



Actuator LA40

Data sheet

LA40

The LA40 is a low noise and powerful actuator which is available in a 1500N, 4000N, 6000N and an 8000N version.

With the LA40, LINAK offers a new durable actuator with high speed/high performance and mechanical endstop for first failure safety making it the right choice for the future market. The LA40 versions are rated up to IPX6 Washable DURA™, except for the LA40 PL version which is rated up to IPX6.

The LA40 8000 N is available in three versions:

- Standard
- High Performance (HP)
- Patient Lift (PL)

Based on the extensive knowledge and experience from previous actuator families, LINAK has developed new gear and braking principles that improve the efficiency of the LA40. These innovative solutions are covered by several patents.

Equipped with a socket for exchangeable cables, the LA40 has the same flexibility as previous families, and existing minifit cables can be used.

The LA40 family has a very smooth design, enlarging their field of application due to easy cleanability and mounting flexibility.

The LA40 is designed for a wide range of applications within both the medical and beds market such as e.g. care and hospital beds, couches, and dental chairs. The LA40 can be ordered with an optional spline function (push only) and/or quick release.

LA40 8000 N range:

- The standard version runs 8000 N from 0-50 mm stroke length with a subsequent decreasing load on the rest of the stroke length
- The High Performance version can perform 8000 N on full stroke length
- The Patient Lift version can perform 8000 N on full stroke length.



Features & Options:

- Load in push: 1500N, 4000N, 6000N, 8000N
- Load in pull: 2000 N, LA40 Standard
LA40 HP + PL only static load in pull
Spline not available in pull (static or dynamic)
- Housing colour: Light grey, RAL 7035
- Protection class: IPX6, IPX6 Washable DURA™
(manual lowering only IPX6)
- Motor: 24 V DC, Standard motor
- Stroke length:

Standard and High Performance version:

- 1500 N: 50 - 405 mm (in steps of 5 mm)
(from 410 - 600 mm stroke is only for special articles)
- 4000 N: 50 - 300 mm (in steps of 5 mm)
- 6000 N: 50 - 200 mm (in steps of 5 mm)
- 8000 N: 50 - 250 mm (in steps of 5 mm)

Patient Lift version:

- 8000 N: 50 - 400 mm (in steps of 5 mm)
Longer stroke lengths is possible - please contact your nearest sales office.
This may have influence on the safety factor.

- Minimum built-in dimensions:
Standard and High Performance version:
 Stroke + 170 mm
 With mechanical spline, stroke + 180 mm
 With QR, stroke + 180 mm
 With mechanical spline and QR, stroke + 190 mm
 With ratchet-spline and QR, stroke + 180 mm
 With QR Damper, add 15 mm to BID for all QR versions
Patient Lift version:
 Stroke + 274 mm; $S \leq 300$ mm
 Stroke + 294 mm; $S \leq 400$ mm
- Positioning options: Dual Hall with power switches & dual Hall analogue, encoded with signal switches (16 pulses per rev.)
 Potentiometer input 0-5 Volt
- Quick release: Standard version: Internal
- Quick release Damper: Standard version: Internal
- Manual lowering: Only for Patient Lift version
- Noise level: ≤ 50 dB (A)
- Nut: Guided spindle nut for Standard and High Performance
 Non-guided spindle nut for Patient Lift version (ML)
- Safety nut: Standard
- Spline: Mechanical spline
 Ratchet spline (for Standard, PL, HP and QR versions only)
 - Required activation force during inward operation: 50-100 N
 - For QR versions:
 Force required to manually activate spline (actuator not in operation): Static pull force = 300-550 N
- Built-in electrical limit switch: Signal switch or power switch
- Built-in endstop: Mechanical (for safety only)
- Exchangeable cable: Minifit plug
- Safety factor is: Up to 2.5
 Beds = 2.0
 Medical = 2.5 (Standard and HP versions) in accordance with norms
 Medical = 1.5 (PL version) in accordance with norms
- Weight: > 2.0 kg (depending on version and specification)
- Static bending moment: No side load allowed
- Feedback type: None, dual hall (digital or encoded dual hall) Potentiometer (only for QR version)

Usage:

- Duty cycle: 10%, 2 minutes continuous use, followed by 18 minutes not in use
- Usage temperature: 5 °C to 40 °C
- Storage temperature: -10 °C to 50 °C
- Compatibility: Compatible with LINAK control boxes. Please contact LINAK.
- Relative humidity: 20% to 80% - non-condensing
- Atmospheric pressure: 700 to 1060 hPa
- Height above sea level: Max. 3000 meters
- Flammability rating: UL94V-2
- Approvals: IEC 60601-1, ANSI/AAMI ES60601-1, CAN/CSA-C22.2 No 60601-1

Technical specification

Motor type	Power Supply	Spindle pitch (mm)	Max. load Push (N)	Self-locking Push (N)	Max. load Pull (2000 N)	Typical speed at 0/max. load (mm/sec.)	Typical current at full load (Amps)
Standard (B)	24 VDC	3	8000	8000	X	4.1 / 2.5	5.5
HP motor (G)	24 VDC	3	8000	8000		4.6 / 3.4	5.6
Standard (B)	33 VDC	3	8000	8000	X	5.5 / 4.0	5.5
HP motor (G)	33 VDC	3	8000	8000		6.3 / 5.1	4.9
Standard (B)	24 VDC	4	8000	8000	X	5.5 / 3.0	6.1
PL motor (F)	24 VDC	4	8000	8000		9.3 / 6.1	9.0
Standard (B)	33 VDC	4	8000	8000	X	7.3 / 5.0	6.3
HP motor (G)	33 VDC	4	8000	8000		9.2 / 6.5	7.5
Standard (B)	24 VDC	4	6000	6000	X	5.5 / 3.6	5.1
HP motor (G)	24 VDC	4	6000	6000		TBD	TBD
Standard (B)	33 VDC	4	6000	6000	X	7.3 / 5.6	5.0
HP motor (G)	33 VDC	4	6000	6000		TBD	TBD
Standard (B)	24 VDC	5	4000	4000	X	6.5 / 5.2	3.5
HP motor (G)	24 VDC	5	4000	4000		7.9 / 6.4	3.4
Standard (B)	33 VDC	5	4000	4000	X	9 / 7.5	3.7
HP motor (G)	33 VDC	5	4000	4000		10.8 / 9.3	3.3
Standard (B)	24 VDC	9	1500	1500		11.9 / 10.4	2.3
HP motor (G)	24 VDC	9	1500	1500		13.5 / 12.2	2.4
Standard (B)	33 VDC	9	1500	1500		16.3 / 14.9	2.3
HP motor (G)	33 VDC	9	1500	1500		19.2 / 18.5	2.5



Please note that extension of the built-in dimension may reduce the safety factor.

LA40

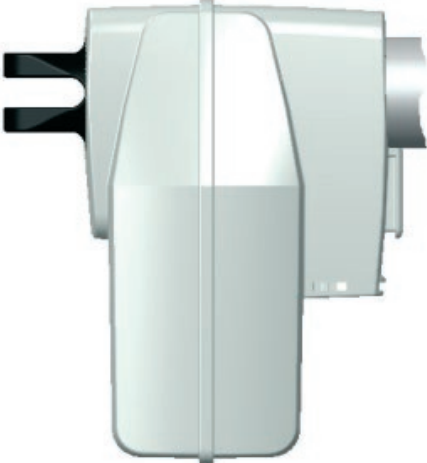
Ordering example:

	LA I		QR	Std.	HP	PL
Actuator type:	40					
Spindle pitch:	040	030 = 3 mm 040 = 4 mm 050 = 5 mm 090 = 9 mm	Only available for 8000 N version Standard Available for 4000 N without QR, 6000 N and all 8000 N HP/PL versions Only available for 4000 N version Only available for 1500 N version	X	X	X
Stroke length:	200	xxx = xxx mm	1500 N: From 50-405 mm in steps of 5 mm 4000 N: From 50-300 mm in steps of 5 mm 6000 N: From 50-200 mm in steps of 5 mm 8000 N: From 50-250 mm in steps of 5 mm 8000 PL: From 50-400 mm in steps of 5 mm	X	X	X
Safety:	0A	0A = Safety Nut 0D = Mech. Spline + Safety nut 0K = Ratchet Spline + Safety Nut 0L = Ratchet Spline + Safety Nut	Only available for 4000N Only available for "Quick Release": 1 = QR. Only available for High Performance and Patient Lift versions,	X	X	X
Feedback:	00	00 = None (F1) 0H = Dual Hall, digital (F2) 0M = Dual Hall, encoded (F3) 0P = Potentiometer (F6)	Possible with any end stop type Not available for QR version. Only possible with end stop type: 0 = Power switch (E1) Not available for QR version. Only possible with end stop type: 2 = Encoded (E3) Only available for QR version. Not possible with end stop type: 2 = Encoded (E3) Max possible stroke length is 280 mm (spindle pitch 5 mm)	X	X	X
Platform:	0	0 = None (P0)		X	X	X
Motor type:	B	B = 24 VDC Normal G = 24 VDC High performance F = 24VDC Patient Lift (only 24VDC)		X	X	X
Endstop:	0	0 = Powerswitch (E1) 1 = Signal switch (E2) 2 = Encoded (E3)	JUMBO + 3rd party control boxes LINAK control boxes (analogue + OpenBus) LINAK control boxes (analogue + OpenBus)	X	X	X
IP degree:	6	6 = IPX6 W = IPX6 Washable DURA™		X	X	X
Colour:	+	+ = Light Grey RAL 7035		X	X	X
Back fixture:	1	1 = With slot Ø10,2 2 = With slot Ø12,2 3 = Solid Ø10,2 4 = Solid Ø12,2 6 = With slot Ø 10,2 7 = With slot Ø 12,2 8 = Solid Ø12,2 Long Hole	Only available for ≤ 6000 N version Only available for ≤ 6000 N version Only available for QR and 8000 N version Only available for QR and 8000 N version Only available for 8000 N High performance + Patient lift versions Only available for 8000 N High performance + Patient lift versions Only available for 4000N with QR Damper	X	X	X
Back fixture rotation:	0	1 = Standard *) 2 = Turned 90°		X	X	X
Piston Rod:	D	C = Steel Ø12.2 (Solid) D = Steel Ø12.2 (With Slot) E = ML Ø12.2 F = ML Ø12.2	Not possible for HP version Not possible for QR version Only for manual lowering option Only for manual lowering option *) please note in system spec. if other colour (red) is requested)	X	X	X
Bushings:	A	A = No Bushings B = Plastic bushings with Ø 10.2 hole in piston rod		X	X	X
Brake:	1	1 = Brake in push		X	X	X
Install. Dim:	370	xxx = xxx mm	Standard + High performance (HP): HP w. ratchet spline: Standard with mech. spline: QR: QR with ratchet spline: QR with mech. spline: ML with ratchet spline: ML with ratchet spline:	BID = SL + 170 (minimum BID = SL + 170) BID = SL + 170 (minimum BID = SL + 170) BID = SL + 180 (minimum BID = SL + 180) BID = SL + 180 (minimum BID = SL + 180) BID = SL + 180 (minimum BID = SL + 180) BID = SL + 180 (minimum BID = SL + 190) BID = SL + 274 (BID = SL ≤ 300) BID = SL + 294 (BID = 300 < SL ≤ 400)	X	X
Option load	1	1 = 6000 N version 2 = 8000 N version (8000N – 5500N) 3 = 1500 N version 4 = 4000 N version 6 = 8000 N version (full stroke)		X	X	X
Fire Category:	2	2 = V2		X	X	X
Option Lowering:	0	0 = None 1 = QR 2 = QR with damper J = Manual lowering (ML)	Only available for 4000 N version Only Available for 4000N version Not possible for QR	X	X	X
Not Used	0	0 = Not specified		X	X	X
Safety factor	0	0 = 2.0 1 = 1.5 2 = 2.5	Bed applications Patient lifts Medical applications	X	X	X

Back fixture orientation:

Orientation of back fixture in relation to encapsulation:

1 = Standard

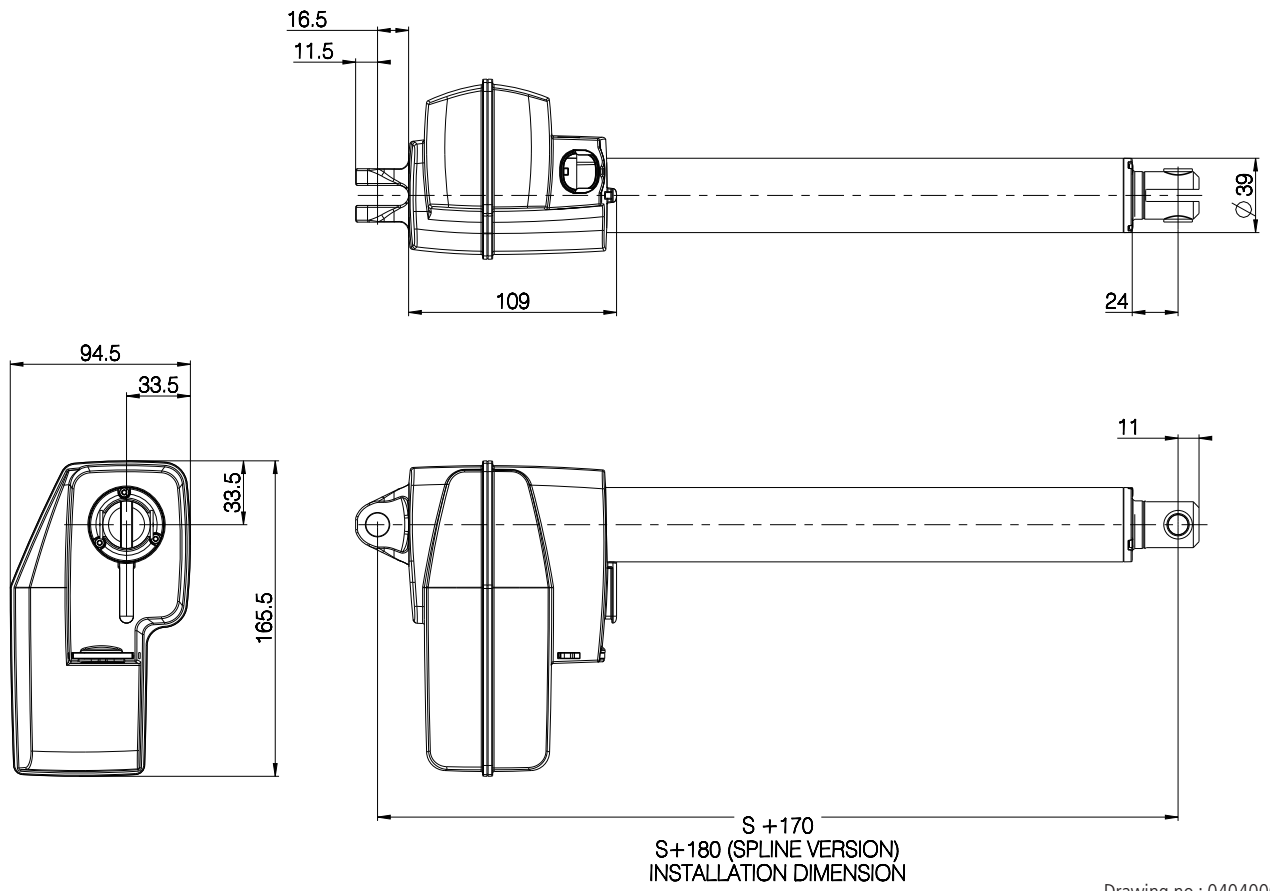


2 = Turned 90°



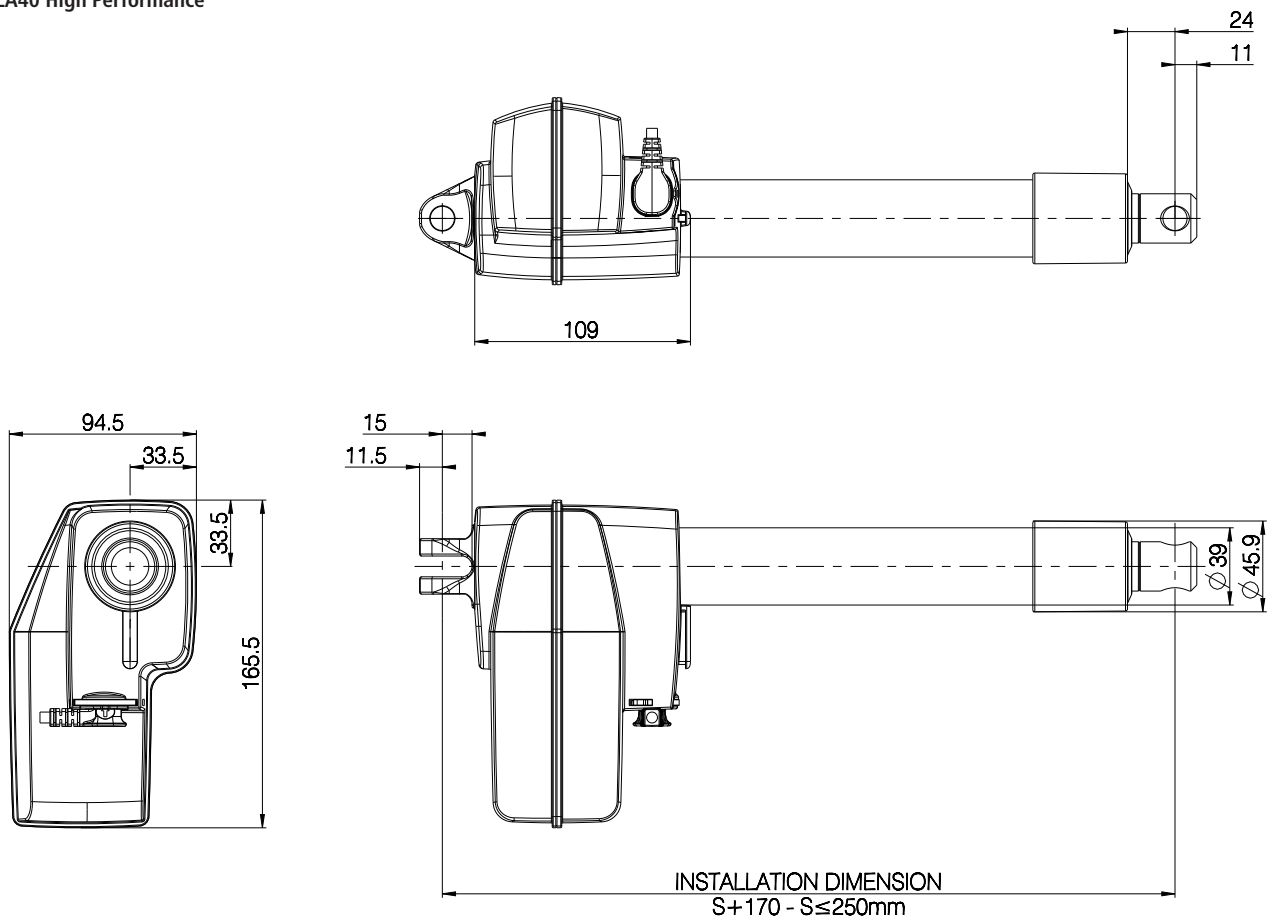
Dimension drawing

LA40 Standard



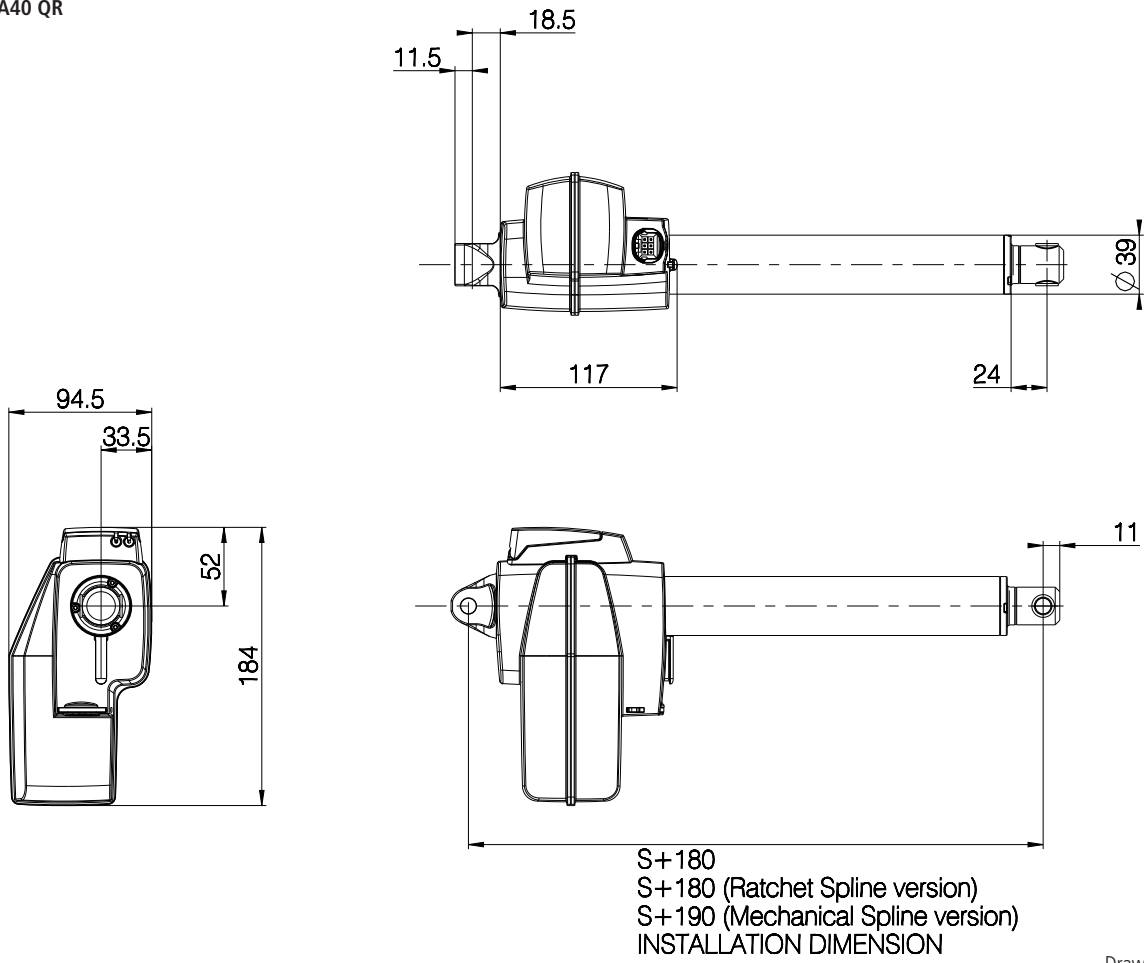
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LA40 High Performance



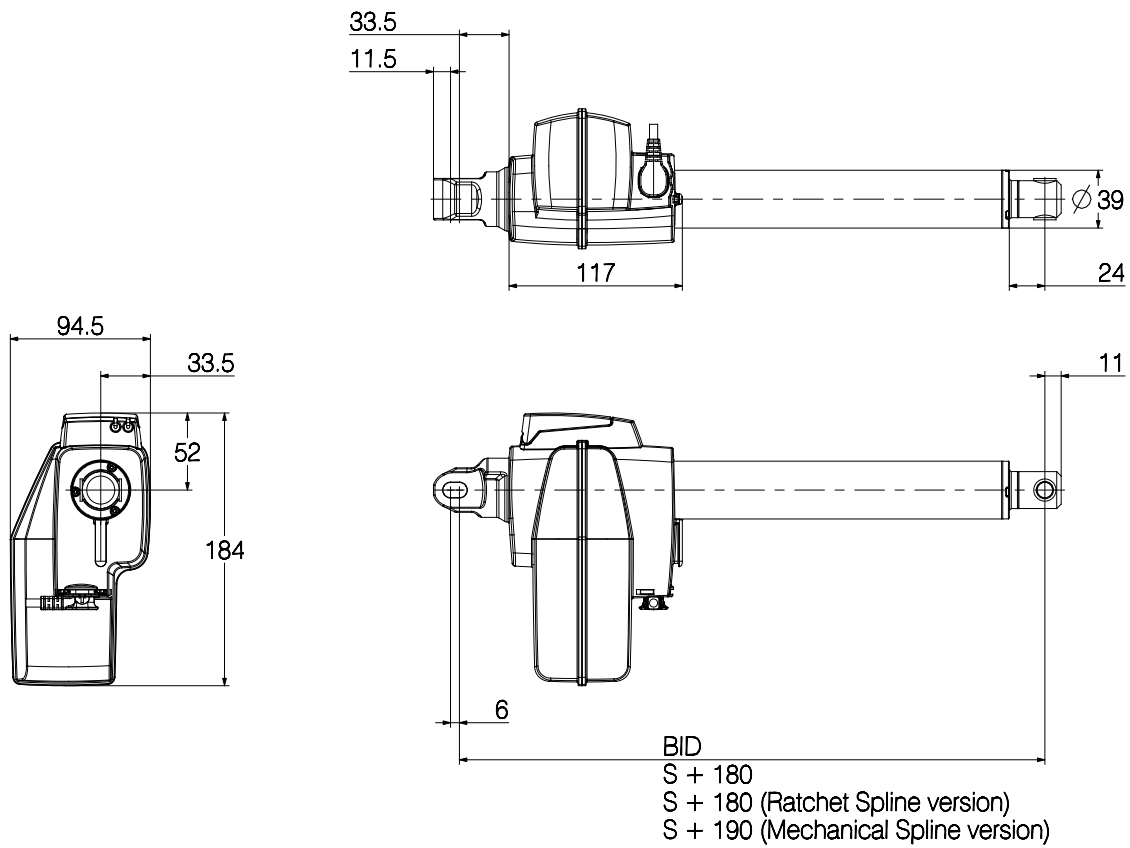
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LA40 QR



Drawing no.: 0404017

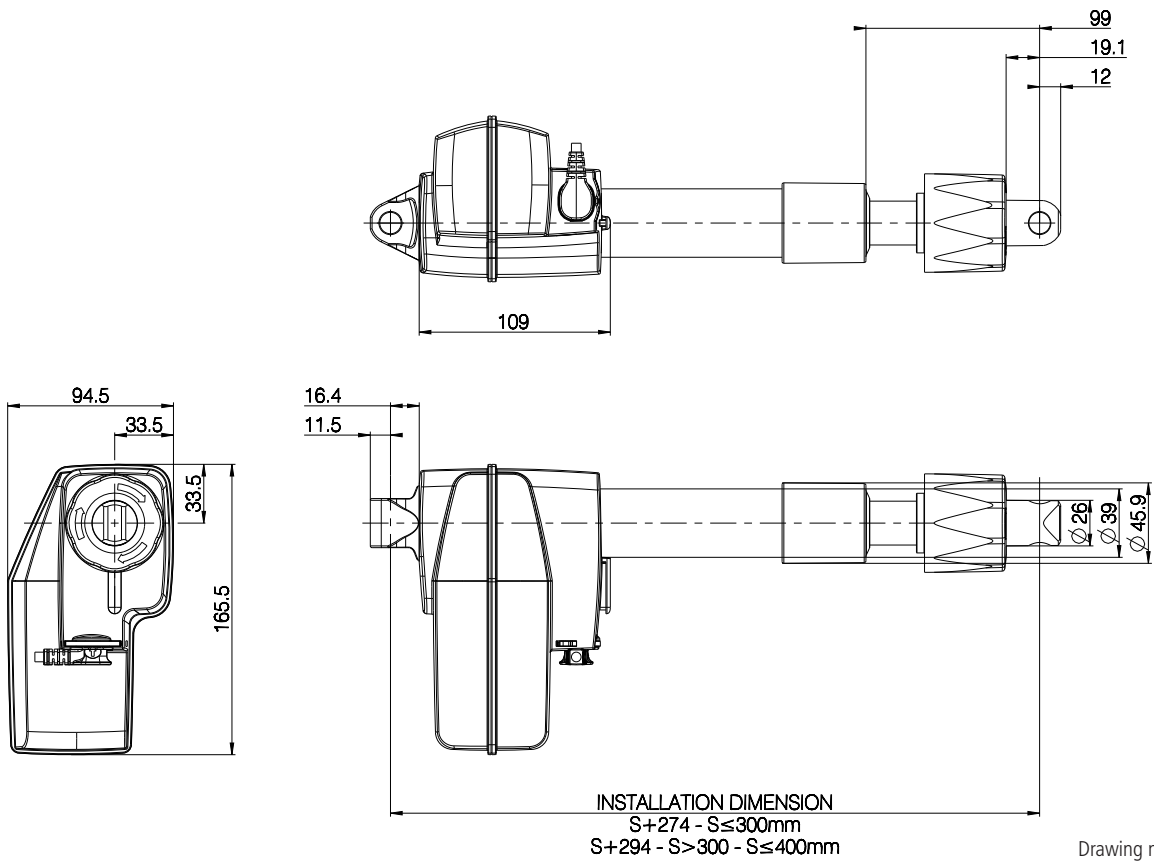
LA40 QR with Damper



BID with "Damper" Back Fixture = +15mm

Drawing no.: 0404043

LA40 Patient Lift

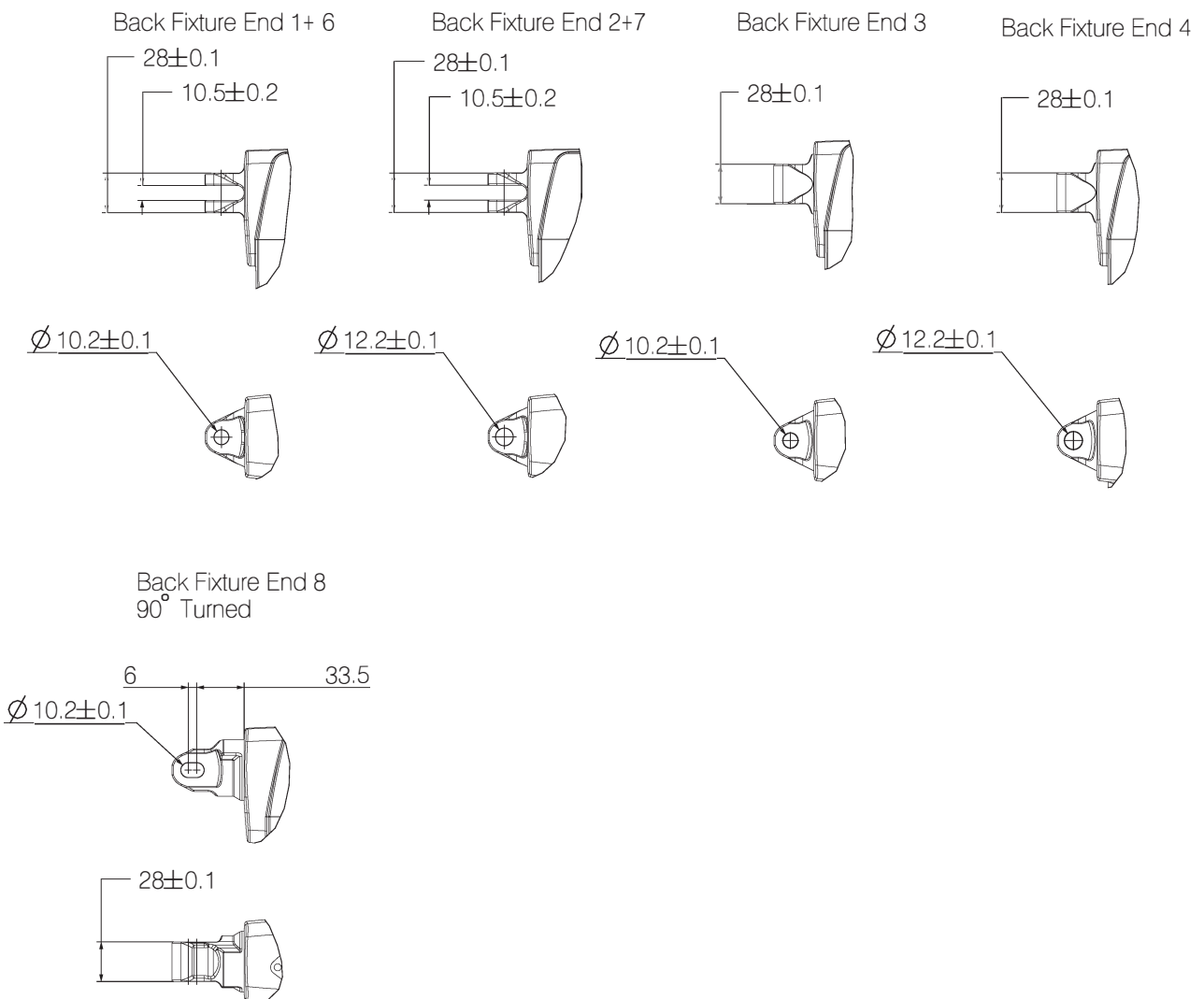


Drawing no.: 0404022

Details on back fixture:

Back fixture (for further details see ordering example)							
	End 1	End 2	End 3	End 4	End 6	End 7	End 8
1500 N	X	X					
4000 N with QR			X				X
4000 N without QR	X	X					
6000 N	X	X					
8000 N Standard			X	X			
8000 N HP					X	X	
8000 N PL					X	X	

Back fixture overview - shown in standard orientation, also available in 90°

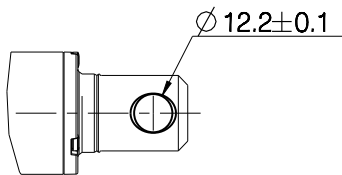
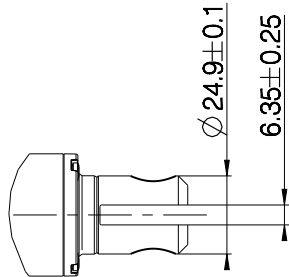


Details on piston rod eyes:

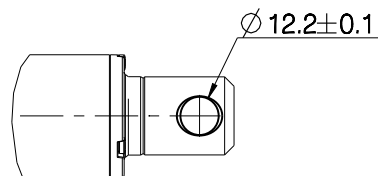
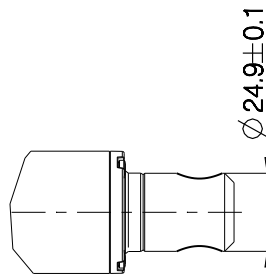
Piston rod eyes							
	End 1	End 2	End 3	End 4	End 5 Manual lowering	End 6	End 7
1500 N	X	X	X	X			
4000 N with QR		X		X			
4000 N without QR	X	X	X	X			
6000 N	X	X	X	X			
8000 N Standard		X		X			

Piston rod eyes for LA40 Standard:

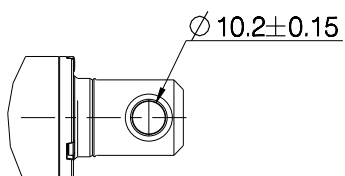
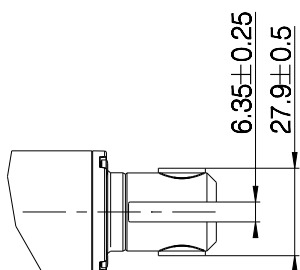
End 1 (Type D)
With slot, no bushings



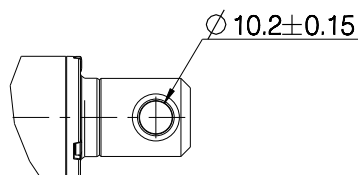
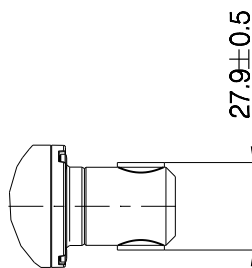
End 2 (Type C)
Solid, no bushings



End 3 (Type D + option B)
With slot, with bushings



End 4 (Type C + option B)
Solid, with bushings

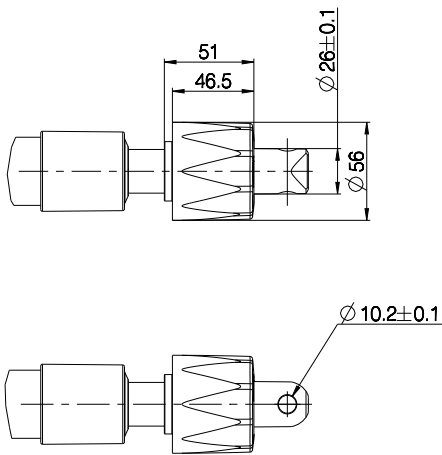


Details on piston rod eyes:

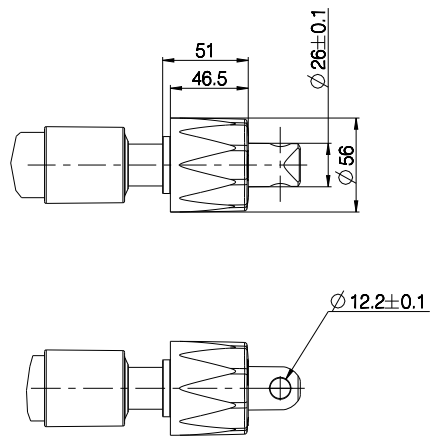
Piston rod eyes							
	End 1	End 2	End 3	End 4	End 5 Manual lowering	End 6	End 7
8000 N HP						X	X
8000 N PL					X		

Piston rod eyes for LA40 HP and PL:

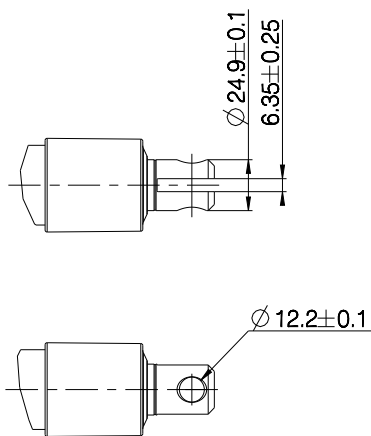
End 5 (Type E)
Manual lowering



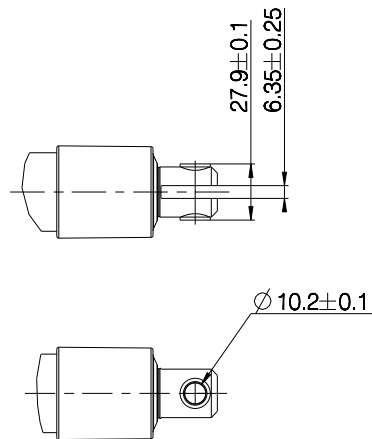
End 5 (Type F)
Manual lowering



End 6 (Type D)
With slot, no bushings

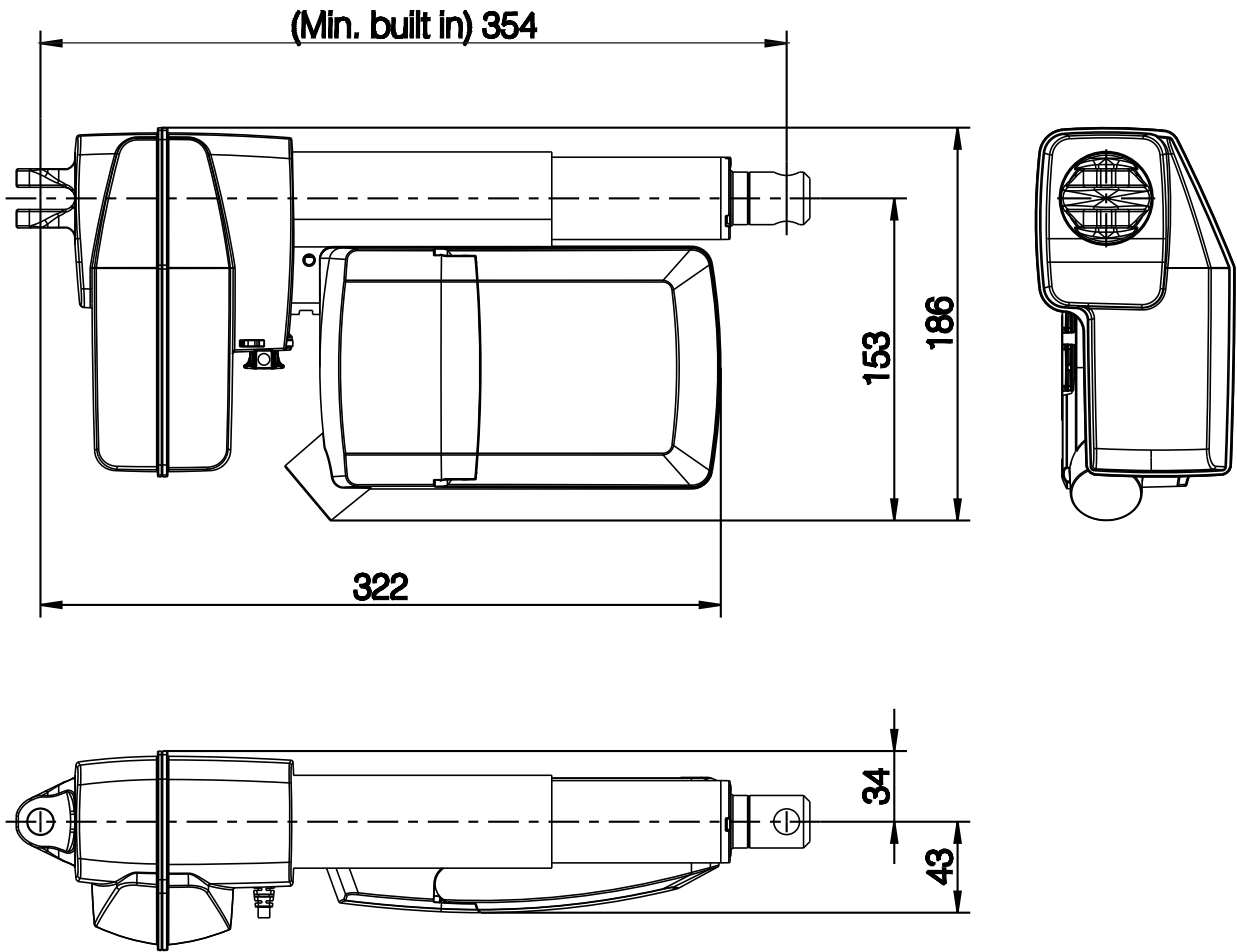


End 7 (Type D)
With slot, with bushings

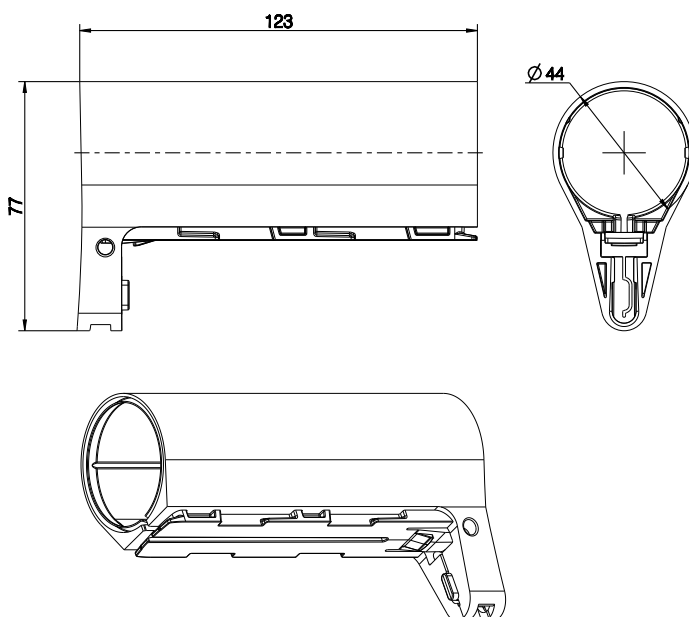


LA40 with mounting brackets – examples

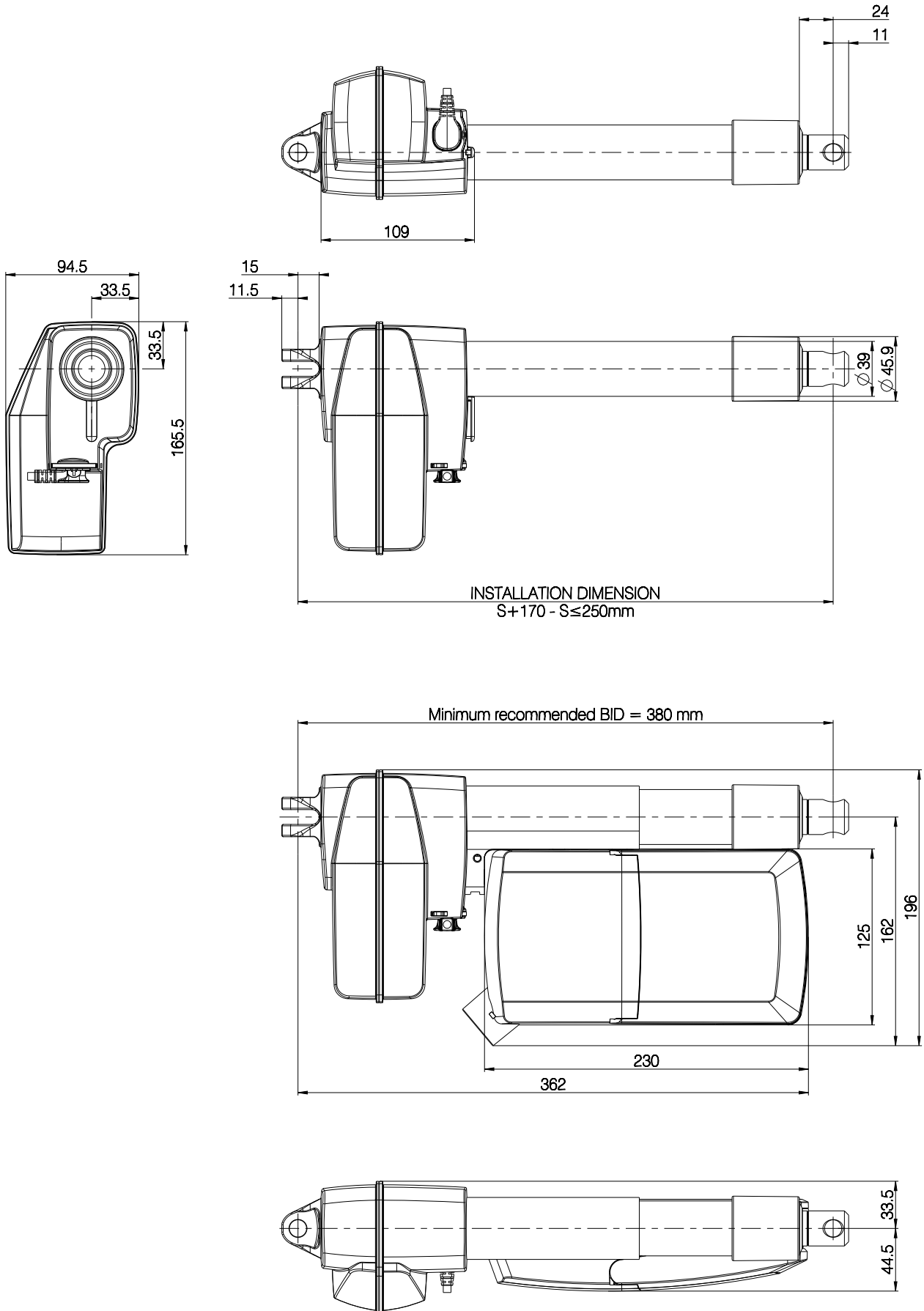
LA40 mounted with CA30-CA40:



CA30-CA40/LA40 mounting bracket:



LA40 HP mounted with CO61, CO71, CO41:



Note:
 Mounting bracket must be ordered together with LA40 HP.
 It is not possible to install the mounting bracket afterwards.

LA40 - control box combination overview

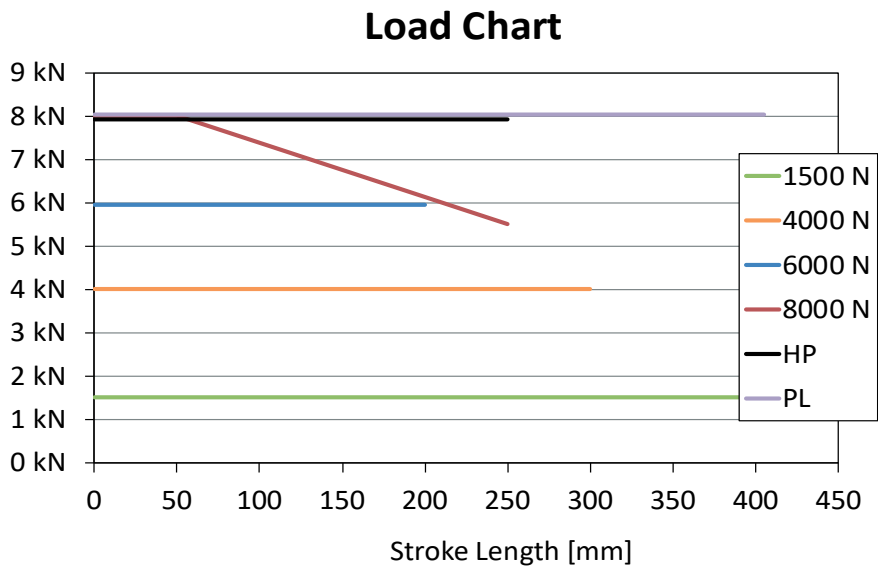
Combination	Drawing number	Minimum build-in dimension	Bracket article number
LA40 / CA30-CA40	1013W4002	354 mm	1015W1002
LA40 / CO61-CO71-CO41	1013W4003	394 mm	1015W1002
LA40 / CB6	0404006	380 mm	40KIT-003*
LA40 HP / CO61-CO71-CO41	0404021	380 mm	1015W1002

*40KIT-003 consists of:

1. 1 x 0401017-A (LA40 clip for adapter RAL7035)
2. 1 x 0401080-A (LA40 CB6 / CB6S adapter RAL7035)

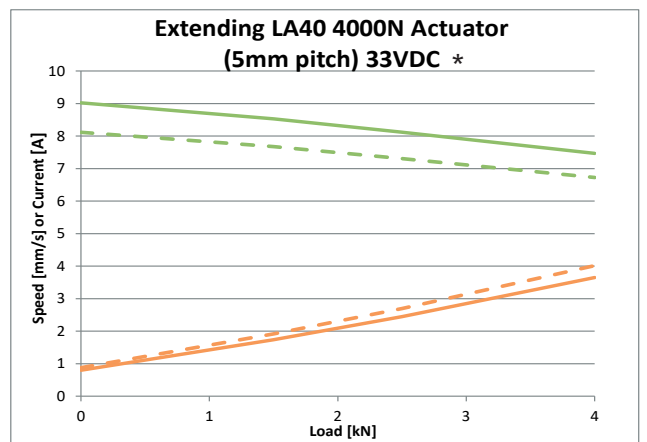
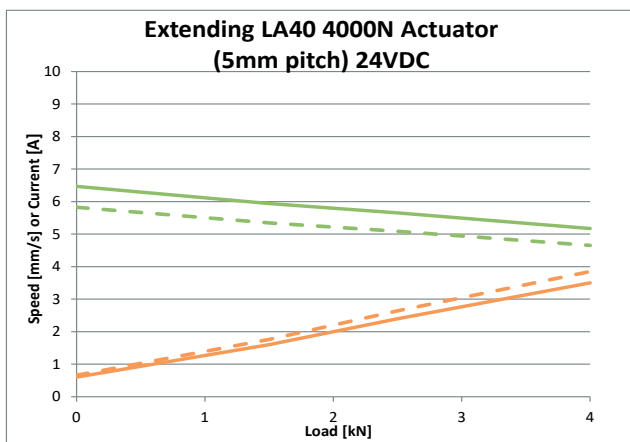
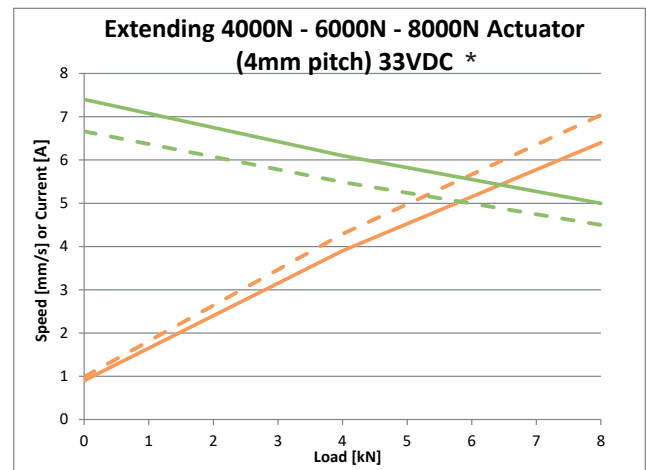
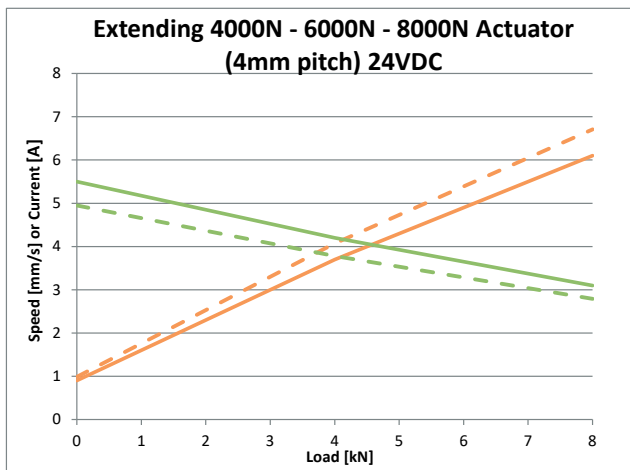
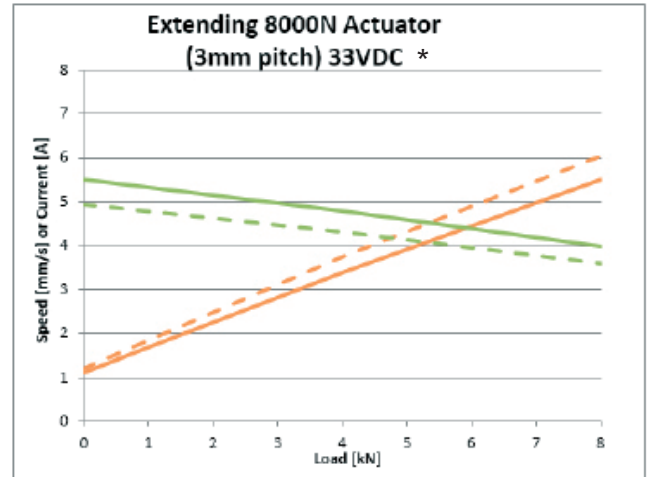
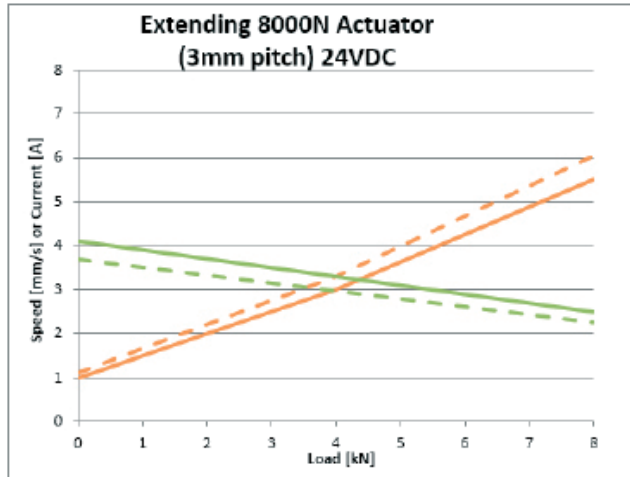
Load curves:

LA40 Standard, HP and PL:



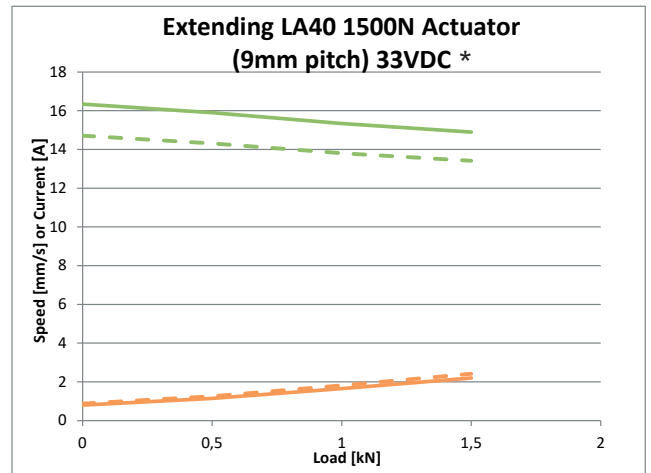
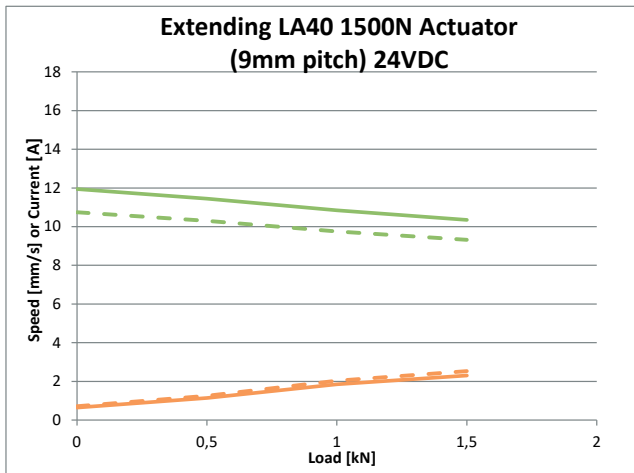
Speed and current graphs:
 (please note measurements are typical values)

LA40 standard, motor type B:



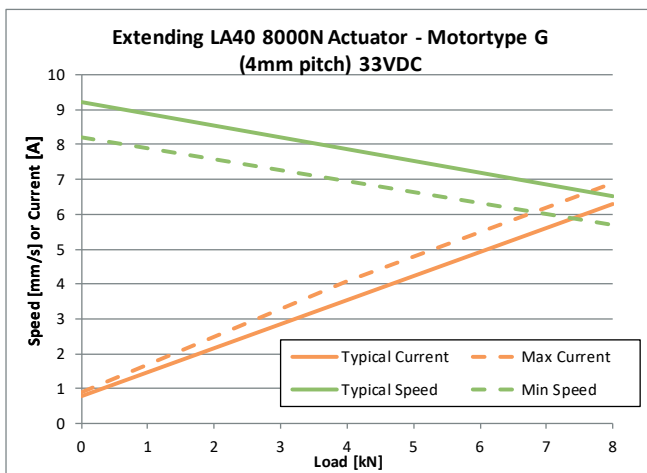
* With stable power supply

Speed and current graphs:
 (please note measurements are typical values)

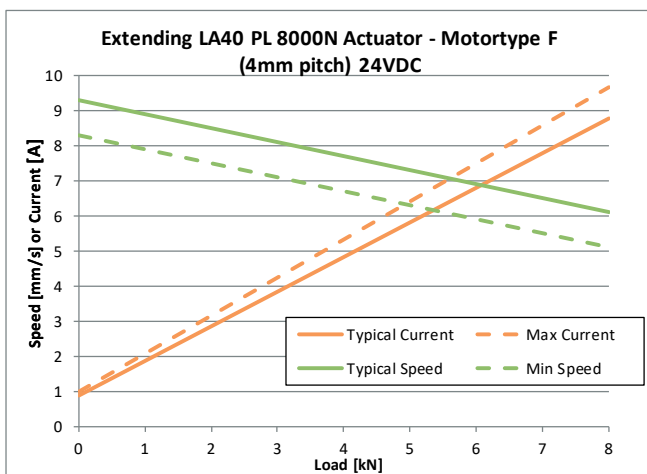


* With stable power supply

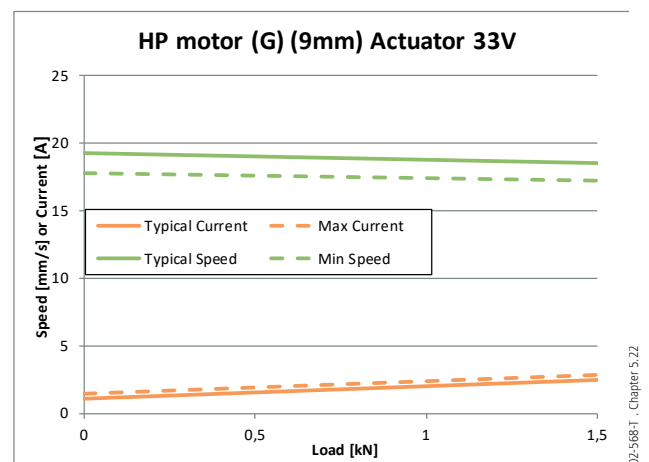
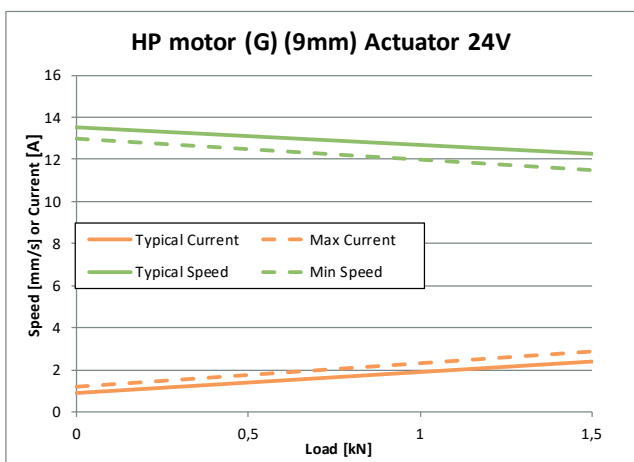
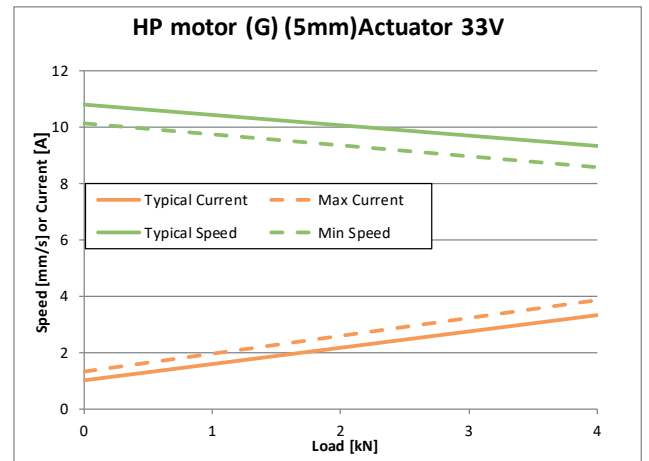
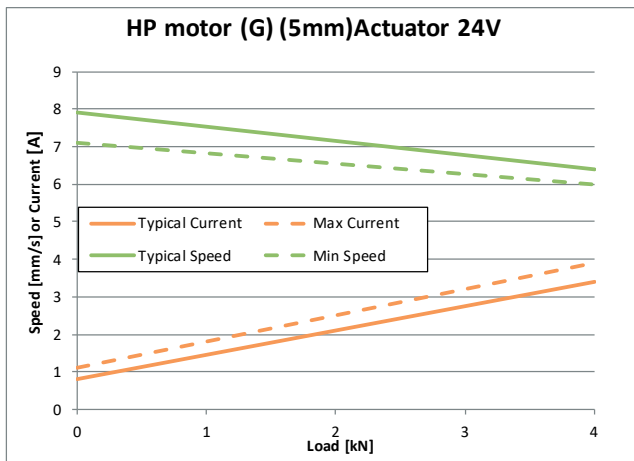
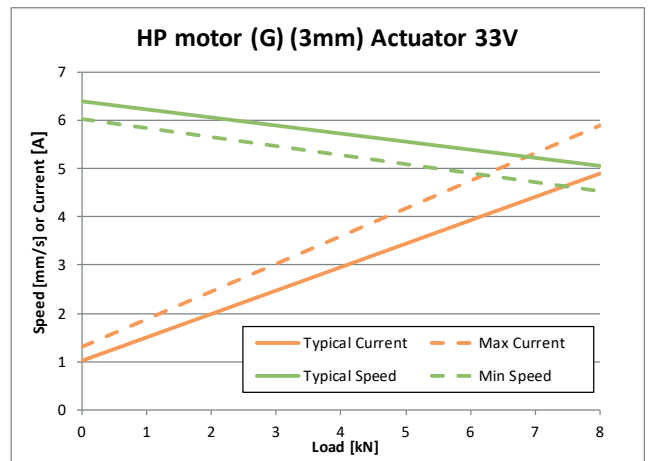
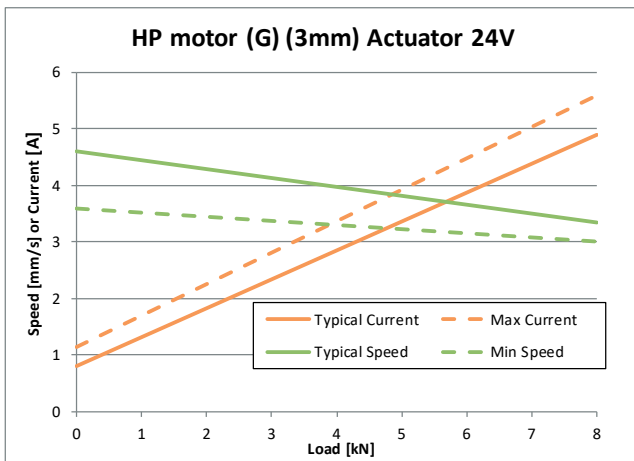
LA40 HP, motor type G



LA40 PL



LA40 standard, motor type G:



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