 mm



Drawing no.: 1068W9016

Calibration

To keep its size as small as possible, LA42 is designed to calibrate its Hall position by using hard stops that spike the current, rather than signal switches. In rare circumstances, the LA42 can lose its position and may require recalibration on these hard stops outside of the normal operating stroke range. Because of this, it is important to design an additional 4 mm of stroke allowance on both sides of the standard operating stroke length for the actuator to move into its hard stop and calibrate.

Example:

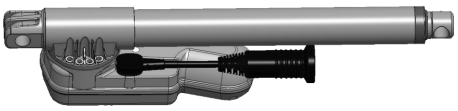
If stroke is 200 mm and BID is 344 mm (rod eye with slot), the standard operating stroke length is from 344 mm to 544 mm. In this case, the mechanical design of the system should allow for movement between 340 mm and 548 mm, so the actuator has room to recalibrate if it loses position.

Cable options

Cable option A

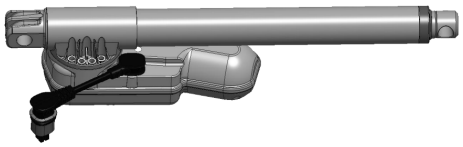


Cable option C

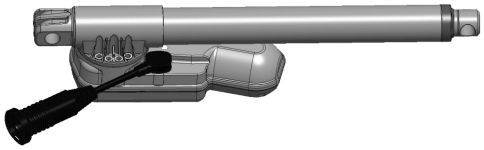


Cable direction A

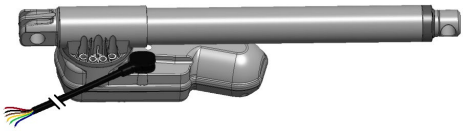
Cable option B



Cable option D



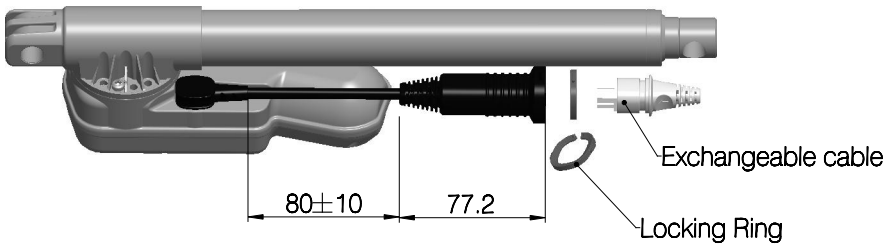
Cable option E



Cable direction B

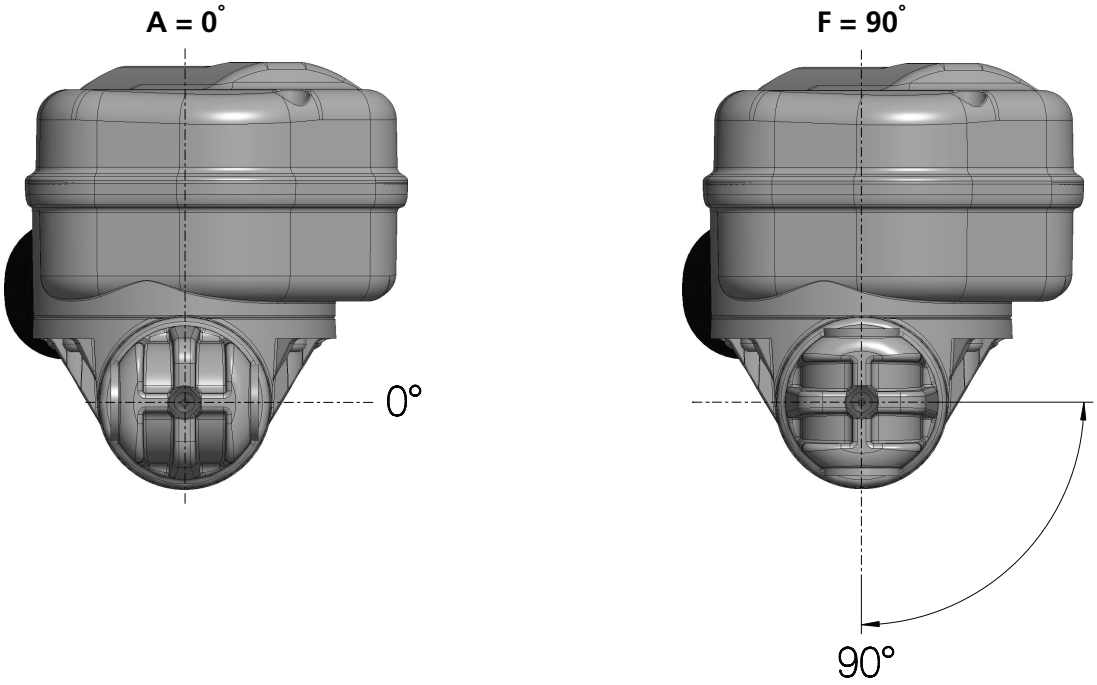
The cable option needs to be ordered together with the actuator.





Back fixture orientation

Two back fixture position options available in 0° or 90°:



Information

- LA42 is only delivered with bushings. If Ø12.2 is needed, the customer must remove bushings.

Connection options

LA42 is a PCP 2.0 actuator, and unlike other actuators, it must connect to only the PCP ports in a LINAK system. Since PCP devices are different from actuator channels, an LA42 must be 'assigned' to an actuator channel to operate properly.

The channel an LA42 actuator operates as is determined by the 25th digit in the 30-digit combicode, referring to the actuator's PCP ID. Because IDs 1 through 4 are reserved for batteries, PCP actuators must start at ID5. Depending on the control box, ID5 may refer to channel 5 or channel 4.

Refer to the below chart when determining which ID to select for your LA42, depending on the channel it should operate as.

ID	CO41, CO61, CO65, CO71, CA63	COL50
5	Channel 5	Channel 4
6	Channel 6	Channel 5
7	Channel 7	Channel 6
8	Channel 8	Channel 7
9	Channel 9	Channel 8

Ordering example

	LA					
Actuator LA42	42					
Spindle pitch:	025	**025 = 2.5 mm**	**040 = 4 mm**	**060 = 6 mm**	**120 = 12 mm**	**150 = 15 mm**
Design stroke length:	160	**000 = XXX mm**	min. 50 mm	50 - 400 mm		
Safety:	0A	**0A = Safety nut, push**				
Feedback:	0M	**0M = Dual Hall encoded (F3)** **0H = Dual Hall digital (F2)**				
Platform:	6	**6 = PCP** (PCP2.0) **0 = None**				
Motor type:	B	**B = 24 VDC. Std.** **C =24 VDC. Std. brake - motor type will be chosen automaticly according to selected spindle pitch (4, 6, 12 and 15 mm pitch will require motor type C)**				
End stop:	5	**5 = None E0**	Virtual endstop included in PCP version. For platform option "0 None", a manual setup of virtual limits, power switches or signal switches at EOS is necessary.			
IP:	6	**6 = IPX6**				
Colour:	-	**- = Black** Ral 9005				
Back fixture:	1	**1 = Ø10.2 w/bushings (remove bushings to get Ø12.2)**				
Back fixture orientation:	F	**A = 0°** **F = 90°**				
Piston rod eye:	1	**1 = Ø10.2 solid w/bushings (remove bushings to get Ø12.2)(BID = 137 + SL)** **2 = Ø10.2 slot w/bushings (remove bushings to get Ø12.2)(BID = 144 + SL)**				
Load direction:	0	**0 = Push** **P = Pull**				
Motor position:	0A	**0A = 0°** **0D = 30°** **0E = 40°** **0F = 50°** **0G = 60°** **0H = 70°** **0I = 80°**	**0J = 90°** **0K = 100°** **0L = 110°** **0P = 150°** **0Q = 160°** **0R = 170°** **0S = 180°**	**0T = 190°** **0U = 200°** **0V = 210°** **0W = 220°** **0Y = 230°** **1C = 270°** **1D = 280°**	**1E = 290°** **1F = 300°** **1G = 310°** **1H = 320°** **1I = 330°** **1J = 340°** **1K = 350°**	
Cable:	C	**A = 1000 mm RAL9005 PCP cable. Cable direction A (angled Mini-Fit connector)** **B = 1000 mm RAL9005 PCP cable. Cable direction B (angled Mini-Fit connector)** **C = 80 mm RAL9005 PCP cable. Cable direction A (exchangeable cable)** **D = 80 mm RAL9005 PCP cable. Cable direction B (exchangeable cable)** **E = 1250 mm RAL9005, 6 wires. Cable direction B, open end**				
ID channel:	5	**0 = None** **5 = ID 5** **6 = ID 6** **7 = ID 7** **8 = ID 8** **9 = ID 9**	**(For platform option 0 "None")** **Info: See description under 'connection options' for more information**			
Not used	0					
Installation dimension	0297	**137 mm + stroke (50 - 400 mm stroke) mechanical stroke length - piston rod eye solid** **144 mm + stroke (50 - 400 mm stroke) mechanical stroke length - piston rod eye slot**				
		Item number:	420251600A0M6B56-1F100AC500297			

Snap ring for locking of Mini-Fit cable (extension plug), cable options C + D
MOQ = 100 pcs, item no.: 0961006

Approvals and certifications

For approval documentation, LINAK recommends specifying the product type instead of individual item numbers to ensure broader approval coverage and simplify future product changes.

Listed LINAK item for application approval: LA42

If this is not possible, we advise being as non-specific as possible when specifying LINAK products in your approval application:

Listed LINAK item for application approval: 42******SS***S*S**********S****

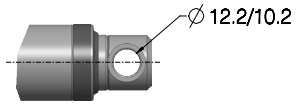
" * " is not safety critical and we recommend including a non-specific signifier such as an asterisk.

" S " is safety critical and represents a listed critical component in the product and cannot be left out.

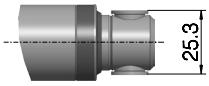
For more information, please refer to "Approvals and certifications" in LINAK Application Design Recommendations found under User Manual for any given product on LINAK.com

Piston rod eyes for LA42

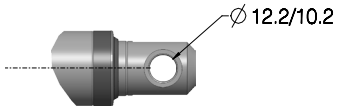
Piston rod solid - type 1



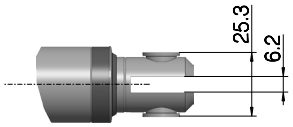
Piston rod eye solid is Ø10.2 mm with bushings.
Remove bushings to get Ø12.2 mm.
Minimum possible BID: 137 mm + stroke length.



Piston rod eye slot - type 2



Piston rod eye slot is Ø10.2 mm with bushings.
Remove bushings to get Ø12.2 mm.
Minimum possible BID: 144 mm + stroke length.



Technical specifications

Performance in push version

Actuator type	Motor type	Spindle pitch (mm)	Max. load push (N)	Self-locking push (N)	Max. load pull (N)	Typical speed at 0/max. load (mm/sec.)	Typical current at full load (Amps)
LA42 PCP	24 VDC Std	2.5	7,000	6,000	2,000	5.2/3.8	5.0
LA42 PCP	24 VDC Std w/ brake	4	5,400	5,400	2,000	8.5/5.8	5.5
LA42 PCP	24 VDC Std w/ brake	6	3,400	3,400	2,000	12.4/9.7	4.4
LA42 PCP	24 VDC Std w/ brake	12	1,300	1,300	0	24.3/20.3	3.8
LA42 PCP	24 VDC Std w/ brake	15	1,000	1,000	0	30.7/26.0	3.5

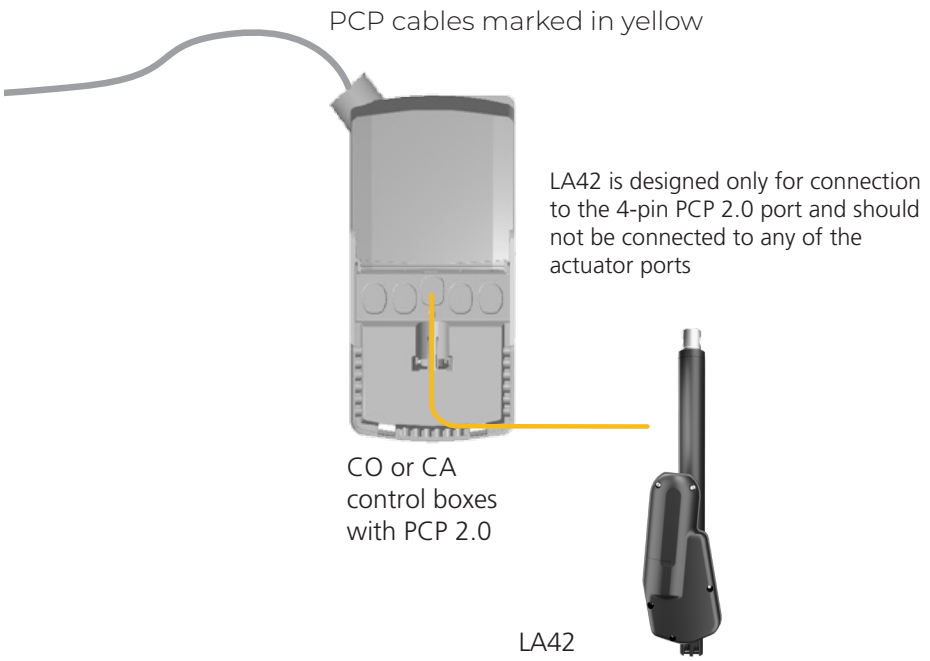
Performance in pull version

Actuator type	Motor type	Spindle pitch (mm)	Max. load pull (N)	Self-locking pull (N)	Max. load push (N)	Typical speed at 0/max. load (mm/sec.)	Typical current at full load (Amps)
LA42 PCP	24 VDC Std	2.5	3,500	3,500	2,700	5.1/4.5	3.1
LA42 PCP	24 VDC Std	4	2,700	2,700	0	8.2/7.1	3.1
LA42 PCP	24 VDC Std	6	2,100	2,100	0	12.4/10.6	3.2
LA42 PCP	24 VDC Std	12	800	800	0	24.7/22.5	2.3
LA42 PCP	24 VDC Std	15	600	600	0	30.9/28.3	2.2

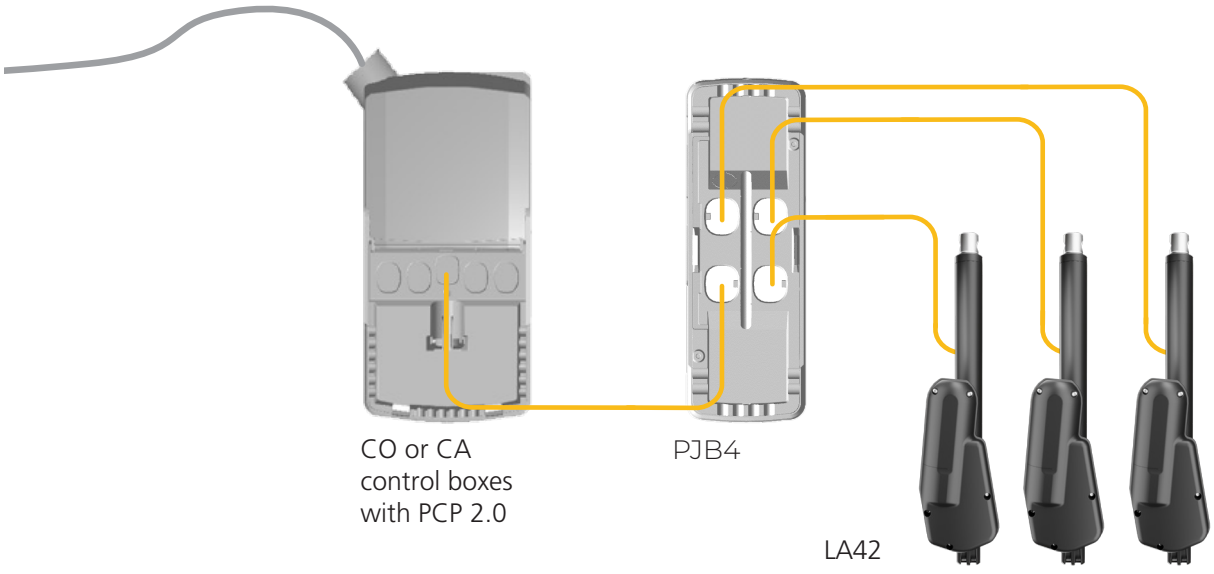
Combination examples

PCP cables marked in yellow

1-actuator system



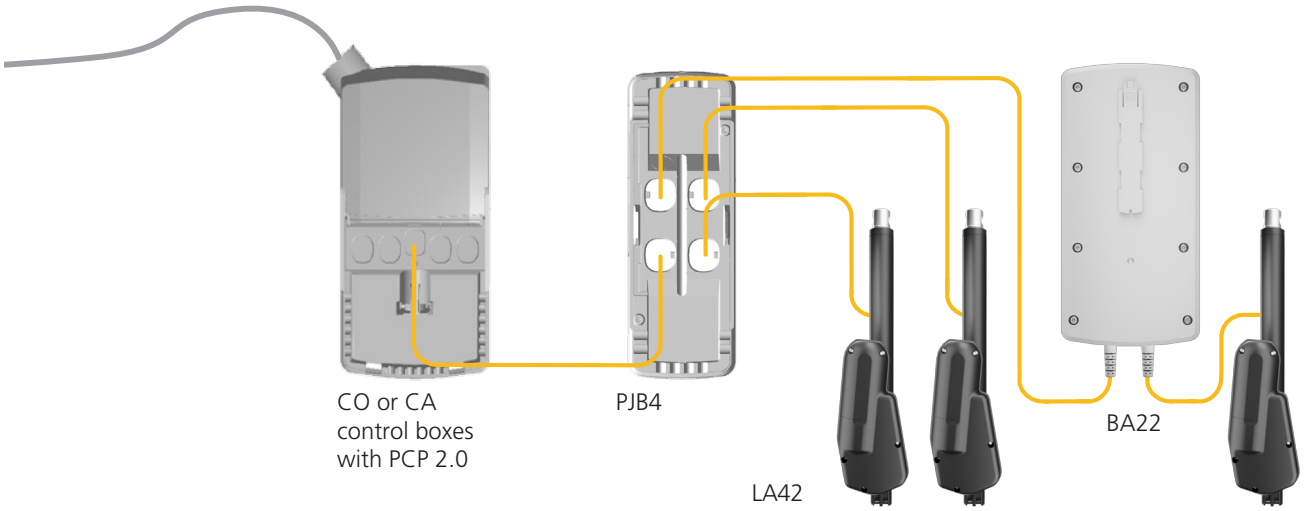
3-actuator system



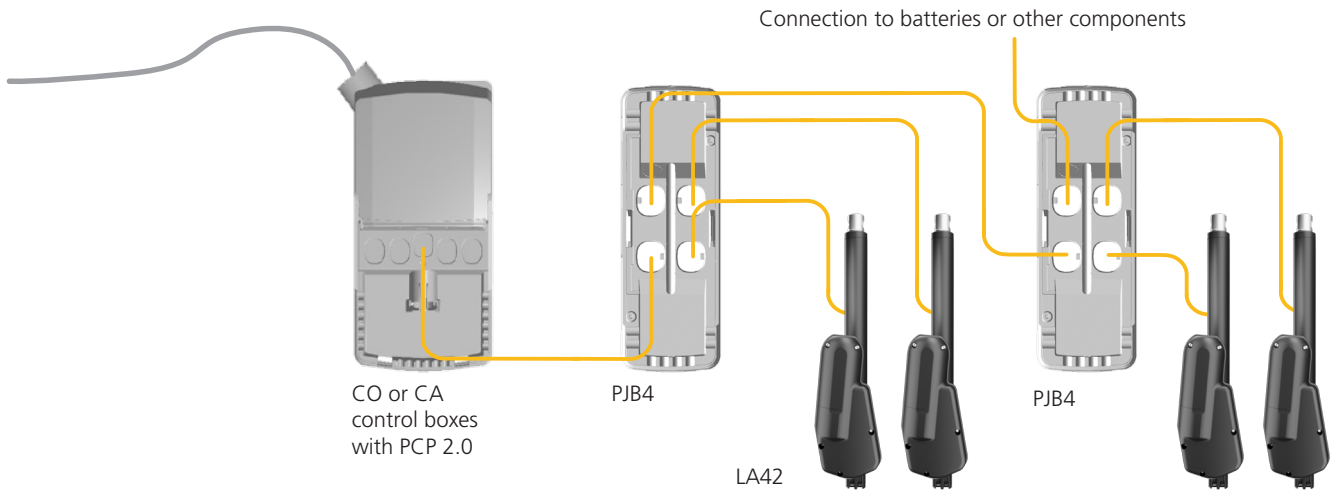
Information

Limitations in the number of actuators running simultaneously will be reduced in accordance with the power consumption of the control box.

3-actuator system with battery



4-actuator system

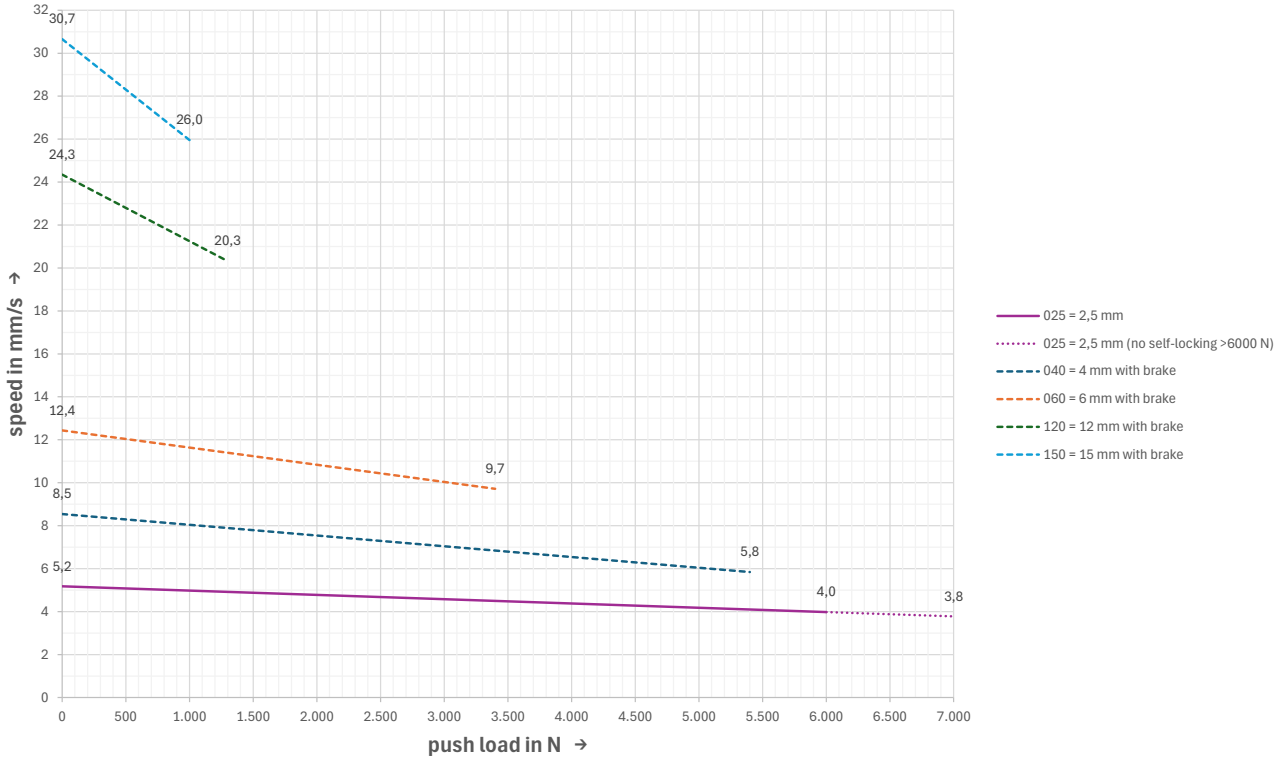


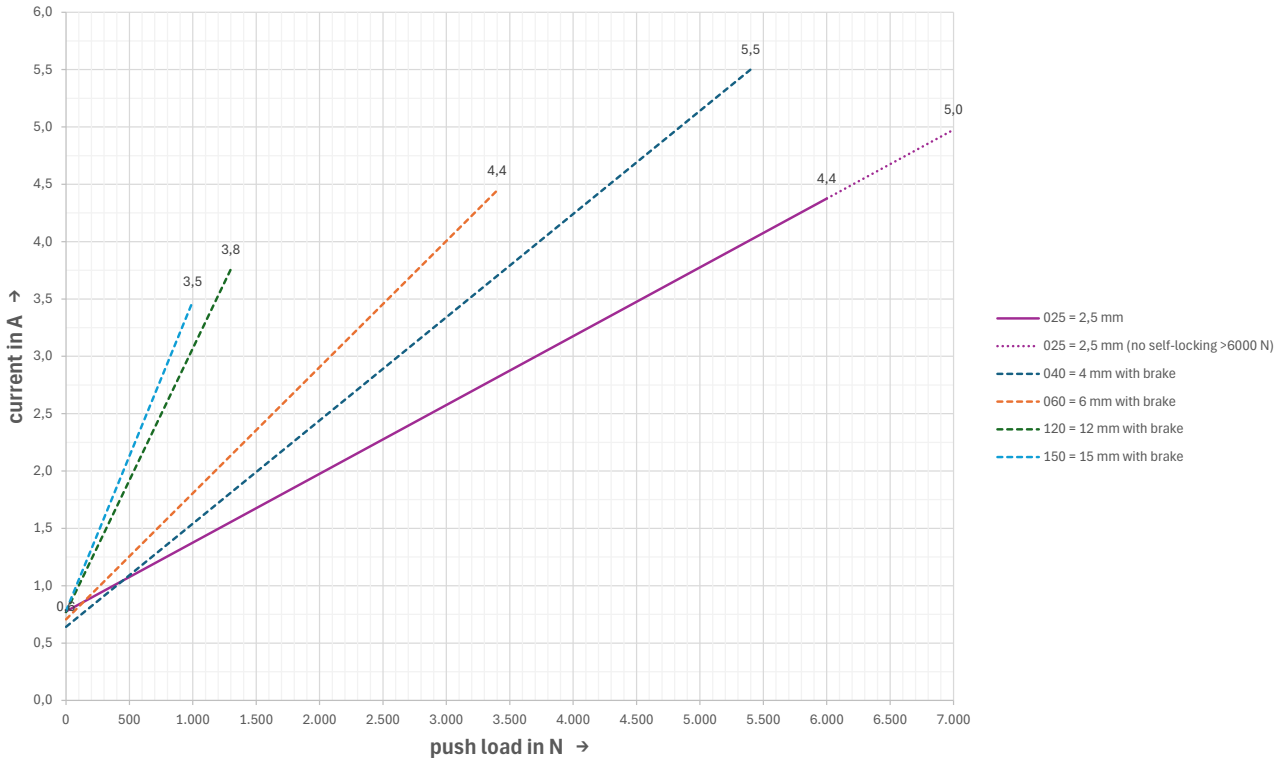
Information

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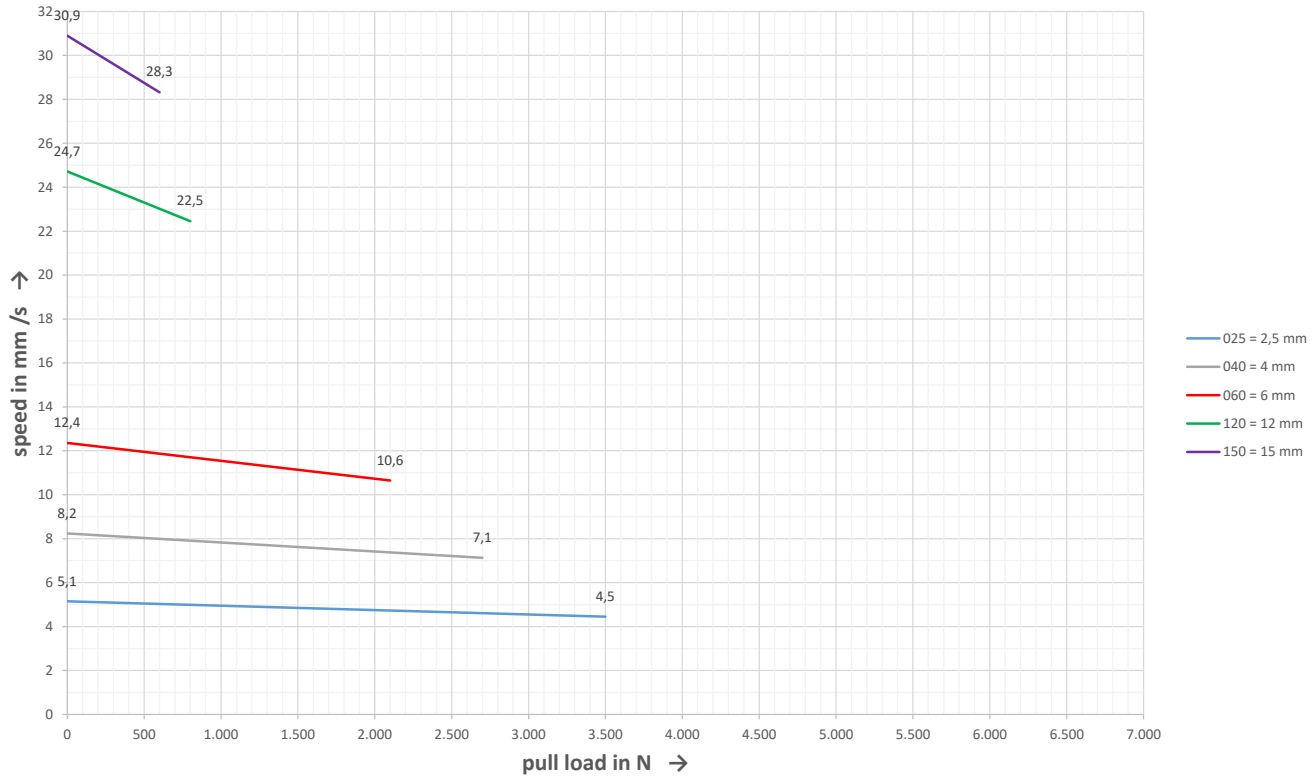
Speed, load and current curves

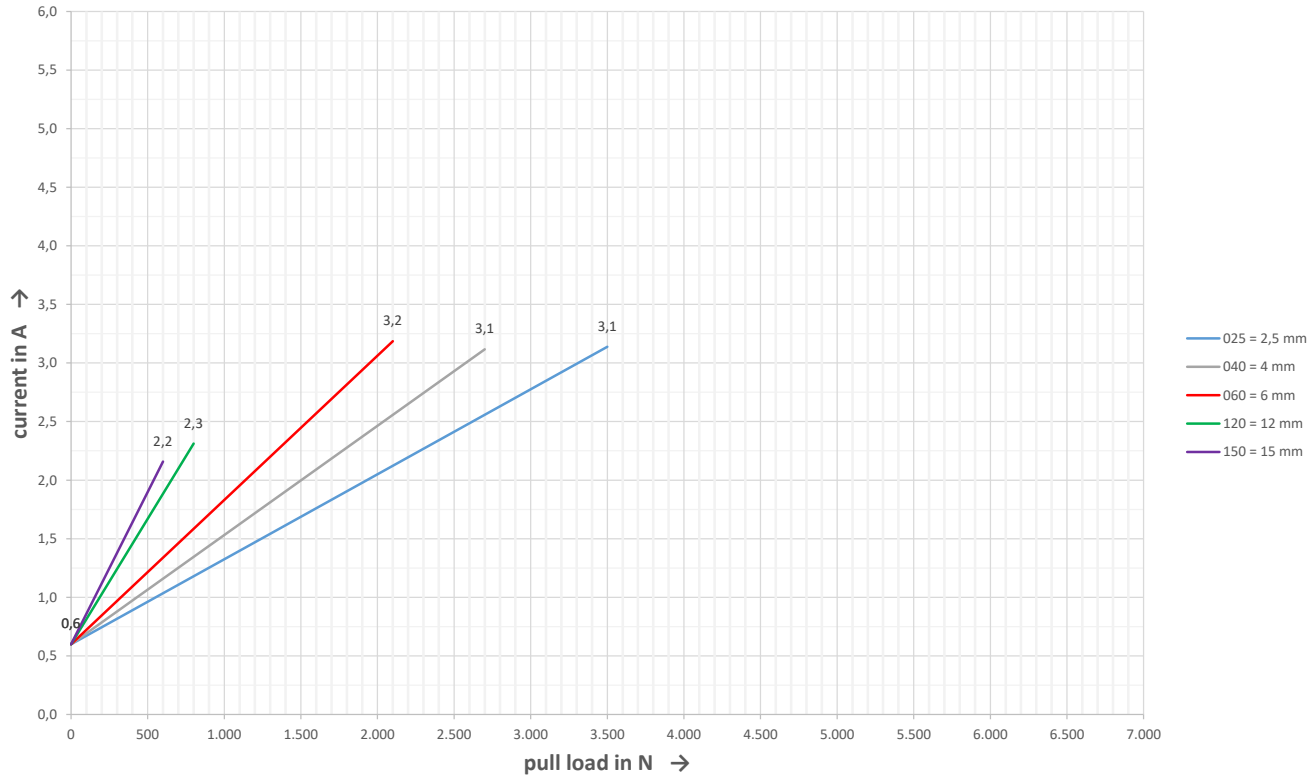
Push version





Pull version





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